City of Galt
Community Development Department

Cardoso II Subdivision Project

Initial Study/Mitigated Negative Declaration

February 2020

Prepared by

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20 years
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INITIAL STUDY

February 2020

A. BACKGROUND

1. Project Title: Cardoso II Subdivision Project

2. Lead Agency Name and Address: City of Galt
Community Development Department
495 Industrial Drive
Galt, CA 95632

3. Contact Person and Phone Number: Chris Erias
Community Development Director
(209) 366-7230

4. Project Location: 10380 Kost Road
Galt, CA 95632
APNs: 150-0101-076, -077

5. Project Sponsor's Name and Address: TTLC Cardoso, LLC
110 Blue Ravine Road, Suite 209
Folsom, CA 95630
(916) 945-9719

6. Existing General Plan Designations: Low Density Residential (LDR)
Open Space (OS)

7. Existing Zoning Designations: Low Density Single-Family Residential (R1A)
Open Space (OS)

8. Proposed Zoning Designation: Maximum Density Single-Family Residential (R1C)
OS

9. Required Approvals from Other Public Agencies: None

10. Surrounding Land Uses and Setting:

The entire 59.17-acre subject property consists primarily of agricultural land used for farming. The subject property is also developed with a dairy and two associated single-family residences. Surrounding land uses include agricultural land to the south and west, and a water tank to the east with single family residences beyond. The vacant land to the north of the property has been approved for development with single-family residential uses. The subject property is currently designated Low Density Residential (LDR) and Open Space (OS) per the City of Galt General Plan and is zoned Low Density, Single-Family Residential (R1A) and Open Space (OS).

11. Project Description Summary:

    The Cardoso II Subdivision Project (proposed project) would include the development of an 87-unit single-family subdivision on the northern 24.62 acres of the subject property (project site), located south of Kost Road and west of the Union Pacific Railroad tracks in Galt, California. The remaining 34.55 acres would be designated as a remainder parcel and would not be developed. The proposed project would require approval of a rezone to change the zoning of the 24.62-acre project site to Maximum Density, Single-Family Residential (R1C).

12. Status of Native American Consultation Pursuant to Public Resources Code Section 21080.3.1:

    In compliance with Assembly Bill (AB) 52 (Public Resources Code Section 21080.3.1), a project notification letter was distributed to the chairpersons of the Wilton Rancheria and the Torres Martinez Desert Cahuilla Indian Tribe on August 1, 2019. Both tribes responded, requesting additional information regarding tribal cultural resources on the subject property.

B. SOURCES

All of the technical reports and modeling results used for the project analysis are available upon request at the City of Galt Community Development Department, located at 495 Industrial Drive, Galt. Office hours are Monday through Thursday, 7:30 AM to 5:30 PM. The following documents are referenced information sources used for the purposes of this Initial Study:

1. Alameda County Superior Court. *California Building Industry Association v. Bay Area Air Quality Management District. A135335 and A136212*. Filed August 12, 2016.
2. Alta Archaeological Consulting. *Archaeological Survey Report, Cardoso II Subdivision Project, Sacramento and San Joaquin Counties, CA.* December 16, 2019.
3. California Air Resources Board. *Air Quality and Land Use Handbook: A Community Health Perspective.* April 2005.
4. California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.
5. California Department of Conservation. *California Earthquake Hazards Zone Application.* Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed September 2019.
6. California Department of Conservation. *California Important Farmland Finder.* Available at: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed May 2019.
7. California Department of Conservation. *Fault Activity of California.* 2010. Available at: https://www.conservation.ca.gov/cgs/maps-data. Accessed September 2019.
8. California Department of Finance. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2019, with 2010 Benchmark. Available at: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/. Accessed September 2019.
9. California Department of Forestry and Fire Protection. *Sacramento County, Very High Fire Hazard Severity Zones in LRA.* October 2, 2007.
10. California Department of Resources Recycling and Recovery (CalRecycle). *Facility/Site Summary Details: Sacramento County Landfill (Kiefer) (34-AA-0001)*. Available at:

https://www2.calrecycle.ca.gov/swfacilities/Directory/34-AA-0001/. Accessed October 2019.

11. California Department of Transportation. *California Scenic Highway Mapping System*. Available at: http://www.dot.ca.gov/hq/LandArch/16_livability/scenic_highways/. Accessed May 2019.
12. City of Galt. City of Galt General Plan Policy Document. April 2009.
13. City of Galt. *Community Profile: City of Galt Demographic Overview.* Available at: http://www.ci.galt.ca.us/city-departments/economic-development/community-profile. Accessed September 2019.
14. City of Galt. *Wastewater Treatment Plant.* Available at: http://www.ci.galt.ca.us/city-departments/public-works/utilities-division/wastewater-services/wastewater-treatment-plant. Accessed October 2019.
15. City of Galt. Wastewater Collection System Master Plan. May 2010.
16. City of Galt. *2015 Urban Water Management Plan Update*. June 2016.
17. Department of Toxic Substances Control. Hazardous Waste and Substances Site List. Available at: https://www.envirostor.dtsc.ca.gov/public/search.asp?cmd=search&reporttype=CORTESE&site_type=CSITES. Accessed September 2019.
18. Federal Emergency Management Agency. *Flood Insurance Rate Map 06067C0606J.* Effective October 20, 2016.
19. Federal Highway Administration. *Roadway Construction Noise Model User's Guide.* January 2006.
20. Live Oak Associates. *Cardoso II, Technical Biological Report, City of Galt, Sacramento County, California.* October 15, 2019.
21. Sacramento Fish and Wildlife Office. *U.S. Fish and Wildlife Service San Joaquin Kit Fox Survey Protocol for the Northern Range.* June 1999.
22. Saxelby Acoustics. *Environmental Noise Assessment, Cardoso Subdivision II, City of Galt, California.* January 29, 2020.
23. United States Department of Agriculture, Natural Resources Conservation Service. *Web Soil Survey.* Available at: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm. Accessed May 2019.

C. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is "Less Than Significant with Mitigation Incorporated" as indicated by the checklist on the following pages.

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

D. DETERMINATION

On the basis of this initial study:

☐ 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 applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

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

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" 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 pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature	Date
Chris Erias	City of Galt
Printed Name	For

E. BACKGROUND AND INTRODUCTION

This Initial Study/Mitigated Negative Declaration (IS/MND) identifies and analyzes the potential environmental impacts of the Cardoso II Subdivision Project (proposed project). The information and analysis presented in this document is organized in accordance with the order of the California Environmental Quality Act (CEQA) checklist in Appendix G of the CEQA Guidelines. Where the analysis provided in this document identifies potentially significant environmental effects of the project, mitigation measures are prescribed. The mitigation measures prescribed for environmental effects described in this IS/MND would be implemented in conjunction with the project, as required by CEQA. The mitigation measures would be incorporated into the project through conditions of approval. The City would adopt findings and a Mitigation Monitoring/Reporting Program for the project in conjunction with approval of the project.

In April 2009, the City of Galt completed a comprehensive General Plan Update (GPU). An EIR was prepared for the GPU. The GPU EIR is a program EIR, prepared pursuant to Section 15168 of the CEQA Guidelines (Title 14, California Code of Regulations, Sections 15000 et seq.). The Galt GPU EIR analyzed full implementation of the Galt GPU and identified measures to mitigate the significant adverse impacts associated with the General Plan.

Several technical reports were prepared for the proposed project, including a Biological Resources Assessment prepared by Live Oak Associates, and an Environmental Noise Report prepared by Saxelby Consulting. The technical reports used for the project analysis are available upon request at the City of Galt Community Development Department, which is located at 495 Industrial Drive, Galt, CA, 95632, and may be reviewed Monday through Thursday, between the hours of 7:30 AM and 5:30 PM.

F. PROJECT DESCRIPTION

The following provides a description of the project site's current location and setting, as well as the proposed project components and the discretionary actions required for the project.

Project Location and Setting

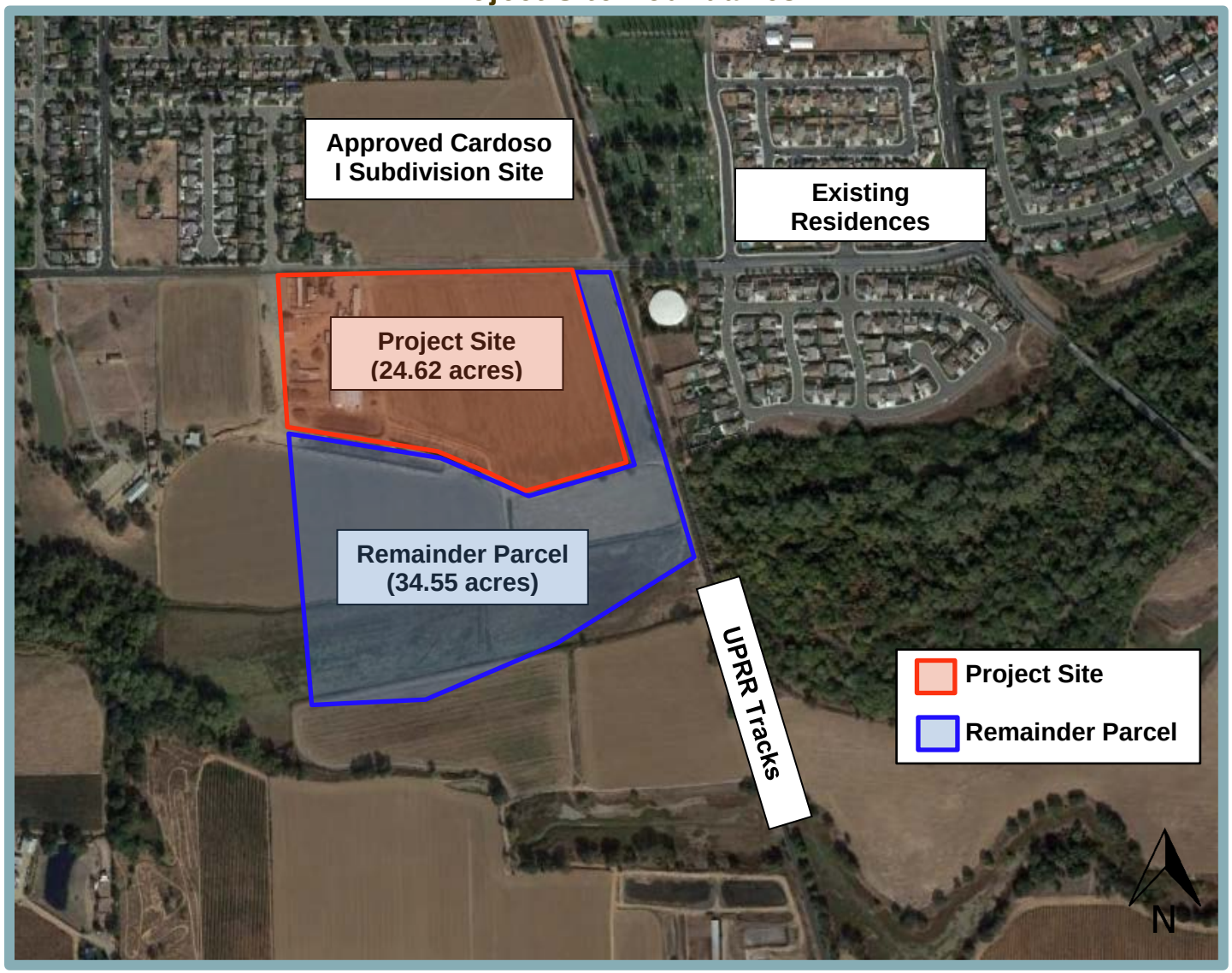
The subject property is located south of Kost Road and west of the Union Pacific Railroad (UPRR) tracks in the City of Galt (see Figure 1 and Figure 2). The property is comprised of two parcels identified as Assessor's Parcel Numbers (APNs) 150-0101-076 and -077. The City of Galt is located within Sacramento County and is approximately 27 miles south of the City of Sacramento and 10 miles north of the City of Lodi. State Route (SR) 99 runs in a north-south direction through the City of Galt and provides regional access to the City. The northwestern portion of the subject property is currently developed with a dairy and two residences. The remainder of the subject property is comprised of vacant and undeveloped land.

It should be noted that for the purposes of this environmental analysis, the term "subject property" refers to the entire 59.17-acre parcel. The term "project site" is hereby defined as the northern 24.62-acre parcel that is proposed for development, while the remaining 34.55 acres of the subject property is hereby defined as the "remainder parcel".

The project site is currently designated LDR by the General Plan and zoned R1A and OS. The remainder parcel is designated and zoned OS. The subject property is bound to the east by the UPRR tracks, agricultural land to the south and west, and Kost Road to the north. Existing single-family residential uses are located across the UPRR tracks to the east. It should be noted that the Cardoso I Subdivision Project has been approved for development on the property located to the north of the subject property, across Kost Road.

Figure 1
Regional Project Location

Figure 2
Project Site Boundaries



Project Components

The proposed project would include subdivision of the 24.62-acre project site to develop a total of 87 single-family lots and associated improvements including, but not limited to landscaping, circulation improvements, and utility installation. The proposed project components and required approvals are described in further detail below.

Rezone

Per the City of Galt Zoning Map, the project site is currently zoned R1A and OS, while the remainder parcel is zoned OS only. The proposed project would include a rezone from R1A to Maximum Density, Single Family Residential (R1C) in order to establish conformance with the existing General Plan land uses designations for the project site.

Tentative Subdivision Map

The proposed project would include construction of 87 single-family residential units on the 24.62-acre project site while the remaining 34.55 acres would be designated as a remainder parcel and would not be developed (see Figure 3). The proposed lot sizes would range from 6,500 sf to 11,534 sf. Construction of 87 new residences on 24.62 acres would result in a gross density of 3.4 units per acre. The proposed residential subdivision would be setback approximately 150-feet from the UPRR tracks to the east of the project site.

Landscaping and Trails

The proposed project would provide for landscaping improvements throughout the project site, including new trees and shrubs at the project frontage along Kost Road (see Figure 4). All landscaping improvements would be consistent with the City's landscape design requirements. Additionally, a new soundwall would be constructed along the Kost Road frontage and would be a minimum height of six feet, with a width of 24 inches.

The proposed project would include a 35-foot-wide trail corridor. The trail corridor would run diagonally across the project site from Kost Road to the southeast boundary of the project site.

Access and Circulation

The proposed project would include internal circulation that would provide access to the proposed residences. Primary access to the project site would be provided by a new internal roadway connecting to the planned Maria Way/Kost Road intersection. An additional emergency vehicle access (EVA) would be constructed at the northwestern edge of the site. The EVA would be approximately 14 feet wide and would include removable bollards to limit non-emergency vehicle traffic.

The proposed project would include additional improvements to Kost Road including expanding the width of the bike lane to six feet. The bike lane would be relocated to provide a three-foot buffer between traffic and the bike lane. Additionally, the proposed project would include crosswalk improvements at Kost Road. The crosswalk would have pedestrian activated LED yellow flashers along with advanced warning signage and flashers.

Utilities

Treated water service for the project would be provided by the City of Galt. The proposed project would include construction of new eight-inch and 10-inch water extensions to connect to an existing 12-inch water line within Kost Road. The new water extensions would run throughout the project site and would serve all units (see Figure 5).

Figure 3
Tentative Subdivision Map

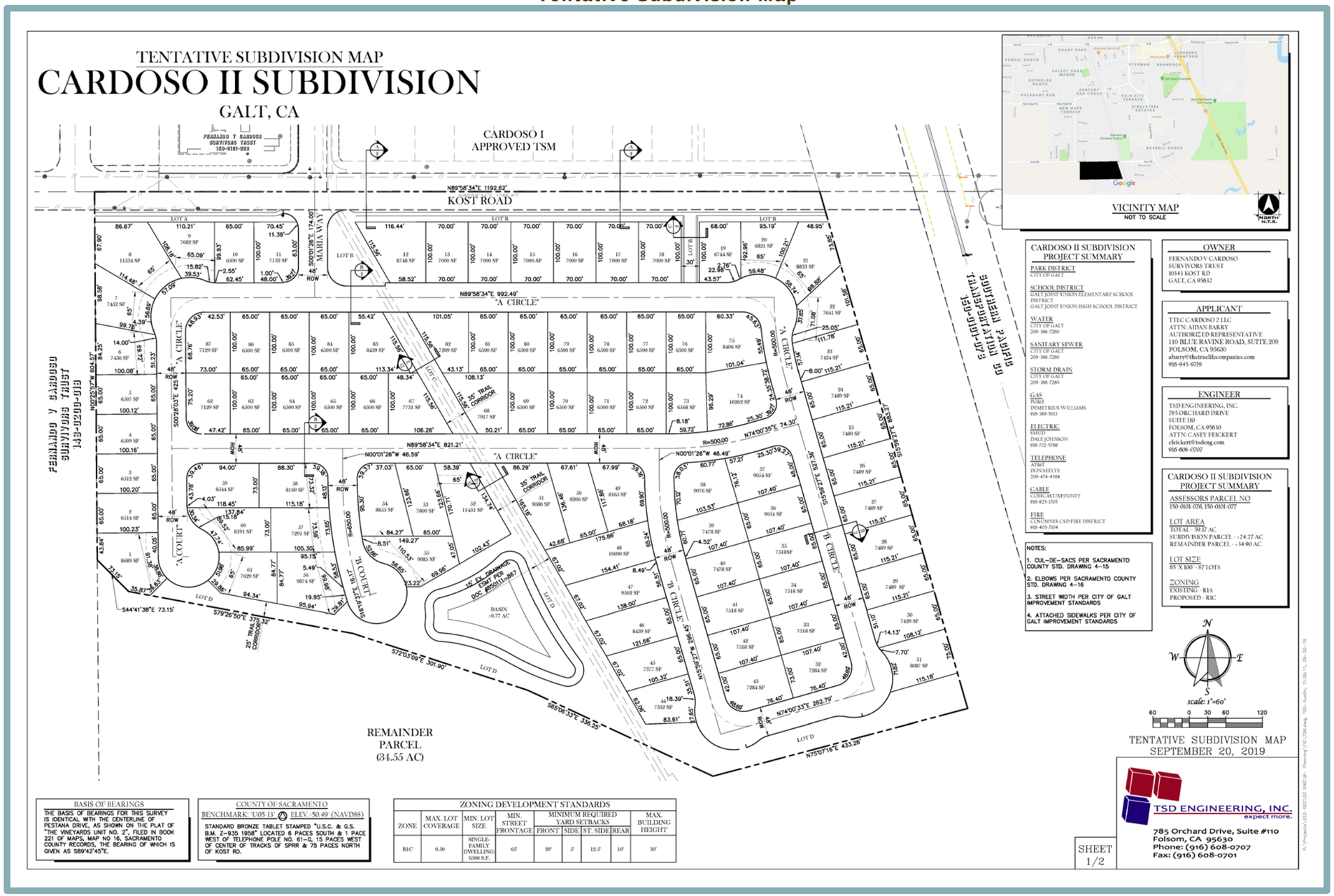
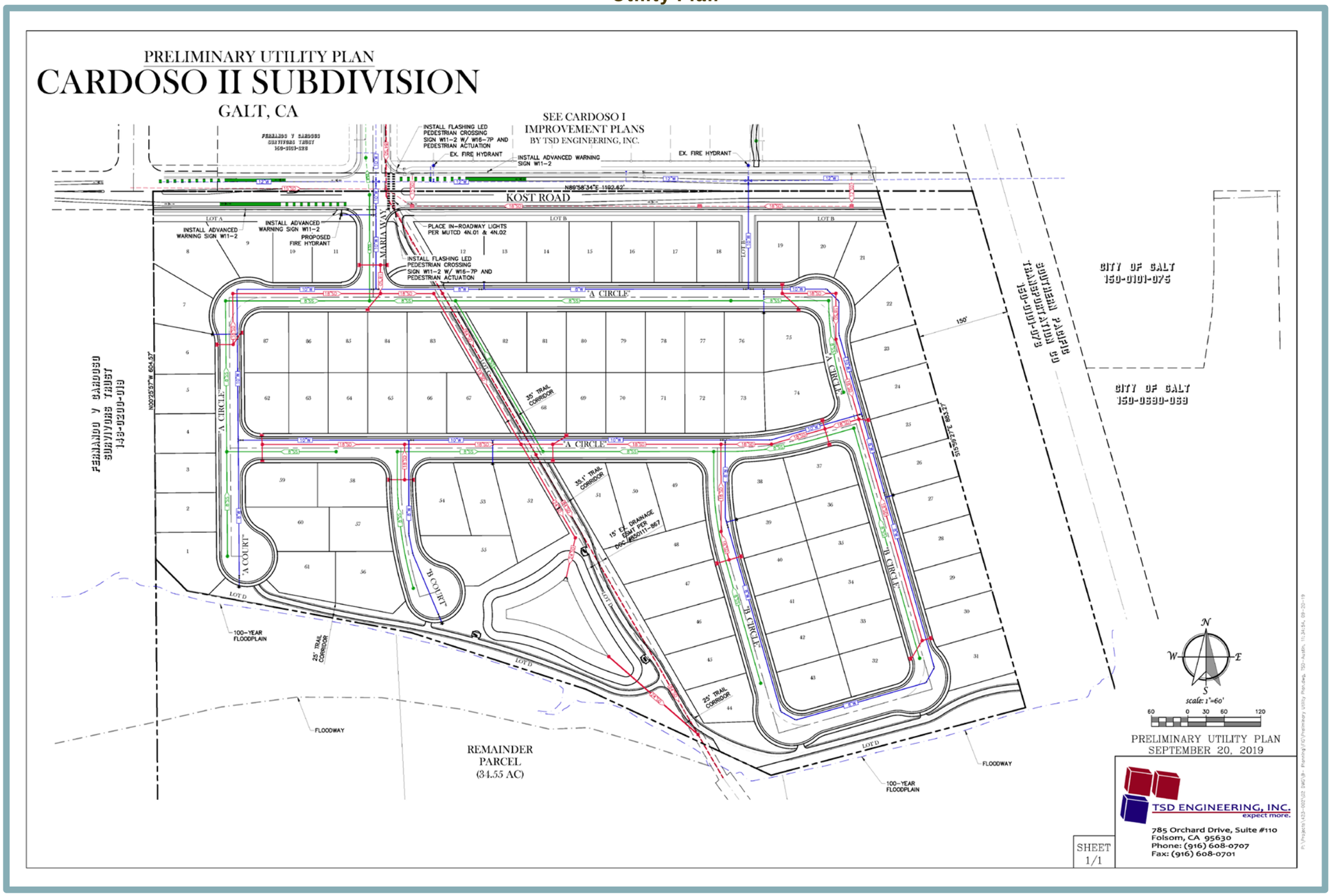


Figure 4
Landscape Plan

Figure 5
Utility Plan



The proposed project would be provided sanitary sewer service by the City of Galt. The City operates and maintains the sewer system, which collects wastewater flows from individual developments within the City and conveys them to the City's wastewater treatment plant located at 10059 Twin Cities Road. The project would include construction of new eight-inch sanitary sewer lines connecting to an existing sewer manhole within Kost Road.

Stormwater draining off impervious surfaces such as roofs, parking areas, and drive aisles within the project site would be captured by curb inlets and routed, by way of new underground drain pipes, to a new bio-retention basin in the southern portion of the site (see Figure 5). The bio-retention basin would provide for treatment and detention of stormwater. Treated runoff would flow to an existing 84-inch storm drain located within the proposed 35-foot trail corridor.

Demolition, Grading, and Construction Details

Construction of the proposed project would include grading of the 24.62-acre project site, as well as trenching for utility improvements. In addition, the project would require demolition of the existing dairy and associated residences on-site.

As discussed previously, the proposed project would not include development of the southern 34.55-acre portion of the subject property (remainder parcel). However, as part of the proposed grading activities, a total of 86,000 cubic yards of soil would be excavated from the remainder parcel and moved to the project site to provide fill material. The two borrow sites within the remainder parcel would total 9.0 acres and 3.2 acres, respectively, and would be located outside of the Dry Creek 100-year floodplain.

Discretionary Actions

The proposed project would require the following approvals from the City of Galt:

- Adoption of the IS/MND;
- Approval of a Mitigation Monitoring and Reporting Program;
- Approval of a Tentative Subdivision Map; and
- Approval of a Rezone.

G. ENVIRONMENTAL CHECKLIST

The following checklist contains the environmental checklist form presented in Appendix G of the CEQA Guidelines. The checklist form is used to describe the impacts of the proposed project. A discussion follows each environmental issue identified in the checklist. For this checklist, the following designations are used:

Potentially Significant Impact: An impact that could be significant, and for which no mitigation has been identified. If any potentially significant impacts are identified, an EIR must be prepared.

Less Than Significant with Mitigation Incorporated: An impact that requires mitigation to reduce the impact to a less-than-significant level.

Less-Than-Significant Impact: Any impact that would not be considered significant under CEQA relative to existing standards.

No Impact: The project would not have any impact.

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

Discussion

a,b. Examples of typical scenic vistas include mountain ranges, ridgelines, or bodies of water as viewed from a highway, public space, or other area designated for the express purpose of viewing and sightseeing. The project site is generally disturbed and contains a dairy with associated single-family residences. The visual landscape of the surrounding area is characterized by vacant land to the south, a vacant lot to the north (approved Cardoso I Project site), and existing residences to the east of the UPRR tracks which border the site to the east. According to the City's General Plan, scenic vistas are not located in the vicinity of the project site, and therefore would not be affected by the proposed project.

In addition, per the California Scenic Highway Mapping System, the project site is not located within the vicinity of an officially designated State Scenic Highway.[1] Thus, the proposed project would not have the potential to damage scenic resources within a State scenic highway. Therefore, the proposed project would not have a substantial adverse effect on a scenic vista or substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway. Thus, a ***less-than-significant*** impact would occur.

c. The project site consists of a dairy with associated residences and agricultural land. The frontage of the site is bordered by Kost Road. The site is bordered by UPRR tracks to the west and agricultural land to the south and west. The project site has been previously anticipated for residential development and the General Plan analyzed potential impacts resulting from development of the site for residential uses. Although the proposed project would result in more intense development than allowed under current zoning, the general nature of development of the project site would be consistent with what was anticipated in the General Plan and analyzed in the General Plan EIR.

The frontage of the site would be landscaped with natural materials and several types of trees and shrubs. The design would improve the existing vacant lot with well-maintained landscape. Additionally, a sound wall would be constructed along the project frontage and would be setback from the road and separated by a sidewalk, as well as the

[1] California Department of Transportation. *California Scenic Highway Mapping System*. Available at: https://dot.ca.gov/programs/design/lap-landscape-architecture-and-community-livability/lap-liv-i-scenic-highways. Accessed December 2019.

aforementioned landscaping. The residences would reach a maximum of 30 feet and would be visible above the proposed sound wall.

Furthermore, pursuant to Section 18.68.100 of the Development Code, the project would undergo a Design Review. The purpose of Design Review is to establish procedures and standards to promote excellence in site planning and building design, to encourage the harmonious appearance of buildings and sites, to ensure that new and modified uses will be compatible with existing and potential development of the surrounding area, to ensure that projects comply with the design standards and intent of specific plans, and to produce and environment of stable and desirable character.

Although implementation of the proposed project would result in a change in visual character, development of the project site has been previously anticipated per the City's General Plan. While the project would require a rezone from R1A to R1C, development of the proposed project would be consistent with the residences to the east and the approved Cardoso I residential subdivision to the north. Furthermore, the proposed project would be generally consistent with the residential uses anticipated by the City's General Plan. As such, the proposed project would not result in a degradation of the existing visual character or quality of the site or the surroundings, and a ***less-than-significant*** impact would occur.

d. The project site does not currently contain sources of light other than the interior and exterior lighting associated with the existing single-family residences and dairy operations on the northwest portion of the site. Although the project site contains existing sources of light and glare, construction of the proposed residences and internal circulation system would result in new sources of light and glare within the project site.

The new sources of lighting would be required to comply with all applicable goals and policies in the City's General Plan and Municipal code in order to minimize impacts. For example, the proposed project would implement General Plan Policy CC-1.11, which requires future development to include design provisions of outdoor light fixtures to be direct/shielded downward and screened to avoid spillover on adjacent properties. Furthermore, the project would be required to adhere to Policy CC-1.12, which states that a range of building materials should be considered to ensure future developments do not produce excessive daytime glare.

Compliance with such regulations would help to ensure that the light and glare created by the proposed project would be consistent with the levels of light and glare currently emitted in the surrounding area. Therefore, the proposed project would result in a ***less-than-significant*** impact related to creating a new source of substantial light or glare which would adversely affect day or nighttime views in the area.

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

Discussion

a,e. Currently, the northwest portion of the site is developed with two single-family residences and a dairy, while the remaining portions of the project site are vacant. Per the California Department of Conservation Farmland Mapping and Monitoring Program, the eastern portion of the project site consists of approximately 6.9 acres designated as "Farmland of Local Importance", while the western portion of the site consists of approximately 16.9 acres designated as "Farmland of Statewide Importance." The remainder parcel consists of approximately 2.3 acres designated as "Farmland of Local Importance", approximately 2.3 acres designated as "Farmland of Statewide Importance", and approximately 32.0 acres designated as "Prime Farmland."[2] However, the City's General Plan designates the project site for low-density residential development.

The 2030 Galt General Plan EIR analyzed the impacts of Prime Farmland conversion that would result from buildout and determined the results would be significant and unavoidable even with the implementation of General Plan goals and policies. Given that the City's General Plan EIR designated the project site for development, the conversion of Prime Farmland has already been anticipated by the General Plan EIR. Furthermore, consistent Policy COS-4.4, the remainder parcel containing the Dry Creek riparian corridor would be retained as open space. Because the conversion of Farmland of Statewide importance has been analyzed and evaluated by the General Plan EIR and the project would not result in new or more severe impacts, the projects impacts would be ***less-than-significant***.

b. The project site is currently zoned R1A and OS, while the remainder parcel is zoned OS only. Given that the R1A zoning designation that covers the majority of the proposed development area already anticipates low density residential uses, the rezone to R1C

[2] California Department of Conservation. *California Important Farmland Finder.* Available at: https://maps.conservation.ca.gov/DLRP/CIFF/. Accessed May 2019.

would not conflict with existing zoning for agriculture use. In addition, the project site is not under a Williamson Act contract.
Therefore, the proposed project would not conflict with existing zoning for agricultural use, or a Williamson Act contract, and ***no impact*** would occur.

c,d. The project site is not considered forest land (as defined in Public Resources Code section 12220[g]), timberland (as defined by Public Resources Code section 4526), and is not zoned Timberland Production (as defined by Government Code section 51104[g]). As noted above, the project site is currently zoned R1A and OS. Therefore, the proposed project would not conflict with existing zoning for, or cause rezoning of, forest land, timberland, or timberland zoned Timberland Production, and the project would not otherwise result in the loss of forest land or conversion of forest land to non-forest use. Thus, ***no impact*** would occur.

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

Discussion

a,b. The City of Galt is located within the boundaries of the Sacramento Valley Air Basin (SVAB) and under the jurisdiction of the Sacramento Metropolitan Air Quality Management District (SMAQMD). Federal and State ambient air quality standards (AAQS) have been established for six common air pollutants, known as criteria pollutants, due to the potential for pollutants to be detrimental to human health and the environment. The criteria pollutants include particulate matter (PM), ground-level ozone, carbon monoxide (CO), sulfur oxides, nitrogen oxides (NO_X), and lead. At the federal level, Sacramento County is designated as severe nonattainment for the 8-hour ozone AAQS, nonattainment for the 24-hour $PM_{2.5}$ AAQS, and attainment or unclassified for all other criteria pollutant AAQS. At the State level, the area is designated as a serious nonattainment area for the 1-hour ozone AAQS, nonattainment for the 8-hour ozone AAQS, nonattainment for the PM_{10} and $PM_{2.5}$ AAQS, and attainment or unclassified for all other State AAQS.

Due to the nonattainment designations, SMAQMD, along with the other air districts in the SVAB region, is required to develop plans to attain the federal and State AAQS for ozone and particulate matter. The attainment plans currently in effect for the SVAB are the 2013 Revisions to the Sacramento Regional 8-Hour Ozone Attainment and Reasonable Further Progress Plan (2013 Ozone Attainment Plan), $PM_{2.5}$ Implementation/Maintenance Plan and Re-designation Request for Sacramento $PM_{2.5}$ Nonattainment Area ($PM_{2.5}$ Implementation/Maintenance Plan), and the 1991 Air Quality Attainment Plan (AQAP), including triennial reports. The air quality plans include emissions inventories to measure the sources of air pollutants, to evaluate how well different control measures have worked, and show how air pollution would be reduced. In addition, the plans include the estimated future levels of pollution to ensure that the area would meet air quality goals.

Nearly all development projects in the Sacramento region have the potential to generate air pollutants that may increase the difficultly of attaining federal and State AAQS. Therefore, evaluation of air quality impacts is required. In order to evaluate ozone and other criteria air pollutant emissions and support attainment goals for those pollutants that the area is designated nonattainment, SMAQMD has developed the Guide to Air Quality Assessment in Sacramento County (SMAQMD Guide), which includes recommended thresholds of significance, including mass emission thresholds for construction-related and operational ozone precursors, as the area is under nonattainment for ozone. The SMAQMD's recommended thresholds of significance for the ozone precursors reactive organic compounds (ROG) and NO_X, which are expressed in pounds per day (lbs/day), are presented in Table 1.

Table 1 SMAQMD Thresholds of Significance (lbs/day)		
Pollutant	**Construction Thresholds**	**Operational Thresholds**
ROG	N/A	65
NO_X	85	65
PM_{10}	80	80
$PM_{2.5}$	82	82
Source: SMAQMD, May 2015.		

The project's construction and operational emissions were quantified using the California Emissions Estimator Model (CalEEMod) software version 2016.3.2 - a Statewide model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify air quality emissions, including GHG emissions, from land use projects. The model applies inherent default values for various land uses, including construction data, vehicle mix, trip length, average speed, etc. Where project-specific information is available, such information should be applied in the model. Accordingly, the project's modeling assumed the following:

- Construction would likely commence in May of 2020;
- Construction would occur over an approximately two-year period;
- Demolition of the on-site structures and grading of the site would each occur over an approximately 15-day period; and
- The proposed project would include excavation of up to 12.2 acres within the remainder parcel in order to provide fill for the development area.

The project's estimated emissions associated with construction and operations are presented and discussed in further detail below. A discussion of the project's contribution to cumulative air quality conditions is provided below as well. All CalEEMod results are included in Appendix A of this IS/MND.

Construction Emissions

According to the CalEEMod results, the proposed project would result in maximum unmitigated construction criteria air pollutant emissions as shown in Table 2. As shown in the table, the project's construction emissions would be below the applicable SMAQMD thresholds of significance. In addition, development within the subject property would be required to comply with the SMAQMD Basic Construction Emission Control Practices, which would likely further reduce emissions beyond the estimates shown in the table below. Thus, in accordance with SMAQMD guidance, the proposed project would be considered to have a less-than-significant impact on air quality during construction.

Table 2 Maximum Unmitigated Construction Emissions (lbs/day)			
Pollutant	**Proposed Project Emissions**	**Threshold of Significance**	**Exceeds Threshold?**
ROG	8.09	N/A	**NO**
NO_X	50.24	85	**NO**
PM_{10}	20.40	80	**NO**
$PM_{2.5}$	11.99	82	**NO**
Source: CalEEMod, October 2019 (see Appendix A).			

Operational Emissions

According to the CalEEMod results, the proposed project would result in maximum unmitigated operational criteria air pollutant emissions as shown in Table 3. As shown in the table, the project's operational emissions would be below the applicable thresholds of significance. As such, the proposed project would not result in a significant air quality impact during operations.

Table 3
Maximum Unmitigated Operational Emissions (lbs/day)

Pollutant	Proposed Project Emissions	Threshold of Significance	Exceeds Threshold?
ROG	5.94	65	**NO**
NO_X	5.44	65	**NO**
PM_{10}	4.54	80	**NO**
$PM_{2.5}$	1.30	82	**NO**

Source: CalEEMod, April 2019 (see Appendix A).

Cumulative Emissions

Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By nature, air pollution is largely a cumulative impact. A single project is not sufficient in size to, by itself, result in nonattainment of AAQS. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant. In developing thresholds of significance for air pollutants, SMAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. The thresholds of significance presented in Table 1 represent the levels at which a project's individual emissions of criteria air pollutants or precursors would result in a cumulatively considerable contribution to the SVAB's existing air quality conditions. Because the proposed project would result in emissions below the applicable thresholds of significance established by SMAQMD for criteria pollutants, the project would not result in a cumulatively considerable contribution to the region's existing air quality conditions.

Conclusion

As discussed above, the proposed project would be below the applicable screening criteria developed by SMAQMD. Thus, the proposed project would not be expected to result in construction or operational emissions in excess of the applicable thresholds of significance. Because the proposed project would result in emissions below the applicable thresholds of significance during both construction and operations, the proposed project would not violate an AAQS or 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. Thus, a ***less-than-significant*** impact would result.

c. Some land uses are considered more sensitive to air pollution than others, due to the types of population groups or activities involved. Heightened sensitivity may be caused by health problems, proximity to the emissions source, and/or duration of exposure to air pollutants. Children, pregnant women, the elderly, and those with existing health problems are especially vulnerable to the effects of air pollution. Sensitive receptors are typically defined as facilities where sensitive receptor population groups (i.e., children, the elderly, the acutely ill, and the chronically ill) are likely to be located. Accordingly, land uses that

are typically considered to be sensitive receptors include residences, schools, playgrounds, childcare centers, retirement homes, convalescent homes, hospitals, and medical clinics. The nearest existing sensitive receptors are the single-family residences located north of the project site across Kost Road.

The major pollutant concentrations of concern are localized carbon monoxide (CO) emissions and toxic air contaminant (TAC) emissions, which are addressed in further detail below.

Localized CO Emissions

Localized concentrations of CO are related to the levels of traffic and congestion along streets and at intersections. Implementation of the proposed project would increase traffic volumes on streets near the project site; therefore, the project would be expected to increase local CO concentrations. Concentrations of CO approaching the ambient air quality standards are only expected where background levels are high, and traffic volumes and congestion levels are high. The SMAQMD's preliminary screening methodology for localized CO emissions provides a conservative indication of whether project-generated vehicle trips would result in the generation of CO emissions that contribute to an exceedance of the applicable threshold of significance. The first tier of SMAQMD's recommended screening criteria for localized CO states that a project would result in a less-than-significant impact to air quality for local CO if:

- Traffic generated by the project would not result in deterioration of intersection level of service (LOS) to LOS E or F; and
- The project would not contribute additional traffic to an intersection that already operates at LOS of E or F.

Even if a project would result in either of the above, under the SMAQMD's second tier of localized CO screening criteria, if all of the following criteria are met, the project would still result in a less-than-significant impact to air quality for localized CO:

- The project would not result in an affected intersection experiencing more than 31,600 vehicles per hour;
- The project would not contribute traffic to a tunnel, parking garage, bridge underpass, urban street canyon, or below-grade roadway; or other locations where horizontal or vertical mixing of air would be substantially limited; and
- The mix of vehicle types at the intersection is not anticipated to be substantially different from the County average (as identified by the EMFAC or CalEEMod models).

As discussed in Section XVII, Transportation, of this IS/MND, the addition of project traffic to local roadways would not conflict with any established operations standards for the study intersections in the project vicinity. Per the Institute of Traffic Engineer's (ITE) Trip Generation Handbook, the proposed project is estimated to result in approximately 828 daily vehicle trips, which is far below SMAQMD's screen criteria for localized CO. As such, based on the SMAQMD screening criteria, the proposed project would result in a less-than-significant impact related to localized CO emissions concentrations and would not expose sensitive receptors to substantial concentrations of localized CO.

TAC Emissions

Another category of environmental concern is TACs. The CARB's *Air Quality and Land Use Handbook: A Community Health Perspective* (Handbook) provides recommended setback distances for sensitive land uses from major sources of TACs, including, but not limited to, freeways and high traffic roads, distribution centers, and rail yards. The CARB has identified diesel particulate matter (DPM) from diesel-fueled engines as a TAC; thus, high volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic are identified as having the highest associated health risks from DPM. Health risks associated with TACs are a function of both the concentration of emissions and the duration of exposure, where the higher the concentration and/or the longer the period of time that a sensitive receptor is exposed to pollutant concentrations would correlate to a higher health risk. The nearest sensitive receptor to the project site are the single-family residences located approximately 68 feet north of the site, across Kost Road.

Operational-related emissions of TACs are typically associated with stationary diesel engines or land uses that involve heavy diesel truck traffic or idling. The proposed residential development does not include any operations that would be considered a substantial source of TACs. Accordingly, operation of the proposed project would not expose sensitive receptors to excess concentrations of TACs.

As part of the *California Building Industry Association v. Bay Area Air Quality Management District (CBIA)* case, the California Supreme Court granted limited review to the question: Under what circumstances, if any, does CEQA require an analysis of how existing environmental conditions will impact future residents or users (receptors) of a proposed project? In the opinion published on December 17, 2015, the Supreme Court looked closely at the language and legislative intent in CEQA, and found that CEQA does not provide "enough of a basis to suggest that the term 'environmental effects' [. . .] is meant, as a general matter, to encompass these broader considerations associated with the health and safety of a project's future residents or users." Based on the Supreme Court opinion, it would be considered appropriate to evaluate a project's potentially significant exacerbating effects on existing environmental hazards – effects that arise because the project brings "development and people into the area affected." The Supreme Court stated that even in those specific instances where evaluation of a project's potentially significant exacerbating effects on existing environmental hazards is appropriate, the evaluation of how future residents or users could be affected by the exacerbated conditions is still compelled by the project's impact on the environment, and not the environment's impact on the project.[3]

Considering the court ruling, while the proposed project would be considered a sensitive receptor, consideration of impacts from existing sources on future residents is outside of the scope of CEQA. Thus, this analysis focuses on the potential for the proposed project to result in TAC emissions that could affect existing nearby sensitive receptors.

Construction activities have the potential to generate DPM emissions related to the number and types of equipment typically associated with construction. Off-road heavy-duty diesel equipment used for site grading, paving, and other construction activities result in the generation of DPM. However, construction is temporary and occurs over a relatively

[3] Alameda County Superior Court. *California Building Industry Association v. Bay Area Air Quality Management District. A135335 and A136212*. Filed August 12, 2016.

short duration in comparison to the operational lifetime of the proposed project. In addition, only portions of the site would be disturbed at a time, with operation of construction equipment regulated by federal, State, and local regulations, including SMAQMD rules and regulations, and occurring intermittently throughout the course of a day. Thus, the likelihood that any one sensitive receptor would be exposed to high concentrations of DPM for any extended period of time would be low.

Conclusion

Based on the above discussion, the proposed project would not expose any sensitive receptors to substantial concentrations of pollutants, including localized CO or TACs, during construction or operation. Therefore, the proposed project would result in a ***less-than-significant*** impact related to the exposure of sensitive receptors to substantial pollutant concentrations.

d. Emissions such as those leading to odor have the potential to adversely affect people. Emissions of principal concern include emissions leading to odors, emission that have the potential to cause dust, or emissions considered to constitute air pollutants. Air pollutants have been discussed in sections “a” through “c” above. Therefore, the following discussion focuses on emissions of odors and dust.

Examples of land uses that have the potential to generate considerable odors include, but are not limited to, wastewater treatment plants, landfills, confined animal facilities, composting stations, food manufacturing plants, refineries, and chemical plants. The proposed project would not introduce any such land uses. Furthermore, residential land uses are not typically associated with the creation of substantial objectionable odors. As a result, the proposed project operations would not create any objectionable odors that would affect a substantial number of people.

The SMAQMD regulates objectionable odors through Rule 402 (Nuisance), which prohibits any person or source from emitting air contaminants that cause detriment, nuisance, or annoyance to a considerable number of persons or the public. Rule 402 is enforced based on complaints. If complaints are received, the SMAQMD is required to investigate the complaint, as well as determine and ensure a solution for the source of the complaint, which could include operational modifications. Thus, although not anticipated, if odor complaints are made after the proposed project is approved, the SMAQMD would ensure that such odors are addressed and any potential odor effects reduced to less than significant.

With regard to dust, the proposed project is required to comply with all applicable SMAQMD rules and regulations for construction, including, but not limited to, Rule 403 (Fugitive Dust) and Rule 404 (Particulate Matter). Furthermore, all projects are required to implement the SMAQMD’s Basic Construction Emission Control Practices (BCECP). Compliance with SMAQMD rules and regulations and BCECP would help to ensure that dust is minimized during project construction.

Because the proposed project is not expected to result in emissions (such as those leading to odors) that would affect a substantial number of people, a ***less-than-significant*** impact would result.

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

Discussion

a. The following discussion is based primarily on a Technical Biological Report prepared for the proposed project by Live Oak Associates, Inc. (see Appendix B).[4]

Currently, the western portion of the project site is developed with two single-family residences and a dairy, while the remainder parcel consists of vacant agricultural land. Surrounding land uses include the UPRR tracks to the east, agricultural land to the south and west, and Kost Road to the north.

Several species of plants and animals within the State of California have low populations, limited distributions, or both. Such species may be considered “rare” and are vulnerable to extirpation as the state’s human population grows and the habitats the species occupy are converted to agricultural and urban uses. State and federal laws have provided the California Department of Fish and Wildlife (CDFD) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as “candidates” for such listing. Still others have been designated as “species of special concern” by CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered. Collectively, these plants and animals are referred to as

[4] Live Oak Associates. *Cardoso II, Technical Biological Report, City of Galt, Sacramento County, California.* October 15, 2019.

"special-status species." Although CDFW Species of Special Concern generally do not have special legal status, they are given special consideration under CEQA. In addition to regulations for special-status species, most birds in the U.S., including non-status species, are protected by the Migratory Bird Treaty Act (MBTA) of 1918. Under the MBTA, destroying active nests, eggs, and young is illegal. In addition, plant species on CNPS Lists 1 and 2 are considered special-status plant species and are protected under CEQA.

The project site is located within the boundaries of the *South Sacramento Habitat Conservation Plan* (SSHCP), which is intended to provide an effective framework to protect natural resources in south Sacramento County, including special-status species. Per the Technical Biological Report, the northern portion of the subject property that would be developed is currently categorized as Low-density Development, Agricultural, and Disturbed land cover types, while the remainder parcel land cover types include Stream/Creek, Seasonal Wetland, and Agricultural.

Live Oak Associates, Inc. conducted a search of the California Natural Diversity Database (CNDDB) for the project site. The intent of the database review was to identify documented occurrences of special-status species in the vicinity of the project area, to determine their locations relative to the project site, and to evaluate whether the site meets the habitat requirements of such species. Based on the results of the CNDDB search, a total of 22 special-status plant species and 29 special-status wildlife species are known to occur within the project region. In addition, a field survey of the subject property (project site and remainder parcel) was undertaken by Live Oak Associates, Inc. on August 12, 2019.

The potential for species covered by the SSHCP and other special-status species to occur on the project site and remainder parcel is discussed in further detail below.

Special-Status Plants

Of the 22 special-status plant species known to occur within the project region, 20 do not have the potential to occur on the subject property based on habitat requirements which include coastal marshes, swamps, and vernal pools. The subject property has been subject to prior disturbance and does not provide suitable habitat for such species. However, the SSHCP indicates that the project site includes modeled habitat for Sanford's arrowroot and Bogg's Lake hedge hyssop, both of which are covered by the SSHCP. Construction activities, such as soil removal and site grading, could adversely affect the two species should the proposed project be approved.

Based on the above, construction activities associated with the proposed project could result in adverse effects to special-status plant species.

Special-Status Wildlife

Of the 29 special-status species, 16 are unlikely to occur within the proposed disturbance areas, as such species have habitat requirements that are not present on the project site (i.e., wetlands, chaparral, oak woodland, etc.). As noted previously, the site has been disturbed through past agricultural uses. The remaining 13 special-status wildlife species include the California tiger salamander, burrowing owl, white-tailed kite, ferruginous hawk, Cooper's hawk, northern harrier, Swainson's hawk, greater sandhill crane, loggerhead shrike, Modesto song sparrow, tricolored blackbird, American badger, and western red bat. Of the 13 species that could potentially occur on the project site or the proposed soil

borrow sites within the remainder parcel, all are considered covered species under the SSHCP, with the exception of the Modesto song sparrow.

California Tiger Salamander

California tiger salamander is known to breed in vernal pools and stock ponds of central California. Adults are also known to inhabit grassland adjacent to breeding sites. Per the Technical Biological Report, the project site contains basins which could provide breeding habitat for the California tiger salamander. The subject property is within the SSHCP modeled range of the species and is mapped as aquatic habitat. While evidence of the species was not detected during the site survey, the potential exists for the species to occupy the proposed disturbance areas in the future. Thus, the ground-disturbing activities associated with the proposed project could result in a significant impact to the California tiger salamander.

Swainson's Hawk

Swainson's hawk is known to breed in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. The species is also found in adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations. According to the Technical Biological Report, the project site is modeled as high-value foraging habitat for Swainson's hawk with a nesting occurrence adjacent to the project site. The existing trees located on, and adjacent to, the project site present suitable nesting habitat for the species. The agricultural field located on the project site is also considered suitable foraging habitat for the species.

Given that the project site includes suitable nesting and foraging habitat for the Swainson's hawk, development of the site could result in a significant adverse impact to the species. Pre-construction surveys and avoidance measures for Swainson's hawk are required by the SSHCP.

Western Burrowing Owl

The primary habitat requirement for western burrowing owls is small mammal burrows that the species uses for nesting. Typically, the species uses abandoned ground squirrel burrows, but western burrowing owls have been known to dig burrows in softer soils. In urban areas, western burrowing owls may use pipes, culverts, and piles of material as artificial burrows. Western burrowing owls breed semi-colonially from March through August.

The project site is located within the SSHCP-modeled wintering habitat for the burrowing owl. The project site also includes suitable habitat in the form of ground squirrel burrows. Burrowing owls or burrows with evidence of burrowing owl occupancy were not observed during the survey. Nonetheless, should burrowing owls be present within the site during project construction, development of the proposed project could result in a significant adverse effect to western burrowing owl.

Greater Sandhill Crane

Greater sandhill crane habitat includes open grasslands, marshes, and edges of lakes, ponds and river banks. Wintering habitat includes a communal roost in shallow water. As previously mentioned, the project site is located with the SSHCP-modeled foraging habitat, as well as roosting habitat, for greater sandhill crane. While the 2019 survey of the site did not detect the presence of the species, the species could occupy the site prior

to the start of construction. Thus, in the absence of pre-construction surveys and other measures for greater sandhill crane, a potentially significant impact could occur.

Tricolored Blackbird

Tricolored blackbird is known to breed near fresh water in dense emergent vegetation, near adjacent foraging habitat. The subject property contains suitable foraging and nesting-foraging habitat for tricolored blackbird, including dense blackberry bushes and other dense vegetation along Dry Creek. The agricultural fields could also present suitable nesting habitat for the species, depending on the type of crop planted. Should tricolored blackbird occupy the site prior to the start of construction, the proposed project could result in a potentially significant impact to the species.

Nesting Raptors and Migratory Birds

The project site contains existing trees that could be used by raptors and migratory birds protected by the MBTA including white-tailed kite, ferruginous hawk, Cooper's hawk, northern harrier, loggerhead shrike, and Modesto song sparrow. Such trees would be removed as part of the proposed project. Construction activities that adversely affect the nesting success of raptors and migratory birds (i.e., lead to the abandonment of active nests) or result in mortality of individual birds constitute a violation of State and federal laws. Thus, in the event that such species occur on-site during the breeding season, project demolition and construction activities could result in an adverse effect to species protected under the MBTA.

Western Red Bat and Other Special-Status Bats

Western red bat is known to roost in trees or shrub foliage, as well as caves and vacant structures. At the time of the site survey performed by Live Oak Associates, Inc., the on-site structure did not show any visible signs of bat use. Thus, although the on-site structures are vacant, the buildings do not appear to be a suitable roosting habitat for any bats. Nonetheless, bat species could roost in nearby trees or the on-site structures prior to the start of construction activities. Thus, the proposed project could result in a potential adverse impact to western red bat and other special-status bat species.

American Badger

American badger can be found in drier open areas of shrub, forest, and herbaceous habitats with friable soils, specifically grassland environments. The presence of agricultural land on the subject property presents suitable habitat for American badger. In addition, the agricultural lands of the site support California ground squirrels, which provide a prey base for the species. Thus, in the event that the species occurs on-site, project grading and construction activities could result in an adverse effect to American badger.

Conclusion

Based on the above, the field survey did not identify any special-status species within the subject property. Regardless, construction activities could result in adverse effects to special-status plant species, including Sanford's arrowroot and Bogg's Lake hedge hyssop. In addition, due to the presence of suitable habitat, California tiger salamander, burrowing owl, white-tailed kite, ferruginous hawk, Cooper's hawk, northern harrier, Swainson's hawk, greater sandhill crane, loggerhead shrike, Modesto song sparrow, tricolored blackbird, American badger, and western red bat have the potential to occur within the subject property. Furthermore, the site contains suitable nest trees for nesting

raptors and migratory birds protected by the MBTA. Thus, the proposed project could have an adverse effect, either directly or through habitat modifications, on species identified as special-status species in local or regional plans, policies, or regulations, or by the CDFW or the USFWS, and a ***potentially significant*** impact could result.

Mitigation Measure(s)

Implementation of the following mitigation measures, as adapted from the SSHCP, would reduce the above potential impact to a *less-than-significant* level.

Special-Status Plants

IV-1(a). *SSHCP PLANT-1 (Rare Plant Surveys): If a Covered Activity project site contains modeled habitat for Ahart's dwarf rush (Juncus leiospermus var. ahartii), Bogg's Lake hedge-hyssop (Gratiola heterosepala), dwarf downingia (Downingia pusilla), legenere (Legenere limosa), pincushion navarretia (Navarretia myersii), or Sanford's arrowhead (Sagittaria sanfordii), the Covered Activity project site shall be surveyed for the rare plant by an approved biologist and following the California Department of Fish and Wildlife (CDFW) rare plant survey protocols (CDFG 2009) or the most recent CDFW rare plant survey protocols. An approved biologist shall conduct the field surveys and shalll identify and map plant species occurrences according to the protocols. See Chapter 10 of the SSHCP for the process to submit survey information to the Plan Permittee and the Permitting Agencies. (SSHCP 2018). If rare plants are not found during surveys, the additional mitigation measures for special-status plants are not necessary.*

IV-1(b). *SSHCP PLANT-2 (Rare Plant Protection): If a rare plant listed in Mitigation Measure IV-1(a) is detected within an area proposed to be disturbed by a Covered Activity or is detected within 250 feet of the area proposed to be disturbed by a Covered Activity, the Implementing Entity shall assure one unprotected occurrence of the species is protected within a SSHCP Preserve before any ground disturbance occurs on the project site (SSHCP 2018).*

IV-1(c). *Prior to take of an occurrence of Sanford's arrowhead (Sagittaria sanfordii), protect one currently unpreserved and "biologically equivalent or superior" (as defined by the TAC) occurrence of Sanford's arrowhead within the Plan Area.*

IV-1(d). *During re-establishment and/or establishment of Seasonal Wetland, Freshwater Marsh, Open Water, and Stream/Creek, translocate impacted Sanford's arrowhead (Sagittaria sanfordii) from other sites.*

California Tiger Salamander

IV-2(a). *SSHCP CTS-1 (California Tiger Salamander Daily Construction Schedule): Ground-disturbing Covered Activities within California tiger salamander modeled habitat (Figure 3-16 [of the SSHCP]) shall occur outside the breeding and dispersal season (occur after July 31 and before October 15), to the maximum extent practicable. If Covered Activities must be*

implemented in modeled habitat (Figure 3-16 [of the SSHCP]) during the breeding and dispersal season (after October 15 and before July 31), construction activities shall not start until 30 minutes after sunrise and must be complete 30 minutes prior to sunset.

IV-2(b). *SSHCP CTS-2 (California Tiger Salamander Exclusion Fencing): If a Covered Activity must be implemented in modeled habitat (Figure 3-16 [of the SSHCP]) during the breeding and dispersal season (after October 15 and before July 31), exclusion fencing shall be installed around the project footprint before October 15. Temporary high-visibility construction fencing shall be installed along the edge of work areas, and exclusion fencing shall be installed immediately outside of the temporary high-visibility construction fencing to exclude California tiger salamanders from entering the construction area or becoming entangled in the construction fencing. Exclusion fencing shall be at least 1 foot tall and be buried at least 6 inches below the ground to prevent salamanders from going under the fencing. Fencing shall remain in place until all construction activities within the construction area are complete. No project activities shall occur outside the delineated project footprint. An approved biologist must inspect the exclusion fencing and project site every morning before 7:00 a.m. for integrity and for any entrapped California tiger salamanders. If a California tiger salamander is encountered, refer to CTS- 5 [Mitigation Measure IV-2(e)], below. (However, the Implementing Entity may, with approval of the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), determine that it is appropriate for a Covered Activity project to not implement CTS-2 [Mitigation Measure IV-2(b)] for certain long and linear roadway Covered Activity projects if it appears that the exclusion fencing shall likely trap individuals or cause more take of California tiger salamander than it would prevent).*

IV-2(c). *SSHCP CTS-3 (California Tiger Salamander Monitoring): If Covered Activities must be implemented in modeled habitat (Figure 3-16 [of the SSHCP]), an approved biologist experienced with California tiger salamander identification and behavior shall monitor the project site, including the integrity of any exclusion fencing. The approved biologist shall be on site daily while construction-related activities are taking place, and shall inspect the project site for California tiger salamander every morning before 7:00 a.m., or prior to construction activities. As required by BMP-8 (Training of Construction Staff), the approved biologist shall also train construction personnel on the required California tiger salamander avoidance procedures, exclusion fencing, and correct protocols in the event that a California tiger salamander enters an active construction zone. If a California tiger salamander is encountered, refer to CTS-5 [Mitigation Measure IV-2(e)], below.*

IV-2(d). *SSHCP CTS-4 (Avoid California Tiger Salamander Entrapment): If Covered Activities must be implemented in modeled habitat, all excavated steep-walled holes or trenches more than 6 inches deep shall be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled*

holes or trenches shall be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within California tiger salamander modeled habitat shall be inspected for California tiger salamanders by the approved biologist prior to being moved. If a California tiger salamander is encountered, refer to CTS-5[Mitigation Measure IV-2(e), below.

IV-2(e). *SSHCP CTS-5 (California Tiger Salamander Encounter Protocol): If a California tiger salamander is encountered during construction activities, the approved biologist shall notify the Wildlife Agencies immediately (California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS)). Construction activities shall be suspended in a 100-foot radius of the animal until the animal is relocated by an approved biologist with appropriate handling permits from the Wildlife Agencies. Prior to relocation, the approved biologist shall notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report shall be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the salamander, within 1 business day to the Wildlife Agencies. The biologist shall report any take of listed species to USFWS and CDFW immediately. Any worker who inadvertently injures or kills a California tiger salamander or who finds dead, injured, or entrapped California tiger salamander(s) must immediately report the incident to the approved biologist.*

IV-2(f). *SSHCP CTS-6 (Erosion Control Materials in California Tiger Salamander Habitat): If erosion control (BMP-2) is implemented within California tiger salamander modeled habitat (Figure 3-16 [of the SSHCP]), non-entangling erosion control material shall be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material shall be used to ensure that salamanders are not trapped (no monofilament). Coconut coir matting and fiber rolls with burlap are examples of acceptable erosion control materials. This limitation shall be communicated to the contractor through use of special provisions included in the bid solicitation package.*

IV-2(g). *SSHCP CTS-7 (Rodent Control): CTS-7 [Mitigation Measure IV-2(g)] only applies to projects that are within California tiger salamander modeled habitat (Figure 3-16 [of the SSHCP]) and on Covered Activities. Rodent control shall be allowed only in developed portions of a Covered Activity project site. Where rodent control is allowed, the method of rodent control shall comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.*

Swainson's Hawk

IV-3(a). *SSHCP SWHA-1 (Swainson's Hawk Surveys): If modeled habitat for Swainson's hawk (Figure 3-25 [of the SSCP]) is present within a Covered Activity's project footprint or within 0.25 mile of a project footprint as is the case for the proposed project, then an approved biologist shall conduct a*

survey to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. Nest sites are often associated with Riparian land cover, but also include lone trees in fields, trees along roadways, and trees around structures. Nest trees may include, but are not limited to, Fremont's cottonwood (Populus fremontii), oaks (Quercus spp.), willows (Salix spp.), walnuts (Juglans spp.), eucalyptus (Eucalyptus spp.), pines (Pinus spp.), and Deodar cedar (Cedrus deodara). The Third-Party Project Proponent shall map all existing and potential nesting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 [of the SSHCP] for the process to conduct and submit survey information.

IV-3(b). *SSHCP SWHA-2 (Swainson's Hawk Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present within a project footprint or within 0.25-mile of a project footprint if existing or potential nest sites were found during initial surveys and construction activities shall occur during the breeding season (March 1 through September 15). An approved biologist shall conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys will be conducted during the breeding season (March 1 through September 15). If a nest is present, then SWHA-3 and SWHA-4 [Mitigation Measures IV-3(c) and IV-3(d)] shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.*

IV-3(c). *SSHCP SWHA-3 (Swainson's Hawk Nest Buffer): If active nests are found within the project footprint or within 0.25 mile of any project-related Covered Activity, the Third-Party Project Proponent shall establish a 0.25-mile disturbance buffer around the active nest until the young have fledged, with concurrence from the Wildlife Agencies.*

IV-3(d). *SSHCP SWHA-4 (Swainson's Hawk Nest Buffer Monitoring): If nesting Swainson's hawks are present within the project footprint or within 0.25-mile of any project-related Covered Activity, then an approved biologist experienced with Swainson's hawk behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place within the buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist shall have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies*

shall meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone (i.e., outside the buffer zone).

Western Burrowing Owl

IV-4(a). *SSHCP WBO-1 (Western Burrowing Owl Surveys): Surveys within modeled habitat are required for both the breeding and non-breeding season. If the project site falls within modeled habitat [as is the case for the proposed project], an approved biologist shall survey the project site and map all burrows, noting any burrows that may be occupied. Occupied burrows are often (but not always) indicated by tracks, feathers, egg shell fragments, pellets, prey remains, and/or excrement. Surveying and mapping shall be conducted by the approved biologist while walking transects throughout the entire project site plus all accessible areas within a 250-foot radius from the project site. The centerline of these transects shall be no more than 50 feet apart and shall vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects shall be closer together, and in open areas with little vegetation, they can be 50 feet apart. This methodology is consistent with current survey protocols for this species (California Burrowing Owl Consortium 1993). Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. If suitable habitat is identified during the initial survey, and if the project does not fully avoid the habitat, pre-construction surveys shall be required. Burrowing owl habitat is fully avoided if project-related activities do not impinge on a 250-foot buffer established by the approved biologist around suitable burrows.*

IV-4(b). *SSHCP WBO-2 (Western Burrowing Owl Pre-Construction Surveys): Prior to any Covered Activity ground disturbance, an approved biologist shall conduct pre-construction surveys in all areas that were identified as suitable habitat during the initial surveys. The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activities. To maximize the likelihood of detecting owls, the pre-construction survey shall last a minimum of 3 hours. The survey shall begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total), or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two pre-construction surveys shall be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed shall be counted and their location shall be mapped. Surveys shall conclude no more than 2 calendar days prior to construction. Therefore, the Third-Party Project Proponent shall begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last-minute changes in schedule or contracting that may occur if burrowing owls are found, the Third-Party Project Proponent*

shall also conduct a preliminary survey up to 15 days before construction. This preliminary survey shall count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction (SSHCP 2018). If burrowing owls are not found during the preconstruction surveys, Mitigation Measures IV-4(c) through IV-4 (f) and IV-4 (h) below are not necessary.

IV-4(c). *SSHCP WBO-3 (Western Burrowing Owl Avoidance): If western burrowing owl or evidence of western burrowing owl is observed on the project site or within 250 feet of the project site during pre-construction surveys, then the following shall occur:*

During Breeding Season: If the approved biologist finds evidence of western burrowing owls within a project site during the breeding season (February 1 through August 31), all project-related activities shall avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance is establishment of a minimum 250-foot buffer zone around nests. Construction and other project-related activities may occur outside of the 250-foot buffer zone. Construction and other project-related activities may be allowed inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the Third-Party Project Proponent develops an avoidance, minimization, and monitoring plan that is approved by the Implementing Entity and Wildlife Agencies prior to project construction based on the following criteria:

- *The Implementing Entity and Wildlife Agencies approve of the avoidance and minimization plan provided by the project applicant.*
- *An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).*
- *The same approved biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.*

If there is any change in owl nesting and foraging behavior as a result of construction activities, the approved biologist shall have authority to shut down activities within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until any owls present are no longer affected by nearby construction activities, and with written concurrence from the Wildlife Agencies.

If monitoring by the approved biologist indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use, the non-disturbance buffer zone may be removed if approved by the Wildlife Agencies. The approved biologist shall excavate the burrow in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl to prevent reoccupation after receiving approval from the Wildlife Agencies.

The Implementing Entity and Wildlife Agencies shall respond to a request from the Third-Party Project Proponent to review the proposed construction monitoring plan within 21 days.

During Non-Breeding Season: During the non-breeding season (September 1 through January 31), the approved biologist shall establish a minimum 250-foot non-disturbance buffer around occupied burrows. Construction activities outside of this 250-foot buffer shall be allowed. Construction activities within the non-disturbance buffer shall be allowed if the following criteria are met to prevent owls from abandoning over-wintering sites:

- *An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).*
- *The same approved biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.*
- *If there is any change in owl foraging behavior as a result of construction activities, the approved biologist shall have authority to shut down activities within the 250-foot buffer.*
- *If the owls are gone for at least 1 week, the Third-Party Project Proponent may request approval from the Implementing Entity and Wildlife Agencies that an approved biologist excavate usable burrows and install one-way exclusionary devices to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone shall be removed and construction may continue.*

Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

IV-4(d). *SSHCP WBO-4 (Burrowing Owl Construction Monitoring): During construction of Covered Activities, 250-foot construction buffer zones shall be established and maintained around any occupied burrow. An approved biologist shall monitor the site to ensure that buffers are enforced and owls are not disturbed. The approved biologist shall also train construction personnel on avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.*

IV-4(e). *SSHCP WBO-5 (Burrowing Owl Passive Relocation): Passive relocation is not allowed without the express written approval of the Wildlife Agencies. Passive owl relocation may be allowed on a case-by-case basis on project sites during the non-breeding season (September 1 through January 31) with the written approval of the Wildlife Agencies if the other measures described in this condition preclude work from continuing. Passive relocation must be done in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl. Passive relocation will only be proposed if the burrow needing to be removed or with the potential to collapse from construction activities is the result of a Covered Activity. If passive relocation is approved by the Wildlife Agencies,*

an approved biologist can passively exclude birds from their burrows during the non-breeding season by installing one-way doors in burrow entrances. These doors shall be in place for 48 hours to ensure that owls have left the burrow, and then the biologist shall excavate the burrow to prevent reoccupation. Burrows shall be excavated using hand tools only. During excavation, an escape route will be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies over the 50-year Permit Term.

