Lake County Interregional Transit Center Project

Draft IS/MND

Lake Transit Authority

8 August 2022

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Acronyms and Abbreviations

AB	Assembly Bill
AC Transit	Alameda-Contra Costa Transit District
AMSHP	Anderson Marsh State Historic Park
ASC	Anthropological Studies Center of Sonoma State University
BAAQMD	Bay Area Air Quality Management District
BMP	Best Management Practices
Cal ARP	California Accidental Release Prevention Program
CARB	California Air Resources Board
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CHP	California Highway Patrol
CHRIS	California Historical Resources Information Center
CO_2e	Carbon dioxide equivalent
CRHR	California Register of Historic Resources
CTSA	Consolidated Transportation Services Agency
CUP	Conditional Use Permit
CUPA	Certified Unified Program Agency
DACAG	Disadvantaged Communities Advisory Group
DAR	Dial-A-Ride
dB	decibel
DOE	U.S. Department of Energy
DPM	Diesel particulate matter
DR	Design Review
EERE	Energy Efficiency and Renewable Energy
EO	Executive Order
EOP	Emergency Operations Plan
EV	Electric vehicle
FCEB	Fuel cell electric bus
FCEV	Fuel cell electric vehicle
FHSZ	Fire Hazard Severity Zone
GHG	Greenhouse gases
HFTO	Hydrogen and Fuel Cell Technologies
HMBP	Hazardous Materials Business Plan
kW	kilowatt
Lake APC	Lake Area Planning Council
Lake Transit	Lake Transit Authority
LCAB	Lake County Air Basin
LCAQMD	Lake County Air Quality Management District

LCFS	Low Carbon Fuel Standard
LRA	Local Responsibility Area
LTA	Lake Transit Authority
MLD	Most Likely Descendant
M&O	Maintenance and Operations
MRR	Mandatory Reporting Program
$MTCO_2e$	Metric tons of carbon dioxide equivalent
mWh	Megawatt hour
NAHC	Native American Heritage Commission
NCRWQCB	North Coast Regional Water Quality Control Board
NEMT	Non-Emergency Medical Transportation
NFPA	National Fire Protection Association
NPDES	National Pollutant Discharge Elimination System
NREL	National Renewable Energy Laboratory
NWIC	Northwest Information Center
OPR	California Governor's Office of Planning and Research's
PG&E	Pacific Gas and Electric
PM	Particulate matter
PPE	Personal protective equipment
PV	Photovoltaic
ROW	Right of way
RPS	Renewable Portfolio Standard
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SGMA	Sustainable Groundwater Management Act
SMAQMD	Sacramento Metropolitan Air Quality Management District
SR	State Route
SRTA	Shasta Regional Transportation Agency
SWPPP	Stormwater Pollution Prevention Plan
TMDL	Total Maximum Daily Load
VMT	Vehicle miles traveled
ZEB	Zero emission bus
ZEV	Zero emission vehicle

1. Project Information

Project Title	Lake County Interregional Transit Center	
Lead Agency Name & Address	Lake Transit Authority	
Contact Person & Phone Number	James Sookne, Program Manager, (707) 263-7868	
Project Component	Interregional Transit Center	Maintenance and Operations Facility Improvements
Component Location	Southwest corner of S. Center Drive and Dam Road Extension (City of Clearlake)	9240 Hwy 53 Lower Lake, CA (Lake County)
Assessor Parcel Number	010-043-57	012-025-72
General Plan Land Use Designation	C Commercial	Cc (Community Commercial)
Zoning	CG (General Commercial)	C2 (Community Commercial)

1.1 Introduction and CEQA Requirements

Lake Transit Authority (Lake Transit), serving as the California Environmental Quality Act (CEQA) Lead Agency, has prepared this Initial Study to provide the public, responsible agencies, and trustee agencies with information about the potential environmental effects of the proposed Lake County Interregional Transit Center Project (hereafter referred to as the “project”).

Lake Transit is considering construction of a new transit center, relocation of route services from the existing transfer hub to the new transit center, acquisition of four (4) hydrogen buses, improvements to the existing Lake Transit maintenance and operations (M&O) facility to support the use of the new hydrogen buses, and expansion of intercity transit service.

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

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

1. A description of the project including the location of the project;
2. An identification of the environmental setting;

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

1.2 Project Background and Objectives

Lake Transit provides public transit service throughout Lake County including the cities and unincorporated communities, as well as providing connections to Napa County and Mendocino County. Lake Transit's projects are subject to the City of Clearlake and Lake County's zoning and development guidelines. As described within this section, Lake Transit coordinates and works in partnership with the City and County to support residents and the community.

Project Need

Lake Transit operates an existing transit transfer hub in the City of Clearlake, within the parking lot of the Clearlake Shopping Center. The existing transfer hub services six Lake Transit fixed routes (three regional routes and three local routes). Several deficiencies have been identified for the existing transfer hub, including security issues, inadequate size (requiring turnaround on private land), poor public image, and a lack of control over land and utilities. This current location is a significant deterrent for some riders as it presents a poor image of the transit system, feels unsafe (particularly to seniors) and offers no scheduling or connection information.

In 2017, Lake Area Planning Council (APC), in coordination with Lake Transit, prepared the Lake Transit Hub Location Plan to assess the long-term viability of the existing transfer hub, Lake Transit's long-term transit hub facility needs, and alternative transit hub sites (LTA and Lake APC 2017). The project need has been well documented in the following Lake Transit documents:

- Lake Transit Hub Location Plan (2017),
- Regional Transportation Plan (2022),
- Transit Development Plan (2015), and
- Coordinated Public Transit-Human Services Transportation Plan (2021).

Project Purpose

The proposed project would provide a safer, more efficient rider experience and expand existing intercity routes using hydrogen fuel cell transit buses. An improved transit center is important in enhancing the overall transit program, and ensuring that adequate capacity is available to accommodate future ridership growth. The proposed Interregional Transit Center is intended to serve as a centralized "node" for local rural transit system uses, as well as a linkage to larger metropolitan areas, increasing opportunities for rural access to airports and passenger rail service, as well as a number of other services that are locally unavailable, and reduce greenhouse gas emissions across the transit system.

One of the primary goals of the project is to construct a new transit center on a property in the City of Clearlake. A second component of the project would include electric vehicle charging and hydrogen fueling

infrastructure, as well as a fleet of zero-emission buses for use in extending regular Lake Transit service to out-of-county destinations.

Public Involvement and Agency Partnerships

Lake APC, the Regional Transportation Planning Agency for Lake County, initiated a study of locating a new and enhanced transit hub. At the outset of the project, an advisory group representing Lake Transit, Lake APC, City of Clearlake, and Caltrans met to discuss potential sites and issues to be addressed during the study.

After the completion of the first Technical Memorandum and the identification of a preferred site, a design charrette was held on May 12th, 2016, at the Clearlake City Council Chambers. Roughly 20 people attended including City Council members, County Board of Supervisors, Lake APC board members, County/City staff, Clearlake Police Department and representatives from neighboring uses. After the charrette, Study Team members held a public open house in the lobby of the Clearlake City Hall just prior to the City Council meeting. This provided the public with the opportunity to view and comment on 3D illustrations of potential transfer hub designs and location.

To address concerns raised by the public at the charrette, the Study Team expanded the scope of the study to include: 1) a peer review of other transit centers located near a school or college, 2) hiring a security expert to review potential security measures, 3) and conducting a second workshop focused on addressing security concerns. In addition to the workshop, the Study Team and security consultant met separately with the Clearlake Police Department, Konocti Education Center, and Woodland Community College.

Regional Planning Context

Lake Transit is coordinating with two agencies that share parallel goals of meeting rural transportation needs. The first is Shasta Regional Transportation Agency (SRTA), which is in the process of implementing its North State Intercity Bus System project, further described below. The second agency is the Lake County region's Consolidated Transportation Services Agency (CTSA), also known as Lake Links, which actively partners with Lake Transit to provide Non-Emergency Medical Transportation (NEMT) services to low-income seniors and disabled residents of the region. The proposed transit hub will play an important role in providing a centralized location for NEMT shuttle service to appointment locations both within and without Lake County.

The project is proposed within a complex and interconnected planning environment, with multiple public agencies cooperating to improve and serve the community. As described in the section above, Lake Transit works in partnership with the City of Clearlake, Lake APC, and Caltrans. The following planning documents provide a local and regional planning context within which the project would be implemented.

Lake Transit – Lake Transit Hub Location Plan (2017)

The Lake Transit Hub Location Plan details the deficiencies of the existing transit hub, the planning process, the public involvement process conducted to include community input, evaluation of 7 alternative sites, and identifies the preferred site. Additionally, the Transit Hub Location Plan describes the adopted plans that may change traffic volumes and circulation with the area surrounding the existing transfer hub, as well as planned changes in the public transit network.

Finally, the plan contains a detailed description of the necessary and potential components, and associated footprint requirements, of a new transit hub, and provides two conceptual site plan configurations for the

preferred site. The proposed Interregional Transit Center location would be located on the preferred site and would be consistent with the Corner Option configuration identified within the plan.

City of Clearlake – 2040 General Plan (2017)

The City of Clearlake 2040 General Plan (General Plan) identifies multiple goals, policies, and objectives applicable to development and growth in the vicinity of the proposed Interregional Transit Center. The General Plan also identifies roadway improvements that serve the site. As stated in the General Plan, Clearlake is expected to grow to a population of around 22,000 persons by the year 2040. This represents an increase of about 6,000 persons (from 2015) reflecting an overall growth of 40 percent of the City's current population (Clearlake 2017).

Preferred growth Scenario for 2040

This scenario emphasizes design concepts from the Infill and Redevelopment Alternative and the Clustered Growth Development Alternative. The Regional Shopping Center (Wal-Mart/Airport Area) is one of the nine key growth areas specified in the General Plan.

Economic Development

General Plan Chapter 10, Economic Development, provides that the adjacent area along SR 53, Old Highway 53, and Dam Road could be developed as a regional shopping center to serve the daily needs of Lake County residents. New commercial development could benefit from the business generated from Walmart, and provide the retail shopping needs suited to locals instead of tourists.

Circulation

General Plan Chapter 4, Circulation, identifies that the City will improve existing streets to be more complete in accommodating bicycle and pedestrian movements. Additionally, the following circulation improvements are needed during the 2040 General Plan time horizon to mitigate traffic impacts to an acceptable level of service:

- Roundabout at Dam Road and Damn Road Extension
- Capacity improvements to SR 53, including improvements to the intersections of SR 53/18th Avenue and SR 53/Old Highway53/Dam Road.

Lake Transit –Lake Transit Energy Use Reduction Plan (2015)

The Lake Transit Energy Use Reduction Plan contains multiple recommendations for the Lake Transit to reduce energy use, from conserving energy at existing Lake Transit facilities, increasing onsite energy generation through solar panels, increasing operational efficiency of the transit system and its facilities, and reducing fuel consumption.

The following recommendations from the plan are relevant to the proposed project:

- Investigate feasibility of solar installation (in form of bus canopy at current facilities)
- Acquire four electric buses (and associated charging station)

Shasta Regional Transportation Agency – North State Intercity Bus Service

The SRTA is planning on extending the North State Intercity Bus Service (NS Express Connect), to include a Lake Feeder Line to connect the City of Clearlake, and associated Lake Transit routes, with the Sacramento Region to the east. The NS Express Connect would establish a new intercity transit express

route between Redding and Sacramento, with feeder routes linking the counties of Shasta, Modoc, Siskiyou, Humboldt, Lassen, Butte, Trinity, Tehama, Glenn, Lake and Colusa. SRTA anticipates using 35-foot zero emission buses (ZEB) for feeder routes. SRTA's proposed NS Express Connect would use electric or hydrogen buses and connect the northern third of the state of California's intercity public transportation system.

Although the SRTA would continue to consult and coordinate with Lake Transit in further planning and implementation of the proposed NS Express Connect, SRTA is the primary responsible party for the program.

State Planning Context

In addition to the complex local planning context provided above, California regulations and funding programs have driven an increase in Zero Emission Vehicles (ZEV), Zero Emission Buses (ZEB), hydrogen Fuel Cell Electric Vehicles (FCEV), and alternative fuel infrastructure (including electric vehicle charging stations and hydrogen fueling stations). Many of the regulations aim at reducing greenhouse gas emissions, electrifying the transportation sector, reducing reliance on oil, and improving air quality.

Relevant State and federal regulations and plans, as well as a brief overview of hydrogen safety codes and standards is provided in Section 1.10, Zero Emission Buses and Hydrogen Fuel Background.

1.3 Project Location and Existing Setting

The project facilities would result in construction within the grounds of existing Lake Transit properties, adjacent roadways, and at the existing transfer hub. Specifically, the project would result in improvements or construction activity at three different locations: the proposed Interregional Transit Center site and adjacent roadways, the existing M&O facility, and the existing transfer hub (see Figure 1, Regional Location Map).

Interregional Transit Center Site

See Figure 2, Interregional Transit Center Location. The Interregional Transit Center would be located on approximately 2 acres of land on the southwest corner of S. Center Drive and Dam Road Extension. Additionally, construction staging would occur on approximately 0.76 acre-portion of the property immediately west and adjacent to the proposed transit center. The site is located approximately 2 miles north of the existing M&O facility, and 0.2-mile northwest of the existing transfer hub. The site is located within the Shoreline Communities Planning Area and is identified as within FEMA Flood Zone X (outside the 0.2-percent annual chance floodplain).

Surrounding Land Uses

The site is bounded by S. Center Drive to the north and Dam Road Extension to the east. To the west is the Clearlake Masonic Lodge, and open space, and State Route (SR) 53 (a main traffic/transportation corridor through the City of Clearlake). To the north are Lake County Superior court, Lake County Mental Health Department, Adventist Health Hospital, and open space beyond. To the east are the Konocti Education Center and Woodland Community College Lake County Campus. To the south are the Sears Hometown Store, open space, and additional commercial uses.

The site is within a half mile of one of the City of Clearlake's primary residential neighborhoods known as "the Avenues," which will have access to the site via a recently constructed road connecting Dam Road Extension (Project area) to 18th Avenue (the southernmost of the residential "Avenues" region).

S. Center Drive has unpaved informal parking on the shoulders. Dam Road Extension has continuous walks on the east side of the roadway and, north of the intersection with S. Center Drive, existing Class II bike lanes and pedestrian facilities on both sides. The Woodlake Community College bus stop, serving Routes 1, 11, and 12, is located approximately 300 feet west of the site boundary, beyond Dam Road Extension. Regional access is provided by SR 53 intersections with 18th Avenue and Dam Road, approximately 0.3-mile northwest and 0.2 mile southwest of the site, respectively.

Site Description

The project site is generally flat and located at an elevation of approximately 1,830 feet above mean sea level. The area is undeveloped, with informal unpaved vehicle paths connecting the eastern boundary of the site to the southwestern boundary of the site. The site is an open, unirrigated field with eleven (11) medium and eight (8) large established oak trees. Tree size is evaluated using diameter at breast height (DBH). Medium-sized trees are between 4 and 18-inch DBH, large trees are above 18 inches DBH.

Utilities adjacent to the site include 6-inch and 10-inch water pipes. The newer 10-inch water pipe currently services Walmart and Woodland Community College, and has ample resources to serve the potential transfer center. The older 6-inch water pipe serves older properties in the area.

Electrical lines run south and west of the site. The western electrical line spans roughly 490 feet, and runs between the site and the parcel to the west. The southern electrical line spans roughly 190 feet, and borders the site and the Sears property.

A sewer line runs across the southernmost portion of the project parcel.

M&O Facility Site

As shown in Figure 3, M&O Facility Location, the Project M&O improvements would be located within the 3.2-acre Lake Transit M&O facility, located at 9240 Hwy 53, Lower Lake, CA, and an approximately 1-acre field immediately north and adjacent to the M&O facility. The site is located approximately 2 miles south of the proposed Interregional Transit Center. Project improvements would occur withing the existing building, and on approximately 10,000 sf of land located between the employee parking area and bus fleet storage area. Potential future solar improvements would occur on the field immediately north and adjacent to the 3.2-acre M&O facility. The site is located within the Lower Lake Planning Area and is identified as within FEMA the Special Flood Hazard Zone AE, but outside the Regulatory Floodway.

Surrounding Land Uses

The site is bounded by SR 53 to the west. To the north are open space and Seigler Canyon Creek. Rural open land, Seigler Canyon Creek, and Lower Lake High School are east of the site. To the south are existing residential uses. To the west beyond SR 53 are existing commercial and light industrial uses. Regional access is provided by the site's driveway connection with SR 53. A bus stop servicing Routes 3, 4, and 10 is located west of the site, across SR 53.

Site Description

Lake Transit operates an existing 7,000 square-foot M&O Facility that is half shop space and half offices. The existing facility includes two (2) indoor and one (1) outdoor maintenance bays. Paved vehicle circulation and employee parking areas surround the facility. Lake Transit's bus fleet is stored in an uncovered, paved lot north of the facility. The bus fleet storage area is surrounded by a chain link fence, with security gate. The bus fleet storage area is closed and locked during non-business house. Typically,

the area would be operational from approximately 5 AM to 9:30 PM, Monday through Saturday (excluding holidays).

PG&E provides electrical service to the site. Existing storm drains are located on the east and west side of the site that connects bioswales, storm drain inlet, and ultimately connect to Siegler Creek.

Existing Transfer Hub Site

The existing Lake Transit transfer hub is located on the north side of the former Ray's Food Place building, now occupied by Big 5 Sporting Goods and Tractor Supply Company, at the eastern end of Dam Road, as shown in Figure 3. This site provides three bus shelters and a large bus pullout that can accommodate three busses.

Existing Transit Conditions

Lake Transit provides public transit service throughout Lake County including the cities and unincorporated communities, as well as providing connections to Napa County and Mendocino County. In addition to fixed route service, curb-to-curb Dial-A-Ride (DAR) service is available in the Clearlake/Lower Lake area as well as the Lakeport area during the fixed route operating hours. Passengers must be eligible for DAR services under the Americans with Disabilities Act. Outside of the DAR service area, Lake Transit's Flex Stop program allows passengers to request curbside service up to one mile from the regular fixed routes. The general public can utilize Flex Stop at a higher fare than disabled and other discount riders.

Lake Transit's bus fleet is comprised of 31 cutaway buses that run on both gasoline and diesel fuel. The buses range from 12-seat minibuses to 32-seat buses. In Fiscal Year 2018-19, Lake Transit operated a total of 897,335 vehicle revenue miles.

Fixed Routes

As shown in Figure 2, Lake Transit provides fixed route service throughout Lake County and beyond, with fixed route service available in Clearlake, Upper Lake, Lakeport, Kelseyville, and Middletown and regional routes connecting to Deer Park (Napa County), Soda Bay, and Ukiah (Mendocino County). In general, service is provided Monday through Saturday between the hours of 7:00 AM and 6:00 PM. Certain routes operate weekdays only and/or during different hours (Transit Hub Location Plan). See Table 1-1 for descriptions of Lake Transit's existing fixed route services.

Table 1-1 Existing Routes

Route	General Description	Operational Schedule	Endpoints	
			Endpoint A	Endpoint B
Intercity Routes				
Route 1 (North Shore)[1]	North Shore Clearlake to Lakeport	Monday - Saturday	Clearlake, Existing Transfer Hub	Lakeport, Sutter Lakeside Hospital
Route 2 (Highway 175)	Hwy 175 Kit's Corner to Middletown	Monday – Friday	Soda Bay Road, Riviera Shopping Center	Middletown, Hwy 29 & Young St.
Route 3 (Highway 29) [1]	Hwy 29 Clearlake to Deer Park	Monday – Saturday	Clearlake, Existing Transfer Hub	Deer Park, St. Helena Hospital

Route	General Description	Operational Schedule	Endpoints	
			Endpoint A	Endpoint B
Route 4 (South Shore) [1]	South Shore Clearlake to Lakeport	Monday - Saturday	Clearlake, Existing Transfer Hub	Lakeport, Third and Main
Route 4a (South Shore via Soda Bay Rd)	Soda Bay Kit's Corner to Lakeport	Monday – Friday	Soda Bay Road, Kit's Corner	Lakeport, Third and Main
Route 7 (To Ukiah)	Lakeport/Ukiah	Monday – Saturday	Ukiah, Airport	Lakeport, Third and Main
Clearlake and Lower Lake Routes (Local Routes)				
Route 10 (Clearlake Park)[1]	Clearlake/Clearlake Park North Loop	Monday - Saturday	Clearlake, Existing Transfer Hub	Clearlake, Bush & Second
Route 11 (The Avenue)[1]	The Avenues Loop	Monday – Saturday	Clearlake, Existing Transfer Hub	Clearlake, Walnut Grove Apts.
Route 12 (Clearlake South)[1]	Clearlake/Lower Lake South Loop	Monday – Friday	Clearlake, Hwy 53 & Main	Clearlake, Walnut Grove Apts.
Lakeport Routes				
Route 8 (Lakeport City)	Lakeport City	Monday - Saturday	Sutter Lakeside Hospital	Konocti Vista Casino

Notes:

[1.] Route includes a stop at the existing Clearlake Transfer Hub in the Walmart Parking Lot

Existing Transfer Hub

Six (6) Lake Transit fixed routes transfer at this location (three [3] regional routes and three [3] City of Clearlake routes). Many common destinations for public transit users are within walking distance of the existing transfer hub including: Walmart, Woodland Community College, County Courts, County Mental Health Department and Adventist Health Clear Lake Hospital. As such, the existing transfer hub in Clearlake represents a key location within the overall transit network. However, the location within the parking lot, in conjuncture with an incomplete pedestrian network, results in conflicts between transit riders walking to adjacent land uses and vehicles moving through the parking lot. The current situation is most challenging to seniors and those with disabilities seeking services at the County Behavioral Health offices, or Adventist Health Clear Lake Hospital, who would need to cover the approximately one-third to one-half mile to reach these destinations.

There is a maximum of six buses (not accounting for Dial-A-Ride vehicles) at the transfer hub at peak times. In the morning hours between 6:00 AM and 10:00 AM, the hour marks of 7:00, 8:00, and 9:00 are the busiest, with five buses stopped at the existing transfer hub. Peak evening bus activity occurs around 7:00 PM, with five to six buses stopped at the existing transfer hub.

Projected Transit Conditions

The existing routes, as discussed in the prior section, serve all of the major corridors directly accessing the existing transfer hub and vicinity. While Lake Transit already has intercity connections to the south (Calistoga and St. Helena in Napa County) and to Ukiah to the west, there is no existing transit connection to the Sacramento region to the east. Therefore, it is estimated that at least one additional route serving the Lake Transit Center will be added in the future 20 years.

1.4 Project Description

The project consists of the following main components:

1. The Interregional Transit Center
2. The addition and use of zero-emission buses (ZEB) to expand existing Lake Transit service to further out-of-county destinations
3. M&O facility improvements to support ZEB
4. Existing Transfer Hub Decommissioning
5. Future solar facilities at the existing M&O facility

The first four components would be implemented upon project approval. The fifth component, installation and operation of a solar array facility, would be constructed at a later date dependent on funding procurement. The fueling infrastructure would also allow Lake Transit to purchase more ZEB in the future.

Interregional Transit Center

The Interregional Transit Center is broadly organized by a triangular transit plaza on the northeastern portion of the site, a diagonal interior driveway and electric bus charging stations on the central portion of the site, and a parking lot and greenspace park on the southern portion of the site. Interior crosswalks would support pedestrian movement through the project site, including through the parking lot. Onsite pedestrian infrastructure and vehicle movement areas (including driveways) would be designed to tie into the City of Clearlake's planned *Dam Road Extension & South Center Drive Bike/Pedestrian Improvements* project.

The Project would include low maintenance, drought tolerant landscaping throughout the site, including within a proposed 0.6-acre greenspace area. Landscaping would be designed and installed in accordance with the City of Clearlake zoning landscaping ordinances. Existing trees would be incorporated into the project landscaping plan, including approximately six large trees.

The Interregional Transit Center would incorporate the following green initiatives:

- Three Electric Bus Charging Stations
- Four Public Electric Vehicle (EV) Charging Stations within the parking lot.
- Solar panels on south and west-facing sides of the Transit Building (estimated 27 kW system[1])
- Water harvesting methods, such as permeable pavement or bioswales

Security measures include real-time cameras (connected to the dispatch center) to be installed throughout the site. Additionally, the project includes safety-oriented design (clear lines of site from the facility to the street and rounded corners). Fencing would be provided along the western boundary of the New Intercity Transfer Hub, and between the project's proposed greenspace and proposed sidewalks fronting Dam Road Extension. Overall, the design has been developed to minimize the areas hidden from police traveling along the adjacent roadways. Within the site, the areas not visible from a potential staff office location have been minimized.