IV-4(f). *SSHCP WBO-6 (Burrowing Owl Timing and Maintenance Activities): All activities adjacent to existing or planned Preserves, Preserve Setbacks, or Stream Setback areas shall be seasonally timed, when safety permits, to avoid or minimize adverse effects on occupied burrows.*

IV-4(g). *SSHCP WBO-7 (Rodent Control): Rodent control shall be allowed only in developed portions of a Covered Activity project site within western burrowing owl modeled habitat. Where rodent control is allowed, the method of rodent control shall comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.*

IV-4(h). *For each western burrowing owl or western burrowing owl pair passively excluded, preserve 200 acres of modeled habitat for western burrowing owl, and establish a California ground squirrel (Spermophilus (Otospermophilus) beecheyi) colony, and augment with artificial burrows as appropriate (determined by TAC). Artificial burrows shall be established at appropriate locations throughout the Preserve System pursuant to CDFW (CDFG 2012 guidelines) or as otherwise determined by the TAC.*

Greater Sandhill Crane

IV-5(a). *SSHCP GSC-1 (Greater Sandhill Crane Surveys): If modeled habitat for greater sandhill crane (Figure 3-22 [of the SSHCP]) is present within a Covered Activity's project footprint or within 0.5-mile of a project footprint [as is the case for the proposed project], then an approved biologist shall conduct a field investigation to determine if existing or potential roosting sites are present within the project footprint and adjacent areas within 0.5-mile of the project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. Roosting sites within the Plan Area are often associated with flooded fields, seasonal wetlands, and freshwater marsh. The Third-Party Project Proponent shall map all existing or potential roosting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Roosting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 (of the SSHCP) for the process to conduct and submit survey information.*

IV-5(b). *SSHCP GSC-2 (Greater Sandhill Crane Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active roosting sites*

are present within a project footprint or within 0.5-mile of a project footprint if existing or potential roosting sites were found during initial surveys and construction activities shall occur when wintering flocks are present within the Plan Area (September 1 through March 15). An approved biologist shall conduct pre-construction surveys within 15 days of ground-disturbing activities, and within 0.5 mile of a project footprint, to determine presence of roosting greater sandhill cranes. Pre-construction surveys shall be conducted September 1 through March 15, when wintering flocks are present within the Plan Area. If birds are present, then GSC-3, GSC-4, and GSC-5 [Mitigation Measures IV-5(c), IV-5(d), and IV-5(e)] shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn shall notify the Wildlife Agencies (SSHCP 2018). If greater sandhill crane roosting sites are not found during the preconstruction surveys, the remainder of the mitigation measures for the greater sandhill crane below are not necessary.

IV-5(c). *SSHCP GSC-3 (Greater Sandhill Crane Roosting Buffer): If active roosting sites are found within the project footprint or within 0.5 mile of any project-related Covered Activity, the Third-Party Project Proponent shall establish a 0.5-mile temporary roosting disturbance buffer around the roosting site until the cranes have left.*

IV-5(d). *SSHCP GSC-4 (Greater Sandhill Crane Visual Barrier): Greater sandhill cranes have low tolerance for human disturbance, and such disturbance has caused cranes to abandon foraging and roosting sites. Repeat disturbance affects their ability to feed and store energy needed for survival. If project-related activities occur within 0.5-mile of a known roosting site as identified by surveys conducted during implementation of GSC-1 or GSC-2 [Mitigation Measure IV-5(a) and IV-5(b)], a visual barrier shall be constructed.*

IV-5(e). *SSHCP GSC-5 (Greater Sandhill Crane Roosting Buffer Monitoring): If roosting sites are found within the project footprint or within 0.5-mile of any project-related Covered Activity, an approved biologist experienced with greater sandhill crane behavior shall be retained by the Third-Party Project Proponent to monitor the roosting site throughout the roosting season and to determine when the birds have left. The approved biologist shall be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary disturbance buffer can only occur with the written permission of the Implementing Entity and Wildlife Agencies. If greater sandhill cranes are abandoning their roosting and/or forage sites, the approved biologist shall have the authority to shut down construction activities. If roost abandonment occurs, the approved biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall meet to determine the best course of action to avoid harm and harassment of individuals. The approved biologist shall also train construction personnel on the avoidance procedures, buffer zones, and protocols in the event that greater sandhill cranes move into an active construction zone (i.e., outside the buffer zone).*

Tricolored Blackbird

IV-6(a). *SSHCP TCB-1 (Tricolored Blackbird Surveys): If modeled habitat for tricolored blackbird is present within a Covered Activity's project footprint or within 500 feet of a project footprint (as is the case for the proposed project), then an approved biologist shall conduct a field investigation to determine if existing or potential nesting or foraging sites are present within the project footprint and adjacent areas within 500 feet of the project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. Within the Plan Area, potential tricolor blackbird nest sites are often associated with freshwater marsh and seasonal wetlands, or in thickets of willow, blackberry, wild rose, thistle, and other thorny vegetation. Tricolored blackbirds are also known to nest in crops associated with dairy farms. Foraging habitat is associated with annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (such as large tracts of alfalfa and pastures with continuous haying schedules and recently tilled fields), cattle feedlots, and dairies. The Third-Party Project Proponent shall map all existing or potential nesting or foraging sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee.*

IV-6(b). *SSHCP TCB-2 (Tricolored Blackbird Pre-Construction Surveys): Pre-construction surveys will be required to determine if active nests are present within a project footprint or within 500 feet of a project footprint if existing or potential nest sites were found during design surveys and construction activities shall occur during the breeding season (March 1 through September 15). An approved biologist shall conduct pre-construction surveys within 30 days and within 3 days of ground-disturbing activities, and within the proposed project footprint and 500 feet of the proposed project footprint to determine the presence of nesting tricolored blackbird. Pre-construction surveys shall be conducted during the breeding season (March 1 through August 31). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, then TCB-3 and TCB-4 [Mitigation Measures IV-6(c) and IV-6(d)] shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and the Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies (SSHCP 2018). If nesting tricolored blackbirds are not found during the preconstruction surveys, the remainder of the mitigation measures for tricolored blackbirds below are not necessary.*

IV-6(c). *SSHCP TCB-3 (Tricolored Blackbird Nest Buffer): If active nests are found within the project footprint or within 500 feet of any project-related Covered Activity, the Third-Party Project Proponent shall establish a 500-foot temporary buffer around the active nest until the young have fledged.*

IV-6(d). *SSHCP TCB-4 (Tricolored Blackbird Nest Buffer Monitoring): If nesting tricolored blackbirds are present within the project footprint or within 500*

feet of any project-related Covered Activity, then an approved biologist experienced with tricolored blackbird behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place near the disturbance buffer. Work within the nest disturbance buffer shall not be permitted. If the approved biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction shall cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with the Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall be held to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a tricolored blackbird flies into an active construction zone (i.e., outside the buffer zone).

IV-6(e). *SSHCP TCB-5 (Timing of Pesticide Use and Harvest Timing on Agricultural Preserve): On SSHCP Agricultural Preserves, pesticides (including herbicides) shall not be applied from January 1 through July 15.*

IV-6(f). *SSHCP Objective TB5: Provide mitigation for loss of any tricolored blackbird nesting colony site that is occupied at the time of Covered Activity implementation or was recorded as an occupied nesting colony at any time since 2008. Sources for occupied nesting colonies are the CNDDB, Tricolored Blackbird Portal, eBird, or other data sources approved by the Wildlife Agencies. Minimum mitigation is to preserve one extant unpreserved occurrence of a nesting colony prior to take of one nesting colony of tricolored blackbirds. Ensure that at least five extant tricolored blackbird colonies that were occupied in recent years are maintained and managed within the SSHCP Preserve System.*

IV-6(g). *SSHCP Objective TB8: For any tricolored blackbird nesting colony that is removed by a Covered Activity, re-establish and/or establish three new colonies within SSHCP Preserves. Re-established and/or established colonies can be in aquatic (freshwater marsh, seasonal wetland) or upland (annual grassland) habitat types, and must be within 0.5-mile of appropriate agricultural forage crops (especially alfalfa) or annual grasslands that provide adequate foraging opportunities.*

Nesting Raptors and Migratory Birds

IV-7(a). *If initial site disturbance activities, including ground disturbance or tree, shrub, or vegetation removal, are to occur during the breeding season (typically February 1 to August 31), a qualified biologist shall conduct pre-construction surveys for nesting migratory birds within the proposed disturbance area and within 250 feet (for raptors) of the proposed disturbance area, where accessible. The survey shall occur within seven days prior to the onset of ground disturbance or vegetation removal. If a nesting migratory bird is detected, an appropriate construction-free buffer*

shall be established. Actual size of buffer, which shall be determined by the project biologist, shall depend on species, topography, and type of activity that would occur in the vicinity of the nest. The project buffer shall be monitored periodically by the project biologist to ensure compliance. After the nesting is completed, as determined by the biologist, the buffer shall no longer be required.

IV-7(b). *SSHCP RAPTOR-1 (Raptor Surveys): If modeled habitat for a covered raptor species (Figures 3-20, 3-23, 3-24, or 3-28 [of the SSHCP]) is present within a Covered Activity's project footprint or within 0.25-mile of a project footprint (as is the case for the proposed project), then an approved biologist shall conduct a field investigation to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent shall map all existing or potential nesting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee.*

IV-7(c). *SSHCP RAPTOR-2 (Raptor Pre-Construction Surveys): Pre-construction surveys shall be required to determine if active nests are present with a project footprint or within 0.25-mile of a project footprint if existing or potential nest sites are found during initial surveys and construction activities shall occur during the raptor breeding season. An approved biologist shall conduct pre-construction surveys within 30 days and three days of ground-disturbing activities within the proposed project footprint and within 0.25-mile of the proposed project footprint to determine presence of nesting covered raptor species. Preconstruction surveys will be conducted during the raptor breeding season. If a nest is present, then RAPTOR-3 and RAPTOR-4 [Mitigation Measures IV-8(d) and IV-8(e)] shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies." (SSHCP 2018). If nesting raptors are not found during the preconstruction surveys, the remainder of the mitigation measures for raptors below are not necessary.*

IV-7(d). *SSHCP RAPTOR-3 (Raptor Nest/Roost Buffer): If active nests are found within the project footprint or within 0.25-mile of any project-related Covered Activity, the Third-Party Project Proponent shall establish a 0.25-mile temporary nest disturbance buffer around the active nest until the young have fledged.*

IV-7(e). *SSHCP RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring): If project-related Covered Activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then an approved biologist experienced with raptor behavior shall be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist shall be on site daily while construction-related activities are taking place*

within the disturbance buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist/monitor shall have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies shall meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist shall also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone (i.e., outside the buffer zone).

Western Red Bat and Other Special-Status Bats

IV-8(a). *SSHCP BAT-1 (Winter Hibernaculum Surveys): If modeled habitat for western red bat is present within 300 feet of a Covered Activity's project footprint (as is the case for the proposed project), then an approved biologist shall conduct a field investigation of the project footprint and adjacent areas within 300 feet of a project footprint to determine if a potential winter hibernaculum is present, and to identify and map potential hibernaculum sites. Adjacent parcels under different land ownership shall be surveyed only if access is granted or if the parcels are visible from authorized areas. If potential hibernaculum sites are found, the Third-Party Project Proponent shall note their locations on project designs and shall design the project to avoid all areas within a 300-foot buffer around the potential hibernaculum sites. Winter hibernaculum habitat is fully avoided if project-related activities do not impinge on a 300-foot buffer established by the approved biologist around an existing or potential winter hibernaculum site.*

IV-8(b). *SSHCP BAT-2 (Winter Hibernaculum Pre-Construction Surveys): If the Third-Party Project Proponent elects not to avoid potential winter hibernaculum sites within the project footprint plus a 300-foot buffer, additional surveys are required. Prior to any ground disturbance related to Covered Activities, an approved biologist shall conduct a pre-construction survey within 3 days of ground-disturbing activities within the project footprint and 300 feet of the project footprint to determine the presence of winter hibernaculum sites. Pre-construction surveys shall be conducted during the winter hibernaculum season (November 1 through March 31). If a winter hibernaculum is present, then BAT-3 and BAT-4 [Mitigation Measures IV-9(c) and IV-9(d)] shall be implemented. The approved biologist shall inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn shall notify the Wildlife Agencies.*

IV-8(c). *An approved biologist shall conduct a survey of buildings on-site for other bat species. The results of the survey shall be submitted to the City of Galt Community Development Department. Should bat species be observed, Mitigation Measures IV-9(d) and IV-9(e) shall be implemented.*

IV-8(d). *SSHCP BAT-3 (Winter Hibernaculum Buffer): If active winter hibernaculum sites are found within the project footprint or within 300 feet of the project footprint, the Third-Party Project Proponent shall establish a 300-foot temporary disturbances buffer around the active winter hibernaculum site until bats have vacated the hibernaculum and the Implementing Entity and Wildlife Agencies concur.*

IV-8(e). *SSHCP BAT-4 (Bat Eviction Methods): An approved biologist shall determine if non-maternity and non-hibernaculum day and night roosts are present on the project site. If necessary, an approved biologist shall use safe eviction methods to remove bats if direct impacts to non-maternity and non-hibernaculum day and night roosts cannot be avoided. If a winter hibernaculum site is present, Covered Activities shall not occur until the hibernaculum is vacated, or, if necessary, safely evicted using methods acceptable to the Wildlife Agencies.*

American Badger

IV-9(a). *Pre-construction surveys conducted for other species shall also be used to determine the presence or absence of badgers in the development footprint. If an active badger den is not found during the preconstruction surveys, the remainder of the mitigation measures for badgers below are not necessary.*

IV-9(b). *If an active badger den is identified during pre-construction surveys within or immediately adjacent to the construction envelope, a construction-free buffer of up to 300 feet (or distance specified by the resource agencies, i.e., CDFW) shall be established around the den. Because badgers are known to use multiple burrows in a breeding burrow complex, a biological monitor shall be present onsite during construction activities to ensure the buffer is adequate to avoid direct impact to individuals or nest abandonment. The monitor would be necessary onsite until it is determined that young are of an independent age and construction activities would not harm individual badgers.*

IV-9(c). *Once it has been determined that badgers have vacated the site, the burrows can be collapsed or excavated, and ground disturbance can proceed.*

b,c. During the field survey conducted by Live Oak Associates, Inc., potentially jurisdictional habitats were found to occur on the subject property. Potentially jurisdictional habitats include both the constructed channel and the channel of Dry Creek, as well as a seasonal wetland occurring with the Dry Creek floodplain, south of the Dry Creek channel. The channel of Dry Creek enters the site along the western boundary of the remainder parcel and flows generally in an easterly direction, eventually exiting the site along the eastern boundary of the remainder parcel. It should be noted that soil excavation activities would occur within the remainder parcel; however, the activities would occur outside of the 100-year floodplain associated with Dry Creek.

Because the habitats are located within the remainder parcel of the project site, the sensitive and regulated habitats are not expected to be substantially degraded by

implementation of the proposed project. However, given that there is the potential for equipment or material storage to occur within the remainder parcel, the proposed project could result in a significant adverse effect to the sensitive habitats. Therefore, the proposed project could have a substantial adverse effect on riparian habitat, sensitive natural communities, or federally protected wetlands, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

IV-10. *During ground-disturbing activities associated with the proposed project, a 25-foot setback, measured from the top of the bank on both sides of the Dry Creek stream channel, shall be clearly delineated. Construction equipment and other materials staging shall not be permitted within the setback.*

d. The project site is bound by Kost Road to the north and UPRR tracks to the east, both of which act as impediments to wildlife movement. Therefore, the portion of the project site proposed for development does not support a substantial wildlife movement corridor. While local wildlife may use Dry Creek to move through the subject property, the proposed project would not include disturbance within the creek corridor. As such, the project would not interfere substantially with the movement of any resident or migratory fish or wildlife species or with established resident or migratory wildlife corridors, or impede the use of wildlife nursery sites, and a ***less-than-significant*** impact would occur.

e. Currently, a total of four trees exist within the southeast portion of the development area. In addition, various ornamental trees are located adjacent to the existing on-site residence. Such trees could require removal as part of the proposed project. Should the proposed project necessitate tree removal, the proposed project would be required to comply with Section 18.52.060, The Cutting and Removal of Heritage Oak and Public Trees, of the City's Municipal Code, which requires prior permission and written approval from the Community Development Director before removal of any tree, shrub, or plant within any street tree area or other public place. In addition, the project would be required to comply with General Plan Policy COS-3.2: Mature Tree and Woodland Preservation, which indicates that the City of Galt will encourage retention of mature trees and woodlands to the maximum extent possible. Compliance with such regulations would be sufficient to reduce any related potential impacts. Therefore, the proposed project would not conflict with any local policies or ordinances, such as a tree preservation policy or ordinance, and a ***less-than-significant*** impact would occur.

f. The project site is located within the boundaries of the SSHCP, which establishes an effective framework to protect natural resources in south Sacramento County, while improving and streamlining the environmental permitting process for impacts on endangered species, and provides guidance for the mitigation of impacts to covered species. According to the Technical Biological Report, the project site is located within Preserve Planning Unit 8 (PPU 8) of the SSHCP. Applicable Avoidance and Minimization Measures for SSHCP covered species known to occur within the project region have been included in Mitigation Measures IV-1 through IV-10 of this IS/MND. Additionally, the project applicant would be required to pay all applicable development fees according to the sites

land cover types. The current per-acre fees for land cover types/habitats occurring on the site are as follows:

- Agriculture: $16,212
- Seasonal Wetland: $138,220
- Streams/Creeks: $119,441
- Disturbed: No Fee
- Low-density Development: No Fee

Alternatively, a project may dedicate land in lieu of paying development fees. The southern portion of the subject property, which would be preserved as open space, may qualify for HCP credits in lieu of fees. Should HCP credits be awarded to the project applicant, the fees listed above would likely be adjusted. Given implementation of Mitigation Measure IV-1 through IV-10 and payment of required fees, if applicable, the proposed project would not conflict with the applicable provisions of the SSHCP and a ***less-than-significant*** impact would occur related to conflicts with an adopted HCP, NCCP, or other approved local, regional, or State HCP.

V. CULTURAL RESOURCES. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5?	☐	☐	✖	☐
b. Cause a substantial adverse change in the significance of a unique archaeological resource pursuant to Section 15064.5?	☐	✖	☐	☐
c. Disturb any human remains, including those interred outside of dedicated cemeteries.	☐	✖	☐	☐

Discussion

The following is primarily based on an Archaeological Survey Report prepared for the proposed project by Alta Archaeological Consulting.[5]

a. The Archaeological Survey Report consisted of a literature review to identify any previously recorded cultural resources and a field survey, conducted on December 5, 2019, of the portion of the subject property located north of Dry Creek (study area). On December 5, 2019, a records search of the California Historic Resources Information System (CHRIS) was completed for cultural resources site records and survey reports in Sacramento County by the North Central Information Center. As a result of the literature review, one previously recorded resource is known to be located near the project site. The resource includes the Western Pacific Railroad; however, the proposed project would not include the alteration or disturbance of the UPRR tracks.

The field survey identified two residences and the remains of the Cardoso Dairy present on the northwest corner of the project site. In order to determine whether the residences and dairy facility are historically significant, the structures were evaluated using the National Register of Historic Places (NRHP) and the California Register of Historic Resources (CRHR) eligibility criteria.

The NRHP and CRHR eligibility criteria include the following:

(1)/(A) It is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the U.S.;
(2)/(B) It is associated with the lives of persons important to local, California, or national history;
(3)/C) It 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)/D) It has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

In addition, the resource must retain integrity. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association. The resource must be at least 50 years old, except in exceptional circumstances.

[5] Alta Archaeological Consulting. *Archaeological Survey Report, Cardoso II Subdivision Project, Sacramento and San Joaquin Counties, CA.* December 16, 2019.

One of the on-site residences was constructed prior to 1953 and includes a gabled roof with a small entry way facing the interior of the lot. The exterior siding, roof, and windows of the residence have been replaced with modern materials. Given that the structure has been modified to include modern materials, the resource would not be considered to have retained the integrity of the structure, as is necessary for listing under the NRHP and CRHR. As such, the residence is not considered eligible for listing under the NRHP and CRHR.

The second residence reflects a trailer style, rectangular home with a flat roof and concrete foundation. The residence dates back to the later part of the 20th century. The residence is not known to be associated with a historical event or the lives of important persons. Additionally, the residence was not determined to embody distinctive characteristic of the region or possess high artistic value. As such, the residence is not considered eligible for listing under the NRHP and CRHR.

According to the Archaeological Survey Report, the Cardoso Dairy dates back to the 1960's. The dairy contains multiple structures designed for sheltering, feeding, and milking cows. The largest structures are two long rectangular feed stall shelters that are open-air, with corrugated metal roofs. An office building constructed of cinder block is also on the site, as well as two additional open areas used for storing hay feed and corral purposes. The dairy facility is not known to be associated with a historical event or the lives of important persons. Furthermore, the dairy facility does not embody distinct characteristics that would render the structures eligible for listing under the NRHP and CRHR. Therefore, the Cardoso Dairy is not considered eligible for listing under the NRHP and CRHR.

Based on the above, development of the site would cause a substantial adverse change in the significance of a historical resource pursuant to Section 15064.5, and a ***less-than-significant*** impact would occur.

b,c. As noted above, the Archaeological Survey Report prepared for the proposed project included a record search of the CHRIS. In addition, on November 21, 2019, Alta Archaeological Consulting requested a search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF). The results on the CHRIS search and NAHC SLF search indicated that historical, archaeological, and other cultural resources are not known to be present in the project vicinity.

During the field survey, two isolated prehistoric finds were discovered, including a whole Olivella shell and a basalt flake. Additionally, sparse historic-era materials noted during the field inventory include an aqua glass insulator, ferrous metal machine parts, a glass marble, a fragment of whiteware ceramic, and enamel sheet metal fragments. The items were considered to be isolated finds and were not found to be associated with a discrete archaeological deposit. Given that the items are not known to be associated with any historical events, lives of persons important to history, embody distinctive characteristics, or yield potential important information, the proposed project is not anticipated to result in substantial adverse effects to the resources.

According to the Archaeological Survey Report, the study area has been subject to ground disturbance associated with agricultural activities and portions of the area have been modified to provide flood controls. Furthermore, given the frequent flood events that the area has sustained in the past, the probability of encountering an intact subsurface archaeological deposit on the site is relatively low. However, because archaeological sites

often occur along perennial waterways, the potential exists for buried archaeological sites to occur within the area. As such, unknown archaeological resources, including human remains, have the potential to be uncovered during ground-disturbing construction and excavation activities at the subject property. If previously unknown resources are encountered during construction activities, the proposed project could cause a substantial adverse change in the significance of a unique archaeological resource pursuant to CEQA Guidelines Section 15064.5 and/or disturb human remains, including those interred outside of dedicated cemeteries. Therefore, impacts could be considered ***potentially significant***.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a *less-than-significant* level.

V-1. *Prior to grading permit issuance, the developer shall submit plans to the Community Development Department for review and approval which indicate (via notation on the improvement plans) that if historic and/or cultural resources are encountered during site grading or other site work, all such work shall be halted immediately within 100 feet and the developer shall immediately notify the Community Development Department of the discovery. In such case, the developer shall be required, at their own expense, to retain the services of a qualified archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeologist for the purpose of recording, protecting, or curating the discovery as appropriate. The archaeologist shall be required to submit to the Community Development Department for review and approval a report of the findings and method of curation or protection of the resources. Further grading or site work within the area of discovery shall not be allowed until the preceding work has occurred.*

V-2. *If human remains, or remains that are potentially human, are found during construction, a professional archeologist shall ensure reasonable protection measures are taken to protect the discovery from disturbance. The archaeologist shall notify the Sacramento County Coroner (per §7050.5 of the State Health and Safety Code). The provisions of §7050.5 of the California Health and Safety Code, §5097.98 of the California Public Resources Code, and Assembly Bill 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, then the Coroner will notify the Native American Heritage Commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the project (§5097.98 of the Public Resources Code). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the applicant does not agree with the recommendations of the MLD, the NAHC can mediate (§5097.94 of the Public Resources Code). If an agreement is not reached, the qualified archaeologist or most likely descendent must rebury the remains where they will not be further disturbed (§5097.98 of the Public Resources Code). This will also include either recording the site with the NAHC or the appropriate Information Center, using an open space or conservation zoning designation or easement, or recording a reinternment document with the county in which*

the property is located (AB 2641). Work cannot resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

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

Discussion

a,b. The main forms of available energy supply are electricity, natural gas, and oil. A description of the 2019 California Green Building Standards Code and the Building Energy Efficiency Standards, with which the proposed project would be required to comply, as well as discussions regarding the proposed project's potential effects related to energy demand during construction and operations, are provided below.

California Green Building Standards Code

The 2019 California Green Building Standards Code, otherwise known as the CALGreen Code (CCR Title 24, Part 11), is a portion of the California Building Standards Code (CBSC), which became effective with the rest of the CBSC on January 1, 2020. The purpose of the CAL Green Code is to improve public health, safety, and general welfare by enhancing the design and construction of buildings through the use of building concepts having a reduced negative impact or positive environmental impact and encouraging sustainable construction practices. The CAL Green standards regulate the method of use, properties, performance, types of materials used in construction, alteration repair, improvement and rehabilitation of a structure or improvement to property. The provisions of the code apply to the planning, design, operation, construction, use, and occupancy of every newly constructed building or structure throughout California. Requirements of the CAL Green Code include, but are not limited to, the following measures:

- Compliance with relevant regulations related to future installation of Electric Vehicle charging infrastructure in residential and non-residential structures;
- Indoor water use consumption is reduced through the establishment of maximum fixture water use rates;
- Outdoor landscaping must comply with the California Department of Water Resources' Model Water Efficient Landscape Ordinance (MWELO), or a local ordinance, whichever is more stringent, to reduce outdoor water use;
- Diversion of 65 percent of construction and demolition waste from landfills; and
- Mandatory use of low-pollutant emitting interior finish materials such as paints, carpet, vinyl flooring, and particle board.

Building Energy Efficiency Standards

The 2019 Building Energy Efficiency Standards is a portion of the CBSC, which expands upon energy efficiency measures from the 2016 Building Energy Efficiency Standards resulting in a seven percent reduction in energy consumption from the 2016 standards for residential structures. Energy reductions relative to previous Building Energy Efficiency Standards would be achieved through various regulations including requirements for the use of high efficacy lighting, improved water heating system efficiency, and high-performance attics and walls.

One of the improvements included within the 2019 Building Energy Efficiency Standards is the requirement that certain residential developments, including some single-family and low-rise residential developments, include on-site solar energy systems capable of producing 100 percent of the electricity demanded by the residences. Certain residential developments, including developments that are subject to substantial shading, rendering the use of on-site solar photovoltaic systems infeasible, are exempted from the foregoing requirement; however, such developments are subject to all other applicable portions of the 2019 Building Energy Efficiency Standards.

Construction Energy Use

Construction of the proposed project would involve on-site energy demand and consumption related to use of oil in the form of gasoline and diesel fuel for construction worker vehicle trips, hauling and materials delivery truck trips, and operation of off-road construction equipment. In addition, diesel-fueled portable generators may be necessary to provide additional electricity demands for temporary on-site lighting, welding, and for supplying energy to areas of the sites where energy supply cannot be met via a hookup to the existing electricity grid.

Even during the most intense period of construction, due to the different types of construction activities (e.g., demolition, site preparation, grading, building construction), only portions of the project site would be disturbed at a time, with operation of construction equipment occurring at different locations on the project site, rather than a single location. In addition, all construction equipment and operation thereof would be regulated per the CARB In-Use Off-Road Diesel Vehicle Regulation. The In-Use Off-Road Diesel Vehicle Regulation is intended to reduce emissions from in-use, off-road, heavy-duty diesel vehicles in California by imposing limits on idling, requiring all vehicles to be reported to CARB, restricting the addition of older vehicles into fleets, and requiring fleets to reduce emissions by retiring, replacing, or repowering older engines, or installing exhaust retrofits. The In-Use Off-Road Diesel Vehicle Regulation would subsequently help to improve fuel efficiency and reduce GHG emissions. Technological innovations and more stringent standards are being researched, such as multi-function equipment, hybrid equipment, or other design changes, which could help to reduce demand on oil and emissions associated with construction.

The CARB has recently prepared the *2017 Climate Change Scoping Plan Update* (2017 Scoping Plan),[6] which builds upon previous efforts to reduce GHG emissions and is designed to continue to shift the California economy away from dependence on fossil fuels. Appendix B of the 2017 Scoping Plan includes examples of local actions (municipal code changes, zoning changes, policy directions, and mitigation measures) that would support the State's climate goals. The examples provided include, but are not limited to, enforcing idling time restrictions for construction vehicles, utilizing existing grid power for electric energy rather than operating temporary gasoline/diesel-powered generators, and increasing use of electric and renewable fuel-powered construction equipment. The Carb Diesel Vehicle Regulation described above, with which the proposed project must comply, would be consistent with the intention of the 2017 Scoping Plan and the recommended actions included in Appendix B of the 2017 Scoping Plan.

Based on the above, the temporary increase in energy use occurring during construction of the proposed project would not result in a significant increase in peak or base demands

[6] California Air Resources Board. *The 2017 Climate Change Scoping Plan Update.* January 20, 2017.

or require additional capacity from local or regional energy supplies. In addition, the proposed project would be required to comply with all applicable regulations related to energy conservation and fuel efficiency, which would help to reduce the temporary increase in demand.

Operational Energy Use

Following implementation of the proposed project, SMUD and PG&E would provide electricity and natural gas to the project site. Energy use associated with operation of the proposed project would be typical of residential uses, requiring electricity and natural gas for interior and exterior building lighting, heating, ventilation, and air conditioning (HVAC), electronic equipment, refrigeration, appliances, and more. Maintenance activities during operations, such as landscape maintenance, would involve the use of electric or gas-powered equipment. In addition to on-site energy use, the proposed project would result in transportation energy use associated with vehicle trips generated by the proposed single-family homes.

The proposed residential project would be subject to all relevant provisions of the most recent update of the CBSC, including the Building Energy Efficiency Standards. Adherence to the most recent CALGreen Code and the Building Energy Efficiency Standards would ensure that the proposed structures would consume energy efficiently through the incorporation of such features as efficient water heating systems, high performance attics and walls, and high efficacy lighting. Required compliance with the CBSC would ensure that the building energy use associated with the proposed project would not be wasteful, inefficient, or unnecessary.

With regard to transportation energy use, the proposed project would comply with all applicable regulations associated with vehicle efficiency and fuel economy. In addition, as discussed in Section XVII, Transportation, of this IS/MND, the City of Galt and surrounding areas provides residents with numerous public transportation options. Transit options include Dial-A-Ride, Highway 99 Express, Delta Route, and other modes of public transit. Transit would provide access to several grocery stores, restaurants, banks, and schools within close proximity to the project site. The site's access to public transit and proximity to such uses would reduce VMT and, consequently, fuel consumption associated with the proposed single-family residences.

Conclusion

Based on the above, construction and operation of the proposed project would not result in wasteful, inefficient, or unnecessary consumption of energy resources or conflict with or obstruct a State or local plan for renewable energy or energy efficiency. Thus, a ***less-than-significant*** impact would occur.

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

Discussion

ai-ii. Per the City of Galt General Plan EIR, the City of Galt is not located within an Alquist-Priolo Earthquake Fault Zone and is not located in the immediate vicinity of an active fault.[7] The nearest active fault is the Clayton-Marsh Creek-Greenville Fault, which is located over 40 miles southwest of the project site. Known active or potentially active faults do not exist on the project site. Thus, the potential for fault rupture risk at the project site is relatively low.

An earthquake of moderate to high magnitude generated by the above fault could cause considerable ground shaking at the project site. However, the proposed buildings would be properly engineered in accordance with the CBSC, which includes engineering standards appropriate for the seismic area in which the project site is located. Conformance with the design standards is verified by the City prior to the issuance of building permits. Furthermore, the proposed project would comply with Policy SS-1.7 of the Galt 2030 General Plan, which requires all new buildings to be built according to seismic requirements of the CBSC. Proper engineering of the proposed buildings would ensure that the project would not be subject to substantial risks related to seismic ground shaking.

[7] California Department of Conservation. *Fault Activity of California.* 2010. Available at: https://www.conservation.ca.gov/cgs/maps-data. Accessed September 2019.

Based on the above, a ***less-than-significant*** impact would occur related to rupture of a known earthquake fault and strong seismic ground shaking.

aiii,aiv,
c. The proposed project's potential effects related to liquefaction, landslides, lateral spreading, and subsidence/settlement are discussed in detail below.

Liquefaction

Liquefaction is a phenomenon in which granular material is transformed from a solid state to a liquefied state as a consequence of increased pore-water pressure and reduced effective stress. Increased pore-water pressure is induced by the tendency of granular materials to densify when subjected to cyclic shear stresses associated with earthquakes. Per the California Earthquake Hazards Zone Application, the project site is not located within a designated seismic hazard zone for liquefaction.[8] Thus, the proposed project would not be subject to substantial liquefaction risks.

Landslides

Seismically-induced landslides are triggered by earthquake ground shaking. The risk of landslide hazard is greatest in areas with steep, unstable slopes. The topography of the project site is relatively level, and the site is not located on or near any slopes. Furthermore, per the California Earthquake Hazards Zone Application, the site is not located within a designated seismic hazard zone for landslides.[9] Thus, landslides are not likely to occur on- or off-site as a result of the proposed project.

Lateral Spreading

Lateral spreading is horizontal/lateral ground movement of relatively flat-lying soil deposits towards a free face such as an excavation, channel, or open body of water; typically, lateral spreading is associated with liquefaction of one or more subsurface layers near the bottom of the exposed slope. The project site does not contain any open faces that would be considered susceptible to lateral spreading. In addition, as noted above, the site is not anticipated to be subject to substantial liquefaction hazards. Therefore, the potential for lateral spreading to pose a risk to the proposed development is relatively low.

Subsidence / Settlement

Per the General Plan EIR, subsidence is the gradual settling or sinking of the earth's surface with little horizontal movement. Subsidence takes place gradually, usually over a period of several years. The General Plan EIR determined that subsidence in Galt has occurred primarily along the Delta within the City's planning area. The City is considered a potential subsidence area due to the underlying groundwater basin and the rates of groundwater withdraw that have occurred in the past. Although subsidence has the potential to occur in the project area, the proposed project would comply with applicable CBSC standards and regulations. Compliance with the CBSC would ensure that subsidence/settlement risks would be less than significant.

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8 California Department of Conservation. *California Earthquake Hazards Zone Application.* Available at: https://maps.conservation.ca.gov/cgs/EQZApp/app/. Accessed September 2019.

9 *Ibid.*

Conclusion

Based on the above, the proposed project would not be subject to substantial risks related to liquefaction, landslides, or lateral spreading. Compliance with standard construction regulations included in the CBSC would ensure that the proposed project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving subsidence or settlement. Furthermore, the proposed project would not 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 subsidence, liquefaction, or collapse. Thus, a ***less-than-significant*** impact would occur.

b. The proposed project would include grading of the project site prior to construction of the proposed residences and associated improvements. During construction activities, topsoil would be moved and graded, leading to disturbed soils. Such disturbed soils could suffer from wind and water erosion while the topsoil is exposed. Additionally, soil excavation activities would occur within the remainder parcel to provide fill material for the proposed residential development. Following development of the site, all exposed soils would be covered with impervious surfaces or landscaping, and, thus, long-term erosion would not occur.

To mitigate any potential impacts related to topsoil exposure, the proposed project would include both temporary and permanent erosion control techniques. General Plan Policy PFS-4.6 requires new development projects to prepare and erosion control plan.[10] The proposed project would also implement best management practices (BMP) in compliance with Policy COS-1.12 to ensure impacts to topsoil erosion are minimized. Furthermore, the proposed project would comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) permit.

Given that the proposed project would comply with applicable General Plan policies and regulations, the proposed project would not result in substantial soil erosion or the loss of topsoil. Therefore, a ***less-than-significant*** impact would occur.

d. Expansive soils are those possessing clay particles that react to moisture changes by shrinking or swelling. If structures are underlain by expansive soils, foundation systems must be capable of tolerating or resisting any potentially damaging soil movements, and building foundation areas must be properly drained. Because a site-specific geotechnical study has not been prepared for the project site, the potential exists for the site to contain expansive soils.

Therefore, a ***potentially significant*** impact could occur related to being located on expansive soil, as defined in Table 18-1B of the Uniform Building Code, thereby creating substantial direct or indirect risks to life or property.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

VII-1. *Prior to issuance of a grading permit, the applicant/developer shall incorporate the recommendations of a design-level geotechnical report into project Improvement Plans for review and approval by the City Engineer. Should expansive or otherwise unstable soils be found within the project*

[10] City of Galt. City of Galt General Plan Policy Document [pg. PFS-6]. April 2009.

site, the design-level geotechnical report shall include measures necessary to ensure that such on-site conditions are fully mitigated. Methods of mitigating potential on-site soil expansive soils may include, but shall not be limited to, the following measures:

- *Remove and replace potentially expansive soils; and/or*
- *Strengthen foundations (e.g., post-tensioned slab, reinforced mat or grid foundation, or other similar system) to resist excessive differential settlement associated with seismically-induced soil expansion.*

e. The proposed project would connect to existing City sewer infrastructure. Thus, the construction or operation of septic tanks or other alternative wastewater disposal systems is not included as part of the project. Therefore, ***no impact*** regarding the capability of soil to adequately support the use of septic tanks or alternative wastewater disposal systems would occur.

f. The City's General Plan indicates that known paleontological resources could exist along the major waterways, especially the Cosumnes River, and along the Dry Creek corridor. Development allowed under the General Plan could result in the discovery and disturbance of previously unknown or undiscovered paleontological resources. The City's General Plan EIR concluded that with implementation of Policy HRE-4.1 through HRE-4.4, which requires all new development projects to comply with procedures upon discovery of unique paleontological resources, impacts related to disturbance of paleontological resources would be less than significant. The City's General Plan does not note the existence of any unique geologic features within the City.

Although the proposed project would not have the potential to result in the destruction of unique geologic features, previously unknown paleontological resources could exist within the subject property due to the presence of the Dry Creek channel within the southern portion of the property. Thus, ground-disturbing activity, such as grading, trenching, or excavating associated with implementation of the proposed project, could have the potential to disturb or destroy such resources. Therefore, the proposed project could result in the direct or indirect destruction of a unique paleontological resource, and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

VII-2. *Should construction or grading activities result in the discovery of unique paleontological resources, all work within 100 feet of the discovery shall cease. The Community Development Department shall be notified, and the resources shall be examined by a qualified archaeologist, paleontologist, or historian, at the developer's expense, for the purpose of recording, protecting, or curating the discovery as appropriate. The archaeologist, paleontologist, or historian shall submit to the Community Development Department for review and approval a report of the findings and method of curation or protection of the resources. Work may only resume in the area of discovery when the preceding work has occurred.*

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

a,b. Emissions of greenhouse gases (GHGs) contributing to global climate change are attributable in large part to human activities associated with the industrial/manufacturing, utility, transportation, residential, and agricultural sectors. Therefore, the cumulative global emissions of GHGs contributing to global climate change can be attributed to every nation, region, and city, and virtually every individual on Earth. A project's GHG emissions are at a micro-scale relative to global emissions, but could result in a cumulatively considerable incremental contribution to a significant cumulative macro-scale impact.

Recognizing the global scale of climate change, California has enacted several pieces of legislations in an attempt to address GHG emissions. Specifically, Assembly Bill (AB) 32, and more recently Senate Bill (SB) 32, have established statewide GHG emissions reduction targets. Accordingly, the CARB has prepared the Climate Change Scoping Plan for California (Scoping Plan), which was approved in 2008 and updated in 2014. The Scoping Plan provides the outline for actions to reduce California's GHG emissions and achieve the emissions reductions targets required by AB 32. In concert with statewide efforts to reduce GHG emissions, air districts, counties, and local jurisdictions throughout the State have implemented their own policies and plans to achieve emissions reductions in line with the Scoping Plan and emissions reductions targets, including AB 32 and SB 32. As part of SMAQMD's efforts to reduce GHG emissions within the district in compliance with AB 32 and SB 32, SMAQMD has adopted thresholds of significance for GHG Emissions from proposed projects. SMAQMD's threshold for land development and construction projects is 1,100 metric tons of CO_2 equivalents ($MTCO_2e$/yr), the common unit of measurement for GHG emissions. If a proposed project results in emissions in excess of 1,100 $MTCO_2e$/yr during either construction or operation, the proposed project would be anticipated to result in a significant impact related to GHG emissions.

It should be noted that the 2030 General Plan includes Policy COS-7.1 related to GHG emission reduction. Policy COS-7.1 indicates, in part, that the City of Galt shall reduce GHG emissions from City operations as well as from private development in compliance with the California Global Warming Act of 2006 and any applicable State regulations. To accomplish this, the City of Galt will coordinate with the SMAQMD and the CARB in developing a Climate Action Plan (CAP) that identifies GHG emissions within the City of Galt as well as ways to reduce those emissions. The City of Galt has not yet fulfilled the requirements of COS-7.1, and has not adopted GHG emissions thresholds that can be used to assess the impact of GHG emissions from new development. The City has produced a draft CAP that is currently the subject of public hearings.

GHG emissions from the proposed project have been estimated using CalEEMod version 2016.3.2. The model applies inherent default values for various land uses, including, vehicle mix, trip length, average speed, energy consumption, water use, etc. The model applies inherent default values for various land uses, including construction data, trip

generation rates based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th Edition, vehicle mix, trip length, average speed, etc.

The estimated GHG emissions from construction and operation of the proposed project are presented in Table 4 below. It should be noted that the construction related emissions presented in Table 4 represent the maximum yearly emissions over the three-year construction period.

Table 4
SMAQMD GHG Thresholds of Significance (MTCO2e/yr)

	Construction Phase (Maximum)	Operational Phase
Project Emissions	883.04	970.23
SMAQMD Threshold	1,100	1,100
Exceed?	**NO**	**NO**

Source: CalEEMod, October 2019 (see Appendix A).

As shown in the table, the proposed project would result in construction-related and operational emissions of GHG below SMAQMD's construction and operational phase thresholds. Consequently, the proposed project would not generate GHG emissions that would have a significant impact on the environment or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. Therefore, impacts would be considered ***less-than-significant***.

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

Discussion

a. Residential uses do not typically involve the routine transport, use, disposal, or generation of substantial amounts of hazardous materials. Future residents may use common household cleaning products, fertilizers, and herbicides on-site, any of which could contain potentially hazardous chemicals; however, such products would be expected to be used in accordance with label instructions. Due to the regulations governing the use of such products and the amount used on the site, routine use of such products would not represent a substantial risk to public health or the environment. Therefore, the project would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials, and a ***less-than-significant*** impact would occur.

b. The following discussion provides an analysis of potential hazards related to the proposed construction activities and existing on-site conditions.

Construction Activities

Construction activities associated with the proposed project would involve the use of heavy equipment, which would contain fuels and oils, and the use of other products such as concrete, paints, and adhesives. Small quantities of potentially toxic substances (e.g., petroleum and other chemicals used to operate and maintain construction equipment) would be used at the project site and transported to and from the site during construction. However, the project contractor would be required to comply with all California Health and Safety Codes and local City ordinances regulating the handling, storage, and transportation of hazardous and toxic materials. Thus, construction of the proposed project

would not create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.

Existing On-Site Hazardous Conditions

The northwestern portion of the project site is currently developed with two residences and a dairy. The remainder of the site consists primarily of vacant agricultural land. A discussion of potential on-site hazardous conditions is discussed below.

Cardoso Dairy

As noted above, the Cardoso Dairy is located in the northwestern portion of the project site. The City has not identified any previously documented use of hazardous materials in association with the dairy. Any chemicals or other potentially hazardous materials potentially existing at the dairy site would be disposed of in accordance with all applicable regulations prior to demolition of the dairy and associated residences. Therefore, the proposed project would result in a less-than-significant impact related to potential hazardous materials occurring at the dairy.

Septic System and Wells

Because the project site is currently developed with two residences and a dairy, the potential exists for a well or septic field associated with the residences or dairy to be uncovered during construction. Proper abandonment and removal of the facilities, if present, would be required prior to construction. Thus, a significant impact could occur.

Asbestos-Containing Materials and Lead-Based Paint

Asbestos is the name for a group of naturally occurring silicate minerals that are considered to be “fibrous” and, through processing, can be separated into smaller and smaller fibers. The fibers are strong, durable, chemical resistant, and resistant to heat and fire. They are also long, thin, and flexible, such that they can be woven into cloth. Because of the above qualities, asbestos was considered an ideal product and has been used in thousands of consumer, industrial, maritime, automotive, scientific, and building products. However, later discoveries found that, when inhaled, the material caused serious illness.

For buildings constructed prior to 1980, the Code of Federal Regulations (29 CFR 1926.1101) states that all thermal system insulation (boiler insulation, pipe lagging, and related materials) and surface materials must be designated as “presumed asbestos-containing material” unless proven otherwise through sampling in accordance with the standards of the Asbestos Hazard Emergency Response Act. Because the existing on-site structures were constructed between the 1950’s and 1960’s, the potential exists that asbestos-containing materials were used in the construction of the residential structures and the dairy.

Lead-based paint (LBP) is defined by federal guidelines as any paint, varnish, stain, or other applied coating that has one milligram of lead per square centimeter or greater. Lead is a highly toxic material that may cause a range of serious illnesses, and in some cases death. In buildings constructed after 1978, the presence of LBP is unlikely. Structures built prior to 1978, and especially prior to the 1960s, are expected to contain LBP. Given that the existing structures on the property were constructed before the phase-out of LBPs in the 1970s the proposed project could potentially expose construction workers to LBP during demolition of the structures.

Contaminated Soils

Although not documented at the subject property, past agricultural activities within the subject property may have included the use of pesticides, fertilizers, or other chemicals. Agricultural uses could result in concentrations of residual chemicals being present in the near surface soil if use or storage of pesticides, fertilizers, or other chemicals has occurred. However, upon development of the project, the site would primarily be covered by pavement and other impervious surfaces, thereby limiting future upset of on-site soils. Nonetheless, issues related to contaminated soils could pose a risk to construction workers during ground disturbing activities. Therefore, without a Phase I Environmental Site Assessment (ESA), the proposed project could result in a potentially significant impact related to contaminated soils.

Conclusion

Based on the above, the subject property has the potential to contain existing septic systems and water wells. Additionally, given the ages of the existing on-site structures, the potential exists for asbestos-containing materials and LBP to be present in the structures. Furthermore, historical agricultural activities on-site may have included pesticide use, thereby contaminating soils within the subject property. Therefore, the proposed project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment and a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a *less-than-significant* level.

IX-1. *Prior to issuance of grading permits, the site shall be examined for existing septic systems. If septic systems are not found, no further mitigation is required. In the event of a discovery, the system shall be abandoned in consultation with the Sacramento County Environmental Management Department. The results of any surveys and proof of abandonment shall be provided to the City Community Development Department and City Engineer.*

IX-2. *Prior to initiation of any ground disturbance activities, a survey shall be performed to inspect the site for abandoned wells. If wells are not found, no further mitigation is required. If any wells are found, the applicant shall hire a licensed well contractor to obtain a well abandonment permit from Sacramento County Environmental Management Department and properly abandon the on-site wells to the satisfaction of the Sacramento County Environmental Health Department. The results of any surveys and proof of abandonment shall be provided to the City Community Development Department and City Engineer.*

IX-3. *Prior to issuance of grading permits, the project applicant shall retain a qualified environmental professional to prepare and submit to the City a Phase I Environmental Site Assessment (ESA) for the project site. The Phase I ESA shall use methods and procedures consistent with the*

nationally recognized standard, ASTM E1527-13, and with Environmental Protection Agency All Appropriate Inquiry regulations. The Phase I ESA shall evaluate potential contamination issues associated with pesticides, fertilizers, or other chemicals from agricultural production.

If the Phase I ESA does not identify any Recognized Environmental Conditions (RECs) associated with the project site, further action is not required. If the Phase I ESA identifies any RECs that would pose a risk to the proposed development, the project applicant shall ensure that the recommendations of the report are fully implemented, to the satisfaction of the City's Community Development Department. In the event that on-site soils are determined to be contaminated, potential methods for remediation may include, but would not necessarily be limited to, excavation of the soils and off-haul to an appropriate disposal facility by a licensed contractor. Measures for cleanup of soils shall be determined in coordination with the City's Community Development Department and the Sacramento County Environmental Management Department.

IX-4 *Prior to issuance of a demolition permit by the City for any on-site structures, the project applicant shall provide a site assessment that determines whether any structures to be demolished contain lead-based paint or asbestos. If structures do not contain lead-based paint or asbestos, further mitigation is not required; however, if lead-based paint or asbestos is found, all loose and peeling paint shall be removed and disposed of by a licensed and certified lead paint removal contractor, in accordance with federal, State, and local regulations. The demolition contractor shall be informed that all paint on the buildings shall be considered as containing lead and/or asbestos. The contractor shall take appropriate precautions to protect his/her workers, the surrounding community, and to dispose of construction waste containing lead paint in accordance with federal, State, and local regulations subject to approval by the City Engineer.*

c. The project site is located 0.67-mile from the Galt Joint Union Elementary School, 0.79-mile from the Valley Oaks Elementary School, and 1.09 miles from Galt High School. The project site is not located within one-quarter mile of any existing or proposed schools. In addition, the proposed residential uses would not involve the routine transport, use, or dispose of hazardous materials, or present a reasonably foreseeable release of hazardous materials. Therefore, the proposed project would have a ***less-than-significant*** impact with respect to emitting hazardous emissions or handling hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

d. According to the Department of Toxic Substance Control's Hazardous Waste and Substances Site List, the project site is not located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5.[11] Thus, the proposed project would not create a significant hazard to the public or the environment, and ***no impact*** would occur.

[11] Department of Toxic Substances Control. Hazardous Waste and Substances Site List. Available at: https://www.envirostor.dtsc.ca.gov/public/search.asp?cmd=search&reporttype=CORTESE&site_type=CSITES. Accessed September 2019.

e. The nearest airport to the project site is Vetters Sky Ranch Airport, which is located approximately 4.5 miles southeast of the project site. As such, the project site is not located within two miles of any public airports, and does not fall within an airport land use plan area. Therefore, ***no impact*** would occur related to the project being located within an airport land use plan or within two miles of a public airport or public use airport, thereby resulting in a safety hazard or excessive noise for people residing or working in the project area.

f. During operation, the proposed project would provide adequate access for emergency vehicles and would not interfere with potential evacuation or response routes used by emergency response teams. During construction of the proposed project, all construction equipment would be staged on-site so as to prevent obstruction of local and regional travel routes in the City that could be used as evacuation routes during emergency events. The project would not substantially alter the existing circulation system in the surrounding area. As a result, the project would have a ***less-than-significant*** impact with respect to impairing the implementation of or physically interfering with an adopted emergency response plan or emergency evacuation plan.

g. Issues related to wildfire hazards are discussed in Section XX, Wildfire, of this IS/MND. As noted therein, the project site is not located within or near a Very High Fire Hazard Severity Zone.[12] In addition, the project site is bordered by UPRR tracks to the east and Kost Road to the north. The areas to the south and west of the site consist primarily of actively maintained agricultural land. Thus, the potential for wildland fires to reach the project site would be limited. Based on the above, the proposed project would not expose people or structures to the risk of loss, injury or death involving wildland fires, and a ***less-than-significant*** impact would occur.

[12] California Department of Forestry and Fire Protection. *Sacramento County, Very High Fire Hazard Severity Zones in LRA.* October 2, 2007.

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

Discussion

a. The City of Galt has a Phase I National Pollutant Discharge Elimination System (NPDES) permit and is part of the Sacramento Stormwater Quality Partnership (SSQP). The City of Galt is regulated by Order No. R5-2002-0206 NPDES No. CAS082597, "Waste Discharge Requirements for County of Sacramento and Cities of Citrus Heights, Elk Grove, Folsom, Galt and Sacramento Storm Water Discharges From Municipal Separate Storm Sewer Systems Sacramento County" issued by the Central Valley Regional Water Quality Control Board (CVRWQCB). However, the City of Galt Municipal Separate Storm Sewer System (MS4) is noncontiguous with other MS4s and is surrounded by rural and agricultural areas that are not subject to NPDES regulations.

The City of Galt participates in the County-wide Sacramento Stormwater Quality Improvement Program (SQIP), which was established in 1990 to reduce the pollution carried by stormwater into local creeks and rivers. The SQIP is based on the NPDES municipal stormwater discharge permit. The comprehensive SQIP includes pollution reduction activities for construction sites, industrial sites, illegal discharges and illicit connections, new development, and municipal operations.

Grading and excavation during construction, as well as implementation of new structures associated with the proposed project, would create the potential to degrade water quality from increased sedimentation and increased discharge (increased flow and volume of runoff) associated with stormwater runoff. Disturbance of site soils would increase the

potential for erosion from stormwater. The State Water Resources Control Board (SWRCB) adopted a statewide general NPDES permit for stormwater discharges associated with construction activity. Dischargers whose projects disturb one or more acres of soil are required to obtain coverage under the General Permit for Discharges of Storm Water Associated with Construction Activity Construction General Permit Order 2009-0009-DWQ. Construction activity subject to the General Permit includes clearing, grading and disturbances to the ground such as stockpiling, or excavation. The proposed project would include disturbance of approximately 36.82 acres, and, thus, is subject to the relevant requirements within the aforementioned General Permit.

The proposed project would be required to implement any applicable goals, policies and BMP's set forth by the above programs. Construction related to BMPs would likely include, but are not limited to, installation of storm drain inlet protection, stabilization of construction exits, and proper maintenance of material stockpiles. The project's compliance with the requirements of the SWRCB, the SQIP, and the City of Galt's Stormwater Management Program would ensure that construction activities, and operation of the project, would not result in degradation of downstream water quality. For example, the proposed bio-retention basin would provide treatment of on-site stormwater during project operations. However, the proposed project's construction activities could result in an increase in erosion, and consequently affect water quality. Therefore, a ***potentially significant*** impact related to water quality and waste discharge requirements could result.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

X-1. *Prior to the issuance of grading permits, the developer shall obtain and comply with the NPDES general construction permit including the submittal of a Notice of Intent (NOI) and associated fee to the SWRCB and the preparation of a SWPPP that includes both construction stage and permanent storm water pollution prevention practices to be submitted to the City Engineer for review.*

b,e. Water supplies for the project site are supplied by the City of Galt. Per the City's 2015 Urban Water Management Plan (UWMP),[13] the City of Galt's groundwater is derived from the Cosumnes Subbasin, which is part of the San Joaquin Valley Groundwater Basin. Despite growth within the City of Galt, on-going groundwater use, and the uncertainty of overdraft conditions, monitoring groundwater levels within the City has shown little change in depth to groundwater since 1961. The 2015 UWMP concludes that groundwater resources within the City are anticipated to be sufficient. Increases in demand for groundwater that occur with buildout of the City, including buildout of the project site, can be met through continued pumping from existing wells and the construction of new wells as needed.[14] The proposed project is not anticipated to require construction of a new well, and continued pumping from existing City of Galt wells is not anticipated to inhibit the use of groundwater by the City.

Furthermore, the bio-retention basin within the project site would allow for stormwater to infiltrate on-site soils and provide limited groundwater recharge. Given that the project site is a relatively small area compared to the size of the groundwater basin, the amount of

[13] City of Galt. *2015 Urban Water Management Plan Update*. June 2016.
[14] City of Galt. 2015 *Urban Water Management Plan Update*. June 2016.

stormwater infiltrating on-site soils and resulting in groundwater recharge would not be substantial.

Given that the proposed project would be consistent with the site's current General Plan land use designation, the project would not result in increased use of groundwater supplies beyond what has been anticipated by the City and accounted for in the UWMP. Additionally, the UWMP imposes specific regulations on water use, which the proposed project would adhere to. Therefore, the proposed project would result in a ***less-than-significant*** impact with respect to substantially decreasing groundwater supplies or interfering substantially with groundwater recharge such that the project would impede sustainable groundwater management of the basin. In addition, the project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan.

ci-iii. The northwestern portion of the project site currently consists of two residences and a dairy. The remainder of the subject parcel primarily consists of disturbed land used for agricultural purposes. Implementation of the proposed project would involve grading of the site, and development of 87 single-family residential units. Such development would increase the amount of impervious surfaces within the project site.

With implementation of the proposed project, stormwater draining from impervious surfaces within the project site would be captured by curb inlets and routed, by way of new underground drain pipes, to a new bio-retention basin in the southern portion of the site. The bio-retention basin would provide treatment and detention of stormwater. Treated runoff would flow to an existing 84-inch storm drain located within the proposed on-site 35-foot-wide trail corridor. As occurs under existing conditions, the existing storm drain would discharge treated runoff into Dry Creek to the south of the project site. The proposed projects compliance with the SQIP requirements and the City of Galt's Stormwater Management Program would ensure that operation of the proposed project would not substantially increase the rate or amount of stormwater runoff entering Dry Creek. Consequently, the proposed project would not exceed the capacity of off-site infrastructure nor would the project result in off-site erosion, siltation, or flooding and a ***less-than-significant*** impact would occur.

civ. According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map that includes the subject property, the project site is located in an Area of Minimal Flood Hazard (Zone X).[15] Although southern portion of the remainder parcel is located within a Regulatory Floodway (Zone AE) associated with Dry Creek parcel, the proposed project would not include any grading activities or development of structures with the Zone AE designated area. The proposed soil borrow sites within the remainder parcel would be located outside of the 100-year floodplain. As such, the project would not impede or redirect flood flows or expose people or structures to a significant loss, injury, or death involving flooding. Therefore, the proposed project would result in a ***less-than-significant*** impact.

d. As discussed under question 'civ' above, the proposed development area is not located within a flood hazard zone. Tsunamis are defined as sea waves created by undersea fault movement, whereas a seiche is a long-wavelength, large-scale wave action set up in a closed body of water such as a lake or reservoir. The project site is not located in proximity

[15] Federal Emergency Management Agency. *Flood Insurance Rate Map 06067C0606J.* Effective October 20, 2016.

to a coastline and would not be potentially affected by flooding risks associated with tsunamis. Seiches do not pose a risk to the proposed project, as the project site is not located adjacent to a large closed body of water. Based on the above, the proposed project would not pose a risk related to the release of pollutants due to project inundation from flooding, tsunami, or seiche zones, and ***no impact*** would occur.

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

Discussion

a. A project risks dividing an established community if the project would introduce infrastructure or alter land use so as to change the land use conditions in the surrounding community, or isolate an existing land use. The proposed project would include development of 87 single-family residences within the project site. The proposed project would be consistent with the planned single-family subdivision to the north (Cardoso I Subdivision Project) and existing residences to the east. In addition, as noted under question 'b' below, the project would be consistent with the site's current land use designation. Although the project would include a rezone from R1A to R1C, the project site has been previously anticipated for residential uses, and the proposed project would not isolate an existing land use. As such, the proposed project would not physically divide an established community, and a ***less-than-significant*** impact would occur.

b. The project site is currently designated LDR per the City of Galt General Plan and is zoned R1A and OS. The remainder parcel is designated and zoned OS. The proposed project would require a rezone from R1A to R1C for the 24.62-acre project site while the remainder parcel would continue to be zoned OS. Therefore, the project would be consistent with the type and intensity of uses anticipated for the site in the General Plan and generally analyzed in the General Plan EIR. The proposed project would adhere to the General Plan goals, policies, and objectives regarding land use and planning including, but not limited to, Policy LU-1.7 and Policy LU-4.3. Policy LU-1.7 establishes the goal of designating land for development with the needs of the community, while Policy LU-4.3 ensures standards for LDR developments. In addition, the proposed project would not conflict with any City policies and regulations adopted for the purpose of avoiding or mitigating an environmental effect. For example, the proposed project would comply with the City of Galt General Plan Noise Element. Additionally, as discussed in Section IV, Biological Resources, the proposed project would comply with Section 18.52.060, The Cutting and Removal of Heritage Oak and Public Trees, of the City's Municipal Code.

Based on the above, the project would not cause a significant environmental impact due to conflicts with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Therefore, a ***less-than-significant*** impact would occur.

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

Discussion

a,b. Impacts to mineral resources were determined to be less-than-significant during the General Plan EIR scoping stage of the analysis, and further assessment was not performed by the City of Galt. The City of Galt is with Sacramento County's General Plan area, which analyzes mineral resources within the County. According to the County's General Plan, the mineral zone closest to the project site is located near New Hope Road, approximately 3.5 miles to the east. The project site itself is not known to contain mineral resources and the construction of the proposed project would not result in the loss of any known mineral resources. Therefore, ***no impact*** to mineral resources would occur.

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

Discussion

The following discussion is based primarily on an Environmental Noise Assessment prepared for the proposed project by Saxelby Acoustics (see Appendix C).[16]

a. The following sections present information regarding sensitive noise receptors in proximity to the project site, the existing noise environment, and the potential for the proposed project to result in impacts during project construction and operation. The following terms are referenced in the sections below:

- Decibel (dB): A unit of sound energy intensity. An A-weighted decibel (dBA) is a decibel corrected for the variation in frequency response to the typical human ear at commonly encountered noise levels. All references to decibels (dB) in this analysis are A-weighted unless noted otherwise.
- Average, or equivalent, sound level (L_{eq}): The L_{eq} corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour).
- Day-Night Average Level (L_{dn}): The average sound level over a 24-hour day, with a +10 decibel weighing applied to noise occurring during nighttime (10:00 PM to 7:00 AM) hours.

Sensitive Noise Receptors

Some land uses are considered more sensitive to noise than others, and, thus, are referred to as sensitive noise receptors. Land uses often associated with sensitive noise receptors generally include residences, schools, libraries, hospitals and passive recreational areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise. In the vicinity of the project site, sensitive land uses include existing single-family residential uses located to the north of the site, across Kost Road, and east of the project site, across the UPRR tracks.

[16] Saxelby Acoustics. *Environmental Noise Assessment, Cardoso Subdivision II, City of Galt, California.* January 29, 2020.

Existing Noise Environment

The existing noise environment in the project vicinity is primarily defined by vehicle traffic on the local roadway network. To quantify the ambient noise environment at the project site, Saxelby Acoustics conducted a continuous (24-hour) noise level measurement at one location on-site and one location off-site, to east of the existing UPRR tracks and directly south of Kost Road (see Figure 6). Table 5 below provides a summary of the noise measurement results.

Table 5
Summary of Existing Background Noise Measurement Data

Site	Date	L_{dn}	Average Measured Hourly Noise Levels (dB)					
			Daytime (7 AM to 10 PM)			Nighttime (10 PM to 7 AM)		
			L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
LT-1	08/05/19 – 08/06/19	80	74	54	91	74	50	87
LT-2	08/05/19 – 08/06/19	66	59	38	75	60	48	69

Source: Saxelby Acoustics, 2020.

Standards of Significance

The City of Galt General Plan Noise Element establishes a noise level standard of 60 dB as normally acceptable at residential land uses. Noise levels up to 70 dB are considered conditionally acceptable for residential uses. The City of Galt considers the following significance criteria for noise impacts:

- If the noise level resulting from project operations would exceed the "normally acceptable" range for a given land use where the existing noise level exceeds the normally acceptable range, a 3 dB L_{dn} or greater increase due to a project is considered significant; and
- If the noise level resulting from project operations would exceed the "normally acceptable" range for a given land use where the existing noise level is within the normally acceptable range, a 5 dB L_{dn} or greater increase due to a project is considered significant; and
- If the noise level resulting from project operations would be within the "normally acceptable" range for a given land use, a 10 dB L_{dn} or greater increase due to a project is considered significant.

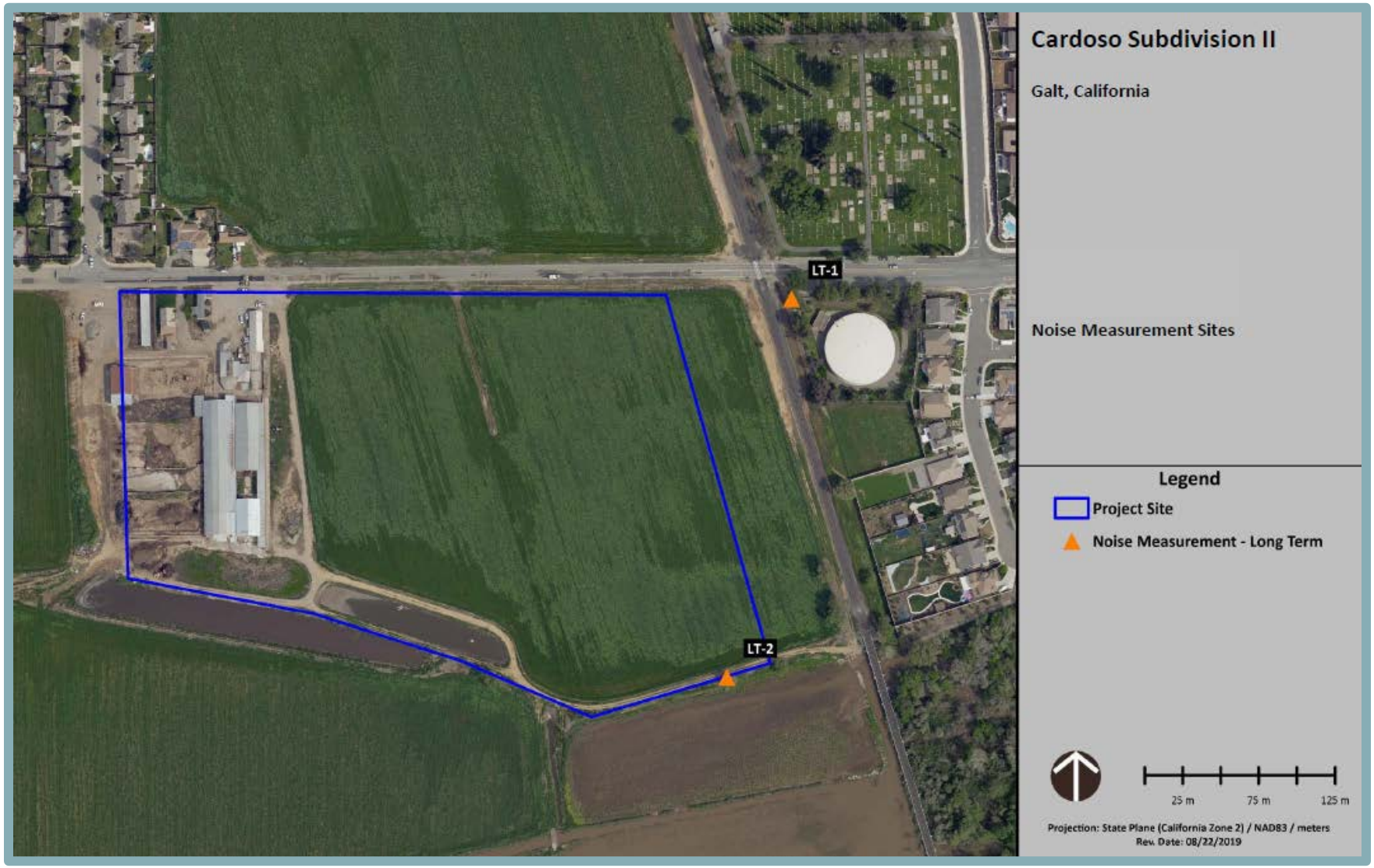
In addition to General Plan standards noted above, Section 8.40.040 of the City's Municipal Code outlines criteria for "non-transportation" or "locally regulated" noise sources. The noise level performance standards for non-transportation noise in the City of Galt are shown in Table 6 below.

Table 6
Noise Level Performance Standards for Residential Areas Affected by Non-Transportation Noise

Noise Level Descriptor	Exterior Noise Level Standards, dBA	
	Daytime (7 AM-10 PM)	Nighttime (10 PM-7 AM)
Hourly L_{eq}, dB	50	45
Maximum Level, dB	70	65

Source: City of Galt Municipal Code.

Figure 6
Noise Measurement Locations



Source: Saxelby Acoustics, 2020.

Impact Analysis

The following sections provide an analysis of potential noise impacts associated with construction and operation of the proposed project.

Construction Noise

During construction of the proposed project, heavy-duty equipment would be used for demolition, grading, excavation, paving, and building construction, which would result in temporary noise level increases. Noise levels would vary depending on the type of equipment used, how the equipment is operated, and how well the equipment is maintained. In addition, noise exposure at any single point outside the project site would vary depending on the proximity of construction activities to that point. Standard construction equipment, such as backhoes, dozers, and dump trucks would be used on-site.

Table 7 shows the predicted construction noise levels for development of the proposed project. Based on the table, activities involved in typical construction would generate maximum noise levels up to 90 dB at a distance of 50 feet. Construction activities would be temporary in nature and are anticipated to occur during normal daytime hours.

Table 7
Construction Equipment Noise

Type of Equipment	Maximum Level, dB at 50 feet
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: Federal Highway Administration, Roadway Construction Noise Model User's Guide, January 2006.

The City of Galt establishes permissible hours of construction in Section 8.40.060(E) and (F) of the Municipal Code. The ordinance restricts noise-producing construction activities to weekday hours between 6:00 AM and 8:00 PM Monday through Friday, and from 7:00 AM to 8:00 PM on Saturdays and Sundays. During the permissible hours, construction activities are conditionally exempt from the standards established by Section 8.40.040(A) of the City's Municipal Code.

Although construction activities are temporary in nature and would likely occur during normal daytime working hours, construction-related noise could result in sleep interference at existing noise-sensitive land uses in the vicinity of the project if construction activities were to occur outside the normal daytime hours. Therefore, impacts resulting in the 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 could be considered significant.

Project Operational Noise

Operations of the proposed project would generate noise primarily associated with increased traffic on nearby roadways. Project operational noise sources would also be generated from heating, ventilation, and air conditions (HVAC) equipment. Non-transportation and transportation related noise at sensitive receptors is discussed in further detail below.

Railroad Noise at New Sensitive Receptors – Exterior Areas

The eastern boundary of the site borders the UPRR tracks, and the site is bordered by Kost Road to the north. The 2030 General Plan EIR states that freight trains pass through the City between 20 to 40 times per day, and on-site railroad noise measurements performed by Saxelby Acoustics identified 30 train events in a 24-hour period.

Under the 2030 Galt General Plan, residential uses are considered normally acceptable in ambient noise environments up to 60 dBA L_{dn}, and conditionally acceptable in noise environments up to 70 dBA L_{dn}.

According to the Environmental Noise Assessment prepared by Saxelby Acoustics, the project site is predicted to be exposed to exterior noise levels up to approximately 73 dBA L_{dn}, exceeding the City of Galt's 60 dB L_{dn} Community Noise Exposure Standards (see Figure 8). However, General Plan Policies N-1.10 and N-1.1 dictate that appropriate noise mitigation, such as conventional construction techniques, closed windows, and fresh air supply systems or air conditioning for new development along major streets, highways, and railroad tracks would bring noise exposure levels to conditionally acceptable levels. Therefore, measures to ensure that future residents are not exposed to exterior noise levels exceeding City standards would be required. (i.e., 70 dB L_{dn} or less).

Railroad Noise at New Sensitive Receptors – Interior Areas

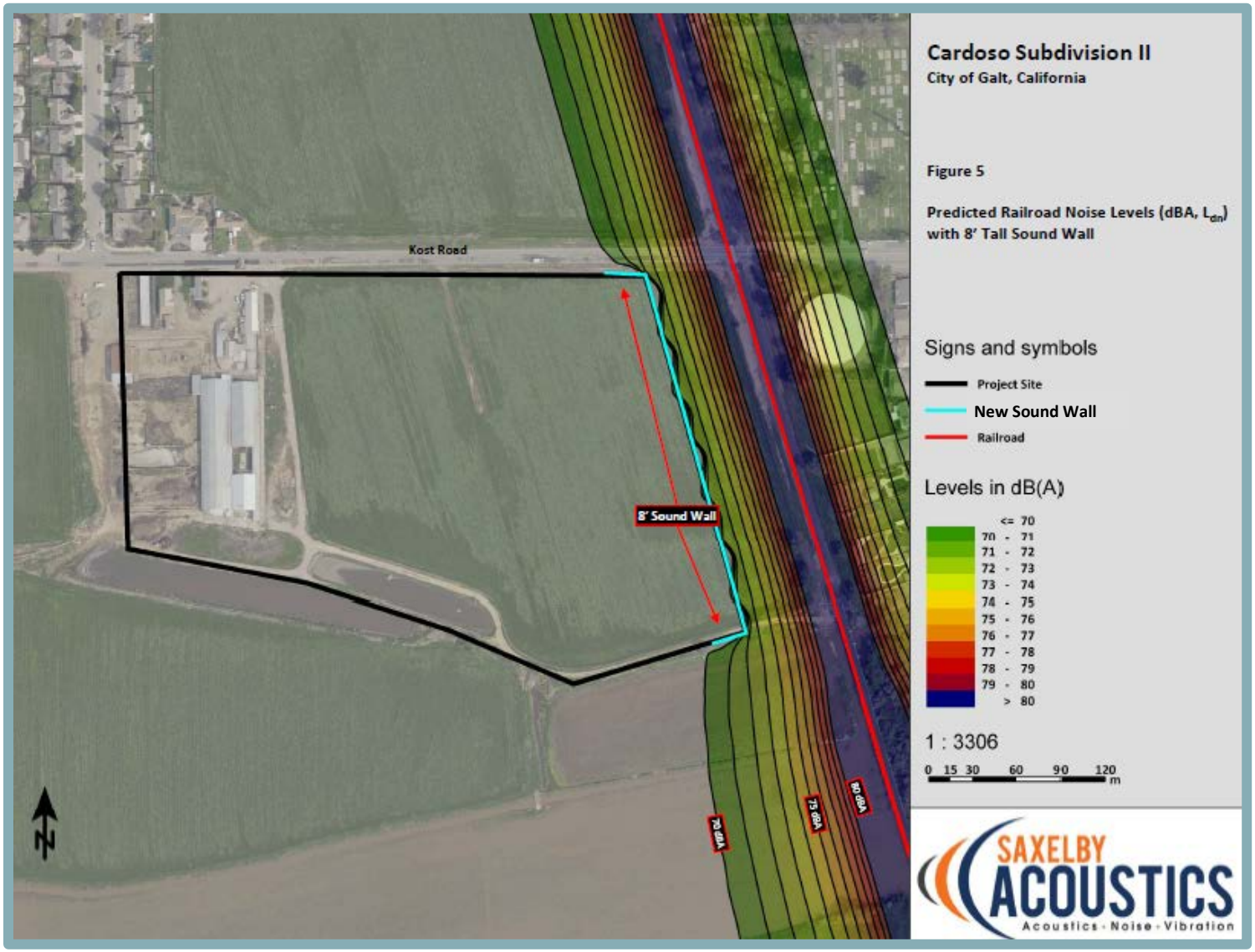
The City of Galt maintains an interior noise level criterion of 45 dBA L_{dn} for residential uses. The intent of this standard is to provide a suitable environment for indoor communication and sleep. Based upon the environmental noise assessment prepared by Saxelby Acousitcs, the proposed project would be exposed to exterior noise levels of up to 70 dBA L_{dn} at the ground floor building facades closest to the UPRR tracks. Second floor locations would not receive substantial shielding from the eight-foot tall sound wall and would be expected to be exposed to exterior noise levels of up to 73 dBA L_{dn}.

Modern building construction typically yields an exterior-to-interior noise level reduction of 25 dBA. Therefore, where exterior noise levels are 70 dBA L_{dn}, or less, typical construction techniques would result in an indoor noise level of 45 dBA L_{dn} or less. However, where exterior noise levels are predicted to exceed 70 dBA L_{dn}, typical construction techniques would result in an interior noise level of 48 dBA L_{dn}, which would exceed the City of Galt's 45 dBA L_{dn} interior noise level standard.

Transportation Noise at Existing Sensitive Receptors

As further discussed in Section XVI. Transportation/Traffic, of this IS/MND, the proposed project would result in an increase in vehicle trips on local roadways; however, because the proposed project would be consistent with the General Plan land use designations for the project site, the increase in traffic-related noise levels associated with buildout of the site has been anticipated by the City and analyzed in the General Plan EIR.

Figure 7
Future Noise Contours



Source: Saxelby Acoustics, 2020.

Per the General Plan EIR, buildout of the 2030 Galt General Plan is anticipated to result in a traffic-related noise level of approximately 67 dB along Kost Road in the project vicinity, at a distance of 100 feet from the roadway centerline. Traffic noise associated with the proposed project would not exceed what has been previously anticipated for the site in the City's General Plan EIR. Therefore, traffic-related noise generated from buildout of the proposed project would not result in a significant impact.

Conclusion

Based on the above, operation of the proposed project would not result in the generation of a substantial permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the City's General Plan and the Municipal Code. However, construction noise could result in a significant impact, should activities occur outside the normal daytime hours. Additionally, noise levels at the proposed residences could exceed the City's interior and exterior noise standards. Therefore, considering the potential for construction noise and interior and exterior environments to experience noise levels in the project area in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies, a ***potentially significant*** impact could occur.

Mitigation Measure(s)

Implementation of the following mitigation measures would reduce the above potential impact to a *less-than-significant* level.

XIII-1(a). *Construction activities shall comply with the City of Galt Noise Ordinance and shall be limited to the hours set forth below:*

Monday-Friday	*6:00 AM to 8:00 PM*
Saturday and Sunday	*7:00 AM to 8:00 PM*

The above criteria shall be included in the grading plan submitted by the applicant/developer for review and approval of the Public Works Department prior to issuance of grading permits. Exceptions to allow expanded construction activities shall be reviewed on a case-by-case basis as determined by the Chief Building Official and/or City Engineer.

XIII-1(b). *Construction activities shall adhere to the requirements of the City of Galt with respect to hours of operation, muffling of internal combustion engines, and other factors that affect construction noise generation and the associated effects on noise-sensitive land uses. Prior to issuance of grading permits, these criteria shall be included in the grading plan submitted by the applicant/developer for the review and approval of the Public Works Department.*

XIII-1(c). *During construction, the applicant/developer shall designate a disturbance coordinator and conspicuously post the person's number around the project site and in adjacent public spaces. The disturbance coordinator will receive all public complaints about construction noise disturbances and will be responsible for determining the cause of the complaint, and implement feasible measures to be taken to alleviate the problem. The disturbance*

coordinator shall report all complaints and corrective measures taken to the Community Development Director.

XIII-2. *Prior to approval of project improvement plans, the improvement plans for the proposed project shall show that the first-row lots shall be shielded from the UPRR tracks through the use of eight-foot tall masonry sound walls, subject to the approval of the City Engineer. The approximate locations of the barriers are shown on Figure 7 of this IS/MND. Other types of barrier may be employed, subject to City approval.*

XIII-3. *Prior to issuance of building permits, the applicant shall provide a detailed analysis of interior noise control measures. The analysis should be prepared by a qualified noise control engineer and shall outline the specific measures required to meet the City's 45 dBA L_{dn} interior noise level standard. Such measures shall include, but not be limited to, Lots 20 through 31. Implementation of the appropriate construction techniques and noise control measures shall be shown on building plans for the proposed project, and such plans shall be reviewed by the City Engineer.*

b. Similar to noise, vibration involves a source, a transmission path, and a receiver. However, noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration depends on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration is measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration in terms of peak particle velocities (PPV) in inches per second (in/sec). Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of PPV. Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. Table 8, which was developed by the California Department of Transportation (Caltrans), shows the vibration levels that would normally be required to result in damage to structures. As shown in the table, the threshold for architectural damage to structures is 0.20 in/sec PPV and continuous vibrations of 0.10 in/sec PPV, or greater, would likely cause annoyance to sensitive receptors.

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and paving occur. Table 9 shows the typical vibration levels produced by construction equipment at various distances. The most substantial source of groundborne vibrations associated with project construction would be the use of vibratory compactors. Use of vibratory compactors/rollers could be required during construction of the proposed roadways. The proposed project would only cause elevated vibration levels during construction, as the proposed project would not involve any uses or operations that would generate substantial groundborne vibration. Although noise and vibration associated with the construction phases of the project would add to the noise and vibration environment in the immediate project vicinity, construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Table 8
Effects of Vibration on People and Buildings

PPV		Human Reaction	Effect on Buildings
mm/sec	in/sec		
0.15 to 0.30	0.006 to 0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10 to 15	0.4 to 0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: Caltrans. Transportation Related Earthborne Vibrations. TAV-02-01-R9601. February 20, 2002.

Table 9
Vibration Levels for Various Construction Equipment

Type of Equipment	PPV at 25 feet (in/sec)	PPV at 50 feet (in/sec)
Large Bulldozer	0.089	0.031
Loaded Trucks	0.076	0.027
Small Bulldozer	0.003	0.001
Auger/drill Rigs	0.089	0.031
Jackhammer	0.035	0.012
Vibratory Hammer	0.070	0.025
Vibratory Compactor/roller	0.210 (less than 0.20 at 26 feet)	0.074

Source: Saxelby Acoustics, 2020.

The nearest existing off-site structure is a single-family residence located approximately 68 feet north of the project site, across Kost Road. Based on Table 9, at distance of 26 feet or greater, construction vibration levels anticipated for the proposed project would be less than the 0.2 in/sec threshold established by CalTrans. Thus, construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would occur during normal daytime working hours.

Based on the above, the proposed project would not expose people to or generate excessive groundborne vibration or groundborne noise levels, and a ***less-than-significant*** impact would occur.

c. The nearest airport to the site is Vetters Sky Ranch Park, located approximately 4.5 miles southeast of the site. The site is not covered by an existing airport land use plan. Given that the project site is not located within two miles of a public or private airport, the proposed project would not expose people residing or working in the project area to excessive noise levels associated with airports. Thus, ***no impact*** would occur.

XIV. POPULATION AND HOUSING. *Would the project:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (e.g., through projects in an undeveloped area or extension of major infrastructure)?	☐	☐	✖	☐
b. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	✖

Discussion

a. The proposed project would include the development of 87 single-family residential units on 24.62 acres. Using the City of Galt average persons per household value for single-family uses of 3.27, the proposed project's addition of 87 single-family residences would result in approximately 285 new residents.[17] The Department of Finance estimates the 2019 population of Galt, based on the 2010 Census, to be approximately 26,489.[18] The increase in population associated with the proposed project would constitute an approximately 1.08 percent increase in the City's total population. Because the proposed project is consistent with the site's General Plan land use designation, the population increase associated with buildout of the site has been anticipated by the City and analyzed in the General Plan EIR. Therefore, the proposed project would not induce substantial unplanned population growth either, directly or indirectly, and a ***less-than-significant*** impact would occur.

b. The proposed project would include the demolition of the two existing residences on the project site. Ample replacement housing would be available elsewhere within the City of Galt. In addition, the proposed project would add 87 new residential units to the City's housing stock. As such, the proposed project would not displace a substantial number of existing housing or people and would not necessitate the construction of replacement housing elsewhere. Therefore, ***no impact*** would occur.

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17 City of Galt. *Community Profile: City of Galt Demographic Overview.* Available at: http://www.ci.galt.ca.us/city-departments/economic-development/community-profile. Accessed September 2019.

18 California Department of Finance. E-5 Population and Housing Estimates for Cities, Counties, and the State, 2011-2019, with 2010 Benchmark. Available at: http://www.dof.ca.gov/Forecasting/Demographics/Estimates/E-5/. Accessed September 2019.

XV. PUBLIC SERVICES.

Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Fire protection?	☐	☐	✖	☐
b. Police protection?	☐	☐	✖	☐
c. Schools?	☐	☐	✖	☐
d. Parks?	☐	☐	✖	☐
e. Other Public Facilities?	☐	☐	✖	☐

Discussion

a,b. The proposed project would include development of 87 single-family residences. The Cosumnes Community Services District Fire Department (CFD) would provide fire protection services to the proposed project. The CFD operates eight fire stations to serve the cities of Galt and Elk Grove, as well as areas of unincorporated Sacramento County covering a total of approximately 157 square miles. Two fire stations are located in the City of Galt: Fire Station 45, at 229 Fifth Street, and Fire Station 46, at 1050 Walnut Avenue. Fire Station 45 is located approximately 0.96-mile from the project site to the northeast, and Fire Station 46 is located approximately 2.88 miles to the northeast.

The increase in the overall demand on fire and police protection services associated with buildout the City of Galt has been previously anticipated by the City and analyzed in the Galt 2030 General Plan EIR. The project site was anticipated for residential development under the existing LDR land use designation. Therefore, the proposed project would not involve a substantially increased demand on fire and police protection services relative to what was analyzed in the General Plan EIR. Additionally, the increase in demand for police protection services was found to result in less-than-significant impact in the Galt 2030 General Plan EIR. The project applicant would also be required to pay all applicable fees, including a development impact fee and public safety fee. The payment of fees would ensure that adequate fire and police protection services would be available to serve the proposed project, and the propose project would not require the construction of new or physically altered fire or police protection facilities, the construction of which could cause an environmental impact. Thus, the proposed project would result in a ***less-than-significant*** impact.

c. The project site is served by the Galt Joint Union Elementary School District (GJUESD) and the Galt Joint Union High School District. According to the Galt 2030 General Plan Existing Conditions, Galt High School and GJUESD are currently exceeding capacity; however, funding for school facilities is provided through State and local revenue sources. The applicant would be required to pay development impact fees in order to fund new facilities. The payment of development impact fees would be sufficient to ensure adequate school capacity is provided and a ***less-than-significant*** impact would occur.

d. Using an average persons per household value of 3.27 per residential unit, the proposed project would generate a population of 285 persons. The 2030 Galt General Plan requires five acres of parkland per 1,000 residents; therefore, the project would be required to

provide 1.43 acres of parkland. However, the proposed project would be subject to compliance with Section 18.64.080B of Galt's Municipal Code, which requires the applicant to pay a fee in-lieu of land dedication. Payment of in-lieu fees would be considered sufficient to ensure that adequate public parkland is provided for future residents, and a ***less-than-significant*** impact would occur.

e. The Galt 2030 General Plan anticipates increased demand for public facilities with growth in the City of Galt. The project site is currently designated for residential uses. An addition of 285 residents to the City of Galt would not be expected to result in the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service for any other public services. Therefore, a ***less-than-significant*** impact would occur.

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

Discussion

a,b. As discussed in Section XIV, Population & Housing, the proposed project would include 87 single-family residences, housing approximately 285 persons. Thus, an increase in demand on recreational facilities would occur. Section 18.64.080B of Galt's Municipal Code require developments that include subdivision of land to either dedicate parkland or pay in-lieu fees. Because the proposed project would not include the dedication of parkland, the project would be subject to the payment of in-lieu park fees, which would be used to fund park facilities throughout the City. The payment of such fees would ensure that adequate parkland be provided with the City, and existing recreational facilities would not experience impacts due to increased population growth. In addition, the proposed project would include a new Class I trail that would run diagonally through the project site and connect to the existing trail system to the north of the project site. Thus, the proposed project would result in a ***less-than-significant*** impact related to recreational facilities.

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

Discussion

a. The proposed project would include the development of the project site with 87 single-family residences and associated improvements. Primary access to the project site would be provided by a new southward extension of the planned intersection of Maria Way and Kost Road to the northwest of the site. An additional EVA would be constructed at the northeastern boundary of the site.

The Galt 2030 General Plan Circulation Element specifies minimum Level of Service (LOS) standards for all streets and intersections within the City of Galt's jurisdiction. Policy C-1.3, Level of Services, requires that roadway systems shall be developed and managed to maintain LOS E on all streets and intersections within a quarter-mile of State Routes, along A Street and C Street between SR 99 to the railroad tracks, and along Lincoln Highway between Pringle Avenue to Meladee Lane. A LOS D or better shall be developed on all other streets and intersections.

In order to determine the potential impact on surrounding roadways increased vehicle trips associated with operation proposed project, the Institute of Traffic Engineer's (ITE) Trip Generation Handbook was used to estimate weekday AM, PM, and daily trip generation forecasts for the proposed project. As shown in Table 10 below, implementation of the proposed project would be expected to result in 65 trips occurring during the AM peak hour and 87 trips occurring during the PM peak hour. However, given that the proposed project is consistent with the type and intensity anticipated by the City, traffic-related impacts for the project site have been analyzed in the General Plan EIR.[19]

Table 10
Weekday Project Trip Generation Rates and Estimates

Size	Rate	Daily Trips	AM Peak Hour				PM Peak Hour			
			Rate	In	Out	Total	Rate	In	Out	Total
87 units	9.52	**828**	0.75	16	49	**65**	1.00	55	32	**87**

Source: Institute of Transportation Engineers, 2012.

Therefore, the proposed project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities and a ***less-than-significant*** impact would occur.

[19] City of Galt. Environmental Impact Report for the 2030 Galt General Plan, Circulation and Transportation [pg. 5-12]. July 2008.

b. Section 15064.3 of the CEQA Guidelines provides specific considerations for evaluating a project's transportation impacts. Per Section 15064.3, analysis of vehicle miles traveled (VMT) attributable to a project is the most appropriate measure of transportation impacts. While a qualitative discussion of VMT has been provided below, the provisions of Section 15064.3 apply only prospectively; determination of impacts based on VTM is not required Statewide until July 1, 2020.

Per Section 15064.3(3), a lead agency may analyze a project's VMT qualitatively based on the availability of transit, proximity to destinations, etc. While changes to driving conditions that increase intersection delay are an important consideration for traffic operations and management, the method of analysis does not fully describe environmental effects associated with fuel consumption, emissions, and public health. Section 15064.3(3) changes the focus of transportation impact analysis in CEQA from measuring impact to drivers to measuring the impact of driving. Development of the proposed project would increase connectivity to the nearby neighborhoods and include pedestrian and bicycle infrastructure within the project site and along Kost Road. For example, the proposed project would include expanding the width of the bike lane along Kost Road to six feet. Additionally, pedestrian crosswalk improvements would be provided at the project site frontage and Kost Road. A Class I trail would also run diagonally through the project site and connect to the existing trail system, north of the project site across Kost Road. The inclusion of such features would encourage residents to use alternative transportation and, as a result, reduce VMT associated with the proposed project.

Furthermore, increased connectivity to the nearby neighborhoods would allow future residents access to the existing transit facilities available within the City of Galt. The Commuter Express is a form of public transportation which operates within South Sacramento County. The Commuter express includes two bus stop locations within the City of Galt; one stop located at City Hall, and another stop located at the Twin Cities Road Park and Ride. Additionally, the Highway 99 Express makes scheduled stops throughout the County, including one located in the City of Galt at City Hall. Access to multiple forms of public transportation would ultimately encourage residents to use alternative means of transportation to and from the project site.

Based on the above, the proposed project would not conflict or be inconsistent with CEQA Guidelines Section 15064.3(b), and a ***less-than-significant*** impact would occur.

c,d. Primary access to the project site would be provided by a new driveway at the planned Maria Way/Kost Road Intersection. The project driveway would be approximately 32 feet wide and would provide access to the site from Kost Road. The proposed circulation improvements would be subject to compliance with all applicable roadway design standards.

Sufficient emergency access is determined by factors such as the number of access points, the width of access roadways, and the width of internal roadways. The proposed project would include construction of an EVA at the northeastern portion of the site along Kost Road. The proposed internal roadways would allow sufficient emergency vehicle access throughout the project site. According to the Cosumnes Community Services District (CSD), wetlands/riparian corridors of creeks can create an unusual fire hazard and challenge to emergency responders. In compliance with Cosumnes CSD standards, the proposed project would include rolled curbs and gates with pipe bollards at the end of cul-de-sacs to allow adequate access to the Dry Creek corridor south of the project site.

Construction traffic associated with the proposed project would include heavy-duty vehicles which would share the area roadways with normal vehicle traffic, as well as transport of construction materials, and daily construction employee trips to and from the site. However, such heavy-duty truck traffic would only occur throughout the duration of construction activities and would cease upon buildout of the proposed subdivision. It should be noted that construction equipment associated with the proposed project would be staged on-site to prevent traffic conflicts on Kost Road. Given that increased construction traffic would be temporary in nature, construction traffic on local roadways would not result in significant hazards to the circulation system or restrict emergency vehicle access to the project site.

Based on the above, the project would not substantially increase hazards due to a design feature, or incompatible uses, or result in inadequate emergency access. Thus, a ***less-than significant*** impact would occur.

XVIII. 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:*	Potentially Significant Impact	Less-Than-Significant with Mitigation Incorporated	Less-Than-Significant Impact	No Impact
a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).	☐	✖	☐	☐
b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	✖	☐	☐

Discussion

a,b. As discussed in Section V, Cultural Resources, of this IS/MND, the Archaeological Resources Report prepared for the proposed project included a record search of the NCIC. In addition, a records search of the NAHC Sacred Lands File was requested on November 5, 2019. Per the NAHC Sacred Lands File, the site does not contain known tribal cultural resources. In addition, the field survey conducted by Alta Archaeological Consulting did not identify any indications of such resources.

In compliance with AB 52 (Public Resources Code Section 21080.3.1), a project notification letter was distributed to the chairpersons of the Wilton Rancheria and the Torres Martinez Desert Cahuilla Indian Tribe on August 1, 2019. Both tribes responded, requesting additional information regarding tribal cultural resources on the subject property. As a result, an Archaeological Survey Report was prepared for the proposed project by Alta Archaeological Consulting; however, the Archaeological Survey Report determined that known tribal cultural resources do not occur within the study area.

Based on the history of disturbance at the project site as a result of past development and agricultural uses, as well as the lack of identified tribal cultural resources at the site, tribal cultural resources are not expected to occur within the site. Nevertheless, the possibility exists that development of the proposed project could result in a substantial adverse change in the significance of a tribal cultural resource if previously unknown tribal cultural resources are uncovered during grading or other ground-disturbing activities. Thus, a ***potentially significant*** impact to tribal cultural resources could occur.

Mitigation Measure(s)

Implementation of the following mitigation measure would reduce the above potential impact to a *less-than-significant* level.

XVIII-1. Implement Mitigation Measures V-1 and V-2.

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

Discussion

a,c. Sewer and water service for the proposed project would be provided by the City by way of new connections to existing sewer and water lines located north of the site within Kost Road (see Figure 5). Stormwater draining off impervious surfaces such as roofs and paved surfaces within the project site would be captured by curb inlets and routed, by way of new underground drain pipes, to a new bio-retention basin in the southwest portion of the site. Treated runoff from the bio-retention basin would be routed to an existing 84-inch storm that flows directly to Dry Creek. Electricity utilities would be provided by SMUD, while natural gas utilities would be provided by PG&E, by way of connections to existing infrastructure located within the immediate project vicinity. Upsizing of utilities is not required for the proposed project, as the project is consistent with the General Plan and has been anticipated by the City.

The City of Galt's current wastewater treatment collection system approximately 79 miles of sewer mains and trunk sewers. The wastewater is collected through the sewer mains and trunk sewers, then conveyed to the City of Galt's wastewater treatment plant (WWTP), which is located approximately 3.5 miles northwest of the project site. The WWTP has a capacity of 3.0 million gallons per day (mgd) and is currently operating at 2.0 mgd.[20] Thus, the WWTP has a remaining capacity of approximately 1.0 mgd. According to the Wastewater Collection System Master Plan, the average per capita flow between 2004 and 2008 is 92 gallons per capita per day (gpcd).[21] Based on the average per capita flow rate, operation of the proposed project would contribute a total wastewater generation of

[20] City of Galt. *Wastewater Treatment Plant.* Available at: http://www.ci.galt.ca.us/city-departments/public-works/utilities-division/wastewater-services/wastewater-treatment-plant. Accessed October 2019.

[21] City of Galt. *Wastewater Collection System Master Plan* [pg. 4-8]. May 2010.

approximately 26,220 gallons per day (0.026 mgd). Therefore, the WWTP has adequate remaining capacity to accommodate the minor increase of wastewater flows.

Based on the above, the proposed project would result in a ***less-than-significant*** impact related to the relocation or construction of new or expanded water, wastewater treatment, or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects, and sufficient wastewater treatment capacity would be available to serve the project and other existing and planned development.

b. Water supplies for the project site are supplied by the City of Galt. Per the City's 2015 UWMP, the City of Galt relies upon groundwater from the Cosumnes Subbasin of the San Joaquin Valley Groundwater basin as the sole source of domestic potable water for current and future water demand. [22] The Cosumnes Subbasin is managed through the South Basin Groundwater Management Plan, which was adopted in 2011.

Per the 2015 UWMP, the City has eight active wells to extract groundwater from the Cosumnes Subbasin. The wells have capacities ranging from 600 to 1,900 gallons per minute (gpm), with a total capacity of approximately 10,400 gpm. The depth to groundwater is approximately 80 feet to 100 feet, with the wells drawing water from depths ranging from 652 feet to 1,539 feet.

According to the 2015 UWMP, the estimated baseline average per capita per day (gpcd) water demand between the years 2008 and 2009 was approximately 217 gallons per day per capita. The 2020 water demand target for the City of Galt is approximately 174 gpcd. Per the 2015 UWMP, the City can supply all of the water demands with groundwater from the Consumnes Subbasin through the year 2040. Furthermore, the City is projected to have sufficient water supplies to meet projected water needs through 2040 during normal, dry, and multiple dry years. The UWMP notes that water usage could be reduced by over 30 percent should conservation measures be necessary. The water demand projections presented in the 2015 UWMP are based on buildout of the City's General Plan, including the project site. Given that the proposed project is consistent with the current General Plan land use designation for the site, water demand associated with buildout of the project site has been anticipated by the City and accounted for in regional planning efforts, including the 2015 UWMP. Although the project is expected to increase population by 285 new residents, such growth has been anticipated by the City and analyzed in the UWMP. As such, the City would have adequate supply to accommodate the proposed project and meet target demands.

Considering the above, the City would have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years, and a ***less-than-significant*** impact would occur.

d,e. Solid waste, recyclable materials, and compostable material collection within the City of Galt is operated by California Waste Recovery Systems (CWRS). CWRS is a private franchise that can haul solid waste to any approved landfill facility in the area. The Sacramento County Landfill located on Kiefer Boulevard has been recently expanded. The Sacramento County Landfill covers 1,084 acres of land; 660 acres are permitted for disposal. The sites permit allows the landfill to receive a maximum of 10,815 tons of waste

[22] City of Galt. *2015 Urban Water Management Plan Update*. June 2016.

per day. According to the California Department of Resources Recycling and Recovery (CalRecycle), the Sacramento County Landfill has a remaining capacity of 112,900,000 cubic yards out of a total permitted capacity of 117,400,000, or 96 percent remaining capacity.[23]

Because the proposed project is consistent with the project site's current General Plan land use designations, construction and operation of the proposed project would not result in increased solid waste generation beyond what has been previously anticipated by the General Plan EIR. The nature of the proposed project would not be expected to generate substantial amounts of solid waste. In addition, the project would be required to comply with all applicable provisions of Chapter 8.16, Garbage, of the City's Municipal Code.

Therefore, the proposed project would not 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 and would comply with federal, State, and local management and reduction statutes and regulations related to solid waste. Therefore, a ***less-than-significant*** impact would occur.

[23] California Department of Resources Recycling and Recovery (CalRecycle). *Facility/Site Summary Details: Sacramento County Landfill (Kiefer) (34-AA-0001)*. Available at: https://www2.calrecycle.ca.gov/swfacilities/Directory/34-AA-0001/. Accessed October 2019.

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

Discussion

a-d. According to the CAL FIRE Fire and Resource Assessment Program, the project site is not located within or near a State responsibility area or lands classified as a Very High Fire Hazard Severity Zone (VHFHSZ).[24] The nearest VHFHSZ is approximately six miles east of the project site. Therefore, the proposed project would not be subject to risks related to wildfires, and a ***less-than-significant*** impact would occur.

[24] California Department of Forestry and Fire Protection. *Sacramento County, Very High Fire Hazard Severity Zones in LRA*. July 30, 2008.

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

Discussion

a. As discussed in Section IV, Biological Resources, of this IS/MND, while a limited potential exists for special-status plants and wildlife, and nesting raptors and migratory birds protected by the MBTA, to occur on-site, Mitigation Measures IV-1 through IV-10 would ensure that any impacts related to special-status species would be reduced to less-than-significant levels. The project site does not contain any known historic or prehistoric resources. Thus, implementation of the proposed project is not anticipated to have the potential to result in impacts related to historic or prehistoric resources. Nevertheless, Mitigation Measures V-1 and V-2 would ensure that in the event that previously unknown archaeological resources are discovered within the project site, such resources would be protected in compliance with the requirements of CEQA and other State standards.

Considering the above, the proposed project would not degrade the quality of the environment, substantially reduce or impact the habitat of fish or wildlife species, cause fish or wildlife populations 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. Therefore, a ***less-than-significant*** impact would occur.

b. The proposed project, in conjunction with other development within the City of Galt, could incrementally contribute to cumulative impacts in the area. However, as demonstrated in this IS/MND, all potential environmental impacts that could occur as a result of project implementation would be reduced to less-than-significant levels through compliance with the mitigation measures included in this IS/MND, as well as applicable General Plan policies, Municipal Code standards, and other applicable local and State regulations. In addition, the proposed project would be consistent with the site's current land use designation. Accordingly, buildout of the site with residential uses and associated cumulative impacts has been analyzed within the General Plan EIR.

As noted in Section 21083.3 of the CEQA Guidelines, where a project is consistent with general plan designations for the site, and an EIR has been certified with respect to that general plan, the analysis of potential environmental impacts resulting from the individual project should focus on those effects that are peculiar to the proposed project. As demonstrated throughout this IS/MND, the proposed project would not result in any significant environmental impacts peculiar to the project and, thus, the proposed project would not contribute any new or additional impacts not previously analyzed in the General Plan EIR. Therefore, when viewed in conjunction with other closely related past, present, or reasonably foreseeable future projects, development of the proposed project would not result in a cumulatively considerable contribution to cumulative impacts in the City of Galt, and the project's incremental contribution to cumulative impacts would be ***less than significant***.

c. As described in this IS/MND, the proposed project would comply with all applicable General Plan policies, Municipal Code standards, other applicable local and State regulations, in addition to the mitigation measures included herein. In addition, as discussed in Section III, Air Quality, Section IX, Hazards and Hazardous Materials, and Section XIII, Noise, of this IS/MND, the proposed project would not cause substantial effects to human beings, including effects related to exposure to air pollutants, hazardous materials, traffic, and noise. Therefore, the proposed project would result in a ***less-than-significant*** impact.

APPENDIX A

AIR QUALITY AND GREENHOUSE GAS EMISSIONS MODELING RESULTS

Cardoso II Project

Sacramento Metropolitan AQMD Air District, Mitigation Report

Construction Mitigation Summary

Phase	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Demolition	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

OFFROAD Equipment Mitigation

Equipment Type	Fuel Type	Tier	Number Mitigated	Total Number of Equipment	DPF	Oxidation Catalyst
Air Compressors	Diesel	No Change	0	1	No Change	0.00
Concrete/Industrial Saws	Diesel	No Change	0	1	No Change	0.00
Cranes	Diesel	No Change	0	1	No Change	0.00
Excavators	Diesel	No Change	0	5	No Change	0.00
Forklifts	Diesel	No Change	0	3	No Change	0.00
Generator Sets	Diesel	No Change	0	1	No Change	0.00
Graders	Diesel	No Change	0	1	No Change	0.00
Pavers	Diesel	No Change	0	2	No Change	0.00
Paving Equipment	Diesel	No Change	0	2	No Change	0.00
Rollers	Diesel	No Change	0	2	No Change	0.00
Rubber Tired Dozers	Diesel	No Change	0	6	No Change	0.00
Scrapers	Diesel	No Change	0	2	No Change	0.00
Tractors/Loaders/Backhoes	Diesel	No Change	0	9	No Change	0.00
Welders	Diesel	No Change	0	1	No Change	0.00

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Unmitigated tons/yr						Unmitigated mt/yr					
Air Compressors	5.70200E-002	3.95990E-001	4.73840E-001	7.70000E-004	2.43500E-002	2.43500E-002	0.00000E+000	6.65123E+001	6.65123E+001	4.60000E-003	0.00000E+000	6.66273E+001
Concrete/Industrial Saws	4.18000E-003	3.29900E-002	3.68700E-002	6.00000E-005	1.98000E-003	1.98000E-003	0.00000E+000	5.37656E+000	5.37656E+000	3.40000E-004	0.00000E+000	5.38508E+000
Cranes	9.34100E-002	1.08727E+000	4.52310E-001	1.31000E-003	4.45600E-002	4.09900E-002	0.00000E+000	1.15544E+002	1.15544E+002	3.73700E-002	0.00000E+000	1.16479E+002
Excavators	1.10200E-002	1.08570E-001	1.47050E-001	2.30000E-004	5.26000E-003	4.84000E-003	0.00000E+000	2.04165E+001	2.04165E+001	6.60000E-003	0.00000E+000	2.05816E+001
Forklifts	9.99100E-002	9.12700E-001	9.11510E-001	1.19000E-003	6.44000E-002	5.92500E-002	0.00000E+000	1.04949E+002	1.04949E+002	3.39400E-002	0.00000E+000	1.05797E+002
Generator Sets	9.33000E-002	8.23850E-001	9.60340E-001	1.71000E-003	4.36800E-002	4.36800E-002	0.00000E+000	1.47237E+002	1.47237E+002	7.53000E-003	0.00000E+000	1.47425E+002
Graders	3.57000E-003	4.74400E-002	1.36100E-002	5.00000E-005	1.52000E-003	1.40000E-003	0.00000E+000	4.37298E+000	4.37298E+000	1.41000E-003	0.00000E+000	4.40834E+000
Pavers	3.94000E-003	4.21500E-002	4.34700E-002	7.00000E-005	2.05000E-003	1.89000E-003	0.00000E+000	6.19524E+000	6.19524E+000	2.00000E-003	0.00000E+000	6.24533E+000
Paving Equipment	3.11000E-003	3.21200E-002	3.80200E-002	6.00000E-005	1.61000E-003	1.48000E-003	0.00000E+000	5.36865E+000	5.36865E+000	1.74000E-003	0.00000E+000	5.41206E+000
Rollers	3.12000E-003	3.12200E-002	2.84000E-002	4.00000E-005	1.99000E-003	1.83000E-003	0.00000E+000	3.45728E+000	3.45728E+000	1.12000E-003	0.00000E+000	3.48523E+000
Rubber Tired Dozers	5.39700E-002	5.66610E-001	2.06580E-001	4.30000E-004	2.77500E-002	2.55300E-002	0.00000E+000	3.75276E+001	3.75276E+001	1.21400E-002	0.00000E+000	3.78311E+001
Scrapers	1.48900E-002	1.76280E-001	1.11880E-001	2.30000E-004	6.88000E-003	6.33000E-003	0.00000E+000	1.99628E+001	1.99628E+001	6.46000E-003	0.00000E+000	2.01242E+001
Tractors/Loaders/Backhoes	1.36200E-001	1.37742E+000	1.64653E+000	2.26000E-003	8.11900E-002	7.46900E-002	0.00000E+000	1.98984E+002	1.98984E+002	6.43600E-002	0.00000E+000	2.00593E+002
Welders	7.90300E-002	3.93000E-001	4.48640E-001	6.70000E-004	1.92300E-002	1.92300E-002	0.00000E+000	4.90315E+001	4.90315E+001	6.42000E-003	0.00000E+000	4.91919E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	Mitigated tons/yr						Mitigated mt/yr					
Air Compressors	5.70200E-002	3.95990E-001	4.73840E-001	7.70000E-004	2.43500E-002	2.43500E-002	0.00000E+000	6.65122E+001	6.65122E+001	4.60000E-003	0.00000E+000	6.66273E+001
Concrete/Industrial Saws	4.18000E-003	3.29900E-002	3.68700E-002	6.00000E-005	1.98000E-003	1.98000E-003	0.00000E+000	5.37656E+000	5.37656E+000	3.40000E-004	0.00000E+000	5.38507E+000
Cranes	9.34100E-002	1.08726E+000	4.52300E-001	1.31000E-003	4.45600E-002	4.09900E-002	0.00000E+000	1.15544E+002	1.15544E+002	3.73700E-002	0.00000E+000	1.16479E+002
Excavators	1.10200E-002	1.08570E-001	1.47050E-001	2.30000E-004	5.26000E-003	4.84000E-003	0.00000E+000	2.04165E+001	2.04165E+001	6.60000E-003	0.00000E+000	2.05815E+001
Forklifts	9.99100E-002	9.12700E-001	9.11510E-001	1.19000E-003	6.44000E-002	5.92500E-002	0.00000E+000	1.04949E+002	1.04949E+002	3.39400E-002	0.00000E+000	1.05797E+002
Generator Sets	9.33000E-002	8.23850E-001	9.60340E-001	1.71000E-003	4.36800E-002	4.36800E-002	0.00000E+000	1.47236E+002	1.47236E+002	7.53000E-003	0.00000E+000	1.47425E+002
Graders	3.57000E-003	4.74400E-002	1.36100E-002	5.00000E-005	1.52000E-003	1.40000E-003	0.00000E+000	4.37298E+000	4.37298E+000	1.41000E-003	0.00000E+000	4.40834E+000
Pavers	3.94000E-003	4.21500E-002	4.34700E-002	7.00000E-005	2.05000E-003	1.89000E-003	0.00000E+000	6.19523E+000	6.19523E+000	2.00000E-003	0.00000E+000	6.24532E+000
Paving Equipment	3.11000E-003	3.21200E-002	3.80200E-002	6.00000E-005	1.61000E-003	1.48000E-003	0.00000E+000	5.36864E+000	5.36864E+000	1.74000E-003	0.00000E+000	5.41205E+000
Rollers	3.12000E-003	3.12200E-002	2.84000E-002	4.00000E-005	1.99000E-003	1.83000E-003	0.00000E+000	3.45727E+000	3.45727E+000	1.12000E-003	0.00000E+000	3.48523E+000
Rubber Tired Dozers	5.39700E-002	5.66610E-001	2.06580E-001	4.30000E-004	2.77500E-002	2.55300E-002	0.00000E+000	3.75276E+001	3.75276E+001	1.21400E-002	0.00000E+000	3.78310E+001
Scrapers	1.48900E-002	1.76280E-001	1.11880E-001	2.30000E-004	6.88000E-003	6.33000E-003	0.00000E+000	1.99628E+001	1.99628E+001	6.46000E-003	0.00000E+000	2.01242E+001
Tractors/Loaders/Backhoes	1.36200E-001	1.37742E+000	1.64653E+000	2.26000E-003	8.11900E-002	7.46900E-002	0.00000E+000	1.98984E+002	1.98984E+002	6.43600E-002	0.00000E+000	2.00593E+002
Welders	7.90300E-002	3.93000E-001	4.48640E-001	6.70000E-004	1.92300E-002	1.92300E-002	0.00000E+000	4.90314E+001	4.90314E+001	6.42000E-003	0.00000E+000	4.91918E+001

Equipment Type	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Air Compressors	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.20279E-006	1.20279E-006	0.00000E+000	0.00000E+000	1.20071E-006
Concrete/Industrial Saws	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.85698E-006
Cranes	0.00000E+000	9.19735E-006	2.21087E-005	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.21165E-006	1.21165E-006	0.00000E+000	0.00000E+000	1.20194E-006
Excavators	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	9.79600E-007	9.79600E-007	0.00000E+000	0.00000E+000	1.45761E-006
Forklifts	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.23870E-006	1.23870E-006	0.00000E+000	0.00000E+000	1.13425E-006
Generator Sets	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15460E-006	1.15460E-006	0.00000E+000	0.00000E+000	1.22096E-006
Graders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000
Pavers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.61414E-006	1.61414E-006	0.00000E+000	0.00000E+000	1.60120E-006
Paving Equipment	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.86267E-006	1.86267E-006	0.00000E+000	0.00000E+000	1.84773E-006
Rollers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	2.89245E-006	2.89245E-006	0.00000E+000	0.00000E+000	0.00000E+000
Rubber Tired Dozers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.06588E-006	1.06588E-006	0.00000E+000	0.00000E+000	1.05733E-006
Scrapers	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.50279E-006	1.50279E-006	0.00000E+000	0.00000E+000	1.49074E-006
Tractors/Loaders/Backhoes	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.15587E-006	1.15587E-006	0.00000E+000	0.00000E+000	1.19645E-006
Welders	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	0.00000E+000	1.01975E-006	1.01975E-006	0.00000E+000	0.00000E+000	1.21971E-006

Fugitive Dust Mitigation

Yes/No	Mitigation Measure	Mitigation Input		Mitigation Input		Mitigation Input	
No	Soil Stabilizer for unpaved Roads	PM10 Reduction		PM2.5 Reduction			
No	Replace Ground Cover of Area Disturbed	PM10 Reduction		PM2.5 Reduction			
No	Water Exposed Area	PM10 Reduction		PM2.5 Reduction		Frequency (per day)	

No	Unpaved Road Mitigation	Moisture Content %		Vehicle Speed (mph)	0.00		
No	Clean Paved Road	% PM Reduction	0.00				

		Unmitigated		Mitigated		Percent Reduction	
Phase	Source	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Architectural Coating	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Architectural Coating	Roads	0.10	0.03	0.10	0.03	0.00	0.00
Building Construction	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Building Construction	Roads	0.63	0.17	0.63	0.17	0.00	0.00
Demolition	Fugitive Dust	0.04	0.01	0.04	0.01	0.00	0.00
Demolition	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Grading	Fugitive Dust	0.06	0.03	0.06	0.03	0.00	0.00
Grading	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Fugitive Dust	0.00	0.00	0.00	0.00	0.00	0.00
Paving	Roads	0.00	0.00	0.00	0.00	0.00	0.00
Site Preparation	Fugitive Dust	0.14	0.07	0.14	0.07	0.00	0.00
Site Preparation	Roads	0.00	0.00	0.00	0.00	0.00	0.00

Operational Percent Reduction Summary

Category	ROG	NOx	CO	SO2	Exhaust PM10	Exhaust PM2.5	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction												
Architectural Coating	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Consumer Products	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electricity	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100.00	100.00	100.00	100.00	100.00
Hearth	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Landscaping	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.70	1.05	1.53	1.93	1.74	1.71	0.00	1.88	1.88	1.59	0.00	1.88
Natural Gas	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Indoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Water Outdoor	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Operational Mobile Mitigation

Project Setting: Low Density Suburban

Mitigation	Category	Measure	% Reduction	Input Value 1	Input Value 2	Input Value
No	Land Use	Increase Density	0.00	0.00	0.00	
No	Land Use	Increase Diversity	0.10	0.32		
No	Land Use	Improve Walkability Design	0.00	0.00		
No	Land Use	Improve Destination Accessibility	0.00	0.00		
No	Land Use	Increase Transit Accessibility	0.25	0.00		
No	Land Use	Integrate Below Market Rate Housing	0.00	0.00		
	Land Use	Land Use SubTotal	0.00			

Yes	Neighborhood Enhancements	Improve Pedestrian Network	2.00	Project Site and Connecting Off-Site		
No	Neighborhood Enhancements	Provide Traffic Calming Measures	0.00			
No	Neighborhood Enhancements	Implement NEV Network	0.00			
	Neighborhood Enhancements	Neighborhood Enhancements Subtotal	0.02			
No	Parking Policy Pricing	Limit Parking Supply	0.00	0.00		
No	Parking Policy Pricing	Unbundle Parking Costs	0.00	0.00		
No	Parking Policy Pricing	On-street Market Pricing	0.00	0.00		
	Parking Policy Pricing	Parking Policy Pricing Subtotal	0.00			
No	Transit Improvements	Provide BRT System	0.00	0.00		
No	Transit Improvements	Expand Transit Network	0.00	0.00		
No	Transit Improvements	Increase Transit Frequency	0.00		0.00	
	Transit Improvements	Transit Improvements Subtotal	0.00			
		Land Use and Site Enhancement Subtotal	0.02			
No	Commute	Implement Trip Reduction Program				
No	Commute	Transit Subsidy				
No	Commute	Implement Employee Parking "Cash Out"	3.00			
No	Commute	Workplace Parking Charge		0.00		
No	Commute	Encourage Telecommuting and Alternative Work Schedules	0.00			
No	Commute	Market Commute Trip Reduction Option	0.00			
No	Commute	Employee Vanpool/Shuttle	0.00		2.00	
No	Commute	Provide Ride Sharing Program	5.00			
	Commute	Commute Subtotal	0.00			

No	School Trip	Implement School Bus Program	0.00			
		Total VMT Reduction	0.02			

Area Mitigation

Measure Implemented	Mitigation Measure	Input Value
No	Only Natural Gas Hearth	
No	No Hearth	
No	Use Low VOC Cleaning Supplies	
No	Use Low VOC Paint (Residential Interior)	100.00
No	Use Low VOC Paint (Residential Exterior)	100.00
No	Use Low VOC Paint (Non-residential Interior)	100.00
No	Use Low VOC Paint (Non-residential Exterior)	100.00
No	Use Low VOC Paint (Parking)	100.00
No	% Electric Lawnmower	0.00
No	% Electric Leafblower	0.00
No	% Electric Chainsaw	0.00

Energy Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Exceed Title 24	0.00	
No	Install High Efficiency Lighting	0.00	
Yes	On-site Renewable	0.00	100.00

Appliance Type	Land Use Subtype	% Improvement
ClothWasher		30.00
DishWasher		15.00
Fan		50.00
Refrigerator		15.00

Water Mitigation Measures

Measure Implemented	Mitigation Measure	Input Value 1	Input Value 2
No	Apply Water Conservation on Strategy		
No	Use Reclaimed Water		
No	Use Grey Water		
No	Install low-flow bathroom faucet	32.00	
No	Install low-flow Kitchen faucet	18.00	
No	Install low-flow Toilet	20.00	
No	Install low-flow Shower	20.00	
No	Turf Reduction		
No	Use Water Efficient Irrigation Systems	6.10	
No	Water Efficient Landscape		

Solid Waste Mitigation

Mitigation Measures	Input Value

Institute Recycling and Composting Services Percent Reduction in Waste Disposed	

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	12.20	Acre	12.20	531,432.00	0
Single Family Housing	87.00	Dwelling Unit	24.62	156,600.00	232

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2023
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	387.1	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Intensity factor for CO2 adjusted based on SMUD's RPS calculator.

Land Use - Applicant provided

Construction Phase - Applicant provided

Demolition - Per google earth

Grading - Applicant provided

Vehicle Trips - Per ITE

Mobile Land Use Mitigation - Applicant provided

Area Mitigation -

Energy Mitigation - Per building code requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	521.00
tblConstructionPhase	NumDays	740.00	521.00
tblConstructionPhase	NumDays	50.00	20.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	NumDays	55.00	15.00
tblConstructionPhase	NumDays	30.00	15.00
tblGrading	AcresOfGrading	37.50	36.80
tblLandUse	LotAcreage	28.25	24.62
tblProjectCharacteristics	CO2IntensityFactor	590.31	387.1
tblVehicleTrips	ST_TR	9.91	9.52
tblVehicleTrips	SU_TR	8.62	9.52

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.5194	2.9368	2.3812	5.5600e-003	0.3944	0.1255	0.5198	0.1496	0.1174	0.2670	0.0000	500.3251	500.3251	0.0787	0.0000	502.2931
2021	0.9822	3.8461	3.7535	9.7400e-003	0.3665	0.1430	0.5095	0.0992	0.1352	0.2343	0.0000	880.5798	880.5798	0.0986	0.0000	883.0451
2022	0.5677	2.0439	2.1074	5.5900e-003	0.2139	0.0706	0.2845	0.0579	0.0668	0.1247	0.0000	505.6462	505.6462	0.0562	0.0000	507.0503
Maximum	**0.9822**	**3.8461**	**3.7535**	**9.7400e-003**	**0.3944**	**0.1430**	**0.5198**	**0.1496**	**0.1352**	**0.2670**	**0.0000**	**880.5798**	**880.5798**	**0.0986**	**0.0000**	**883.0451**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2020	0.5194	2.9368	2.3812	5.5600e-003	0.3944	0.1255	0.5198	0.1496	0.1174	0.2670	0.0000	500.3248	500.3248	0.0787	0.0000	502.2928
2021	0.9822	3.8461	3.7535	9.7400e-003	0.3665	0.1430	0.5095	0.0992	0.1352	0.2343	0.0000	880.5794	880.5794	0.0986	0.0000	883.0447
2022	0.5677	2.0439	2.1074	5.5900e-003	0.2139	0.0706	0.2845	0.0579	0.0668	0.1247	0.0000	505.6460	505.6460	0.0562	0.0000	507.0500
Maximum	**0.9822**	**3.8461**	**3.7535**	**9.7400e-003**	**0.3944**	**0.1430**	**0.5198**	**0.1496**	**0.1352**	**0.2670**	**0.0000**	**880.5794**	**880.5794**	**0.0986**	**0.0000**	**883.0447**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**5-1-2020**	**7-31-2020**	1.2887	1.2887
2	**8-1-2020**	**10-31-2020**	1.2926	1.2926
3	**11-1-2020**	**1-31-2021**	1.2934	1.2934
4	**2-1-2021**	**4-30-2021**	1.1782	1.1782
5	**5-1-2021**	**7-31-2021**	1.2130	1.2130
6	**8-1-2021**	**10-31-2021**	1.2155	1.2155
7	**11-1-2021**	**1-31-2022**	1.1893	1.1893
8	**2-1-2022**	**4-30-2022**	1.0890	1.0890
9	**5-1-2022**	**7-31-2022**	1.1215	1.1215
10	**8-1-2022**	**9-30-2022**	0.0419	0.0419
		Highest	1.2934	1.2934

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7784	0.0104	0.8976	5.0000e-005		4.9700e-003	4.9700e-003		4.9700e-003	4.9700e-003	0.0000	1.4659	1.4659	1.4100e-003	0.0000	1.5011
Energy	0.0121	0.1036	0.0441	6.6000e-004		8.3700e-003	8.3700e-003		8.3700e-003	8.3700e-003	0.0000	248.9282	248.9282	0.0120	4.2000e-003	250.4783
Mobile	0.2228	0.9156	2.6324	8.8000e-003	0.7923	6.8800e-003	0.7992	0.2124	6.4200e-003	0.2188	0.0000	809.6961	809.6961	0.0364	0.0000	810.6059
Waste						0.0000	0.0000		0.0000	0.0000	16.9538	0.0000	16.9538	1.0019	0.0000	42.0023
Water						0.0000	0.0000		0.0000	0.0000	2.0055	7.1553	9.1608	7.4400e-003	4.4700e-003	10.6794
Total	**1.0133**	**1.0295**	**3.5741**	**9.5100e-003**	**0.7923**	**0.0202**	**0.8126**	**0.2124**	**0.0198**	**0.2321**	**18.9593**	**1,067.2454**	**1,086.2047**	**1.0591**	**8.6700e-003**	**1,115.2671**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.7784	0.0104	0.8976	5.0000e-005		4.9700e-003	4.9700e-003		4.9700e-003	4.9700e-003	0.0000	1.4659	1.4659	1.4100e-003	0.0000	1.5011
Energy	0.0121	0.1036	0.0441	6.6000e-004		8.3700e-003	8.3700e-003		8.3700e-003	8.3700e-003	0.0000	119.9415	119.9415	2.3000e-003	2.2000e-003	120.6542
Mobile	0.2213	0.9060	2.5920	8.6300e-003	0.7765	6.7600e-003	0.7833	0.2081	6.3100e-003	0.2144	0.0000	794.4993	794.4993	0.0358	0.0000	795.3947
Waste						0.0000	0.0000		0.0000	0.0000	16.9538	0.0000	16.9538	1.0019	0.0000	42.0023
Water						0.0000	0.0000		0.0000	0.0000	2.0055	7.1553	9.1608	7.4400e-003	4.4700e-003	10.6794
Total	**1.0118**	**1.0199**	**3.5337**	**9.3400e-003**	**0.7765**	**0.0201**	**0.7966**	**0.2081**	**0.0197**	**0.2278**	**18.9593**	**923.0619**	**942.0212**	**1.0489**	**6.6700e-003**	**970.2318**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.15**	**0.93**	**1.13**	**1.79**	**2.00**	**0.59**	**1.96**	**2.00**	**0.56**	**1.88**	**0.00**	**13.51**	**13.27**	**0.97**	**23.07**	**13.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2020	5/28/2020	5	20	
2	Site Preparation	Site Preparation	5/29/2020	6/18/2020	5	15	
3	Grading	Grading	6/19/2020	7/9/2020	5	15	
4	Paving	Paving	7/10/2020	7/30/2020	5	15	
5	Building Construction	Building Construction	8/1/2020	8/1/2022	5	521	
6	Architectural Coating	Architectural Coating	8/15/2020	8/15/2022	5	521	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 36.8

Acres of Paving: 12.2

Residential Indoor: 317,115; Residential Outdoor: 105,705; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 31,886 (Architectural Coating – sqft)

<u>OffRoad Equipment</u>

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	321.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	255.00	96.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	51.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0362	0.0000	0.0362	5.4900e-003	0.0000	5.4900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2386
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**	**0.0362**	**0.0166**	**0.0528**	**5.4900e-003**	**0.0154**	**0.0209**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2386**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2300e-003	0.0461	0.0104	1.3000e-004	2.7100e-003	1.7000e-004	2.8700e-003	7.4000e-004	1.6000e-004	9.0000e-004	0.0000	12.2803	12.2803	7.1000e-004	0.0000	12.2981
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	3.8000e-004	4.1500e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9761	0.9761	3.0000e-005	0.0000	0.9768
Total	**1.7900e-003**	**0.0465**	**0.0146**	**1.4000e-004**	**3.8100e-003**	**1.8000e-004**	**3.9800e-003**	**1.0300e-003**	**1.7000e-004**	**1.2000e-003**	**0.0000**	**13.2564**	**13.2564**	**7.4000e-004**	**0.0000**	**13.2749**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0362	0.0000	0.0362	5.4900e-003	0.0000	5.4900e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0331	0.3320	0.2175	3.9000e-004		0.0166	0.0166		0.0154	0.0154	0.0000	33.9986	33.9986	9.6000e-003	0.0000	34.2385
Total	**0.0331**	**0.3320**	**0.2175**	**3.9000e-004**	**0.0362**	**0.0166**	**0.0528**	**5.4900e-003**	**0.0154**	**0.0209**	**0.0000**	**33.9986**	**33.9986**	**9.6000e-003**	**0.0000**	**34.2385**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.2300e-003	0.0461	0.0104	1.3000e-004	2.7100e-003	1.7000e-004	2.8700e-003	7.4000e-004	1.6000e-004	9.0000e-004	0.0000	12.2803	12.2803	7.1000e-004	0.0000	12.2981
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	3.8000e-004	4.1500e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9761	0.9761	3.0000e-005	0.0000	0.9768
Total	**1.7900e-003**	**0.0465**	**0.0146**	**1.4000e-004**	**3.8100e-003**	**1.8000e-004**	**3.9800e-003**	**1.0300e-003**	**1.7000e-004**	**1.2000e-003**	**0.0000**	**13.2564**	**13.2564**	**7.4000e-004**	**0.0000**	**13.2749**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1355	0.0000	0.1355	0.0745	0.0000	0.0745	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.3181	0.1614	2.9000e-004		0.0165	0.0165		0.0152	0.0152	0.0000	25.0730	25.0730	8.1100e-003	0.0000	25.2757
Total	**0.0306**	**0.3181**	**0.1614**	**2.9000e-004**	**0.1355**	**0.0165**	**0.1520**	**0.0745**	**0.0152**	**0.0896**	**0.0000**	**25.0730**	**25.0730**	**8.1100e-003**	**0.0000**	**25.2757**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.4000e-004	3.7400e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8785	0.8785	2.0000e-005	0.0000	0.8791
Total	**5.0000e-004**	**3.4000e-004**	**3.7400e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**1.0000e-003**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8785**	**0.8785**	**2.0000e-005**	**0.0000**	**0.8791**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1355	0.0000	0.1355	0.0745	0.0000	0.0745	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0306	0.3181	0.1614	2.9000e-004		0.0165	0.0165		0.0152	0.0152	0.0000	25.0730	25.0730	8.1100e-003	0.0000	25.2757
Total	**0.0306**	**0.3181**	**0.1614**	**2.9000e-004**	**0.1355**	**0.0165**	**0.1520**	**0.0745**	**0.0152**	**0.0896**	**0.0000**	**25.0730**	**25.0730**	**8.1100e-003**	**0.0000**	**25.2757**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.0000e-004	3.4000e-004	3.7400e-003	1.0000e-005	9.9000e-004	1.0000e-005	1.0000e-003	2.6000e-004	1.0000e-005	2.7000e-004	0.0000	0.8785	0.8785	2.0000e-005	0.0000	0.8791
Total	**5.0000e-004**	**3.4000e-004**	**3.7400e-003**	**1.0000e-005**	**9.9000e-004**	**1.0000e-005**	**1.0000e-003**	**2.6000e-004**	**1.0000e-005**	**2.7000e-004**	**0.0000**	**0.8785**	**0.8785**	**2.0000e-005**	**0.0000**	**0.8791**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0647	0.0000	0.0647	0.0269	0.0000	0.0269	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0334	0.3765	0.2397	4.7000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	40.8632	40.8632	0.0132	0.0000	41.1936
Total	**0.0334**	**0.3765**	**0.2397**	**4.7000e-004**	**0.0647**	**0.0163**	**0.0810**	**0.0269**	**0.0150**	**0.0419**	**0.0000**	**40.8632**	**40.8632**	**0.0132**	**0.0000**	**41.1936**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	3.8000e-004	4.1500e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9761	0.9761	3.0000e-005	0.0000	0.9768
Total	**5.6000e-004**	**3.8000e-004**	**4.1500e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9761**	**0.9761**	**3.0000e-005**	**0.0000**	**0.9768**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0647	0.0000	0.0647	0.0269	0.0000	0.0269	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0334	0.3765	0.2397	4.7000e-004		0.0163	0.0163		0.0150	0.0150	0.0000	40.8632	40.8632	0.0132	0.0000	41.1936
Total	**0.0334**	**0.3765**	**0.2397**	**4.7000e-004**	**0.0647**	**0.0163**	**0.0810**	**0.0269**	**0.0150**	**0.0419**	**0.0000**	**40.8632**	**40.8632**	**0.0132**	**0.0000**	**41.1936**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.6000e-004	3.8000e-004	4.1500e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9761	0.9761	3.0000e-005	0.0000	0.9768
Total	**5.6000e-004**	**3.8000e-004**	**4.1500e-003**	**1.0000e-005**	**1.1000e-003**	**1.0000e-005**	**1.1100e-003**	**2.9000e-004**	**1.0000e-005**	**3.0000e-004**	**0.0000**	**0.9761**	**0.9761**	**3.0000e-005**	**0.0000**	**0.9768**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0102	0.1055	0.1099	1.7000e-004		5.6500e-003	5.6500e-003		5.1900e-003	5.1900e-003	0.0000	15.0212	15.0212	4.8600e-003	0.0000	15.1426
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0102**	**0.1055**	**0.1099**	**1.7000e-004**		**5.6500e-003**	**5.6500e-003**		**5.1900e-003**	**5.1900e-003**	**0.0000**	**15.0212**	**15.0212**	**4.8600e-003**	**0.0000**	**15.1426**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	2.8000e-004	3.1100e-003	1.0000e-005	8.3000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.7321	0.7321	2.0000e-005	0.0000	0.7326
Total	**4.2000e-004**	**2.8000e-004**	**3.1100e-003**	**1.0000e-005**	**8.3000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.7321**	**0.7321**	**2.0000e-005**	**0.0000**	**0.7326**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0102	0.1055	0.1099	1.7000e-004		5.6500e-003	5.6500e-003		5.1900e-003	5.1900e-003	0.0000	15.0212	15.0212	4.8600e-003	0.0000	15.1426
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0102**	**0.1055**	**0.1099**	**1.7000e-004**		**5.6500e-003**	**5.6500e-003**		**5.1900e-003**	**5.1900e-003**	**0.0000**	**15.0212**	**15.0212**	**4.8600e-003**	**0.0000**	**15.1426**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.2000e-004	2.8000e-004	3.1100e-003	1.0000e-005	8.3000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.3000e-004	0.0000	0.7321	0.7321	2.0000e-005	0.0000	0.7326
Total	**4.2000e-004**	**2.8000e-004**	**3.1100e-003**	**1.0000e-005**	**8.3000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.3000e-004**	**0.0000**	**0.7321**	**0.7321**	**2.0000e-005**	**0.0000**	**0.7326**

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1155	1.0456	0.9182	1.4700e-003		0.0609	0.0609		0.0572	0.0572	0.0000	126.2274	126.2274	0.0308	0.0000	126.9973
Total	**0.1155**	**1.0456**	**0.9182**	**1.4700e-003**		**0.0609**	**0.0609**		**0.0572**	**0.0572**	**0.0000**	**126.2274**	**126.2274**	**0.0308**	**0.0000**	**126.9973**

3.6 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0200	0.5867	0.1637	1.2900e-003	0.0306	3.0400e-003	0.0336	8.8400e-003	2.9100e-003	0.0118	0.0000	123.7961	123.7961	7.3300e-003	0.0000	123.9794
Worker	0.0517	0.0351	0.3847	1.0000e-003	0.1021	7.3000e-004	0.1028	0.0272	6.8000e-004	0.0278	0.0000	90.4360	90.4360	2.5600e-003	0.0000	90.5000
Total	**0.0718**	**0.6218**	**0.5483**	**2.2900e-003**	**0.1327**	**3.7700e-003**	**0.1364**	**0.0360**	**3.5900e-003**	**0.0396**	**0.0000**	**214.2322**	**214.2322**	**9.8900e-003**	**0.0000**	**214.4793**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1155	1.0456	0.9182	1.4700e-003		0.0609	0.0609		0.0572	0.0572	0.0000	126.2273	126.2273	0.0308	0.0000	126.9972
Total	**0.1155**	**1.0456**	**0.9182**	**1.4700e-003**		**0.0609**	**0.0609**		**0.0572**	**0.0572**	**0.0000**	**126.2273**	**126.2273**	**0.0308**	**0.0000**	**126.9972**

3.6 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0200	0.5867	0.1637	1.2900e-003	0.0306	3.0400e-003	0.0336	8.8400e-003	2.9100e-003	0.0118	0.0000	123.7961	123.7961	7.3300e-003	0.0000	123.9794
Worker	0.0517	0.0351	0.3847	1.0000e-003	0.1021	7.3000e-004	0.1028	0.0272	6.8000e-004	0.0278	0.0000	90.4360	90.4360	2.5600e-003	0.0000	90.5000
Total	**0.0718**	**0.6218**	**0.5483**	**2.2900e-003**	**0.1327**	**3.7700e-003**	**0.1364**	**0.0360**	**3.5900e-003**	**0.0396**	**0.0000**	**214.2322**	**214.2322**	**9.8900e-003**	**0.0000**	**214.4793**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2867	302.2867	0.0729	0.0000	304.1099
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2867**	**302.2867**	**0.0729**	**0.0000**	**304.1099**