The transit facility will be fully compliant with guidelines set forth under the American Disability Act, including the following provisions: no more than a 2 percent slope in any direction of travel; space of 5 feet

[1] The actual electricity generation would depend on the physical design of the PV system. The results from the PVWatts tool assumes a 20-degree tilt on a roof-mounted system.17 At approximately 16 Watts (W) per square foot, a 27 kW system would require 1,700 square feet (LTA 2015).

by 8 feet located between the bus and sidewalk to accommodate wheelchair ramps and passage; and clear passages of travel provided for disabled patrons.

Transit Plaza

The overall site plan for the transit plaza is triangular shaped, delineated by S. Center Drive to the north, Dam Road Extension to the east, and a proposed diagonal interior drive to the south and west. The transit plaza consists of a transit building, a pedestrian platform with covered breezeway, pedestrian and bicycle facilities, landscaping, and bus bays. The project includes lighting and security cameras installed throughout the transit plaza.

Transit Building

The transit building would be a one-story, 2,160 sf building, with pedestrian waiting areas, private restrooms, and offices. Within this building, the waiting area would be on the south side (both to provide passengers with a view of arriving buses and to take advantage of natural sunlight) and the offices/restrooms on the north side. Solar panels would be placed on south and west-facing sides of the Transit Building.

Bus Bays

A total of eight (8) bus bays would be located along the triangular transit plaza. All of the bus bays are of sufficient dimensions to accommodate a 40-foot bus. Three (3) sawtooth bays are provided along the northern (Center Drive) side, two (2) straight bays are provided on the eastern (Dam Road Extension) side, and three (3) sawtooth bays are provided along the diagonal interior drive.

The sawtooth bays allow all buses to enter and exit the site regardless of the presence of buses in other bays, thereby reducing delays. This also allows specific bays to be designated for specific routes, which is a convenience to passengers.

The straight bays along Dam Road Extension would have an adequate length to allow a bus in the northern bay to depart even with a bus parked in the southern bay, though a bus could not access the southern bay if a bus is parked in the northern bay. This limitation could be addressed by designating the southern bay for a route that accesses the transit center at times when the bus on the route using the northern bay is not on-site.

Pedestrian Platform/Breezeway

The outdoor space adjacent to the transit building includes a covered breezeway and adjoining paved pedestrian platform. The breezeway would be an approximately 2,800 sf covered outdoor passenger waiting area, and would extend west from the transit building. The roofed but unwalled breezeway would provide shade and scattered seating to accommodate sitting and standing passengers. Outdoor seating under the breezeway is designed to accommodate 43 passengers.

The outdoor space would include a drinking fountain, pay phone, and trash bins, and general route and schedule information boards. For the bus bays not convenient to the building or breezeway, one bus shelter is provided to the south and one to the north. Eight bike lockers are provided adjacent to the northerly shelter.

Diagonal Driveway and Electric Bus Charging Stations

The diagonal driveway would be one-way in a northwesterly direction, with space for a Dial-A-Ride or NEMT shuttle services along the plaza.

Three electric bus charging bays will be located directly southwest of the diagonal driveway portion of the site marked for “buses only,” with a one-way entrance/exit directed towards the regular northwesterly egress onto South Center Drive.

Parking Lot and Greenspace

Auto parking is provided in a separate parking lot south of the bus charging infrastructure with two-way auto access onto Dam Road Extension. A total of 19 spots are included to be used for employees or park-and-ride. Four (4) of the 19 spots will be available for EV charging along with at least one (1) designated disabled spot.

Pedestrian crosswalks would connect the parking lot to the transit plaza to the north, and paved sidewalks would connect the parking lot to existing and planned pedestrian infrastructure along Dam Road Extension to the east.

An approximately 0.6-acre landscaped green space would be developed in the remaining southerly portion of the site with trees, grass and bench areas throughout. Fencing would be installed between the greenspace and the proposed sidewalk along Dam Road Extension to control access and safety to the site.

Offsite Improvements

Offsite improvements include new bicycle lanes and crosswalks. On the S. Center Drive and Dam Road Extension adjacent to the project site, 12-foot travel lanes would be maintained, and new 4-foot-wide bike lanes would be striped and signed. Four feet of distance has been provided between bike lanes and the adjacent parked buses, in order to improve sight lines and reduce the potential for conflicts.

As shown in Figure 7, Lake Transit anticipates six (6) offsite crosswalk improvements to connect the Interregional Transit Center with destinations north and east of the project site. Pedestrian crossings would connect the site to properties north of S. Center Drive and east of Dam Road Extension.

To enhance the pedestrian conditions at the northeast corner, the project design would formalize the current large-radius curve between Center Drive and Dam Road Extension. While the intersection would still serve all types of vehicles (a 25-foot curb return radius), this would slow traffic speeds and enhance pedestrian safety.

The project would also install speed limit signs and warning signs on Dam Road Extension for a school zone and buses turning into the transit center.

Zero Emission Buses and Expanded Intercity Route Service

Lake Transit proposes to purchase four (4) zero emission buses (ZEB) to supplement the existing fleet. Specifically, Lake Transit would purchase and use four (4) hydrogen buses. The buses would be stored at the M&O facility, consistent with existing practices. Improvements to the M&O facility to support the hydrogen buses are described in the next section. Hydrogen bus use is further described in Section 1.2, Operation and Maintenance.

Currently, Lake Transit offers intercity service to Ukiah (Mendocino County) and Calistoga (Napa County). The proposed ZEB (hydrogen bus) additions to the fleet will provide zero-emission service via Ukiah to the Charles M. Schulz–Sonoma County Airport (approximately seven miles northwest of downtown Santa Rosa). A second extended line that will be made possible by the expanded fleet will be via Calistoga to the Santa Rosa Bus Terminal in downtown Santa Rosa.

The expanded Intercity route service will use existing facilities and the facilities proposed by this project, as described above. No additional physical improvements would be required. Additional description of the expanded Intercity route service is provided in Section 1.2, Operation and Maintenance.

M&O Facility Improvements

Improvements to the Lake Transit M&O facility are proposed to support hydrogen buses. Improvements would consist of hydrogen fueling infrastructure and retrofits to the existing maintenance facility.

Retrofits to the maintenance facility would be required to allow for the proper air flow and ventilation needed to safely work on the hydrogen buses. In addition to retrofitting the building, solar panels will be installed on the south-facing pitched roofs. It is estimated that up to approximately 22 kW of solar could be accommodated by the facility's south-facing roofs.

A hydrogen storage facility and dispensing station would be constructed between the existing maintenance facility and the bus parking area, as shown on Figure 3. Facility design has not been completed. The conceptual plan includes a liquid hydrogen fuel storage location east of the internal drive, a fuel dispenser west of the internal drive, and subsurface piping connecting the two facilities.

The fuel storage facility would be designed to receive liquid hydrogen by a vendor. Preliminary calculations indicate the storage facility would require approximately 50 feet by 80 feet of space and include a liquid hydrogen storage tank of approximately 15,000 gallons, liquid hydrogen pumps, a cryo compressor, vaporizers, and gaseous storage. This footprint would accommodate the initial design of receiving fuel by a vendor as well as conversion to on-site hydrogen generation. The hydrogen storage facility would be fully enclosed in either a security fence (such as chain link) or by a wall with secured, limited access.

Although design has not been completed, the hydrogen storage and fueling facility would include, at a minimum, the following elements:

- A dispensing platform
- Vehicle crash protection
- Electrical service
- Lighting
- Compressors to compress the hydrogen to vehicle storage pressure
- Piping from the gaseous hydrogen storage system to the dispenser
- Fire protection system
- Maintenance system
- Dispenser with fueling hose and nozzle, and integrated emergency shut-off switch.

The fuel storage facility would be modified at a future date to allow for onsite hydrogen generation with an electrolyzer, depending on electricity prices and funding availability. Onsite hydrogen generation could occur using either a single electrolyzer or multiple electrolyzers used in parallel.

The Project design would comply with applicable design standards, safety codes, and setback requirements, including (but not limited to) National Fire Protection Association (NFPA) 2 Hydrogen Technologies Code. Specific setback requirements are dependent on facility size, design, components, and features.

Existing Transfer Hub Decommissioning

The existing transit facilities (shelter, benches, signs) would be removed.

Future Solar Facilities

Potential future solar improvements would occur on an approximately 1-acre field immediately north and adjacent to the M&O facility. Design and construction would occur at a later date dependent on funding procurement. The actual electricity generation would depend on the physical design of the photo voltaic (PV) system. Using the National Renewable Energy Laboratory's PVWatts tool, and assuming a 20-degree tilt on a fixed (open rack) mounted system, and current PV system efficiencies, it is estimated that up to 460 kW PV array could installed.

1.5 Project Construction

Construction Schedule

Construction of the Interregional Transit Center could begin in mid-2024, and last approximately 10 months. Construction of the M&O facility Improvements would also begin in mid-2024 and last approximately 2 months. Anticipated work hours would be daylight hours (7:00 AM to 7:00 PM) Monday through Friday. Nighttime work is not anticipated.

Staging During Construction

Staging would occur withing the project sites, as well as within the staging area adjacent to the proposed Interregional Transit Center, shown on Figure 1-2. Workers would park their vehicles within designated areas of the project sites.

Traffic Control

Construction of proposed facilities on and adjacent to S. Center Road and Dam Road Extension may require traffic control or brief road closures. The City would require the contractor to develop and implement a temporary Traffic Control Plan outlining work zones, activities, and time needed to complete the work in each zone.

Construction Workers and Equipment

The number of construction-related vehicles traveling to and from the project sites would vary daily. The estimated size of the construction workforce at any one time during construction is anticipated to range between 10 and 20 workers.

Construction debris, including soil, plant material, concrete, and asphalt, would be recycled where feasible. Materials found unsuitable for reuse or recycling would be disposed of at a regional landfill. Mass grading is not anticipated to require import or export of soils. Miscellaneous material deliveries would range from 4 to 14 loads per day.

Anticipated construction equipment includes excavator, loader/backhoe, compactor, industrial saw, small equipment for excavation, paving equipment, crane, and generator.

Interregional Transit Center

Depending on final design, the project would remove three to four existing blue oak trees in the small grove on the west side of Dam Road Extension, approximately 100 feet south of S. Center Drive. However, the largest (westernmost) blue oak tree would remain, as would a grove of blue oak trees on the southern portion of the site. Tree removal would be mitigated in accordance with Chapter 18-40 (Native Tree

Protection), of the City's Municipal Code. Mitigation would consist of either replacing trees onsite or offsite at the ratio prescribed by the City's Municipal Code Section 18-40.050.

M&O Facility Improvements

Installation of the hydrogen storage and fueling facilities would include trenching, foundation work, facility installation, pressure testing, leak detection, and hydrogen sampling. Once construction and verification has been completed, a final inspection by Lake County and the Fire Department are required to approve the station for operation.

At a future date, the conversion of the hydrogen storage facility would consist of installation of electrolyzer(s) and associated infrastructure such as electrical upgrades. It is anticipated that the Project would install a containerized hydrogen generation system, which contain the electrolyzer in a modular container for ease of installation and integration into existing fuel storage systems.

Existing Transfer Hub Decommissioning

Decommissioning of the existing transfer hub would consist of removal of the existing shelters. Removal of the shelters would require unbolting and small patchwork to fill minor holes.

1.6 Operation and Maintenance

Following construction, the project would result in relocating the six (6) routes currently serviced by the existing transfer hub to the new transit center. Additionally, the project would result in operation of the hydrogen fueling infrastructure at the M&O facility and expansion of Intercity transit service, as detailed below. The project is not anticipated to require new employees.

Interregional Transit Center

The estimated useful life for the new transit center is 40 years. Sawtooth bays allow buses to operate fully independently with each other. This means that buses can pull in or out of all bays regardless of the presence of buses in the adjacent bays. Therefore, the new facility would reduce delays and associated idling times currently experienced at the existing transfer hub (which would be decommissioned as a part of the project).

Relocating the six (6) routes currently serviced the by existing transfer hub to the new transit center would result in approximately 500 additional bus miles per year. However, the transit center is estimated to result in a fossil fuel use reduction for the agency due to replacing existing diesel-fueled buses with hydrogen-fueled ZEB. Additionally, the three electric charging stations will allow for future ZEB purchases by Lake Transit, further reducing fossil fuel emissions.

Safety

At least one Lake Transit staff member would be stationed at the new transfer hub during transit hours. It is anticipated that the staff member would be administrative personnel who could assist passengers with questions and ticket sales and/or a transit supervisor. Transit staff would have a good line of sight from the office onto Dam Road Extension in the direction of Konocti Education Center and Woodland Community College. Periodically, staff would walk the perimeter of the transfer hub property in an effort to maintain a strong presence as well as enforce no loitering on the premises. Transit staff would also be trained to coordinate with Konocti Education Center/Woodland Community College staff and security personnel. Lake Transit would assist in enforcing City of Clearlake Ordinance 5.21.3.d, which prohibits panhandling within 10 feet of a public transportation vehicle or stop, if asked to leave by the owner/operator. Additionally, Lake

Transit would work with Clearlake Police Department to conduct period police patrols. Finally, the Interregional Transit Center would avoid or secure with locking caps all outdoor electrical outlets where transients could easily charge cell phones or other electronic devices; securing or locking would occur during non-operational hours. Outdoor electrical outlets would be available during business hours for riders to charge their devices.

M&O Facility Improvements

Project operations at the M&O facility would consist of receipt of hydrogen fuel by vendors, storage and dispensing of hydrogen fuel, and regular inspection and maintenance of the fuel storage and dispensing facility. The Project would not require new employees.

The new ZEB would be stored with the existing bus fleet on the site. Fueling ZEB is anticipated to take approximately 15 minutes per bus per day, with 2 ZEB fueled per hour. The Project would not increase on-road mobile trips associated with employees or buses. Receipt of fuel by vendors is anticipated to result in two (2) new one-way truck trips per month, likely to originate in the Sacramento area where existing hydrogen generating companies are located. Fuel receipt would occur during normal operating hours.

Initial operations (receiving hydrogen fuel by vendors) of the Project facility would not result in a substantive increase in electrical energy or water consumption at the Project site. After conversion of the storage facility to allow for onsite hydrogen generation, it is estimated that the Project would require additional electricity and potable water during onsite generation. Depending on the efficiency of the electrolyzer, the system would require an estimated 2,374 to 2,672 megawatt hours (mWh) per year, and approximately 259,416 gallons of water per year.

Safety

Safety includes both physical design and operational activities. The hydrogen fueling station has several different safety systems that work together to keep vehicle operators safe while fueling. If flame detectors or gas sensors detect a fire or leak, redundant safety systems automatically stop hydrogen flow, seal storage tanks, and/or safely vent the hydrogen if required. Strategically placed emergency stops are designed to automatically shut down hydrogen equipment and isolate the gas supply, if activated. Separation walls and equipment setbacks are designed into the site plan to maximize safety. In addition to physical safety systems, hydrogen fueling stations also have logic systems that use sensors to detect illogical patterns or flows. If a sensor detects an off-normal condition the system will shut down if necessary (GoBiz 2020).

Hydrogen components for vehicles are built to meet strict manufacturer and published guidelines and undergo third-party testing for safety and structural integrity (DOE 2014). Hydrogen storage tanks on vehicles are put through rigorous testing including crash tests, gunfire and performance requirements. They are also made of high-strength composite materials that are much stronger than steel (CHBC 2018). With safety codes and current design, FCEVs and the fueling stations to supply the hydrogen are considered as safe as conventional systems (CHBC 2018).

Prior to the start of operations, Lake Transit would prepare a Facility Safety Plan (Safety Plan) and Operating Procedures consistent with recommendations from the Hydrogen Safety Panel's *Safety Planning for Hydrogen and Fuel Cell Projects* (HSP 2020).

> **The Safety Plan** would be based on the facility design, components, and anticipated operational parameters. The Safety Plan would detail potential risks and impacts to personnel, equipment and the environment, and controls that minimize the likelihood and/or severity of the risk. The Safety Plan would include a safety communication protocol to describe how project safety is communicated

and made available to the operating staff, neighboring occupants, and local emergency response officials.

Operating Procedures provide guidelines for: who is authorized to operate the system and what required training they must have; what personal protective equipment (PPE) must be worn when performing specific tasks; steps for each operating phase, such as startup, normal operation, normal shutdown, emergency shutdown; operating limits; safety considerations, such as precautions necessary to prevent exposure and measures to be taken if physical contact or airborne exposure occurs; safety systems and their functions; nonroutine work authorizations; and maintenance activities.

Additionally, operations, maintenance, and safety training would be conducted at startup, and include Lake Transit staff and stakeholder staff (such as the Fire District).

Expanded Intercity Route Service

Currently, Lake Transit offers intercity service to Ukiah (Mendocino County) and Calistoga (Napa County). The proposed ZEB (hydrogen bus) additions to the fleet would provide zero-emission service via Ukiah to the Charles M. Schulz–Sonoma County Airport (approximately seven miles northwest of downtown Santa Rosa). A second extended line made possible by the expanded fleet would be via Calistoga to the Santa Rosa Bus Terminal in downtown Santa Rosa. Table 1-2 provides additional details regarding the expanded route service. The expanded route services are also shown in Figure 1-8.

Table 1-2 Expanded Intercity Route Service

Route	Existing Terminus (County)	Proposed Terminus (County)	Additional Connection Opportunities
Route 3	Calistoga (Napa County)	Santa Rosa Bus Terminal in downtown Santa Rosa (Sonoma County)	Golden Gate Transit access to connections such as Rohnert Park, Novato, San Rafael, and BART in the Bay Area.
Route 7	Ukiah (Mendocino County)	Charles M. Schulz–Sonoma County Airport (Sonoma County)	Sonoma County Airport Express from there, which can reach further destinations such as Santa Rosa, Rohnert Park and Petaluma, as well as both Oakland and San Francisco International airports. Sonoma-Marin Area Rail Transit (SMART) train, which also reaches Santa Rosa, Rohnert Park and Petaluma, as well as Novato, San Rafael, and Larkspur.

Increased Ridership

Construction of the transit center is anticipated to increase ridership across the entire system while the expanded service would increase ridership on the specific routes that are to be expanded. Lake Transit anticipates that expanding service on the two routes would increase ridership by providing access to additional places of employment, medical care, education, and entertainment. The projected ridership for both components is provided in Table 1-4.

Table 1-4 Projected Increased Ridership

Parameter	Transit Center	Expanded Service	
		Route 30	Route 40
Existing Ridership	311,240	16,262	13,119
Projected 2023 Ridership	317,521	17,419	14,910
Projected 2035 Ridership	-	18,494	18,910
Projected 2063 Ridership	387,616	-	-

Source: LTA 2020

Future Solar Facilities

Assuming a 460 kW PV system were installed, the Project's future solar facility could produce more than 700 MWh per year, or approximately 30 percent of the anticipated energy needs of the future onsite hydrogen production. Operations of the future solar facility would consist of regular monthly inspection and maintenance.

1.7 Compliance with Existing Regulations and Standard BMPS

The project would abide by the following regulations and industry-accepted Best Management Practices (BMPs) to reduce or avoid potential adverse effects that could result from construction or operation of the project. Although these actions would reduce or avoid the Project's potential environmental impacts, they exist as elements of the Project and, as such, are considered prior to significance determinations, in accordance with *Lotus vs. Department of Transportation (2014) 223 Cal.App.4th 645 (Lotus)*. CEQA Guidelines Section 15378(a) defines a "Project" as the whole of an action, and the whole of the Project would include features required to meet design standards, regulatory requirements, industry standards, and features required by non-project specific permits (such as the NPDES permit or standard Stormwater BMPs). Additionally, Project elements identified in this section are not developed in response to a Project-specific impact, but are common and typical for development projects.

In addition to these BMPs, mitigation measures are presented in the following analysis sections in Chapter 3, Environmental Analysis, to reduce potentially significant environmental impacts below a level of significance.

Implementation of Geotechnical Design Recommendations

The project would be designed and constructed in compliance with the site-specific recommendations made in the Project's Geotechnical Report (to be developed during project design). This would include design in accordance with recommendations for open-cut trenching, trenchless construction, excavation dewatering, excavation shoring, pipeline foundation material, geotextile filter fabric requirements, pipeline embedment material, trench backfill material, shaft construction, and other factors. The geotechnical recommendations would be incorporated into the final plans and specifications for the project and would be implemented during construction.

Implementation Construction Best Management Practices

To limit dust, criteria pollutants, and precursor emissions associated with the construction activity, the following recommended Basic Construction Measures would be included in construction contract specifications and required during implementation of the Project:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas and unpaved access roads) shall be watered two times per day;
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered or shall have at least two feet of freeboard;
- All visible mud or dirt tracked-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping shall be prohibited;
- All vehicle speeds on unpaved areas shall be limited to 15 miles per hour;
- All paving shall be completed as soon as possible after trenching work is finished;
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to five minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points;
- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation;
- A publicly visible sign shall be posted with the telephone number and person to contact at Lake Transit regarding dust complaints. This person shall respond and take corrective action within 48 hours.

Implementation of Construction Stormwater Pollution Prevention Plan

The project would seek coverage under State Water Resources Control Board (Water Board) Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities. Lake Transit would submit permit registration documents (notice of intent, risk assessment, site maps, Stormwater Pollution Prevention Plan, annual fee, and certifications) to the Water Board. The Stormwater Pollution Prevention Plan (SWPPP) would address pollutant sources, best management practices, and other requirements specified in the Order. The SWPPP would include erosion and sediment control measures, and dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment. A Qualified SWPPP Practitioner would oversee implementation of the Project SWPPP, including visual inspections, sampling and analysis, and ensuring overall compliance.

Implementation of Industrial Stormwater Pollution Prevention Plan

Lake Transit would seek to update the existing M&O facility's Industrial Storm Water NPDES permit which controls pollutants in storm water discharges during Project operations. The Industrial SWPPP identifies storm water drainage patterns, discharge locations, and potential sources of storm water pollution and includes site-specific BMPs that must be implemented to prevent storm water pollution. A dedicated Pollution Prevention Team is responsible for compliance with the requirements of the Industrial General Permit through proper implementation of the Industrial SWPPP.

Compliance with Tree Ordinance

The Project would seek a native tree removal permit for trees identified as protected by City of Clearlake Municipal Code Section 18-40.020 (Protected Trees), and comply with zoning clearance and planting replacement to the satisfaction of the City of Clearlake planning department.

1.8 Required Agency Approvals

The project may require the following approvals:

City of Clearlake

- Conditional Use Permit (CUP) and Design Review (DR)
- Oak Tree Removal Permit
- Grading Permit
- Building Permit
- Encroachment Permit for work along Dam Extension Road and S. Center Drive

Lake County

- Grading Permit
- Building Permit

Lake County Fire Protection District

- Plan Check Review
- Solar Plan Review

1.9 Tribal Consultation

On January 19, 2022, Lake Transit sent a tribal consultation invitation to the Elem Indian Colony, Habematolel Pomo of Upper Lake, Big Valley Rancheria, Scotts Valley Rancheria, Robinson Rancheria, Middletown Band of Pomo Indians, and Koi Nation with regard to the Project.

On March 16, 2022, Lake Transit met with Robert Geary, who represents the Habematolel Pomo Tribe and Koi Nation, to discuss the Project's potential for impacting tribal cultural resources. Subsequent to the meeting, the Habematolel Pomo Tribe provided their recommended *Treatment Protocol for Handling Human Remains and Cultural Items Affiliated with the Habematolel Pomo of Upper Lake*.

In addition, the Anthropological Studies Center (ASC) requested a review of the Native American Heritage Commission (NAHC) Sacred Lands File for information on Native American cultural resources in the Project area. NAHC responded that sacred resources may exist within the Project area and provided contact information for tribal communities that may have further information. On November 22, 2021, letters were sent to all of the individuals provided by the NAHC requesting any additional information or comments they have on the Project or Project Area. On December 6, 2021, Mr. Cromwell of the Robinson Rancheria responded recommending a cultural resource monitor be on site during the entire project. An additional email was sent on January 7, 2022, to Chairperson Beltran of the Koi Nation requesting any additional information regarding the sacred site identified by the NAHC. Chairperson Beltran responded that same day stating that he would like to have a Cultural Resource Monitor present for the project and requested more information (Dino Beltran 2022, pers. comm.). Project information, including a map was sent to Chairperson Beltran, also that same day.

For a summary of the investigation and mitigation measures related to cultural and tribal resources, see Section 3.5 Cultural Resources and 3.18 Tribal Resources.

1.10 Zero Emission Buses and Hydrogen Fuel Background

As stated in Section 1.2, Project Background and Objectives, California regulations and funding programs have driven an increase in ZEV, ZEB, FCEV, and alternative fuel infrastructure (including electric vehicle charging stations and hydrogen fueling stations). Additionally, Federal regulations, funding programs, and research programs support the development of hydrogen fueling infrastructure and hydrogen fuel use.