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0394	1.2816	0.3425	3.0600e-003	0.0733	3.5400e-003	0.0768	0.0212	3.3900e-003	0.0246	0.0000	293.9627	293.9627	0.0168	0.0000	294.3829
Worker	0.1152	0.0753	0.8423	2.3200e-003	0.2444	1.7100e-003	0.2461	0.0650	1.5700e-003	0.0666	0.0000	209.1754	209.1754	5.4900e-003	0.0000	209.3127
Total	**0.1546**	**1.3569**	**1.1848**	**5.3800e-003**	**0.3177**	**5.2500e-003**	**0.3229**	**0.0862**	**4.9600e-003**	**0.0911**	**0.0000**	**503.1381**	**503.1381**	**0.0223**	**0.0000**	**503.6956**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.2481	2.2749	2.1631	3.5100e-003		0.1251	0.1251		0.1176	0.1176	0.0000	302.2863	302.2863	0.0729	0.0000	304.1095
Total	**0.2481**	**2.2749**	**2.1631**	**3.5100e-003**		**0.1251**	**0.1251**		**0.1176**	**0.1176**	**0.0000**	**302.2863**	**302.2863**	**0.0729**	**0.0000**	**304.1095**

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0394	1.2816	0.3425	3.0600e-003	0.0733	3.5400e-003	0.0768	0.0212	3.3900e-003	0.0246	0.0000	293.9627	293.9627	0.0168	0.0000	294.3829
Worker	0.1152	0.0753	0.8423	2.3200e-003	0.2444	1.7100e-003	0.2461	0.0650	1.5700e-003	0.0666	0.0000	209.1754	209.1754	5.4900e-003	0.0000	209.3127
Total	**0.1546**	**1.3569**	**1.1848**	**5.3800e-003**	**0.3177**	**5.2500e-003**	**0.3229**	**0.0862**	**4.9600e-003**	**0.0911**	**0.0000**	**503.1381**	**503.1381**	**0.0223**	**0.0000**	**503.6956**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1288	1.1790	1.2354	2.0300e-003		0.0611	0.0611		0.0575	0.0575	0.0000	174.9526	174.9526	0.0419	0.0000	176.0004
Total	**0.1288**	**1.1790**	**1.2354**	**2.0300e-003**		**0.0611**	**0.0611**		**0.0575**	**0.0575**	**0.0000**	**174.9526**	**174.9526**	**0.0419**	**0.0000**	**176.0004**

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0212	0.7040	0.1827	1.7500e-003	0.0424	1.8000e-003	0.0442	0.0122	1.7200e-003	0.0140	0.0000	168.5755	168.5755	9.4500e-003	0.0000	168.8116
Worker	0.0623	0.0392	0.4478	1.2900e-003	0.1414	9.6000e-004	0.1424	0.0376	8.9000e-004	0.0385	0.0000	116.6825	116.6825	2.8500e-003	0.0000	116.7539
Total	**0.0835**	**0.7432**	**0.6305**	**3.0400e-003**	**0.1838**	**2.7600e-003**	**0.1865**	**0.0499**	**2.6100e-003**	**0.0525**	**0.0000**	**285.2580**	**285.2580**	**0.0123**	**0.0000**	**285.5655**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1288	1.1790	1.2354	2.0300e-003		0.0611	0.0611		0.0575	0.0575	0.0000	174.9524	174.9524	0.0419	0.0000	176.0002
Total	**0.1288**	**1.1790**	**1.2354**	**2.0300e-003**		**0.0611**	**0.0611**		**0.0575**	**0.0575**	**0.0000**	**174.9524**	**174.9524**	**0.0419**	**0.0000**	**176.0002**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0212	0.7040	0.1827	1.7500e-003	0.0424	1.8000e-003	0.0442	0.0122	1.7200e-003	0.0140	0.0000	168.5755	168.5755	9.4500e-003	0.0000	168.8116
Worker	0.0623	0.0392	0.4478	1.2900e-003	0.1414	9.6000e-004	0.1424	0.0376	8.9000e-004	0.0385	0.0000	116.6825	116.6825	2.8500e-003	0.0000	116.7539
Total	**0.0835**	**0.7432**	**0.6305**	**3.0400e-003**	**0.1838**	**2.7600e-003**	**0.1865**	**0.0499**	**2.6100e-003**	**0.0525**	**0.0000**	**285.2580**	**285.2580**	**0.0123**	**0.0000**	**285.5655**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2002					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0120	0.0834	0.0907	1.5000e-004		5.4900e-003	5.4900e-003		5.4900e-003	5.4900e-003	0.0000	12.6386	12.6386	9.8000e-004	0.0000	12.6631
Total	**0.2122**	**0.0834**	**0.0907**	**1.5000e-004**		**5.4900e-003**	**5.4900e-003**		**5.4900e-003**	**5.4900e-003**	**0.0000**	**12.6386**	**12.6386**	**9.8000e-004**	**0.0000**	**12.6631**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-003	6.3700e-003	0.0699	1.8000e-004	0.0185	1.3000e-004	0.0187	4.9300e-003	1.2000e-004	5.0500e-003	0.0000	16.4278	16.4278	4.6000e-004	0.0000	16.4394
Total	**9.4000e-003**	**6.3700e-003**	**0.0699**	**1.8000e-004**	**0.0185**	**1.3000e-004**	**0.0187**	**4.9300e-003**	**1.2000e-004**	**5.0500e-003**	**0.0000**	**16.4278**	**16.4278**	**4.6000e-004**	**0.0000**	**16.4394**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2002					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0120	0.0834	0.0907	1.5000e-004		5.4900e-003	5.4900e-003		5.4900e-003	5.4900e-003	0.0000	12.6386	12.6386	9.8000e-004	0.0000	12.6631
Total	**0.2122**	**0.0834**	**0.0907**	**1.5000e-004**		**5.4900e-003**	**5.4900e-003**		**5.4900e-003**	**5.4900e-003**	**0.0000**	**12.6386**	**12.6386**	**9.8000e-004**	**0.0000**	**12.6631**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-003	6.3700e-003	0.0699	1.8000e-004	0.0185	1.3000e-004	0.0187	4.9300e-003	1.2000e-004	5.0500e-003	0.0000	16.4278	16.4278	4.6000e-004	0.0000	16.4394
Total	**9.4000e-003**	**6.3700e-003**	**0.0699**	**1.8000e-004**	**0.0185**	**1.3000e-004**	**0.0187**	**4.9300e-003**	**1.2000e-004**	**5.0500e-003**	**0.0000**	**16.4278**	**16.4278**	**4.6000e-004**	**0.0000**	**16.4394**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5279					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3200	33.3200	2.2900e-003	0.0000	33.3771
Total	**0.5565**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3200**	**33.3200**	**2.2900e-003**	**0.0000**	**33.3771**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0231	0.0151	0.1685	4.6000e-004	0.0489	3.4000e-004	0.0492	0.0130	3.1000e-004	0.0133	0.0000	41.8351	41.8351	1.1000e-003	0.0000	41.8625
Total	**0.0231**	**0.0151**	**0.1685**	**4.6000e-004**	**0.0489**	**3.4000e-004**	**0.0492**	**0.0130**	**3.1000e-004**	**0.0133**	**0.0000**	**41.8351**	**41.8351**	**1.1000e-003**	**0.0000**	**41.8625**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5279					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0286	0.1993	0.2372	3.9000e-004		0.0123	0.0123		0.0123	0.0123	0.0000	33.3199	33.3199	2.2900e-003	0.0000	33.3771
Total	**0.5565**	**0.1993**	**0.2372**	**3.9000e-004**		**0.0123**	**0.0123**		**0.0123**	**0.0123**	**0.0000**	**33.3199**	**33.3199**	**2.2900e-003**	**0.0000**	**33.3771**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0231	0.0151	0.1685	4.6000e-004	0.0489	3.4000e-004	0.0492	0.0130	3.1000e-004	0.0133	0.0000	41.8351	41.8351	1.1000e-003	0.0000	41.8625
Total	**0.0231**	**0.0151**	**0.1685**	**4.6000e-004**	**0.0489**	**3.4000e-004**	**0.0492**	**0.0130**	**3.1000e-004**	**0.0133**	**0.0000**	**41.8351**	**41.8351**	**1.1000e-003**	**0.0000**	**41.8625**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3256					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0165	0.1134	0.1460	2.4000e-004		6.5800e-003	6.5800e-003		6.5800e-003	6.5800e-003	0.0000	20.5537	20.5537	1.3400e-003	0.0000	20.5872
Total	**0.3421**	**0.1134**	**0.1460**	**2.4000e-004**		**6.5800e-003**	**6.5800e-003**		**6.5800e-003**	**6.5800e-003**	**0.0000**	**20.5537**	**20.5537**	**1.3400e-003**	**0.0000**	**20.5872**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0133	8.3500e-003	0.0955	2.8000e-004	0.0302	2.1000e-004	0.0304	8.0200e-003	1.9000e-004	8.2100e-003	0.0000	24.8820	24.8820	6.1000e-004	0.0000	24.8972
Total	**0.0133**	**8.3500e-003**	**0.0955**	**2.8000e-004**	**0.0302**	**2.1000e-004**	**0.0304**	**8.0200e-003**	**1.9000e-004**	**8.2100e-003**	**0.0000**	**24.8820**	**24.8820**	**6.1000e-004**	**0.0000**	**24.8972**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3256					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0165	0.1134	0.1460	2.4000e-004		6.5800e-003	6.5800e-003		6.5800e-003	6.5800e-003	0.0000	20.5537	20.5537	1.3400e-003	0.0000	20.5871
Total	**0.3421**	**0.1134**	**0.1460**	**2.4000e-004**		**6.5800e-003**	**6.5800e-003**		**6.5800e-003**	**6.5800e-003**	**0.0000**	**20.5537**	**20.5537**	**1.3400e-003**	**0.0000**	**20.5871**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0133	8.3500e-003	0.0955	2.8000e-004	0.0302	2.1000e-004	0.0304	8.0200e-003	1.9000e-004	8.2100e-003	0.0000	24.8820	24.8820	6.1000e-004	0.0000	24.8972
Total	**0.0133**	**8.3500e-003**	**0.0955**	**2.8000e-004**	**0.0302**	**2.1000e-004**	**0.0304**	**8.0200e-003**	**1.9000e-004**	**8.2100e-003**	**0.0000**	**24.8820**	**24.8820**	**6.1000e-004**	**0.0000**	**24.8972**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2213	0.9060	2.5920	8.6300e-003	0.7765	6.7600e-003	0.7833	0.2081	6.3100e-003	0.2144	0.0000	794.4993	794.4993	0.0358	0.0000	795.3947
Unmitigated	0.2228	0.9156	2.6324	8.8000e-003	0.7923	6.8800e-003	0.7992	0.2124	6.4200e-003	0.2188	0.0000	809.6961	809.6961	0.0364	0.0000	810.6059

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	828.24	828.24	828.24	2,125,354	2,082,847
Total	828.24	828.24	828.24	2,125,354	2,082,847

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.562895	0.037862	0.207220	0.115570	0.017815	0.005092	0.018559	0.023754	0.002009	0.001969	0.005819	0.000618	0.000817
Single Family Housing	0.562895	0.037862	0.207220	0.115570	0.017815	0.005092	0.018559	0.023754	0.002009	0.001969	0.005819	0.000618	0.000817

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	128.9867	128.9867	9.6600e-003	2.0000e-003	129.8241
NaturalGas Mitigated	0.0121	0.1036	0.0441	6.6000e-004		8.3700e-003	8.3700e-003		8.3700e-003	8.3700e-003	0.0000	119.9415	119.9415	2.3000e-003	2.2000e-003	120.6542
NaturalGas Unmitigated	0.0121	0.1036	0.0441	6.6000e-004		8.3700e-003	8.3700e-003		8.3700e-003	8.3700e-003	0.0000	119.9415	119.9415	2.3000e-003	2.2000e-003	120.6542

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.24762e+006	0.0121	0.1036	0.0441	6.6000e-004		8.3700e-003	8.3700e-003		8.3700e-003	8.3700e-003	0.0000	119.9415	119.9415	2.3000e-003	2.2000e-003	120.6542
Total		**0.0121**	**0.1036**	**0.0441**	**6.6000e-004**		**8.3700e-003**	**8.3700e-003**		**8.3700e-003**	**8.3700e-003**	**0.0000**	**119.9415**	**119.9415**	**2.3000e-003**	**2.2000e-003**	**120.6542**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	2.24762e+006	0.0121	0.1036	0.0441	6.6000e-004		8.3700e-003	8.3700e-003		8.3700e-003	8.3700e-003	0.0000	119.9415	119.9415	2.3000e-003	2.2000e-003	120.6542
Total		**0.0121**	**0.1036**	**0.0441**	**6.6000e-004**		**8.3700e-003**	**8.3700e-003**		**8.3700e-003**	**8.3700e-003**	**0.0000**	**119.9415**	**119.9415**	**2.3000e-003**	**2.2000e-003**	**120.6542**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	734609	128.9867	9.6600e-003	2.0000e-003	129.8241
Total		**128.9867**	**9.6600e-003**	**2.0000e-003**	**129.8241**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.7784	0.0104	0.8976	5.0000e-005		4.9700e-003	4.9700e-003		4.9700e-003	4.9700e-003	0.0000	1.4659	1.4659	1.4100e-003	0.0000	1.5011
Unmitigated	0.7784	0.0104	0.8976	5.0000e-005		4.9700e-003	4.9700e-003		4.9700e-003	4.9700e-003	0.0000	1.4659	1.4659	1.4100e-003	0.0000	1.5011

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1054					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6460					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0271	0.0104	0.8976	5.0000e-005		4.9700e-003	4.9700e-003		4.9700e-003	4.9700e-003	0.0000	1.4659	1.4659	1.4100e-003	0.0000	1.5011
Total	**0.7784**	**0.0104**	**0.8976**	**5.0000e-005**		**4.9700e-003**	**4.9700e-003**		**4.9700e-003**	**4.9700e-003**	**0.0000**	**1.4659**	**1.4659**	**1.4100e-003**	**0.0000**	**1.5011**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1054					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.6460					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0271	0.0104	0.8976	5.0000e-005		4.9700e-003	4.9700e-003		4.9700e-003	4.9700e-003	0.0000	1.4659	1.4659	1.4100e-003	0.0000	1.5011
Total	**0.7784**	**0.0104**	**0.8976**	**5.0000e-005**		**4.9700e-003**	**4.9700e-003**		**4.9700e-003**	**4.9700e-003**	**0.0000**	**1.4659**	**1.4659**	**1.4100e-003**	**0.0000**	**1.5011**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	9.1608	7.4400e-003	4.4700e-003	10.6794
Unmitigated	9.1608	7.4400e-003	4.4700e-003	10.6794

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	5.6684 / 3.57356	9.1608	7.4400e-003	4.4700e-003	10.6794
Total		**9.1608**	**7.4400e-003**	**4.4700e-003**	**10.6794**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	5.6684 / 3.57356	9.1608	7.4400e-003	4.4700e-003	10.6794
Total		**9.1608**	**7.4400e-003**	**4.4700e-003**	**10.6794**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	16.9538	1.0019	0.0000	42.0023
Unmitigated	16.9538	1.0019	0.0000	42.0023

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	83.52	16.9538	1.0019	0.0000	42.0023
Total		**16.9538**	**1.0019**	**0.0000**	**42.0023**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Single Family Housing	83.52	16.9538	1.0019	0.0000	42.0023
Total		**16.9538**	**1.0019**	**0.0000**	**42.0023**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Cardoso II Project

Sacramento Metropolitan AQMD Air District, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	12.20	Acre	12.20	531,432.00	0
Single Family Housing	87.00	Dwelling Unit	24.62	156,600.00	232

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2023
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	387.1	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Intensity factor for CO2 adjusted based on SMUD's RPS calculator.

Land Use - Applicant provided

Construction Phase - Applicant provided

Demolition - Per google earth

Grading - Applicant provided

Vehicle Trips - Per ITE

Mobile Land Use Mitigation - Applicant provided

Area Mitigation -

Energy Mitigation - Per building code requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	521.00
tblConstructionPhase	NumDays	740.00	521.00
tblConstructionPhase	NumDays	50.00	20.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	NumDays	55.00	15.00
tblConstructionPhase	NumDays	30.00	15.00
tblGrading	AcresOfGrading	37.50	36.80
tblLandUse	LotAcreage	28.25	24.62
tblProjectCharacteristics	CO2IntensityFactor	590.31	387.1
tblVehicleTrips	ST_TR	9.91	9.52
tblVehicleTrips	SU_TR	8.62	9.52

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	8.0888	50.2433	32.6113	0.0782	18.2032	2.1984	20.4016	9.9670	2.0225	11.9895	0.0000	7,793.7528	7,793.7528	1.9470	0.0000	7,815.1937
2021	7.6881	29.2290	30.0090	0.0771	2.9054	1.0949	4.0003	0.7837	1.0352	1.8188	0.0000	7,690.4257	7,690.4257	0.8349	0.0000	7,711.2990
2022	7.3760	26.7558	28.8758	0.0761	2.9053	0.9292	3.8345	0.7837	0.8791	1.6628	0.0000	7,585.3861	7,585.3861	0.8196	0.0000	7,605.8762
Maximum	**8.0888**	**50.2433**	**32.6113**	**0.0782**	**18.2032**	**2.1984**	**20.4016**	**9.9670**	**2.0225**	**11.9895**	**0.0000**	**7,793.7528**	**7,793.7528**	**1.9470**	**0.0000**	**7,815.1937**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	8.0888	50.2433	32.6113	0.0782	18.2032	2.1984	20.4016	9.9670	2.0225	11.9895	0.0000	7,793.7528	7,793.7528	1.9470	0.0000	7,815.1937
2021	7.6881	29.2290	30.0090	0.0771	2.9054	1.0949	4.0003	0.7837	1.0352	1.8188	0.0000	7,690.4257	7,690.4257	0.8349	0.0000	7,711.2990
2022	7.3760	26.7558	28.8758	0.0761	2.9053	0.9292	3.8345	0.7837	0.8791	1.6628	0.0000	7,585.3861	7,585.3861	0.8196	0.0000	7,605.8762
Maximum	**8.0888**	**50.2433**	**32.6113**	**0.0782**	**18.2032**	**2.1984**	**20.4016**	**9.9670**	**2.0225**	**11.9895**	**0.0000**	**7,793.7528**	**7,793.7528**	**1.9470**	**0.0000**	**7,815.1937**

Cardoso II Project - Sacramento Metropolitan AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.3333	0.0828	7.1805	3.8000e-004		0.0397	0.0397		0.0397	0.0397	0.0000	12.9267	12.9267	0.0124	0.0000	13.2376
Energy	0.0664	0.5675	0.2415	3.6200e-003		0.0459	0.0459		0.0459	0.0459		724.4538	724.4538	0.0139	0.0133	728.7589
Mobile	1.5518	4.8391	16.3186	0.0523	4.5069	0.0377	4.5446	1.2046	0.0351	1.2397		5,301.5148	5,301.5148	0.2264		5,307.1753
Total	**5.9515**	**5.4893**	**23.7405**	**0.0563**	**4.5069**	**0.1233**	**4.6302**	**1.2046**	**0.1208**	**1.3254**	**0.0000**	**6,038.8953**	**6,038.8953**	**0.2528**	**0.0133**	**6,049.1718**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.3333	0.0828	7.1805	3.8000e-004		0.0397	0.0397		0.0397	0.0397	0.0000	12.9267	12.9267	0.0124	0.0000	13.2376
Energy	0.0664	0.5675	0.2415	3.6200e-003		0.0459	0.0459		0.0459	0.0459		724.4538	724.4538	0.0139	0.0133	728.7589
Mobile	1.5428	4.7903	16.0484	0.0513	4.4167	0.0370	4.4538	1.1805	0.0345	1.2150		5,201.7483	5,201.7483	0.2227		5,207.3162
Total	**5.9425**	**5.4406**	**23.4703**	**0.0553**	**4.4167**	**0.1227**	**4.5394**	**1.1805**	**0.1202**	**1.3007**	**0.0000**	**5,939.1288**	**5,939.1288**	**0.2491**	**0.0133**	**5,949.3127**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.15**	**0.89**	**1.14**	**1.76**	**2.00**	**0.54**	**1.96**	**2.00**	**0.51**	**1.86**	**0.00**	**1.65**	**1.65**	**1.46**	**0.00**	**1.65**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2020	5/28/2020	5	20	
2	Site Preparation	Site Preparation	5/29/2020	6/18/2020	5	15	
3	Grading	Grading	6/19/2020	7/9/2020	5	15	
4	Paving	Paving	7/10/2020	7/30/2020	5	15	
5	Building Construction	Building Construction	8/1/2020	8/1/2022	5	521	
6	Architectural Coating	Architectural Coating	8/15/2020	8/15/2022	5	521	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 36.8

Acres of Paving: 12.2

Residential Indoor: 317,115; Residential Outdoor: 105,705; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 31,886 (Architectural Coating – sqft)

OffRoad Equipment

Cardoso II Project - Sacramento Metropolitan AQMD Air District, Summer

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	321.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	255.00	96.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	51.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.6241	0.0000	3.6241	0.5487	0.0000	0.5487			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**3.6241**	**1.6587**	**5.2828**	**0.5487**	**1.5419**	**2.0906**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1219	4.4532	1.0166	0.0127	0.2792	0.0163	0.2955	0.0764	0.0156	0.0920		1,362.4554	1,362.4554	0.0772		1,364.3864
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0343	0.4898	1.2000e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		119.0269	119.0269	3.4100e-003		119.1122
Total	**0.1866**	**4.4876**	**1.5063**	**0.0139**	**0.3933**	**0.0171**	**0.4104**	**0.1067**	**0.0163**	**0.1230**		**1,481.4824**	**1,481.4824**	**0.0807**		**1,483.4986**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.6241	0.0000	3.6241	0.5487	0.0000	0.5487			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**3.6241**	**1.6587**	**5.2828**	**0.5487**	**1.5419**	**2.0906**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1219	4.4532	1.0166	0.0127	0.2792	0.0163	0.2955	0.0764	0.0156	0.0920		1,362.4554	1,362.4554	0.0772		1,364.3864
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0343	0.4898	1.2000e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		119.0269	119.0269	3.4100e-003		119.1122
Total	**0.1866**	**4.4876**	**1.5063**	**0.0139**	**0.3933**	**0.0171**	**0.4104**	**0.1067**	**0.0163**	**0.1230**		**1,481.4824**	**1,481.4824**	**0.0807**		**1,483.4986**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0412	0.5877	1.4400e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		142.8323	142.8323	4.0900e-003		142.9346
Total	**0.0776**	**0.0412**	**0.5877**	**1.4400e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**142.8323**	**142.8323**	**4.0900e-003**		**142.9346**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0776	0.0412	0.5877	1.4400e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		142.8323	142.8323	4.0900e-003		142.9346
Total	**0.0776**	**0.0412**	**0.5877**	**1.4400e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**142.8323**	**142.8323**	**4.0900e-003**		**142.9346**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6239	0.0000	8.6239	3.5912	0.0000	3.5912			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6239**	**2.1739**	**10.7978**	**3.5912**	**2.0000**	**5.5912**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0862	0.0458	0.6530	1.5900e-003	0.1521	1.0600e-003	0.1532	0.0404	9.7000e-004	0.0413		158.7026	158.7026	4.5500e-003		158.8163
Total	**0.0862**	**0.0458**	**0.6530**	**1.5900e-003**	**0.1521**	**1.0600e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**		**158.7026**	**158.7026**	**4.5500e-003**		**158.8163**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6239	0.0000	8.6239	3.5912	0.0000	3.5912			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6239**	**2.1739**	**10.7978**	**3.5912**	**2.0000**	**5.5912**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0862	0.0458	0.6530	1.5900e-003	0.1521	1.0600e-003	0.1532	0.0404	9.7000e-004	0.0413		158.7026	158.7026	4.5500e-003		158.8163
Total	**0.0862**	**0.0458**	**0.6530**	**1.5900e-003**	**0.1521**	**1.0600e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**		**158.7026**	**158.7026**	**4.5500e-003**		**158.8163**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0343	0.4898	1.2000e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		119.0269	119.0269	3.4100e-003		119.1122
Total	**0.0647**	**0.0343**	**0.4898**	**1.2000e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**119.0269**	**119.0269**	**3.4100e-003**		**119.1122**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0647	0.0343	0.4898	1.2000e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		119.0269	119.0269	3.4100e-003		119.1122
Total	**0.0647**	**0.0343**	**0.4898**	**1.2000e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**119.0269**	**119.0269**	**3.4100e-003**		**119.1122**

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.6 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3620	10.5412	2.8332	0.0239	0.5777	0.0550	0.6327	0.1663	0.0526	0.2188		2,531.0921	2,531.0921	0.1434		2,534.6777
Worker	1.0996	0.5835	8.3258	0.0203	1.9398	0.0135	1.9533	0.5146	0.0124	0.5270		2,023.4580	2,023.4580	0.0580		2,024.9073
Total	**1.4616**	**11.1247**	**11.1590**	**0.0442**	**2.5175**	**0.0684**	**2.5860**	**0.6808**	**0.0650**	**0.7458**		**4,554.5501**	**4,554.5501**	**0.2014**		**4,559.5850**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.6 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3620	10.5412	2.8332	0.0239	0.5777	0.0550	0.6327	0.1663	0.0526	0.2188		2,531.0921	2,531.0921	0.1434		2,534.6777
Worker	1.0996	0.5835	8.3258	0.0203	1.9398	0.0135	1.9533	0.5146	0.0124	0.5270		2,023.4580	2,023.4580	0.0580		2,024.9073
Total	**1.4616**	**11.1247**	**11.1590**	**0.0442**	**2.5175**	**0.0684**	**2.5860**	**0.6808**	**0.0650**	**0.7458**		**4,554.5501**	**4,554.5501**	**0.2014**		**4,559.5850**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2967	9.6423	2.4622	0.0237	0.5777	0.0265	0.6041	0.1662	0.0253	0.1915		2,510.1879	2,510.1879	0.1372		2,513.6177
Worker	1.0220	0.5232	7.6284	0.0196	1.9398	0.0131	1.9529	0.5146	0.0121	0.5266		1,954.5215	1,954.5215	0.0520		1,955.8218
Total	**1.3187**	**10.1655**	**10.0906**	**0.0433**	**2.5174**	**0.0395**	**2.5570**	**0.6808**	**0.0374**	**0.7181**		**4,464.7094**	**4,464.7094**	**0.1892**		**4,469.4395**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2967	9.6423	2.4622	0.0237	0.5777	0.0265	0.6041	0.1662	0.0253	0.1915		2,510.1879	2,510.1879	0.1372		2,513.6177
Worker	1.0220	0.5232	7.6284	0.0196	1.9398	0.0131	1.9529	0.5146	0.0121	0.5266		1,954.5215	1,954.5215	0.0520		1,955.8218
Total	**1.3187**	**10.1655**	**10.0906**	**0.0433**	**2.5174**	**0.0395**	**2.5570**	**0.6808**	**0.0374**	**0.7181**		**4,464.7094**	**4,464.7094**	**0.1892**		**4,469.4395**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2753	9.1671	2.2686	0.0235	0.5776	0.0232	0.6008	0.1662	0.0222	0.1884		2,488.2913	2,488.2913	0.1332		2,491.6222
Worker	0.9540	0.4705	7.0252	0.0189	1.9398	0.0128	1.9525	0.5146	0.0118	0.5263		1,884.4277	1,884.4277	0.0468		1,885.5964
Total	**1.2292**	**9.6376**	**9.2938**	**0.0424**	**2.5174**	**0.0359**	**2.5533**	**0.6808**	**0.0339**	**0.7146**		**4,372.7190**	**4,372.7190**	**0.1800**		**4,377.2186**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2753	9.1671	2.2686	0.0235	0.5776	0.0232	0.6008	0.1662	0.0222	0.1884		2,488.2913	2,488.2913	0.1332		2,491.6222
Worker	0.9540	0.4705	7.0252	0.0189	1.9398	0.0128	1.9525	0.5146	0.0118	0.5263		1,884.4277	1,884.4277	0.0468		1,885.5964
Total	**1.2292**	**9.6376**	**9.2938**	**0.0424**	**2.5174**	**0.0359**	**2.5533**	**0.6808**	**0.0339**	**0.7146**		**4,372.7190**	**4,372.7190**	**0.1800**		**4,377.2186**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**4.2874**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2199	0.1167	1.6652	4.0700e-003	0.3880	2.7000e-003	0.3907	0.1029	2.4900e-003	0.1054		404.6916	404.6916	0.0116		404.9815
Total	**0.2199**	**0.1167**	**1.6652**	**4.0700e-003**	**0.3880**	**2.7000e-003**	**0.3907**	**0.1029**	**2.4900e-003**	**0.1054**		**404.6916**	**404.6916**	**0.0116**		**404.9815**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**4.2874**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2199	0.1167	1.6652	4.0700e-003	0.3880	2.7000e-003	0.3907	0.1029	2.4900e-003	0.1054		404.6916	404.6916	0.0116		404.9815
Total	**0.2199**	**0.1167**	**1.6652**	**4.0700e-003**	**0.3880**	**2.7000e-003**	**0.3907**	**0.1029**	**2.4900e-003**	**0.1054**		**404.6916**	**404.6916**	**0.0116**		**404.9815**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**4.2641**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2044	0.1046	1.5257	3.9300e-003	0.3880	2.6200e-003	0.3906	0.1029	2.4100e-003	0.1053		390.9043	390.9043	0.0104		391.1644
Total	**0.2044**	**0.1046**	**1.5257**	**3.9300e-003**	**0.3880**	**2.6200e-003**	**0.3906**	**0.1029**	**2.4100e-003**	**0.1053**		**390.9043**	**390.9043**	**0.0104**		**391.1644**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**4.2641**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2044	0.1046	1.5257	3.9300e-003	0.3880	2.6200e-003	0.3906	0.1029	2.4100e-003	0.1053		390.9043	390.9043	0.0104		391.1644
Total	**0.2044**	**0.1046**	**1.5257**	**3.9300e-003**	**0.3880**	**2.6200e-003**	**0.3906**	**0.1029**	**2.4100e-003**	**0.1053**		**390.9043**	**390.9043**	**0.0104**		**391.1644**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**4.2498**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1908	0.0941	1.4050	3.7800e-003	0.3880	2.5500e-003	0.3905	0.1029	2.3500e-003	0.1053		376.8855	376.8855	9.3500e-003		377.1193
Total	**0.1908**	**0.0941**	**1.4050**	**3.7800e-003**	**0.3880**	**2.5500e-003**	**0.3905**	**0.1029**	**2.3500e-003**	**0.1053**		**376.8855**	**376.8855**	**9.3500e-003**		**377.1193**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**4.2498**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1908	0.0941	1.4050	3.7800e-003	0.3880	2.5500e-003	0.3905	0.1029	2.3500e-003	0.1053		376.8855	376.8855	9.3500e-003		377.1193
Total	**0.1908**	**0.0941**	**1.4050**	**3.7800e-003**	**0.3880**	**2.5500e-003**	**0.3905**	**0.1029**	**2.3500e-003**	**0.1053**		**376.8855**	**376.8855**	**9.3500e-003**		**377.1193**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.5428	4.7903	16.0484	0.0513	4.4167	0.0370	4.4538	1.1805	0.0345	1.2150		5,201.7483	5,201.7483	0.2227		5,207.3162
Unmitigated	1.5518	4.8391	16.3186	0.0523	4.5069	0.0377	4.5446	1.2046	0.0351	1.2397		5,301.5148	5,301.5148	0.2264		5,307.1753

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	828.24	828.24	828.24	2,125,354	2,082,847
Total	828.24	828.24	828.24	2,125,354	2,082,847

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.562895	0.037862	0.207220	0.115570	0.017815	0.005092	0.018559	0.023754	0.002009	0.001969	0.005819	0.000618	0.000817
Single Family Housing	0.562895	0.037862	0.207220	0.115570	0.017815	0.005092	0.018559	0.023754	0.002009	0.001969	0.005819	0.000618	0.000817

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0664	0.5675	0.2415	3.6200e-003		0.0459	0.0459		0.0459	0.0459		724.4538	724.4538	0.0139	0.0133	728.7589
NaturalGas Unmitigated	0.0664	0.5675	0.2415	3.6200e-003		0.0459	0.0459		0.0459	0.0459		724.4538	724.4538	0.0139	0.0133	728.7589

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	6157.86	0.0664	0.5675	0.2415	3.6200e-003		0.0459	0.0459		0.0459	0.0459		724.4538	724.4538	0.0139	0.0133	728.7589
Total		**0.0664**	**0.5675**	**0.2415**	**3.6200e-003**		**0.0459**	**0.0459**		**0.0459**	**0.0459**		**724.4538**	**724.4538**	**0.0139**	**0.0133**	**728.7589**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	6.15786	0.0664	0.5675	0.2415	3.6200e-003		0.0459	0.0459		0.0459	0.0459		724.4538	724.4538	0.0139	0.0133	728.7589
Total		**0.0664**	**0.5675**	**0.2415**	**3.6200e-003**		**0.0459**	**0.0459**		**0.0459**	**0.0459**		**724.4538**	**724.4538**	**0.0139**	**0.0133**	**728.7589**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.3333	0.0828	7.1805	3.8000e-004		0.0397	0.0397		0.0397	0.0397	0.0000	12.9267	12.9267	0.0124	0.0000	13.2376
Unmitigated	4.3333	0.0828	7.1805	3.8000e-004		0.0397	0.0397		0.0397	0.0397	0.0000	12.9267	12.9267	0.0124	0.0000	13.2376

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5774					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5395					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2164	0.0828	7.1805	3.8000e-004		0.0397	0.0397		0.0397	0.0397		12.9267	12.9267	0.0124		13.2376
Total	**4.3333**	**0.0828**	**7.1805**	**3.8000e-004**		**0.0397**	**0.0397**		**0.0397**	**0.0397**	**0.0000**	**12.9267**	**12.9267**	**0.0124**	**0.0000**	**13.2376**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5774					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5395					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2164	0.0828	7.1805	3.8000e-004		0.0397	0.0397		0.0397	0.0397		12.9267	12.9267	0.0124		13.2376
Total	**4.3333**	**0.0828**	**7.1805**	**3.8000e-004**		**0.0397**	**0.0397**		**0.0397**	**0.0397**	**0.0000**	**12.9267**	**12.9267**	**0.0124**	**0.0000**	**13.2376**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Cardoso II Project

Sacramento Metropolitan AQMD Air District, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	12.20	Acre	12.20	531,432.00	0
Single Family Housing	87.00	Dwelling Unit	24.62	156,600.00	232

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.5	**Precipitation Freq (Days)**	58
Climate Zone	6			**Operational Year**	2023
Utility Company	Sacramento Municipal Utility District				
CO2 Intensity (lb/MWhr)	387.1	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - Intensity factor for CO2 adjusted based on SMUD's RPS calculator.

Land Use - Applicant provided

Construction Phase - Applicant provided

Demolition - Per google earth

Grading - Applicant provided

Vehicle Trips - Per ITE

Mobile Land Use Mitigation - Applicant provided

Area Mitigation -

Energy Mitigation - Per building code requirements

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	55.00	521.00
tblConstructionPhase	NumDays	740.00	521.00
tblConstructionPhase	NumDays	50.00	20.00
tblConstructionPhase	NumDays	75.00	15.00
tblConstructionPhase	NumDays	55.00	15.00
tblConstructionPhase	NumDays	30.00	15.00
tblGrading	AcresOfGrading	37.50	36.80
tblLandUse	LotAcreage	28.25	24.62
tblProjectCharacteristics	CO2IntensityFactor	590.31	387.1
tblVehicleTrips	ST_TR	9.91	9.52
tblVehicleTrips	SU_TR	8.62	9.52

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	8.0027	50.2541	32.5174	0.0746	18.2032	2.1984	20.4016	9.9670	2.0225	11.9895	0.0000	7,433.3480	7,433.3480	1.9464	0.0000	7,454.8774
2021	7.6087	29.5352	29.0563	0.0737	2.9054	1.0965	4.0019	0.7837	1.0367	1.8204	0.0000	7,340.3144	7,340.3144	0.8388	0.0000	7,361.2843
2022	7.3039	27.0227	27.9705	0.0727	2.9053	0.9307	3.8360	0.7837	0.8806	1.6642	0.0000	7,245.7995	7,245.7995	0.8239	0.0000	7,266.3960
Maximum	**8.0027**	**50.2541**	**32.5174**	**0.0746**	**18.2032**	**2.1984**	**20.4016**	**9.9670**	**2.0225**	**11.9895**	**0.0000**	**7,433.3480**	**7,433.3480**	**1.9464**	**0.0000**	**7,454.8774**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2020	8.0027	50.2541	32.5174	0.0746	18.2032	2.1984	20.4016	9.9670	2.0225	11.9895	0.0000	7,433.3480	7,433.3480	1.9464	0.0000	7,454.8774
2021	7.6087	29.5352	29.0563	0.0737	2.9054	1.0965	4.0019	0.7837	1.0367	1.8204	0.0000	7,340.3144	7,340.3144	0.8388	0.0000	7,361.2843
2022	7.3039	27.0227	27.9705	0.0727	2.9053	0.9307	3.8360	0.7837	0.8806	1.6642	0.0000	7,245.7995	7,245.7995	0.8239	0.0000	7,266.3960
Maximum	**8.0027**	**50.2541**	**32.5174**	**0.0746**	**18.2032**	**2.1984**	**20.4016**	**9.9670**	**2.0225**	**11.9895**	**0.0000**	**7,433.3480**	**7,433.3480**	**1.9464**	**0.0000**	**7,454.8774**

Cardoso II Project - Sacramento Metropolitan AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.3333	0.0828	7.1805	3.8000e-004		0.0397	0.0397		0.0397	0.0397	0.0000	12.9267	12.9267	0.0124	0.0000	13.2376
Energy	0.0664	0.5675	0.2415	3.6200e-003		0.0459	0.0459		0.0459	0.0459		724.4538	724.4538	0.0139	0.0133	728.7589
Mobile	1.1540	5.1741	14.9486	0.0473	4.5069	0.0381	4.5450	1.2046	0.0355	1.2401		4,792.8409	4,792.8409	0.2242		4,798.4467
Total	**5.5537**	**5.8243**	**22.3705**	**0.0513**	**4.5069**	**0.1237**	**4.6306**	**1.2046**	**0.1211**	**1.3257**	**0.0000**	**5,530.2215**	**5,530.2215**	**0.2506**	**0.0133**	**5,540.4432**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.3333	0.0828	7.1805	3.8000e-004		0.0397	0.0397		0.0397	0.0397	0.0000	12.9267	12.9267	0.0124	0.0000	13.2376
Energy	0.0664	0.5675	0.2415	3.6200e-003		0.0459	0.0459		0.0459	0.0459		724.4538	724.4538	0.0139	0.0133	728.7589
Mobile	1.1454	5.1183	14.7326	0.0464	4.4167	0.0374	4.4542	1.1805	0.0349	1.2154		4,702.7309	4,702.7309	0.2208		4,708.2501
Total	**5.5451**	**5.7685**	**22.1545**	**0.0504**	**4.4167**	**0.1231**	**4.5398**	**1.1805**	**0.1205**	**1.3010**	**0.0000**	**5,440.1115**	**5,440.1115**	**0.2471**	**0.0133**	**5,450.2466**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.16**	**0.96**	**0.97**	**1.74**	**2.00**	**0.53**	**1.96**	**2.00**	**0.50**	**1.86**	**0.00**	**1.63**	**1.63**	**1.38**	**0.00**	**1.63**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	5/1/2020	5/28/2020	5	20	
2	Site Preparation	Site Preparation	5/29/2020	6/18/2020	5	15	
3	Grading	Grading	6/19/2020	7/9/2020	5	15	
4	Paving	Paving	7/10/2020	7/30/2020	5	15	
5	Building Construction	Building Construction	8/1/2020	8/1/2022	5	521	
6	Architectural Coating	Architectural Coating	8/15/2020	8/15/2022	5	521	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 36.8

Acres of Paving: 12.2

Residential Indoor: 317,115; Residential Outdoor: 105,705; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 31,886 (Architectural Coating – sqft)

OffRoad Equipment

Cardoso II Project - Sacramento Metropolitan AQMD Air District, Winter

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Excavators	3	8.00	158	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Site Preparation	Rubber Tired Dozers	3	8.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	97	0.37
Grading	Excavators	2	8.00	158	0.38
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Building Construction	Cranes	1	7.00	231	0.29
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	321.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	7	18.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	255.00	96.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	51.00	0.00	0.00	10.00	6.50	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Demolition - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.6241	0.0000	3.6241	0.5487	0.0000	0.5487			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419		3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**3.6241**	**1.6587**	**5.2828**	**0.5487**	**1.5419**	**2.0906**		**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1258	4.6351	1.0878	0.0125	0.2792	0.0168	0.2960	0.0764	0.0161	0.0925		1,341.5291	1,341.5291	0.0808		1,343.5492
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0595	0.0424	0.4194	1.0500e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		104.5333	104.5333	3.0100e-003		104.6084
Total	**0.1853**	**4.6775**	**1.5072**	**0.0136**	**0.3933**	**0.0176**	**0.4109**	**0.1067**	**0.0168**	**0.1235**		**1,446.0624**	**1,446.0624**	**0.0838**		**1,448.1577**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.6241	0.0000	3.6241	0.5487	0.0000	0.5487			0.0000			0.0000
Off-Road	3.3121	33.2010	21.7532	0.0388		1.6587	1.6587		1.5419	1.5419	0.0000	3,747.7049	3,747.7049	1.0580		3,774.1536
Total	**3.3121**	**33.2010**	**21.7532**	**0.0388**	**3.6241**	**1.6587**	**5.2828**	**0.5487**	**1.5419**	**2.0906**	**0.0000**	**3,747.7049**	**3,747.7049**	**1.0580**		**3,774.1536**

3.2 Demolition - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.1258	4.6351	1.0878	0.0125	0.2792	0.0168	0.2960	0.0764	0.0161	0.0925		1,341.5291	1,341.5291	0.0808		1,343.5492
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0595	0.0424	0.4194	1.0500e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		104.5333	104.5333	3.0100e-003		104.6084
Total	**0.1853**	**4.6775**	**1.5072**	**0.0136**	**0.3933**	**0.0176**	**0.4109**	**0.1067**	**0.0168**	**0.1235**		**1,446.0624**	**1,446.0624**	**0.0838**		**1,448.1577**

3.3 Site Preparation - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216		3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**		**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0714	0.0509	0.5032	1.2600e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		125.4399	125.4399	3.6100e-003		125.5301
Total	**0.0714**	**0.0509**	**0.5032**	**1.2600e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**125.4399**	**125.4399**	**3.6100e-003**		**125.5301**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					18.0663	0.0000	18.0663	9.9307	0.0000	9.9307			0.0000			0.0000
Off-Road	4.0765	42.4173	21.5136	0.0380		2.1974	2.1974		2.0216	2.0216	0.0000	3,685.1016	3,685.1016	1.1918		3,714.8975
Total	**4.0765**	**42.4173**	**21.5136**	**0.0380**	**18.0663**	**2.1974**	**20.2637**	**9.9307**	**2.0216**	**11.9523**	**0.0000**	**3,685.1016**	**3,685.1016**	**1.1918**		**3,714.8975**

3.3 Site Preparation - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0714	0.0509	0.5032	1.2600e-003	0.1369	9.5000e-004	0.1379	0.0363	8.8000e-004	0.0372		125.4399	125.4399	3.6100e-003		125.5301
Total	**0.0714**	**0.0509**	**0.5032**	**1.2600e-003**	**0.1369**	**9.5000e-004**	**0.1379**	**0.0363**	**8.8000e-004**	**0.0372**		**125.4399**	**125.4399**	**3.6100e-003**		**125.5301**

3.4 Grading - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6239	0.0000	8.6239	3.5912	0.0000	3.5912			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000		6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6239**	**2.1739**	**10.7978**	**3.5912**	**2.0000**	**5.5912**		**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.4 Grading - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0794	0.0565	0.5591	1.4000e-003	0.1521	1.0600e-003	0.1532	0.0404	9.7000e-004	0.0413		139.3777	139.3777	4.0100e-003		139.4779
Total	**0.0794**	**0.0565**	**0.5591**	**1.4000e-003**	**0.1521**	**1.0600e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**		**139.3777**	**139.3777**	**4.0100e-003**		**139.4779**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6239	0.0000	8.6239	3.5912	0.0000	3.5912			0.0000			0.0000
Off-Road	4.4501	50.1975	31.9583	0.0620		2.1739	2.1739		2.0000	2.0000	0.0000	6,005.8653	6,005.8653	1.9424		6,054.4257
Total	**4.4501**	**50.1975**	**31.9583**	**0.0620**	**8.6239**	**2.1739**	**10.7978**	**3.5912**	**2.0000**	**5.5912**	**0.0000**	**6,005.8653**	**6,005.8653**	**1.9424**		**6,054.4257**

3.4 Grading - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0794	0.0565	0.5591	1.4000e-003	0.1521	1.0600e-003	0.1532	0.0404	9.7000e-004	0.0413		139.3777	139.3777	4.0100e-003		139.4779
Total	**0.0794**	**0.0565**	**0.5591**	**1.4000e-003**	**0.1521**	**1.0600e-003**	**0.1532**	**0.0404**	**9.7000e-004**	**0.0413**		**139.3777**	**139.3777**	**4.0100e-003**		**139.4779**

3.5 Paving - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926		2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**		**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.5 Paving - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0595	0.0424	0.4194	1.0500e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		104.5333	104.5333	3.0100e-003		104.6084
Total	**0.0595**	**0.0424**	**0.4194**	**1.0500e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**104.5333**	**104.5333**	**3.0100e-003**		**104.6084**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.3566	14.0656	14.6521	0.0228		0.7528	0.7528		0.6926	0.6926	0.0000	2,207.7334	2,207.7334	0.7140		2,225.5841
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.3566**	**14.0656**	**14.6521**	**0.0228**		**0.7528**	**0.7528**		**0.6926**	**0.6926**	**0.0000**	**2,207.7334**	**2,207.7334**	**0.7140**		**2,225.5841**

3.5 Paving - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0595	0.0424	0.4194	1.0500e-003	0.1141	7.9000e-004	0.1149	0.0303	7.3000e-004	0.0310		104.5333	104.5333	3.0100e-003		104.6084
Total	**0.0595**	**0.0424**	**0.4194**	**1.0500e-003**	**0.1141**	**7.9000e-004**	**0.1149**	**0.0303**	**7.3000e-004**	**0.0310**		**104.5333**	**104.5333**	**3.0100e-003**		**104.6084**

3.6 Building Construction - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503		2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**		**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.6 Building Construction - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3813	10.7565	3.2590	0.0233	0.5777	0.0568	0.6345	0.1663	0.0543	0.2206		2,466.3581	2,466.3581	0.1552		2,470.2384
Worker	1.0118	0.7210	7.1290	0.0179	1.9398	0.0135	1.9533	0.5146	0.0124	0.5270		1,777.0657	1,777.0657	0.0511		1,778.3431
Total	**1.3931**	**11.4775**	**10.3880**	**0.0412**	**2.5175**	**0.0703**	**2.5878**	**0.6808**	**0.0668**	**0.7476**		**4,243.4238**	**4,243.4238**	**0.2063**		**4,248.5815**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.1198	19.1860	16.8485	0.0269		1.1171	1.1171		1.0503	1.0503	0.0000	2,553.0631	2,553.0631	0.6229		2,568.6345
Total	**2.1198**	**19.1860**	**16.8485**	**0.0269**		**1.1171**	**1.1171**		**1.0503**	**1.0503**	**0.0000**	**2,553.0631**	**2,553.0631**	**0.6229**		**2,568.6345**

3.6 Building Construction - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3813	10.7565	3.2590	0.0233	0.5777	0.0568	0.6345	0.1663	0.0543	0.2206		2,466.3581	2,466.3581	0.1552		2,470.2384
Worker	1.0118	0.7210	7.1290	0.0179	1.9398	0.0135	1.9533	0.5146	0.0124	0.5270		1,777.0657	1,777.0657	0.0511		1,778.3431
Total	**1.3931**	**11.4775**	**10.3880**	**0.0412**	**2.5175**	**0.0703**	**2.5878**	**0.6808**	**0.0668**	**0.7476**		**4,243.4238**	**4,243.4238**	**0.2063**		**4,248.5815**

3.6 Building Construction - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013		2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**		**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.6 Building Construction - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3143	9.8009	2.8556	0.0231	0.5777	0.0281	0.6058	0.1662	0.0269	0.1931		2,445.6198	2,445.6198	0.1486		2,449.3341
Worker	0.9412	0.6462	6.5066	0.0172	1.9398	0.0131	1.9529	0.5146	0.0121	0.5266		1,716.5688	1,716.5688	0.0457		1,717.7125
Total	**1.2554**	**10.4470**	**9.3622**	**0.0403**	**2.5174**	**0.0412**	**2.5586**	**0.6808**	**0.0389**	**0.7197**		**4,162.1887**	**4,162.1887**	**0.1943**		**4,167.0466**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.9009	17.4321	16.5752	0.0269		0.9586	0.9586		0.9013	0.9013	0.0000	2,553.3639	2,553.3639	0.6160		2,568.7643
Total	**1.9009**	**17.4321**	**16.5752**	**0.0269**		**0.9586**	**0.9586**		**0.9013**	**0.9013**	**0.0000**	**2,553.3639**	**2,553.3639**	**0.6160**		**2,568.7643**

3.6 Building Construction - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.3143	9.8009	2.8556	0.0231	0.5777	0.0281	0.6058	0.1662	0.0269	0.1931		2,445.6198	2,445.6198	0.1486		2,449.3341
Worker	0.9412	0.6462	6.5066	0.0172	1.9398	0.0131	1.9529	0.5146	0.0121	0.5266		1,716.5688	1,716.5688	0.0457		1,717.7125
Total	**1.2554**	**10.4470**	**9.3622**	**0.0403**	**2.5174**	**0.0412**	**2.5586**	**0.6808**	**0.0389**	**0.7197**		**4,162.1887**	**4,162.1887**	**0.1943**		**4,167.0466**

3.6 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.6 Building Construction - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2917	9.3015	2.6335	0.0229	0.5776	0.0247	0.6023	0.1662	0.0236	0.1898		2,423.8895	2,423.8895	0.1444		2,427.4984
Worker	0.8802	0.5809	5.9666	0.0166	1.9398	0.0128	1.9525	0.5146	0.0118	0.5263		1,655.1070	1,655.1070	0.0410		1,656.1327
Total	**1.1718**	**9.8824**	**8.6002**	**0.0395**	**2.5174**	**0.0374**	**2.5548**	**0.6808**	**0.0354**	**0.7161**		**4,078.9965**	**4,078.9965**	**0.1854**		**4,083.6311**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612	0.0000	2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**	**0.0000**	**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

3.6 Building Construction - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.2917	9.3015	2.6335	0.0229	0.5776	0.0247	0.6023	0.1662	0.0236	0.1898		2,423.8895	2,423.8895	0.1444		2,427.4984
Worker	0.8802	0.5809	5.9666	0.0166	1.9398	0.0128	1.9525	0.5146	0.0118	0.5263		1,655.1070	1,655.1070	0.0410		1,656.1327
Total	**1.1718**	**9.8824**	**8.6002**	**0.0395**	**2.5174**	**0.0374**	**2.5548**	**0.6808**	**0.0354**	**0.7161**		**4,078.9965**	**4,078.9965**	**0.1854**		**4,083.6311**

3.7 Architectural Coating - 2020

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109		281.4481	281.4481	0.0218		281.9928
Total	**4.2874**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**		**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2024	0.1442	1.4258	3.5700e-003	0.3880	2.7000e-003	0.3907	0.1029	2.4900e-003	0.1054		355.4131	355.4131	0.0102		355.6686
Total	**0.2024**	**0.1442**	**1.4258**	**3.5700e-003**	**0.3880**	**2.7000e-003**	**0.3907**	**0.1029**	**2.4900e-003**	**0.1054**		**355.4131**	**355.4131**	**0.0102**		**355.6686**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2422	1.6838	1.8314	2.9700e-003		0.1109	0.1109		0.1109	0.1109	0.0000	281.4481	281.4481	0.0218		281.9928
Total	**4.2874**	**1.6838**	**1.8314**	**2.9700e-003**		**0.1109**	**0.1109**		**0.1109**	**0.1109**	**0.0000**	**281.4481**	**281.4481**	**0.0218**		**281.9928**

3.7 Architectural Coating - 2020

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.2024	0.1442	1.4258	3.5700e-003	0.3880	2.7000e-003	0.3907	0.1029	2.4900e-003	0.1054		355.4131	355.4131	0.0102		355.6686
Total	**0.2024**	**0.1442**	**1.4258**	**3.5700e-003**	**0.3880**	**2.7000e-003**	**0.3907**	**0.1029**	**2.4900e-003**	**0.1054**		**355.4131**	**355.4131**	**0.0102**		**355.6686**

3.7 Architectural Coating - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941		281.4481	281.4481	0.0193		281.9309
Total	**4.2641**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**		**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1882	0.1292	1.3013	3.4500e-003	0.3880	2.6200e-003	0.3906	0.1029	2.4100e-003	0.1053		343.3138	343.3138	9.1500e-003		343.5425
Total	**0.1882**	**0.1292**	**1.3013**	**3.4500e-003**	**0.3880**	**2.6200e-003**	**0.3906**	**0.1029**	**2.4100e-003**	**0.1053**		**343.3138**	**343.3138**	**9.1500e-003**		**343.5425**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2189	1.5268	1.8176	2.9700e-003		0.0941	0.0941		0.0941	0.0941	0.0000	281.4481	281.4481	0.0193		281.9309
Total	**4.2641**	**1.5268**	**1.8176**	**2.9700e-003**		**0.0941**	**0.0941**		**0.0941**	**0.0941**	**0.0000**	**281.4481**	**281.4481**	**0.0193**		**281.9309**

3.7 Architectural Coating - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1882	0.1292	1.3013	3.4500e-003	0.3880	2.6200e-003	0.3906	0.1029	2.4100e-003	0.1053		343.3138	343.3138	9.1500e-003		343.5425
Total	**0.1882**	**0.1292**	**1.3013**	**3.4500e-003**	**0.3880**	**2.6200e-003**	**0.3906**	**0.1029**	**2.4100e-003**	**0.1053**		**343.3138**	**343.3138**	**9.1500e-003**		**343.5425**

3.7 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**4.2498**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1760	0.1162	1.1933	3.3200e-003	0.3880	2.5500e-003	0.3905	0.1029	2.3500e-003	0.1053		331.0214	331.0214	8.2100e-003		331.2265
Total	**0.1760**	**0.1162**	**1.1933**	**3.3200e-003**	**0.3880**	**2.5500e-003**	**0.3905**	**0.1029**	**2.3500e-003**	**0.1053**		**331.0214**	**331.0214**	**8.2100e-003**		**331.2265**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	4.0452					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**4.2498**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

3.7 Architectural Coating - 2022

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.1760	0.1162	1.1933	3.3200e-003	0.3880	2.5500e-003	0.3905	0.1029	2.3500e-003	0.1053		331.0214	331.0214	8.2100e-003		331.2265
Total	**0.1760**	**0.1162**	**1.1933**	**3.3200e-003**	**0.3880**	**2.5500e-003**	**0.3905**	**0.1029**	**2.3500e-003**	**0.1053**		**331.0214**	**331.0214**	**8.2100e-003**		**331.2265**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

Improve Pedestrian Network

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.1454	5.1183	14.7326	0.0464	4.4167	0.0374	4.4542	1.1805	0.0349	1.2154		4,702.7309	4,702.7309	0.2208		4,708.2501
Unmitigated	1.1540	5.1741	14.9486	0.0473	4.5069	0.0381	4.5450	1.2046	0.0355	1.2401		4,792.8409	4,792.8409	0.2242		4,798.4467

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Single Family Housing	828.24	828.24	828.24	2,125,354	2,082,847
Total	828.24	828.24	828.24	2,125,354	2,082,847

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	10.00	5.00	6.50	0.00	0.00	0.00	0	0	0
Single Family Housing	10.00	5.00	6.50	46.50	12.50	41.00	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.562895	0.037862	0.207220	0.115570	0.017815	0.005092	0.018559	0.023754	0.002009	0.001969	0.005819	0.000618	0.000817
Single Family Housing	0.562895	0.037862	0.207220	0.115570	0.017815	0.005092	0.018559	0.023754	0.002009	0.001969	0.005819	0.000618	0.000817

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Percent of Electricity Use Generated with Renewable Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0664	0.5675	0.2415	3.6200e-003		0.0459	0.0459		0.0459	0.0459		724.4538	724.4538	0.0139	0.0133	728.7589
NaturalGas Unmitigated	0.0664	0.5675	0.2415	3.6200e-003		0.0459	0.0459		0.0459	0.0459		724.4538	724.4538	0.0139	0.0133	728.7589

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	6157.86	0.0664	0.5675	0.2415	3.6200e-003		0.0459	0.0459		0.0459	0.0459		724.4538	724.4538	0.0139	0.0133	728.7589
Total		**0.0664**	**0.5675**	**0.2415**	**3.6200e-003**		**0.0459**	**0.0459**		**0.0459**	**0.0459**		**724.4538**	**724.4538**	**0.0139**	**0.0133**	**728.7589**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Single Family Housing	6.15786	0.0664	0.5675	0.2415	3.6200e-003		0.0459	0.0459		0.0459	0.0459		724.4538	724.4538	0.0139	0.0133	728.7589
Total		**0.0664**	**0.5675**	**0.2415**	**3.6200e-003**		**0.0459**	**0.0459**		**0.0459**	**0.0459**		**724.4538**	**724.4538**	**0.0139**	**0.0133**	**728.7589**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.3333	0.0828	7.1805	3.8000e-004		0.0397	0.0397		0.0397	0.0397	0.0000	12.9267	12.9267	0.0124	0.0000	13.2376
Unmitigated	4.3333	0.0828	7.1805	3.8000e-004		0.0397	0.0397		0.0397	0.0397	0.0000	12.9267	12.9267	0.0124	0.0000	13.2376

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5774					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5395					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2164	0.0828	7.1805	3.8000e-004		0.0397	0.0397		0.0397	0.0397		12.9267	12.9267	0.0124		13.2376
Total	**4.3333**	**0.0828**	**7.1805**	**3.8000e-004**		**0.0397**	**0.0397**		**0.0397**	**0.0397**	**0.0000**	**12.9267**	**12.9267**	**0.0124**	**0.0000**	**13.2376**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.5774					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	3.5395					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.2164	0.0828	7.1805	3.8000e-004		0.0397	0.0397		0.0397	0.0397		12.9267	12.9267	0.0124		13.2376
Total	**4.3333**	**0.0828**	**7.1805**	**3.8000e-004**		**0.0397**	**0.0397**		**0.0397**	**0.0397**	**0.0000**	**12.9267**	**12.9267**	**0.0124**	**0.0000**	**13.2376**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

APPENDIX B

TECHNICAL BIOLOGICAL REPORT

LIVE OAK ASSOCIATES, INC.

an Ecological Consulting Firm

CARDOSO II
TECHNICAL BIOLOGICAL REPORT
CITY OF GALT, SACRAMENTO COUNTY, CALIFORNIA

Prepared by

LIVE OAK ASSOCIATES, INC.

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October 15, 2019 PN 2399-01

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APPENDIX A. SOUTH SACRAMENTO COUNTY HABITAT PLAN CONDITIONS AND MEASURES. 69

1 INTRODUCTION

This site was evaluated by Live Oak Associates, Inc. (LOA) to ascertain whether or not build-out of the proposed project would have a significant impact (as defined by CEQA) on the biological resources of the site and region. This report describes the biotic resources of the approximately 59.17 acres (24.62-acres proposed for development and 34.55 acres proposed for remainder parcel) Cordoso II property (hereafter referred to as the "study area" or "site"), south of Kost Road in Galt, Sacramento County, California (APNs 150-0101-076 and 150-0101-077) and evaluates possible impacts to these resources resulting from the proposed land use changes upon these resources. The site is bordered by Kost Road and agricultural fields to the north, agricultural fields to the west and south, and Southern Pacific Transportation land, residential development, and riparian habitat to the east and is located in the City of Galt, Sacramento County, California (a portion of the remainder parcel is in San Joaquin County; Figure 1). The site can be found on the Lodi North U.S.G.S. 7.5' quadrangle in Section 34 of Township 5 North, Range 6 East. The site is currently comprised of a developed farm with house, barns, and outbuildings, including livestock buildings, agricultural basins, agricultural fields and associated canals, and Dry Creek.

This project site is within the South Sacramento County Habitat Conservation Plan (SSHCP) area, which provides take authorization for 20 animal species and eight plant species.

In general, the development of parcels can damage or modify biotic habitats used by sensitive plant and wildlife species. In such cases, site development may be regulated by state or federal agencies, subject to provisions of the California Environmental Quality Act (CEQA), and/or covered by policies and ordinances of the City of Galt. Therefore, this report addresses issues related to: 1) sensitive biotic resources occurring in the study area; 2) the federal, state, and local laws regulating such resources, 3) evaluate whether or not the project results in any significant impacts to these resources; and if so, 4) includes mitigation measures to reduce these impacts to less-than-significant (as defined by CEQA).

The analysis of impacts, as discussed in Section 3.0 of this report, was based on the known and potential biotic resources of the study area discussed in Section 2.0. Sources of information used in the preparation of this analysis included: 1) the *California Natural Diversity Data Base*

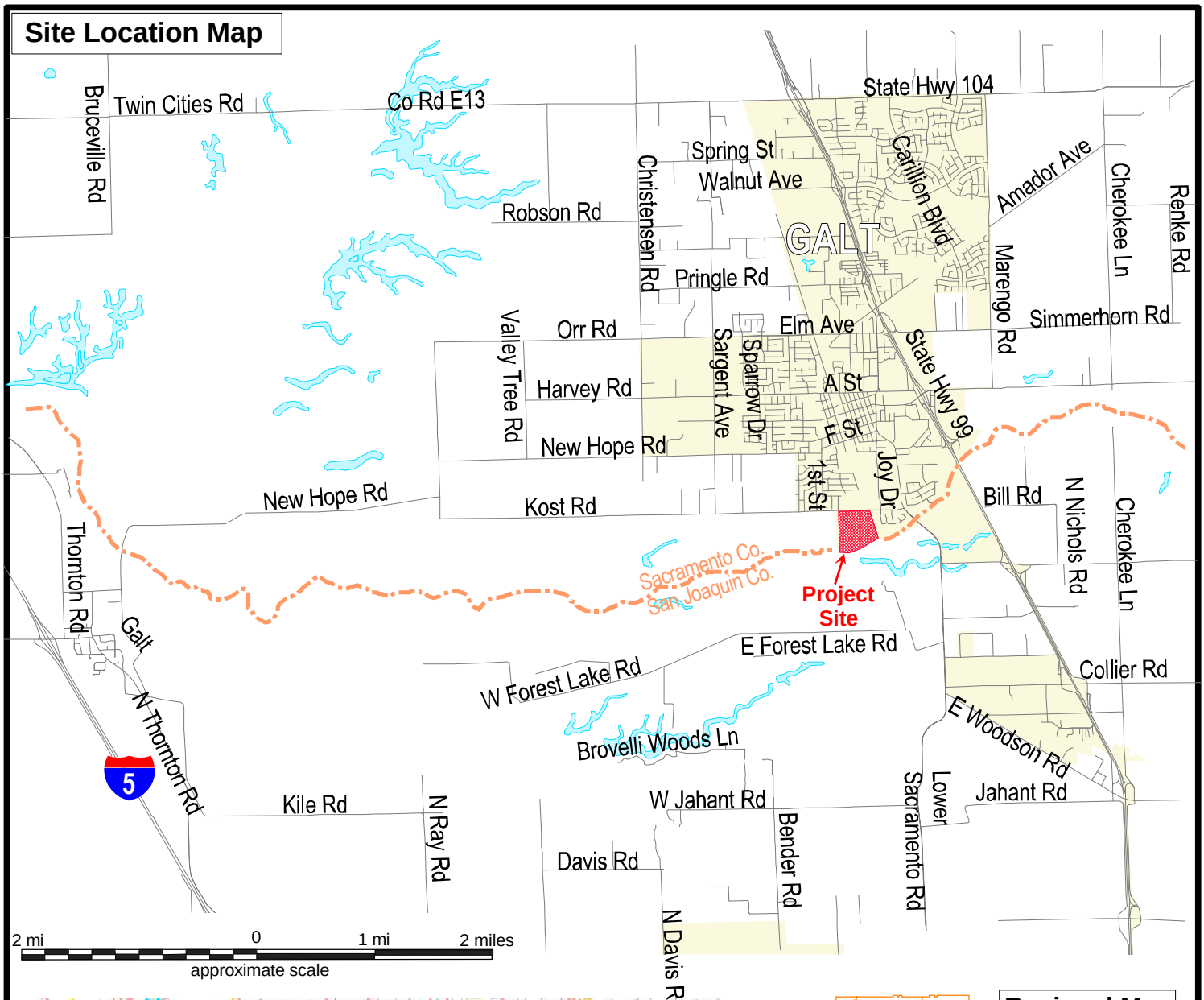
(RareFind5, 2019); 2) the *California Rare Plant Rank* (CNPS 2019); 3) manuals and references related to plants and animals of the region; and 4) the City of Galt policies and ordinances.

A field surveys of the study area was conducted on August 12, 2019 by LOA ecologists Katrina Krakow and Pamela Peterson.

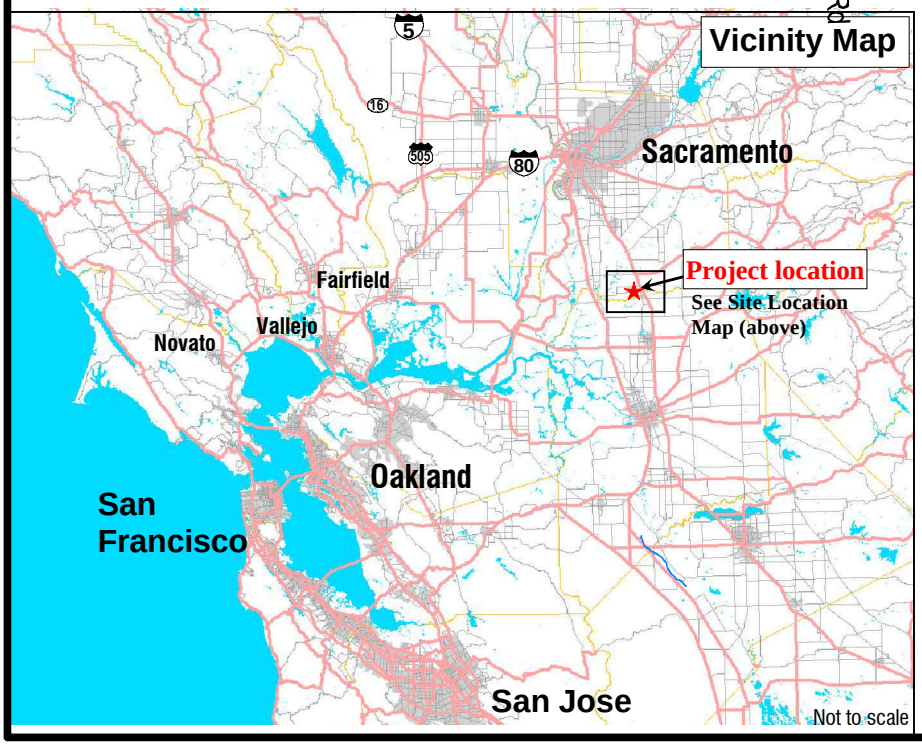
1.1 PROJECT DESCRIPTION

The project proposes to build 87 residential lots with associated landscaping and infrastructure and a basin, with a remainder parcel of 34.55 acres of open space, which includes a portion of Dry Creek (Figure 2).