A summary of the most relevant federal and State actions is provided below. This section also contains a brief overview of how hydrogen FCEVs work, and safety, codes and standards that apply to FCEV and hydrogen fueling stations.

Federal Background

In 2003, President George W. Bush announced the Hydrogen Fuel Initiative. The Energy Policy Act of 2005, passed by Congress and signed into law by President Bush on August 8, 2005, reinforces Federal government support for hydrogen and fuel cell technologies. In 2006, the President announced the Advanced Energy Initiative to accelerate research on technologies with the potential to reduce near-term oil use in the transportation sector—batteries for hybrid vehicles and cellulosic ethanol—and advance activities under the Hydrogen Fuel Initiative (DOE 2014).

The US Department of Energy (DOE) Hydrogen Program, led by the Hydrogen and Fuel Cell Technologies Office (HFTO) within the DOE's Energy Efficiency and Renewable Energy (EERE) department, conducts research and development in hydrogen production, delivery, infrastructure, storage, fuel cells, and multiple end uses across transportation, industrial, and stationary power applications. The program also includes activities in technology validation, manufacturing, analysis, systems development and integration, safety, codes and standards, education, and workforce development. The DOE identifies a reduction of gasoline and diesel-fueled cars as integral for the US's energy security. The DOE EERE also runs the Alternative Fuels Data Center, which contains a clearing house of information on hydrogen laws, vehicles, regulations, benefits and considerations.

The National Renewable Energy Laboratory (NREL), a laboratory of the DOE, conducts hydrogen and fuel cell research and has determined that 100 percent of new bus sales can fully transition to ZEV by 2030 (NREL 2022a). NREL has stated that transit buses are one of the best early transportation applications for fuel cell technology (NREL 2022b).

On November 15, 2021, President Biden signed the Bipartisan Infrastructure Law. In December 2021, the DOE established a new Office of Clean Energy Demonstrations to oversee the $21.5 billion in Bipartisan Infrastructure Law funding for clean energy demonstration projects, including hydrogen. The law invests in deployment of electric vehicle (EV) charging infrastructure as one of many important ways to confront the climate crisis. The law also establishes a discretionary grant program for Charging and Fueling Infrastructure (Charging and Fueling Infrastructure Program) to strategically deploy publicly accessible EV charging infrastructure and hydrogen, propane, and natural gas fueling infrastructure along designated alternative fuel corridors or in certain other locations that are accessible to all drivers of such vehicles (FHWA 2021).

California Background

A wide, interconnected framework of State Executive Orders (EO), Assembly Bills (AB), Senate Bills (SB), State agency regulations, and State agency planning and funding documents rely on, plan for, and promote the installation of hydrogen fueling stations and use of hydrogen fuel in the transportation sector. These regulations, plans, and funding sources aim to reduce statewide GHG emissions, increase renewable

energy generation and use, decarbonize transportation, and improve air quality. These State actions include or rely on increasing hydrogen fueling infrastructure and FCEV. Relevant State targets for reducing greenhouse gases and increasing renewable energy are summarized in Table 1-5. An overview of State agency regulations and plans relevant to hydrogen fuels and infrastructure is provided in Table 1-6.

Table 1-5 State Greenhouse Gas Reduction Targets and Renewable Energy Goals

State Action	Targets or Goals
EO B-16-2012 *ZEV Mandate*	This EO orders State agencies to facilitate the rapid commercialization of ZEVs. The EO sets a target for the number of ZEVs in California as 1.5 million ZEVs by 2025. Also, the Executive Order sets as a target for 2050 a reduction of GHG emissions from the transportation sector equaling 80 percent less than 1990 levels.
SB 1505 *Environmental Performance Standards for Hydrogen Fuel*	Passed in 2006, the bill directs the California Air Resources Board (CARB) to adopt regulations to ensure production and use of hydrogen for transportation purposes would reduce greenhouse gas, criteria air pollutants, and toxic air contaminant emissions, as well as reduce dependence on petroleum.
EO B-30-15	Signed on April 29, 2015, contains the target of reducing GHG emissions to 40 percent below 1990 levels by 2030. The emission reduction is an interim-year goal to provide substantial progress toward the ultimate goal of reducing emissions by 80 percent below 1990 levels by 2050.
SB 32 and AB 197	Senate Bill (SB) 32, passed in 2016, extended the State's greenhouse gas reduction goals and codifies the GHG reduction target of 40 percent below 1990 levels by year 2030, consistent with EO B-30-15. The companion bill to SB 32, AB 197 provides additional direction to CARB in developing each update to the Scoping Plan
EO B-55-18	Signed in 2018, EO B-55-18 sets a statewide goal of achieving carbon neutrality by 2045
AB 8 and EO B-48-18	AB 8 directs the CEC and CARB to jointly prepare an annual report on the time and cost needed to attain 100 hydrogen refueling stations within the state. EO B-48-18 further directs the state to implement 5 million zero-emission vehicles by 2030, install 250,000 electric vehicle chargers, including 10,000 direct current (DC) fast chargers, and 200 hydrogen refueling stations by 2025.
EO N-79-20	This EO contains a goal of 100 percent of operating trucks and buses as ZEVs by 2045, where feasible.
SB 643	SB 643 requires the CEC, in consultation with the CARB and CPUC, to prepare a statewide assessment of FCEV fueling infrastructure and fuel production needs to support the adoption of zero-emission trucks, buses, and off-road vehicles to meet the goals and requirements of EO N-79-20 and regulations. The assessment will be completed by no later than December 31, 2023, and updated at least once every three years.
SB 350 *Clean Energy and Pollution Reduction Act*	Established clean energy, clean air, and greenhouse gas (GHG) reduction goals, including reducing GHG to 40 percent below 1990 levels by 2030 and to 80 percent below 1990 levels by 2050. SB 350 increases California's renewable electricity procurement goal from 33 percent by 2020 to 50 percent by 2030.

State Action	Targets or Goals
	SB 350 also directs State agencies to identify recommendations on how to increase access to zero-emission and near-zero-emission transportation options to low-income customers, including those in disadvantaged communities. SB 350 called for the formation of the Disadvantaged Communities Advisory Group (DACAG) to review and provide guidance on CEC and CPUC clean energy programs and determine whether those programs are effective and useful in disadvantaged communities. In spring 2019, the DACAG specifically advised the CEC to focus its Clean Transportation Program investments on zero-emission fuels.

Table 1-6 State Agency Hydrogen Regulations and Plans

Regulation or Plan	Description and Relation to Hydrogen Fuels and Infrastructure
California Air Resources Board	
2017 Climate Change Scoping Plan	Provides the strategy for achieving California's 2030 GHG target. Identifies electrification of the transportation sector using both electricity and hydrogen. Contains clean fuel goals of promoting research development and deployment of low carbon fuels such as renewable gas, including renewable hydrogen.
Draft 2022 Scoping Plan Update	The Draft 2022 Scoping Plan Update assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The Plan identifies clean energy production and distribution infrastructure as necessary for a carbon-neutral future. *The solution will have to include transitioning existing energy production and transmission infrastructure to produce zero-carbon electricity and hydrogen, and utilizing biogas resulting from wildfire management or landfill and dairy operations, among other substitutes.* And *Vehicles must transition to zero emission technology to decarbonize the transportation sector.* And *Electric vehicle chargers and hydrogen refueling stations must become easily accessible for all drivers to support a wholesale transition to ZEV technology.*
Low Carbon Fuel Standards	The Low Carbon Fuel Standard (LCFS) is designed to decrease the carbon intensity of California's transportation fuel pool and provide an increasing range of low-carbon and renewable alternatives, which reduce petroleum dependency and achieve air quality benefits. The LCFS incentivizes use of electricity and hydrogen as low carbon transportation fuels by providing several opportunities to generate LCFS credits.
Innovative Clean Transit Regulation	In 2019, the CARB passed the Innovative Clean Transit (ICT) Regulation, requiring all public transit agencies to transition to zero emission technologies by 2040. The ZEB percentage increases gradually with time. The ZEB purchase requirements begin in 2023 and 2026 for large and small transit agencies, respectively. Starting 2029, 100 percent of all transit agencies' new bus purchases must be ZEBs, with a goal of complete

Regulation or Plan	Description and Relation to Hydrogen Fuels and Infrastructure
	transition to ZEBs (all buses in each transit agency's fleet to be ZEBs) by 2040. The ICT regulation requires each transit agency to submit a complete Zero-Emission Bus Rollout Plan (Rollout Plan) before the ICT's ZEB purchase requirements take effect. On January 9, 2020, CARB issued the updated Zero-Emission Bus Rollout Plan Guidance for Transit Agencies. The Zero Emission Bus (ZEB) Rollout plan requirements differ based on fleet size: — Large fleet has 100 or more active buses — Small fleet has less than 100 buses Each transit agency would submit a transit board approved ZEB purchase and deployment plan — June 30, 2020, for large transit agencies — June 30, 2023, for small transit agencies CARB identified that the regulation would assist the State to achieve its mid- and long-term GHG targets, protect public health and address environmental impacts of climate change.
2016 Mobile Source Strategy	Reduce GHGs and other pollutants from the transportation sector through planned transition to zero-emission and low-emission vehicles, cleaner transit systems and reduction of vehicle miles traveled. Includes increase in hydrogen FCEV.
Revised Draft 2020 Mobile Source Strategy	SB 44, signed into law on September 20, 2019, requires CARB to update the 2016 Strategy by 2021 and every five years thereafter. Specifically, SB 44 requires CARB to update the 2016 Strategy to include a comprehensive strategy for the deployment of medium and heavy-duty vehicles for the purpose of meeting air quality standards and reducing GHG emissions. It also directs CARB to set reasonable and achievable goals for reducing emissions by 2030 and 2050 from medium- and heavy-duty vehicles that are consistent with the State's overall goals and maximizes the reduction of criteria air pollutants.
Draft Advanced Clean Fleet Rule	CARB is currently developing a zero-emission fleet regulation to establish zero-emission truck and bus procurement requirements for fleet operators. Draft requirements include: <u>Public Fleets</u> City, county, special district, and state agency fleets would purchase 50 percent ZEVs beginning in 2024 and 100 percent ZEVs by 2027.
California Energy Commission	
Draft Zero-Emission Vehicle Infrastructure Plan	The plan identifies the overall strategy to meet California's ZEV goals. The plan states that ZEV charging and hydrogen fueling infrastructure are critical to meeting California's clean transportation goals. (CEC 2022)
2021 Integrated Energy Policy Report (IEPR)	The California Energy Commission (CEC) is required by state law to conduct an assessment and forecast of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The CEC then uses the assessments and forecasts to develop energy policies. The 2021 IEPR includes an assessment of the benefits and contributions of Clean Transportation, including petroleum fuel and GHG reduction from hydrogen fueling infrastructure projects.

Regulation or Plan	Description and Relation to Hydrogen Fuels and Infrastructure
Clean Transportation Program	CEC is identified as the State's primary ZEV infrastructure planning agency. Through the Clean Transportation Program (formerly known as the Alternative and Renewable Fuel and Vehicle Technology Program), the CEC funds projects that will "develop and deploy innovative technologies that transform California's fuel and vehicle types to help attain the state's climate change policies." The CEC develops an Investment Plan and updates it each year to determine funding priorities and opportunities for the Clean Transportation Program. As stated by the CEC: *The Clean Transportation Program does not operate in a vacuum but within a context of several state funding programs, vehicle regulations, and agency collaborations. These include vehicle regulations and incentives developed by the California Air Resources Board (CARB), low-carbon fuel standards developed by CARB, infrastructure investments by investor-owned utilities overseen by the California Public Utilities Commission (CPUC), and broader business coordination with the Governor's Office of Business and Economic Development (GO-Biz). There is strong collaboration among the agencies on a regular basis and through the ZEV Market Development Strategy, spearheaded by GO-Biz. The projects supported by the Clean Transportation Program interact with and are informed by these other efforts. (CEC 2021)* The CEC's actions are further guided by state law that requires the CEC to prepare a statewide assessment of the charging infrastructure needed to achieve the goal of 5 million ZEVs on the road by 2030, assess the infrastructure needed to achieve full ZEV adoption within the coming decades. The recent CARB Mobile Source Strategy approximated this trajectory to include about 180,000 medium-and heavy-duty ZEVs by 2030 (including plug-in electric vehicles and fuel cell electric vehicles).

In addition to the items above, the California Governor's Office of Business and Economic Development has published Hydrogen Station Permitting Guidebook. Per the guidebook:

> *The Hydrogen Station Permitting Guidebook is intended to help local jurisdictions and hydrogen station developers navigate and streamline the station development process. It also provides stakeholders with background on hydrogen and fuel cell electric vehicles, California's efforts to accelerate infrastructure development, and insights into the upward momentum of this market since its launch in 2015.* (GO-Biz 2022)

Currently, the CEC's staff estimates that about 10,000 FCEVs were registered and operating in California in 2021. The CEC identified 52 retail hydrogen refueling stations that are open, with another 31 planned and under contract through the Clean Transportation Program (CEC 2022b).

Near Lake County, Alameda-Contra Costa Transit District (AC Transit) in San Francisco East Bay opened their first hydrogen fueling facility in 2011, and opened a second hydrogen fueling station in 2014. As of 2020, AC Transit operates 22 hydrogen fuel cell electric buses (FCEB) and plans on purchasing an additional 20 FCEB.

How A Fuel Cell Electric Vehicle Works

Within a FCEV, the fuel cell takes the chemical energy stored in pure hydrogen and converts it into electricity and heat. The only byproducts of the process are heat and water vapor. FCEV do not produce air

pollutant or greenhouse gas emissions (zero tailpipe emissions). The FCEV contains onboard batteries that are charged by the vehicle during operation, extending the distance the vehicle is able to travel.

FCEV are typically quieter than internal combustion vehicles. An average automobile operates at 65–75 decibels, and diesel buses operate at 100 decibels (dB). Fuel cell passenger vehicles and transit buses operate at 50–60 dB (CAFC 2022).

Refueling a FCEV is relatively fast: 3-5 minutes to refuel a passenger vehicle, 12-20 minutes for a 60-ft bus, and 6-10 minutes for a 40-ft bus. Safety systems at the station and on the vehicle are designed for a buoyant, gaseous fuel and are designed to work together. On the small chance that hydrogen does escape from the vehicle or station, it quickly disperses in the atmosphere. Because hydrogen systems are a closed-loop system, nothing drips or spills when vehicles are refueling (DOE 2014).

Safety, Codes and Standards

Hydrogen Properties

Hydrogen has a number of properties that are advantageous with regard to safety. It is much lighter than air and has a rapid diffusivity (3.8 times faster than natural gas), which means that when released in an open environment, it disperses quickly into a non-flammable concentration (DOE 2014). Hydrogen rises at a speed of almost 20 meters per second, twice as fast as helium and six times faster than natural gas. Because hydrogen is buoyant and disperses rapidly, it is less likely to be confined than other gases and therefore poses less risk as an asphyxiant.

Hydrogen is non-toxic and non-poisonous. It will not contaminate groundwater and is a gas under normal atmospheric conditions with a very low solubility in water. A release of hydrogen is not known to contribute to atmospheric pollution or water pollution (DOE 2014).

An explosion cannot occur in a tank or any contained location with only hydrogen. An oxidizer, such as oxygen, must be present. If a hydrogen tank is punctured, air cannot not enter a tank while hydrogen is escaping due to the design of hydrogen tanks and properties of hydrogen. Because of the buoyancy of hydrogen, escaped hydrogen rapidly disperses to low concentrations (DOE 2017). If hydrogen is released it will disperse upwards rapidly and will be in the flammable range for only a very short time (seconds to minutes) (NFPA 2016).

Hydrogen burns with a pale blue, nearly invisible, flame. A hydrogen flame is just as hot as a hydrocarbon flame (fueled by hydrocarbon products such as petroleum and natural gas). However, hydrogen flames have low radiant heat compared to a hydrocarbon fire; in other words, the levels of heat emitted from the flame are lower. This decreases the risk of secondary fires (DOE 2017).

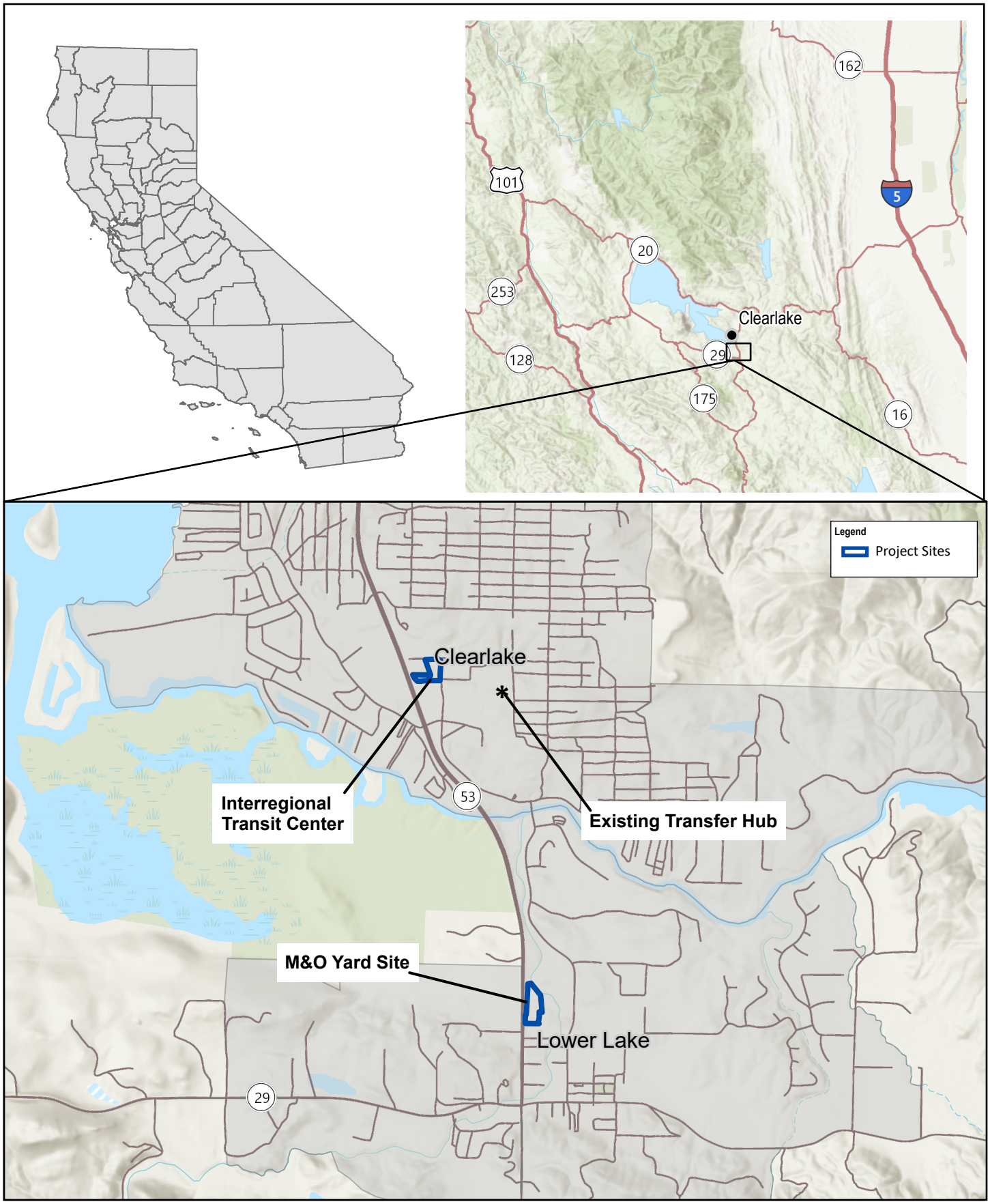
Regulations and Codes

Federal, State, and local codes and standards regulate the design, installation, and use of hydrogen fueling stations. A summary of applicable codes and standards is provided in Table 1-7. Additional codes and standards may apply, depending on the design, size, and components of a hydrogen fueling station.

Table 1-7 Codes & Standards for a Hydrogen Fueling Station

Standard	Description
Station Design	
California Title 24 Codes: – California Building Code, Part 2, Title 24 – California Electrical Code, Part 3, Title 24 – California Energy Code, Part 6, Title 24 – California Fire Code, Part 9, Title 24	California Title 24 contains requirements for a building's structural, mechanical, electrical, and plumbing systems, in addition to measures for energy conservation, sustainable construction, maintenance, fire and life safety, and accessibility.
Local fire and building codes.	Fundamental laws that the station will need to meet in order to be properly permitted to operate by the local government.
National Fire Protection Association (NFPA) 2 Hydrogen Technologies Code	This standard contains requirements for all things hydrogen. California first adopted NFPA 2 in 2014, and approved subsequent updates. The 2020 Edition of NFPA 2 as adopted by California in August 2020 as a supplement to the 2019 Title 24 Codes, effective July 1, 2021.
NFPA 70 National Electrical Code NFPA 79 Electrical Standard for Industrial Machinery	Basic electrical requirements are included in these two standards.
ASME B31 Pressure Piping ASME Boiler & Pressure Vessel Cod	Requirements for high pressure equipment and hydrogen storage tanks.
CSA/ANSI HGV 4.X standards for HRS components	Standards for hydrogen components, like hoses, valves, compressors, etc.
Station Fueling Protocol	
SAE J2601-2 Fueling Protocols Gaseous Hydrogen Powered Heavy Duty Vehicles CSA HGV 4.3 Test methods for hydrogen fueling parameter evaluation SAE J2601/4 Ambient Temperature Fixed Orifice Fueling**	These standards ensure the station fuels the vehicle properly.
Station Hydrogen Quality	
SAE J2719 Hydrogen Fuel Quality for Fuel Cell Vehicles ISO 14687 Hydrogen fuel quality — Product specification ISO 19880-8 Gaseous hydrogen — Fueling stations — Part 8: Fuel quality control	Fuel quality is important to ensure the station does not contaminate the vehicle. The California Fuel Cell Partnership recommends testing the fuel quality of the station when it is installed, periodically, and after any major repair.