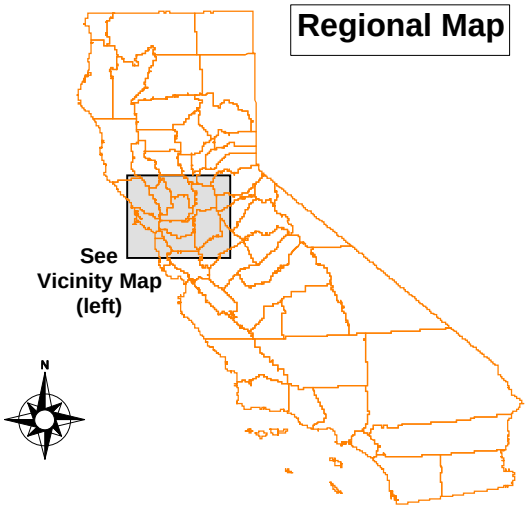
Site Location Map



Vicinity Map



Regional Map



Live Oak Associates, Inc.

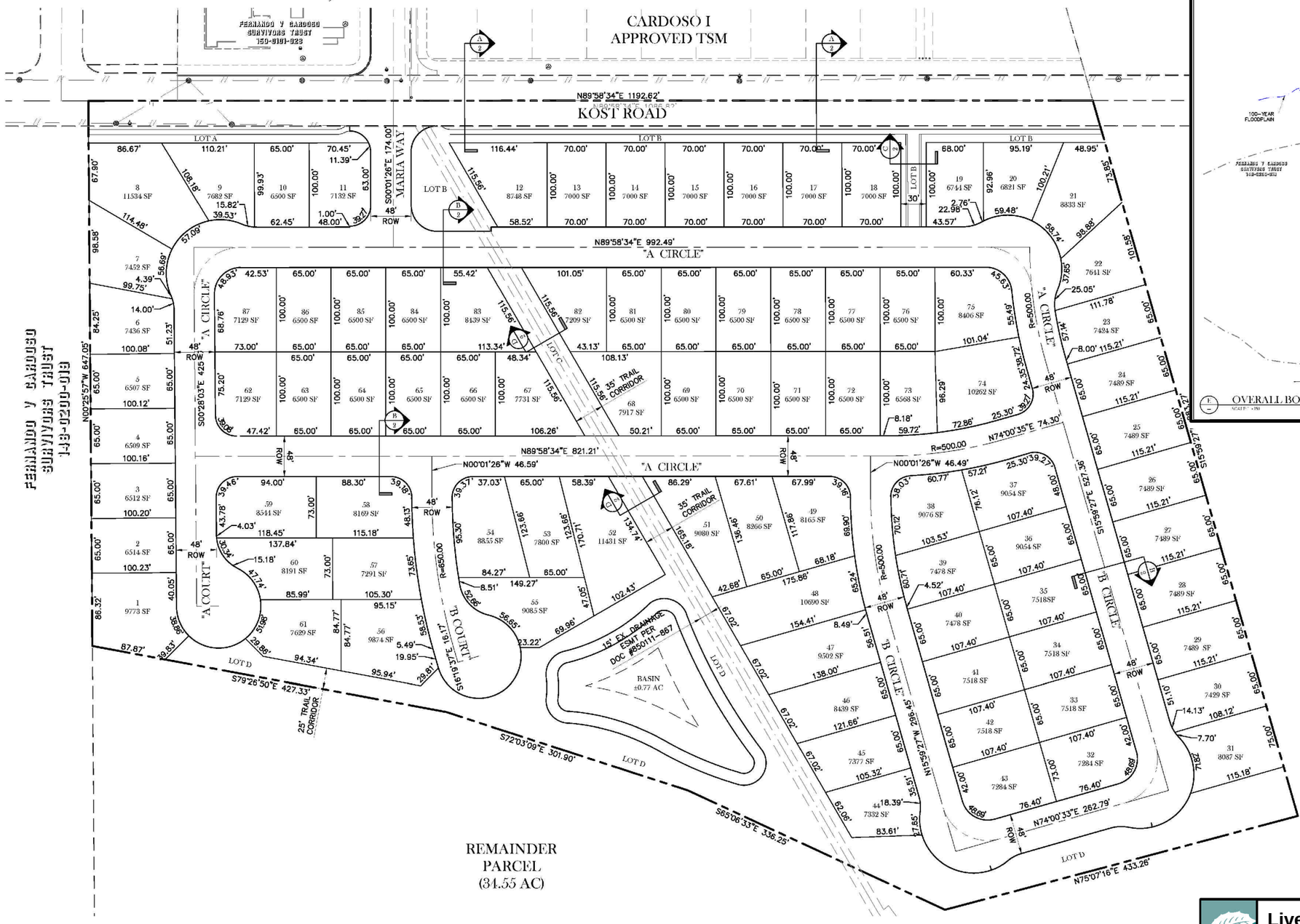
Cardoso II B.E.
Site / Vicinity Map

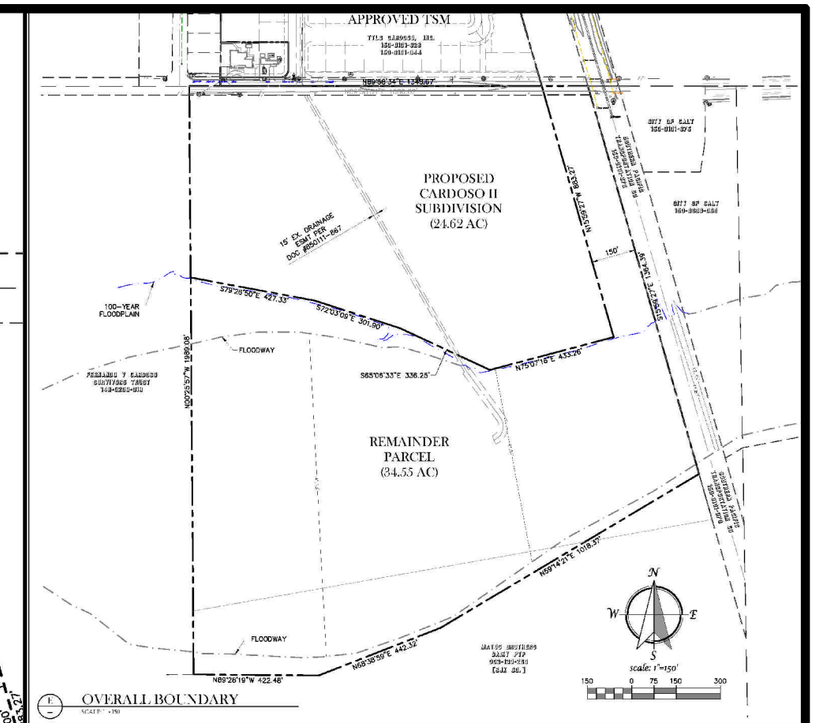
Date	Project #	Figure #
9/10/2019	2399-01	1

TENTATIVE SUBDIVISION MAP

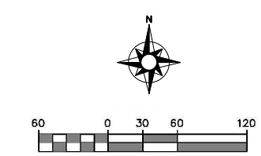
CARDOSO II SUBDIVISION

GALT, CA





OVERALL BOUNDARY



TENTATIVE SUBDIVISION MAP
JUNE 13, 2019

BASIS OF BEARINGS

THE BASIS OF BEARINGS FOR THIS SURVEY IS IDENTICAL WITH THE CENTERLINE OF PESTANA DRIVE, AS SHOWN ON THE PLAT OF "THE VINEYARDS UNIT NO. 2", FILED IN BOOK 221 OF MAPS, MAP NO 16, SACRAMENTO COUNTY RECORDS, THE BEARING OF WHICH IS GIVEN AS S89°42'45"E.

COUNTY OF SACRAMENTO

BENCHMARK: "L05-13" ELEV.=50.49' (NAVD88)

STANDARD BRONZE TABLET STAMPED "U.S.C. & G.S. B.M. Z-935 1958" LOCATED 6 PACES SOUTH & 1 PACE WEST OF TELEPHONE POLE NO. 61-G, 15 PACES WEST OF CENTER OF TRACKS OF SPRR & 75 PACES NORTH OF KOST RD.

ZONING DEVELOPMENT STANDARDS

ZONE	MAX. LOT COVERAGE	MIN. LOT SIZE	MIN. STREET FRONTAGE	MINIMUM REQUIRED YARD SETBACKS				MAX. BUILDING HEIGHT
				FRONT	SIDE	ST. SIDE	REAR	
R1C	0.50	SINGLE-FAMILY DWELLING: 6500 S.F.	65'	20'	5'	12.5'	10'	30'

Live Oak Associates, Inc.

Cardoso II B.E.
Site Plan

Date	Project #	Figure #
10/9/2019	2399-01	2

TSD ENGINEERING, INC.
expect more.
785 Orchard Drive, Suite #110
Folsom, CA 95630
Phone: (916) 608-0707
Fax: (916) 608-0701

2 EXISTING CONDITIONS

The approximately 59.17 acres (24.62-acres proposed for development and 34.55 acres proposed for remainder parcel) Cordoso II property, south of Kost Road in Galt, Sacramento County, California (APNs 150-0101-076 and 150-0101-077). The site is bordered by Kost Road and agricultural fields to the north, agricultural fields to the west and south, and Southern Pacific Transportation land, residential development, and riparian habitat to the east and is located in the City of Galt, Sacramento County, California (a portion of the remainder parcel is in San Joaquin County). The site is currently comprised of a developed farm with house, barns, and outbuildings, including livestock buildings, agricultural basins, agricultural fields and associated canals, and Dry Creek.

The site has somewhat terraced topography with the highest elevation approximately 52 feet (15 meters) in the northeastern corner and the lowest elevation approximately 29 feet in Dry Creek (9 meters) National Geodetic Vertical Datum (NGVD).

There are two soil types present on the site (NRCS 2019). San Joaquin silt loam, leveled, 0 to 1 percent slopes underlays developed, disturbed and agricultural areas in the northern portion of the site. Sailboat silt loam, drained, 0 to 2 percent slopes, wet, occasionally flooded, occurs in the southern portion of the site underlying the channel of Dry Creek and its flood plain. Both of the soils occurring on the site are considered to be hydric soils, which are soils that, under conditions of saturation, flooding or ponding long enough during the growing season, will develop anaerobic conditions in the upper part and may support hydrophytic (wetland) vegetation. Neither of these soils is considered to be particularly alkaline, therefore, plant species endemic to alkaline soils are considered unlikely to occur on the site. San Joaquin silt loam soils are known to support populations of some special status plants in the project's region.

Annual precipitation in the general vicinity of the study area is about 18 inches. Virtually all precipitation falls in the form of rain.

2.1 BIOTIC HABITATS

Land uses and biotic habitats of the site, named according to land cover types found in the SSHCP, include Low-density Development, Disturbed, Agriculture, Seasonal Wetland, and Stream/Creek.

Additionally, a manmade ditch occurs on the site. This latter feature may be considered Stream/Creek land cover under the SSHCP but is described separately. Land cover types of the project area are described in greater detail below (Figure 3).

2.1.1 Low-density Development and Disturbed Land Cover

Development existing on the site includes rural residential and agricultural structures such as barns and sheds that occur in the northwest corner of the site. This land cover would be considered Low-density Development under the SSHCP. Surrounding the existing development of the site, and also occurring at the edges of agricultural fields, soils are highly disturbed and generally barren of vegetation. Where vegetation does occur in the disturbed areas of the site, the vegetation consists of herbaceous weedy species. Included in this latter land cover type were areas heavily impacted by vehicle use including dirt roadways, several large dirt stock piles, and three manmade detention basins. One of the basins was inundated with water to a depth of six feet or more, and of the other two, one was almost completely dry and the other was completely dry. Detention basins supported ruderal vegetation around the perimeter including cheeseweed (*Malva neglecta*), bristly ox-tongue (*Helminthotheca echioides*), serrated lettuce (*Lactuca serriola*), and broad leaved pepper grass (*Lepidium latifolium*). A small amount of cattail (*Typha* sp.) was present at the eastern end of the basin.

Animals observed in this habitat during the August 2019 site visit included the sandpiper (*Calidris sp.*), rock pigeon (*Columba livia*), black phoebe (*Sayornis nigricans*), house sparrow (*Passer domesticus*), and domestic dog (*Canis lupus familiaris*).

2.1.2 Agricultural Land Cover

Agricultural fields occur over the majority of the site that is proposed for development, as well as a small amount in the southern portion of the site that is proposed to be preserved in the remainder parcel. The fields of the site were mostly barren and disced at the time of the survey. Vegetation observed in the fields consisted of non-native annual grasses and forbs including perennial wild-rye (*Festuca perennis*), wild oat (*Avena sp*.), orchard grass (*Dactylis glomerata*), field bindweed (Convolvolus arvensis), and chicory (*Cichorium intybus*).

Animal species observed in the agricultural field during the August 2019 survey includes western fence lizard (*Sceloporus occidentalis*), Canada goose (*Branta canadensis*), turkey vulture

(*Cathartes aura*), great egret (*Ardea alba*), northern harrier (*Circus cyaneus*), black phoebe, California towhee (*Melozone crissalis*), California ground squirrel (*Otospermophilus beecheyi*) burrows, raccoon (*Procyon lotor*), domestic dog scat, and domestic cat (*Felis catus*) scat.

2.1.3 Stream/Creek and Seasonal Wetland

A channelized reach of Dry Creek occurs in the southern portion of the site within the Remainder Parcel which is proposed for preservation. The channel enters the site along the western boundary and flows generally in an easterly direction, eventually exiting the site along the eastern boundary. The channel has a defined bed and bank and evidence of an Ordinary High Water mark (OHWM) on opposing banks. The channel is approximately 9 feet wide and four feet in depth. Although to the west and east of the site, Dry Creek supports riparian woodland habitat, on the site, the creek has been channelized and supports no riparian woodland habitat, and vegetation associated with the channel is limited to predominantly herbaceous and non-native plant species, including cocklebur (*Xanthium strumarium*), English plantain (Plantago lanceolata), panicled willow herb (*Epilobium brachycarpum*) and water primrose (*Ludwigia peploides*). Woody vegetation observed along the channel included California walnut (*Juglans hindsii*), Russian olive (*Elaeagnus angustifolia*), and boxelder (*Acer negundo*).

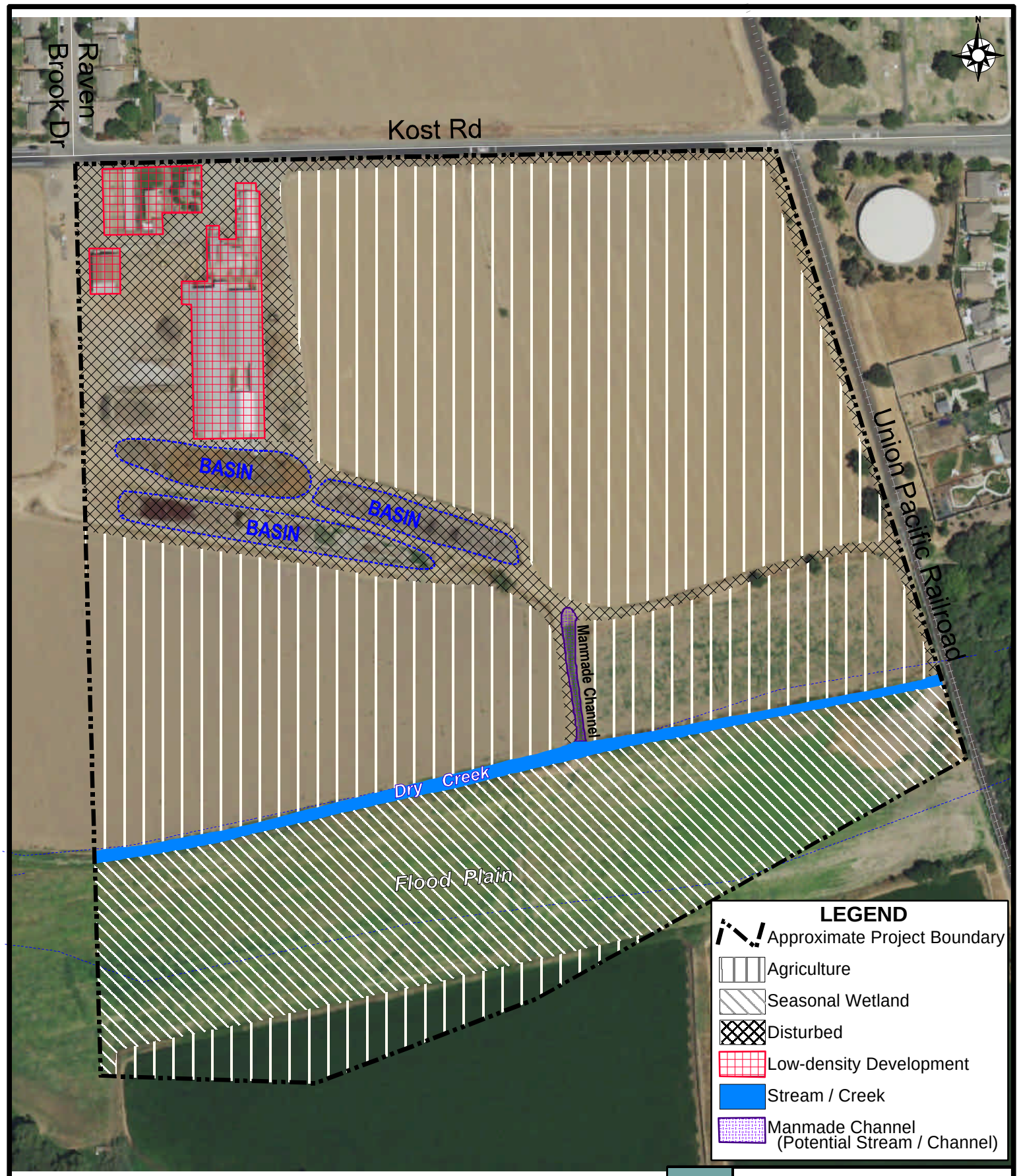
Seasonal wetland habitat occurs within the wide flood plain of Dry Creek in the southern portion of the parcel to the south of the existing channelized section of Dry Creek described above. Although completely dry at the time of the LOA survey, there was evidence that this area had been inundated in the recent past. The area supports dense populations of hydrophytic (wetland) plants. This seasonal wetland habitat occurs on the remainder parcel that is proposed for preservation, and the project is not expected to result in any direct or indirect impacts to this habitat.

Dried American bullfrog metamorphs and tadpoles (*Lithobates catesbeianus*) and crayfish were observed within the Dry Creek and a Cooper's hawk (*Accipiter cooperii*) and northern flicker (*Colaptes auratus*) were observed in the adjacent Riparian habitat off-site.

2.1.4 Constructed Channel

Waters from the detention basins on the site flow through a large culvert into a constructed channel and eventually into the channelized section of Dry Creek. This constructed ditch supported vegetation similar to the Dry Creek channel and was dominated by water primrose (*Ludwigia*

peploides). Potentially, this feature would be considered "Stream/Creek" land cover under the South Sacramento Habitat Conservation Plan (SSHCP).



400' 0 200' 400 feet
approximate scale

Sources:
USDA FSA Aerial Photography Field Office 12/17/2018

Live Oak Associates, Inc.

Cardoso II B.E.
Biotic Habitats

Date	Project #	Figure #
10/15/2019	2399-01	3

2.2 MOVEMENT CORRIDORS

Many terrestrial animals need more than one biotic habitat in order to perform all of their biological activities. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain linkages, or movement corridors, for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles. Terrestrial animals use ridges, canyons, riparian areas, and open spaces to travel between their required habitats.

The importance of an area as a movement corridor depends on the species in question and its consistent use patterns. Animal movements generally can be divided into three major behavioral categories:

- Movements within a home range or territory;
- Movements during migration; and
- Movements during dispersal.

While no detailed study of animal movements has been conducted for the study area, knowledge of the site, its habitats, and the ecology of the species potentially occurring onsite permits sufficient predictions about the types of movements occurring in the region and whether or not proposed development would constitute a significant impact to animal movements.

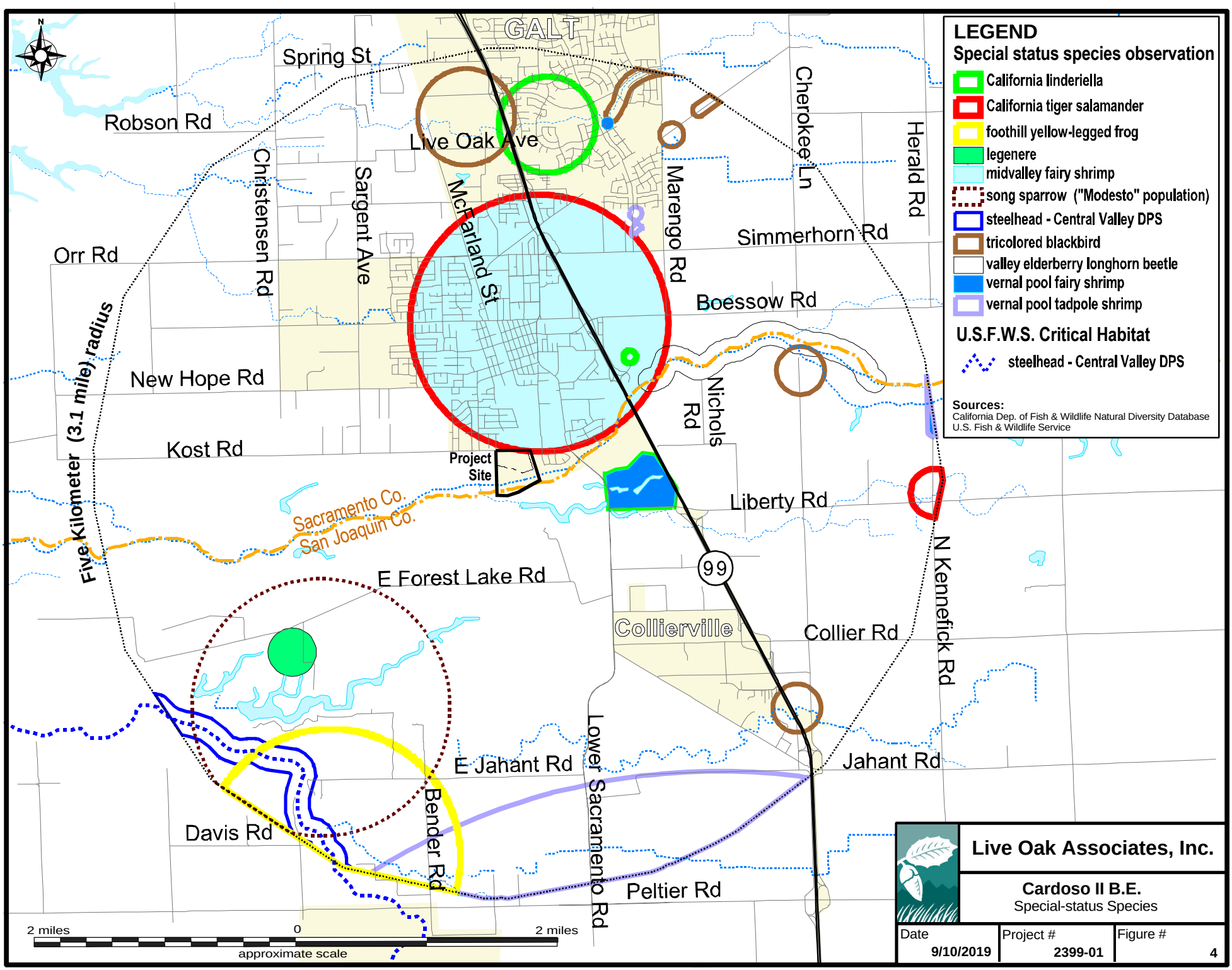
The project site exists along the southern edge of the City of Galt and currently consists of agricultural land and is adjacent to agricultural land to the north and west, however, other than that land, lands to the north of the project site consists of land uses consistent with cities. Therefore, the development area of the project site is not likely used as a movement corridor into and out of the City of Galt. Dry Creek exists within the remainder parcel which will not be developed as a part of this project. This creek is ephemeral and although local animals may use this feature to move through the site, the site is on the outskirts of the City and animals would not likely use it as a larger movement corridor. Dry Creek is not considered a linkage under the SSHCP, and the project site is not within a defined movement corridor.

2.3 SPECIAL STATUS PLANTS AND ANIMALS

Several species of plants and animals within the state of California have low populations, limited distributions, or both. Such species may be considered "rare" and are vulnerable to extirpation as the state's human population grows and the habitats these species occupy are converted to agricultural and urban uses. As described more fully in Section 3.2, state and federal laws have provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting the diversity of plant and animal species native to the state. A sizable number of native plants and animals have been formally designated as threatened or endangered under state and federal endangered species legislation. Others have been designated as "candidates" for such listing. Still others have been designated as "species of special concern" by the CDFW. The California Native Plant Society (CNPS) has developed its own set of lists of native plants considered rare, threatened, or endangered (CNPS 2001). Collectively, these plants and animals are referred to as "special status species."

A number of special status plants and animals occur in the vicinity of the study area. These species, and their potential to occur in the study area, are listed in Table 1. Sources of information for this table included *California Amphibian and Reptile Species of Special Concern* (Thomson et.al. 2016), *California Bird Species of Special Concern* (Shuford and Gardall 2008), *California Natural Diversity Data Base* (CDFW 2019), *Endangered and Threatened Wildlife and Plants* (USFWS 2019), and the *Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants* (CDFW 2019).

A search of published accounts for all of the relevant special status plant and animal species was conducted for the Lodi North USGS 7.5 minute quadrangle in which the project site occurs, and for the eight surrounding quadrangles (Bruceville, Galt, Clay, Thornton, Lockeford, Terminous, Lodi South, and Waterloo) using the California Natural Diversity Data Base Rarefind5 2019. All species listed as occurring in these quadrangles on CNPS Lists 1A, 1B, 2, or 4 were also reviewed (See Figure 4).


LEGEND
Special status species observation
California linderiella
California tiger salamander
foothill yellow-legged frog
legenere
midvalley fairy shrimp
song sparrow ("Modesto" population)
steelhead - Central Valley DPS
tricolored blackbird
valley elderberry longhorn beetle
vernal pool fairy shrimp
vernal pool tadpole shrimp
U.S.F.W.S. Critical Habitat
steelhead - Central Valley DPS
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
U.S. Fish & Wildlife Service
GALT
Spring St
Robson Rd
Live Oak Ave
Christensen Rd
Sargent Ave
McFarland St
Marengo Rd
Cherokee Ln
Herald Rd
Simmerhorn Rd
Orr Rd
Boessow Rd
New Hope Rd
Nichols Rd
Kost Rd
Project Site
Five Kilometer (3.1 mile) radius
Sacramento Co.
San Joaquin Co.
Liberty Rd
99
E Forest Lake Rd
Collierville
Collier Rd
N Kennefick Rd
E Jahant Rd
Lower Sacramento Rd
Jahant Rd
Bender Rd
Davis Rd
Peltier Rd
2 miles
0
2 miles
approximate scale
Live Oak Associates, Inc.
Cardoso II B.E.
Special-status Species
Date
9/10/2019
Project #
2399-01
Figure #
4

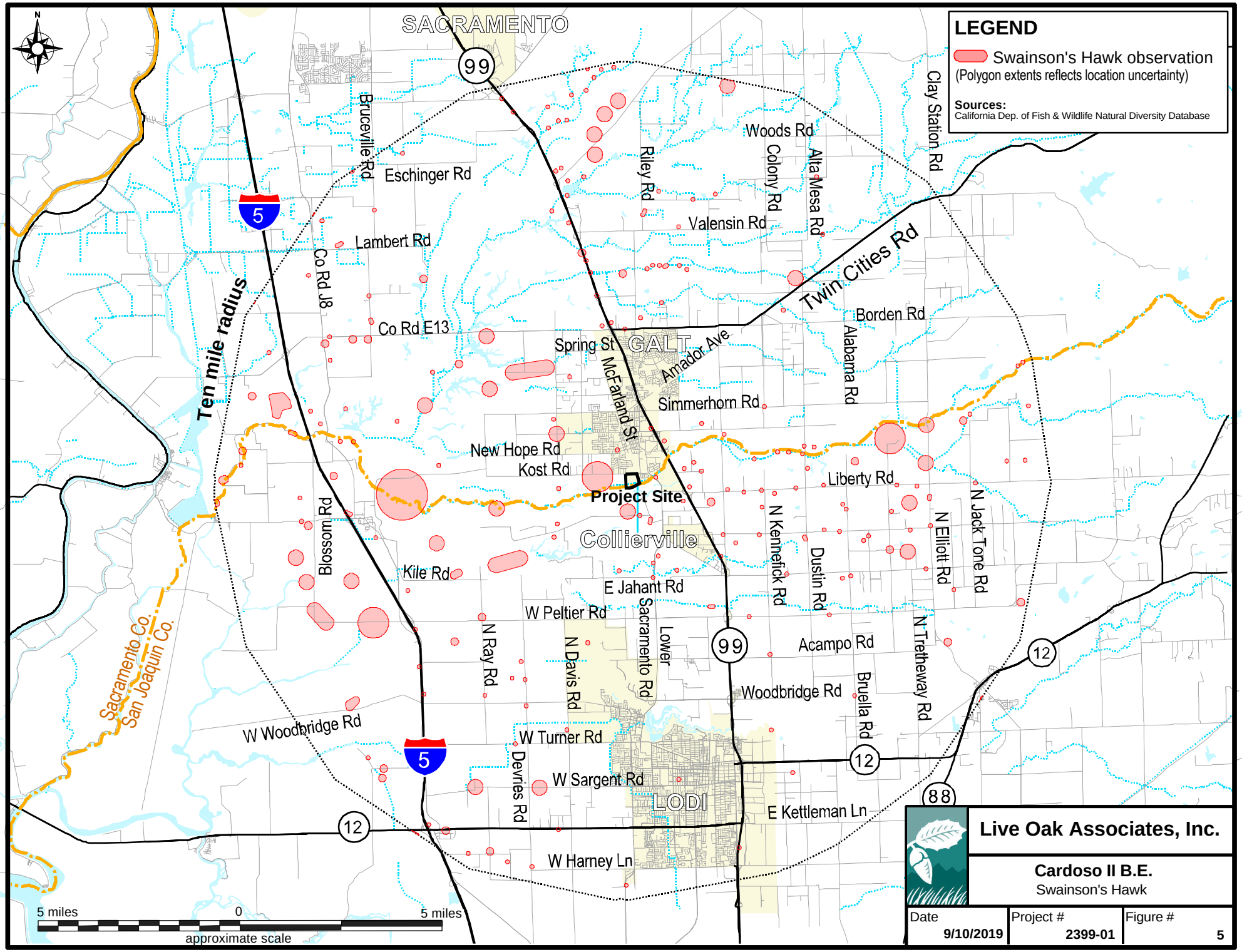

LEGEND
Swainson's Hawk observation
(Polygon extents reflects location uncertainty)
Sources:
California Dep. of Fish & Wildlife Natural Diversity Database
SACRAMENTO
GALT
Collierville
LODI
Project Site
Ten mile radius
Twin Cities Rd
Sacramento Co.
San Joaquin Co.
Bruceville Rd
Eschinger Rd
Lambert Rd
Co Rd J8
Co Rd E13
Spring St
McFarland St
Amador Ave
Riley Rd
Woods Rd
Colony Rd
Alta Mesa Rd
Clay Station Rd
Valensin Rd
Borden Rd
Alabama Rd
Simmerhorn Rd
New Hope Rd
Kost Rd
Liberty Rd
N Jack Tone Rd
N Elliott Rd
N Kennefick Rd
Dustin Rd
Blossom Rd
Kile Rd
E Jahant Rd
W Peltier Rd
N Ray Rd
N Davis Rd
Lower Sacramento Rd
Acampo Rd
N Tretheway Rd
Woodbridge Rd
Bruella Rd
W Woodbridge Rd
W Turner Rd
Devries Rd
W Sargent Rd
E Kettleman Ln
W Harney Ln
99
5
12
88
5 miles
0
5 miles
approximate scale
Live Oak Associates, Inc.
Cardoso II B.E.
Swainson's Hawk
Date
9/10/2019
Project #
2399-01
Figure #
5

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (adapted from CDFW 2019 and CNPS 2019)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area
Succulent owl's clover (*Castilleja campestris var. succulenta*)	FT, CE, CRPR 1B	Habitat: Occurs in vernal pools. Elevation: 50-750 meters. Blooms: (March) April-May	**Absent from Development Area and Remainder Parcel.** Vernal pools are absent from the site.
Boggs Lake hedge-hyssop (*Gratiola heterosepala*)	CE, CRPR 1B, SSHCP Covered Species	Habitat: Occurs in marshes and swamps (lake margins), vernal pools often in clay. Per the SSCHCP, this species may occur in vernal pools and seasonal wetlands within the project site region. Elevation: 10-2375 meters. Blooms: April-August.	**Absent from Development Area and Possible in Remainder Parcel.** Seasonal wetland habitat within the Dry Creek flood plain may provide potential habitat for this species and the SSHCP appears to indicate that modeled habitat for this species occurs on the site. Additionally, the closest documented occurrences are approximately 10 miles east and north of the site.
Slender orcutt grass (*Orcuttia tenuis*)	FT, CE, CRPR 1B SSHCP Covered Species	Habitat: Occurs in vernal pools often gravelly Elevation: 35-1760 meters. Blooms: May-September (October)	**Absent from Development Area and Remainder Parcel.** Vernal pools are absent from the site and the closest known occurrences are more than 10 miles north of the site.
Sacramento orcutt grass (*Orcuttia viscida*)	FE, CE, CRPR 1B SSHCP Covered Species	Habitat: Occurs in vernal pools. The SSHCP considers this species to be a strict vernal pool endemic. Elevation: 30-100 meters. Blooms: April- July (September).	**Absent from Development Area and Remainder Parcel.** Vernal pools are absent from the site. The closest known occurrences are more than 10 miles north and east of the site, and the SSHCP indicates that the closest modelled habitat for this species is more than five miles northeast and east of the site. Also, the SSHCP indicates that this species is associated with Corning complex; Hicksville sandy clay loam; Red Bluff-Redding complex; and Redding gravelly loam soil types, none of which are present on the site.

PLANTS (adapted from CDFW 2019 and CNPS 2019)
Other special status plants listed by CNPS

Species	Status	Habitat	Occurrence in the Study Area
Watershield (*Brasenia schreberi*)	CRPR 2B	Habitat: Occurs in marshes and swamps (freshwater). Elevation: 33-2200 meters. Blooms: June-September	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site. The closest known occurrences are more than five miles northeast of the site.
Bristly sedge (*Carex comosa*)	CRPR 2B	Habitat: Occurs in coastal prairie, marshes and swamps (lake margins), valley and foothill grassland. Elevation: 0-625 meters. Blooms: May- September	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (adapted from CDFW 2019 and CNPS 2019)
Other special status plants listed by CNPS (cont.)

Species	Status	Habitat	Occurrence in the Study Area
Bolander's water hemlock (*Cicuta maculata var. bolanderi*)	CRPR 2B	Habitats: Found in coastal marshes and swamps with fresh or brackish water. Elevation: 0-200 meters. Blooms: July-September.	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site.
Peruvian dodder (*Cuscuta obtusiflora var. glandulosa*)	CRPR 2B	Habitat: Marshes and swamps (freshwater). Elevation: 15-280 meters. Blooms: July-October.	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site. The closest known occurrence is more than ten miles northeast of the site.
Dwarf downingia (*Downingia pusilla*)	CRPR 2B, SSHCP Covered Species	Habitat: Occurs in vernal pools and swales. Elevation: 1-445 meters. Blooms: March-May	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site.
Woolly rose (*Hibiscus lasiocarpos var. occidentalis*)	CRPR 1B	Habitat: Occurs in freshwater marshes and swamps, often found in riprap on sides of levees. Elevation: 45-175 metes. Blooms: Perennial rhizomatous herb (emergent) June-September	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site.
Ahart's dwarf rush (*Juncus leiospermus var. ahartii*)	CRPR 1B SSHCP Covered Species	Habitat: Vernal pools and vernal pool edges and their related swales per the SSHCP. Elevation: 30-229 meters Blooms: March-May	**Absent from Development Area and Remainder Parcel.** The SSHCP identifies land cover types in this region for this species as shallow vernal pool, edges of large vernal pools, and their related swale habitat per the SSHCP on Red Bluff loam, Red Bluff-Redding complex and Redding gravelly loam soil types in this region. Although the seasonal wetlands of the remainder parcel may provide marginal habitat for this species, the soils of the site are not Red Bluff or Redding soils and there are no known occurrences within three miles of the site and the SSHCP indicates there is no modeled habitat for this species within the Galt area.
Delta tule pea (*Lathyrus jepsonii*)	CRPR 1B	Habitat: Occurs in freshwater and brackish marshes and swamps. Elevation: 0-5 meters Blooms: May-July (August-September)	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site. There are no occurrences of this species within a three-mile radius of the site.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (adapted from CDFW 2019 and CNPS 2019)
Other special status plants listed by CNPS (cont.)

Species	Status	Habitat	Occurrence in the Study Area
Legenere (*Legenere limosa*)	CRPR 1B, SSHCP Covered Species	Habitat: Occurs in vernal pools. The SSHCP considers vernal pool and seasonal wetland land cover types to provide potential habitat for this species. Elevation: 1-880 meters. Blooms: April–June.	**Absent from Development Area and Remainder Parcel.** The seasonal wetland habitat of the site proposed for preservation within the Remainder Parcel provides potential habitat for this species. However, the closest known occurrences of this species are more than six miles north, northwest and southwest of the site.
Heckard's pepper-grass (*Lepidium latipes var. heckardii)*	CRPR 1B	Habitat: Occurs in valley and foothill grasslands (alkaline flats). Elevation: 2-200 meters. Blooms: March-May.	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site.
Mason's lilaeopsis (*Lilaeopsis masonii*)	CRPR 1B	Habitat: Occurs in brackish or freshwater marshes and swamps and riparian scrub. Elevation: 0-10 meters. Blooms: April-November	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site. There are no occurrences within three miles of the site.
Delta mudwort (*Limosella australis*)	CRPR 2B	Habitat: Occurs in freshwater or brackish marshes and swamps and riparian scrub. Elevation: 0-3 meters. Bloom: May-August.	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site. There are no occurrences within three miles of the site.
Pincushion navarretia (*Navarretia myersii*)	CRPR 1B SSHCP Covered Species	Habitat: Occurs in vernal pools, often acidic. The SSHCP considers this species to be a strict vernal pool species and land cover types supporting this species are considered to be vernal pools and their related swales per the SSHCP. Elevation: 20-30 meters. Bloom: April-May.	**Absent from Development Area and Remainder Parcel.** Vernal pools and their related swales per the SSHCP are absent from the site. The closest occurrences are more than 10 miles northeast of the site.
Sanford's arrowhead (*Sagittaria sandfordii*)	CRPR 1B, SSHCP Covered Species	Habitat: Occurs in marshes and swamps (assorted shallow freshwater) Elevation: 0-650 meters Blooms: May-October (November)	**Possible in Development Area and Remainder Parcel.** The site appears to be within modeled habitat for Sanford's arrowhead by the SSHCP and the seasonal wetlands and Dry Creek channel may provide potential habitat for this species. However, the closest known occurrences are approximately five miles north and west of the site.
Marsh skullcap (*Scutellaria galericulata*)	CRPR 2B	Habitat: Occurs in lower montane coniferous forest, meadows and seeps (mesic), marshes and swamps. Elevation: 0-2100 meters. Blooms: June-September	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site. There are no occurrences within three miles of the site.

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

PLANTS (adapted from CDFW 2019 and CNPS 2019)
Other special status plants listed by CNPS (cont.)

Species	Status	Habitat	Occurrence in the Study Area
Side-flowering skullcap (*Scutellaria lateriflora)*	CRPR 2B	Habitat: Meadows and seeps (mesic), marshes and swamps. Elevation: 0-500 meters. Blooms: July- September	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site. The closest occurrences are approximately five miles northwest of the site.
Suisun Marsh aster (*Symphyotrichum lentum*)	CRPR 1B	Habitat: Occurs in brackish and freshwater marshes and swamps. Elevation: 0-3 meters. Blooms: (April) May-November.	**Absent from Development Area and Remainder Parcel.** No suitable habitat occurs on the site. The closest known occurrence is more than 15 miles west of the site along the Sacramento River.
Saline clover (*Trifolium hydrophilum*)	CRPR 1B	Habitat: Marshes and swamps, mesic and alkaline areas of valley and foothill grasslands, and vernal pools. Elevation: 0-300 meters. Blooms: Annual herb; April-June.	**Absent from Development Area and Remainder Parcel.** Suitable habitat is absent on the site for this species due to a lack of alkaline soils.

ANIMALS (adapted from CDFW 2019 and USFWS 2019)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act

Species	Status	Habitat	Occurrence in the Study Area
Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*)	FT, SSHCP Covered Species	Lives in mature elderberry shrubs of California's Central Valley and Sierra Foothills.	**Absent from Development Area and Remainder Parcel.** Although the South Sacramento Habitat Conservation Plan (SSHCP) maps show the site as being adjacent to Valley elderberry longhorn beetle modeled habitat, suitable habitat in the form of elderberry shrubs is absent from the site.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT, SSHCP Covered Species	Occurs in vernal pools of California.	**Absent from Development Area and Remainder Parcel.** Although the SSHCP identified the site as supporting modeled vernal pool fairy shrimp habitat, the majority of the site has been used agriculturally and has had soils disturbed for many decades. The nearest recorded observation of this species is approximately a half-mile from the site (CNDDB 2019).
Vernal pool tadpole shrimp (*Lepidurus packardi*)	FE, SSHCP Covered Species	Occurs in vernal pools of California. Vernal pools and swales in the Sacramento Valley containing clear to highly turbid water.	**Absent from Development Area and Remainder Parcel.** Although the SSHCP identified the site as being adjacent to modeled vernal pool tadpole shrimp habitat and the majority of the site has been used agriculturally and has had soils disturbed for many decades. The nearest recorded observation of this species is approximately two miles from the site (CNDDB 2019).

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2019 and USFWS 2019)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act (cont.)

Species	Status	Habitat	Occurrence in the Study Area
Midvalley fairy shrimp (*Branchinecta mesovallensis*)	SSHCP Covered Species	Occurs in vernal pools, vernal swales, and other ephemeral freshwater similar in habitat to other fairy shrimp species.	**Absent from Development Area and Remainder Parcel.** Although the SSHCP identified the site as supporting modeled midvalley fairy shrimp habitat, the majority of the site has been used agriculturally and has had soils disturbed for many decades. The nearest recorded observation of this species is adjacent to the site; however, the center of the record is approximately one mile from the site (CNDDB 2019).
Delta smelt (*Hypomesus transpacificus*)	FT, SE	Endemic to the upper portions of the San Francisco Bay-Delta Estuary.	**Absent from Development Area and Remainder Parcel.** The site is outside the range of this species (Santos et. al. 2014). The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).
Longfin smelt (*Spirinchus thaleichthys*)	ST	Bays and estuaries from Alaska south to the San Francisco Bay-Delta Estuary.	**Absent from Development Area and Remainder Parcel.** The site is outside the range of this species (Santos et. al. 2014). The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).
Steelhead – Central Valley DPS (*Oncorhynchus mykiss irideus pop.11*)	FT	Anadromous form of rainbow trout living in the ocean but migrating up freshwater streams and rivers to spawn.	**Absent from Development Area and Remainder Parcel.** The site is just outside the range of this species (Santos et. al. 2014). The nearest recorded observation of this species is nearly three miles from the site (CNDDB 2019).
California tiger salamander (*Ambystoma californiense*)	FT, CT, SSHCP Covered Species	Breeds in vernal pools and stock ponds of central California; adults aestivate in grassland habitats adjacent to the breeding sites.	**Possible in Development Area and Remainder Parcel.** Suitable breeding habitat for this species in the form of the basins onsite. Additionally, the SSHCP identified the site as supporting modeled aquatic habitat and being adjacent to modeled upland habitat. The nearest recorded observation centered adjacent from the site; however, the record is centered approximately one mile from the site (CNDDB 2019).
Foothill yellow-legged frog (*Rana boylii*)	CSC, CCT	Occurs in swiftly flowing streams and rivers with rocky substrate with open, sunny banks in forest, chaparral, and woodland habitats, and can sometimes be found in isolated pools.	**Absent from Development Area and Remainder Parcel.** Habitats required by this species are absent, as Dry Creek is an ephemeral creek. Additionally, the closest recorded observation of this species is more than two miles from the site (CNDDB 2019).

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2019 and USFWS 2019)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act (cont.)

Species	Status	Habitat	Occurrence in the Study Area
Giant gartersnake (*Thamnophis gigas*)	FT, CT, SSHCP Covered Species	Habitat requirements consist of (1) adequate water during the snake's active season (early-spring through mid-fall) to provide food and cover; (2) emergent, herbaceous wetland vegetation, such as cattails and bulrushes, for escape cover and foraging habitat during the active season; (3) grassy banks and openings in waterside vegetation for basking; and (4) higher elevation uplands for cover and refuge from flood waters during the snake's dormant season in the winter.	**Absent from Development Area and Remainder Parcel.** Although Dry Creek occurs onsite, which will not be developed, this creek does not hold adequate water in the giant gartersnake active season to provide food and cover for the giant gartersnake. Additionally, the SSHCP does not identify the site as supporting modeled habitat for this species. The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).
Tricolored Blackbird (*Agelaius tricolor*)	CSC, CCE, SSHCP Covered Species	Breeds near fresh water in dense emergent vegetation.	**Possible in Development Area and Remainder Parcel.** The site is within SSHCP-modeled foraging and nesting-foraging habitat for the tricolored blackbird, and the dense blackberry bushes and other dense vegetation along the manmade channel and the edges of Dry Creek may support suitable nesting habitat, additionally, the agricultural fields may provide suitable nesting habitat depending on the type of crop planted. The nearest recorded observation of this species is approximately two miles from the site (CNDDB 2019).
Swainson's hawk (nesting) (*Buteo swainsoni*)	CT, SSHCP Covered Species	Breeds in stands with few trees in juniper-sage flats, riparian areas, and in oak savannah. Requires adjacent suitable foraging areas such as grasslands or alfalfa fields supporting rodent populations.	**Possible in Development Area and Remainder Parcel.** A few trees occur onsite and several larger trees occur adjacent to the site. The site is within SSHCP-modeled high-value foraging habitat and has a nesting occurrence adjacent to the site.
Greater sandhill crane (nesting & nonbreeding/wintering) (*Grus canadensis tabida*)	CT, CP, SSHCP Covered Species	Breeding habitat includes open grasslands, marshes, and edges of lakes, ponds, and river banks. Wintering habitat includes a communal roost in shallow water.	**Possible in Development Area and Remainder Parcel.** Agricultural fields of the site provide suitable foraging habitat. The site is within SSHCP-modeled foraging (Non-VHV) and roosting (Non-VHV) habitat for the greater sandhill crane. The nearest recorded observation is more than three miles from the site (CNDDB 2019).

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2019 and USFWS 2019)
Species Listed as Threatened or Endangered under the State and/or Federal Endangered Species Act (cont.)

Species	Status	Habitat	Occurrence in the Study Area
Western yellow-billed cuckoo (nesting) (*Coccyzus americanus occidentalis*)	FC, CE	Breed in large blocks of riparian habitats, particularly cottonwoods and willows.	**Unlikely in Development Area and Remainder Parcel.** Dense riparian habitat required by the western yellow-billed cuckoo is absent from the site, however, dense riparian habitat is nearly adjacent to the site, so a cuckoo may move onto the site from time to time from that habitat. Additionally, the nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).
Riparian brush rabbit (*Sylvilagus bachmani riparius*)	FE, CE	Occurs close to the San Joaquin River in riparian forest with dense shrub cover. The only known extant population is in Caswell Memorial State Park on the Stanislaus River in southern San Joaquin County, CA.	**Absent from Development Area and Remainder Parcel.** The site is outside the range of the riparian brush rabbit. Additionally, the closes recorded observation of this species is more than three miles from the site (CNDDB 2019).

ANIMALS (adapted from CDFW 2019 and USFWS 2019)
State Species of Special Concern and Protected Species

Species	Status	Habitat	Occurrence in the Study Area
Ricksecker's water scavenger beetle (*Hydrochara ricksecker*i)	SSHCP Covered Species	Occurs in vernal pool wetlands with water in winter and early spring and the absence of water in summer.	**Absent from Development Area and Unlikely in Remainder Parcel.** Although the SSHCP identified the site as supporting modeled Ricksecker's water scavenger beetle habitat, the majority of the site has been used agriculturally and has had soils disturbed for many decades. The only habitat which has a possibility to support this species onsite may be pooling which may occur within the bed of Dry Creek, which will not be developed as a part of this project. The nearest recorded observation of this species is more than three miles from the site (SSHCP 2018).
Sacramento splittail (*Pogonichthys macrolepidotus*)	CSC	Endemic to lakes and rivers of the Central Valley. Occurs in estuaries along the San Francisco Bay and associated bays and marshes, and can survive high salinity and low dissolved oxygen.	**Absent from Development Area and Remainder Parcel.** The site is outside the range of this species (Santos et. al. 2014). The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2019 and USFWS 2019)
State Species of Special Concern and Protected Species

Species	Status	Habitat	Occurrence in the Study Area
Western pond turtle (*Actinemys marmorata*)	CSC, SSHCP Covered Species	Intermittent and permanent waterways including streams, marshes, rivers, ponds and lakes. Open slow-moving water of rivers and creeks of central California with rocks and logs for basking.	**Unlikely in Development Area and Remainder Parcel.** The site supports basins likely used for settling ponds for the dairy; these would not likely be used by the western pond turtle; Dry Creek is an ephemeral creek, which has a poor suitability for the western pond turtle. The site is within modeled aquatic habitat and adjacent to upland habitat for the western pond turtle. The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).
Western spadefoot (*Spea hammondii*)	CSC, SSHCP Covered Species	Primarily occurs in grasslands, but also occurs in valley and foothill hardwood woodlands. Requires vernal pools or other temporary wetlands for breeding.	**Absent from Development Area and Unlikely in Remainder Parcel.** Although the SSHCP identified the site as supporting modeled western spadefoot aquatic habitat and adjacent to upland habitat, the majority of the site has been used agriculturally and has had soils disturbed for many decades. The only habitat which has a possibility to support this species onsite may be pooling which may occur within the bed of Dry Creek, which will not be developed as a part of this project. The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).
Song Sparrow ("Modesto" population) (*Melospiza melodia*)	CSC	Nests in riparian and dense vegetation fairly near water and along sparsely vegetated irrigation canals.	**Possible in Development Area and Remainder Parcel.** The site currently supports dense blackberry brambles along Dry Creek and manmade channel, therefore this species could occur in both the development area and the remainder parcel. The nearest recorded observation of this species is approximately 1.5 miles from the site (CNDDB 2019).
White-tailed Kite (nesting) (*Elanus leucurus*)	CP, SSHCP Covered Species	Open grasslands and agricultural areas throughout central California.	**Possible in Development Area and Remainder Parcel.** Suitable breeding and foraging habitat are present onsite and adjacent to the site. Additionally, the SSHCP identified the site as supporting modeled foraging habitat and adjacent to nesting habitat. The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2019 and USFWS 2019)
State Species of Special Concern and Protected Species (cont.)

Species	Status	Habitat	Occurrence in the Study Area
Ferruginous hawk (*Buteo regalis*)	SSHCP Covered Species	Occurs in grassland, shrub-steppe, and edge habitats. Breeds mostly outside of California.	**Possible in Development Area and Remainder Parcel.** Although this species is not known to breed in the SSHCP plan area, it does overwinter within the plan area. The site is within SSHCP-modeled foraging habitat and the site provides suitable overwintering habitat. The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).
Northern harrier (nesting) (*Circus cyaneus*)	CSC, SSHCP Covered Species	Frequents meadows, grasslands, open rangelands, freshwater emergent wetlands; uncommon in wooded habitats.	**Present in Development Area and Remainder Parcel.** This species was observed onsite during the 2019 site visit. Suitable breeding and foraging habitat exists onsite and adjacent to the site for this species. The site is within SSHCP-modeled nesting-foraging and foraging habitat with an occurrence adjacent to the site.
Cooper's Hawk (*Accipiter cooperii*)	CSC, SSHCP Covered Species	Breeds in oak woodlands, riparian forests and mixed conifer forests of the Sierra Nevada, but winters in a variety of lowland habitats.	**Present in Development Area and Remainder Parcel.** This species was observed adjacent to the site during the 2019 site visit. Suitable foraging habitat exists onsite and suitable breeding and foraging habitat exists adjacent to the site for this species. The site is adjacent to SSHCP-modeled foraging-nesting habitat.
Loggerhead Shrike (nesting) (*Lanius ludovicianus*)	CSC, SSHCP Covered Species	Frequents open habitats with sparse shrubs and trees, other suitable perches, bare ground, and low herbaceous cover. Nests in tall shrubs and dense trees. Forages in grasslands, marshes, and ruderal habitats. Can often be found in cropland.	**Possible in Development Area and Remainder Parcel.** Suitable breeding and foraging habitat exists onsite and adjacent to the site for this species. The site is within SSHCP-modeled foraging habitat. The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).
Burrowing Owl (*Athene cunicularia*)	CSC, SSHCP Covered Species	Found in open, dry grasslands, deserts and ruderal areas. Requires suitable burrows. This species is often associated with California ground squirrels.	**Possible in Development Area and Remainder Parcel.** Suitable habitat in the form of ground squirrel burrows exists onsite for this species, although no evidence of this spe4cies was detected during the August 2019 site survey. The site is within SSHCP-modeled wintering habitat. The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).

TABLE 1. LIST OF SPECIAL STATUS SPECIES THAT COULD OCCUR IN THE PROJECT VICINITY

ANIMALS (adapted from CDFW 2019 and USFWS 2019)
State Species of Special Concern and Protected Species (cont.)

Species	Status	Habitat	Occurrence in the Study Area
California Yellow Warbler (*Dendroica petechia brewsteri*)	CSC	Migrants move through many habitats of Sierra and its foothills. This species breeds in riparian thickets of alder, willow and cottonwoods.	**Unlikely in Development Area and Remainder Parcel.** The site currently supports agricultural land and does not support the dense vegetation the yellow warbler prefers for nesting, however, the riparian habitat nearby supports suitable habitat for this species, so this species may move onto the site from time to time. The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).
Western red bat (*Lasiurus blossevillii*)	CSC, SSHCP Covered Species	Roosts in tree or shrub foliage, although will occasionally use caves.	**Possible in Development Area and Remainder Parcel.** Although suitable roosting habitat for this species is absent from the site, suitable roosting habitat occurs adjacent to the site. Suitable foraging habitat occurs onsite. The site supports SSHCP-modeled foraging habitat onsite. The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).
American Badger (*Taxidea taxus*)	CSC, SSHCP Covered Species	Found in drier open stages of most shrub, forest and herbaceous habitats with friable soils, specifically grassland environments. Natal dens occur on slopes.	**Possible in Development Area and Remainder Parcel.** The site supports suitable habitat for this species throughout the site, including the agricultural land, developed portion, and the Dry Creek floodplain, additionally, the site supports SSHCP-modeled onsite. The nearest recorded observation of this species is more than three miles from the site (CNDDB 2019).

***Explanation of Occurrence Designations and Status Codes**
Present: Species observed on the sites at time of field surveys or during recent past.
Likely: Species not observed on the site, but it may reasonably be expected to occur there on a regular basis.
Possible: Species not observed on the sites, but it could occur there from time to time.
Unlikely: Species not observed on the sites, and would not be expected to occur there except, perhaps, as a transient.
Absent: Species not observed on the sites, and precluded from occurring there because habitat requirements not met.

STATUS CODES

FE	Federally Endangered	CE	California Endangered
FT	Federally Threatened	CT	California Threatened
FPE	Federally Endangered (Proposed)	CR	California Rare
FC	Federal Candidate	CP	California Protected
CSC	California Species of Special Concern		
CCE	California Candidate Endangered		
CNPS	California Native Plant Society Listing		
1A	Plants Presumed Extinct in California	3	Plants about which we need more information – a review list
1B	Plants Rare, Threatened, or Endangered in		

	California and elsewhere	4	Plants of limited distribution – a watch list
2	Plants Rare, Threatened, or Endangered in California, but more common elsewhere		

2.4 JURISDICTIONAL WATERS

Jurisdictional waters include rivers, creeks, and drainages that have a defined bed and bank and which, at the very least, carry ephemeral flows. Jurisdictional waters also include lakes, ponds, reservoirs, and wetlands. Such waters may be subject to the regulatory authority of the U.S. Army Corps of Engineers (USACE), the California Department of Fish and Wildlife (CDFW), and the California Regional Water Quality Control Board (RWQCB). See Section 3.2.5 of this report for additional information.

The site supports waters of the U.S. and state in the form of the channel of Dry Creek and its associated flood plain wetlands, as well as potentially as the constructed channel. Manmade basins on the site would not be considered jurisdictional by the USACE as they are features that have been constructed in uplands. The basins also would not meet the definition of a water of the state under the jurisdiction of the RWQCB as they fall under the category of "Artificial Wetlands", which include wetlands created for purposes including, but not limited to, stormwater detention, crop irrigation or livestock watering.

3 IMPACTS AND MITIGATIONS

3.1 SIGNIFICANCE CRITERIA

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act (CEQA). The purpose of CEQA is to assess the impacts of proposed projects on the environment before they are constructed. For example, site development may require the removal of some or all of its existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, etc., may replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed. These impacts may be considered significant. According to *2019 CEQA Status and Guidelines* (2019), "Significant effect on the environment" means a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest. Specific project impacts to biological resources may be considered "significant" if they will:

- 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;
- 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;
- 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;
- 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;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; and

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

For the purposes of this report, it is assumed that impacts will be buildout of the Development Area with the Remainder Parcel not being impacted.

3.2 RELEVANT GOALS, POLICIES, AND LAWS

3.2.1 Threatened and Endangered Species

State and federal "endangered species" legislation has provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal Endangered Species Acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as "species of special status." Permits may be required from both the CDFW and USFWS if activities associated with a proposed project will result in the take of a listed species. To "take" a listed species, as defined by the state of California, is "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill" said species (California Fish and Game Code, Section 86). "Take" is more broadly defined by the federal Endangered Species Act to include "harm" of a listed species (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFW and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

3.2.2 Migratory Birds

State and federal laws also protect most bird species. The State of California signed Assembly Bill 454 into law in 2019, which clarifies native bird protection and increases protections where California law previously deferred to Federal law. The Federal Migratory Bird Treaty Act (FMBTA: 16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs.

3.2.3 Birds of Prey

Birds of prey are protected in California under provisions of the State Fish and Game Code, Section 3503.5, which states that it is "unlawful to take, possess, or destroy any birds in the order *Falconiformes* or *Strigiformes* (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto". Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "taking" by the CDFW.

Additionally, the Bald and Golden Eagle Protection Act (16 U.S.C., scc. 668-668c) prohibits anyone from taking bald or golden eagles, including their parts, nests, or eggs, unless authorized under a federal permit. The act prohibits any disturbance that directly affects an eagle or an active eagle nest as well as any disturbance caused by humans around a previously used nest site during a time when eagles are not present such that it agitates or bothers an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death or nest abandonment.

3.2.4 Bats

Section 2000 and 4150 of the California Fish and Game Code states that it is unlawful to take or possess a number of species, including bats, without a license or permit, as required by Section 3007. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as "an intentional act which disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering." For these reasons, bat colonies in particular are considered to be sensitive and therefore, disturbances that cause harm to bat colonies are unlawful.

3.2.5 Wetlands and Other "Jurisdictional Waters"

3.2.5.1 Waters of the U.S.

Natural drainage channels and adjacent wetlands may be considered "Waters of the United States" (hereafter referred to as "jurisdictional waters") subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

- All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
- All interstate waters including interstate wetlands:
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;
- All impoundments of waters otherwise defined as waters of the United States under the definition;
- Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e. the bulleted items above).

Section 404 of the federal Clean Water Act (CWA) regulates the discharge of dredged or fill material into "navigable waters" (33 U.S.C. §1344), defined in the CWA as "the waters of the United States, including the territorial seas" (33 U.S.C. §1362(7)). Waters of the United States have been defined in the June 29, 2015 Clean Water Rule to include the following:

1) All waters used in interstate or foreign commerce (also known as traditional navigable waters), including all waters subject to the ebb and flow of the tide;
2) All interstate waters including interstate wetlands;
3) The territorial seas;
4) All impoundments of Waters of the U.S.;
5) All tributaries of waters defined in Nos. 1 through 4 above, where "tributary" refers to a water (natural or constructed) that contributes flow to another water and is characterized by the physical indicators of a bed and bank and an ordinary high water (OHW) mark;
6) Adjacent waters, defined as either (a) located in whole or in part within 100 feet of the OHW mark of waters defined in Nos. 1 through 5 above, or (b) located in whole or in part within the 100-year floodplain and within 1,500 feet of the OHW mark of waters defined in Nos. 1 through 5 above;
7) Western vernal pools, prairie potholes, Carolina bays and Delmarva bays, pocosins, and Texas coastal prairie wetlands, if determined on a case-specific basis to have a significant nexus to waters defined in Nos. 1 through 3 above;
8) Waters that do not meet the definition of adjacency, but are determined on a case-specific basis to have a significant nexus to waters defined in Nos. 1 through 3 above, and are either (a) located in whole or in part within the 100-year floodplain of waters defined in Nos. 1 through 3 above, or (b) located within 4,000 feet of the OHW mark of waters defined in Nos. 1 through 5 above.

The 2015 rule also redefines exclusions from jurisdiction, which include:

1) Waste treatment systems;

2) Prior converted cropland;
3) Artificially irrigated areas that would revert to dry land should application of irrigation water to the area cease;
4) Groundwater;
5) Stormwater control features constructed to convey treat or store stormwater created in dry land; and
6) Three types of ditches: (a) ditches with ephemeral flow that are not a relocated or excavated tributary, (b) ditches with intermittent flow that are not a relocated or excavated tributary or that do not drain wetlands, and (c) ditches that do not flow, either directly or through another water, to a traditional navigable water.

A ditch may be a water of the U.S. only it if meets the definition of "tributary" and is not otherwise excluded under the provision.

A number of U.S. Supreme Court decisions have attempted to address the jurisdictional status of aquatic features that are not hydrologically connected to navigable waters or their tributaries, or have such an insubstantial hydrologic connection that destruction or modification of the aquatic feature would have little effect on downstream waters of the United States. These Supreme Court decisions are relevant to the analysis of aquatic features within the study area addressed by this report, because some of these features are not connected to navigable waters downstream.

In January of 2001, the U.S. Supreme Court ruled in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision) that "non-navigable, isolated, intrastate" waters could not be claimed as jurisdictional by the USACE on the basis of their use by migratory birds. Although the Court did not specifically address the meaning of the word "isolated," it upheld the jurisdictional status of "adjacent" wetlands (and other waters), which are by definition wetlands that are "bordering, contiguous, or neighboring" other jurisdictional waters. Therefore, the term "isolated wetland" has implicitly been defined as 'wetlands that are not bordering, contiguous, or neighboring' other jurisdictional waters. This definition does not, however, address the degree of proximity necessary to establish that one wetland (or other water) is "adjacent" to a known jurisdictional water. As established by the Supreme Court in the *United States v. Riverside Bayview Homes, Inc.* in 1985, "wetlands separated from other waters by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands.'"

In June of 2006, the U.S. Supreme Court ruled in the consolidated cases of *June Carabell v. U.S. Army Corps of Engineers* and *John Rapanos v. United States* that wetlands are waters of the United States "if the wetlands, either alone or in combination with similarly situated lands in the region,

significantly affect the chemical, physical, and biological integrity of other covered waters more readily understood as 'navigable.'" When, in contrast, wetland's effects on water quality are speculative or insubstantial, they fall outside the zone fairly encompassed by the statutory term 'navigable waters.'

On June 5, 2007, the Environmental Protection Agency (EPA) and the USACE jointly issued guidance in interpreting the Carabell/Rapanos cases as they apply to the extent of federal jurisdiction covered by Section 404 of the Clean Water Act. The agencies revised this guidance memorandum on December 2, 2008. The key points of this guidance are that the EPA and the USACE: 1) will assert jurisdiction over traditional navigable waters, wetlands adjacent to traditional navigable waters, relatively permanent non-navigable tributaries of traditional navigable waters where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months), and wetlands that directly abut such tributaries; 2) will decide jurisdiction over relatively impermanent non-navigable tributaries of navigable waters, wetlands adjacent to such tributaries, and wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary, based on a fact-specific analysis to determine whether they have a "significant nexus" with a traditional navigable water; and 3) generally will not assert jurisdiction over swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow) or ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water. In applying the "significant nexus" standard, the EPA and USACE will "assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical and biological integrity of downstream traditional navigable waters." "Significant nexus" includes consideration of hydrologic and ecologic factors.

The court rulings and subsequent guidance provided by the EPA and USACE discussed above are germane to the delineation of jurisdictional waters summarized in this report. They are presently the basis for determining the jurisdictional status of drainage features and wetlands of the study area.

All activities that involve the discharge of dredge or fill material into Waters of the U.S. are subject to the permit requirements of the USACE. Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or

values. No permit can be issued until the RWQCB issues a Section 401 Water Quality Certification (or waiver of such certification) verifying that the proposed activity will meet state water quality standards.

3.2.5.2 Waters of the State

The State of California also asserts jurisdiction over drainages and wetlands of the study area. The limits of jurisdiction vary slightly from those of the USACE. The California Department of Fish and Wildlife (CDFW) and the Regional Water Quality Control Board (RWQCB) are the two state regulatory agencies responsible for implementing state regulations that identify and protect waters of the state.

According to Section 1602 of the California Fish and Game Code, public and private entities may not substantially divert or obstruct the natural flow of any river, stream, or lake within the state. This section of Fish and Game Code establishes the State's interest in regulating construction activities in the "bed, channel, or bank" of a natural drainage or stream. A "stream" subject to the jurisdiction of the CDFW has been defined as "a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life" (California Code of Regulations, Title 14).

Under the Porter-Cologne Water Quality Control Act of 1969, the State Water Resources Control Board (SWRCB) and nine local RWQCBs have regulatory authority over activities affecting water quality in all surface waters of the State, consisting of rivers, streams, lakes, and wetlands of the State.

Shortly after the U.S. Supreme Court rendered its SWANCC Decision, the SWRCB notified the Regional Boards that isolated waters, including wetlands, were subject to the jurisdiction of the State of California per provisions of the Porter-Cologne Water Quality Control Act. The Regional Boards, therefore, now assert jurisdiction over isolated wetlands disclaimed as jurisdictional by the USACE.

The RWQCB for a given region regulates discharges of fill or pollutants into Waters of the State through the issuance of various permits and orders. Discharges into Waters of the State that are also Waters of the U.S. require a Section 401 Water Quality Certification from the RWQCB as a prerequisite to obtaining certain federal permits, such as a Section 404 Clean Water Act

permit. Discharges into all Waters of the State, even those that are not also Waters of the U.S., require Waste Discharge Requirements (WDRs), or waivers of WDRs, from the RWQCB.

The RWQCB also administers the Construction Storm Water Program and the federal National Pollution Discharge Elimination System (NPDES) program. Projects that disturb one or more acres of soil must obtain a Construction General Permit under the Construction Storm Water Program. A prerequisite for this permit is the development of a Storm Water Pollution Prevention Plan (SWPPP) by a certified Qualified SWPPP Developer. Projects that discharge wastewater, storm water, or other pollutants into a Water of the U.S. may require a NPDES permit.

3.2.6 Tree Regulations of the City of Galt

The City of Galt has a Heritage Oak and Public Trees ordnance that requires a permit for the cutting and removal of heritage oak and public trees, or for activities that encroach on heritage trees and public trees (Section 18.52.060 of the Municipal Code). The ordinance requires a permit for any activity that will impact through cutting, removal or encroachment upon a Heritage Tree. The City of Galt defines a heritage oak tree, public tree and encroachment as:

> The definition of a Heritage Oak Tree "includes, but is not limited to, any of the following: valley oak (*Quercus lobata*), interior live oak (*Quercus wislizenii*), blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia*) or oracle oak (*Quercus morehus*) having at least one (1) trunk of six (6) inch diameter measured four (4) feet above the ground, or multi-trunks with an aggregate diameter of eight (8) inches or more, measured four (4) feet above ground."
>
> The definition of public tree means "any tree with one-half or more of its trunk or branches on or above public land."
>
> The definition of encroachment means "any intrusion or human activity into the dripline of an oak tree including, but not limited to, pruning, grading, excavating, trenching, parking of vehicles, storage of materials or equipment, or the construction of structures or other improvements."

The City does not provide a set policy for replacement of heritage and public trees for permitted removals and it appears this is handled on a case by case basis. The City does have a program for payment of in-lieu fees for the removal of heritage and public trees. The same ordnance sets forth a number of requirements for protection of heritage and public trees being preserved on a development site.

3.2.7 Conservation Habitat Plans

The South Sacramento Habitat Conservation Plan (SSHCP) was adopted in 2018. The SSCHP has five biological goals:

1) Preserve and link intact landscapes that include the highest quality habitat for Covered Species within the Plan Area;

2) Maintain or improve physical, chemical, and biological functions of aquatic resources within the Plan Area;

3) Preserve, re-establish, and establish natural land covers (including cropland and irrigated pasture-grassland) that provide habitat for Covered Species;

4) Maintain or improve habitat value of natural land covers (including cropland and irrigated pasture-grassland) that are preserved within the Plan Area; and

5) Maintain or expand the existing distribution of each Covered Species within the Plan Area.

The SSHCP provides take authorization for 28 species. These species are comprised of 20 animal species and eight plant species.

Animal species for which the SSHCP provides take authorization includes the Vernal pool tadpole shrimp (*Lepidurus packardi*), Vernal pool fairy shrimp (*Branchinecta lynchi*), Midvalley fairy shrimp (*Branchinecta mesovallensis*), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), Ricksecker's water scavenger beetle (*Hydrochara ricksecker*i), California tiger salamander, (Central Valley population; *Ambystoma californiense*), Western spadefoot (*Spea hammondii*), Western pond turtle (*Actinemys marmorata*), Giant gartersnake (*Thamnophis gigas*), Cooper's hawk (*Accipiter cooperii*), Tricolored blackbird (*Agelaius tricolor*), Western burrowing owl (*Athene cunicularia hypugaea*), Ferruginous hawk (*Buteo regalis*), Swainson's hawk (*Buteo swainsoni*), Northern harrier (*Circus cyaneus*), White-tailed kite (*Elanus leucurus*), Greater sandhill crane (*Grus canadensis tabida*), Loggerhead shrike (*Lanius ludovicianus*), Western red bat (*Lasiurus blossevillii*), and American badger (*Taxidea taxus*).

Plant species for which the SSHCP provides take authorization includes dwarf downingia (*Downingia pusilla*), Boggs Lake hedge-hyssop (*Gratiola heterosepala*), Ahart's dwarf rush

(*Juncus leiospermus var. ahartii*), legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii*), slender Orcutt grass (*Orcuttia tenuis*), Sacramento orcutt grass (*Orcuttia viscida*), and Sanford's arrowhead (*Sagittaria sanfordii*).

Impacts under the SSHCP can be mitigated for via land dedication and/or a development fee, which is based on land cover types; the SSHCP identifies 12 landcovers, including Agriculture, Valley Grassland, Vernal Pool, Blue Oak Savanna and Woodland, Riparian, Mine Tailing Riparian Woodland, Seasonal Wetland, Freshwater Marsh, Swale, Stream/Creek (VPIH), Open Water, and Stream/Creek. The fee schedule is updated annually.

In association with the SSHCP, the Plan Permittees and key stakeholders have coordinated with state and federal resource agencies (USACE, RWQCB and CDFW) to implement an SSHCP Aquatic Resources Program (ARP) (County of Sacramento et al. 2018). The basic purpose of the ARP is to institute a locally based aquatic permitting program that is also anticipated to assist the Plan Permittees in complying with the requirements of federal, state, and local laws that protect aquatic resources. The ARP is intended to be consistent with and either meet or exceed the requirements of Sections 404 and 401 of the federal CWA and the Porter-Cologne Act. The ARP is also written to be consistent with California Fish and Game Code Sections 1600–1616 (Lake or Streambed Alteration Agreement). Together, the ARP and SSHCP would result in a comprehensive Conservation Strategy for the conservation of aquatic resources, natural communities, native species, and the 28 species covered by the SSHCP. The objectives of the ARP are:

- Local Implementation: Establish local ordinances for successful implementation of the SSHCP and ARP.
- Local Permitting Program: Establish a local program carried out by the Plan Permittees to ensure improved permitting efficiency for future SSHCP Covered Activities for CWA 404 permits, 401 certifications, and California Fish and Game Code 1600 agreements. Such efficiency will help the regulated public and resource agencies save time and money, and will facilitate a better decision-making processes at the landscape and project levels.
- Predictability: Create a standardized and predictable permitting process for future SSHCP Covered Activities. A regionally integrated process allows permitting consistency and a more environmentally effective decision-making process.

- Fair and Equitable Decisions: Create a predictable decision-making outcome based upon a comprehensive approach that incorporates regionally important factors that better serves the regulated public.
- Greater Ecological Benefits: Implement ecologically effective, watershed-based aquatic resource mitigation and conservation to achieve more robust protection for aquatic resources in the Plan Area.

As of the time of preparation of this report, the ARP does not appear to have taken effect yet. As such, impacts to waters of the U.S. or state would require that permits be obtained from the USACE, RWQCB and CDFW, or some combination of these three agencies.

3.3 IMPACTS SPECIFIC TO THE PROJECT

The proposed project consists of the development of the northern portion of the site with approximately 87 residential lots and associated streets, a basin, and other infrastructure while preserving the southern portion of the site as a Remainder Parcel.

The northern portion of the site that will be developed currently supports Low-density Development, Agricultural and Disturbed land cover types, while land cover types that will be preserved on the Remainder Parcel include Stream/Creek (including both the Dry Creek channel and the constructed channel), Seasonal Wetland, and Agricultural. Any appreciable difference in either scope or general locations of the proposed project elements would require an additional impact assessment to ensure that unanticipated impacts to biotic resources are not likely to occur.

The development of the property could cause impacts including nest failure of breeding migratory birds and raptors, loss of habitat for several species covered under the SSHCP, and loss of ordnance-sized trees. As discussed above, activities resulting in impacts to biotic resources may be regulated by local, state, and federal laws. The natural resource issues specific to this project are discussed in detail below and only impacts to the development area are discussed, as we do not anticipate impacts to the Remainder Parcel.

3.3.1 Loss of Habitat for Special Status Plants within the Development Area

Potential Impact. Of the special status plant species that occur, or once occurred, regionally, all but two species are considered either absent from or unlikely to occur on the site (Table 1). For those considered unlikely to occur on the site, it is because the site provides very marginal habitat

for these species, and there are no occurrences documented within a three-mile radius of the site. The SSHCP appears to indicate that modeled Sanford's arrowroot and Bogg's Lake hedge hyssop habitat occurs on the site, although the closest documented occurrences of these species are approximately two miles north of the site for Sanford's arrowhead and approximately 10 miles east and north of the site for Bogg's Lake hedge hyssop. Since the site is modelled habitat for these two species, certain SSHCP measures apply to the project as discussed below. Project activities that result in the loss of populations of either of these species may be considered a significant impact under CEQA.

Consistency with SSHCP- The project will follow measures PLANT 1 and PLANT 2 from Chapter 5, Section 4 of the SSHCP (2018). Additionally, should the project cause the removal of Sanford's arrowhead, the project shall follow Objectives SA1 and SA2 of Table 7-39 of the SSHCP (2018).

Mitigation. The SSHCP requires measures 3.3.1a and 3.3.1b for Boggs Lake hedge-hyssop. Additionally, if Sanford's arrowhead will be impacted, measures 3.3.1c and 3.3.1d will be required.

Mitigation Measure 3.3.1a. "**PLANT-1 (Rare Plant Surveys):** If a Covered Activity project site contains modeled habitat for Ahart's dwarf rush (*Juncus leiospermus var. ahartii*), Bogg's Lake hedge-hyssop (*Gratiola heterosepala*), dwarf downingia (*Downingia pusilla*), legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii*), or Sanford's arrowhead (*Sagittaria sanfordii*), the Covered Activity project site will be surveyed for the rare plant by an approved biologist and following the California Department of Fish and Wildlife (CDFW) rare plant survey protocols (CDFG 2009) or the most recent CDFW rare plant survey protocols. An approved biologist will conduct the field surveys and will identify and map plant species occurrences according to the protocols. See Chapter 10 for the process to submit survey information to the Plan Permittee and the Permitting Agencies." (SSHCP 2018). If no rare plants are found during surveys, the remainder of the mitigation measures for plants are not necessary.

Mitigation Measure 3.3.1b. **"PLANT-2 (Rare Plant Protection):** If a rare plant listed in AMM PLANT-1 is detected within an area proposed to be disturbed by a Covered Activity or is detected within 250 feet of the area proposed to be disturbed by a Covered Activity, the Implementing Entity will assure one unprotected occurrence of the species is protected within a SSHCP Preserve before any ground disturbance occurs on the project site." (SSHCP 2018).

Mitigation Measure 3.3.1c. "Objective SA1. Prior to take of an occurrence of Sanford's arrowhead (*Sagittaria sanfordii*), protect one currently unpreserved and "biologically equivalent or superior" (as defined by the TAC) occurrence of Sanford's arrowhead within the Plan Area."

Mitigation Measure 3.3.1d. "Objective SA2. During re-establishment and/or establishment of Seasonal Wetland, Freshwater Marsh, Open Water, and Stream/Creek, translocate impacted Sanford's arrowhead (*Sagittaria sanfordii*) from other sites."

3.3.2 Loss of Habitat for Special Status Animals within the Development Area

Potential Impact. Twenty-nine (29) special status animal species occur, or once occurred, regionally. Of these, 16 species would be absent or unlikely to occur on the development area due to a lack of suitable habitat for these species. The species that would be absent or unlikely to occur include the Valley elderberry longhorn beetle, Ricksecker's water scavenger beetle, vernal pool fairy shrimp, vernal pool tadpole shrimp, Midvalley fairy shrimp, Delta smelt, longfin smelt, steelhead, Sacramento splittail, western spadefoot, Foothill yellow-legged frog, giant gartersnake, western pond turtle, California yellow warbler, western yellow-billed cuckoo, and riparian brush rabbit.

The remaining 13 special status animal species from Table 1 potentially occur more frequently as potential foragers, transients, may be resident to the site, or they may occur within areas adjacent to the site. These include California tiger salamander, burrowing owl, white-tailed kite, ferruginous hawk, Cooper's hawk, northern harrier, Swainson's hawk, greater sandhill crane, loggerhead shrike, Modesto song sparrow, tricolored blackbird, western red bat, and American badger.

The white-tailed kite, Cooper's hawk, northern harrier, Swainson's hawk, loggerhead shrike, Modesto song sparrow, and tricolored blackbird may nest on or adjacent to the site, and the ferruginous hawk, burrowing owl, and greater sandhill crane may forage, roost, or overwinter onsite during migration and winter months.

This project will not create a significant loss of habitat for any of these species. Potential impacts to individuals of these species are discussed further below.

Consistency with SSHCP- Several species covered under the SSHCP (California tiger salamander, burrowing owl, white-tailed kite, ferruginous hawk, Cooper's hawk, northern harrier, Swainson's

hawk, greater sandhill crane, loggerhead shrike, tricolored blackbird, western red bat, and American badger) have the potential to occur onsite. General Conditions and species-specific measures of the SSHCP will be followed.

Mitigation. No mitigation warranted.

3.3.3 Loss of Habitat for Native Wildlife

Potential Impact. The habitats of the site comprise only a small portion of the regionally available habitat for plant and animal species that are expected to use the habitat. The proposed project would result in the loss of agricultural and wetland habitats. This is not expected to result in a significant effect on local wildlife. Therefore, impacts due to the loss of agricultural habitat and a small loss of seasonal wetland habitat for native wildlife resulting from the proposed project are considered less-than-significant.

Consistency with SSHCP- The project will pay all project fees, which will preserve contiguous lands specifically for species covered by the SSHCP, which will provide protected suitable habitat for a suite of other species as well.

Mitigation. No mitigation would be warranted for the loss of habitat for native wildlife.

3.3.4 Interference with the Movement of Native Wildlife

Potential Impact. Buildout of the site would not constrain native wildlife movement, as species currently using the site for movement would continue to do so, and the reserved parcel will not be built on, and includes a part of Dry Creek, which more wildlife movement is expected to occur onsite, so any wildlife using that portion of the site for movement through the site would be expected to continue to use it for movement. In addition, the site is not within or adjacent to any linkage identified by the SSHCP to be preserved.

Consistency with SSHCP- The site is not within any linkage defined by the SSHCP.

Mitigation. No mitigation would be warranted for interference with the movement of native wildlife.

3.3.5 Impacts to California Tiger Salamanders

Potential Impacts. The site supports basins onsite which may provide breeding habitat for the California tiger salamander. The site is within modeled aquatic habitat and being adjacent to modeled upland habitat for the California tiger salamander. Individuals and evidence of this species' presence were not detected during the 2019 survey. The harm, injury or mortality of individuals from site development would be considered significant. Should site grading occur while a California tiger salamander is within a burrow or wetland onsite, they may be buried, injured, or killed. Any actions related to site development that result in the mortality of California tiger salamanders would constitute a significant adverse environmental impact.

Consistency with SSHCP- The project will follow measures CTS 1-7 from Chapter 5, Section 4 of the SSHCP (2018).

Mitigation. As the site is within SSHCP-modeled aquatic habitat and potentially suitable breeding habitat exists within the basins onsite, the following measures will ensure that California tiger salamanders will not be disturbed and individuals will not be harmed by construction activities. Completion of the following measures will reduce the potential impacts to California tiger salamanders to a less-than-significant level.

Mitigation Measure 3.3.5a. "**CTS-1 (California Tiger Salamander Daily Construction Schedule):** Ground-disturbing Covered Activities within California tiger salamander modeled habitat (Figure 3-16) will occur outside the breeding and dispersal season (occur after July 31 and before October 15), to the maximum extent practicable. If Covered Activities must be implemented in modeled habitat (Figure 3-16) during the breeding and dispersal season (after October 15 and before July 31), construction activities will not start until 30 minutes after sunrise and must be complete 30 minutes prior to sunset." (SSHCP 2018)

Mitigation Measure 3.3.5b. "**CTS-2 (California Tiger Salamander Exclusion Fencing):** If a Covered Activity must be implemented in modeled habitat (Figure 3-16) during the breeding and dispersal season (after October 15 and before July 31), exclusion fencing will be installed around the project footprint before October 15. Temporary high-visibility construction fencing will be installed along the edge of work areas, and exclusion fencing will be installed immediately outside of the temporary high-visibility construction fencing to exclude California tiger salamanders from entering the construction area or becoming entangled in the construction fencing. Exclusion fencing

will be at least 1 foot tall and be buried at least 6 inches below the ground to prevent salamanders from going under the fencing. Fencing will remain in place until all construction activities within the construction area are complete. No project activities will occur outside the delineated project footprint. An approved biologist must inspect the exclusion fencing and project site every morning before 7:00 a.m. for integrity and for any entrapped California tiger salamanders. If a California tiger salamander is encountered, refer to CTS-5, below. (However, the Implementing Entity may, with approval of the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), determine that it is appropriate for a Covered Activity project to not implement CTS-2 for certain long and linear roadway Covered Activity projects if it appears that the exclusion fencing will likely trap individuals or cause more take of California tiger salamander than it would prevent.)" (SSHCP 2018)

Mitigation Measure 3.3.5c. "**CTS-3 (California Tiger Salamander Monitoring):** If Covered Activities must be implemented in modeled habitat (Figure 3-16), an approved biologist experienced with California tiger salamander identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place, and will inspect the project site for California tiger salamander every morning before 7:00 a.m., or prior to construction activities. As required by BMP-8 (Training of Construction Staff), the approved biologist will also train construction personnel on the required California tiger salamander avoidance procedures, exclusion fencing, and correct protocols in the event that a California tiger salamander enters an active construction zone. If a California tiger salamander is encountered, refer to CTS-5, below." (SSHCP 2018)

Mitigation Measure 3.3.5d. "**CTS-4 (Avoid California Tiger Salamander Entrapment):** If Covered Activities must be implemented in modeled habitat, all excavated steep-walled holes or trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes or trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within California tiger salamander modeled habitat will be inspected for California tiger salamanders by the approved biologist prior to being moved. If a California tiger salamander is encountered, refer to CTS-5, below." (SSHCP 2018)

Mitigation Measure 3.3.5e. "**CTS-5 (California Tiger Salamander Encounter Protocol):** If a California tiger salamander is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately (California Department of Fish and Wildlife (CDFW) and U.S. Fish and Wildlife Service (USFWS)). Construction activities will be suspended in a 100-foot radius of the animal until the animal is relocated by an approved biologist with appropriate handling permits from the Wildlife Agencies. Prior to relocation, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the salamander, within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to USFWS and CDFW immediately. Any worker who inadvertently injures or kills a California tiger salamander or who finds dead, injured, or entrapped California tiger salamander(s) must immediately report the incident to the approved biologist." (SSHCP 2018)

Mitigation Measure 3.3.5f. "**CTS-6 (Erosion Control Materials in California Tiger Salamander Habitat):** If erosion control (BMP-2) is implemented within California tiger salamander modeled habitat (Figure 3-16), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that salamanders are not trapped (no monofilament). Coconut coir matting and fiber rolls with burlap are examples of acceptable erosion control materials. This limitation will be communicated to the contractor through use of special provisions included in the bid solicitation package." (SSHCP 2018)

Mitigation Measure 3.3.5g. "**CTS-7 (Rodent Control):** CTS-7 only applies to projects that are within California tiger salamander modeled habitat (Figure 3-16) and on Covered Activities. Rodent control will be allowed only in developed portions of a Covered Activity project site. Where rodent control is allowed, the method of rodent control will comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander." (SSHCP 2018)

3.3.6 Impacts to Nesting Migratory Birds Including Nesting Raptors and other Protected Birds

Potential Impacts. Trees and shrubs and agricultural fields of the site as well edge habitat along the boundaries of the site may support nesting birds and raptors such, including, but not limited to special status birds such as white-tailed kite, ferruginous hawk, Cooper's hawk, northern harrier, Swainson's hawk, loggerhead shrike, Modesto song sparrow, and tricolored blackbird. Buildout of the project during the nesting period for migratory birds (i.e., typically between February 1 to August 31), including initial site grading, soil excavation, and/or tree and vegetation removal, poses a risk of nest abandonment and death of any live eggs or young that may be present within the nest within or near the site. Such an effect would be considered a significant impact. To ensure that any active nests will not be disturbed and individual birds will not be harmed by construction activities, the following measures should be followed.

Consistency with SSHCP- Separate measures for migratory bird and raptor species covered by the SSCHP are included in Sections 3.3.7-3.3.11. Although the ferruginous hawk is a Covered Species under the SSHCP, the SSHCP does not require specific measures for this species, therefore, measures below are designed to be satisfactory for this species as well.

Mitigation. The following measures will ensure that active migratory bird and raptor nests will not be disturbed and individual birds will not be harmed by construction activities, especially including tree removal. As the SSHCP notes, the site is within suitable habitat for several bird migratory bird and raptor species covered under the SSCHP; mitigation measures for these species are included within the Sections 3.3.7-3.3.11 and are excerpted from Chapter 5, Section 4 of the SSHCP (2018); these measures supersede the measures below for species covered under the SSHCP. Completion of the following measures will reduce the potential impacts to nesting migratory birds and raptors to a less-than-significant level.

Mitigation Measure 3.3.6a. If initial site disturbance activities, including ground disturbance or tree, shrub, or vegetation removal, are to occur during the breeding season (typically February 1 to August 31), a qualified biologist would conduct pre-construction surveys for nesting migratory birds onsite and within 250 feet (for raptors) of the site, where accessible. The survey should occur within 7-days prior to the onset of ground disturbance or vegetation removal. If a nesting migratory bird were to be detected, an appropriate construction-free buffer would be established. Actual size

of buffer, which would be determined by the project biologist, would depend on species, topography, and type of activity that would occur in the vicinity of the nest. The project buffer would be monitored periodically by the project biologist to ensure compliance. After the nesting is completed, as determined by the biologist, the buffer would no longer be required.

3.3.7 Impacts to Swainson's Hawks

Potential Impacts. A few trees within the center of the site and some trees adjacent to the site support suitable nesting habitat for the Swainson's hawk and the agricultural field supports foraging habitat. The site is within modeled high-value foraging habitat with a nesting occurrence adjacent to the site. The harm, injury or mortality of individuals from site development would be considered significant. Should site grading, vegetation, or tree removal occur while a Swainson's hawk is nesting, they may be injured or killed. Any actions related to site development that result in the mortality of Swainson's hawks would constitute a significant adverse environmental impact.

Consistency with SSHCP- The project will follow measures SWHA 1-4 from Chapter 5, Section 4 of the SSHCP (2018).

Mitigation. As the site is within SSHCP-modeled high-value foraging habitat and has a nesting occurrence adjacent to the site, the following measures will ensure that active Swainson's hawk nests will not be disturbed and individual birds will not be harmed by construction activities, especially including tree removal. Completion of the following measures will reduce the potential impacts to Swainson's hawks to a less-than-significant level.

- ***Mitigation Measure 3.3.7a.* "SWHA-1 (Swainson's Hawk Surveys):** If modeled habitat for Swainson's hawk (Figure 3-25) is present within a Covered Activity's project footprint or within 0.25 mile of a project footprint [as noted above, it is], then an approved biologist will conduct a survey to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Nest sites are often associated with Riparian land cover, but also include lone trees in fields, trees along roadways, and trees around structures. Nest trees may include, but are not limited to, Fremont's cottonwood (*Populus fremontii*), oaks (*Quercus spp*.), willows (*Salix spp*.), walnuts (*Juglans spp*.), eucalyptus (*Eucalyptus*

spp.), pines (*Pinus spp*.), and Deodar cedar (*Cedrus deodara*). The Third-Party Project Proponent will map all existing and potential nesting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information." (SSHCP 2018)

- ***Mitigation Measure 3.3.7b.*** **"SWHA-2 (Swainson's Hawk Pre-Construction Surveys):** Pre-construction surveys will be required to determine if active nests are present within a project footprint or within 0.25 mile of a project footprint if existing or potential nest sites were found during initial surveys and construction activities will occur during the breeding season (March 1 through September 15). An approved biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys will be conducted during the breeding season (March 1 through September 15). If a nest is present, then SWHA-3 and SWHA-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies." (SSHCP 2018)
- ***Mitigation Measure 3.3.7c.*** **"SWHA-3 (Swainson's Hawk Nest Buffer):** If active nests are found within the project footprint or within 0.25 mile of any project-related Covered Activity, the Third-Party Project Proponent will establish a 0.25 mile disturbance buffer around the active nest until the young have fledged, with concurrence from the Wildlife Agencies." (SSHCP 2018)
- ***Mitigation Measure 3.3.7d.*** **"SWHA-4 (Swainson's Hawk Nest Buffer Monitoring):** If nesting Swainson's hawks are present within the project footprint or within 0.25 mile of any project-related Covered Activity, then an approved biologist experienced with Swainson's hawk behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place within the buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-

Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone (i.e., outside the buffer zone)." (SSHCP 2018)

3.3.8 Impacts to Burrowing Owls

Potential Impacts. The site is within SSHCP-modeled wintering habitat for the burrowing owl, and the site supports suitable habitat for the burrowing owl onsite in the form of ground squirrel burrows. Individuals and evidence of this species' presence were not detected during the 2019 survey. The harm, injury or mortality of individuals from site development would be considered significant. Should site grading occur while a burrowing owl is inside a burrow, they may be buried in their burrow. Any actions related to site development that result in the mortality of burrowing owls would constitute a significant adverse environmental impact.

Consistency with SSHCP- The project will follow measures WBP 1-7 from Chapter 5, Section 4 of the SSHCP (2018). Additionally, should the project cause the passive exclusion of burrowing owls to occur, the project shall follow Objective BO2 of Table 7-80 of the SSHCP (2018).

Mitigation. As the site is within SSHCP-modeled wintering habitat, the following measures will ensure that burrowing owls will not be disturbed and individuals will not be harmed by construction activities. Completion of the following measures will reduce the potential impacts to burrowing owls to a less-than-significant level.

Mitigation Measure 3.3.8a. "**WBO-1 (Western Burrowing Owl Surveys):** Surveys within modeled habitat are required for both the breeding and non-breeding season. If the project site falls within modeled habitat [as noted above, it does], an approved biologist will survey the project site and map all burrows, noting any burrows that may be occupied. Occupied burrows are often (but not always) indicated by tracks, feathers, egg shell fragments, pellets, prey remains, and/or excrement. Surveying and mapping will be conducted by the approved biologist while walking transects throughout the entire project site plus all accessible areas within a 250-foot radius from the project site. The centerline of these transects will be no more than 50 feet apart and will vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects will be closer together,

and in open areas with little vegetation, they can be 50 feet apart. This methodology is consistent with current survey protocols for this species (California Burrowing Owl Consortium 1993). Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. If suitable habitat is identified during the initial survey, and if the project does not fully avoid the habitat, pre-construction surveys will be required. Burrowing owl habitat is fully avoided if project-related activities do not impinge on a 250-foot buffer established by the approved biologist around suitable burrows. See Chapter 10 for the process to conduct and submit survey information." (SSHCP 2018)

Mitigation Measure 3.3.8b. "**WBO-2 (Western Burrowing Owl Pre-Construction Surveys):** Prior to any Covered Activity ground disturbance, an approved biologist will conduct pre-construction surveys in all areas that were identified as suitable habitat during the initial surveys. The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activities. To maximize the likelihood of detecting owls, the pre-construction survey will last a minimum of 3 hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total), or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two pre-construction surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped. Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the Third-Party Project Proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last-minute changes in schedule or contracting that may occur if burrowing owls are found, the Third-Party Project Proponent may also conduct a preliminary survey up to 15 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction." (SSHCP 2018). If burrowing owls are not found during the preconstruction surveys, Mitigation Measures 3.3.11c-f and h below are not necessary.

Mitigation Measure 3.3.8c. "**WBO-3 (Burrowing Owl Avoidance):** If western burrowing owl or evidence of western burrowing owl is observed on the project site or within 250 feet of the project site during pre-construction surveys, then the following will occur:

During Breeding Season: If the approved biologist finds evidence of western burrowing owls within a project site during the breeding season (February 1 through August 31), all project-related activities will avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance is establishment of a minimum 250-foot buffer zone around nests. Construction and other project-related activities may occur outside of the 250-foot buffer zone. Construction and other project-related activities may be allowed inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the Third-Party Project Proponent develops an avoidance, minimization, and monitoring plan that is approved by the Implementing Entity and Wildlife Agencies prior to project construction based on the following criteria:

- The Implementing Entity and Wildlife Agencies approve of the avoidance and minimization plan provided by the project applicant.
- An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
- The same approved biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.

If there is any change in owl nesting and foraging behavior as a result of construction activities, the approved biologist will have authority to shut down activities within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until any owls present are no longer affected by nearby construction activities, and with written concurrence from the Wildlife Agencies.

If monitoring by the approved biologist indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use, the non-disturbance buffer zone may be removed if approved by the Wildlife Agencies. The approved biologist will excavate the burrow in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl to prevent reoccupation after receiving approval from the Wildlife Agencies.

The Implementing Entity and Wildlife Agencies will respond to a request from the Third-Party Project Proponent to review the proposed construction monitoring plan within 21 days.

During Non-Breeding Season: During the non-breeding season (September 1 through January 31), the approved biologist will establish a minimum 250-foot non-disturbance buffer around occupied burrows. Construction activities outside of this 250-foot buffer will be allowed. Construction activities within the non-disturbance buffer will be allowed if the following criteria are met to prevent owls from abandoning over-wintering sites:

- An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same approved biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl foraging behavior as a result of construction activities, the approved biologist will have authority to shut down activities within the 250-foot buffer.
- If the owls are gone for at least 1 week, the Third-Party Project Proponent may request approval from the Implementing Entity and Wildlife Agencies that an approved biologist excavate usable burrows and install one-way exclusionary devices to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue.

Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

Mitigation Measure 3.3.8d. "**WBO-4 (Burrowing Owl Construction Monitoring):** During construction of Covered Activities, 250-foot construction buffer zones will be established and maintained around any occupied burrow. An approved biologist will monitor the site to ensure that buffers are enforced and owls are not disturbed. The approved biologist will also train construction personnel on avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone." (SSHCP 2018)

Mitigation Measure 3.3.8e. "**WBO-5 (Burrowing Owl Passive Relocation):** Passive relocation is not allowed without the express written approval of the Wildlife Agencies. Passive owl relocation may be allowed on a case-by-case basis on project sites during the non-breeding season (September 1 through January 31) with the written approval of the Wildlife Agencies if the other measures described in this condition preclude work from continuing. Passive relocation must be done in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing

owl. Passive relocation will only be proposed if the burrow needing to be removed or with the potential to collapse from construction activities is the result of a Covered Activity. If passive relocation is approved by the Wildlife Agencies, an approved biologist can passively exclude birds from their burrows during the non-breeding season by installing one-way doors in burrow entrances. These doors will be in place for 48 hours to ensure that owls have left the burrow, and then the biologist will excavate the burrow to prevent reoccupation. Burrows will be excavated using hand tools only. During excavation, an escape route will be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies over the 50-year Permit Term." (SSHCP 2018)

Mitigation Measure 3.3.8f. "**WBO-6 (Burrowing Owl Timing of Maintenance Activities):** All activities adjacent to existing or planned Preserves, Preserve Setbacks, or Stream Setback areas will be seasonally timed, when safety permits, to avoid or minimize adverse effects on occupied burrows." (SSHCP 2018)

Mitigation Measure 3.3.8g. "**WBO-7 (Rodent Control):** Rodent control will be allowed only in developed portions of a Covered Activity project site within western burrowing owl modeled habitat. Where rodent control is allowed, the method of rodent control will comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander." (SSHCP 2018)

Mitigation Measure 3.3.8h. "Objective BO2. For each western burrowing owl or western burrowing owl pair passively excluded, preserve 200 acres of modeled habitat for western burrowing owl, and establish a California ground squirrel (*Spermophilus (Otospermophilus) beecheyi*) colony, and augment with artificial burrows as appropriate (determined by TAC). Artificial burrows will be established at appropriate locations throughout the Preserve System pursuant to CDFW (CDFG 2012 guidelines) or as otherwise determined by the TAC." (SSHCP 2018)

3.3.9 Impacts to Covered Raptor Species

Potential Impacts. The SSHCP mitigation measures for Covered Raptor Species applies to Cooper's hawk (*Accipiter cooperii*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*). Breeding habitat for these species occurs

onsite. The site is within SSHCP-modeled foraging habitat for the loggerhead shrike, SSHCP-modeled foraging habitat for the white-tailed kite and adjacent to nesting habitat, SSHCP-modeled nesting-foraging and foraging habitat with an occurrence adjacent to the site for the northern harrier and is adjacent to SSHCP-modeled Cooper's hawk foraging-nesting habitat. Cooper's hawk and northern harrier were present during the 2019 survey. The harm, injury or mortality of individuals from site development would be considered significant. Should site grading or vegetation or tree removal occur while a covered raptor species is nesting, they may be injured or killed. Any actions related to site development that result in the mortality of covered raptors would constitute a significant adverse environmental impact.

Consistency with SSHCP- The project will follow measures RAPTOR 1-4 from Chapter 5, Section 4 of the SSHCP (2018).

Mitigation. As the site is within SSHCP-modeled habitat for the loggerhead shrike, white-tailed kite, and northern harrier, and a northern harrier and Cooper's hawk were observed onsite and adjacent to the site during the 2019 site visit, the following measures will ensure that covered raptors will not be disturbed and individuals will not be harmed by construction activities. Completion of the following measures will reduce the potential impacts to covered raptors to a less-than-significant level.

- ***Mitigation Measure 3.3.9a.*** **"RAPTOR-1 (Raptor Surveys):** If modeled habitat for a covered raptor species (Figures 3-20, 3-23, 3-24, or 3-28) is present within a Covered Activity's project footprint or within 0.25 mile of a project footprint [as noted above, it is], then an approved biologist will conduct a field investigation to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential nesting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information." (SSHCP 2018)
- ***Mitigation Measure 3.3.9b.*** **"RAPTOR-2 (Raptor Pre-Construction Surveys):** Pre-construction surveys will be required to determine if active nests are present with a project

footprint or within 0.25 mile of a project footprint if existing or potential nest sites are found during initial surveys and construction activities will occur during the raptor breeding season. An approved biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities within the proposed project footprint and within 0.25 mile of the proposed project footprint to determine presence of nesting covered raptor species. Preconstruction surveys will be conducted during the raptor breeding season. If a nest is present, then RAPTOR-3 and RAPTOR-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies." (SSHCP 2018). If nesting raptors are not found during the preconstruction surveys, the remainder of the mitigation measures for raptors below are not necessary.

- ***Mitigation Measure 3.3.9c.* "RAPTOR-3 (Raptor Nest/Roost Buffer):** If active nests are found within the project footprint or within 0.25 mile of any project-related Covered Activity, the Third-Party Project Proponent will establish a 0.25 mile temporary nest disturbance buffer around the active nest until the young have fledged." (SSHCP 2018)
- ***Mitigation Measure 3.3.9d.* "RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring):** If project-related Covered Activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then an approved biologist experienced with raptor behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist/monitor will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone (i.e., outside the buffer zone)." (SSHCP 2018)

3.3.10 Impacts to Greater Sandhill Cranes

Potential Impacts. Although nesting habitat for the greater sandhill crane is absent from the site, they may roost onsite and forage in the agricultural field during the winter months and during migration times. The site is within SSHCP-modeled foraging (Non-VHV) and roosting (Non-VHV) habitat for the greater Sandhill crane. Individuals and evidence of this species' presence were not detected during the 2019 survey. The harm, injury or mortality of individuals from site development would be considered significant. Should site grading or vegetation removal occur while a greater sandhill crane is onsite, they may be injured or killed. Any actions related to site development that result in the mortality of greater sandhill cranes would constitute a significant adverse environmental impact.

Consistency with SSHCP- The project will follow measures GSC 1-5 from Chapter 5, Section 4 of the SSHCP (2018).

Mitigation. As the site is within SSHCP-modeled foraging (Non-VHV) and roosting (Non-VHV) habitat, the following measures will ensure that greater sandhill cranes will not be disturbed and individuals will not be harmed by construction activities. Completion of the following measures will reduce the potential impacts to greater sandhill cranes to a less-than-significant level.

- ***Mitigation Measure 3.3.10a.*** **"GSC-1 (Greater Sandhill Crane Surveys):** If modeled habitat for greater sandhill crane (Figure 3-22) is present within a Covered Activity's project footprint or within 0.5 mile of a project footprint [as noted above, it is], then an approved biologist will conduct a field investigation to determine if existing or potential roosting sites are present within the project footprint and adjacent areas within 0.5 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Roosting sites within the Plan Area are often associated with flooded fields, seasonal wetlands, and freshwater marsh. The Third-Party Project Proponent will map all existing or potential roosting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Roosting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information." (SSHCP 2018)
- ***Mitigation Measure 3.3.10b.*** **"GSC-2 (Greater Sandhill Crane Pre-Construction Surveys):** Pre-construction surveys will be required to determine if active roosting sites are

present within a project footprint or within 0.5 mile of a project footprint if existing or potential roosting sites were found during initial surveys and construction activities will occur when wintering flocks are present within the Plan Area (September 1 through March 15). An approved biologist will conduct pre-construction surveys within 15 days of ground-disturbing activities, and within 0.5 mile of a project footprint, to determine presence of roosting greater sandhill cranes. Pre-construction surveys will be conducted September 1 through March 15, when wintering flocks are present within the Plan Area. If birds are present, then GSC-3, GSC-4, and GSC-5 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies." (SSHCP 2018) If greater sandhill crane roosting sites are not found during the preconstruction surveys, the remainder of the mitigation measures for the greater sandhill crane below are not necessary.

- ***Mitigation Measure 3.3.10c.* "GSC-3 (Greater Sandhill Crane Roosting Buffer):** If active roosting sites are found within the project footprint or within 0.5 mile of any project-related Covered Activity, the Third-Party Project Proponent will establish a 0.5 mile temporary roosting disturbance buffer around the roosting site until the cranes have left." (SSHCP 2018)
- ***Mitigation Measure 3.3.10d.* "GSC-4 (Greater Sandhill Crane Visual Barrier):** Greater sandhill cranes have low tolerance for human disturbance, and such disturbance has caused cranes to abandon foraging and roosting sites. Repeat disturbance affects their ability to feed and store energy needed for survival. If project-related activities occur within 0.5 mile of a known roosting site as identified by surveys conducted during implementation of GSC-1 or GSC-2, a visual barrier will be constructed." (SSHCP 2018)
- ***Mitigation Measure 3.3.10e.* "GSC-5 (Greater Sandhill Crane Roosting Buffer Monitoring):** If roosting sites are found within the project footprint or within 0.50 mile of any project-related Covered Activity, an approved biologist experienced with greater sandhill crane behavior will be retained by the Third-Party Project Proponent to monitor the roosting site throughout the roosting season and to determine when the birds have left. The approved biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary disturbance buffer can only occur with the written permission of the Implementing Entity and Wildlife Agencies. If greater sandhill cranes are abandoning their roosting and/or forage sites, the approved biologist will

have the authority to shut down construction activities. If roost abandonment occurs, the approved biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid harm and harassment of individuals. The approved biologist will also train construction personnel on the avoidance procedures, buffer zones, and protocols in the event that greater sandhill cranes move into an active construction zone (i.e., outside the buffer zone)." (SSHCP 2018)

3.3.11 Impacts to Tricolored Blackbirds

Potential Impacts. The site is within modeled foraging and nesting-foraging habitat for the tricolored blackbird, and the dense blackberry bushes and other dense vegetation along Dry Creek and the agricultural fields may support suitable nesting habitat depending on the type of crop planted. Individuals and evidence of this species' presence were not detected during the 2019 survey. The harm, injury or mortality of individuals from site development would be considered significant. Should site grading or vegetation removal occur while tricolored blackbirds are nesting onsite, they may be injured or killed. Any actions related to site development that result in the mortality of tricolored blackbirds would constitute a significant adverse environmental impact.

Consistency with SSHCP- The project will follow measures TCB 1-5 from Chapter 5, Section 4 of the SSHCP (2018). Additionally, should the project cause the loss of any nesting tricolored blackbird colony site, the project shall follow Objectives TB5 and TB8 of Table 7-87 of the SSHCP (2018).

Mitigation. As the site is within SSHCP-modeled foraging nesting-foraging habitat, the following measures will ensure that tricolored blackbirds will not be disturbed and individuals will not be harmed by construction activities. Completion of the following measures will reduce the potential impacts to tricolored blackbirds to a less-than-significant level.

- ***Mitigation Measure 3.3.11a.*** **"TCB-1 (Tricolored Blackbird Surveys):** If modeled habitat for tricolored blackbird is present within a Covered Activity's project footprint or within 500 feet of a project footprint [as noted above, it is], then an approved biologist will conduct a field investigation to determine if existing or potential nesting or foraging sites are present within the project footprint and adjacent areas within 500 feet of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted

or if the parcels are visible from authorized areas. Within the Plan Area, potential tricolor blackbird nest sites are often associated with freshwater marsh and seasonal wetlands, or in thickets of willow, blackberry, wild rose, thistle, and other thorny vegetation. Tricolored blackbirds are also known to nest in crops associated with dairy farms. Foraging habitat is associated with annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (such as large tracts of alfalfa and pastures with continuous haying schedules and recently tilled fields), cattle feedlots, and dairies. The Third-Party Project Proponent will map all existing or potential nesting or foraging sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information." (SSHCP 2018)

- ***Mitigation Measure 3.3.11b.* "TCB-2 (Tricolored Blackbird Pre-Construction Surveys):** Pre-construction surveys will be required to determine if active nests are present within a project footprint or within 500 feet of a project footprint if existing or potential nest sites were found during design surveys and construction activities will occur during the breeding season (March 1 through September 15). An approved biologist will conduct pre-construction surveys within 30 days and within 3 days of ground-disturbing activities, and within the proposed project footprint and 500 feet of the proposed project footprint to determine the presence of nesting tricolored blackbird. Pre-construction surveys will be conducted during the breeding season (March 1 through August 31). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, then TCB-3 and TCB-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and the Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies." (SSHCP 2018) If nesting tricolored blackbirds are not found during the preconstruction surveys, the remainder of the mitigation measures for tricolored blackbirds below are not necessary.
- ***Mitigation Measure 3.3.11c.* "TCB-3 (Tricolored Blackbird Nest Buffer):** If active nests are found within the project footprint or within 500 feet of any project-related Covered Activity, the Third-Party Project Proponent will establish a 500-foot temporary buffer around the active nest until the young have fledged." (SSHCP 2018)

- ***Mitigation Measure 3.3.11d.*** **"TCB-4 (Tricolored Blackbird Nest Buffer Monitoring):** If nesting tricolored blackbirds are present within the project footprint or within 500 feet of any project-related Covered Activity, then an approved biologist experienced with tricolored blackbird behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place near the disturbance buffer. Work within the nest disturbance buffer will not be permitted. If the approved biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction will cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with the Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will be held to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a tricolored blackbird flies into an active construction zone (i.e., outside the buffer zone)." (SSHCP 2018)
- ***Mitigation Measure 3.3.11e.*** **"TCB-5 (Timing of Pesticide Use and Harvest Timing on Agricultural Preserves):** On SSHCP Agricultural Preserves, pesticides (including herbicides) will not be applied from January 1 through July 15." (SSHCP 2018)
- **Mitigation Measure 3.3.11f. "Objective TB5.** Provide mitigation for loss of any tricolored blackbird nesting colony site that is occupied at the time of Covered Activity implementation or was recorded as an occupied nesting colony at any time since 2008. Sources for occupied nesting colonies are the CNDDB, Tricolored Blackbird Portal, eBird, or other data sources approved by the Wildlife Agencies. Minimum mitigation is to preserve one extant unpreserved occurrence of a nesting colony prior to take of one nesting colony of tricolored blackbirds. Ensure that at least five extant tricolored blackbird colonies that were occupied in recent years are maintained and managed within the SSHCP Preserve System." (SSHCP 2018)
- **Mitigation Measure 3.3.11g. "Objective TB8.** For any tricolored blackbird nesting colony that is removed by a Covered Activity, re-establish and/or establish three new colonies within SSHCP Preserves. Re-established and/or established colonies can be in aquatic (freshwater marsh, seasonal wetland) or upland (annual grassland) habitat types, and must

be within 0.5 mile of appropriate agricultural forage crops (especially alfalfa) or annual grasslands that provide adequate foraging opportunities." (SSHCP 2018)

3.3.12 Impacts to Western Red Bat and other Bats

Potential Impacts. The site supports SSHCP-modeled foraging habitat for western red bats, and roosting habitat for western red bats is adjacent to the site. Other bat species may also roost in the buildings of the site. Individuals and evidence of western red bats or other bat species' presence were not detected during the 2019 site visit. The harm, injury or mortality of individuals from site development would be considered significant. Should site grading occur while bats are roosting in buildings onsite or in trees adjacent to the site, especially when overwintering or during maternity season, they may be injured or killed. Any actions related to site development that result in the mortality of bats would constitute a significant adverse environmental impact.

Consistency with SSHCP- The project will follow measures BAT 1-4 from Chapter 5, Section 4 of the SSHCP (2018).

Mitigation. As the site is within SSHCP-modeled foraging and is adjacent to modeled roosting habitat, and suitable roosting habitat was observed onsite during the 2019 site visit, the following measures will ensure that western red bats and other bat species will not be disturbed and individuals will not be harmed by construction activities. Completion of the following measures will reduce the potential impacts to western red bats and other bat species to a less-than-significant level.

Mitigation Measure 3.3.12a. "**BAT-1 (Winter Hibernaculum Surveys):** If modeled habitat (Figure 3-30) for western red bat is present within 300 feet of a Covered Activity's project footprint [as noted above, it is], then an approved biologist will conduct a field investigation of the project footprint and adjacent areas within 300 feet of a project footprint to determine if a potential winter hibernaculum is present, and to identify and map potential hibernaculum sites. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. If potential hibernaculum sites are found, the Third-Party Project Proponent will note their locations on project designs and will design the project to avoid all areas within a 300-foot buffer around the potential hibernaculum sites. Winter hibernaculum habitat is fully avoided if project-related activities do not impinge on a 300-foot buffer established by the approved

biologist around an existing or potential winter hibernaculum site. See Chapter 10 for the process to conduct and submit survey information." (SSHCP 2018)

Mitigation Measure 3.3.12b. "**BAT-2 (Winter Hibernaculum Pre-Construction Surveys):** If the Third-Party Project Proponent elects not to avoid potential winter hibernaculum sites within the project footprint plus a 300-foot buffer, additional surveys are required. Prior to any ground disturbance related to Covered Activities, an approved biologist will conduct a pre-construction survey within 3 days of ground-disturbing activities within the project footprint and 300 feet of the project footprint to determine the presence of winter hibernaculum sites. Pre-construction surveys will be conducted during the winter hibernaculum season (November 1 through March 31). If a winter hibernaculum is present, then BAT-3 and BAT-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies." (SSHCP 2018)

Mitigation Measure 3.3.12c. An approved biologist will conduct a survey of buildings onsite for other bat species. Should bat species be observed, Mitigation Measures 3.3.15d and 3.3.1e will be implemented.

Mitigation Measure 3.3.12d. "**BAT-3 (Winter Hibernaculum Buffer):** If active winter hibernaculum sites are found within the project footprint or within 300 feet of the project footprint, the Third-Party Project Proponent will establish a 300-foot temporary disturbances buffer around the active winter hibernaculum site until bats have vacated the hibernaculum and the Implementing Entity and Wildlife Agencies concur." (SSHCP 2018)

Mitigation Measure 3.3.12e. "**BAT-4 (Bat Eviction Methods):** An approved biologist will determine if non-maternity and non-hibernaculum day and night roosts are present on the project site. If necessary, an approved biologist will use safe eviction methods to remove bats if direct impacts to non-maternity and non-hibernaculum day and night roosts cannot be avoided. If a winter hibernaculum site is present, Covered Activities will not occur until the hibernaculum is vacated, or, if necessary, safely evicted using methods acceptable to the Wildlife Agencies." (SSHCP 2018)

3.3.13 Impacts to American Badgers

Potential Impacts. The site mainly consists of agricultural lands suitable for badgers. Impacts to the American badger would be similar to those for the burrowing owl. Individuals and evidence of

this species' presence were not detected during the 2019 survey. However, agricultural lands of the Project Site support California ground squirrels, which provide a prey base for the American badger; additionally, the site supports SSHCP-modeled habitat for American badgers onsite. The harm, injury or mortality of individuals from site development would be considered significant. Should site grading occur while a badger is inside a den, they may be buried in their den. Any actions related to site development that result in the mortality of badgers would constitute a significant adverse environmental impact.

Consistency with SSHCP- Although this species is a Covered Species under the SSHCP (2018), the SSHCP does not provide species-specific measures for badgers.

Mitigation. The following measures will ensure that American badgers will not be disturbed and individuals will not be harmed by construction activities. Completion of the following measures will reduce the potential impacts to American badgers to a less-than-significant level.

Mitigation Measure 3.3.13a. Pre-construction surveys conducted for other species should also be used to determine the presence or absence of badgers in the development footprint. If an active badger den is not found during the preconstruction surveys, the remainder of the mitigation measures for badgers below are not necessary.

Mitigation Measure 3.3.13b. If an active badger den is identified during pre-construction surveys within or immediately adjacent to the construction envelope, a construction-free buffer of up to 300 feet (or distance specified by the resource agencies, i.e., CDFW) should be established around the den. Because badgers are known to use multiple burrows in a breeding burrow complex, a biological monitor should be present onsite during construction activities to ensure the buffer is adequate to avoid direct impact to individuals or nest abandonment. The monitor would be necessary onsite until it is determined that young are of an independent age and construction activities would not harm individual badgers.

Mitigation Measure 3.3.13c. Once it has been determined that badgers have vacated the site, the burrows can be collapsed or excavated, and ground disturbance can proceed.

3.3.14 Potential Impacts to Riparian Habitat and Other Sensitive Natural Communities, Including Federally Protected Wetlands

Potential Impacts. Potentially jurisdictional habitats occurring on the site include both the constructed channel and the channel of Dry Creek, as well as seasonal wetland occurring within the Dry Creek flood plain. These sensitive and regulated habitats are proposed for preservation within the Remainder Parcel.

As indicated previously, the constructed basins on the site do not appear to meet the definition of a water regulated by the USACE or RWQCB.

Consistency with SSHCP-The project will not result in any impacts to Stream/Creek or Seasonal Wetland land cover types.

Mitigation. The project will not result in any impacts to Stream/Creek or Seasonal Wetland land cover types, and the project will follow setback requirements within the SSHCP below.

"STREAM-3 (Minor Tributaries to UDA Streams): A 25-foot setback measured from the top of the bank on both sides of the stream channel will be applied to all avoided first and second order tributaries to the streams listed in Table 5-1 and Laguna Creek. Refer to Objective W6 in Chapter 7 (Table 7-1) regarding avoided first and second order tributaries. Trails are not permitted within headwater ephemeral Stream Setbacks."

Regulatory Permitting under the SSHCP Aquatic Resources Program (SSHCP ARP). Although the current project does not appear to impact any waters of the U.S. or state, should there be any revisions to the project, such as installation of an outfall into Dry Creek, the project would need to apply for an Aquatic Resources Impact Permit under the SSHCP ARP (County of Sacramento et. al. 2018). Prior to applying for this permit, an Aquatic Resources Delineation would need to be prepared according to the current minimum standards of the Sacramento District USACE and State Water Quality Control Board, and verified by the USACE.

CWA Section 404 and 401 permits, and a Fish and Game Section 1600 permit, would be required from the USACE, RWQCB and CDFW, respectively, for impacts to waters under their jurisdiction. The project proponent would need to satisfy all agency mitigation requirements to compensate for aquatic impacts. (In the future, the SSHCP is looking to create a streamlined approach to regulatory permitting under the SSHCP ARP that may include a USACE Programmatic General Permit, a

RWQCB Programmatic 401 Water Quality Certification and a CDFW Section 1600 Master or Long-term Stream Alteration Agreement (LTSAA).

3.3.15 Degradation of Water Quality in Dry Creek, Manmade Channel, and Downstream Waters

Potential Impact. Eventual site development and construction may require grading that leaves the soil of construction zones barren of vegetation and, therefore, vulnerable to sheet, rill, or gully erosion. Eroded soil is generally carried as sediment in surface runoff to be deposited in natural creek beds, canals, and adjacent wetlands. Furthermore, urban runoff is often polluted with grease, oil, pesticide and herbicide residues, heavy metals, etc. These pollutants may eventually be carried to sensitive wetland habitats used by a diversity of native wildlife species. The deposition of pollutants and sediments in sensitive riparian and wetland habitats would be considered a potentially significant adverse environmental impact. The project would comply with the City's grading requirements and requirements of the SSHCP. Therefore, the project buildout would result in a less-than-significant impact to water quality.

Consistency with SSHCP- The project will comply with water quality measures and best management practices of the SSHCP.

Mitigation. No mitigation is warranted.

3.3.16 Conflict with Local Policies or Ordinances

Impact. The project will need to abide by *The Cutting and Removal of Heritage Oak and Public Trees* ordinance (Section 18.52.060 of the Municipal Code) of the City of Galt. This ordinance defines a heritage oak tree and encroachment as:

> The definition of a Heritage Oak Tree "includes, but is not limited to, any of the following: valley oak (*Quercus lobata*), interior live oak (*Quercus wislizenii*), blue oak (*Quercus douglasii*), coast live oak (*Quercus agrifolia*) or oracle oak (*Quercus morehus*) having at least one (1) trunk of six (6) inch diameter measured four (4) feet above the ground, or multi-trunks with an aggregate diameter of eight (8) inches or more, measured four (4) feet above ground. ...
>
> "Encroachment" means any intrusion or human activity into the dripline of an oak tree including, but not limited to, pruning, grading, excavating, trenching, parking of vehicles, storage of materials or equipment, or the construction of structures or other improvements."

Appropriate permits and additional conditions are required for removal of any heritage oak tree or public tree or encroachment on any heritage oak tree. The applicant will be responsible for conforming to these requirements and applying for necessary permits and replacements if a protected tree is to be affected or removed.

A tree inventory was not conducted as a part of this evaluation; therefore, a tree inventory should be conducted by a certified ISA Arborist.

Consistency with SSHCP- The SSHCP does not cover take of individual trees.

Mitigation. Should the project affect, encroach on, or remove a protected or heritage tree, the appropriate permits would need to be obtained and any additional conditions of the permit be adhered to.

3.3.17 Conflict with an Adopted Habitat Conservation Plan

The site is within the Preserve Planning Unit 8 (PPU 8). According to the SSHCP, "PPU 8 contains documented occurrences of several Covered Species, including five occurrences of greater sandhill crane, 19 of Swainson's hawk, and a single occurrence of western red bat; otherwise, PPU 8 does not support occurrence concentrations of any particular species (Figures 3-3 through 3-30). …The Preserve System in PPU 8 is limited to Cropland Preserve located in the northwest of the PPU and in the south of the PPU along Dry Creek. Preservation in PPU 8 focuses on high-value Swainson's hawk foraging habitat. This PPU also includes a greater sandhill crane roosting pond (Figure 3-22)" (SSHCP 2018).

Species with modeled habitat occurring onsite include Boggs Lake hedge-hyssop, Ricksecker's water scavenger beetle, midvalley fairy shrimp, vernal pool fairy shrimp, California tiger salamander (upland and adjacent to aquatic), western spadefoot (aquatic and adjacent to upland), western pond turtle aquatic and adjacent to upland), Ferruginous hawk (foraging), greater sandhill crane (foraging (Non-VHV) and roosting (Non-VHV)), loggerhead shrike (foraging), northern harrier (foraging and nesting-foraging), Swainson's hawk (high value foraging habitat with a nesting occurrence adjacent to the site), tricolored blackbird (foraging and nesting-foraging), burrowing owl (wintering habitat), white tailed kite (foraging and adjacent to nesting), American badger, western red bat (foraging), and adjacent to Sanford's arrowhead, Valley elderberry longhorn beetle, vernal pool tadpole shrimp, and Cooper's hawk (foraging-nesting).

3.3.17.1 Fees

Development fees for the SSHCP are updated annually and are paid based on the actual impacts to each land cover type onsite. Fee calculations are described in Chapter 10 of the SSHCP. The current per-acre fees for land cover types/habitats occurring on the site include:

- Agriculture: $16,212
- Seasonal Wetland: $138,220
- Streams/Creeks: $119,441
- Disturbed: No Fee
- Low-density Development: No Fee

Alternatively, a project may dedicate land in lieu of paying development fees. The portion of the site that will be preserved in the Remainder Parcel may qualify for the land in lieu of fees.

Conditions and Measures

Table 3. Application of General Species Take Avoidance and Minimization Measures to the Proposed Project from Section 5.4.2 of the SSHCP. All SSHCP conditions and AMMs are provided in Appendix A.

Measure	**Applies?**	**Description**
SPECIES-1 through -4.	Yes	Applies to all Covered Activities.
Measure	**Applies?**	**Description**
PLANT-1 through -2.	Yes	The project site is within modeled habitat for Sanford's arrowroot and Bogg's Lake hedge hyssop.
ORCUTT-1 through -2.	No	The project site is not within modeled habitat for Orcutt grass.
STREAM–1 through -2	No	The project will not impact any streams listed in Table 5-1 of the SSHCP.
STREAM-3 through -5	Potentially	Although not currently planned, should the project impact Dry Creek, these measures may apply.
CTS-1 through -7.	Yes	Suitable breeding habitat for this species in the form of the basins onsite. Additionally, the SSHCP identified the site as supporting modeled aquatic habitat and being adjacent to modeled upland habitat.
WS-1 through -7.	Possibly	The site supports pooling within Dry Creek, which currently are not planned to be impacted by the project, should the project impact Dry Creek, these measures may apply. The site is within modeled western spadefoot aquatic habitat and adjacent to upland habitat for the western spadefoot.
GGS-1 through -8.	No	Although Dry Creek occurs onsite, which will not be developed, this creek does not hold adequate water in the giant gartersnake active season to provide food and cover for the giant gartersnake. Additionally, the SSHCP does not identify the site as supporting modeled habitat for this species.
WPT-1 through -9.	Yes	Although the habitat onsite has a poor suitability for the western pond turtle, the SSHCP identifies the site to be within modeled aquatic habitat and adjacent to upland habitat for the western pond turtle.

TCB-1 through -5.	Yes	The site is within SSHCP-modeled foraging and nesting-foraging habitat for the tricolored blackbird, and the dense blackberry bushes and other dense vegetation along the manmade channel and the edges of Dry Creek may support suitable nesting habitat, additionally, the agricultural fields may provide suitable nesting habitat depending on the type of crop planted.
SWHA-1 through -4.	Yes	A few trees occur onsite and several larger trees occur adjacent to the site. The site is within SSHCP-modeled high-value foraging habitat and has a nesting occurrence adjacent to the site.
GSC-1 through -5.	Yes	Although nesting habitat for the greater sandhill crane is absent from the site, agricultural fields of the site provide suitable foraging habitat. The site is within SSHCP-modeled foraging (Non-VHV) and roosting (Non-VHV) habitat for the greater sandhill crane.
WBO-1 through -7.	Yes	Although burrowing owl nesting habitat is absent from the site, the site is within modeled wintering habitat for the burrowing owl.
RAPTOR-1 through -4.	Yes	The SSHCP mitigation measures for Covered Raptor Species applies to Cooper's hawk (*Accipiter cooperii*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*). Breeding habitat for these species occurs onsite. The site is within modeled foraging habitat for the loggerhead shrike, modeled foraging habitat and adjacent to modeled nesting habitat for the white-tailed kite, modeled foraging and nesting-foraging habitat for the northern harrier and modeled foraging-nesting habitat for the Cooper's hawk.
BAT-1 through -4.	Yes	The site supports SSHCP-modeled foraging habitat for western red bats onsite with modeled roosting habitat adjacent to the site. However, roosting habitat for other bat species is available onsite and along the border of the site as well.

Mitigation. Payment of all applicable SSHCP fees and compliance with all SSHCP conditions and AMMs will ensure the project is consistent with the SSHCP.

LITERATURE CITED

California Department of Fish and Wildlife. 2019. Annual Report on the Status of California State Listed Threatened and Endangered Animals and Plants. The Resources Agency, Sacramento, CA.

California Department of Fish and Game. 2019. California Fish and Game code. Gould Publications. Binghamton, N.Y.

California Department of Fish and Wildlife. 2019. California Natural Diversity Database, Rarefind5. The Resources Agency, Sacramento, CA.

California Native Plant Society (CNPS). 2019. Inventory of Rare and Endangered Plants (online edition, v6-05c). California Native Plant Society. Sacramento, CA.

City of Galt Municipal Code. 2019.

County of Sacramento, City of Rancho Cordova, City of Galt, Sacramento County Water Agency, Sacramento Regional County Sanitation District, and the Southeast Connector Joint Powers Authority. 2018. Final South Sacramento Habitat Conservation Plan. January 2018. Sacramento, CA.

County of Sacramento, City of Rancho Cordova, City of Galt, Sacramento County Water Agency, Sacramento Regional County Sanitation District, and the Southeast Connector Joint Powers Authority. 2018. SSHCP Aquatic Resources Program.

Harris, L.D., Gallagher, P.B., 1989. New initiatives for wildlife conservation: the need for movement corridors. In: Mackintosh, G. (Ed.), Preserving Communities and Corridors. Defenders of Wildlife, Washington DC, pp. 11–34.

Natural Resource Conservation Service. 2019. Web Soil Survey. USDA.

Santos, N.R., J.V.E. Katz, P.B. Moyle, and J.H. Viers. 2014. A programmable information system for management and analysis of aquatic species range data in California. Environmental Modelling & Software. Volume 53 pp. 13-26. https://pisces.ucdavis.edu and http://calfish.ucdavis.edu/PISCES_Distribution_Maps/

Shuford, W. David and Thomas Gardall eds. 2008. California Bird Species of Special Concern. Western Field Orinthologists and California Department of Fish and Game.

Thomson, Robert C., Amber N. Wright, and H. Bradley Shaffer. 2016. California Amphibian and Reptile Species of Special Concern. California Department of Wildlife. University of California Press.

USACE. 1987. Corps of Engineers Wetlands Delineation Manual. Department of the Army.

U.S. Fish and Wildlife Service. 2019. Endangered and threatened wildlife and plants.

Wetland Training Institute, Inc. 1990. Federal Wetland Regulation Reference Manual. B.N. Goode and R.J. Pierce (eds.) WTI 90-1. 281pp.

APPENDIX A. SOUTH SACRAMENTO COUNTY HABITAT PLAN CONDITIONS AND MEASURES.

(Taken from Chapter 5 of the SSHCP)

implemented. The Land Use Authority Permittee can compel a Third-Party Project Proponent to stop working if a project is not in compliance with all SSHCP AMMs.[16] Upon construction completion, the Land Use Authority Permittee will monitor and confirm that post-construction conditions are acceptable and consistent with the requirements of the SSHCP permits (e.g., revegetation, soil treatments).[17] Once the constructed project has received final clearance from the Land Use Authority, it is the responsibility of the Land Use Authority to monitor continued operation of installed AMMs (e.g., swales, retention basins) and to monitor compliance with AMMs required for future operations and maintenance of the Covered Activity. The Implementing Entity may also assist with and in some instances may assume responsibility for monitoring continued operation of installed AMMs when those AMMs are part of the Preserve System, Preserve Setbacks, or Stream Setbacks.

On occasion, a local Land Use Authority Permittee may not have authority over a Covered Activity proposed by a Third-Party Project Proponent. In that event, the SSHCP Implementing Entity may develop a Participating Special Entity agreement with the Third-Party Project Proponent (see Chapter 9). As a Participating Special Entity, the Third-Party Project Proponent will incorporate and implement all applicable design and construction AMMs. The Implementing Entity will ensure that AMMs specific to that SSHCP Covered Activity are included in the project's Participating Special Entity agreement and ensure that AMMs are being implemented during construction.

As the SSHCP will be implemented over a 50-year Permit Term, the results of construction monitoring may indicate that certain AMMs are ineffective. Should the Plan Permittees wish to modify or replace an SSHCP AMM, they will follow the modification process outlined in the Adaptive Management Program (see Chapter 8).

5.4.1 General Avoidance and Minimization Measures

General AMMs are designed to avoid or minimize effects of Covered Activities on SSHCP land cover types and Covered Species.

Condition 1. Avoid and Minimize Urban Development Impacts to Watershed Hydrology and Water Quality

National Pollution Discharge Elimination System permits are issued by the Regional Water Quality Control Board to jurisdictions in the region, including the jurisdictions that are also SSHCP Land Use Authority Permittees (i.e., County of Sacramento, and Cities of Rancho

[16] In a situation like this, the Local Land Use Authority Permittee will suspend one or more local permits (e.g., grading permit, building permit) until compliance with terms of all SSHCP requirements is demonstrated.

[17] Post-construction monitoring by the Land Use Authority Permittee could continue for several years.

Cordova and Galt). The National Pollution Discharge Elimination System permit is issued to each of the Land Use Authority Permittees every 5 years, and is referred to as the Municipal Separate Storm Sewer System (MS4) permit. MS4 permits contain specific design measures required for all projects constructed within the region. The Stormwater Quality Design Manual for the Sacramento and South Placer Regions (Stormwater Manual) outlines planning tools and requirements to reduce urban runoff from new development and redevelopment projects within the region (Sacramento Stormwater Quality Partnership 2007). The Stormwater Manual is used as a general guidance document to aid with the selection, siting, design, operation, and long-term maintenance of stormwater quality control measures. The Stormwater Manual contains control measures intended to meet the standard of "reducing pollutants in urban runoff to the maximum extent practicable" set forth in the local agencies' MS4 permits issued by the Central Valley Regional Water Quality Control Board. AMM LID-1 (see below) is designed to ensure compliance with MS4 requirements by requiring Third-Party Project Proponents to minimize increases of peak discharge of stormwater and to eliminate or reduce runoff of pollutants.

Development Covered Activities may adversely alter watershed hydrology and degrade water quality, which, in turn, could diminish or eliminate the conservation benefits provided by the SSHCP Preserve System. Condition 1 is designed to conserve and/or rehabilitate on-site natural creeks and streams. This condition will require the provision of BMPs and low-impact development (LID) drainage control measures to ensure that runoff from developed lands will closely mimic the pre-development hydrograph and retain most pre-development hydrologic functions. Condition 1 will accomplish the hydrograph and hydrologic objectives through application of the listed AMMs to all UDA Covered Activities that occur at the parcel, subdivision, or master plan scale.

LID-1 (Stormwater Quality): When the size of a Covered Activity project exceeds the thresholds established by the State Water Resources Control Board (SWRCB) (see the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions, or future SWRCB-approved design manuals applicable to the Plan Area), incorporate stormwater management into site design to satisfy the requirements outlined in the most recent Stormwater Quality Design Manual for the Sacramento and South Placer Regions. Stormwater management may include groundwater recharge (LID-2) and natural site features (LID-3).

LID-2 (Groundwater Recharge): When siting SSHCP Preserves containing Riparian, Open Water, or Freshwater Marsh SSHCP land cover types, the Implementing Entity will prioritize locations that are suitable for groundwater recharge.

LID-3 (Natural Site Features): Incorporate preservation of a site's natural aquatic features (such as creeks and streams) into project design to retain natural hydrologic patterns and to retain habitat that might be used by Covered Species.