Source: CAFCP 2021



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

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GHD

Lake County Transit Authority
Lake County
Interregional Transit Center

Project No. **12563411**
Revision No. **-**
Date **1/26/2022**

Regional Location Map

FIGURE 1-1

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California III FIPS 0403 Feet

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Lake County Transit Authority
Lake County
Interregional Transit Center

Interregional Transit Center Location

Project No. 12563411
Revision No. -
Date 8/4/2022

FIGURE 1-2

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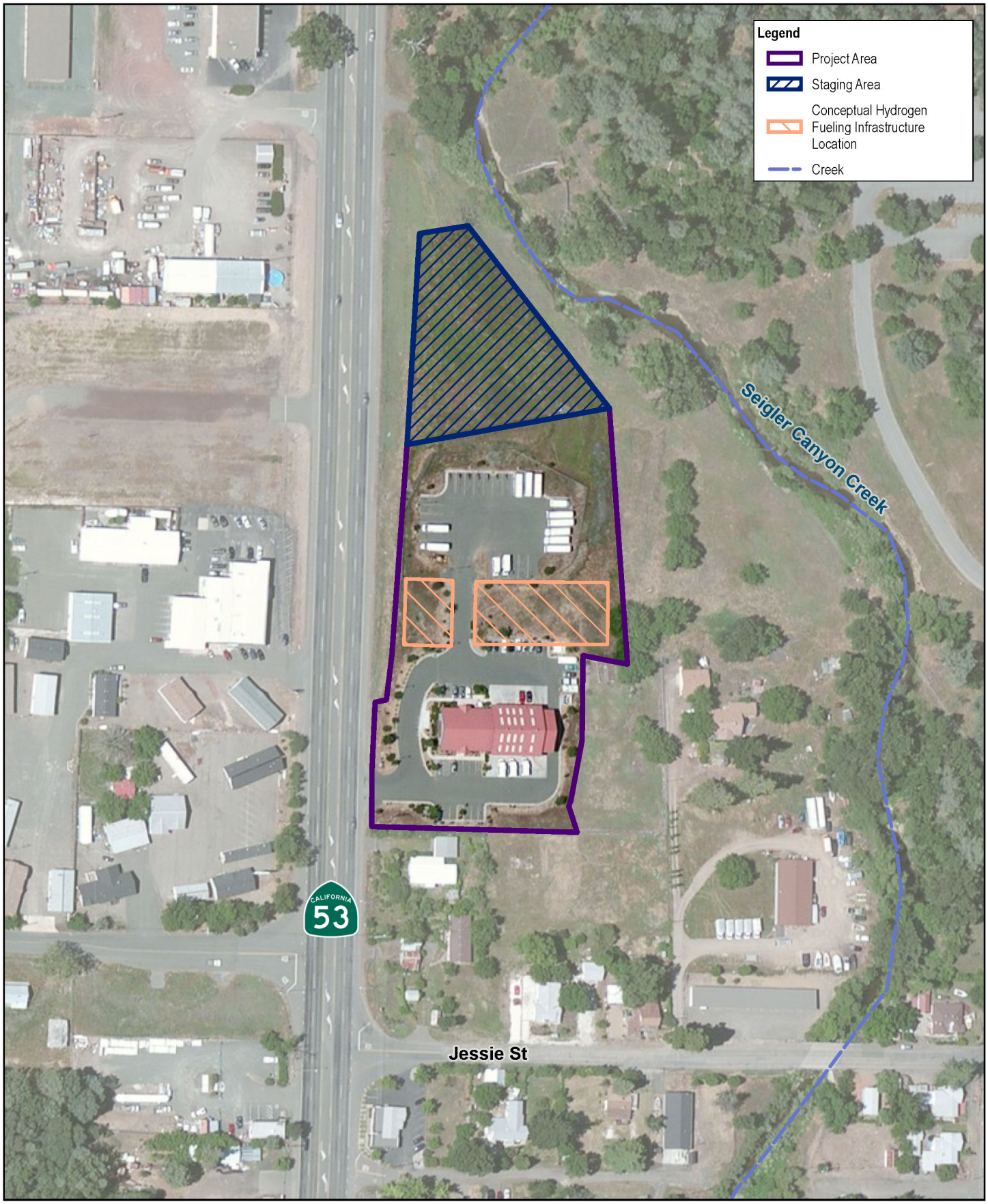
Data source: World Imagery (Clarity): Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Inside: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by:



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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California III FIPS 0403 Feet

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GHD

Lake County Transit Authority
Lake County
Interregional Transit Center

Project No. **12563411**
Revision No. **-**
Date **8/4/2022**

M&O Facility Location

FIGURE 1-3

\\ghdnet\ghd\US\Sacramento - 2200 21st\Projects\661\12563411\GIS\Maps\Deliverables\12563411_LTA\12563411_LTA.aprx - 12563411_03_M&O
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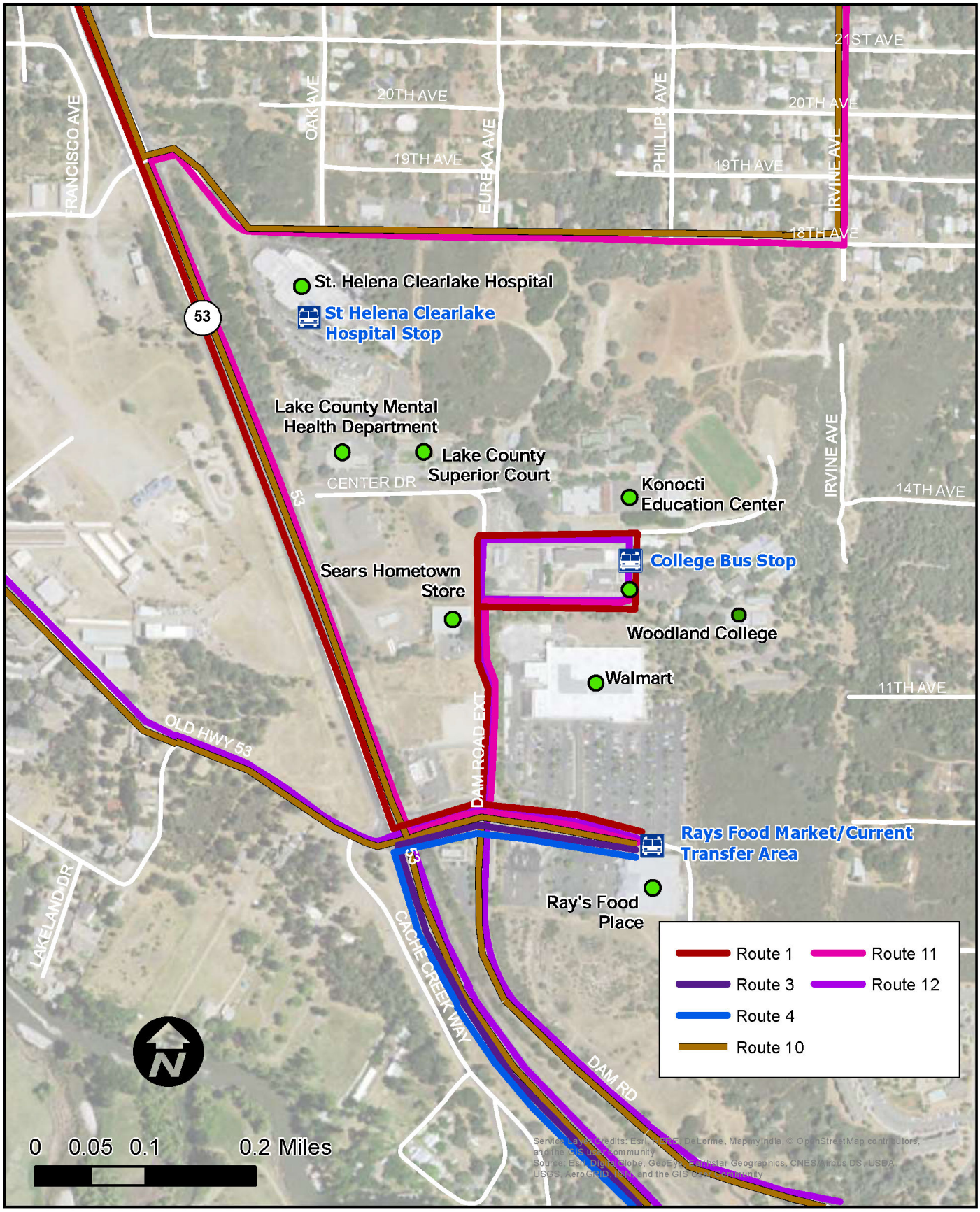

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Lake County Transit Authority
Lake County
Interregional Transit Center

Project No. 12563411
Revision No. -
Date 12/13/2021

Existing Transfer Hub Location

FIGURE 1-4

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Data source: . Created by: ethompson3

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Lake County Transit Authority
Lake County
Interregional Transit Center

Existing Route Service
Clearlake & Lower Lake

Project No. 12563411
Revision No. -
Date 12/13/2021

FIGURE 1-5

\\ghdnet\ghd\US\Sacramento - 2200 21st\Projects\561\12563411\GIS\Maps\Deliverables\12563411_LTA\12563411_LTA.aprx - 12563411_05_ExsClearLower
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Lake County Transit Authority
Lake County
Interregional Transit Center

Existing Route Service
Intercity

Project No. 12563411
Revision No. -
Date 8/4/2022

FIGURE 1-6

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Print date: 04 Aug 2022 - 17:01

Data source: Created by: ethompson3

LEGEND

1. Transit Building
2. Seating under Breezeway
3. Solar Panels on South and West Facing Sides of the Transit Building
4. North Bus Shelter
5. Bike Lockers
6. Bike Lanes
7. East Bus Shelter
8. Electric Bus Charging Stations (3 Stations)
9. Parking Area (19 Spaces)
10. Electric Vehicle Charging Station
11. Greenspace Area with Park Benches and Low Maintenance, Drought Tolerant Plant Materials
12. Fence
13. Crosswalk
14. Concrete Sidewalk
15. Existing Tree

NOTES:

- Landscaping to be low maintenance, drought tolerant, and allow easy visibility for security (see standards for Crime Prevention Through Environmental Design).
- Benches to be designed to not encourage overnight uses.
- Solar lighting to be used throughout the site.

0 20 FT. 40 FT. 80 FT.
SCALE: 1 inch equals 20 FT.

DESIGNWORKSHOP
JANUARY 14, 2020

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Lake County Transit Authority
Lake County
Interregional Transit Center

Interregional Transit Center
Site Plan

Project No. **12563411**
Revision No. **-**
Date **8/4/2022**

FIGURE 1-7

\\ghdnet\ghd\US\Sacramento - 2200 21st\Projects\56\12563411\GIS\Maps\Deliverables\12563411_LTA\12563411_LTA.aprx - 12563411_07_PropITCS
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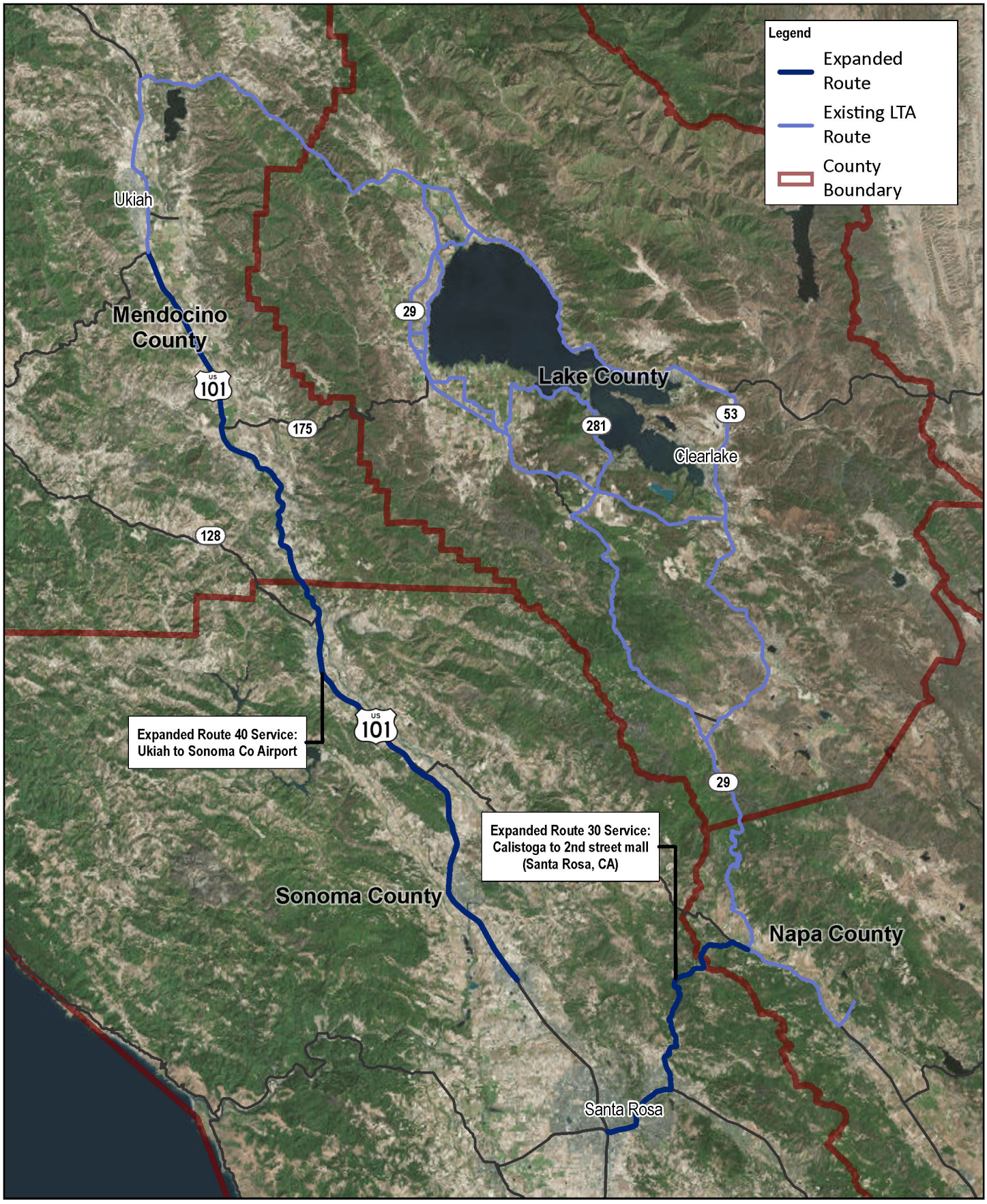

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California III FIPS 0403 Feet

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Lake County Transit Authority
Lake County
Interregional Transit Center

Proposed Expanded Intercity Route Service

Project No. 12563411
Revision No. -
Date 8/4/2022

FIGURE 1-8

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Data source: World Imagery (Clarity). Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by: ethompson3

2. Environmental Factors Potentially Affected

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

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

DETERMINATION (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

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

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

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

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

_____ _____

Lake Transit Signature Date

3. Environmental Analysis

3.1 Aesthetics

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

The Interregional Transit Center site is located within the City of Clearlake, adjacent to existing urban uses including commercial/retail uses and government service buildings. The proposed Interregional Transit Center would be visible from SR 53 and Dam Road Extension. Full design of the Interregional Transit Center has not been completed. However, conceptual plans for the center do not include any substantive vertical elements above a one-story building and breezeway.

The M&O facility site is visible from State Route 53, and adjacent to existing urbanized uses, rural residential, and open space. Full design of the M&O facility improvements has not been completed. However, typical elevations for proposed facilities would not exceed that of a standard one or two-story building.

a-c) Have a substantial adverse effect on a scenic vista, substantially damage scenic resource in within a state scenic highway, or substantially degrade existing visual character or quality of public views of the site and its surrounding? (Less than Significant)

This evaluation is applicable to Project features that would be located on or disrupt access to a scenic vista, or result in significant visual changes within its viewshed. A scenic vista can generally be defined as a viewpoint that provides expansive views of a highly valued landscape for the benefit of the general public.

City of Clearlake

Scenic places in the City are identified as city parks, vistas from the parks, SR 53 and Lakeshore Drive scenic drives, view corridors from Lakeshore Drive, “glimpses” of the lake, Clear Lake, Borax Lake, and Anderson Marsh Historic State Park (City of Clearlake 2017).

The Project site is zoned General Commercial (GC) by the City of Clearlake. Sections 18-9 of the City of Clearlake Municipal Code establish development standards for the General Commercial zoning designation. Because the project site is zoned GC, the proposed development would be subject to the requirements set forth in this section, as well as subject to all City standards for commercial uses such as lighting, parking, height regulations, and design review. The Interregional Transit Center would require an issuance of conditional use permit from the City. No variances to signage or height restrictions are anticipated.

The site is also located within the Scenic Corridor (SC) combining district due to the proximity to SR 53. The City’s Municipal Code, Section 18-13.010 states the purpose of the Scenic Corridor combining district is to “preserve the scenic quality of the land immediately visible from SR 53.”

County of Lake

The Lake County General Plan does not identify specific scenic corridors or vistas. However, the General Plan does include a number of applicable scenic resource policies.

The Project site is zoned Community Commercial (C2) by Lake County. Article 19 of the Lake County Municipal Code establishes development standards for the Community Commercial zoning designation. Because the project site is zoned C2, the proposed development would be subject to the requirements set forth in this Article, as well as subject to all County standards for commercial uses such as lighting, parking, height regulations, and design review. No variances to signage or height restrictions are anticipated.

Project Analysis

The Project sites are not located near an officially designated state scenic highway. The nearest designated scenic highway is Route 12, more than 30 miles away. SR 53 is identified as ‘eligible’ for scenic highway designation, but is not officially designated as such. Therefore, the Project would have no impact on scenic resources within a State Scenic Highway.

The Project’s Interregional Transit Center is located within an urbanized area. The M&O facility improvements are located in an urbanized area of Lake County (identified as an urban growth area by the County General Plan). City and County review and approval of the Interregional Transit Center and M&O facility improvements, respectively, is a component of the anticipated design review.

Most of the Project improvements would be at ground level (parking lot, landscaping). Other improvements, such as fencing, the Interregional Transit Center, and lighting poles would not exceed the height of adjacent and nearby existing facilities. The proposed facilities would be consistent in height and dimensions with existing commercial and industrial facilities in the viewshed. The Project would not block or substantially obscure views of Clear Lake, mountain views, SR 53, or Dam Road Extension. The Project facilities would not be located on a scenic vista. Public views of the regional scenic resources would not be substantially altered or disrupted by the Project. The Project impact on a scenic vista would be less than significant.

The proposed Project facilities would be located either within the existing M&O facility site, or adjacent to similar existing infrastructure (Interregional Transit Center). Once constructed, the above-ground improvements would not be readily distinguishable from the existing infrastructure currently present in the area. The new facilities would be placed consistent with setback requirements and height limitations of the

respective zoning designations. Therefore, the Project improvements would not conflict with applicable zoning and, therefore, would have no related aesthetic impacts.

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

Nighttime construction work is not anticipated to be required for the Project. Therefore, no exterior lighting would be required during construction, and no impact would result.

The Project improvements would be located within an urbanized environment (Interregional Transit Center) and existing developed area (M&O facility), and adjacent to an urban area where nighttime lighting currently exists, including existing parking lot lighting and street lighting. In addition, the M&O facility site has existing lighting similar to that which would be installed as part of the Project. The proposed new lighting would be located within the Project site and focused onto the areas within the site.

The Project lighting would be designed to be consistent with City and County zoning (as applicable), which regulate lighting to balance the safety and security needs for lighting with the City and County's desire to preserve dark skies and to ensure that light trespass and glare have negligible impact on surrounding property (especially residential) and roadways.

City review and approval of the lighting design is a component of the anticipated Conditional Use Permit and design review. The zoning code includes standards for fixtures, shielding, placement, height, energy efficiency, and illumination levels. To comply with these requirements, specific design preferences would include directing light downward and away from other properties, shielding lights, avoiding brightly illuminated vertical surfaces where feasible, such as walls and lamp poles, and using the minimum lumens necessary. Given the Project's compliance with the design requirements mentioned above, light emissions would be minimized, and potential light or glare impacts would be less than significant.

3.2 Agriculture and Forest Resources

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

a-e) 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? (No Impact)

The Project would not be located on lands designated as Prime Farmland, Unique Farmland or Farmland of Statewide Importance (CDC 2016), nor on land under a Williamson Act contract. The Interregional Transit Center site is designated Commercial by the City of Clearlake General Plan, and zoned CG (General Commercial) under the City's municipal code. The Lake County General Plan land use designation for the M&O facility improvement site is Cc (Community Commercial). The County zoning for the site is C2 (Community Commercial).

The Project would not be constructed on land zoned for agricultural or forestland uses. Thus, the Project would not convert Important Farmland, land under a Williamson Act contract, or forest land to other uses, nor conflict with zoning for agricultural or forestry uses. No impact to agriculture or forestry resources would result

3.3 Air Quality

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				✓
b) Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?				✓
c) Expose sensitive receptors to substantial pollutant concentrations?			✓	
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?			✓	

The Project sites are located within the Lake County Air Basin (LCAB) and are under the jurisdiction of the Lake County Air Quality Management District (LCAQMD). Lake County is currently designated as attainment or unclassified for all federal and state ambient air quality standards.

As the LCAQMD does not have an attainment plan or recommended thresholds of significance for use in CEQA, LCAQMD refers to the Bay Area Air Quality Management District (BAAQMD)'s recommended CEQA Guidelines to evaluate a project's potential air quality impact.

A Health Risk Assessment evaluation was prepared for the Project to identify potential health risk impacts associated with the construction of the Project and operation of the Interregional Transit Center (Illingworth and Rodkin, Appendix A).

a-b) Conflict with or obstruct implementation of the applicable air quality plan, or result in a cumulatively considerable net increase in any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard? (No Impact)

These impacts relate to consistency with an adopted attainment plan and increasing emissions of non-attainment criteria pollutants. Lake County is currently designated as Attainment or Unclassified for all federal and state ambient air quality standards, and does not have an applicable air quality attainment plan. As there is no applicable air quality plan, and the area is not designated non-attainment for any criteria pollutant, the Project would have no impact.

The BAAQMD, which oversees air quality in the San Francisco Air Basin, has published CEQA Guidelines to assist projects in assessing potential air quality and greenhouse gas impacts under CEQA. The San Francisco Air Basin, in contrast to the LCAB, is designated as nonattainment for state and federal ozone standards, and nonattainment for state particulate matter (PM) standards. Specifically, the San Francisco Air Basin is designated nonattainment for state PM10 and PM2.5 standards. The BAAQMD's CEQA Guidelines provide thresholds of significance, screening criteria and levels, and impact assessment methodologies. As provided by the BAAQMD's guidance, if the Project meets the screening criteria for an

impact category, and is consistent with the methodology used to develop the screening criteria, then its air quality impact for that category may be considered less than significant (BAAQMD 2017).

The BAAQMD's relevant screening criteria land use type would be 'Government (Civic Center)'. The BAAQMD's screening criteria for operational and construction-generated criteria pollutants are 149,000 square feet of facility and 277,000 square feet of facility, respectively. The BAAQMD's screening criteria for General Light Industry are 541,000 sf of facility and 259,000 square feet of facility.

The Project facilities, including the 2,160 square foot Interregional Transit Center, and M&O facility improvements, would not exceed the BAAQMD's recommended screening criteria for Government or General Light Industry.

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

Sensitive receptors are defined by the California Air Resources Board (CARB) as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Potential impacts are related to emissions of fugitive dust and diesel particulate matter (DPM).

Construction equipment and heavy-duty truck traffic generate DPM exhaust, which is a known toxic air contaminant. DPM is a human carcinogen and chronic (long-term) inhalation exposure to DPM poses a chronic health risk. DPM from equipment exhaust poses potential health impacts to nearby receptors if those receptors have prolonged exposure to substantial emissions. The LCAQMD has not established health risk thresholds. This assessment uses the BAAQMD's adopted health risk thresholds and assessment methodology, The Project's construction and operational impacts are assessed separately below.

Sensitive Receptor Locations

The closest sensitive receptors to the Interregional Transit Center are the children attending the Konocti Education Center (4th through 12th grade school) 188 feet east of the new transit center site. The Woodland Community College Childcare Development Center (i.e., campus daycare) is located approximately 755 feet east of the new center and the Adventist Health Care Center (i.e., hospital) is located approximately 680 northwest of the new center.

The nearest sensitive receptor to the M&O facility site is an existing residential unit located approximately 38 feet south of the M&O facility boundary, and 280 feet south of the proposed improvements. Additionally, Lower Lake Elementary and preschool are located approximately 715 feet and 575 feet east of the facility boundary, respectively. These receptor locations are located more than 700 feet east of the proposed improvements.

Construction

The types of air pollutants generated by construction activities are typically nitrogen oxides and particulate matter, such as dust and exhaust. Construction activities could temporarily increase levels of PM2.5 and PM10 downwind of construction activity. These are temporary emissions that vary considerably from day-to-day and by the type of equipment and weather. In addition, CO and reactive organic gases are emitted during operation of gas and diesel-powered construction equipment.

For construction related PM2.5 and PM10 dust, the BAAQMD recommends incorporation of best management practices (BMPs) to reduce localized dust impacts to less than significant. As described in Section 1.3, Construction Best Management Practices, the Project would incorporate the BAAQMD's Basic

Construction Measures for fugitive dust. Therefore, the Project would adhere to the basic construction measures recommended by BAAQMD, and the construction-phase impacts from fugitive PM2.5 and PM10 dust would be less than significant.

Construction equipment and heavy-duty truck traffic generate diesel particulate matter (DPM) exhaust, which is a known toxic air contaminant. DPM from equipment exhaust and PM2.5 pose potential health impacts to nearby receptors if those receptors have prolonged exposure to substantial emissions. As required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]), construction contractors would be required to minimize idling times for trucks and equipment to five minutes, as well as to ensure that construction equipment is maintained in accordance with manufacturer's specifications.

Construction is anticipated to occur up to 10 months for the Interregional Transit Center and 2 months for the M&O facility improvements. The majority of heavy-duty off-road construction equipment activity would be on the Interregional Transit Center site. Given the short duration of construction activity, limited daily activity, and continuous shifting of the construction activities, distance to receptors, and because emissions would dissipate rapidly from the source with an increase in distance, prolonged exposure of sensitive receptors to substantial pollutant concentrations would not occur. Therefore, the impact of construction-related emissions on sensitive receptors would be less than significant.

Operation

Operation of the Project’s M&O facility improvements are not anticipated to result in new or increased emissions of DPM or other toxic air contaminant. Therefore, the impact of operation of the M&O facility improvements on sensitive receptors would be less than significant.

The Project would result relocation of route services from the existing transfer hub to the new Interregional Transit Center, thereby relocating emissions associated with operating diesel-fueled buses closer to existing sensitive receptors. DPM emissions from operations of the Interregional Transit Center were estimated using the latest version of CARB’s EMFAC emissions model (i.e., EMFAC2021) and offsite DPM concentrations estimated using the U.S. EPA’s AERMOD model. Modeling assumptions, parameters, and output are provided in Appendix A.

Community health risk impacts associated with operation of the new transit center were assessed by predicting increased lifetime cancer risk and computing the Hazard Index (HI) for non-cancer health risks. Unlike cancer risk, HI values are not cumulative but based on the highest (or maximum) annual DPM concentration. The maximally exposed individual (MEI) is identified as the receptor that is most impacted by the project’s operation. As a result, the MEI would be located at the Konocti Education Center.

The community health risk impact results are provided in Table 3.3-1. The health risk analysis showed that increased cancer risks associated with the operation of the Interregional Transit Center at nearby sensitive receptor locations would be less than one in a million. Non-cancer health risks associated with chronic DPM exposure would be less than 0.1. As shown in the table, the calculated risks associated with operation of the Interregional Transit Center are well below the single source thresholds established by BAAQMD. The impact would be less than significant.