Condition 2. Avoid and Minimize Urban Development Direct and Indirect Impacts to Existing Preserves and SSHCP Preserves

Development Covered Activities adjacent to Preserves may adversely impact species that use the Preserve, and erode or eliminate the conservation benefits provided by the Preserve. Condition 2 seeks to avoid or minimize the following Covered Activity environmental stressors that may result in direct and indirect impacts to the SSHCP Preserve System:

- Alterations to landscape hydrology from new impervious surfaces may adversely affect natural communities in the lower watershed, the ecology of a Preserve, and/or downstream aquatic resources.
- Water runoff from development or from roadways directed into Preserves may introduce harmful substances into Preserves. Unseasonal and/or additional water entering a Preserve may eliminate vernal pools and other seasonal wetlands native to the region by converting them to low-functioning perennial wetlands.
- Development adjacent to Preserves may partially to fully remove the soil's "perched aquifer" (see Chapter 3) and reduce or eliminate the micro-watersheds that support the hydrology of vernal pools within the Preserve boundary. These changes may adversely affect the existing hydrologic regime of vernal pools by changing the timing, depth, and/or duration of vernal pool saturation and/or ponding, causing long-term changes to a suite of vernal pool functions. For example, changes to water chemistry could adversely affect species habitat. Although the vernal pools remain, the environmental conditions of the pools may no longer provide habitat for vernal pool Covered Species, or provide the benefit of other wetland functions (e.g., stormwater attenuation) compared to pre-project conditions.
- Introduction or proliferation of non-native or invasive plant and wildlife species may displace native species.
- Landscaping in the interface of a development and a Vernal Pool–Grassland Preserve often includes native or non-native trees and other plant species that are not found in California grasslands and, therefore, cannot survive on the Vernal Pool–Grassland Preserve border without intensive irrigation and cultivation. In addition to adverse effects from irrigation and landscape maintenance, adult trees may become landscape barriers that inhibit species movement and may act to isolate individual Preserves from the larger SSHCP Preserve System.
- Recreational use of Preserves near developed areas may compact soils, eliminate vegetation, impair hydrologic functions, introduce weeds or invasive plant species, and disturb plants and wildlife.

- Introduction of light, noise, or vibrations may disrupt normal nocturnal and diurnal cycles of native species.

AMMs associated with Condition 2 must be applied to all UDA Covered Activities that border an existing Preserve or planned SSHCP Preserve.

EDGE-1 (Compatible Land Uses): To the maximum extent practicable, development project Covered Activities will locate compatible land uses (e.g., designated open space such as parks and ball fields, detention basins, and other land uses with less-intensive human activity) in areas immediately adjacent to existing or planned Preserve boundaries. The compatible land use will provide additional buffering of Preserves from potential indirect effects of adjacent urban development. The soil surfaces in a compatible land use area may be re-contoured provided that the soil restrictive layer remains undamaged and most of the soil profile above the restrictive layer remains intact. The Land Use Authority will determine when it is not practicable to locate a compatible land use adjacent to existing or planned Preserve boundaries.

EDGE-2 (Single-Loaded Streets): To the maximum extent practicable, the design of Urban Development Covered Activities will locate single-loaded streets adjacent to existing or planned Preserve. The Land Use Authority will determine when single-loaded streets are not practicable.

EDGE-3 (Preserve Setbacks): Urban Development Covered Activities constructed adjacent to existing or planned Preserves must establish a minimum 50-foot-wide setback outward from the boundary of any existing Preserve or planned SSHCP Preserve. This minimum 50-foot-wide setback will function as a transition between Urban Development and the Preserve, and must be managed to maintain the natural community of vegetation present in the adjacent Preserve. As much of the setback as possible should remain in the same natural habitat as the Preserve.

However, as discussed in Section 5.2.5, Covered Activities in Preserve Setbacks in the UDA, where an existing or planned Preserve is adjacent to an existing roadway (e.g., collectors, arterials, thoroughfares), the 50-foot Preserve Setback will not be required, and any bicycle or pedestrian trail will be established in the road right-of-way. In addition, where a planned roadway crosses an existing or planned Preserve, no Preserve Setback will be required, and any bicycle or pedestrian trail will be established in the road right-of-way.

EDGE-3a (Setback Recreational Trails): Trails are best suited outside of the setback; however, certain types of recreational trails or facilities (e.g., benches, trash receptacles, shade structures, fencing) that can be constructed with minimum ground disturbance and in compliance with EDGE-7 may be allowed within a Preserve Setback, as specified in Section 5.2.5, Covered Activities in Preserve Setbacks in the UDA. Preserve Setback design must locate trails on the side nearest development, away from the Preserve boundary. Trails may be permeable or semi-permeable hiking trails or paved community trials. The maximum trail width will be 16 feet total, including 2-foot-wide shoulders. Post and cable fencing, split rail, or other open fencing will be installed adjacent to recreation trails to keep pedestrians on the trail.

EDGE-3b (Setback Firebreaks): If approved by the local authorities, the Preserve Setback trail may also be used as a firebreak. In instances where a trail cannot act as a firebreak, the firebreak will be located between the trail and the Preserve boundary (see Section 5.2.7). Firebreaks allowed inside the setbacks must be created by methods that will not disturb the soil's restrictive layer, such as mowing, minor scraping of surface vegetation, or shallow tilling, to comply with EDGE-7. Firebreak width within Preserve Setbacks is the minimum width needed to comply with applicable local codes.

EDGE-3c (Setback Shade Trees and Landscaping): To prevent potential impacts from irrigation water or from accumulation of leaf litter onto the grasslands or vernal pools of a Preserve, planting of shade trees or landscaping vegetation will be limited to the area of the Preserve Setback located between the recreation trail and the adjacent urban development (i.e., away from Preserves).

- Only drought-tolerant plant species will be planted. The planting pallet used for Preserve Setback landscaping will not include invasive plant species listed in the California Invasive Plant Council's (Cal-IPC) California Invasive Plant Inventory Database or listed in the Cal-IPC California Invasive Plant Watch List (see http://www.cal-ipc.org/paf/). Any shade trees planted along Preserve Setback trails will be native species that are found in California grasslands and that can survive in the Vernal Pool–Grassland border without long-term irrigation or fertilization (e.g., valley oak, black oak, blue oak, oracle oak). In general, no more than 30% of any 1,000-foot-long segment of a Preserve Setback trail will have canopy cover from tree plantings (to be consistent with maximum tree densities naturally found within native California grasslands and savanna).

- Drip irrigation will be allowed for a maximum of 5 years to establish shade trees or landscape vegetation between the recreation trail and adjacent urban development. The Implementing Entity has the discretion to allow irrigation to continue past 5 years if extenuating circumstances necessitate it (e.g., during a drought) and the continuance of irrigation will not affect the Preserve. Any irrigation systems located within Preserve Setbacks will be inspected quarterly to determine if such systems are affecting soils or vegetation not part of the intended plantings. Irrigation system repairs will be completed immediately if it is determined that the irrigation system is affecting vegetation or soil moisture not part of the intended tree planting.
- If, during annual monitoring of the adjacent Preserve (see Chapter 8), adverse indirect effects (e.g., leaf litter accumulation, irrigation runoff, plant encroachment) of the Preserve Setback's planted vegetation are detected, then the SSHCP Implementing Entity, the Preserve Manager, and the entity responsible for the Preserve Setback will identify appropriate adaptive management of the Preserve Setback tree or landscape plantings in accordance with the Preserve Setback Easement (see Section 5.2.5 and Chapter 9).

EDGE-4 (Locate Stormwater Control Outside Preserves): Roads, sidewalks, and other impermeable surfaces of Urban Development Covered Activities adjacent to existing or planned Preserves will slope away from Preserves and Preserve Setbacks or intercept drainage with swales or curbs and gutters to preclude drainage from entering Preserves and Preserve Setbacks. Stormwater flows must be directed away from Preserves and Preserve Setbacks and directed into stormwater control facilities inside the development (outside Preserves and Preserve Setbacks)[18] (see EDGE-6 for exception to EDGE-4 in certain SSHCP Linkage Preserves).

EDGE-5 (Stormwater Control in Preserve Setbacks): If trails are established in any Preserve Setback in compliance with EDGE-3, the trail must be sloped away from the Preserve, and rainwater leaving the trail surface must flow into an adjacent low-velocity bio-retention swale or cell to keep rainwater runoff and trail contaminants from entering the Preserve. Low-velocity bio-retention swales or cells are typically small linear features placed on one or both sides of a trail. As required by EDGE-3, trails and their adjacent bio-retention swales or cells must be located on the side of the Preserve Setback nearest development.

[18] Detention basins are allowed in some Linkage Preserves consistent with the requirements of EDGE-6. At the time of SSHCP preparation, seven Linkage Preserves with drainages are planned SSHCP Preserves: L1, L2, L4, L7, L8, L9, and L10 (see Section 5.2.7 and Section 7.5). Also see project-specific measures in Section 5.5.1.

EDGE-6 (Detention Basins in Linkage Preserves): Because planned SSHCP Linkage Preserves L1, L2, L4, L7, L8, L9, and L10 (see Section 7.5) surround natural creeks or streams that must receive stormwater from planned adjacent Urban Development Covered Activities, a limited number of stormwater detention basins will be allowed on those Linkage Preserves. Detention basins within Linkage Preserves (see Section 5.2.7) will be designed and constructed with fill material to build up the perimeter of the detention basin so as not to impact the soil restrictive layer (duripan or hardpan) and function of the soil perched aquifer. Detention basins within Linkage Preserves will capture stormwater flows and runoff, and will discharge water to the stream/creek or percolate collected water to the soil perched aquifer. Detention basin structures that collect stormwater entering the basin or convey stormwater leaving the basin must be designed to avoid and minimize effects to Covered Species habitat in the Linkage Preserve.

EDGE-7 (Hardpan/Duripan Protection): To protect the soil perched aquifer and the micro-watersheds supporting existing vernal pool hydrology, activities that have the potential to cut into, disrupt, or remove the soil's restrictive layer (hardpan or duripan) will not occur within Preserves or Preserve Setbacks. However, in certain circumstances, the Covered Activities defined in Section 5.2.6, Covered Activities in Stream Setbacks in the UDA, and Section 5.2.8, Covered Activities in the Laguna Creek Wildlife Corridor of the Preserve System, may result in punctures[19] or other minor disruptions of the soil hardpan or duripan if approved by the Implementing Entity and the Technical Advisory Committee according to the process described in Chapter 9 of the SSHCP. If a Covered Activity on a Preserve or Preserve Setback results in a puncture or other disruption to the soil hardpan or duripan, the puncture will be sealed using bentonite clay or other material that maintains the functionality of the soil's restrictive layer and associated perched aquifer.

EDGE-8 (Outdoor Lighting): All outdoor lighting in Urban Development Covered Activity projects will be designed to minimize light pollution into existing and planned Preserves, except where a Land Use Authority Permittee determines lighting is necessary for public safety or security. Minimization measures may include light fixture placement (e.g., as low to the ground as possible), lamp designs (e.g., shielding, low glare, or no lighting), directing light away from Preserves, or other means to avoid or minimize light pollution. The Third-Party Project Proponent will use the best information available at the time of project design to minimize effects of light pollution on target SSHCP Covered Species (e.g., western spadefoot (*Spea*

[19] Punctures may include small holes that penetrate the soil hardpan or duripan such as might occur when digging or drilling holes for the installation of fence posts, sign posts, or trees.

hammondii), Valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), and Ricksecker's water scavenger beetle (*Hydrochara ricksecker*i)).

EDGE-9 (Livestock Access to Preserves): Urban Development Covered Activity projects that include on-site Preserves will include in their design an adequate number of access points and facilities for delivery and pick up of grazing animals (livestock), such that these activities will not significantly alter the Preserve's habitat and are consistent with the protection of livestock and protection of adjacent public property, and include adequate public safety measures.

EDGE-10 (Prevent Invasive Species Spread): Completed Covered Activities (including roads) will be maintained in a manner that avoids the spread of invasive species into Preserve and Open Space areas. Such maintenance measures will include the following:

- To prevent the transport of non-native invasive species onto Preserves, before bringing any equipment onto an SSHCP Preserve or Preserve Setback, equipment must be cleaned of mud, dirt, and plant material. Cleaning will occur in the infested area or another appropriate location as approved by a Plan Permittee.
- Mowing rotation will start in un-infested areas and move to infested areas.
- Invasive plant prevention techniques will be incorporated into maintenance plans.
- The SSHCP Implementing Entity will survey road shoulders, ditches, and rights-of-way that border SSHCP Preserves for invasive weeds or other exotic plant species. Where roadside weed infestations have reached a critical control point, the Implementing Entity or Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment.

Condition 3. Implement Construction Best Management Practices

AMMs associated with Condition 3 must be applied to all UDA Covered Activities.

BMP-1 (Construction Fencing): Orange construction fencing will be installed to ensure that ground disturbance does not extend beyond the allowed construction footprint (i.e., the limit of project construction plus equipment staging areas and access roads). Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will mark the outer boundary of any Preserve Setback or Stream Setback adjacent to or within the project site with orange construction fencing prior to ground disturbance. This fencing will remain in place until project completion, as identified by the Plan Permittee.

BMP-2 (Erosion Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will install temporary control measures for sediment, stormwater, and pollutant runoff as required by the Plan Permittee to protect water quality and species habitat. Silt fencing or other appropriate sediment control device(s) will be installed downslope of any Covered Activity that disturbs soils.

Fiber rolls and seed mixtures used for erosion control will be certified as free of viable noxious weed seed. As discussed in Section 5.4.2, Covered Species Take Avoidance and Minimization Measures, erosion controls installed in or adjacent to Plan Area modeled habitat for giant gartersnake (*Thamnophis gigas*), western pond turtle (*Actinemys marmorata*), California tiger salamander (*California tiger salamander*), or western spadefoot (see Chapter 3) must be of appropriate design and materials that will not entrap the species (e.g., not contain mesh netting). Regular monitoring and maintenance of the project's erosion control measures will be conducted until project completion to ensure effective operation of erosion control measures.

BMP-3 (Equipment Storage and Fueling): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will ensure that equipment storage and staging will occur in the development footprint only (not sited in any existing on-site Preserve, planned on-site Preserve, Preserve Setback, Stream Setback, or aquatic land cover type). Fuel storage and equipment fueling will occur away from waterways, stream channels, stream banks, and other environmentally sensitive areas within the development footprint.

However, certain equipment storage and fueling activities can be allowed on Preserves within habitat re-establishment/establishment sites (refer to Section 5.2.7) if no location outside of the site is available. If a Covered Activity results in a spill of fuel, hydraulic fluid, lubricants, or other petroleum products, the spill will be absorbed and waste disposed of in a manner to prevent pollutants from entering a waterway, Preserve, Preserve Setback, or Stream Setback.

BMP-4 (Erodible Materials): Plan Permittees and Third-Party Project Proponents implementing Covered Activities must not deposit erodible materials into waterways. Vegetation clippings, brush, loose soils, or other debris material will not be stockpiled within stream channels or on adjacent banks. Erodible material must be disposed of such that it cannot enter a waterway, Preserve, Preserve Setback, Stream Setback, or aquatic land cover type. If water and sludge must be pumped from a subdrain or other structure, the material will be conveyed to a temporary settling basin to prevent sediment from entering a waterway.

BMP-5 (Dust Control): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will water active construction sites regularly, if warranted, to avoid or minimize impacts from construction dust on adjacent vegetation and wildlife habitats. No surface water will be used from aquatic land covers; water will be obtained from a municipal source or existing groundwater well.

BMP-6 (Construction Lighting): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will direct all temporary construction lighting (e.g., lighting used for security or nighttime equipment maintenance) away from adjacent natural habitats, and particularly Riparian and Wetland habitats and wildlife movement areas.

BMP-7 (Biological Monitor): If a Covered Activity includes ground disturbance within Covered Species modeled habitat, an approved biologist will be on site during the period of ground disturbance, and may need to be on site during other construction activities depending on the Covered Species affected. After ground-disturbing project activities are complete, the approved biologist will train an individual to act as the on-site construction monitor for the remainder of construction, with the concurrence of the Permitting Agencies. The on-site monitor will attend the training described in BMP-8. The approved biologist and the on-site monitor will have oversight over implementation of Avoidance and Minimization Measures, and will have the authority to stop activities if any of the requirements associated with those measures are not met. If the monitor requests that work be stopped, the Wildlife Agencies will be notified within one working day by email. The approved biologist and/or on-site monitor will record all observations of listed species on California Natural Diversity Database field sheets and submit them to the California Department of Fish and Wildlife. The approved biologist or on-site monitor will be the contact source for any employee or contractor who might inadvertently kill or injure a Covered Species or who finds a dead, injured or entrapped individual. The approved biologist and on-site monitor's names and telephone numbers will be provided to the Wildlife Agencies prior to the initiation of ground-disturbing activities. Refer to species-specific measures for details on requirements for biological monitors.

BMP-8 (Training of Construction Staff): A mandatory Worker Environmental Awareness Program will be conducted by an approved biologist for all construction workers, including contractors, prior to the commencement of construction activities. The training will include how to identify Covered Species that might enter the construction site, relevant life history information and habitats, SSHCP and

statutory requirements and the consequences of non-compliance, the boundaries of the construction area and permitted disturbance zones, litter control training (SPECIES-2), and appropriate protocols if a Covered Species is encountered. Supporting materials containing training information will be prepared and distributed by the approved biologist. When necessary, training and supporting materials will also be provided in Spanish. Upon completion of training, construction personnel will sign a form stating that they attended the training and understand all of the Avoidance and Minimization Measures. Written documentation of the training must be submitted to the Implementing Entity within 30 days of completion of the training, and the Implementing Entity will provide this information to the Wildlife Agencies.

BMP-9 (Soil Compaction): After construction is complete, all temporarily disturbed areas will be restored similar to pre-project conditions, including impacts relating to soil compaction, water infiltration capacity, and soil hydrologic characteristics.

BMP-10 (Revegetation): Plan Permittees and Third-Party Project Proponents implementing ground-disturbing Covered Activities will revegetate any cut-and-fill slopes with native or existing non-invasive, non-native plants (e.g., non-native grasses) suitable for the altered soil conditions and in compliance with EDGE-2 and EDGE-8, if applicable.

BMP-11 (Speed Limit): Project-related vehicles will observe the posted speed limits on paved roads and a 10-mile-per-hour speed limit on unpaved roads and during travel in project areas. Construction crews will be given weekly tailgate instruction to travel only on designated and marked existing, cross-country, and project-only roads.

Condition 4. Avoid and Minimize Impacts that May Result from Implementation of Covered Transportation Projects

Urban Development transportation project and Rural Transportation Project Covered Activities, including bridge projects, can affect Covered Species. AMMs included for Condition 4 seek to avoid or minimize direct and indirect impacts that may result from construction of roadways or roadway improvements. Condition 4 applies to all transportation-related Covered Activities (see Sections 5.2.1 and 5.2.3).

Plan Permittees and Third-Party Project Proponents implementing Urban Development transportation or Rural Transportation Project Covered Activities must comply with the roadway siting, design, and construction AMMs described below.

ROAD-1 (Road Project Location): Road projects will be located in the least environmentally sensitive area to avoid, to the maximum extent practicable, impacts on Covered Species, Covered Species habitat, and waters of the United States. Road project alignments will follow existing roads, road easements, and rights-of-way, or be sited in disturbed areas to minimize habitat loss and additional habitat fragmentation.

ROAD-2 (Wildlife Crossing Structures): Road projects that are Urban Development Covered Activities (see Section 5.2.1) (including the Capital Southeast Connector, see Section 5.2.1.1) or are Rural Transportation Covered Activities (see Section 5.2.3) will include an adequate number of wildlife crossing structures, as depicted in Figure 5-10. An adequate number of wildlife crossing structures within the Urban Development Area (UDA) and outside the UDA will provide for continued dispersal and movement of native wildlife throughout the SSHCP Plan Area, as required by the SSHCP Biological Goals and Objectives (see Chapter 7).

The Plan defines "wildlife crossing structure" as a physical structure specifically designed or retrofitted to facilitate undercrossing for target wildlife species. The Plan further classifies wildlife crossings as hydrologic crossings and dry crossings. Hydrologic crossings are built where there is an existing stream, creek, or intermittent drainage to maintain existing hydrologic connectivity within the Plan Area. As described below, hydrologic crossings require specialized features to be built into the crossing structure, such as elevated platforms to allow wildlife to pass under a crossing structure when it is inundated with water. Dry wildlife crossings are built where there is no hydrologic feature but where a crossing is needed to provide for overland connectivity. SSHCP wildlife crossing structures may include structures such as bridges, arches, or box and pipe culverts.

Plan Permittees expect that future wildlife movement and dispersal within the UDA will occur almost entirely within the boundaries of the future interconnected SSHCP Preserve System (see Section 7.5). Therefore, wildlife crossings are needed wherever a roadway crosses (bisects) the conceptual SSHCP Preserve System (see Figure 5-10). Wildlife crossing structures inside the UDA will be sized to accommodate movement of a highly mobile native indicator species (i.e., coyote (*Canis latrans*)). By designing UDA wildlife crossing structures to meet the movement and dispersal requirements of coyote, the Plan Permittees anticipate that the crossing structure will also accommodate most native wildlife species that currently occupy the UDA (see Chapter 3).

The Plan Permittees expect that most of the Plan Area outside of the UDA will remain as Open Space over the 50-year Permit Term (see Chapter 4). Therefore,

the Plan Permittees expect that the Rural Transportation Project Covered Activities proposed outside the UDA will have a relatively small effect on the movement and dispersal of larger or more mobile native wildlife species, including coyote. Consequently, the Plan Permittees anticipate that the design of Rural Transportation Project Covered Activities outside the UDA will need to include wildlife crossing structures primarily where the Rural Transportation Project Covered Activities occur within California tiger salamander modeled habitat (see CTS-3 and also Chapter 3, Figure 3-16).

The design and location of wildlife crossing structures both inside the UDA and outside the UDA will be determined by collaboration between the Third-Party Project Proponent, the Land Use Authority, and the Implementing Entity. Crossing design will use the best available scientific and commercial information for the target species. The design of crossing structures will be based on demonstrated effectiveness of design for the target species when such information is available, or will be designed with a high level of certainty of success based on studies of similar taxa in similar environmental settings. The proposed wildlife crossing structures designs will be reviewed and approved by the Implementing Entity prior to final design.

The Implementing Entity will develop a Wildlife Crossing Maintenance Manual to be provided to the entity responsible for maintaining the wildlife crossing. The Wildlife Crossing Maintenance Manual will identify vegetation management, clearing of obstructions, and other techniques to maintain the desired movement and hydrologic connectivity, and to avoid effects to adjacent Preserves.

All SSHCP wildlife crossing structures in the UDA will include the following design elements:

- Open-bottom bridges or arches where the roadway crosses a river or stream. Where an open-bottom bridge or arch is used, the span of the crossing will be at least 1.2 times the bankfull width of the stream and span the banks to allow for dry wildlife passage along each side of the stream and to avoid or minimize piers or footings within the stream. (Bankfull width refers to the width of a stream channel at the point where over-bank flow begins during a flood event.)
- Any wildlife crossing structure that also maintains hydrologic connectivity will be designed to maintain pre-construction water capacity, depth, and velocity. The crossing structure will not restrict or impede normal flows or flood flows, unless a primary purpose of the structure is to manage such

flow(s). Wildlife crossing structures must be designed to provide a dry passage (e.g., a platform ledge) higher than flows for a 10-year storm event to allow wildlife to pass through an inundated crossing structure.

- Wildlife crossing structures in the UDA will be designed and sized to accommodate movement of at least medium-sized mammals (e.g., coyote). The opening must be at least 3 feet high and the crossing structure must have a minimum openness ratio of at least 0.4.
- Vegetation leading up to the entrance of a crossing structure and the substrate leading into and within the crossing structure will be natural and appropriate to provide for continuity of habitat, attract the target animal species for which the crossing is designed, and facilitate use of the crossing structure.
- A wildlife crossing under six-lane roads or larger will be designed to provide ambient light and temperature in the longer crossing structures (e.g., either by providing a larger opening or a grate at the top of the structure to improve the attractiveness of the crossing to certain Covered Species and wildlife that may hesitate to cross through dark, confined structures or one with a temperature gradient (Jackson and Griffin 2000)). If a road is less than six lanes in width, these designs will be optional.
- Lighting will not be placed at or near the entrance of a wildlife crossing structure to maintain natural ambient light conditions at night and to increase chances of wildlife use. However, a Land Use Authority Permittees may allow lighting if necessary for human health or safety.

Outside the UDA, wildlife crossing structures may be required for California tiger salamander (refer to CTS-1), and could also be required for other native species.

ROAD-3 (Roadside Pesticide Use[20]): If pesticide use is necessary along roadsides, the appropriate SSHCP Permittee will ensure that the pesticide application strictly complies with the pesticide label and all other applicable federal, state, and local authorities pertaining to the use, safety, storage, disposal, and reporting of the pesticide. Where roadside weed infestations have reached a critical control point, the Implementing Entity or a Land Use Authority Permittee will apply the appropriate manual, mechanical, or chemical treatment. In addition, the Implementing Entity or appropriate Land Use Authority Permittee will post signs along road shoulders adjacent to sensitive areas that are within the SSHCP

[20] Use of pesticides (including rodenticides and herbicides) is not an SSHCP Covered Activity. However, pesticide use specified in Section 5.3 is an allowed land management tool, provided the pesticide application is otherwise legal and conforms to all conditions in Section 5.4.

Preserve System (e.g., California tiger salamander breeding ponds, endemic plant populations, vertebrates that rely on insects for part of their diet). The signs will identify pesticide use restrictions or other roadside maintenance restrictions.

Condition 5. Avoid and Minimize Impacts that Result from Public Use of Low-Impact Nature Trails in Preserves

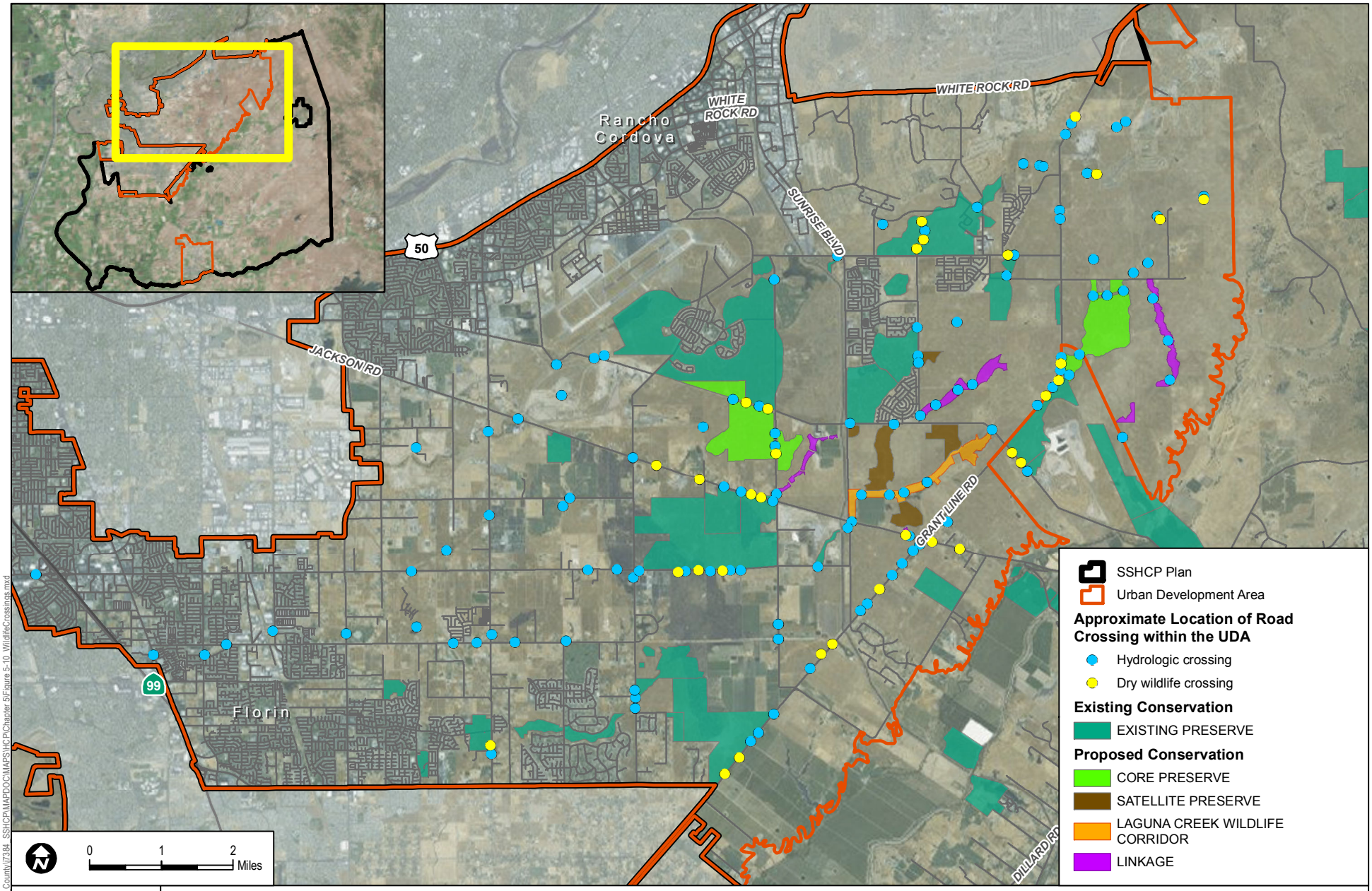
Preserves within the UDA are likely to be surrounded by urban development. As discussed in Section 5.2.7, allowing limited use of SSHCP Preserves will help to foster a sense of community ownership and will provide an opportunity to educate the community about the natural resources to be protected within the SSHCP Preserve System.

Low-impact nature trails will be designed following the AMMs outlined below.

NATURE TRAIL-1 (Nature Trail Plan): A nature trail plan must be prepared for each Preserve where a trail is allowed by the Preserve Management Plan. Nature trails will be unpaved trails that vary in width depending on terrain and existing constraints, but will never exceed 4 feet in width. Where a trail crosses a swale, wooden walkways elevated to a height no greater than 2 feet will be installed. Trail improvements may include mowing vegetation to create or maintain a trail, minor grading to remove trip hazards, and signs providing directional and educational information. Public access to land acquired for preservation will be prohibited until a trail plan can be prepared by the Implementing Entity and approved by the Permitting Agencies. A trail plan will include the following:

- Maps identifying areas that contain sensitive habitats or species occurrences.
- Maps that show the location and footprint of proposed trails.
- Methods used to control public access.
- Trail and use monitoring methods, schedules, and responsibilities.
- Trail operation and maintenance guidelines and responsibilities.
- Clear triggers for use restrictions or closure based on sensitive biological indicators (e.g., seasonal closures of some trails on the basis of activity periods of Covered Species or sensitive species).

NATURE TRAIL-2 (Nature Trail Protection of Duripan): Nature trails will be sited and constructed so as not to interfere with existing soil duripan and the perched aquifer that support the existing hydrologic regime of the Vernal Pool–Grassland, and will not interfere with existing pool hydrology. Trails within Preserves will not be paved.



SSHCP South Sacramento Habitat Conservation Plan

SOURCE: ESRI, County of Sacramento 2014, USFWS 2015

FIGURE 5-10

Wildlife Crossings

SOUTH SACRAMENTO HABITAT CONSERVATION PLAN

Path: Z:\Projects\Sacramento_County\7384_SSHCP\MAPDOC\MAPS\HCP\Chapter 5\Figure 5-10_WildlifeCrossings.mxd

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NATURE TRAIL-3 (Nature Trail Location): Nature trails will be located away from sensitive natural resources (e.g., vernal pools, riparian habitat, woodland habitat, Covered Species occurrences, raptor nesting sites, tricolored blackbird (*Agelaius tricolor*) colony sites). The Wildlife Agencies will determine the distance necessary to avoid impacts to sensitive natural resources.

NATURE TRAIL-4 (Biological Studies Prior to Nature Trail Design): Biological studies will be conducted within the area being considered for nature trail construction prior to project design. The studies will include land cover type mapping and focused species surveys and/or wetland delineations. The biological studies will include assessments of potential effects of trail construction on Preserve System resources, and recommendations for avoidance and minimization that may be incorporated into project siting, design, construction, and operation.

NATURE TRAIL-5 (Monitoring of Nature Trail Impacts): Impacts that could result from use of a nature trail within a Preserve will be monitored according to the Preserve Management Plan (Chapter 8) to ensure that uses do not conflict with the individual Preserve Management Plan. If use of a trail is found to conflict with the individual Preserve Management Plan, use of that trail will be discontinued until adjustments in the use can be made to reduce or eliminate conflicts. The Implementing Entity will make decisions about discontinuing or modifying use of a trail in consultation with the Preserve Manager or other applicable Preserve management agency or organization.

Condition 6. Avoid and Minimize Impacts When Re-Establishing or Establishing Wetlands

As discussed in Chapter 7, the Plan Permittees anticipate that 389 acres of Vernal Pool habitat will be re-established or established[21] within the Plan Area as part of the SSHCP Conservation Strategy. Although re-establishment or establishment of vernal pools is a Measurable Objective under this Plan, if not done correctly, the action could have an adverse impact on existing vernal pools.

RE-ESTABLISHMENT/ESTABLISHMENT-1 (Vernal Pool): Re-establish or establish Vernal Pool Wetland according to the following guidelines:

- Re-establishment will always take priority over establishment of vernal pools. Establishment will be permitted only after it has been determined that sites with the potential to re-establish vernal pools no longer exist in the Plan Area or cannot be acquired through a willing seller/buyer agreement.

[21] In the context of this Plan, "establish" is synonymous with "create."

- When possible, re-established or established sites will be located adjacent to an existing Preserve(s) to maximize connectivity and Preserve area.
- Re-establishment or establishment will not result in direct or indirect adverse impacts to the hydrologic regime of existing vernal pools. Vernal pool re-establishment or establishment actions will not remove more than 10% of any existing vernal pool watershed, as defined by the SSHCP LIDAR analysis (see Section 3.3 and Conservation Action VPI1.2 in Table 7.1).
- Vernal pool re-establishment will attempt to restore the historical density and range of vernal pool sizes to the maximum extent feasible using historical aerial photography of the site, if available. Where aerial photography of the site's historical conditions is not available, vernal pool re-establishment will include a range of pool sizes (area and depth) to accommodate the different habitat needs and life history characteristics of the vernal pool invertebrate Covered Species.
- Established vernal pools must be located on sites with vernal pool soils, defined as any Plan Area soil type where vernal pools currently exist.
- Established vernal pool sites will include a range of pool sizes to accommodate the different habitat needs and life history characteristics of the three vernal pool invertebrate Covered Species.
- The total density of vernal pools will not exceed 10% of the suitable soil areas in any vernal pool re-establishment and/or establishment site, unless it can be shown that the suitable areas of that site historically supported greater densities.
- Re-establishment or establishment may include inoculation when it is likely that no seed or cyst bank of vernal pool species remains at a site. Vernal Pool inocula will come from nearby vernal pools that are on the same geologic formation and soil type.

RE-ESTABLISHMENT/ESTABLISHMENT-2 (Vernal Pool Inocula Bank): Vernal pool re-establishment or establishment may include "soil inoculation" when it is likely that no seed or cyst bank of vernal pool species remains at a re-establishment or establishment site.

- During conversion of Urban Development Area vernal pools to a developed land cover type, project proponents will excavate and retain soil from vernal pools following protocols developed by the SSHCP Technical Advisory Committee (Chapter 9).

- Inocula applied in re-established or established vernal pools must be harvested from a vernal pool that is on the same geologic formation and soil type shown on the County General Soil Map as the re-establishment/establishment site. Geologic formations and soil types will follow U.S. Department of Agriculture Soil Conservation Service's 1993 Soil Survey of Sacramento County, California. Proposed off-site inocula sources must be approved by the Wildlife Agencies.

RE-ESTABLISHMENT/ESTABLISHMENT-3 (Re-Establishment/Establishment of Freshwater Marsh or Open Water Near Airports): During review of proposed re-establishment/establishment projects for freshwater marsh or open water on SSHCP Preserves, the Implementing Entity shall consider the potential for the location of the re-establishment/establishment projects to increase the risk of wildlife strikes or generation of ground fog at airports. If a re-establishment/ establishment project would result in (1) a net increase in open water or freshwater marsh acreage over baseline conditions[22] within 5 miles of Mather Field, Sacramento Executive Airport, or Franklin Field; or (2) replacement of open water/freshwater marsh habitat that is located 2 or more miles from Mather Field or Sacramento Executive Airport with open water/freshwater marsh habitat that is located less than 2 miles from those airports, a qualified biologist shall prepare a concise letter report. The letter report shall summarize the biologist's findings regarding (1) the species likely to use the re-established/established habitat, (2) a rough order of magnitude estimate on the peak number of birds that might use the re-established/established habitat, and (3) potential movement patterns for birds using the re-established/established habitat and whether they might cross through the airport safety zones (e.g., to reach foraging habitat or another wildlife attractant). The letter report will also provide recommendations to the Implementing Entity on how they could reduce any of the identified wildlife hazards if there are any feasible means to do so that would not conflict with the biological goals and measurable objectives of the Conservation Plan.

Condition 7. Avoid and Minimize Impacts to Streams and Creeks

AMMs associated with Condition 7 must be applied to all Covered Activities where a stream or creek is located within a project footprint.

[22] For purposes of establishing baseline conditions, Freshwater Marsh and Open Water acreages will be calculated using that version of the SSHCP Land Cover Type Map in existence as of the date that the SSHCP permit was issued to the Plan Permittees by the USFWS.

STREAM-1 (Laguna Creek Wildlife Corridor): A 150-foot setback measured from the top of the bank on both sides of the stream will be applied to Laguna Creek within the Urban Development Area (minimum 300-foot corridor width). If trails are located within the Laguna Creek Wildlife Corridor, the nearest edge of the trail will be located at least 80 feet from the top of the bank.

STREAM-2 (UDA Stream Setbacks): A 100-foot setback measured from the top of the bank on both sides of the stream channel will be applied to all streams listed in Table 5-1 (see also Figure 2-4). If a stream reach supports woody riparian vegetation, the setback will be equal to the riparian edge plus 25 feet or will be the setback defined above, whichever is greater. If trails are located within the Stream Setback, the nearest edge of the trail will be located at least 50 feet from the top of the bank.

Table 5-1
Stream Setback Minimum Requirements in the Urban Development Area

Stream	Minimum Setback (from the Top of Bank Measured in Aerial Perspective) on Both Sides of the Stream
Elder Creek	100 feet
Frye Creek	100 feet or as depicted as part of the NewBridge development project hardline Preserve (see Appendix K)
Gerber Creek	100 feet
Morrison Creek	100 feet
Central Paseo	100 feet or as depicted as part of the Cordova Hills development project hardline Preserve (Appendix K)
Sun Creek	100 feet or as depicted as part of the Sun Creek development project hardline Preserve (see Appendix K)

STREAM-3 (Minor Tributaries to UDA Streams): A 25-foot setback measured from the top of the bank on both sides of the stream channel will be applied to all avoided first and second order tributaries to the streams listed in Table 5-1 and Laguna Creek. Refer to Objective W6 in Chapter 7 (Table 7-1) regarding avoided first and second order tributaries. Trails are not permitted within headwater ephemeral Stream Setbacks.

STREAM-4 (Minimize Effects from Temporary Channel Re-Routing): When an Urban Development Covered Activity temporarily re-routes a stream, creek, or drainage, the re-routing will be completed in a manner that minimizes impacts to beneficial uses and habitat. The following measures will be employed to minimize disturbances that will adversely impact water quality:

- No equipment will be operated in areas of flowing or standing water.
- Construction materials and heavy equipment must be stored outside of the active flow of any waters.

- When work within waters is necessary, the entire stream flow will be diverted around the work area.
- In the event of rain, the disturbed in-water work area will be temporarily stabilized before water body flow exceeds the capacity of the diversion structure. The disturbed water body will be stabilized so that the disturbed areas will not come in contact with the flow.
- Once construction is complete, all project-introduced material (e.g., pipes, gravel, cofferdam, sandbags) must be removed, leaving the water as it was before construction. Excess materials will be disposed of at an appropriate disposal site.
- All work areas will be effectively isolated from stream flows using suitable control measures before commencement of any in-water work. The diverted stream flow will not be contaminated by construction activities. Structures for isolating the in-water work area and/or diverting the stream flow (e.g., cofferdam, geo-textile silt curtain) will not be removed until all disturbed areas are cleaned and stabilized.
- Any flow diversion used during construction will be designed in a manner to prevent pollution and minimize siltation, and will provide flows to downstream reaches. Flows will be maintained to support existing aquatic life, riparian wetlands, and habitat that may be located upstream and downstream from any temporary diversion.
- All surface waters, including ponded waters, will be diverted away from areas undergoing grading, construction, excavation, vegetation removal, and/or any other activity that may result in a discharge to waters.
- All temporary dewatering methods will be designed to have the minimum necessary impacts to waters to isolate the immediate work area. All dewatering methods will be installed such that natural flow is maintained upstream and downstream of the diversion area. Any temporary dams and diversions will be installed such that the diversion does not cause sedimentation, siltation, or erosion upstream or downstream of the diversion area. All dewatering methods will be removed immediately upon completion of diversion activities.
- A method of containment must be used below any bridge, boardwalk, and/or temporary crossing to prevent debris from falling into the waters through the entire duration of a project.

- If temporary surface water diversions and/or dewatering are anticipated, the Third-Party Project Proponent will develop and maintain on site a surface water diversion and/or dewatering plan. The plan(s) must be developed prior to initiation of any water diversions and will include the proposed method and duration of diversion activities. The plan(s) must be made available to Central Valley Water Board staff upon request.
- When work in a flowing stream is unavoidable and any dam or other artificial obstruction is being constructed, maintained, or placed in operation, sufficient water will be allowed at all times to pass downstream to maintain beneficial uses of waters below the dam. Construction, dewatering, and removal of temporary cofferdams will not violate the turbidity, settle-able matter, pH, temperature, or dissolved oxygen requirements of any Water Quality Control Plan.
- Any temporary dam or other artificial obstruction will only be built from clean materials such as sandbags, gravel bags, water dams, or clean/washed gravel that will cause little or no siltation. Stream flow will be temporarily diverted using gravity flow through temporary culverts or pipes, or pumped around the work site with the use of hoses.

STREAM-5 (Design for Stream Channel Re-Routing, Widening, or Deepening): When an Urban Development Covered Activity alters a stream, creek, or drainage by re-routing, widening, or deepening a channel, the project design will include the following:

- The main channel of a re-routed channel will be free to migrate laterally over its active and terrace floodplain.
- Channel geometry (plan, profile, and cross-section) of the site will be appropriate for the watershed location and physical/hydrologic condition.
- Local, native materials will be used as fill material to the extent practicable.
- Bioengineering techniques will be used for construction and maintenance of bank stabilization. Bioengineered bank stabilization structures will use vegetation in combination with bank reshaping; biodegradeable geotextile materials; and, in some cases, a minimal amount of rock or wood to the extent practicable to dissipate erosive energy. Third-Party Project Proponents will consult a professional engineer when considering using bioengineering techniques.
- All re-routed, widened, or deepened streams are required to establish Stream Setbacks with minimum widths required under STREAM-1, STREAM-2, or STREAM-3. All re-routed, widened, or deepened streams must re-establish/

establish and maintain native Woody Riparian land cover and/or native Grassland Riparian land cover in the entire Stream Setback.

Condition 8. Avoid and Minimize Impacts to Covered Species from Utility and Utility Maintenance Covered Activities

AMMs associated with Condition 8 must be applied to all Covered Activities associated with construction and maintenance of infrastructure projects.

UTILITY-1 (Avian Collision Avoidance): Installation of new, or relocation of existing, utility poles, lines, and cell towers located within the Preserve System or within 1,000 feet of a Preserve boundary will be coordinated with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. The applicant or relevant utility/service provider will install utility poles, lines, and cell towers in conformance with Avian Powerline Interaction Committee (APLIC) standards for collision-reducing techniques, as outlined in Reducing Avian Collisions with Power Lines: State of the Art in 2012 (APLIC 2012), or any superseding document issued by the APLIC.

UTILITY-2 (Utility Maintenance on Preserves): Utility maintenance inside SSHCP Preserves and SSHCP Preserve Setbacks containing vernal pools will occur only when vernal pools have been dry for 30 days, except in emergency situations related to human health and safety.

UTILITY-3 (Trenchless Construction Methods): Where a pipeline or conduit crosses an existing or planned Preserve or will be located between adjacent Preserves (e.g., under a roadway that has a Preserve on both sides), trenchless construction methods will be used to minimize impacts to the existing soil profile (including impacts to a hardpan or duripan) to maintain the perched aquifer in Vernal Pool Grassland land cover type.

UTILITY-4 (Siting of Entry and Exit Location): The entry and exit locations for the trenchless construction method (see Utility-3) will be sited to avoid impacts to vernal pools and Riparian Woodland, and to avoid direct take of SSHCP Covered Species.

Condition 9. Avoid and Minimize Impacts That Might Result From Removing or Breaching Levees to Establish or Re-establish Riparian Habitat

LEVEE-1 (Preparation of Hydrologic Analysis): Prior to approving a draft Preserve Management Plan that includes (1) modifying or breaching an existing levee, or (2) would place a potential impedance to high-water event flood-flows on the water side of an existing levee (including new riparian vegetation plantings or

other new Preserve facilities), a hydrologic analysis will be conducted. The Preserve activity will only be implemented if the hydrologic analysis concludes that the activity will not result in a substantial increase in flood stage elevations or flood risk on lands outside the Preserve.

Condition 10. Avoid and Minimize Impacts That Might Result From Potential Residual Contamination of Preserves and Related Exposure of People to Such Hazardous Materials

HAZARDOUS MATERIALS-1 (Preparation of Phase I Environmental Site Assessment): Prior to the acquisition of a preserve site or implementation of a stream or riparian restoration project, a Phase I Environmental Site Assessment shall be conducted in general accordance with the American Society for Testing and Materials Standard Practice E1527-05. The purpose of this Environmental Site Assessment is to identify, to the extent feasible pursuant to the American Society for Testing and Materials Standard, recognized environmental conditions in connection with the potential site. The term "recognized environmental condition" means the presence or likely presence of hazardous substances or petroleum products on the property under conditions that may indicate an existing release, a past release, or a material threat of release of these substances to the property. If the Phase 1 Environmental Site Assessment indicates the presence of a recognized environmental condition, the Implementing Entity shall consider the following options.

- Determine that the acquisition/project can proceed on the basis that the Habitat Plan goals and objectives can be met on the site even with the presence of a recognized environmental condition.
- Conduct a Phase II Environmental Site Assessment, including soil and groundwater testing, to further study the potential for contamination to limit the Implementing Entity's management activities.
- If the results of the Phase I (or Phase II) Environmental Site Assessment indicate that the Habitat Plan goals and objectives cannot be met on the site, the Implementing Entity should not acquire the site.

HAZARDOUS MATERIALS-2 (Contingency Plan): As part of each Preserve Management Plan or site restoration plan, a Contingency Plan shall be prepared to address the actions that would be taken during construction in the event that unexpected contaminated soil or groundwater is discovered. The Contingency Plan shall include health and safety considerations, handling and disposal of wastes, reporting requirements, and emergency procedures. The Contingency Plan shall include a requirement that if evidence of contaminated materials is encountered

during construction, construction would cease immediately and applicable requirements of the Comprehensive Environmental Release Compensation and Liability Act and the California Code of Regulations Title 22 regarding the disposal of waste would be implemented.

5.4.2 Covered Species Take Avoidance and Minimization Measures

The following section describes measures to avoid or minimize effects of Covered Activities on specific SSHCP Covered Species. Species-specific AMMs include species surveys, pre-construction surveys, and construction monitoring. Most species-specific AMMs require that species surveys be conducted if Covered Species modeled habitat is within the proposed Covered Activity footprint or within a specified distance of the proposed Covered Activity. Section 3.4 provides maps and descriptions of modeled habitat for each Covered Species. The AMMs described below apply to Covered Activities when Covered Species modeled habitat or a Covered Species occurrence are at a project site. The Implementing Entity and Wildlife Agencies may update specific SSHCP AMMs over the Permit Term to provide the best and most appropriate protective measures for a Covered Species.

General Covered Species Take Avoidance and Minimization Measures

The following AMMs will apply to all Covered Activities that are required to implement Covered Species take AMMs.

SPECIES-1 (Litter Removal Program): A litter control program will be instituted for the entire project site. All workers will ensure that their food scraps, paper wrappers, food containers, cans, bottles, and other trash are deposited in covered or closed trash containers. All garbage will be removed from the project site at the end of each work day, and construction personnel will not feed or otherwise attract wildlife to the area where construction activities are taking place.

SPECIES-2 (No Pets in Construction Areas): To avoid harm and harassment of native species, workers and visitors will not bring pets onto a project site.

SPECIES-3 (Take Report): If accidental injury or death of any Covered Species occurs, workers will immediately inform the approved biologist or on-site monitor and site supervisor. The approved biologist or on-site monitor will phone the appropriate contact person at the Implementing Entity. The Implementing Entity will immediately contact the Wildlife Agencies by telephone. A memorandum will be provided to the Implementing Entity and Wildlife Agencies within 1 working day of the incident. The report will provide the date and location of the incident, number of individuals taken,

the circumstances resulting in the take, and any corrective measures taken to prevent additional take.

SPECIES-4 (Post-Construction Compliance Report): A post-construction compliance report will be submitted to the SSHCP Implementing Entity within 30 calendar days of completion of construction activities or within 30 calendar days of any break in construction activity that lasts more than 30 days. The report will detail the construction start and completion dates, any information about meeting or failing to meet species take Avoidance and Minimization Measures (AMM), effectiveness of each AMM that was applied at the project site, and any known project effects to Covered Species.

Rare Plants

PLANT-1 (Rare Plant Surveys): If a Covered Activity project site contains modeled habitat for Ahart's dwarf rush (*Juncus leiospermus* var. *ahartii)*, Bogg's Lake hedge-hyssop (*Gratiola heterosepala)*, dwarf downingia (*Downingia pusilla)*, Legenere (*Legenere limosa*), pincushion navarretia (*Navarretia myersii)*, or Sanford's arrowhead (*Sagittaria sanfordii*), the Covered Activity project site will be surveyed for the rare plant by an approved biologist and following the California Department of Fish and Wildlife (CDFW) rare plant survey protocols (CDFG 2009) or the most recent CDFW rare plant survey protocols. An approved biologist will conduct the field surveys and will identify and map plant species occurrences according to the protocols. See Chapter 10 for the process to submit survey information to the Plan Permittee and the Permitting Agencies.

PLANT-2 (Rare Plant Protection): If a rare plant listed in AMM PLANT-1 is detected within an area proposed to be disturbed by a Covered Activity or is detected within 250 feet of the area proposed to be disturbed by a Covered Activity, the Implementing Entity will assure one unprotected occurrence of the species is protected within a SSHCP Preserve before any ground disturbance occurs a the project site.

Sacramento and Slender Orcutt Grass

Sacramento Orcutt grass (*Orcuttia viscida*) is a federally and state endangered species and is ranked by the California Native Plant Society as a California Rare Plant Rank 1B.1 species. Slender Orcutt grass (*Orcuttia tenuis*) is a federally threatened and state endangered species and is ranked by the California Native Plant Society as a California Rare Plant Rank 1B.1 species. Both Orcutt grasses are very rare, and the likelihood of finding new occurrences within the Plan Area is low. Due to their rarity, take of either of these species is not permitted under the SSHCP, with the exception of take related to Preserve management and monitoring (see Section 5.2.7, SSHCP Preserve System Covered Activities).

ORCUTT-1 (Orcutt Grass Surveys): If a Covered Activity project site is located within 1 mile of the Mather Core Recovery Area and contains the Vernal Pool land cover type, the project site will be surveyed for Sacramento and slender Orcutt grass by an approved biologist following California Department of Fish and Wildlife (CDFW) rare plant survey protocols (CDFG 2009) or most recent CDFW guidelines to determine if Sacramento and/or slender Orcutt grass is present. An approved biologist will conduct the field investigation to identify and map occurrences. See Chapter 10 for the process to conduct and submit survey information.

ORCUTT-2 (Orcutt Grass Protection): Where known or new Sacramento or slender Orcutt grass occurrences are found, they will be protected within an SSHCP Preserve that is at least 50 acres. The occurrence will be located interior to the Preserve at a distance of no less than 300 feet from the edge of the Preserve boundary. If a Third-Party Project Proponent encounters a previously undiscovered occurrence of Sacramento or slender Orcutt grass on a Covered Activity project site, the Third-Party Project Proponent will contact the Implementing Entity or Land Use Authority Permittee with authority over the project, who will coordinate with the Wildlife Agencies for written concurrence of avoidance to ensure that the project does not cause take of the species.

California Tiger Salamander

To avoid direct and indirect effects of Covered Activities on California tiger salamander (*Ambystoma californiense*), the following AMMs will be implemented.

CTS-1 (California Tiger Salamander Daily Construction Schedule): Ground-disturbing Covered Activities within California tiger salamander modeled habitat (Figure 3-16) will occur outside the breeding and dispersal season (occur after July 31 and before October 15), to the maximum extent practicable. If Covered Activities must be implemented in modeled habitat (Figure 3-16) during the breeding and dispersal season (after October 15 and before July 31), construction activities will not start until 30 minutes after sunrise and must be complete 30 minutes prior to sunset.

CTS-2 (California Tiger Salamander Exclusion Fencing): If a Covered Activity must be implemented in modeled habitat (Figure 3-16) during the breeding and dispersal season (after October 15 and before July 31), exclusion fencing will be installed around the project footprint before October 15. Temporary high-visibility construction fencing will be installed along the edge of work areas, and exclusion fencing will be installed immediately outside of the temporary high-visibility construction fencing to exclude California tiger salamanders from entering the construction area or becoming entangled in the construction fencing. Exclusion fencing will be at least 1 foot tall and be buried

at least 6 inches below the ground to prevent salamanders from going under the fencing. Fencing will remain in place until all construction activities within the construction area are complete. No project activities will occur outside the delineated project footprint. An approved biologist must inspect the exclusion fencing and project site every morning before 7:00 a.m. for integrity and for any entrapped California tiger salamanders. If a California tiger salamander is encountered, refer to CTS-5, below. (However, the Implementing Entity may, with approval of the U.S. Fish and Wildlife Service (USFWS) and California Department of Fish and Wildlife (CDFW), determine that it is appropriate for a Covered Activity project to not implement CTS-2 for certain long and linear roadway Covered Activity projects if it appears that the exclusion fencing will likely trap individuals or cause more take of California tiger salamander than it would prevent.)

CTS-3 (California Tiger Salamander Monitoring): If Covered Activities must be implemented in modeled habitat (Figure 3-16), an approved biologist experienced with California tiger salamander identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place, and will inspect the project site for California tiger salamander every morning before 7:00 a.m., or prior to construction activities. As required by BMP-8 (Training of Construction Staff), the approved biologist will also train construction personnel on the required California tiger salamander avoidance procedures, exclusion fencing, and correct protocols in the event that a California tiger salamander enters an active construction zone. If a California tiger salamander is encountered, refer to CTS-5, below.

CTS-4 (Avoid California Tiger Salamander Entrapment): If Covered Activities must be implemented in modeled habitat, all excavated steep-walled holes or trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes or trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within California tiger salamander modeled habitat will be inspected for California tiger salamanders by the approved biologist prior to being moved. If a California tiger salamander is encountered, refer to CTS-5, below.

CTS-5 (California Tiger Salamander Encounter Protocol): If a California tiger salamander is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately (California Department of Fish and Wildlife (CDFW)

and U.S. Fish and Wildlife Service (USFWS)). Construction activities will be suspended in a 100-foot radius of the animal until the animal is relocated by an approved biologist with appropriate handling permits from the Wildlife Agencies. Prior to relocation, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the salamander, within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to USFWS and CDFW immediately. Any worker who inadvertently injures or kills a California tiger salamander or who finds dead, injured, or entrapped California tiger salamander(s) must immediately report the incident to the approved biologist.

CTS-6 (Erosion Control Materials in California Tiger Salamander Habitat): If erosion control (BMP-2) is implemented within California tiger salamander modeled habitat (Figure 3-16), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that salamanders are not trapped (no monofilament). Coconut coir matting and fiber rolls with burlap are examples of acceptable erosion control materials. This limitation will be communicated to the contractor through use of special provisions included in the bid solicitation package.

CTS-7 (Rodent Control): CTS-7 only applies to projects that are within California tiger salamander modeled habitat (Figure 3-16) and on Covered Activities. Rodent control will be allowed only in developed portions of a Covered Activity project site. Where rodent control is allowed, the method of rodent control will comply with the methods of rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.

Western Spadefoot

To avoid direct and indirect effects of Covered Activities on western spadefoot (*Spea hammondii*), the following AMMs will be implemented.

WS-1 (Western Spadefoot Work Window): Ground-disturbing Covered Activities within western spadefoot modeled habitat (Figure 3-17) will occur outside the breeding and dispersal season (after May 15 and before October 15), to the maximum extent practicable.

WS-2 (Western Spadefoot Exclusion Fencing): If Covered Activities must be implemented in modeled habitat (Figure 3-17) after October 15 and before May 15, exclusion fencing

will be installed around the project footprint before October 15, and the project site must be monitored by an approved biologist following rain events. Temporary high-visibility construction fencing will be installed along the edge of work areas, and silt fencing will be installed immediately behind the temporary high-visibility construction fencing to exclude western spadefoot from entering the construction area. Fencing will remain in place until all construction activities within the construction area are completed. No project activities will occur outside the delineated project footprint. If a western spadefoot is encountered, refer to WS-6, below.

WS-3 (Western Spadefoot Monitoring): If Covered Activities must be implemented in modeled habitat (Figure 3-17) in the breeding and dispersal season (after October 15 and before May 15), an approved biologist experienced with western spadefoot identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place, and will inspect the project site daily for western spadefoot prior to construction activities. The approved biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western spadefoot enters an active construction zone (i.e., outside the buffer zone). If a western spadefoot is encountered, refer to WS-6, below.

WS-4 (Avoid Western Spadefoot Entrapment): If a Covered Activity occurs in western spadefoot modeled habitat (Figure 3-17), all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western spadefoot modeled habitat will be inspected for western spadefoot by the approved biologist prior to being moved. If a western spadefoot is encountered, refer to WS-6, below.

WS-5 (Erosion Control Materials in Western Spadefoot Habitat): If erosion control (BMP-2) is implemented within western spadefoot modeled habitat (Figure 3-17), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that western spadefoots are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

WS-6 (Western Spadefoot Encounter Protocol): If Covered Activities must be implemented in modeled habitat (Figure 3-17) during the breeding and dispersal season (after October 15 and before May 15), and a western spadefoot is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the western spadefoot within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife immediately. Any worker who inadvertently injures or kills a western spadefoot or who finds dead, injured, or entrapped western spadefoot(s) must immediately report the incident to the approved biologist.

Giant Gartersnake

To avoid direct and indirect effects of Covered Activities on giant gartersnake (*Thamnophis gigas*), the following AMMs will be implemented.

GGS-1 (Giant Gartersnake Surveys): If the SSHCP giant gartersnake modeled habitat maps (Figure 3-18) show that modeled habitat for giant gartersnake is present within a Covered Activity's project footprint or within 300 feet of a project footprint, then an approved biologist will conduct a field investigation to delineate giant gartersnake aquatic habitat within the project footprint and adjacent areas within 300 feet of the project footprint. In addition to the SSHCP land cover types shown in Figure 3-18, giant gartersnake aquatic habitat includes, but is not limited to, low-gradient streams and creeks, open water, freshwater marsh, agricultural ditches, and rice fields. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential sites and provide these maps to the Local Land Use Permittees and the Implementing Entity. Locations of delineated giant gartersnake habitat must also be noted on plans that are submitted to a Local Land Use Permittee. The applicant will use this information to finalize project design. Covered Activities may occur throughout the year as long as giant gartersnake habitat is identified and fully avoided. Otherwise, Covered Activities must comply with GGS-2 through GGS-8, below. See Chapter 10 for the process to conduct and submit survey information.

GGS-2 (Giant Gartersnake Work Window): Covered Activities that do not fully avoid giant gartersnake modeled habitat (Figure 3-18) will be conducted during the snake's active

season. Construction and ground-disturbing activities will be initiated after May 1 and will end prior to September 15. If it appears that construction activities may go beyond September 15, the Third-Party Project Proponent or Plan Permittee will contact the Local Land Use Permittee and the Implementing Entity as soon as possible, but not later than September 1. The Local Land Use Permittee and the Implementing Entity will discuss with the Wildlife Agencies additional measures necessary to minimize take.

GGS-3 (Giant Gartersnake Monitoring): If a Covered Activity is occurring in giant gartersnake modeled habitat (Figure 3-18), an approved biologist experienced with giant gartersnake identification and behavior will monitor the project site, including the integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project site daily for giant gartersnake prior to construction activities. If a giant gartersnake is encountered, refer to GGS-7. The approved biologist will also train construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a giant gartersnake enters an active construction zone (i.e., outside the buffer zone).

GGS-4 (Giant Gartersnake Habitat Dewatering and Exclusion): If construction activities will occur in giant gartersnake aquatic habitat, aquatic habitat will be dewatered and then remain dry and absent of aquatic prey (e.g., fish and tadpoles) for 15 days prior to initiation of construction activities. If complete dewatering is not possible, the Implementing Entity will be contacted to determine what additional measures may be necessary to minimize effects to giant gartersnake. After aquatic habitat has been dewatered 15 days prior to construction activities, exclusion fencing will be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat. Exclusionary fencing will be erected 36 inches above ground and buried at least 6 inches below the ground to prevent snakes from attempting to move under the fence into the construction area. In addition, high-visibility fencing will be erected to identify the construction limits and to protect adjacent habitat from encroachment of personnel and equipment. Giant gartersnake habitat outside construction fencing will be avoided by all construction personnel. The fencing and the work area will be inspected by the approved biologist to ensure that the fencing is intact and that no snakes have entered the work area before the start of each work day. The fencing will be maintained by the contractor until completion of the project. If giant gartersnake is encountered, refer to GGS-7, below.

GGS-5 (Avoid Giant Gartersnake Entrapment): If a Covered Activity occurs in giant gartersnake modeled habitat (Figure 3-18), all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or

provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within giant gartersnake modeled habitat will be inspected for giant gartersnake by the approved biologist prior to being moved. If a giant gartersnake is encountered, refer to GGS-7.

GGS-6 (Erosion Control Materials in Giant Gartersnake Habitat): If erosion control (BMP-2) is implemented within giant gartersnake modeled habitat (Figure 3-18), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure snakes are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

GGS-7 (Giant Gartersnake Encounter Protocol): If a giant gartersnake is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the giant gartersnake within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service immediately. Any worker who inadvertently injures or kills a giant gartersnake or who finds one dead, injured, or entrapped must immediately report the incident to the approved biologist.

GGS-8 (Giant Gartersnake Post-Construction Restoration): After completion of ground-disturbing Covered Activities, the applicant will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with a seed mix similar to pre-project conditions. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis in consultation with the Implementing Entity. Restoration work may include replanting emergent aquatic vegetation. Refer to the U.S. Fish and Wildlife Service's (USFWS) Guidelines for the Restoration and/or Replacement of Giant Gartersnake Habitat (USFWS 1997), or the most current USFWS guidelines at the time of the

activity. A photo documentation report showing pre- and post-project conditions will be submitted to the Implementing Entity 1 month after implementation of the restoration.

Western Pond Turtle

To avoid direct and indirect effects of Covered Activities on western pond turtle (*Actinemys marmorata*), the following AMMs will be implemented.

WPT-1 (Western Pond Turtle Surveys): If the SSHCP western pond turtle modeled habitat maps (Figure 3-19) show that modeled habitat for western pond turtle is present within a Covered Activity's project footprint or within 300 feet of a project footprint, then an approved biologist will conduct a field investigation to delineate western pond turtle aquatic habitat within the project footprint and within 300 feet of the project footprint. In addition to the SSHCP land cover types shown in Figure 3-19, western pond turtle aquatic habitat includes, but is not limited to, low-gradient streams and creeks, open water, freshwater marsh, and rice fields. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential sites and provide those maps to the Local Land Use Permittees and the Implementing Entity. Locations of delineated western pond turtle habitat must also be noted on plans that are submitted to a Local Land Use Permittee. The applicant will use this information to finalize project design. Covered Activities may occur throughout the year as long as western pond turtle habitat is identified and fully avoided. Otherwise, Covered Activities must comply with WPT-2 through WPT-9. See Chapter 10 for the process to conduct and submit survey information.

WPT-2 (Western Pond Turtle Work Window): Maintenance and improvements to existing structures may occur throughout the year as long as western pond turtle habitat is identified and avoided, and movement of equipment is confined to existing roads. Otherwise, construction and ground-disturbing Covered Activities must be conducted outside of western pond turtle's active season. Construction and ground-disturbing activities will be initiated after May 1 and will commence prior to September 15. If it appears that construction activities may go beyond September 15, the appropriate Plan Permittee will contact the Local Land Use Permittee and the Implementing Entity as soon as possible, but not later than September 1, to determine if additional measures are necessary to minimize take.

WPT-3 (Western Pond Turtle Monitoring): If a Covered Activity is occurring in western pond turtle modeled habitat (Figure 3-19), an approved biologist experienced with western pond turtle identification and behavior will monitor the project site, including the

integrity of any exclusion fencing. The approved biologist will be on site daily while construction-related activities are taking place in aquatic habitat or within 300 feet of aquatic habitat, and will inspect the project site daily for western pond turtle prior to construction activities. The approved biologist will also training construction personnel on the required avoidance procedures, exclusion fencing, and protocols in the event that a western pond turtle enters an active construction zone (i.e., outside the buffer zone).

WPT-4 (Western Pond Turtle Habitat Dewatering and Exclusion): If construction activities will occur in western pond turtle aquatic habitat, aquatic habitat for the turtle will be dewatered and then remain dry and absent of aquatic prey (e.g., crustaceans and other aquatic invertebrates) for 15 days prior to the initiation of construction activities. If complete dewatering is not possible, the Implementing Entity will be contacted to determine what additional measures may be necessary to minimize effects to western pond turtle. After aquatic habitat has been dewatered 15 days prior to construction activities, exclusion fencing will be installed extending a minimum of 300 feet into adjacent uplands to isolate both the aquatic and adjacent upland habitat. Exclusionary fencing will be erected 36 inches above ground and buried at least 6 inches below the ground to prevent turtles from attempting to burrow or move under the fence into the construction area. In addition, high-visibility fencing will be erected to identify construction limits and to protect adjacent habitat from encroachment of personnel and equipment. Western pond turtle habitat outside construction fencing will be avoided by all construction personnel. The fencing and work area will be inspected by the approved biologist to ensure that the fencing is intact and that no turtles have entered the work area before the start of each work day. Fencing will be maintained by the contractor until completion of the project. If, after exclusion fencing and dewatering, western pond turtles are found within the project footprint or within 300 feet of the project footprint, the Third-Party Project Proponent will discuss the next best steps with the Implementing Entity and Wildlife Agencies.

WPT-5 (Avoid Western Pond Turtle Entrapment): If a Covered Activity occurs within western pond turtle modeled habitat (Figure 3-19), all excavated steep-walled holes and trenches more than 6 inches deep will be covered with plywood (or similar material) or provided with one or more escape ramps constructed of earth fill or wooden planks at the end of each work day or 30 minutes prior to sunset, whichever occurs first. All steep-walled holes and trenches will be inspected by the approved biologist each morning to ensure that no wildlife has become entrapped. All construction pipes, culverts, similar structures, construction equipment, and construction debris left overnight within western pond turtle modeled habitat will be inspected for western pond turtle by the approved biologist prior to being moved.