Table 3.3-1 Community Health Risk Impacts from Operation of the Interregional Transit Center

Sensitive Receptor Location (Receptor Type)	Cancer Risk (per million)	Hazard Index (maximum)
Konocti Education Center (4 - 12 School)	0.36	<0.1
Woodland CC Child Development Center (Daycare)	0.08	<0.1
Adventist Health (Infant @ Hospital)	0.25	<0.1
BAAQMD Single-Source Threshold	>10.0	>1.0

Illingworth & Rodkin, 2022. Appendix A

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

Implementation of the Project would not result in major sources of odor. The Project type is not one of the common types of facilities known to produce odors (i.e., landfill, coffee roaster, wastewater treatment facility, etc.). Minor odors from the use of equipment during construction activities would be intermittent and temporary and would dissipate rapidly from the source with an increase in distance. In addition, operation of the Project would not result in locating sensitive receptors near an existing odor source. Thus, the Project would not create objectionable odors affecting a substantial number of people. The impact would be less than significant.

3.4 Biological Resources

	Potentially Significant Impact	Less-than-Significant w/ Mitigation Incorporated	Less-than-Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		✓		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service?		✓		
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		✓		
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			✓	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			✓	
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				✓

Biological Resources Evaluation

A Biological Resources evaluation was prepared for the Project to identify any special-status plant and wildlife species and sensitive habitats (including wetlands) that have the potential to occur on or in the vicinity of the Project site (GHD 2022, Appendix B). The assessment included literature and database searches as well as site surveys to determine what species might have potential to be present on the Project site. Database searches included the California Natural Diversity Database (CNDDB), California Native Plant Society (CNPS) Inventory of Rare and Endangered Vascular Plants, U.S. Fish and Wildlife Service (USFWS) Information for Planning and Conservation, and the National Oceanic and Atmospheric Administration (NOAA) Fisheries West Coast Region California Species List Tools. The database searches encompassed the U.S. Geological Survey (USGS) quadrangles (quads) centered on the Project area quad (Lower Lake).

A reconnaissance field survey was conducted by a GHD Biologist on December 28, 2021. The survey methods were intended to identify sensitive habitat and detect wildlife activity. The survey included a

physical search of the area, including inspecting the ground, shrubs, holes, and trees for the presence of any wildlife species. Additionally, the bark of vegetation and the ground layer under vegetation were inspected for evidence of wildlife species, such as feathers, pellets, whitewash, scat, and tracks. This reconnaissance-level site visit was conducted to identify general special status resources and habitat within the Project site.

A seasonally appropriate, protocol level botanical survey was conducted by qualified GHD Botanist on April 25-26, and June 9-10, 2022. The survey included the Interregional Transit Center site and the M&O facility site, with the surveyor walking the perimeter and a meandering transect throughout the Project site boundary. The survey methods were intended to assess the potential for special status plants and Sensitive Natural Communities (SNCs) to occur within the Project site. Prior to surveys, the list of special status plant species derived from database queries, was analyzed to determine the potential to occur based on elevation and habitat suitability. Surveys were timed to capture all plant species with low to high potential to occur in the Project site.

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

Special-status species include those plant and wildlife species that have been formally listed, are proposed as endangered or threatened, or are candidates for such listing under the federal Endangered Species Act (ESA) or California Endangered Species Act (CESA). These acts afford protection to both listed and proposed species. Birds and raptors are protected under the federal Migratory Bird Treaty Act (50 CFR 10.13), and their nest, eggs, and young are also protected under the California Fish and Wildlife Code (§3503, §3503.5, and §3513). In addition, California Department of Fish and Wildlife (CDFW) Species of Special Concern, which are species that face extirpation in California if current population and habitat trends continue, U.S. Fish and Wildlife Service (USFWS) Birds of Conservation Concern, and CDFW special-status invertebrates, are all considered special-status species. Although CDFW Species of Special Concern generally have no special legal status, they are given special consideration under CEQA. Plant species on California Native Plant Society (CNPS) Inventory of Rare and Endangered Plants with California Rare Plant Ranks (Rank) of 1, 2 and 4 are also considered special-status plant species and must be considered under CEQA. Bat species designated as “High Priority” by the Western Bat Working Group (WBWG) qualify for legal protection under Section 15380(d) of the CEQA Guidelines. Species designated “High Priority” are defined as “imperiled or are at high risk of imperilment based on available information on distribution, status, ecology and known threats.”

A Biological Resources Technical Memorandum was prepared for the Project to evaluate the potential for special-status plant and wildlife species and sensitive habitats to occur on or in the vicinity of the Project site (GHD 2022, Appendix B). The assessment included literature and database searches as well as site surveys to determine what species and habitats have potential to be present on the Project site. The information and data collected for the assessment have been used as the basis of this biological resources analysis.

Construction

Special-status Plant Species

The database review of the California Natural Diversity Database, California Native Plant Society Inventory of Rare and Endangered Vascular Plants, and U.S. Fish and Wildlife Service Information for Planning and

Consultation showed one-hundred seven (107) special status plant species known to occur within a 9-quad vicinity of the Project site. Based on species specific habitat requirements and habitat availability within the Project site, two (2) special status plant species were determined to have moderate or high potential to occur within the Project site, and include Konocti manzanita (*Arctostaphylos manzanita ssp. elegans*) and Baker's Navarretia (*Navarretia leucocephala ssp. bakeri*).

However, no special status plant species were observed at the Project site during the seasonally appropriate protocol level botanical survey. Therefore, the project would not impact a special-status plant. There would be no impact.

Special-status Wildlife Species

Literature and database searches showed thirty-six (36) special status wildlife species known to occur within a 9-quad vicinity of the Project site. Based on species specific habitat requirements and habitat availability within the Project site, nine (9) special status wildlife species were determined to have moderate or high potential to occur within the Project site and include the pallid bat (*Antrozous paalidus*), silver-haired bat (*Lasionycteris noctivagans*), western red bat (*Lasarius blossevillii*), hoary bat (*Lasiurus cinereus*), long-eared myotis (*Myotis evotis*), fringed myotis (*Myotis thysanodes*), Cooper's hawk (*Accipiter cooperii*), purple martin (*Progne subis*), and western pond turtle (*Emys marmorata*).

No special status wildlife species were observed during wildlife habitat assessment field survey. However, the Project site contains potential habitat for some special status bats, a special status reptile, and special status and other migratory birds.

Bats

Vegetation and structures on the Project site provide habitat to a variety of bat species. Construction of the Project may adversely impact special-status bat species through the removal or modification of vegetation or structures and due to ground disturbance. If special-status bats were adversely affected, a significant impact would potentially occur. Mitigation Measure BIO-1 is designed to avoid adverse impacts to special-status bats which may be present in the Project Area, including the pallid bat, silver-haired bat, western red bat, hoary bat, long-eared myotis, fringed myotis. With implementation of Mitigation Measure BIO-1, the impact to special-status bats would be reduced to a less-than-significant level.

Western Pond Turtle

No on-site streams or creeks are present on the Project site. Siegler Creek is located north and east of the M&O facility site. The Project site is outside of the riparian habitat corridor associated with Seigler Canyon Creek. The Anderson Marsh, and associated Anderson Marsh State Historic Park (AMSHP), is located between the two Project areas.

Pond turtles occur in a variety of permanent and semi-permanent freshwater aquatic habitats including lakes, rivers, ponds, creeks, and marshes. The species is frequently observed basking on exposed banks, logs, and rocks. Winter activity is possible but limited to unusually warm, sunny days; normally pond turtles are dormant during winter months on the north coast; dormancy typically involved burrowing into loose substrate above the high-water mark. Overwintering sites can include undercut banks, burrowing under leaf/needle litter, or in soil or mud. The species has been known to travel into upland habitats around their main water body.

The western pond turtle has a moderate potential to occur at the M&O facility site due to the proximity of the site to Seigler Canyon Creek. Specifically, the future solar facility-portion of the site (currently an open field) may provide suitable habitat for this species. Closest known record is from 6.25 miles west of the Project

Area (CDFW 2022). If construction within the future solar facility-portion of the site occurred while pond turtles were present, it would be considered a potentially significant impact. Mitigation Measure BIO-2 is designed to avoid adverse impacts to western pond turtles. With implementation of Mitigation Measure BIO-2, the impact to western pond turtles would be reduced to a less-than-significant level.

Aquatic Resources

Water quality in Seigler Canyon Creek could be affected by run-off, erosion, sedimentation, leaking equipment, chemical/material spills, or trash/debris. Construction activities could degrade water quality and/or increase erosion within or near Seigler Canyon Creek if not managed properly. No project improvements are proposed within Seigler Canyon Creek. As described in Section 1.7 (Compliance with Existing Regulations and Standard BMPs), the Project would include erosion and sediment control measures required within a Construction SWPPP, and address pollutant sources and implement best management practice within and around the work area to prevent pollutants from entering the creek. Therefore, the impact to water quality in Seigler Canyon Creek would be less than significant.

Passerines and Raptors

Several trees on the Project site and within the Project vicinity that may provide suitable nesting habitat for common avian species protected by the federal Migratory Bird Treaty Act (MBTA) and California Fish and Game Code (FGC). If trees were to be removed or trimmed while a special-status bird or bird protected under the MBTA were present (nesting), or be juxtaposed to vegetation with a nesting bird, it could be injured or abandon its nest, both of which will be considered a potentially significant impact. Mitigation Measure BIO-3 is designed to avoid adverse impacts to nesting birds resulting from vegetation removal during the breeding season. Bird species to be protected by this mitigation measure include all birds protected under the MBTA, Cooper's Hawk, and purple martin. With implementation of Mitigation Measure BIO-3, the impact to nesting birds would be reduced to a less-than-significant level.

Operation

The Project would result in operation of a new Interregional Transit Center, hydrogen fueling infrastructure at the existing M&O facility, and a future solar facility. Potential impacts to special status species are not expected to differ from existing uses at the Project site.

Project improvements include installation of lighting at the Interregional Transit Center and the M&O facility. The Project lighting would be designed to be consistent with City and County zoning (as applicable), which regulate lighting to balance the safety and security needs for lighting with the City and County's desire to preserve dark skies and to ensure that light trespass and glare have negligible impact on surrounding property and roadways. Given the design requirements of the lighting and limited extent of lighting, operational nighttime lighting is not anticipated to impact the foraging ability of bats. The potential impact related to the proposed lighting and other operations would be less than significant.

Mitigation Measures

Implementation of Mitigation Measures BIO-1 and BIO-3 would reduce impacts to bats and nesting birds by limiting construction and vegetation removal to specified work windows, and if that is not feasible, then by providing a procedure to follow to identify nests and/or roosts and establish buffers and other avoidance measures until nesting and/or roosting is complete. Implementation of Mitigation Measure BIO-2 would reduce the construction-related impacts on western pond turtles to a less-than-significant level by locating any potential active nests before the start of construction and establishing buffers and avoiding nests if found.

With the implementation of Mitigation Measures BIO-1 through BIO-3, the potential impact on special status species and communities would be less than significant.

Mitigation Measure BIO-1: Avoid Impacts to Special-Status Bats

Prior to construction, including any tree removal or trimming, Lake Transit shall have a qualified bat biologist conduct a Habitat Assessment for special-status bats, focusing on the trees to be removed. Survey methodology shall include visual examination of suitable habitat areas for signs of bat use and may utilize ultrasonic detectors to determine if special status bat species utilize the vicinity.

Removal of trees that potentially support a bat maternity roost should only occur between September 1 and October 15, after the young have learned to be self-sufficient but before hibernation. Trees supporting bats should not be removed while bats are hibernating between October 15 and March 15 or otherwise while bats are present.

If a special-status bat species is found, or if suspected day roosts for special-status bats are identified, then the Habitat Assessment shall identify suitable performance measures for avoiding impacts to roosts, which may include, but would not be limited to:

- Consultation with the California Department of Fish and Wildlife to determine appropriate measures for protecting bats with young if present, and for implementing measures to exclude non-breeding bat colonies during construction process.
- Phased removal of trees where selected limbs and branches not containing cavities are removed using chainsaws on the first day, with the remainder of the tree removed using chainsaws or other equipment on the second day.

If no bat utilization or roosts are found, then no further study or action is required.

Mitigation Measure BIO-2: Avoid Impacts to Western Pond Turtles

This measure applies to only to construction work conducted within 300 feet of Seigler Canyon Creek (survey zone). For construction activity outside of survey zone, no further mitigation is necessary. If construction activity within the survey zone occurs outside the western pond turtle nesting season, no further mitigation is necessary.

If work must be performed during the western pond turtle nesting season (April 1 – August 31), a qualified biologist shall conduct pre-construction surveys within 300 feet Seigler Canyon Creek no more than 7 days prior to the onset of construction activity withing that area. If western pond turtle nests are located, buffer zones and additional adaptive measures should be established by a qualified biologist until all hatchlings have left the nest. These adaptive measures may include, but are not limited to, relocation, exclusion buffers, or nest exclosures. Because turtles may move into and out of the area, the approved biologist will also conduct training for 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).

If western pond turtle nests are located, the approved biologist will be on site daily while construction-related activities are taking place within the survey zone and will inspect the Project site daily for western pond turtle prior to construction activities. Additionally, if erosion control is implemented within the survey zone, 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).

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 or it is determined that the turtle will not be harmed. Any trapped, injured, or killed turtles shall be reported immediately to the CDFW.

Mitigation Measure BIO-3: Avoid Impacts to Nesting Birds

Contractors shall attempt to remove trees and other vegetation that could potentially contain nesting birds outside the bird nesting season (March 1 - August 15) to avoid direct effects on special status and protected birds. If vegetation removal occurs outside the bird nesting season, no further mitigation is necessary.

If work must be performed during the avian nesting season (March 1 – August 15), a qualified biologist shall conduct pre-construction surveys within construction footprint and 300 feet of a tree, to check for bird nesting activity and to evaluate the site for presence of special-status bird species. The biologist shall conduct a minimum of one day pre-construction survey within the 7-day period prior to vegetation removal or ground-disturbing activities. If ground disturbance and vegetation removal work lapses for seven days or longer during the breeding season, a qualified biologist shall conduct a supplemental avian pre-construction survey before project work is reinitiated. If active nests are detected within the construction footprint or within 300 feet of construction activities, the biologist shall flag a buffer around each nest. Construction activities shall avoid nest sites until the biologist determines that the young have fledged or nesting activity has ceased. If nests are documented outside of the construction (disturbance) footprint, but within 300 feet of the construction area, buffers will be implemented as needed. In general, the buffer size for common species would be determined on a case-by-case basis in consultation with the CDFW. Buffer sizes will take into account factors such as (1) noise and human disturbance levels at the construction site at the time of the survey and the noise and disturbance expected during the construction activity; (2) distance and amount of vegetation or other screening between the construction site and the nest; and (3) sensitivity of individual nesting species and behaviors of the nesting birds.

If active nests are detected during the survey, the qualified ornithologist shall monitor all nests at least once per week to determine whether birds are being disturbed. Activities that might, in the opinion of the qualified ornithologist, disturb nesting activities (e.g., excessive noise), shall be prohibited within the buffer zone until such a determination is made. If signs of disturbance or distress are observed, the qualified ornithologist shall immediately implement adaptive measures to reduce disturbance. These measures may include, but are not limited to, increasing buffer size, halting disruptive construction activities in the vicinity of the nest until fledging is confirmed, placement of visual screens or sound dampening structures between the nest and construction activity, reducing speed limits, replacing and updating noisy equipment, queuing trucks to distribute idling noise, locating vehicle access points and loading and shipping facilities away from noise-sensitive receptors, reducing the number of noisy construction activities occurring simultaneously, and/or reorienting and/or relocating construction equipment to minimize noise at noise-sensitive receptors.

b, c) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service, including wetlands? (Less than Significant with Mitigation)

No sensitive natural communities were observed within the Project site during the seasonally appropriate botanical surveys. The Project site is outside of the riparian habitat corridor associated with Siegler Canyon Creek.

Within the Interregional Transit Center site, there is a small, approximately 411 square foot area with hydrophytic (water-loving) plants on the southwest portion of the proposed construction staging area (see Figure 1-2). Hydrophytic plants indicate the potential for a wetland. The Project footprint would not result in impacts in this location of the Project site; therefore, no formal wetland delineation was conducted.

Near the M&O facility site, the National Wetland Inventory (NWI) shows Seigler Canyon Creek as a PEM1C freshwater emergent wetland.

Construction

As noted under Impact ‘a’, the Project would include erosion and sediment control measures required within a Construction SWPPP, and address pollutant sources and implement best management practice within and around the work area to prevent pollutants from entering the creek. The construction-related impacts to the riparian habitat would be less than significant. The Project is located outside of the riparian corridor. No other sensitive communities exist at the Project site.

Project improvements for Interregional Transit Center would not be located on potential wetlands. The presence of hydrophytic vegetation within the identified construction staging area indicates a potential wetland. A formal wetland delineation was not conducted; however, it is assumed that the location of hydrophytic vegetation is a wetland for the purposes of a conservative analysis. Direct or indirect impacts to the location of hydrophytic vegetation would, therefore, be considered a significant impact. Avoidance of the location through Mitigation Measure BIO-4 would reduce the impact to less than significant.

The Project improvements to the M&O facility, excepting for the future solar facility, would be located more than 100 feet from creek and beyond locations of potential emergent wetlands that may occur in proximity to the creek. Construction of the improvements would result in no impact.

Construction of the future solar facility-portion of the M&O site would occur at a later date depending on funding procurement. Wetland delineation determinations typically expire after five years, at which time the determination would require revisiting to determine if the delineation is still accurate or need revision due to changes in conditions. Because the future solar facility construction could occur within 100 feet of Seigler Canyon Creek, and because the creek is identified as a freshwater emergent wetland, construction occurring in proximity to the creek may impact potential wetlands. If wetlands are present within the footprint or construction boundary of the future solar facility, and if full avoidance of the wetland is not incorporated, the Project would be subject to permitting requirements of Section 401 and 404 of the Clean Water Act (CWA). Section 401 of the CWA requires any applicant for a federal license or permit, which involves an activity that may result in a discharge of a pollutant into waters of the U.S., obtain a certification that the discharge will comply with applicable effluent limitations and water quality standards. CWA 401 certifications are issued by RWQCBs under the California Environmental Protection Agency. Discharge of fill material into “waters of the U.S.,” including wetlands, is regulated by the USACE under Section 404 of the CWA. Compliance with permitting requirements, which include minimization, protection, and (where applicable) preservation, restoration, or compensation. Avoidance and mitigation of impacts through Mitigation Measure BIO-5 would reduce the impact to less than significant.

Operation

Project operation would not encroach into the riparian corridor for Seigler Creek. The potential impact from Project operations would be less than significant.

Mitigation Measures

With incorporation of Mitigation Measures BIO-4 and BIO-5, inadvertent indirect or direct impacts to wetlands and other Waters of the U.S. will be reduced or avoided by clearly delineating boundaries of disturbance activities, utilizing existing disturbed areas for access roads and appropriate staging of construction equipment. Additionally, Mitigation Measure BIO-5 requires preparation of a wetland delineation for the future solar facility site prior to the start of construction of that component. If wetlands are determined to be present and within the footprint or construction boundary for the future solar facility, the Project would secure required Section 401 and 404 wetlands permitting with state and federal agencies prior to construction. These potential inadvertent impacts to wetlands and Waters of the U.S. will be reduced to a less than significant level with mitigation.

Mitigation Measure BIO-4: Avoid Construction-related Impacts to Potential Wetlands and other Waters of the U.S.

Because implementing the Project directly or indirectly has the potential to inadvertently harm potential wetlands or Waters of the U.S., the following avoidance and minimization measures will be incorporated into the Project:

- The locations of potential wetlands and other Waters of the U.S. to be retained onsite during construction shall be clearly identified in the contract documents (plans and specifications).
- Before clearing and grubbing commences, disturbance areas and exclusion zones shall be flagged to clearly define the limits of the work area in the field with flagging or orange construction fencing and no activities shall occur inside the exclusion zones. The exclusion zone shall be, at minimum, a 20-foot no construction buffer zone established from the edge of the *Juncus effusus* hydrophytic vegetative community.
- Flagging or fencing shall remain in place for the duration of construction in the vicinity of the protected resources and shall be periodically inspected and repaired as needed to maintain the exclusion zone.

Mitigation Measure BIO-5: Avoid and Mitigate Construction-related Impacts to Potential Wetlands and other Waters of the U.S. from Future Solar Facility

Because implementing the Project directly or indirectly has the potential to inadvertently harm potential wetlands or Waters of the U.S. associated with Seigler Canyon Creek, the following avoidance, minimization, and mitigation measures will be incorporated into the Project for the future solar facility component. A wetland delineation determination will be conducted prior to the start of construction of the future solar facility.

- If no wetlands are found to occur within the Project footprint or construction area, no additional mitigation is required.
- If wetlands are found to occur within the Project footprint or construction area, the facility design and construction plan will attempt to avoid the wetlands. Avoidance and minimization measures to be implemented include:

- The locations of wetlands and other Waters of the U.S. to be retained onsite during construction shall be clearly identified in the contract documents (plans and specifications).
- Before clearing and grubbing commences, disturbance areas and exclusion zones shall be flagged to clearly define the limits of the work area in the field with flagging or orange construction fencing and no activities shall occur inside the exclusion zones. The exclusion zone shall be, at minimum, a 20-foot no construction buffer zone established from the edge of the wetlands.
- Flagging or fencing shall remain in place for the duration of construction in the vicinity of the protected resources and shall be periodically inspected and repaired as needed to maintain the exclusion zone.

If full avoidance of wetlands is not implemented, then Sections 404 and 401 of the Clean Water Act (CWA) require permitting and state certification for construction and/or other work conducted in "waters of the United States." Such work includes levee work, dredging, filling, grading, or any other temporary or permanent modification of wetlands, streams, or other water bodies. The Project would require both a RWQCB 401 Water Quality Certification and U.S Army Corps of Engineers (USACE) Section 404 permit. The Project will secure the RWQCB 401 and USACE Section 404 permits, as applicable and relevant.

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

Wildlife movement corridors are areas that connect suitable wildlife habitat areas in a region otherwise fragmented by extensive urban development, changes in vegetation, or human disturbance. Wildlife movement corridors are important because they provide access to mates, food, and water; allow the dispersal of individuals away from high population density areas, and facilitate the exchange of genetic traits between populations.

According to the CDFW BIOS Viewer version 6.22.0711, the Project site is not located within or near any natural landscape blocks identified by the California Essential Habitat Connectivity Project. The Project site is outside of the riparian habitat corridor associated with Siegler Canyon Creek and no other significant wildlife movement corridors or regional wildlife linkages were identified within the Project area. Construction and operation of the Project would not impact either the creek or the riparian corridor as improvements are outside of the riparian area. Therefore, wildlife and fish that may use this corridor would not be impeded. Impacts to wildlife migration would be less than significant.

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

The City of Clearlake has a Tree Ordinance (Municipal Code, Native Tree Ordinance, Section 18-40) for the protection of trees within the City. The tree ordinance requires permit for removal of native oak trees greater than 6 inches diameter at breast height (DBH) and trees designated as a "heritage tree" by the City Council, and prohibitions of disturbances within the root protection zone of protected trees. As described in Section 1.7 (Compliance with Existing Regulations and Standard BMPs), the Project would include compliance with the City Tree Ordinance requirements and obtain a tree removal permit. Therefore, the impact would be less than significant.

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

The Project site is not located within the boundaries of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. As such, the Project would not conflict with the provisions of an applicable plan. No impact would occur.

3.5 Cultural Resources

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

Archaeological Resources Study

An Archaeological Resources Study was prepared for the Project by the Anthropological Studies Center of Sonoma State University (ASC 2022). The study assessed the potential for surficial and/or buried archaeological and historical resources in the proposed improvement area through the completion of the following:

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

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

a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5? (Less than Significant)

CEQA Guidelines Section 15064.5(b) establishes the criteria for assessing a significant environmental impact on historic resources. That section states, “[a] project with an effect that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.” The CEQA Guidelines define substantial adverse change in the significance of an historical resource as a “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (Section 15064.5(b)(1)). The significance of an historic architectural resource is considered to be “materially impaired” when a project demolishes or materially alters the physical characteristics that justify the inclusion of the resource in the California Register of Historic Resources (CRHR), or that justify the inclusion of the

resource in a local register, or that justify its eligibility for inclusion in the CRHR as determined by the lead agency for the purposes of CEQA (Section 15064.5(b)(2)).

No historic-era resources are recorded or identified with the Project site. The Project Area's sensitivity for buried historic-era resources is low, as is the Project Area's sensitivity for unrecognized surficial historic-era resources. No evidence of the previously-identified historic-era artifact deposits were observed on the surface within the Project area. Therefore, the impact is less than significant. The potential for historic-period archaeological resources is evaluated in Impact 'b' below.