WPT-6 (Erosion Control Materials in Western Pond Turtle Habitat): If erosion control (BMP-2) is implemented within western pond turtle modeled habitat (Figure 3-19), non-entangling erosion control material will be used to reduce the potential for entrapment. Tightly woven fiber netting (mesh size less than 0.25 inch) or similar material will be used to ensure that turtles are not trapped (no monofilament). Coconut coir matting and fiber rolls containing burlap are examples of acceptable erosion control materials.

WPT-7 (Western Pond Turtle Modeled Habitat Speed Limit): Covered Activity construction and maintenance vehicles will observe a 20-mile-per-hour speed limit within western pond turtle modeled upland habitat (Figure 3-19).

WPT-8 (Western Pond Turtle Encounter Protocol): If a western pond turtle is encountered during construction activities, the approved biologist will notify the Wildlife Agencies immediately. Construction activities will be suspended in a 100-foot radius of the animal until the animal leaves the project site on its own volition. If necessary, the approved biologist will notify the Wildlife Agencies to determine the appropriate procedures related to relocation. If the animal is handled, a report will be submitted, including date(s), location(s), habitat description, and any corrective measures taken to protect the turtle, within 1 business day to the Wildlife Agencies. The biologist will report any take of listed species to the U.S. Fish and Wildlife Service immediately. Any worker who inadvertently injures or kills a western pond turtle or who finds one dead, injured, or entrapped must immediately report the incident to the approved biologist.

WPT-9 (Western Pond Turtle Post-Construction Restoration): After completion of ground-disturbing Covered Activities, the applicant will remove any temporary fill and construction debris and will restore temporarily disturbed areas to pre-project conditions. Restoration work includes such activities as re-vegetating the banks and active channels with a seed mix similar to pre-project conditions. Appropriate methods and plant species used to re-vegetate such areas will be determined on a site-specific basis in consultation with the Implementing Entity. Restoration work may include replanting emergent aquatic vegetation and placing appropriate artificial or natural basking areas in waterways and wetlands. A photo documentation report showing pre- and post-project conditions will be submitted to the Implementing Entity 1 month after implementation of the restoration.

Tricolored Blackbird

To avoid direct and indirect effects of Covered Activities on tricolored blackbird (*Agelaius tricolor*), the following AMMs will be implemented.

TCB-1 (Tricolored Blackbird Surveys): If modeled habitat for tricolored blackbird is present within a Covered Activity's project footprint or within 500 feet of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential nesting or foraging sites are present within the project footprint and adjacent areas within 500 feet of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Within the Plan Area, potential tricolor blackbird nest sites are often associated with freshwater marsh and seasonal wetlands, or in thickets of willow, blackberry, wild rose, thistle, and other thorny vegetation. Tricolored blackbirds are also known to nest in crops associated with dairy farms. Foraging habitat is associated with annual grasslands, wet and dry vernal pools and other seasonal wetlands, agricultural fields (such as large tracts of alfalfa and pastures with continuous haying schedules and recently tilled fields), cattle feedlots, and dairies. The Third-Party Project Proponent will map all existing or potential nesting or foraging sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.

TCB-2 (Tricolored Blackbird Pre-Construction Surveys): Pre-construction surveys will be required to determine if active nests are present within a project footprint or within 500 feet of a project footprint if existing or potential nest sites were found during design surveys and construction activities will occur during the breeding season (March 1 through September 15). An approved biologist will conduct pre-construction surveys within 30 days and within 3 days of ground-disturbing activities, and within the proposed project footprint and 500 feet of the proposed project footprint to determine the presence of nesting tricolored blackbird. Pre-construction surveys will be conducted during the breeding season (March 1 through August 31). Surveys conducted in February (to meet pre-construction survey requirements for work starting in March) must be conducted within 14 days and 3 days in advance of ground-disturbing activities. If a nest is present, then TCB-3 and TCB-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and the Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

TCB-3 (Tricolored Blackbird Nest Buffer): If active nests are found within the project footprint or within 500 feet of any project-related Covered Activity, the Third-Party Project Proponent will establish a 500-foot temporary buffer around the active nest until the young have fledged.

TCB-4 (Tricolored Blackbird Nest Buffer Monitoring): If nesting tricolored blackbirds are present within the project footprint or within 500 feet of any project-related Covered

Activity, then an approved biologist experienced with tricolored blackbird behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place near the disturbance buffer. Work within the nest disturbance buffer will not be permitted. If the approved biologist determines that tricolored blackbirds are exhibiting agitated behavior, construction will cease until the buffer size is increased to a distance necessary to result in no harm or harassment to the nesting tricolored blackbirds. If the biologist determines that the colonies are at risk, a meeting with the Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will be held to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a tricolored blackbird flies into an active construction zone (i.e., outside the buffer zone).

TCB-5 (Timing of Pesticide Use and Harvest Timing on Agricultural Preserves): On SSHCP Agricultural Preserves, pesticides (including herbicides) will not be applied from January 1 through July 15.

Swainson's Hawk

To avoid direct and indirect effects of Covered Activities on Swainson's hawk (*Buteo swainsoni*), the following AMMs will be implemented.

SWHA-1 (Swainson's Hawk Surveys): If modeled habitat for Swainson's hawk (Figure 3-25) is present within a Covered Activity's project footprint or within 0.25 mile of a project footprint, then an approved biologist will conduct a survey to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Nest sites are often associated with Riparian land cover, but also include lone trees in fields, trees along roadways, and trees around structures. Nest trees may include, but are not limited to, Fremont's cottonwood (*Populus fremontii*), oaks (*Quercus* spp.), willows (*Salix* spp.), walnuts (*Juglans* spp.), eucalyptus (*Eucalyptus* spp.), pines (*Pinus* spp.), and Deodar cedar (*Cedrus deodara*). The Third-Party Project Proponent will map all existing and potential nesting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.

SWHA-2 (Swainson's Hawk Pre-Construction Surveys): Pre-construction surveys will be required to determine if active nests are present within a project footprint or within 0.25 mile of a project footprint if existing or potential nest sites were found during initial surveys and construction activities will occur during the breeding season (March 1 through September 15). An approved biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities to determine presence of nesting Swainson's hawk. Pre-construction surveys will be conducted during the breeding season (March 1 through September 15). If a nest is present, then SWHA-3 and SWHA-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

SWHA-3 (Swainson's Hawk Nest Buffer): If active nests are found within the project footprint or within 0.25 mile of any project-related Covered Activity, the Third-Party Project Proponent will establish a 0.25 mile disturbance buffer around the active nest until the young have fledged, with concurrence from the Wildlife Agencies.

SWHA-4 (Swainson's Hawk Nest Buffer Monitoring): If nesting Swainson's hawks are present within the project footprint or within 0.25 mile of any project-related Covered Activity, then an approved biologist experienced with Swainson's hawk behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place within the buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting Swainson's hawks begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a Swainson's hawk flies into an active construction zone (i.e., outside the buffer zone).

Greater Sandhill Crane

To avoid direct and indirect effects of Covered Activities on greater sandhill crane (*Grus canadensis*), the following AMMs will be implemented.

GSC-1 (Greater Sandhill Crane Surveys): If modeled habitat for greater sandhill crane (Figure 3-22) is present within a Covered Activity's project footprint or within 0.5 mile of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential roosting sites are present within the project footprint and adjacent areas within 0.5 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. Roosting sites within the Plan Area are often associated with flooded fields, seasonal wetlands, and freshwater marsh. The Third-Party Project Proponent will map all existing or potential roosting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Roosting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.

GSC-2 (Greater Sandhill Crane Pre-Construction Surveys): Pre-construction surveys will be required to determine if active roosting sites are present within a project footprint or within 0.5 mile of a project footprint if existing or potential roosting sites were found during initial surveys and construction activities will occur when wintering flocks are present within the Plan Area (September 1 through March 15). An approved biologist will conduct pre-construction surveys within 15 days of ground-disturbing activities, and within 0.5 mile of a project footprint, to determine presence of roosting greater sandhill cranes. Pre-construction surveys will be conducted September 1 through March 15, when wintering flocks are present within the Plan Area. If birds are present, then GSC-3, GSC-4, and GSC-5 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

GSC-3 (Greater Sandhill Crane Roosting Buffer): If active roosting sites are found within the project footprint or within 0.5 mile of any project-related Covered Activity, the Third-Party Project Proponent will establish a 0.5 mile temporary roosting disturbance buffer around the roosting site until the cranes have left.

GSC-4 (Greater Sandhill Crane Visual Barrier): Greater sandhill cranes have low tolerance for human disturbance, and such disturbance has caused cranes to abandon foraging and roosting sites. Repeat disturbance affects their ability to feed and store energy needed for survival. If project-related activities occur within 0.5 mile of a known roosting site as identified by surveys conducted during implementation of GSC-1 or GSC-2, a visual barrier will be constructed.

GSC-5 (Greater Sandhill Crane Roosting Buffer Monitoring): If roosting sites are found within the project footprint or within 0.50 mile of any project-related Covered Activity, an

approved biologist experienced with greater sandhill crane behavior will be retained by the Third-Party Project Proponent to monitor the roosting site throughout the roosting season and to determine when the birds have left. The approved biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary disturbance buffer can only occur with the written permission of the Implementing Entity and Wildlife Agencies. If greater sandhill cranes are abandoning their roosting and/or forage sites, the approved biologist will have the authority to shut down construction activities. If roost abandonment occurs, the approved biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid harm and harassment of individuals. The approved biologist will also train construction personnel on the avoidance procedures, buffer zones, and protocols in the event that greater sandhill cranes move into an active construction zone (i.e., outside the buffer zone).

Western Burrowing Owl

To avoid direct and indirect effects of Covered Activities on western burrowing owl (*Athene cunicularia*), the following AMMs will be implemented.

WBO-1 (Western Burrowing Owl Surveys): Surveys within modeled habitat are required for both the breeding and non-breeding season. If the project site falls within modeled habitat, an approved biologist will survey the project site and map all burrows, noting any burrows that may be occupied. Occupied burrows are often (but not always) indicated by tracks, feathers, egg shell fragments, pellets, prey remains, and/or excrement. Surveying and mapping will be conducted by the approved biologist while walking transects throughout the entire project site plus all accessible areas within a 250-foot radius from the project site. The centerline of these transects will be no more than 50 feet apart and will vary in width to account for changes in terrain and vegetation that can preclude complete visual coverage of the area. For example, in hilly terrain with patches of tall grass, transects will be closer together, and in open areas with little vegetation, they can be 50 feet apart. This methodology is consistent with current survey protocols for this species (California Burrowing Owl Consortium 1993). Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. If suitable habitat is identified during the initial survey, and if the project does not fully avoid the habitat, pre-construction surveys will be required. Burrowing owl habitat is fully avoided if project-related activities do not impinge on a 250-foot buffer established by the approved biologist around suitable burrows. See Chapter 10 for the process to conduct and submit survey information.

WBO-2 (Western Burrowing Owl Pre-Construction Surveys): Prior to any Covered Activity ground disturbance, an approved biologist will conduct pre-construction surveys in all areas that were identified as suitable habitat during the initial surveys. The purpose of the pre-construction surveys is to document the presence or absence of burrowing owls on the project site, particularly in areas within 250 feet of construction activities. To maximize the likelihood of detecting owls, the pre-construction survey will last a minimum of 3 hours. The survey will begin 1 hour before sunrise and continue until 2 hours after sunrise (3 hours total), or begin 2 hours before sunset and continue until 1 hour after sunset. Additional time may be required for large project sites. A minimum of two pre-construction surveys will be conducted (if owls are detected on the first survey, a second survey is not needed). All owls observed will be counted and their location will be mapped. Surveys will conclude no more than 2 calendar days prior to construction. Therefore, the Third-Party Project Proponent must begin surveys no more than 4 days prior to construction (2 days of surveying plus up to 2 days between surveys and construction). To avoid last-minute changes in schedule or contracting that may occur if burrowing owls are found, the Third-Party Project Proponent may also conduct a preliminary survey up to 15 days before construction. This preliminary survey may count as the first of the two required surveys as long as the second survey concludes no more than 2 calendar days in advance of construction.

WBO-3 (Burrowing Owl Avoidance): If western burrowing owl or evidence of western burrowing owl is observed on the project site or within 250 feet of the project site during pre-construction surveys, then the following will occur:

During Breeding Season: If the approved biologist finds evidence of western burrowing owls within a project site during the breeding season (February 1 through August 31), all project-related activities will avoid nest sites during the remainder of the breeding season or while the nest remains occupied by adults or young (nest occupation includes individuals or family groups foraging on or near the site following fledging). Avoidance is establishment of a minimum 250-foot buffer zone around nests. Construction and other project-related activities may occur outside of the 250-foot buffer zone. Construction and other project-related activities may be allowed inside of the 250-foot non-disturbance buffer during the breeding season if the nest is not disturbed, and the Third-Party Project Proponent develops an avoidance, minimization, and monitoring plan that is approved by the Implementing Entity and Wildlife Agencies prior to project construction based on the following criteria:

- The Implementing Entity and Wildlife Agencies approve of the avoidance and minimization plan provided by the project applicant.

- An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline nesting and foraging behavior (i.e., behavior without construction).
- The same approved biologist monitors the owls during construction and finds no change in owl nesting and foraging behavior in response to construction activities.

If there is any change in owl nesting and foraging behavior as a result of construction activities, the approved biologist will have authority to shut down activities within the 250-foot buffer. Construction cannot resume within the 250-foot buffer until any owls present are no longer affected by nearby construction activities, and with written concurrence from the Wildlife Agencies.

If monitoring by the approved biologist indicates that the nest is abandoned prior to the end of nesting season and the burrow is no longer in use, the non-disturbance buffer zone may be removed if approved by the Wildlife Agencies. The approved biologist will excavate the burrow in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl to prevent reoccupation after receiving approval from the Wildlife Agencies.

The Implementing Entity and Wildlife Agencies will respond to a request from the Third-Party Project Proponent to review the proposed construction monitoring plan within 21 days.

During Non-Breeding Season: During the non-breeding season (September 1 through January 31), the approved biologist will establish a minimum 250-foot non-disturbance buffer around occupied burrows. Construction activities outside of this 250-foot buffer will be allowed. Construction activities within the non-disturbance buffer will be allowed if the following criteria are met to prevent owls from abandoning over-wintering sites:

- An approved biologist monitors the owls for at least 3 days prior to construction to determine baseline foraging behavior (i.e., behavior without construction).
- The same approved biologist monitors the owls during construction and finds no change in owl foraging behavior in response to construction activities.
- If there is any change in owl foraging behavior as a result of construction activities, the approved biologist will have authority to shut down activities within the 250-foot buffer.
- If the owls are gone for at least 1 week, the Third-Party Project Proponent may request approval from the Implementing Entity and Wildlife Agencies that an approved biologist excavate usable burrows and install one-way exclusionary

devices to prevent owls from re-occupying the site. After all usable burrows are excavated, the buffer zone will be removed and construction may continue.

Monitoring must continue as described above for the non-breeding season as long as the burrow remains active.

WBO-4 (Burrowing Owl Construction Monitoring): During construction of Covered Activities, 250-foot construction buffer zones will be established and maintained around any occupied burrow. An approved biologist will monitor the site to ensure that buffers are enforced and owls are not disturbed. The approved biologist will also train construction personnel on avoidance procedures, buffer zones, and protocols in the event that a burrowing owl flies into an active construction zone.

WBO-5 (Burrowing Owl Passive Relocation): Passive relocation is not allowed without the express written approval of the Wildlife Agencies. Passive owl relocation may be allowed on a case-by-case basis on project sites during the non-breeding season (September 1 through January 31) with the written approval of the Wildlife Agencies if the other measures described in this condition preclude work from continuing. Passive relocation must be done in accordance with the latest California Department of Fish and Wildlife guidelines for burrowing owl. Passive relocation will only be proposed if the burrow needing to be removed or with the potential to collapse from construction activities is the result of a Covered Activity. If passive relocation is approved by the Wildlife Agencies, an approved biologist can passively exclude birds from their burrows during the non-breeding season by installing one-way doors in burrow entrances. These doors will be in place for 48 hours to ensure that owls have left the burrow, and then the biologist will excavate the burrow to prevent reoccupation. Burrows will be excavated using hand tools only. During excavation, an escape route will be maintained at all times. This may include inserting an artificial structure into the burrow to avoid having materials collapse into the burrow and trap owls inside. Other methods of passive relocation, based on best available science, may be approved by the Wildlife Agencies over the 50-year Permit Term.

WBO-6 (Burrowing Owl Timing of Maintenance Activities): All activities adjacent to existing or planned Preserves, Preserve Setbacks, or Stream Setback areas will be seasonally timed, when safety permits, to avoid or minimize adverse effects on occupied burrows.

WBO-7 (Rodent Control): Rodent control will be allowed only in developed portions of a Covered Activity project site within western burrowing owl modeled habitat. Where rodent control is allowed, the method of rodent control will comply with the methods of

rodent control discussed in the 4(d) Rule published in the U.S. Fish and Wildlife Service's (2004) final listing rule for tiger salamander.

Covered Raptor Species

To avoid direct and indirect effects of Covered Activities on covered raptor species, the following AMMs will be implemented. This measure applies to Cooper's hawk (*Accipiter cooperii*), loggerhead shrike (*Lanius ludovicianus*), northern harrier (*Circus cyaneus*), and white-tailed kite (*Elanus leucurus*). The following AMMs do not apply to ferruginous hawk (*Buteo regalis*), as they do not nest in the Plan Area. The following AMMs also do not apply to Swainson's hawk or burrowing owl, as specific AMMs have been developed for these covered raptor species.

RAPTOR-1 (Raptor Surveys): If modeled habitat for a covered raptor species (Figures 3-20, 3-23, 3-24, or 3-28) is present within a Covered Activity's project footprint or within 0.25 mile of a project footprint, then an approved biologist will conduct a field investigation to determine if existing or potential nesting sites are present within the project footprint and adjacent areas within 0.25 mile of the project footprint. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. The Third-Party Project Proponent will map all existing or potential nesting sites and provide these maps to the Local Land Use Permittees and Implementing Entity. Nesting sites must also be noted on plans that are submitted to a Local Land Use Permittee. See Chapter 10 for the process to conduct and submit survey information.

RAPTOR-2 (Raptor Pre-Construction Surveys): Pre-construction surveys will be required to determine if active nests are present with a project footprint or within 0.25 mile of a project footprint if existing or potential nest sites are found during initial surveys and construction activities will occur during the raptor breeding season. An approved biologist will conduct pre-construction surveys within 30 days and 3 days of ground-disturbing activities within the proposed project footprint and within 0.25 mile of the proposed project footprint to determine presence of nesting covered raptor species. Pre-construction surveys will be conducted during the raptor breeding season. If a nest is present, then RAPTOR-3 and RAPTOR-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

RAPTOR-3 (Raptor Nest/Roost Buffer): If active nests are found within the project footprint or within 0.25 mile of any project-related Covered Activity, the Third-Party Project

Proponent will establish a 0.25 mile temporary nest disturbance buffer around the active nest until the young have fledged.

RAPTOR-4 (Raptor Nest/Roost Buffer Monitoring): If project-related Covered Activities within the temporary nest disturbance buffer are determined to be necessary during the nesting season, then an approved biologist experienced with raptor behavior will be retained by the Third-Party Project Proponent to monitor the nest throughout the nesting season and to determine when the young have fledged. The approved biologist will be on site daily while construction-related activities are taking place within the disturbance buffer. Work within the temporary nest disturbance buffer can occur with the written permission of the Implementing Entity and Wildlife Agencies. If nesting raptors begin to exhibit agitated behavior, such as defensive flights at intruders, getting up from a brooding position, or flying off the nest, the approved biologist/monitor will have the authority to shut down construction activities. If agitated behavior is exhibited, the biologist, Third-Party Project Proponent, Implementing Entity, and Wildlife Agencies will meet to determine the best course of action to avoid nest abandonment or take of individuals. The approved biologist will also train construction personnel on the required avoidance procedures, buffer zones, and protocols in the event that a covered raptor species flies into an active construction zone (i.e., outside the buffer zone).

Western Red Bat

To avoid direct and indirect effects of Covered Activities on western red bat (*Lasiurus blossevillii*), the following AMMs will be implemented.

BAT-1 (Winter Hibernaculum Surveys): If modeled habitat (Figure 3-30) for western red bat is present within 300 feet of a Covered Activity's project footprint, then an approved biologist will conduct a field investigation of the project footprint and adjacent areas within 300 feet of a project footprint to determine if a potential winter hibernaculum is present, and to identify and map potential hibernaculum sites. Adjacent parcels under different land ownership will be surveyed only if access is granted or if the parcels are visible from authorized areas. If potential hibernaculum sites are found, the Third-Party Project Proponent will note their locations on project designs and will design the project to avoid all areas within a 300-foot buffer around the potential hibernaculum sites. Winter hibernaculum habitat is fully avoided if project-related activities do not impinge on a 300-foot buffer established by the approved biologist around an existing or potential winter hibernaculum site. See Chapter 10 for the process to conduct and submit survey information.

BAT-2 (Winter Hibernaculum Pre-Construction Surveys): If the Third-Party Project Proponent elects not to avoid potential winter hibernaculum sites within the project footprint plus a 300-foot buffer, additional surveys are required. Prior to any ground disturbance related to Covered Activities, an approved biologist will conduct a pre-construction survey within 3 days of ground-disturbing activities within the project footprint and 300 feet of the project footprint to determine the presence of winter hibernaculum sites. Pre-construction surveys will be conducted during the winter hibernaculum season (November 1 through March 31). If a winter hibernaculum is present, then BAT-3 and BAT-4 will be implemented. The approved biologist will inform the Land Use Authority Permittee and Implementing Entity of species locations, and they in turn will notify the Wildlife Agencies.

BAT-3 (Winter Hibernaculum Buffer): If active winter hibernaculum sites are found within the project footprint or within 300 feet of the project footprint, the Third-Party Project Proponent will establish a 300-foot temporary disturbance buffer around the active winter hibernaculum site until bats have vacated the hibernaculum and the Implementing Entity and Wildlife Agencies concur.

BAT-4 (Bat Eviction Methods): An approved biologist will determine if non-maternity and non-hibernaculum day and night roosts are present on the project site. If necessary, an approved biologist will use safe eviction methods to remove bats if direct impacts to non-maternity and non-hibernaculum day and night roosts cannot be avoided. If a winter hibernaculum site is present, Covered Activities will not occur until the hibernaculum is vacated, or, if necessary, safely evicted using methods acceptable to the Wildlife Agencies.

5.5 How Conditions on Covered Activities are Applied to Various Urban Development Permit Types Approved by the Land Use Authority Permittees

Covered Activities can be approved by Land Use Authority Permittees at different scales. For example, master plans (including specific plans, comprehensive plans, and special planning areas) generally include large areas of land, and other permit types (conditional use permits, grading permits, and building permits) can apply over a range of project footprints. The process that Land Use Authority Permittees will use to approve Covered Activities in these planning documents is described in Chapter 10. See Table 5-2 for a list of projects and activities that are considered Covered Activities.

APPENDIX C

ENVIRONMENTAL NOISE ASSESSMENT

Environmental Noise Assessment

Cardoso Subdivision II

City of Galt, California

January 29, 2020

Project # 190706

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INTRODUCTION

The Cardoso Subdivision project consists of the development of an 87-lot single-family subdivision on 25.56 of 59.17 acres on a vacant parcel. The project is located south of Kost Road, just east of Raven Brook Drive in the City of Galt, California.

Figure 1 shows the project site plan. **Figure 2** shows an aerial photo of the project site.

ENVIRONMENTAL SETTING

BACKGROUND INFORMATION ON NOISE

Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound, and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

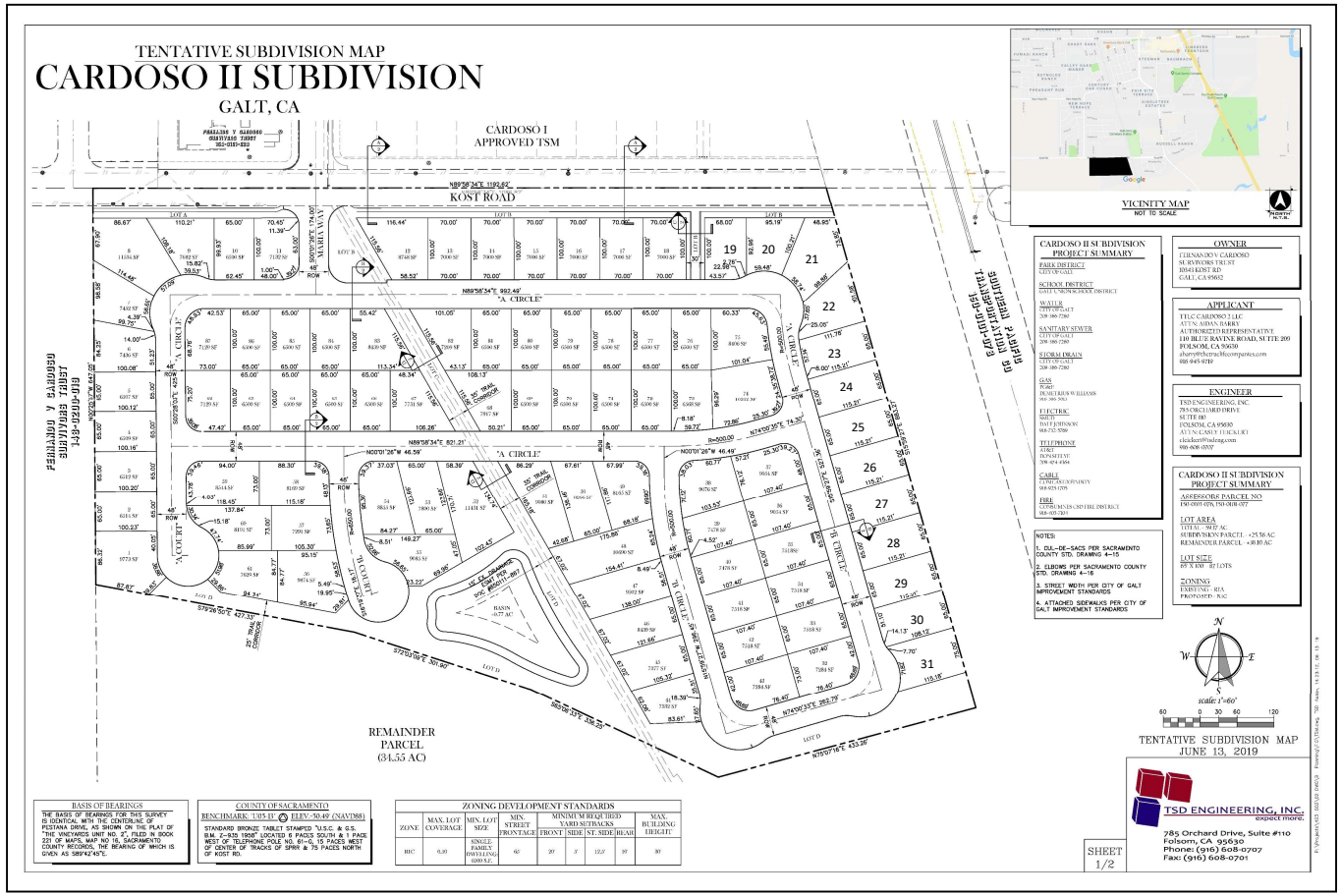
The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.

Cardoso Subdivision II

City of Galt, California

Figure 1

Project Site Plan



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Cardoso Subdivision II

Galt, California

Figure 2

Noise Measurement Sites

Legend

Project Site

Noise Measurement - Long Term

25 m 75 m 125 m

Projection: State Plane (California Zone 2) / NAD83 / meters
Rev. Date: 08/22/2019

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The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60 dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (DNL or L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

TABLE 1: TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft.)	--100--	
Gas Lawn Mower at 1 m (3 ft.)	--90--	
Diesel Truck at 15 m (50 ft.), at 80 km/hr. (50 mph)	--80--	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft.)	--70--	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area Heavy Traffic at 90 m (300 ft.)	--60--	Normal Speech at 1 m (3 ft.)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. September, 2013.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regard to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness, and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres, or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING AND FUTURE NOISE AND VIBRATION ENVIRONMENTS

EXISTING NOISE RECEPTORS

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, sensitive land uses include existing single-family residential uses located northwest and east of the project site.

EXISTING GENERAL AMBIENT NOISE LEVELS

The existing noise environment in the project area is primarily defined by rail activity on the adjacent Union Pacific Railroad line located along the east side of the project site.

To quantify the existing ambient noise environment in the project vicinity, Saxelby Acoustics conducted continuous (24-hr.) noise level measurements at two locations on the project.

Noise measurement locations are shown on **Figure 2**. A summary of the noise level measurement survey results is provided in **Table 2**. **Appendix B** contains the complete results of the noise monitoring.

The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all of the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period.

Larson Davis Laboratories (LDL) model 812 and 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with a B&K Model 4230 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

TABLE 2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

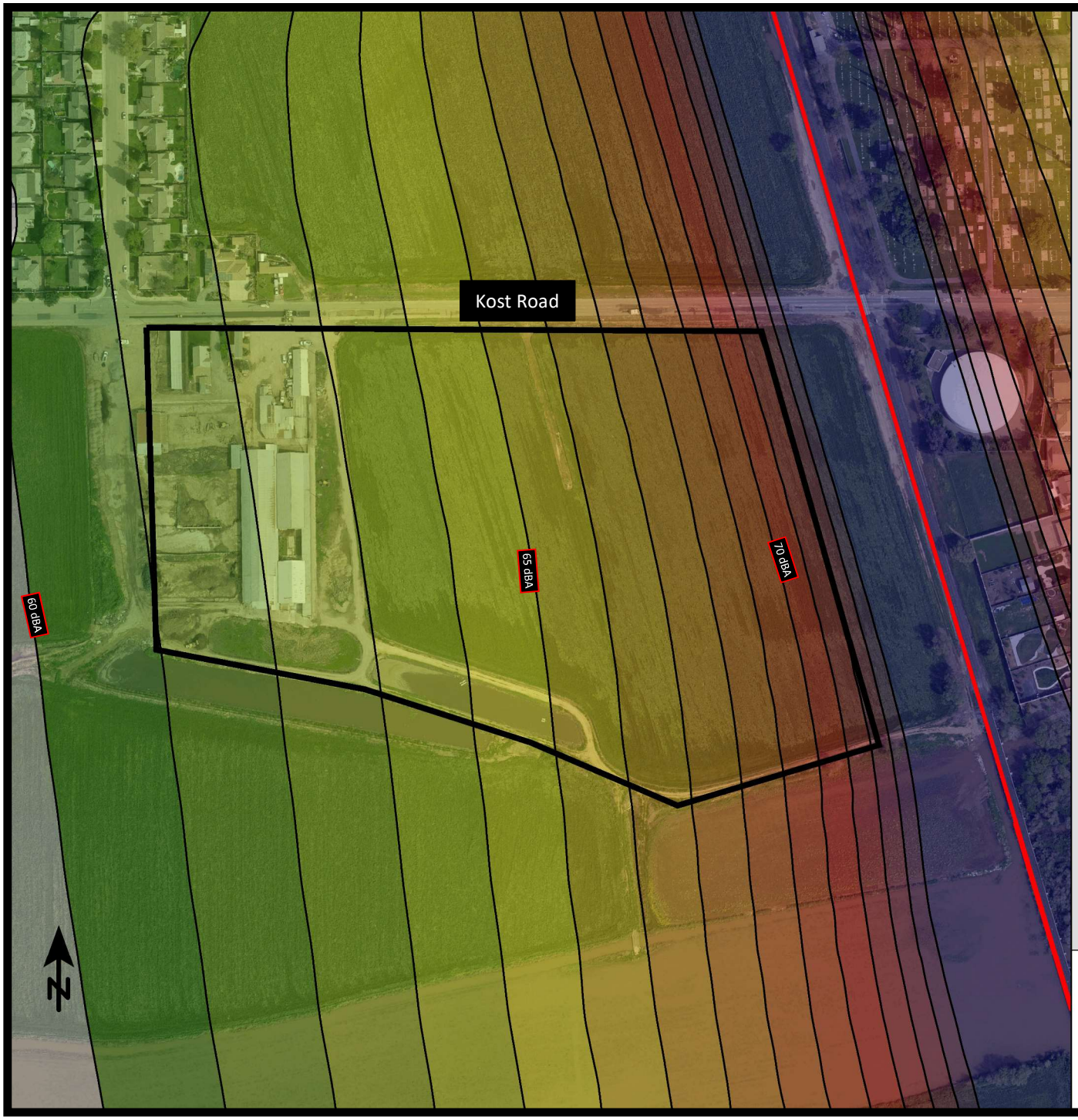
Site	Date	Average Measured Hourly Noise Levels, dBA						
			Daytime (7:00 am - 10:00 pm)			Nighttime (10:00 pm – 7:00 am)		
		CNEL/L_{dn}	L_{eq}	L_{50}	L_{max}	L_{eq}	L_{50}	L_{max}
LT-1	08/05/19-08/06/19	80	74	54	91	74	50	87
LT-2	08/05/19-08/06/19	66	59	38	75	60	48	69
Source: Saxelby Acoustics – 2019								

RAILROAD NOISE

To quantify noise exposure from existing train operations, a continuous (24-hour) noise level measurement survey was conducted along the existing Union Pacific Railroad tracks, located to the east of the project site. Based upon the noise measurement data, approximately 9 freight trains traveled this line during nighttime (10:00 p.m. – 7:00 a.m.) with 21 daytime (7:00 a.m. – 10:00 p.m.) trains.

Noise measurement equipment consisted of a Larson Davis Laboratories (LDL) model 812 and 820 precision integrating sound level meter. The meters were calibrated using a B&K 4230 acoustical calibrator before and after testing. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

Based upon the 24-hour noise measurement data Saxelby Acoustics used the SoundPLAN noise model to calculate existing railroad noise levels across the proposed project site. The results of this analysis are shown graphically on **Figure 3**.



Cardoso Subdivision II

City of Galt, California

Figure 3

Existing Railroad Noise Levels (dBA, L_{dn})

Signs and symbols

- Project Site
- Railroad

Levels in dB(A)

- <= 60
- 60 - 61
- 61 - 62
- 62 - 63
- 63 - 64
- 64 - 65
- 65 - 66
- 66 - 67
- 67 - 68
- 68 - 69
- 69 - 70
- 70 - 71
- 71 - 72
- 72 - 73
- 73 - 74
- > 74

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0 15 30 60 90 120 m

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CONSTRUCTION NOISE ENVIRONMENT

During the construction of the proposed project, including roads, water and sewer lines, and related infrastructure, noise from construction activities would temporarily add to the noise environment in the project vicinity. As shown in **Table 3**, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

TABLE 3: CONSTRUCTION EQUIPMENT NOISE

Type of Equipment	Maximum Level, dBA at 50 feet
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: *Roadway Construction Noise Model User's Guide*. Federal Highway Administration. FHWA-HEP-05-054. January 2006.

CONSTRUCTION VIBRATION ENVIRONMENT

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and parking lot construction occur. **Table 4** shows the typical vibration levels produced by construction equipment.

TABLE 4: VIBRATION LEVELS FOR VARIOUS CONSTRUCTION EQUIPMENT

Type of Equipment	Peak Particle Velocity at 25 feet (inches/second)	Peak Particle Velocity at 50 feet (inches/second)	Peak Particle Velocity at 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210 (Less than 0.20 at 26 feet)	0.074	0.026

Source: *Transit Noise and Vibration Impact Assessment Guidelines.* Federal Transit Administration. May 2006.

REGULATORY CONTEXT

FEDERAL

There are no federal regulations related to noise that apply to the Proposed Project.

STATE

There are no state regulations related to noise that apply to the Proposed Project.

LOCAL

City of Galt General Plan

The 2030 Galt General Plan Noise Element outlines criteria to “non-transportation” or “locally regulated” noise sources. The noise level performance standards for non-transportation noise in Galt are shown in **Table 5**.

TABLE 5: NOISE LEVEL PERFORMANCE STANDARDS FOR RESIDENTIAL AREAS AFFECTED BY NON-TRANSPORTATION NOISE

Noise Level Descriptor	Exterior Noise Level Standards, dBA	
	Daytime (7 AM-10 PM)	Nighttime (10 PM-7 AM)
Hourly Leq, dB	50	45
Maximum Level, dB	70	65

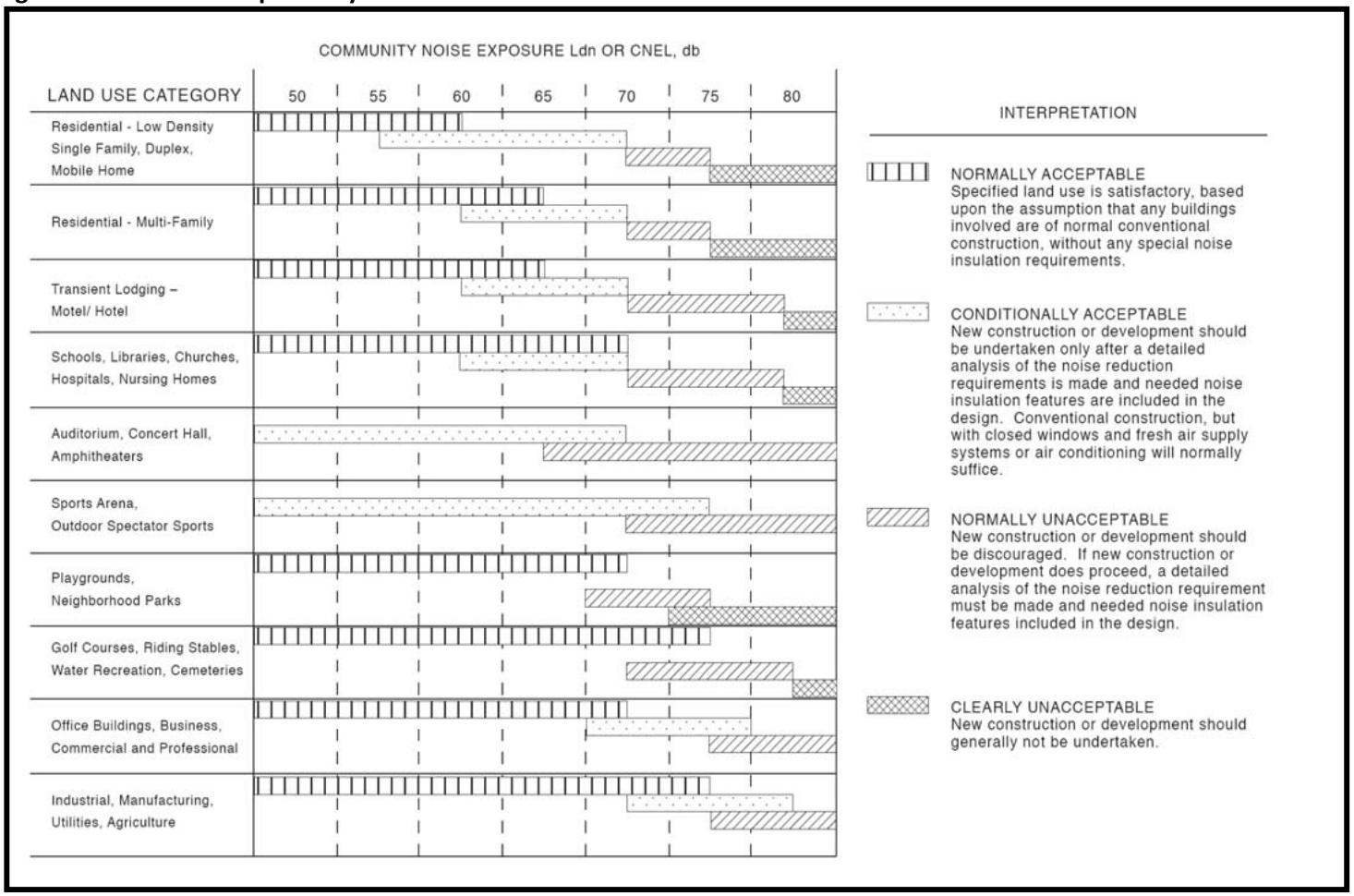
Note: These standards apply to new or existing residential areas affected by new or existing non-transportation sources.

Each of the noise level standards specified above shall be reduced by five dBA for simple tone noises, noises consisting primarily of speech or music, or for recurring impulsive noises.

Source: 2030 Galt General Plan EIR, March 2009.

The 2030 Galt General Plan Noise Element utilizes the State Office of Noise Control (ONC) *Guidelines for the Preparation and Content of Noise Elements of the General Plan*. The ONC guidelines include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The ONC guidelines contain a land use compatibility table that describes the compatibility of different land uses with a range of environmental noise levels in terms of L_{dn}. These guidelines are shown in **Figure 4**.

Figure 4: Land Use Compatibility Chart



Sources: State of California General Plan Guidelines, Office of Planning and Research, 1998; and ESA, 2008.

Based upon **Figure 4**, residential uses are considered normally acceptable in ambient noise environments up to 60 dBA L_{dn}, and conditionally acceptable in noise environments up to 70 dBA L_{dn}. The City of Galt maintains an interior noise level criterion of 45 dBA L_{dn} for residential uses. The intent of this standard is to provide a suitable environment for indoor communication and sleep.

Criteria for Acceptable Vibration

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. **Table 6**, which was developed by Caltrans, shows the vibration levels which would normally be required to result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Table 6 indicates that the threshold for architectural damage to structures is 0.20 in/sec p.p.v. A threshold of 0.2 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

TABLE 6: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

Peak Particle Velocity		Human Reaction	Effect on Buildings
mm/second	in/second		
0.15-0.30	0.006-0.019	Threshold of perception; possibility of intrusion	Vibrations unlikely to cause damage of any type
2.0	0.08	Vibrations readily perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
2.5	0.10	Level at which continuous vibrations begin to annoy people	Virtually no risk of "architectural" damage to normal buildings
5.0	0.20	Vibrations annoying to people in buildings (this agrees with the levels established for people standing on bridges and subjected to relative short periods of vibrations)	Threshold at which there is a risk of "architectural" damage to normal dwelling - houses with plastered walls and ceilings. Special types of finish such as lining of walls, flexible ceiling treatment, etc., would minimize "architectural" damage
10-15	0.4-0.6	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Vibrations at a greater level than normally expected from traffic, but would cause "architectural" damage and possibly minor structural damage

Source: *Transportation Related Earthborne Vibrations.* Caltrans. TAV-02-01-R9601. February 20, 2002.

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines states that a project would normally be considered to result in significant noise impacts if noise levels conflict with adopted environmental standards or plans or if noise generated by the project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis. Significance criteria for noise impacts are drawn from CEQA Guidelines Appendix G (Items XI [a-f]).

Would the project:

a. Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

b. Expose persons to, or generate, excessive groundborne vibration or groundborne noise levels;

c. Cause a substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the project;

d. Cause a substantial temporary or periodic increase in ambient noise levels in the project vicinity above existing levels without the project;

e. Expose persons residing or working in the project area to excessive noise levels if located within an airport land use plan or where such a plan has not been adopted within 2 miles of a public airport or public use airport; or

f. Expose persons residing or working in the project area to excessive noise levels if located within the vicinity of a private airstrip.

The 2030 Galt General Plan considers the following significance criteria for noise impacts:

- If the noise level resulting from project operations would exceed the "normally acceptable" range (as shown in **Figure 4**) for a given land use where the existing noise level exceeds the normally acceptable range, a 3 dBA or greater increase due to a project is considered significant;

- If the noise level resulting from project operations would exceed the "normally acceptable" range (as shown in **Figure 4**) for a given land use where the existing noise

level is within the normally acceptable range, a 5 dBA or greater increase due to a project is considered significant; or

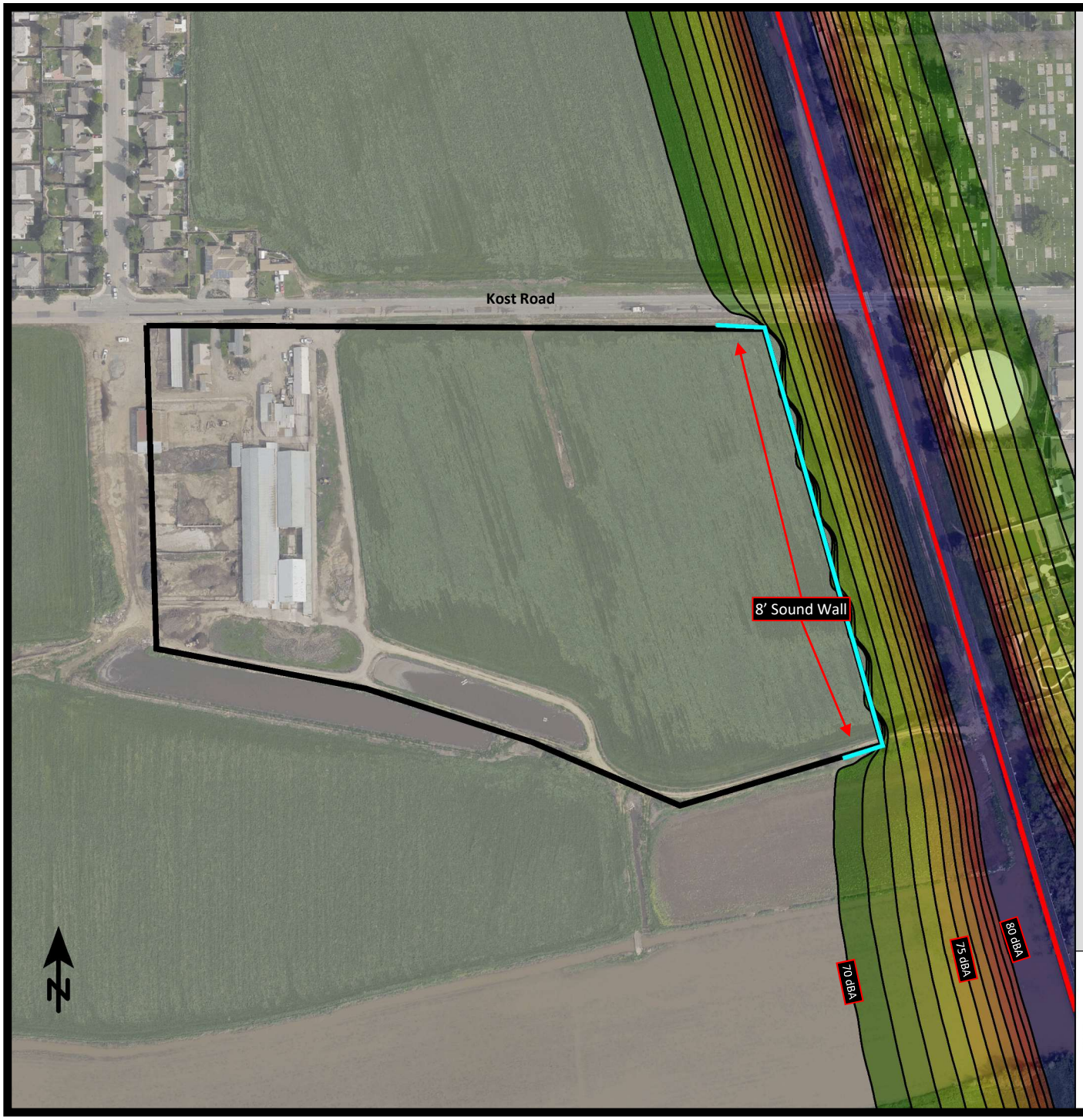
- If the noise level resulting from project operations would be within the "normally acceptable" range (as shown in **Figure 4**) for a given land use, a 10 dBA or greater increase due to the project is considered significant.

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

IMPACT 1: WOULD THE PROJECT RESULT IN EXPOSURE OF PERSONS TO OR GENERATION OF NOISE LEVELS IN EXCESS OF STANDARDS ESTABLISHED IN THE LOCAL GENERAL PLAN OR NOISE ORDINANCE, OR APPLICABLE STANDARDS OF OTHER AGENCIES?

Railroad Noise at New Sensitive Receptors – Exterior Areas

As shown on **Figure 3**, the project site is predicted to be exposed to exterior noise levels up to approximately 73 dBA L_{dn}. This would exceed the City of Galt 60 dB L_{dn} Community Noise Exposure standards. Therefore, exterior noise control measures would be required to ensure that future residents are not exposed to exterior noise levels exceeding City standards. Specifically, 8-foot tall sound walls were analyzed at the location shown on **Figure 5.** Based upon the noise predictions shown on **Figure 5**, exterior noise levels would be reduced to 70 dBA L_{dn}, or less with use of these barriers.



Cardoso Subdivision II

City of Galt, California

Figure 5

Predicted Railroad Noise Levels (dBA, L_{dn}) with 8' Tall Sound Wall

Signs and symbols

- Project Site
- Existing Sound Wall
- Railroad

Levels in dB(A)

	<= 70
70	- 71
71	- 72
72	- 73
73	- 74
74	- 75
75	- 76
76	- 77
77	- 78
78	- 79
79	- 80
	> 80

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0 15 30 60 90 120 m

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Railroad Noise at New Sensitive Receptors – Interior Areas

Based upon **Figure 5**, the proposed project would be exposed to exterior noise levels of up to 70 dBA L_{dn} at the ground floor building facades closest to the Union Pacific Railroad tracks. Second floor locations would not receive substantial shielding from the 8-foot tall sound wall and would be expected to be exposed to exterior noise levels of up to 73 dBA L_{dn}.

Modern building construction typically yields an exterior-to-interior noise level reduction of 25 dBA. Therefore, where exterior noise levels are 70 dBA L_{dn}, or less, no additional interior noise control measures are typically required. For this project, exterior noise levels are predicted to be up to 73 dBA L_{dn}, resulting in an interior noise level of 48 dBA L_{dn} based on typical building construction. This would exceed the City's 45 dBA L_{dn} interior noise level standard.

Impacts resulting from exterior and interior noise levels exceeding the threshold of significance due to interior traffic noise would be considered ***potentially significant***.

<u>Mitigation Measure(s)</u>
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

1(a) *Prior to approval of project improvement plans, the improvement plans for the proposed project shall show that the first-row lots shall be shielded from the Union Pacific Railroad tracks through the use of eight-foot tall masonry sound walls per the approval of the City Engineer. The approximate locations of these barriers are shown on* ***Figure 5****. Other types of barrier may be employed but shall be reviewed by an acoustical engineer prior to being constructed.*

1(b) *Prior to issuance of building permits, the applicant shall provide a detailed analysis of interior noise control measures. The analysis should be prepared by a qualified noise control engineer and shall outline the specific measures required to meet the City's 45 dBA L_{dn} interior noise level standard. Such measures shall be required for Lots 20 through 31. Implementation of the appropriate construction techniques and noise control measures shall be shown on building plans for the proposed project, and such plans shall be reviewed by the City Engineer.*

IMPACT 2: WOULD THE PROJECT RESULT IN EXPOSURE OF PERSONS TO OR GENERATION OF EXCESSIVE GROUNDBORNE VIBRATION OR GROUNDBORNE NOISE LEVELS?

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural.

The **Table 4** data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec threshold at distances of 26 feet. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 26 feet, or further, from typical construction activities. At these distances construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

This is a **less-than-significant** impact and no mitigation is required.

IMPACT 3: WOULD THE PROJECT RESULT IN A SUBSTANTIAL PERMANENT INCREASE IN AMBIENT NOISE LEVELS IN THE PROJECT VICINITY ABOVE LEVELS EXISTING WITHOUT THE PROJECT?

Traffic Noise Increases

The proposed project is consistent with the City's General Plan and no traffic study was required for the project. Therefore, no substantial increases in traffic noise are predicted.

Operational Noise Increases

The proposed project would include typical residential noise which would be compatible with the adjacent existing residential uses.

This is a **less-than-significant** impact and no mitigation is required.

IMPACT 4: WOULD THE PROJECT RESULT IN A SUBSTANTIAL TEMPORARY OR PERIODIC INCREASE IN AMBIENT NOISE LEVELS IN THE PROJECT VICINITY ABOVE LEVELS EXISTING WITHOUT THE PROJECT?

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. As indicated in **Table 3**, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dBA L_{max} at a distance of 50 feet. Most of the building construction would occur at distances of 50 feet or greater from the nearest residences. Construction noise associated with streets would be similar to noise that would be associated with public works projects, such as a roadway widening or paving projects.

Construction activities would be temporary in nature and are anticipated to occur during normal daytime working hours.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from the construction site. This noise increase would be of short duration, and would likely occur primarily during daytime hours.

Construction activities are conditionally exempt from the Noise Ordinance during certain hours. Construction activities are exempt from the noise standard from 6 AM to 8 PM Monday through Friday, and from 7 AM to 8 PM on Saturdays and Sundays.

Although construction activities are temporary in nature and would likely occur during normal daytime working hours, construction-related noise could result in sleep interference at existing noise-sensitive land uses in the vicinity of the construction if construction activities were to occur outside the normal daytime hours. Therefore, impacts resulting from noise levels temporarily exceeding the threshold of significance due to construction would be considered ***potentially significant***.

<u>Mitigation Measure(s)</u>
Implementation of the following mitigation measures would reduce the above impact to a *less-than-significant* level.

4(a) *Construction activities shall comply with the City of Galt Noise Ordinance and shall be limited to the hours set forth below:*

Monday-Friday	*6:00 AM to 8:00 PM*
Saturday and Sunday	*7:00 AM to 8:00 PM*

These criteria shall be included in the grading plan submitted by the applicant/developer for review and approval of the Public Works Department prior to issuance of grading

permits. Exceptions to allow expanded construction activities shall be reviewed on a case-by-case basis as determined by the Chief Building Official and/or City Engineer.

4(b) *Construction activities shall adhere to the requirements of the City of Galt with respect to hours of operation, muffling of internal combustion engines, and other factors that affect construction noise generation and its effects on noise-sensitive land uses. Prior to issuance of grading permits, these criteria shall be included in the grading plan submitted by the applicant/developer for the review and approval of the Public Works Department.*

4(c) *During construction, the applicant/developer shall designate a disturbance coordinator and conspicuously post this person's number around the project site and in adjacent public spaces. The disturbance coordinator will receive all public complaints about construction noise disturbances and will be responsible for determining the cause of the complaint, and implement feasible measures to be taken to alleviate the problem. The disturbance coordinator shall report all complaints and corrective measures taken to the Community Development Director.*

IMPACT 5: 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 EXPOSE PEOPLE RESIDING OR WORKING IN THE PROJECT AREA TO EXCESSIVE NOISE LEVELS?

There are no airports in the project vicinity. Therefore, this impact is not applicable to the proposed project.

IMPACT 6: FOR A PROJECT WITHIN THE VICINITY OF A PRIVATE AIRSTRIP, WOULD THE PROJECT EXPOSE PEOPLE RESIDING OR WORKING IN THE PROJECT AREA TO EXCESSIVE NOISE LEVELS?

There are no private airstrips in the project vicinity. Therefore, this impact is not applicable to the proposed project.

REFERENCES

American National Standards Institute. (1998). *[Standard] ANSI S1.43-1997 (R2007): Specifications for integrating-averaging sound level meters*. New York: Acoustical Society of America.

American Standard Testing Methods, *Standard Guide for Measurement of Outdoor A-Weighted Sound Levels, American Standard Testing Methods (ASTM) E1014-08*, 2008.

ASTM E1014-12. *Standard Guide for Measurement of Outdoor A-Weighted Sound Levels*. ASTM International. West Conshohocken, PA. 2012.

ASTM E1780-12. *Standard Guide for Measuring Outdoor Sound Received from a Nearby Fixed Source.* ASTM International. West Conshohocken, PA. 2012.

Barry, T M. (1978). *FHWA highway traffic noise prediction model* (FHWA-RD-77-108). Washington, DC: U.S. Department of transportation, Federal highway administration, Office of research, Office of environmental policy.

California Department of Transportation (Caltrans), *Technical Noise Supplement, Traffic Noise Analysis Protocol*, September 2013.

Egan, M. D. (1988). Architectural acoustics. United States of America: McGraw-Hill Book Company.

Federal Highway Administration. *FHWA Roadway Construction Noise Model User's Guide.* FHWA-HEP-05-054 DOT-VNTSC-FHWA-05-01. January 2006.

Hanson, Carl E. (Carl Elmer). (2006). *Transit noise and vibration impact assessment*. Washington, DC: U.S. Department of Transportation, Federal Transit Administration, Office of Planning and Environment.

International Electrotechnical Commission. Technical committee 29: Electroacoustics. International Organization of Legal Metrology. (2013). *Electroacoustics: Sound level meters*.

International Organization for Standardization. (1996). *Acoustic - ISO 9613-2: Attenuation of sound during propagation outdoors. Part 2: General methods of calculation*. Ginevra: I.S.O.

Miller, L. N., Bolt, Beranek, & and Newman, Inc. (1981). *Noise control for buildings and manufacturing plants*. Cambridge, MA: Bolt, Beranek and Newman, Inc.

SoundPLAN. SoundPLAN GmbH. Backnang, Germany. http://www.soundplan.eu/english/

Appendix A: Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
ASTC	Apparent Sound Transmission Class. Similar to STC but includes sound from flanking paths and correct for room reverberation. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by +5 dBA and nighttime hours weighted by +10 dBA.
DNL	See definition of Ldn.
IIC	Impact Insulation Class. An integer-number rating of how well a building floor attenuates impact sounds, such as footsteps. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
NIC	Noise Isolation Class. A rating of the noise reduction between two spaces. Similar to STC but includes sound from flanking paths and no correction for room reverberation.
NNIC	Normalized Noise Isolation Class. Similar to NIC but includes a correction for room reverberation.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
RT60	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train pass by, that compresses the total sound energy into a one-second event.
SPC	Speech Privacy Class. SPC is a method of rating speech privacy in buildings. It is designed to measure the degree of speech privacy provided by a closed room, indicating the degree to which conversations occurring within are kept private from listeners outside the room.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating is typically used to rate the sound transmission of a specific building element when tested in laboratory conditions where flanking paths around the assembly don't exist. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

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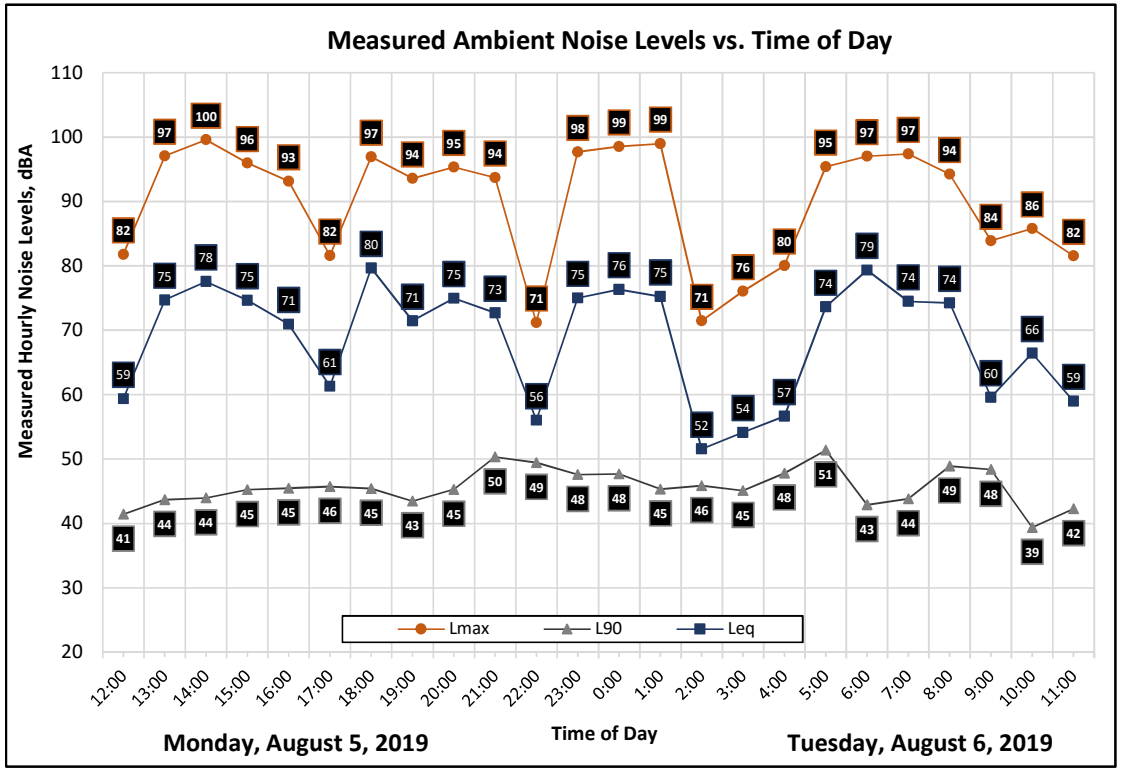
Appendix B1: Continuous Noise Monitoring Results

Site: LT-1
Project: Cardoso Subdivision II
Meter: LDL 812-1
Location: Northeastern Corner
Calibrator: B&K 4230
Coordinates: 38.2400725°, -121.3017500°

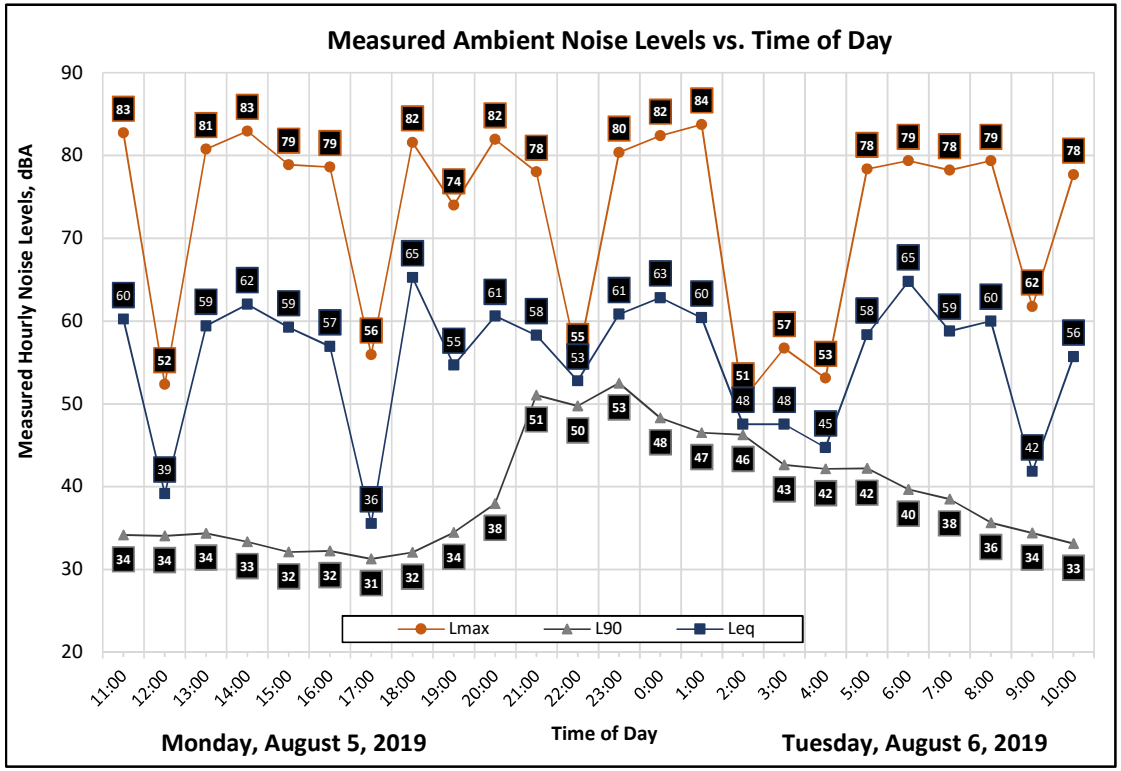
Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Monday, August 5, 2019	12:00	59	82	49	41
Monday, August 5, 2019	13:00	75	97	53	44
Monday, August 5, 2019	14:00	78	100	53	44
Monday, August 5, 2019	15:00	75	96	57	45
Monday, August 5, 2019	16:00	71	93	56	45
Monday, August 5, 2019	17:00	61	82	56	46
Monday, August 5, 2019	18:00	80	97	56	45
Monday, August 5, 2019	19:00	71	94	52	43
Monday, August 5, 2019	20:00	75	95	53	45
Monday, August 5, 2019	21:00	73	94	54	50
Monday, August 5, 2019	22:00	56	71	51	49
Monday, August 5, 2019	23:00	75	98	51	48
Tuesday, August 6, 2019	0:00	76	99	49	48
Tuesday, August 6, 2019	1:00	75	99	47	45
Tuesday, August 6, 2019	2:00	52	71	47	46
Tuesday, August 6, 2019	3:00	54	76	47	45
Tuesday, August 6, 2019	4:00	57	80	51	48
Tuesday, August 6, 2019	5:00	74	95	56	51
Tuesday, August 6, 2019	6:00	79	97	55	43
Tuesday, August 6, 2019	7:00	74	97	57	44
Tuesday, August 6, 2019	8:00	74	94	55	49
Tuesday, August 6, 2019	9:00	60	84	55	48
Tuesday, August 6, 2019	10:00	66	86	52	39
Tuesday, August 6, 2019	11:00	59	82	48	42

Statistics	Leq	Lmax	L50	L90
Day Average	74	91	54	45
Night Average	74	87	50	47
Day Low	59	82	48	39
Day High	80	100	57	50
Night Low	52	71	47	43
Night High	79	99	56	51
Ldn	80	Day %		61
CNEL	80	Night %		39



Appendix B2: Continuous Noise Monitoring Results

Site: LT-2
Project: Cardoso Subdivision II
Location: Southern Boundary
Coordinates: 38.2378372°, -121.3022576°
Meter: LDL 820-1
Calibrator: B&K 4230

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Monday, August 5, 2019	11:00	60	83	38	34
Monday, August 5, 2019	12:00	39	52	37	34
Monday, August 5, 2019	13:00	59	81	38	34
Monday, August 5, 2019	14:00	62	83	36	33
Monday, August 5, 2019	15:00	59	79	35	32
Monday, August 5, 2019	16:00	57	79	35	32
Monday, August 5, 2019	17:00	36	56	34	31
Monday, August 5, 2019	18:00	65	82	37	32
Monday, August 5, 2019	19:00	55	74	38	34
Monday, August 5, 2019	20:00	61	82	44	38
Monday, August 5, 2019	21:00	58	78	52	51
Monday, August 5, 2019	22:00	53	55	53	50
Monday, August 5, 2019	23:00	61	80	54	53
Tuesday, August 6, 2019	0:00	63	82	53	48
Tuesday, August 6, 2019	1:00	60	84	48	47
Tuesday, August 6, 2019	2:00	48	51	48	46
Tuesday, August 6, 2019	3:00	48	57	48	43
Tuesday, August 6, 2019	4:00	45	53	44	42
Tuesday, August 6, 2019	5:00	58	78	45	42
Tuesday, August 6, 2019	6:00	65	79	43	40
Tuesday, August 6, 2019	7:00	59	78	41	38
Tuesday, August 6, 2019	8:00	60	79	38	36
Tuesday, August 6, 2019	9:00	42	62	36	34
Tuesday, August 6, 2019	10:00	56	78	36	33

Statistics	Leq	Lmax	L50	L90
Day Average	59	75	38	35
Night Average	60	69	48	46
Day Low	36	52	34	31
Day High	65	83	52	51
Night Low	45	51	43	40
Night High	65	84	54	53
Ldn	66	Day %		60
CNEL	66	Night %		40