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

The Archaeological Resources Study conducted for the Project found no previously recorded cultural resources located within the proposed Interregional Transit Center Site. A pedestrian archaeological survey of the Interregional Transit Center site also identified no archaeological resources.

The Archaeological Resources Study found one previously recorded prehistoric cultural resource and one prehistoric archeological district on the M&O facility site, both primarily within the future solar facility-portion of the site. A pedestrian archaeological survey of the M&O facility site identified a previously unrecorded historic-era cultural resource partially within the site.

Background research indicates a high sensitivity for prehistoric archaeological resources on the surface, and a low sensitivity for historic-era archaeological resources on the surface (ASC 2022). The sensitivity for buried prehistoric archaeological resources in the improvement area is also considered high (ASC 2022).

A search of the NAHC's Sacred Lands File for Sacred Sites identified a sacred site within the vicinity of the Project site. Additionally, information suggesting the presence of sacred sites or archaeological resources was received from individuals or organizations contacted as part of the study. Such coordination included letters and telephone calls to Native American contacts provided by the NAHC. The potential exists for encountering previously undiscovered archaeological resources during Project construction. If such resources were to represent unique archaeological resources as defined by CEQA, any substantial change to or destruction of these resources would be a significant impact. Therefore, the impact is considered potentially significant.

Mitigation Measures

Implementation of Mitigation Measure CR-1 would reduce the potential impact to previously undiscovered archaeological or cultural resources to a less-than-significant level by requiring procedures to be taken in the event of inadvertent discovery of resources consistent with appropriate laws and requirements.

Mitigation Measure CR-1: Archaeological Inadvertent Discovery Procedures

Lake Transit shall ensure the following procedures are followed. If archaeological materials are encountered during initial ground-disturbing activities, work within 100 feet of a discovery shall be halted until a qualified archaeologist assesses the find, consults with the appropriate tribes and agencies, and makes recommendations for the treatment of the discovery to protect the integrity of the resource and ensure that no additional resources are affected. Upon completion of the assessment, the archaeologist shall prepare a report to document the methods and results of the assessment. The report shall be submitted to the City or County (as appropriate), appropriate tribes, and the Northwest Information Center upon completion. Following initial ground disturbance, in the event that any subsurface archaeological features or deposits, including locally darkened midden

soil, are discovered during later construction-related earth-moving activities, all ground-disturbing activity in the vicinity of the resource shall be halted, a qualified professional archaeologist shall be retained to evaluate the find, and the appropriate tribal representative(s) shall be notified. If the find qualifies as a historical resource, unique archaeological resource, or tribal cultural resource as defined by CEQA, the archaeologist, in consultation with tribes, shall develop appropriate measures to protect the integrity of the resource and ensure that no additional resources are affected. In considering any suggested measures proposed by the consulting archaeologist in order to mitigate impacts to historical resources or unique archaeological resources, the City or County (as applicable), in consultation with applicable Native American tribes, shall determine whether avoidance is necessary and feasible in light of factors such as the nature of the find, Project design, costs, and other considerations. If avoidance is infeasible, other appropriate measures (e.g., data recovery, reburial at another location within the site) shall be instituted. Work may proceed on other parts of the Project while mitigation for unique archaeological resources is being carried out.

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

Based on the archaeological field survey and records search performed for the Project, no indication of human burials was identified on the Project site (ASC 2022). Although no human remains have been directly observed, the possibility of encountering human remains during Project construction cannot be discounted. Therefore, the impact related to the potential disturbance or damage of previously undiscovered human remains, if present, is considered significant. Mitigation Measure CR- 2 would reduce the impact to a less-than-significant level by addressing discovery of unanticipated remains, associated grave goods, or items of cultural patrimony consistent with appropriate laws and requirements.

Following construction, no ground disturbing activities are anticipated to occur other than those related to routine maintenance of the Project, such as landscaping or irrigation repair. Therefore, it is unlikely any human remains would be encountered during operation. The operational impact would be less than significant.

Mitigation Measures

Mitigation Measure CR-2 would reduce the impact of construction activities on potentially unknown human remains to a less than significant level by addressing discovery of unanticipated remains, associated grave goods, or items of cultural patrimony consistent with appropriate laws and requirements.

Mitigation Measure CR-2: Protect Human Remains If Encountered during Construction

Lake Transit shall ensure the following measures are implemented to protect human remains. If human remains, associated grave goods, or items of cultural patrimony are encountered during construction, work shall halt within 100 feet of the find and the County Coroner shall be notified immediately. The following procedures shall be followed as required by Public Resources Code §5097.9 and Health and Safety Code § 7050.5. If the human remains are determined to be of Native American origin, the Coroner shall notify the Native American Heritage Commission within 24 hours of the determination. The Native American Heritage Commission shall then notify the Most Likely Descendant (MLD). The MLD shall complete an inspection and make its MLD recommendation for disposition of the remains within 48 hours of receiving access to the site. Lake Transit and the MLD shall make all reasonable efforts to develop an agreement for the treatment, with appropriate dignity, of any human remains and associated or unassociated funerary objects. Said determination may

include avoidance of the human remains, reburial on-site, or reburial on tribal or other lands that will not be subject to future disturbance. Any reburial of human remains shall be accomplished in compliance with the California Public Resources Code Sections 5097.98(a) and (b). Unless otherwise required by law, the site of any reburial of Native American human remains shall not be disclosed.

3.6 Energy Resources

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

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

Construction

Construction of the Project would involve grading, excavation, use of heavy machinery, and materials hauling as discussed in Section 1.5, Project Construction, and Section 3.3, Air Quality. Temporary energy use in connection with Project construction would include consumption of diesel fuel and gasoline by construction equipment and transport of earth moving equipment, construction materials, supplies, and construction personnel to and from the Project site. As summarized in Section 1.7, Compliance with Existing Regulations and Standards, implementation of Construction Best Management Practices is included as part of the Project, requiring provisions in contractor agreements for minimizing idling time to 5 minutes or less during construction, requiring construction equipment to be maintained per specifications established by the manufacturer, and using electric equipment and/or equipment using alternative fuels as feasible and appropriate. With implementation of such construction measures, the wasteful, inefficient, or unnecessary use of energy resources is not anticipated during Project construction. The impact would be less than significant.

Operation

Energy-consuming equipment anticipated to be used during operation of the Project includes mechanical and electrical equipment associated with the new Interregional Transit Center building, new lighting, fuel pumping, and (at a future date) onsite hydrogen generation. The proposed new lights would minimize energy consumption in accordance with City of Clearlake Zoning Code 18.22.080 (Energy Conservation).

The Interregional Transit Center would be designed and installed in accordance with applicable design standards, including Title 24 Building Energy Efficiency Standards for non-residential buildings. The Project would replace existing diesel-fueled bus trips with clean, zero emission bus trips. In the near-term, the Project would result in approximately 2 heavy-duty truck trips per month for hydrogen vendor fuel delivery to the M&O facility. Once onsite hydrogen generation facilities are installed, the Project would result in increased electricity consumption to operate the hydrogen electrolyzers. Additionally, the electric charging stations on the Interregional Transit Center would support the future use of Battery Electric Buses anticipated by other transit agencies.

As discussed in Section 1.10, Zero Emission Buses and Hydrogen Fuel Background:

- Lake Transit is required by State law to convert their bus fleet to ZEB
- The State is planning for and requiring an increase in hydrogen fuel generation and use within California to address climate change

Additionally, State laws require energy providers to increase procurement and delivery of renewable electricity. California's Renewables Portfolio Standard (RPS), as modified by SB 350, requires that retail sellers of electricity increase the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to 50 percent by December 31, 2030. SB 100 requires that 100 percent or retail sales of electricity be renewable by 2045. Hydrogen generated using renewable energy is, by extension, considered a renewable fuel.

It is noted that the Project's operational trips and electricity consumption are a necessary component of the Project and, therefore, would not constitute wasteful, inefficient, or unnecessary consumption of energy resources. The increase in energy demand resulting from the Project would not be expected to require or result in the construction of new sources of energy supplies or additional energy infrastructure capacity, and the Project would not conflict with applicable energy policies or standards. Therefore, operation of the Project would not use large amounts of energy nor use it in a wasteful manner. The operational impact would be less than significant.

b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency? (Less than Significant)

There are no local plans for renewable energy that would apply to the Project site. Implementation of the Project would not obstruct a state plan for renewable energy.

The City of Clearlake and Lake County General Plans include goals to promote energy-conserving features and clean alternative energy use in new construction (Policy CO 6.1.1 and Policy OSC-5.1, respectively).

Construction and operation of the Project would not conflict with or obstruct implementation of the General Plan goals. Project construction would not require a large amount of fuel or energy usage because of the limited extent and nature of the proposed improvements and the minimal number of construction vehicles and equipment, worker trips, and truck trips that would be required for a project of this small scale. Project operation would similarly utilize the minimum necessary energy to operate the facilities. No conflicts with a state or local plan for renewable energy or energy efficiency have been identified. Therefore, no impact would result.

3.7 Geology and Soils

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

The Project area is not located within an active Alquist-Priolo earthquake fault zone and no other active or potentially active faults have been mapped within the area. The closest mapped active fault to the sites is the Konocti Bay Fault Zone, located approximate 4 miles west of the Project (CDC 2021). As mapped by the California Department of Conservation, the Project sites are not located within identified liquefaction or landslide zones.

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

The Alquist-Priolo Act (Public Resources Code Sections 2621–2630) was passed in 1972 to mitigate the hazard of surface faulting to structures designed for human occupancy. The purpose of the Act is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The project site is not located within an active Alquist-Priolo earthquake fault zone, in which the state requires special studies for structures for human occupancy, and no other active or potentially active faults occur within the project site. The closest fault (Konocti Bay Fault Zone) is located approximately 4 miles west of the project site. Due to the distance from the project to the nearest recognized fault, the potential for ground surface fault rupture to occur at the project site is considered low. No impact would result.

a.ii) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking? (Less than Significant)

The Project area is located within a seismically active region where the project site would be susceptible to strong ground shaking due to seismic activities primarily along the Konocti Bay Fault Zone, which is the nearest active fault to the project site. Earthquake engineering design as required by the Uniform Building Code would reduce the probability of damage to the facilities during a seismic event. Therefore, the potential impact related to strong seismic ground shaking would be less than significant.

a.iii, c, d) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic related ground failure, including liquefaction, or expansive soils, or unstable geologic units or soils potentially result in on, or off, site landslide, lateral spreading, subsidence, liquefaction or collapse? (Less than Significant)

As stated in Section 1.7, Compliance with Existing Regulations and Standard BMPs, the Project would be designed and constructed in compliance with the site-specific recommendations in the Geotechnical Evaluation to be prepared for this Project. This would include design in accordance with recommendations for site preparation, grading, excavations, fill quality and placement, foundations, pavement sections, asphalt overlay, compactions, moisture barriers, and other factors. The geotechnical recommendations would be incorporated into the final plans and specifications for the project, and would be implemented during construction.

Implementation of the design recommendations included in the project geotechnical report would reduce the potential impact to people and structures due to liquefaction, and expansive or otherwise unstable soils, to less than significant.

a.iv) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides? (Less than Significant)

The Project site is located on relatively flat terrain. No landslides have occurred at the Project site in recent history. Project construction and operation would not increase the risk of landslides above existing conditions. The impact would be less than significant.

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

The Project site is relatively flat. Construction activities would include grading, cuts, and fills that have the potential to cause erosion. As described in Section 1.7, Compliance with Existing Regulations and Standard BMPs, the Project will prepare a Storm Water Pollution Prevention Plan (SWPPP) under the National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit) (Order No. 2009-0009, as amended by Order No. 2012-0006), which includes best management practices to prevent soil erosion. Compliance with the NPDES permit requirements would ensure that potential impacts from soil erosion or loss of topsoil during construction would be less than significant.

e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? (No Impact)

The Project would not install nor require the installation of septic tanks or alternative wastewater disposal systems where soil infiltration would be required. No impact would occur.

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

Paleontological resources are the remains or traces of prehistoric animals and plants. Paleontological resources, which include fossil remains and geologic sites with fossil-bearing strata are non-renewable and scarce and are a sensitive resource afforded protection under environmental legislation in California.

Since the Project does not include substantial excavation, it is unlikely that Project construction would impact potentially significant paleontological resources. Nonetheless, such an impact cannot be ruled out altogether. Therefore, the impact is potentially significant.

Mitigation Measures

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

Mitigation Measure GEO-1: Protect Paleontological Resources during Construction Activities

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

3.8 Greenhouse Gas Emissions

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

The LCAQMD refers to the BAAQMD's recommended CEQA Guidelines to evaluate a project's potential greenhouse gas impact. The BAAQMD publishes CEQA Air Quality Guidelines to assist local jurisdictions and lead agencies in complying with the requirements of CEQA regarding potentially adverse impacts to air quality and greenhouse gases.

On April 20, 2022, the BAAQMD adopted new thresholds of significance for climate impacts and substantiated the thresholds in the *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans* (Justification Report) (BAAQMD 2022). The BAAQMD analyzed what would be required of new land use development projects to achieve California's long-term climate goal of carbon neutrality by 2045, and identified specific measures for new land use development to address its "fair share" of implementing the goal of carbon neutrality by 2045. The BAAQMD's newly adopted thresholds for land use development are provided in Table 3.8-1. The BAAQMD did not adopt or provide recommended thresholds for construction-generated GHGs.

Table 3.8-1 BAAQMD Recommended GHG Thresholds of Significance for Land Use Projects

Thresholds for Land Use Projects (Must Include A or B)
A. Projects must include, at a minimum, the following project design elements: 1. Buildings a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development). b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines. 2. Transportation a. Achieve compliance with electric vehicle requirements in the most recently adopted version of CALGreen Tier 2. b. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA: i. Residential projects: 15 percent below the existing VMT per capita ii. Office projects: 15 percent below the existing VMT per employee iii. Retail projects: no net increase in existing VMT

Thresholds for Land Use Projects (Must Include A or B)
B. Projects must be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

Source: BAAQMD 2022

The BAAQMD provides that a lead agency should not use the BAAQMD-adopted threshold when the agency is, "faced with a unique or unusual project for which the analysis supporting the thresholds as described in this report do not squarely apply." The BAAQMD recommends that in such cases, the lead agency should develop an alternative approach that is more appropriate to the particular project before it, considering all the facts and circumstances of the project on a case-by-case basis.

This Project is, in fact, unique as a transit/transportation project, and is not suitable for thresholds that would apply to a standard land use project or typical commercial/residential development. The Project does not fit the activity, use, or emissions inventory profiles of typical commercial or residential land uses. The Project is a transit development, which would support bus trips (rather than light duty auto trips). Therefore, thresholds of significance for industrial development are more appropriate for the Project's analysis than thresholds developed for typical commercial or residential development.

A review of potential sources for thresholds of significance to apply includes:

- CARB's Mandatory Reporting Program for Greenhouse Gases (MRR) and Cap-and-Trade Program Regulatory Documents (including Initial and Final Statements of Reasons)
- South Coast Air Quality Management District's (SCAQMD) Agenda No. 31, Board Meeting December 5, 2008, Synopsis, and Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold (SCAQMD 2008)
- BAAQMD's California Environmental Quality Act Air Quality Guidelines (including Appendix D, Thresholds of Significance Justification) (BAAQMD 2017)
- Sacramento Metropolitan Air Quality Management District (SMAQMD) Guide to Air Quality Assessment in Sacramento County (SMAQMD 2021)

A review of the potential sources of thresholds is provided below.

CARB Background

The State has implemented a Cap-and-Trade program as a major climate program, effective 2012. As described in CARB's 2017 Scoping Plan:

> The Cap-and-Trade Program includes GHG emissions from transportation, electricity, industrial, agricultural, waste, residential and commercial sources, and caps them while complementing the other measures needed to meet the 2030 GHG target. Altogether, the emissions covered by the Cap-and-Trade program total 80 percent of all GHG emissions in California.

AB 32 also requires CARB to adopt regulations for the mandatory reporting of GHG emissions (MRR) in order to monitor and enforce compliance with CARB's GHG emissions reduction actions. The MRR and Cap-and-Trade programs use two emissions thresholds for determining compliance requirements:

- 10,000 $MTCO_2e$ Threshold for MRR reporting
- 25,000 $MTCO_2e$ "Major Source" Threshold for Cap-And-Trade Compliance

The 10,000 $MTCO_2e$ threshold is for entry into the MRR reporting system; the 25,000 $MTCO_2e$ threshold defines a 'major source' under the Cap-and-Trade program.

South Coast Air Quality Management District Guidance

The current SCAQMD guidance on assessing GHG emissions from industrial developments is to apply a 10,000 $MTCO_2e$/year threshold of significance. SCAQMD recommends including construction emissions amortized over 30 years added to operational GHG emissions to assess the significance of industrial projects under CEQA (SCAQMD 2008). SCAQMD's guidance references the CARB's MRR reporting threshold as informing the recommended threshold of significance (SCAQMD 2008). The SCAQMD threshold of 10,000 $MTCO_2e$/year is industry standard for industrial developments and is regularly used by agencies such as the Port of Los Angeles for industrial projects in the State of California.

Although the Project is not within SCAQMD's jurisdiction, GHG emissions are inherently global, not local, in nature; accordingly, it is appropriate to utilize guidance from jurisdictions where large scale industrial developments are more common.

Bay Area Air Quality Management District Guidance

2010 Thresholds/2017 Guidelines

In 2010, the BAAQMD adopted thresholds of significance for GHG impacts and updated their Guidelines to reflect the new thresholds. The BAAQMD's Guidelines were further updated in May 2017 to address the California Supreme Court's 2015 opinion in *California Building Industry Association vs. Bay Area Air Quality Management District, 62 Cal.4th 369*. The BAAQMD's 2017 Air Quality Guidelines provide the following project-level operational GHG thresholds of significance:

- For land use development projects, the threshold is compliance with a qualified GHG Reduction Strategy; or annual emissions less than 1,100 metric tons per year (MT/yr) of CO_2e; or 4.6 MT CO_2e/SP/yr (residents + employees). Land use development projects include residential, commercial, industrial, and public land uses and facilities.
- For stationary-source projects, the threshold is 10,000 metric tons per year (MT/yr) of CO_2e. Stationary-source projects include land uses that would accommodate processes and equipment that emit GHG emissions and would require an Air District permit to operate.

2022 Thresholds

On April 20, 2022, the BAAQMD adopted new thresholds of significance for climate impacts. The BAAQMD's Justification Report for the newly adopted greenhouse gas thresholds differentiates between thresholds and treatment of commercial/residential development and other projects. Per the Justification Report:

> The Air District has developed these thresholds of significance based on **typical residential and commercial land use projects** and typical long-term communitywide planning documents such as general plans and similar long-range development plans. As such, **these thresholds may not be appropriate for other types of projects that do not fit into the mold of a typical residential or commercial project** or general plan update.
>
> Lead agencies should keep this point in mind when evaluating other types of projects. A lead agency does not necessarily need to use a threshold of significance if the analysis and justifications that were used to develop the threshold do not reflect the particular circumstances of the project

> under review. Accordingly, a lead agency should not use these thresholds if it is faced with a unique or unusual project for which the analyses supporting the thresholds as described in this report do not squarely apply. In such cases, the lead agency should develop an alternative approach that would be more appropriate for the particular project before it, considering all of the facts and circumstances of the project on a case-by-case basis. (emphasis added)

Additionally, the BAAQMD's Justification Report states:

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

The BAAQMD's recommended 2022 thresholds differentiate between typical 'indirect' land uses (commercial or residential development) and other types of development such as industrial or transit land uses. As a transit/transportation development, the BAAQMD's recommended threshold would not apply to the proposed project.

Sacramento Metropolitan Air Quality Management District Guidance

The SMAQMD provides threshold of significance applicable to project construction and operation, as shown in Table 3.8-2.

Table 3.8-2 SMAQMD Greenhouse Gas Thresholds

Construction Phase	Operational Phase
1,100 $MTCO_2e$/Year	Demonstrate consistency with the Climate Change Scoping Plan by implementing applicable Best Management Practices (BMP), or equivalent on-site or off-site mitigation.
	All projects must implement tier 1 BMPs (BMP 1 & 2): *BMP 1* - projects shall be designed and constructed without natural gas infrastructure. *BMP 2* - projects shall meet the current CalGreen Tier 2 standards, except all electric vehicle capable spaces shall instead be electric vehicle ready. Projects that exceed 1,100 metric tons/year after implementation of tier 1 BMPs must implement tier 2 BMPs (BMP 3): *BMP 3* - residential projects shall achieve a 15% reduction in vehicle miles traveled per resident and office projects shall achieve a 15% reduction in vehicle miles traveled per worker compared to existing average vehicle miles traveled for the county, and retail projects shall achieve a no net increase in total vehicle miles traveled to show consistency with SB 743.

Source: SMAQMD 2021

Thresholds Applied to Project

Therefore, as the BAAQMD does not have recommended thresholds of significance to apply to construction-period emissions or transit projects, the SMAQMD and SCAQMD-recommended GHG methodologies and thresholds were applied as follows:

- Construction emissions are quantified and amortized over the life of the project, defined as 30 years, and added to the operational emissions for comparison against the threshold of significance (SCAQMD Methodology)

- Operational emissions are quantified and compared against the thresholds identified by SMAQMD and provided in Table 3.8-2 (SMAQMD Threshold)

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

The GHG analysis also discusses greenhouse gas emissions and consistency with the goals of the State of California's 2017 Climate Change Scoping Plan. If the Project meets the criteria laid out in applicable greenhouse gas emissions plans, policies, and regulations, then its impact for that category may be considered less than significant.

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

Construction emissions were estimated using CalEEMod 2020.4. Operational emissions for the Interregional Transit facility were also estimated using CalEEMod 2020.4. Details regarding the source equipment inventory, assumptions, and all data used to calculate construction-related and operational greenhouse gas emissions are available in Appendix D, GHG Emissions Modeling Output.

In order to assess the potential impact of construction-generated emissions, the construction GHG emissions are annualized over an assumed 30-year project lifespan, added to operational emissions, and compared against a threshold of 1,100 $MTCO_2e$. The Project's construction-generated greenhouse gas emissions of 567.5 $MTCO_2e$ annualized over 30 years would equal 8.9 $MTCO_2e$ per year.

Operation of the Interregional Transit Center would not result in an increase in diesel-fueled bus use, or require new Lake Transit employees. The facility's greenhouse gas generation associated with area (landscaping), energy, and water-consumption is estimated to be approximately 12 $MTCO_2e$ per year. With annualized construction emissions, the Project would emit an estimated 20.9 $MTCO_2e$ per year. The Project's emissions would be less than the applicable threshold, and the Project's impact would be less than significant.

Although the Project may result in future onsite hydrogen generation at the M&O facility that would require an increase in energy consumption, that activity would occur at a future date, possibly in conjuncture with the Project's future solar facilities. PG&E's 2021 electric power mix primarily consisted of renewable and large hydroelectric energy sources, and 16.4 percent fossil-fueled fired energy generation (PG&E 2021). State laws require energy providers to increase procurement and delivery of renewable electricity. California's Renewables Portfolio Standard (RPS), as modified by SB 350, require retail sellers of electricity to increase the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to increase to 50 percent by December 31, 2030. SB 100 future requires that 100 percent or retail sales of electricity be renewable by 2045. This analysis assumes that onsite hydrogen generation will primarily utilize renewable energy sources and, therefore, would not generate a substantive quantity of greenhouse gases.

Using CARB's Benefits Calculator Tool for the Transit and Intercity Rail Capital Program, the total GHG emissions reductions for the North State Intercity Bus System - Lake County Interregional Transit Center related to replacing existing buses with ZEB is projected to be 14,239 $MTCO_2e$ over the lifespan of the project (LTA 2020).

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

The City of Clearlake and Lake County do not have adopted, qualified Climate Action Plans.

The CARB 2017 Climate Change Scoping Plan provides California's climate policy portfolio and recommended strategies to put the State on a pathway to achieve the 2030 target. The scenario includes ongoing and statutorily required programs, continuing the Cap-and-Trade Program, and high-level objectives and goals to reduce GHGs across multiple economic sectors. Existing programs, also known as "known commitments," identified by the 2017 Climate Change Scoping Plan include: SB 350, the Low Carbon Fuel Standard, CARB's Mobile Source Strategy, SB 1383 for short-lived climate pollutants and California's Sustainable Freight Action Plan. The high-level objective and goals recommendations cover the energy, transportation, industry, water, waste management, agriculture, and natural and working lands, and are to be implemented by a variety of State agencies.

The Project is analyzed for consistency with the 2017 Climate Change Scoping Plan in Table 3.8-3. As shown in the table, the Project is consistent with the applicable Scoping Plan measures. Therefore, the Project would result in no impact.

Table 3.8-3 Consistency Analysis between Project and Climate Change Scoping Plan.

Scoping Plan Reduction Measure	Consistency/Applicability Determination
California Cap-and-Trade Program Linked to Western Climate Initiative Implement a broad-based California Cap-and-Trade program to provide a firm limit on emissions. Link the California cap-and-trade program with other Western Climate Initiative Partner programs to create a regional market system to achieve greater environmental and economic benefits for California. Ensure California's program meets all applicable AB 32 requirements for market-based mechanisms.	**Consistent**. This is a statewide measure that cannot be implemented by the Project or lead agency. PG&E obtains 30 percent of its power supply from renewable sources such as solar, wind, and geothermal, in conformance with various regulations (PG&E 2021). The State's Renewable Portfolio goals require energy producers to achieve a 60% renewables goal by 2030, and 100% carbon-free by 2045.
California Light-Duty Vehicle Greenhouse Gas Standards Implement adopted standards and planned second phase of the program. Align zero-emission vehicle, alternative and renewable fuel, and vehicle technology programs with long-term climate change goals.	**Consistent**. This is a statewide measure that cannot be implemented by the Project or lead agency. However, the standards would be applicable to the light-duty vehicles that will access the Project site.
Energy Efficiency Maximize energy efficiency building and appliance standards; pursue additional efficiency including new technologies, policy, and implementation mechanisms. Pursue comparable investment in energy efficiency from all retail providers of electricity in California.	**Consistent**. This is a measure for the state to increase its energy efficiency standards in new buildings. The Project would be required to build to the latest standards in energy efficiency.
Renewable Portfolio Standard Achieve 50 percent renewable energy mix	**Consistent**. This is a statewide measure that cannot be implemented by the Project or lead agency. The Project would receive energy from

Scoping Plan Reduction Measure	Consistency/Applicability Determination
statewide by 2030. Renewable energy sources include (but are not limited to) wind, solar, geothermal, small hydroelectric, biomass, anaerobic digestion, and landfill gas	PG&E which is required to achieve a 60% renewables goal by 2030 and be 100% carbon-free by 2045.
Low Carbon Fuel Standard Develop and adopt the Low Carbon Fuel Standard.	**Consistent**. This is a statewide measure that cannot be implemented by the Project or lead agency. The standard would be applicable to the fuel used by vehicles that will access the Project site.
Regional Transportation-Related Greenhouse Gas Targets Develop regional greenhouse gas emissions reduction targets for passenger vehicles. This measure refers to SB 375.	**Not Applicable**. This is a statewide measure calling for the development of GHG emission reduction targets.
Vehicle Efficiency Measures Implement light-duty vehicle efficiency measures.	**Not Applicable**. This is a statewide measure that cannot be implemented by the Project or lead agency.
Goods Movement Implement adopted regulations for the use of shore power for ships at berth. Improve efficiency in goods movement activities.	**Not Applicable**. The Project does not propose any changes to modes of transportation of goods.
Million Solar Roofs Program Install 3,000 MW of solar-electric capacity under California's existing solar programs.	**Consistent**. This measure is intended to increase solar power throughout California, which is being done by various utility companies and solar programs. The Project includes solar facilities on the Interregional Transit Center roof and existing M&O facility roof, as well as future solar facility.
Medium/Heavy-Duty Vehicles Adopt medium and heavy-duty vehicle efficiency measures.	**Consistent**. This is a statewide measure that cannot be implemented by the Project or lead agency. However, the standards would be applicable to the medium and heavy-duty vehicles that would access the Project site.
Industrial Emissions Require assessment of large industrial sources to determine whether individual sources within a facility can cost-effectively reduce greenhouse gas emissions and provide other pollution reduction co-benefits. Reduce greenhouse gas emissions from fugitive emissions from oil and gas extraction and gas transmission. Adopt and implement regulations to control fugitive methane emissions and reduce flaring at refineries.	**Not Applicable**. This measure will apply to the direct GHG emissions at major industrial facilities. The Project is not an industrial facility.
High Speed Rail Support implementation of a high-speed rail system.	**Not Applicable**. This is a statewide measure that cannot be implemented by the Project or lead agency. High speed rail systems are not part of this Project.
Green Building Strategy Expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings.	**Consistent**. The Project would comply with the California Energy Code and thus include the required energy efficiency features.

Scoping Plan Reduction Measure	Consistency/Applicability Determination
High Global Warming Potential Gases Adopt measures to reduce high global warming potential gases.	**Consistent**. This measure is applicable to the high global warming potential gases such as hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride found in air conditioning and commercial refrigerators. The Project's cooling system would utilize equipment that complies with this measure. Consistent with new State law, the project would be required to use refrigerants with a Global Warming Potential of 150 or less, and to comply with the Refrigerant Management Program that will be in place prior to Project operations.
Recycling and Waste Reduce methane emissions at landfills. Increase waste diversion, composting, and commercial recycling. Move toward zero-waste.	**Consistent**. The Project does not include a landfill. The project would reduce waste with implementation of state mandated recycling and reuse mandates.
Sustainable Forests Preserve forest sequestration and encourage the use of forest biomass for sustainable energy generation.	**Not Applicable**. The Project would not include tree removal or areas for reforestation.
Water Continue efficiency programs and use cleaner energy sources to move and treat water.	**Consistent**. This is a measure for State and local agencies. However, the Project would adhere to California Green Building Standards Code regulation.
Agriculture In the near-term, encourage investment in manure digesters and at the five- year Scoping Plan update determine if the program should be made mandatory by 2020.	**Not Applicable**. The Project does not include agricultural production.

Source of Scoping Plan Reduction Measures: CARB 2017

3.9 Hazards and Hazardous Materials

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

A summary of applicable safety regulations is provided in Table 1-7, Codes & Standards for a Hydrogen Fueling Station.

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

The Project would include modifications to the existing M&O facility to receive, store, and distribute hydrogen fuel. The Project would add a hydrogen storage tank with an estimated 15,000-gallon storage capacity. The proposed hydrogen storage tank would be located on the east side of the M&O facility, with paved areas surrounding 3 sides, and open space on the fourth.

Hydrogen is identified as a hazardous material (flammable gas) under the criteria of the Federal OSHA Hazard Communication Standard 29 CFR 1910.1200. However, hydrogen is non-toxic and non-poisonous.

The Project improvements would require compliance with the Unified Hazardous Waste and Hazardous Material Management Regulatory Program. The Lake County Environmental Management Department has been designated by Cal EPA to implement the Unified Program for Lake County. The Unified Program consolidates and coordinates hazardous waste program elements, including the California Accidental Release Prevention Program (Cal ARP); Hazardous Material Release Response Plans and Inventories; and Uniform Fire Code Hazardous Materials Management Plans and Inventories.

The transportation of hazardous materials on railroads and roadways is regulated by U.S. Department of Transportation, the CHP, and Caltrans, and use of such materials is regulated by the DTSC (22 Cal. Code Regs §§ 66001, et seq.). The use, storage, and transport of hazardous materials is required to be in compliance with local, state, and federal regulations during both Project construction and operation. The M&O facility is required to operate under a permit and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. The Project would be required to comply with federal, state and local regulations regarding the handling, transportation, disposal, and clean-up of hazardous materials.

All potentially hazardous materials would be required to be handled, used, and stored in accordance with manufacturers' specifications and applicable health and safety regulations. Compliance with the requirements of the CUPA Unified Permit, and Hazardous Materials Business Plan (HMBP) would ensure that hazardous materials are properly transported, stored, inventoried, and disposed. Mandatory compliance with regulations would ensure that the improvements to the existing facility are constructed, maintained, and operated in accordance with current safety and environmental protection standards. With adherence to applicable regulatory requirements, the operational impacts related to the transport and use of hydrogen fuel (hazardous) would be less than significant.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? (Less than Significant)

As discussed under Impact 'a' above, the Project would result in new hydrogen fuel storage and dispensing improvements at the M&O facility. The Project would operate under a CUPA Unified Program permit and a HMBP. The HMBP contains a hazardous materials inventory and emergency response procedures, pursuant to Chapter 6.95, Division 20 of the California Health and Safety Code. The M&O facility is operated in accordance with an Industrial Storm Water NPDES permit which controls pollutants in storm water discharges. The Industrial SWPPP identifies storm water drainage patterns, discharge locations, and potential sources of storm water pollution and includes site-specific BMPs that must be implemented to prevent storm water pollution.

Hydrogen is a gas that rapidly disperses. It will not contaminate groundwater and is a gas under normal atmospheric conditions with a very low solubility in water. A release of hydrogen is not known to contribute to atmospheric pollution or water pollution (DOE 2014). Because hydrogen is buoyant and disperses rapidly, it is less likely to be confined than other gases and therefore poses less risk as an asphyxiant.

The use, storage, and transport of hazardous materials is required to be in compliance with local, state, and federal regulations during both Project construction and operation. The M&O facility is required to operate under a permit and comply with appropriate regulatory agency standards designed to avoid hazardous waste releases. The Project would be required to comply with federal, state, and local regulations regarding the handling, transportation, disposal, and clean-up of hazardous materials. With required adherence to applicable regulatory requirements, the impacts related to accidental release of hazardous materials would be less than significant.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (Less than Significant)

The Project would be located within 0.25 mile of two existing schools. The two nearest schools to the Project site are the Konocti Education Center (approximately 0.15 mile from the Interregional Transit Center Site) and the Lower Lake Elementary School and preschool (approximately 0.11 mile from the M&O facility). As provided in Impact 'a' and 'b' above, the Project would comply with federal, state, and local regulations that reduce potential for routine or accidental emissions of hazardous materials to less than significant. Additionally, because hydrogen is a gas that rapidly disperses, hydrogen emissions from the M&O facility would not affect nearby schools. The impact would be less than significant.

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? (No Impact)

The Project site is not listed as a Cleanup Program Site under the State Water Resources Control Board's Site Cleanup Program. Therefore, the Project would result in no impact.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area? (No Impact)

The nearest airport is Lampson Field, located more than 14 miles to the west of the Project site. The Project is not located near a public use airport or active private airstrip. Therefore, the Project would not result in a safety hazard or excessive noise for people residing or working in the Project area from airport activity. The Project would result in no impact.

f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (Less than Significant)

The Safety Element of the City of Clearlake General Plan and Health & Safety Element of the Lake County General Plan include goals, policies, and actions to minimize the potential risk of death, injuries, property damage, and economic hardship and social displacement resulting from fires, floods, earthquakes, landslides, and other hazards. The General Plans element also addresses safety and hazards related to airport land use, groundwater contamination, the potential release of hazardous materials into the community, and general issues related to police and fire protection services.

The Lake Emergency Operational Plan (EOP) addresses planned methods for managing information, resources, and priorities during a multi-jurisdiction response to extraordinary emergency situations associated with natural and human caused disasters. The Lake EOP encompasses the boundaries of Lake County and includes the City of Clearlake. The City of Clearlake Hazard Mitigation Plan and Lake County Local Hazard Mitigation Plan Update address long-term risk to people and their property from hazards.

The Project would not change existing circulation patterns along local roadways or generate substantial new traffic. Construction of proposed facilities along S. Center Drive or Dam Road Extension may require traffic control or brief road closures. In accordance with City requirements, the construction contractor would be required to obtain an encroachment permit from the City for any portion of work completed within the S. Center Drive or Dam Road Extension ROW. The contractor would develop a Traffic Control Plan required by the City's Encroachment Permit, which would include notification of emergency responders and a work

area access plan detailing access to each portion of the project area, including those properties which may experience temporary delay or disruption of access. With implementation of the Traffic Control Plan, the impact to emergency response or evacuation elements associated with local and regional plans would be less than significant.

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

The Project site improvements are located in a Local Responsibility Area (LRA), which is an area where a local agency, in this case the City of Clearlake and Lake County, has primary responsibility for fire and emergency response. California Department of Forestry and Fire Protection mapping (CALFIRE 2022) indicates both sites are located outside of Very High Fire Hazard Severity Zones (Very High FHSZ). The M&O facility site is surrounded by land also not considered Very High FHSZ. However, the Interregional Transit Center site is located near land identified as within the Very High FHSZ. Specifically, land east of Dam Road Extension is within the Very High FHSZ.

Although the Project site areas are not located within designated areas at risk of wildland fires, it is possible that accidental fire ignition could occur during construction (e.g., related to heavy machinery usage). Because the vegetation at portions of the Project site could be dry during construction, the construction-related impact is considered significant. With implementation of Mitigation Measure HAZ-1 (Reduce Wildland Fire Hazards during Construction), the potential impact related to wildland fires during construction would be reduced to a less-than-significant level.

Mitigation Measure

Implementation of Mitigation Measure HAZ-1 would require the use of construction techniques that would reduce the likelihood of wildland fires during construction of the Project. With implementation of Mitigation Measure HAZ-1, the impact related to wildland fires would be less than significant

Mitigation Measure HAZ-1: Reduce Wildland Fire Hazards during Construction

Prior to construction, Lake Transit and its contractor(s) shall remove and/or clear away dry, combustible vegetation from the construction site. Grass and other vegetation less than 18 inches in height above the ground shall be maintained where necessary to stabilize the soil and prevent erosion. Vehicles shall not be parked in areas where exhaust systems contact combustible materials. Fire extinguishers shall be available on the construction site to assist in quickly extinguishing any small fires, and the contractors shall have on site the phone number for the local fire department.

3.10 Hydrology and Water Quality

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

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

Construction

The Project would include modifications to the existing M&O facility and construction of the Interregional Transit Center. During construction, temporary construction activities have the potential to degrade water quality that could be discharged to the local storm drain system as a result of erosion caused by earthmoving activities or the accidental release of hazardous construction chemicals. Therefore, if not properly managed, construction activities could result in erosion, as well the discharge of chemicals and materials. In such an instance, applicable water quality standards and waste discharge requirements could be violated, and polluted runoff could substantially degrade water quality in the local storm drain system.

As summarized in Section 1.7, Lake Transit and/or their construction contractor would be required to obtain coverage under State Water Resources Control Board Order No. 2009-0009-DWQ, Waste Discharge Requirements for Discharges of Storm Water Runoff Associated with Construction and Land Disturbance Activities, as amended by Order No. 2012-0006. This would include required submittal of permit registration documents (notice of intent, risk assessment, site maps, construction Storm Water Pollution Prevention Plan (SWPPP), annual fee, and certifications) to the State Water Resources Control Board. The construction SWPPP would address pollutant sources, non-storm water discharges resulting from construction dewatering, best management practices, and other requirements specified in the above-mentioned Order. The SWPPP would also include dust control practices to prevent wind erosion, sediment tracking, and dust generation by construction equipment. A Qualified SWPPP Practitioner would oversee implementation of the Plan, including visual inspections, sampling and analysis, and ensuring overall compliance. With implementation of the storm water control measures identified in Section 1.7 of this Initial Study, the impact of construction-related activities on water quality would be less than significant.

Operation and Maintenance

Following construction, the Project would include operation and maintenance of the Interregional Transit Center and hydrogen fuel facilities at, as well as operation and maintenance of new hydrogen ZEB. The proposed hydrogen fuel facilities would be located within the existing M&O facility within the central portion of the property.

The Project site is located within the California Regional Water Quality Control Board's North Coast Region (NCRWQCB). The Water Quality Control Plan for the North Coast Region (Basin Plan) addresses surface and groundwater quality within the Project area. The Project is also subject to compliance with Lake County's Low Impact Development (LID) requirements.

The M&O facility has existing storm water discharge points to which runoff discharges directly to the Lake County Special Districts municipal storm sewer system (MS4). The Interregional Transit Center would similarly discharge to the MS4. Specifically, the Project would not discharge to a water body that has a Total Maximum Daily Load (TMDL) requirement or is listed as impaired under CWA 303(d) for industrial pollutants associated with the facility.

Control of pollutants in storm water discharges at the Project site is required through several required permits and plans. The Project improvements at the M&O facility would be operated under an Industrial Storm Water Pollution Prevention Plan (Industrial SWPPP), which is currently in place, and would be amended to cover operation of the proposed new facilities.

An Industrial Stormwater NPDES Permit and Industrial SWPPP for the Project identifies storm water drainage patterns, discharge locations, and potential sources of storm water pollution and includes site-specific best management practices that are required to be implemented to prevent storm water pollution. A dedicated Pollution Prevention Team is responsible for compliance with the requirements of the Industrial General Permit through proper implementation of the Industrial SWPPP.

The Project would also operate under a CUPA Unified Program permit and a Hazardous Materials Business Plan, which would be required to be amended and implemented for the proposed Project facilities. The Hazardous Materials Business Plan includes a hazardous materials inventory and emergency response procedures, pursuant to Chapter 6.95, Division 20 of the California Health and Safety Code.

All potentially hazardous materials would be required to be handled, used, and stored in accordance with manufacturers' specifications and applicable health and safety regulations. The use of hazardous materials would require compliance with the Hazardous Materials Business Plan Program. Compliance with the

requirements of these programs at the Project site would be achieved through compliance with the CUPA Unified Permit and the Industrial SWPPP.

With adherence to applicable regulatory requirements, the operational impacts related to water quality standards or waste discharge requirements would be less than significant, and the Project would not 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? (Less than Significant)

Relative to groundwater, the Project site is located within the Clear Lake Cache Formation Groundwater Subbasin and Lower Lake Valley Groundwater Subbasin, which are designated as a low or very low priority groundwater basin by the California Department of Water Resources (DWR). Please see Impact 'e' below for additional information on the local groundwater basin and the applicable groundwater sustainability plan. No groundwater supplies would be needed to support the Project, nor would construction or operation of the Project interfere with groundwater recharge in a manner that would impact groundwater resources. Therefore, no impact to sustainable groundwater management would result.

c.i) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site? (Less than Significant)

The M&O facility onsite drainage system consists of a series of ditches, pipes, culverts, and inlets, and the system connects to the storm water drainage system through an existing storm drain connection.

Approximately 50 percent of the existing M&O facility site is developed with a combination of buildings and pavement. The Project would expand the use of the existing facility by adding new hydrogen fuel storage and dispensing facilities. Additionally, the Project would increase the amount of impervious surfaces at the Interregional Transit Center site by approximately 1.3 acres.

No on-site streams or creeks are present on the property. Drainage patterns at the Project site would remain essentially the same as they currently exist and would connect to the local storm drain system. The Project would require adherence to the requirements set forth in the General Construction Permit, which would include a construction SWPPP that includes BMPs to prevent erosion and siltation.

Operation and maintenance activities would also require adherence to the requirements set forth in the Industrial Stormwater NPDES Permit, Industrial SWPPP, CUPA Unified Permit, and HMBP for the M&O facility (see Impact 'a' for additional information). As a result, the impacts relative to erosion or siltation would be less than significant.

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

No on-site streams or creeks are present on the Project site. Siegler Creek is located north and east of the M&O facility site. The Project would increase the amount of impervious surfaces at the Interregional Transit Center site by approximately 1.3 acres, and at the M&O facility by an estimated 0.1 acre.

The portion of the Project site that would have new impervious pavement represents approximately 60 percent of the total area of the Interregional Transit Center site.

Because the increased impervious area exceeds one acre, permanent water quality treatment is included as part of the Project, consistent with Lake County's Low Impact Development (LID) requirements. Specific LID improvements would be determined during facility design, but may include vegetated swales to provide water quality treatment for stormwater runoff prior to discharge to an existing permeable area on the Project site or the MS4. Drainage patterns at the Project site would remain essentially the same as they currently exist and would connect to the local storm drain system.

Because the on-site and proposed drainage infrastructure for the Project is adequate and would be required to manage the increase in runoff and mimic existing hydrologic conditions, the stormwater drainage system would have adequate capacity to serve the Project. As a result, the impacts relative to storm drain capacity and potential for flooding would be less than significant.

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

Please see Impact 'c.ii' above relative to contribution of runoff water in relation to the capacity of existing stormwater drainage systems, and Impact 'a' above relative to water quality and sources of polluted runoff.

Because the existing and proposed on-site drainage infrastructure for the Project is adequate and would be required to manage the increase in runoff and mimic existing hydrologic conditions, the stormwater drainage system would have adequate capacity to serve the Project. Compliance with existing regulations would ensure that the Project facilities are managed during construction to avoid discharges to the storm water system, and designed and operated to minimize the potential for violations of water quality standards. As a result, the impacts relative to drainage capacity and water quality would be less than significant.

c, iv) Impede or redirect flood flows? (Less than Significant.)

No streams or creeks are present at the Project site or at the off-site improvement areas. The Interregional Transit Center site is located in FEMA Zone X, which is defined as areas of minimal flood hazard (FEMA 2022). The M&O site is located within FEMA the Special Flood Hazard Zone AE, but outside the Regulatory Floodway. Regulatory floodway means the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the base flood without cumulatively increasing the water surface elevation more than a designated height.

Construction within Zone AE is regulated by the Federal Insurance and Hazard Mitigation program, which includes the design requirements that ensure flood carrying capacity of the area is maintained. Compliance with existing regulations would ensure that the Project facilities would not substantially impede or redirect flood flows. As a result, the impact would be less than significant.

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

The Project site is not located within a designated floodplain or within a tsunami or seiche zone. No impact would result.

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

As described under Impact ‘a’ above, the Project site is located within the NCRWQCB and within an area covered by the Basin Plan for the Sacramento River Basin. The Project would be required to comply with applicable storm water standards and permits that are designed to reduce potential water quality impacts to a less-than-significant level. As further described under Impact ‘a’ above, the Project as proposed would not conflict with or obstruct implementation of the regional Basin Plan. Therefore, no impact related to obstruction of the Basin Plan would result.

In 2014, the State of California enacted the Sustainable Groundwater Management Act (SGMA), which requires groundwater basins and subbasins in California designated as high- or medium-priority by the DWR to be managed sustainably. The Project site is located within the Clear Lake Cache Formation Groundwater Subbasin and Lower Lake Valley Groundwater Subbasin, which are designated as a low or very low priority groundwater basin by the California DWR and are not required to complete Groundwater Management Plans to comply with SGMA. The Lake County Watershed Protection District’s Lake County Groundwater Management Plan, developed before adoption of the SGMA, includes an assessment of the impacts of predicted future groundwater levels on beneficial users, including groundwater-dependent shallow wells, and interconnected surface water. The Project would not conflict with or obstruct implementation of the Lake County Groundwater Management Plan. Therefore, no conflict would result.

3.11 Land Use and Planning

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

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

Division of an established community typically occurs when a new physical feature, in the form of a highway or railroad, physically transects an area, thereby removing mobility and access within an established community. The Project would construct an Interregional Transit Center and improvements to the M&O facility within the existing Lake Transit property. Therefore, the Project would not physically divide an established community. No impact would occur.

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

The Project would implement improvements at the existing M&O facility and within an existing urbanized area at the Interregional Transit Center site. The improvements at the Interregional Transit Center site would be consistent with the allowable uses within the Commercial land use designation of the City of Clearlake General Plan, and respective Commercial General (CG) zoning. The improvements at the M&O facility site would be consistent with the allowable uses within the Community Commercial (Cc) land use designation the Lake County General Plan, and respective Community Commercial (C2) zoning.

Specific policies and regulations adopted for the purpose of avoiding or mitigating environmental effects are evaluated in this document under the corresponding issue areas. See Sections 3.13, Noise, for a full analysis of the Project's noise impacts.

The Project would not involve a change of land use on the affected property from the land use designation or zoning. Ultimately the land use of the M&O facility site would remain the same as existing conditions, as it would continue as storage and maintenance facilities for transit. The proposed design of the Interregional Transit Center facilities would be consistent with all applicable land use policies and regulations. Therefore, implementation of the facilities on the M&O facility and Interregional Transit Center sites would not conflict with a land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. No impact would occur.

3.12 Mineral Resources

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

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

The Project sites are not located within an area classified as mineral resource zone or aggregate source by the City of Clearlake General Plan or Lake County Aggregate Resource Management Plan. Minimal grading and excavation would occur during Project construction, preserving any mineral resource that may exist on site. There would be no impact.

3.13 Noise

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

Potential noise impacts were evaluated based on the findings of an environmental noise assessment performed by Illingworth & Rodkin (Illingworth & Rodkin 2022b, Appendix C).

A noise monitoring survey was performed from Wednesday June 22, 2022, through Friday, June 24, 2022. The survey included two long-term (LT) noise measurements and three short-term (ST) noise measurements to quantify existing ambient noise levels near the Interregional Transit Center site. Sites were selected to characterize the ambient noise levels in the vicinity of the Project site. Detailed data for the existing noise environment is provided in Appendix C. The noise environment at the Interregional Transit Center site and surrounding area includes noise primarily from local vehicular traffic along SR 53, Dam Road Extension, and South Center Drive.

a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (Less than Significant with Mitigation)

Construction

Construction activities would be carried out in stages. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary by stage and vary within stages, based on the amount of equipment in operation and the location at which the equipment is operating.

The Project includes mass grading within the Interregional Transit Center site and installation of the new facilities, and minor demolition activity and installation of new facilities at the M&O site. As stated in Section 1.5 (Project Construction), anticipated construction work hours would be daylight hours (7:00 AM to 7:00 PM) Monday through Friday, which would be consistent with the allowable noise-production hours of the City of Clearlake Municipal Code and Lake County Municipal Code.

Construction of the Interregional Transit Center is anticipated to take approximately 10 months. Project construction equipment is anticipated to include backhoes, forklifts, pickup trucks, concrete mixer trucks,

front-end loaders, rollers, dump trucks, graders, scrapers, and excavators. Most of the heavy equipment would be used during the first month of construction, during site preparation and grading. The concrete mixer and pick-up trucks would be used throughout construction. Pile driving would not be used as a method of construction.

Based on the noise modeling contained in Appendix C, construction activities for the Interregional Transit Center would not produce noise levels exceeding 80 decibels when measured at a distance of one hundred feet from the source. Therefore, the Project construction complies with the City's construction requirements and noise impacts are less than significant.

Project construction at the M&O site would generate Nosie similar to construction noise levels for the Interregional Transit Center. The Lake County Municipal Code exempts construction site sounds between 7:00 am and 7:00 pm. However, Lake County General Plan Policy N-1.7 require contractors to implement noise-reducing mitigation measures during construction when residential uses or other sensitive receptors are located within 500 feet. Therefore, implementation of Mitigation Measure NOI-1 is incorporated to ensure consistency with the Lake County General Plan, and reduce the temporary construction noise impact to less than significant.

Operation

Interregional Transit Center

The main noise source attributable to the Project's operations would be bus operations. Noise measurements were made at the existing transfer hub. The purpose of these measurements was to document existing noise levels produced by Lake Transit buses. While buses were parked and idling, sustained noise levels of 62 to 64 dBA were recorded at a distance of approximately 130 feet. When these buses passed by the monitoring location, noise levels of 69 to 77 dBA were recorded at approximately 20 feet, and noise levels of 55 dBA were noted at 150 feet. An additional bus was observed to produce noise levels of 55 dBA at approximately 100 feet away. The average noise level at 85 feet from the acoustic center of the activity was 61 dBA Leq, and assuming a similar level of activity throughout the day (between the hours of 6:00 AM to 8:00 PM, consistent with existing schedules), the Ldn attributable to these activities would also be 61 dBA at 85 feet.

The City of Clearlake identifies transportation-related noise increases to be 3 dB Ldn or greater as significant where existing traffic noise levels range between 60 and 65 dB Ldn at the outdoor activity areas of noise-sensitive uses. Where existing traffic noise levels are less than 60 dB Ldn at the outdoor activity areas of noise-sensitive uses, a +5 dB Ldn increase in roadway noise levels is considered significant. No formalized outdoor activity areas exist at the Lake County Superior Court building to the northwest, at the Lake County Behavioral Services building to the north, or at the commercial buildings to the south (Freedom Heating and Air Conditioning, Sears Appliance Store, and Walmart), and operational noise levels at these land uses are not discussed further.

The outdoor activity area at the Clearlake Masonic Lodge, located west of the Project site, includes a covered barbeque near the southeast corner of the building. The barbecue area is located approximately 150 feet from the primary noise sources at the Interregional Transit Center and would be exposed to operational noise levels of 56 dBA Ldn. With the operation of the Project, the existing noise level at the barbeque area (63 dBA Ldn) would increase by approximately 1 dBA Ldn and reach 64 dBA Ldn. Project operations would not increase noise levels by 3 dB Ldn or more at the at the Clearlake Masonic Lodge barbeque area.

The nearest outdoor activity areas at the Konocti Education Center are located approximately 200 feet from the primary noise sources at the Interregional Transit Center and would be exposed to operational noise levels of 51 dBA Ldn. With the operation of the Project, the existing noise level at the outdoor activity areas at the Konocti Education Center (55 dBA Ldn) would increase by 1 to 2 dBA Ldn and reach 56 to 57 dBA Ldn. Project operations would not increase noise levels by 5 dB Ldn or more at the nearest outdoor activity areas at the Konocti Education Center.

The nearest dwellings are approximately1,000 feet north of the Project site. At 1,000 feet, and assuming no intervening acoustical shielding, operational noise levels would be 40 dBA or less. As noted above, the nearest sensitive school building is approximately 200 feet east. At 200 feet, and assuming no intervening acoustical shielding, operational noise levels would be 54 dBA or less. No transient accommodations exist in the project vicinity. Based on the above, predicted noise levels would not exceed 55 dBA between the hours of 10:00 PM and 7:00 AM or 65 dBA between the hours of 7:00 AM and 10:00 PM and would comply with the Clearlake Municipal Code. The operational impact would be less than significant.

M&O Facility

The Project would result in the purchase four (4) hydrogen buses to replace the existing intercity transit buses. The new hydrogen buses would be stored at the M&O facility, consistent with existing practices. Improvements to the M&O facility are proposed to support hydrogen buses. Improvements would consist of hydrogen fueling infrastructure and retrofits to the existing maintenance facility to allow for the proper air flow and ventilation needed to safely work on the hydrogen buses. In addition to the retrofitting the building, solar panels will be installed on the south-facing pitched roofs. No new substantial operational noise sources are proposed at the M&O Facility. The operational impact would be less than significant.

Mitigation Measures

With the implementation of Mitigation Measures NOI-1, the Project's construction activities at the M&O facility would be consistent with the Lake County General Plan Policy N-1.7 and the potential temporary impact on sensitive receptors would be less than significant.

Mitigation Measure NOI-1: Implement Lake County General Plan Noise Policy Measures

For construction activities at the M&O site, Lake Transit shall require construction contractors to comply with the following measures:

- Construction activities shall be limited to the hours between 7:00 am and 7:00 pm, Monday through Friday in accordance with the Lake County General Plan, unless permission is granted with a development permit or other planning approval.
- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
- Prohibit unnecessary idling of internal combustion engines.
- Locate stationary noise-generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise-generating equipment when located near adjoining sensitive land uses.
- Utilize "quiet" air compressors and other stationary noise sources where technology exists.
- Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.

- Notify all adjacent businesses, residences, and other noise-sensitive land uses of the construction schedule in writing.
- Designate a “disturbance coordinator” who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to current the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

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

Project construction may generate perceptible vibration when heavy equipment or impact tools are used close to sensitive receptors. Construction of the Interregional Transit Center would include site preparation, grading, building construction, paving, and architectural coating. utilizing such equipment or tools would include demolition, site preparation, grading, trenching, building construction, and paving. Such activities could occur as close as 25 feet from the nearest building. Construction of improvements for M&O site for the hydrogen facility would consist of demolition and site preparation, excavation/foundations/trenching, facility installation, and repaving. Such activities could occur as close as 75 feet from the nearest building. Foundation construction techniques involving impact or vibratory pile driving equipment, which can cause excessive vibration, are not expected with the proposed project.

Neither Lake County nor the City of Clearlake specify a construction vibration limit to apply to project construction activities. The California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.25 in/sec PPV for historic and some old buildings. For the purposes of this study, groundborne vibration levels exceeding the conservative 0.25 in/sec PPV limit at the existing adjacent buildings would have the potential to result in a significant vibration impact.

Vibration levels generated by proposed activities and equipment would be below the 0.25 in/sec PPV criteria at the nearest structures. Vibration levels generated by construction activities would be perceptible indoors when construction is located adjacent to structures and secondary vibration, such as a slight rattling of windows or doors, may be considered annoying at times. However, architectural damage to normal residential structures would not be anticipated and vibration levels would be below those anticipated to cause structural damage. In addition, construction would occur during daytime hours only, thus reducing the potential for residential annoyance during typical periods of rest or sleep (Illingworth & Rodkin 2022b). The construction-related impact would be less than significant.

Operational activities resulting in vibration would not occur. Therefore, no impact from operation, related to vibration, would occur.

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

The nearest airport is Lampson Field, located more than 14 miles to the west of the Project site. The Project is not located near a public use airport or active private airstrip. The project site is not located within any compatibility zones in an airport land use plan or within two miles of a public airport. Therefore, the project would not expose people to noise in the vicinity of an airport. No impact would result.

3.14 Population and Housing

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

a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? (No Impact)

The Project would not induce substantial unplanned population growth because it does not propose new homes, businesses, roads, or extension of utilities that would result in direct or indirect population growth. The Project would serve the existing community. Construction is anticipated to be staffed by local contractors (who could travel to the Project site from their homes) and would not generate a need for temporary housing. Maintenance and operation of the Project is anticipated to be performed by existing Lake Transit staff, and no new employment opportunities would be induced by maintenance and operation of the Project. Due to these reasons, there would be no impact.

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

No housing currently exists within the perimeter of the Project; therefore, no people or housing units would be displaced necessitating the construction of replacement housing. No impact would result.

3.15 Public Services

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

a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for public services? (No Impact)

As discussed in Section 4.14, Population and Housing, the Project would not directly or indirectly induce substantial population growth nor create substantial new demand for services. Therefore, the Project would have no impact on the service ratios, response times, or other performance objectives of schools, parks, and other public facilities that are based on population growth. Fire and police service levels provided to the existing Lake Transit facilities would continue to be sufficient. The Project would not require a new or physically altered government facility to serve the Project site. No impact would occur.

3.16 Recreation

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

The Anderson Marsh State Historic Park (AMSHP) is located between the two Project Areas. The AMSHP trailhead is approximately 0.65 mile from the existing transfer hub, and 0.40 mile from the M&O facility. Additionally, the Deja-Vu RV Park and Clear Lake Campground (located adjacent to each other) are approximately 0.25 mile from the existing transfer hub (0.50 mile to the proposed Interregional Transit Center), and approximately 0.80 mile from the existing M&O facility. The Lower Lake Park is located approximately 0.40 mile from the existing M&O facility, 1.40 miles from the existing transfer hub.

Following Project implementation, the proposed Interregional Transit Center would be approximately 0.90 mile from the AMSHP Trailhead, and 1.65 miles from the Lower Lake Park.

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

The proposed Interregional Transit Center would be located approximately 0.50-mile further away from nearby parks including the AMSHP and, therefore, would not encourage an increase in use of parks due to transit center location alone. However, the purpose of the Project is to provide a safer, more efficient rider experience and to expand existing intercity routes (using hydrogen ZEB), which could lead to an increase in ridership over time, and thus could – in theory – incrementally increase the use of existing parks and recreational centers. However, this potential increase is not anticipated to be at the level where it would cause substantial physical deterioration of park facilities. Additionally, park facilities would continue to be maintained under the existing maintenance schedule independent of this Project. No impact would occur.

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

The Project does not propose construction or expansion of recreational facilities, or elements that would cause the need for construction or expansion of recreational facilities. No impact would occur.

3.17 Transportation

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

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

During construction, the normal functionality of S. Center Drive and Dam Road Extension in the project area would be altered due to the need for temporary lane closures. In addition, construction would result in additional vehicle trips by construction workers, supply trucks, and haul trucks travelling to and from active portions of the Project site. The number of construction-related vehicles traveling to and from the Project site would vary on a daily basis. It is estimated that construction crew trips could require up to 34 trips per day (17 workers). The addition of construction-related traffic would occur during daytime hours. Nighttime work is not anticipated.

Construction of proposed facilities along S. Center Drive or Dam Road Extension may require traffic control or brief road closures. S. Center Drive and Dam Road Extension are both two-lane roads. In accordance with City requirements, the construction contractor would be required to obtain an encroachment permit from the City for any portion of work completed within the S. Center Drive or Dam Road Extension ROW. The construction contractor's encroachment permit application would include a proposed temporary traffic control plan, and if necessary, would include plans for re-routing of vehicles, bicycles, and pedestrians. To the extent feasible, only a single lane would be closed at any time in order to maintain access to the Project vicinity. Traffic controls would be required in accordance with the City standards, and contractors would be required to comply with the general conditions of the encroachment permit. Therefore, through compliance with local requirements, construction activities would not result in substantial adverse effects or conflicts with the local roadway system. The temporary construction impact on the circulation system would be less than significant.

On-road activity from Project operations would be similar to existing Lake Transit operations. No increase in trips related to the Project operations would occur. Because the Project would not represent an increase in the intensity of the use taking place, and would not require additional staffing or maintenance visits, no conflicts with a program plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities, have been identified. Therefore, no impact would result.

See Impact 'c' below for a discussion of potential impacts relative to traffic hazards during construction.

b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)? (No Impact)

In November 2017, the Governor's Office of Planning and Research (OPR) released a technical advisory containing recommendations regarding the assessment of vehicle miles travelled (VMT). VMT refers to the amount and distance of automobile travel attributable to a project. The term "automobile" refers to on-road passenger vehicles, specifically cars and light trucks. The movement of heavy trucks and equipment associated with the construction of the Project is not considered for the purposes of determining transportation impacts under this section. Additionally, the movement of heavy trucks or buses during Project operations is not considered for the purposes of determining transportation impacts, as heavy vehicle trips are generally not meant to be the standard for VMT analysis.

Transportation projects that reduce or have no impact on VMT are presumed to cause a less than significant transportation impact (OPR 2018). For roadway capacity projects, lead agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. The purpose of the proposed Project is to construct an Interregional Transit Center to replace an existing transit hub, provide increased safety for riders and the community, and replace 4 existing diesel-fueled intercity buses with zero emission, hydrogen fueled buses. The Project would not add additional motor vehicle capacity to the roadway network and would not lead to additional vehicle travel. There would be no impact.

For reference, the California Governor's Office of Planning and Research's (OPR) guidance on assessing this impact provides the following:

> *Presumption of Less Than Significant Impact Near Transit Stations*
>
> Proposed CEQA Guideline Section 15064.3, subdivision (b)(1), states that lead agencies generally should presume that certain projects (including residential, retail, and office projects, as well as projects that are a mix of these uses) proposed within ½ mile of an existing major transit stop or an existing stop along a high quality transit corridor will have a less-than-significant impact on VMT.

The proposed Project would result in the construction and operation of a major transit stop; therefore, the Project would facilitate the goal of reducing VMT and would have no impact.

c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (Less than Significant)

The Project would not alter the existing alignment of the surrounding streets. Construction traffic would access the Interregional Transit Center site from Dam Road Extension. Construction-related truck traffic would access the M&O facility improvements site from SR 53. The affected streets are fully developed two-lane roads with either control-stop or signalized intersections. As such, the surrounding street network can adequately accommodate the car and light truck traffic related to the construction and operation of the site. The impact would be less than significant.

The Project would not introduce any new curves or intersections. Access to the Project facilities would be accomplished through the existing M&O facility drive, new Interregional Transit Center drives, and internal paved facilities. The existing M&O facility driveway on SR 53 would continue to provide the primary access to the site from the regional street network and would retain its current configuration with no proposed modifications.

The Interregional Transit Center would result in additional bus pullouts along S. Center Drive and Dam Road Extension. However, Project design would proceed in compliance with City standards, and in

coordination with the City's proposed Active Transportation Program (ATP) Dam Road Extension & South Center Drive Bike/Pedestrian Improvements project. Once installed, the Project would not pose a substantial hazard to vehicle, bicyclist, or pedestrians in the vicinity. The Project's impact would be less than significant.

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

Construction of the Project may temporarily slow emergency response times. Dam Road Extension and S. Center Drive would remain open during construction activities; however, traffic may be shifted temporarily during construction. To the extent feasible, only a single lane would be closed at any time in order to maintain access to the Project vicinity The contractor would develop a Traffic Control Plan required by the City's Encroachment Permit, which would include notification of emergency responders and a work area access plan detailing access to each portion of the project area, including those properties which may experience temporary delay or disruption of access. With implementation of the Traffic Control Plan, the impact would be less than significant.

3.18 Tribal Cultural Resources

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

a, b) Cause a substantial adverse change in the significance of a tribal cultural resource listed or eligible for listing in the California Register of Historic Resources, or in a local register of historic resources as defined in Public Resources Code section 5020.1(k)? (Less than Significant with Mitigation)

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

Efforts to identify tribal cultural resources that could be affected by the Project included a records search at the Northwest Information Center, literature review, a sacred lands search through the Native American Heritage Commission (NAHC), contact with appropriate local Native American Tribes, and a pedestrian archaeological survey of the Project site. Based on consultation with the Koi Nation, Robinson Rancheria of Pomo Indians, and Habematolel Pomo Tribe, Lake Transit understands the cultural tribal sensitivity of the Project sites and incorporates the requested tribal monitoring and recommended treatment protocol as Mitigation Measures TC-1 and TC-2, respectively.

Mitigation Measures

Implementation of Mitigation Measures CR-1 (Archaeological Inadvertent Discovery Procedures), and CR-2 (Protect Human Remains If Encountered during Construction) would be required for the Project (please see

Section 3.5, Cultural Resources for a full description of these mitigation measures). Additionally, Mitigation Measures TR-1 and TR-2 would be required for the Project.

Implementation of Mitigation Measures CR-1, CR-2, TR-1, and TR-2 would reduce the potential impact to previously undiscovered tribal cultural resources to a less-than-significant level by requiring procedures to be taken in the event of inadvertent discovery of resources consistent with appropriate laws and requirements, as well as incorporating tribal monitoring and treatment protocols due to the sensitive nature of the area.

Mitigation Measure TCR-1: Tribal Monitoring during Construction

No less than five working days before the start of any ground-disturbing construction activity, the contractor shall notify the Habematolel Pomo Cultural Resources Department, Koi Nation, and the Robinson Rancheria of Pomo Indians about the start date of ground disturbing activities. The tribes will be given the opportunity to send a tribal monitor to inspect the subsurface soils once during the first five days of ground disturbing activity on the project. Should the tribes choose not to send a monitor to perform the inspection within the first five days, work can continue as long as the notice was provided and documented. Should a tribe choose to send a monitor, Lake Transit shall enter into a Monitoring Agreement with the tribe prior to the start of ground-disturbing activities.

Mitigation Measure TCR-2: Implement Habematolel Pomo of Upper Lake's Treatment Protocol during Construction

Lake Transit shall implement the Habematolel Pomo of Upper Lake's *Treatment Protocol for Handling Human Remains and Cultural Items Affiliated with the Habematolel Pomo of Upper Lake* during Project construction.

3.19 Utilities and Service Systems

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

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

Water

The Project would temporarily utilize water for dust suppression and other activities during construction. Construction-related water demands would be short-term and minimal in volume. No new or expanded facilities would be needed to supply dust-suppression water.

Following construction, the Project would utilize water for staff use in the Interregional Transit Center and for onsite hydrogen generation at the M&O facility. The potable water demand of staff at the Transit Center is anticipated to be marginal; potable water demand for hydrogen generation at the M&O facility is anticipated to be similar to what would be used for a small office.

Other than a lateral connection to the existing water line, no new or expanded infrastructure would be required to serve the Interregional Transit Center. In addition, existing entitlements would be sufficient to serve the operational phase of the Project. Therefore, no new or expanded water facilities would be required. No impact would occur.

Wastewater

The Project would result in employees being stationed at the Interregional Transit Center site, which would result in an increase in use of the restrooms and kitchen facilities. However, this is not anticipated to generate a significant amount of wastewater. Other than a lateral connection to the existing sewer line, no new or expanded infrastructure would be required. The existing transmission pipelines and wastewater treatment plant is anticipated to have sufficient capacity to serve the Project. Therefore, the Project would not require construction of a new or expanded wastewater treatment facility. No impact would occur.

Storm Water

The Project would result in new impervious surfaces at the Interregional Transit Center site. Storm water associated with new impervious surfaces at the Interregional Transit Center site would be collected via proposed on-site storm water features, which would be designed to comply with the Stormwater Best Management Practices Handbook for New Development and Redevelopment, as required by Lake County. Storm water generated by Project hardscapes would be released at the same rate as pre-project conditions during an applicable design storm, and would discharge to the existing stormwater infrastructure adjacent to the Project site. With implementation of the proposed on-site storm water infrastructure, the capacity of the existing storm water drainage system would be adequate to serve the Project. Therefore, no additional off-site storm water improvements are anticipated to be required to accommodate runoff from the Project. The impact would be less than significant.

Other Utilities

Electrical energy for the Project would be provided by PG&E. The Project would not result in an increased consumption of gasoline or other petroleum products. Energy-consuming equipment anticipated to be used during operation of the Project includes lighting, the new Interregional Transit Center, and onsite hydrogen generation. The new facilities would be a new source of energy demand. However, all systems would be designed for energy efficiency and be consistent with existing zoning and building codes. Overall, the addition of the new facilities is not anticipated to demand a significant amount of energy such that it would require new or expanded off-site infrastructure. No additional electrical, natural gas, or telecommunication facilities or expansion of existing facilities would be required to serve the Project. The impact would be less than significant.

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

As discussed in Impact ‘a’, the Project would require minimal water. The impact on available water supplies during normal, dry, and multiple dry years would be less than significant.

c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project’s projected demand in addition to the provider’s existing commitments? (Less than Significant)

As discussed in Impact ‘a’, the Project may require a marginal increase in wastewater treatment. The Project would not induce the growth of the regional or local population, but would relocate existing Lake Transit Staff to the proposed Interregional Transit Center and marginally increase onsite consumption of water on the M&O facility site. Based on the marginal increase of water consumption and, therefore, wastewater generation, it is anticipated that the local wastewater provider would have adequate capacity to serve the Project’s projected demand. The impact would be less than significant.

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? (Less than Significant)

Construction of the Project would result in a temporary increase in solid waste disposal needs associated with demolition and construction wastes. Following construction, the proposed Project would be expected to produce additional solid waste. Demolition debris, such as pavement, would be off-hauled for recycling. Materials with no practical potential for reuse would be disposed of at a regional landfill.

Solid waste from the Project site would be delivered to a Transfer Station. Any materials not recycled would be hauled to Eastlake Landfill located at 16015 Davis Street, Clearlake, CA, Lake County. The Eastlake Landfill is an active solid waste landfill with an allowable daily capacity of 20 tons per day and approximately 2.8 million cubic yards remaining capacity and is permitted to remain in operation through 2043 (CalRecycle 2022). In addition, there are several other active permitted regional landfills in the Project vicinity, including the Evans Road Landfill and Demaria Landfill (CalRecycle 2022).

The solid waste generated during construction and operation of the Project would represent a small fraction of the daily permitted tonnage of these facilities. Solid waste from the Project would not be expected to exceed the capacity of or otherwise adversely affect the Eastlake Landfill. Therefore, the impact related to increased demand for solid waste and landfill space would be less than significant.

e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste? (Less than Significant)

No applicable federal solid waste regulations would apply to the Project. At the State level, the Integrated Waste Management Act mandates a reduction of waste being disposed and establishes an integrated framework for program implementation, solid waste planning, and solid waste facility and landfill compliance. Demolition debris, such as pavement, would be off-hauled for recycling. Materials with no practical potential for reuse would be disposed of at a regional landfill. The State of California requires that large construction and demolition projects reuse or recycle at least 65% of the debris generated. Project construction and demolition activities would be required to comply with applicable solid waste regulations, and solid waste generated on-site would be required to be disposed of in accordance with all applicable federal and state regulations related to solid waste. The impact would be less than significant.

3.20 Wildfire

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

The Project site is located within a Local Responsibility Area (LRA), which is an area where a local agency, in this case the City of Clearlake and Lake County, has primary responsibility for fire and emergency response. California Department of Forestry and Fire Protection mapping (CALFIRE 2022) indicates both sites are located outside of Very High Fire Hazard Severity Zones (Very High FHSZ). The M&O facility site is surrounded by land also not considered Very High FHSZ. However, the Interregional Transit Center site is located near land identified as within the Very High FHSZ. Specifically, land east of Dam Road Extension is within the Very High FHSZ.

a) Substantially impair an adopted emergency response plan or emergency evacuation plan? (Less than Significant)

The project would improve existing facilities within the M&O facility site and develop new facilities within an urbanized area (Interregional Transit Center). As discussed in Section 3.17, Transportation, Impact ‘d’ and 3.9, Hazards and Hazardous Materials, Impact ‘f’, the Project would not change existing circulation patterns along local roadways or generate substantial new traffic. Construction of proposed facilities along S. Center Drive or Dam Road Extension may require traffic control or brief road closures. In accordance with City requirements, the construction contractor would be required to obtain an encroachment permit from the City for any portion of work completed within the S. Center Drive or Dam Road Extension ROW. The contractor would develop a Traffic Control Plan required by the City’s Encroachment Permit, which would include notification of emergency responders and a work area access plan detailing access to each portion of the project area, including those properties which may experience temporary delay or disruption of access. With implementation of the Traffic Control Plan, the impact to local and regional emergency response or evacuation plans would be less than significant.

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? (No Impact)

Wildfire risk is dependent upon existing environmental conditions, including but not limited to the amount of vegetation present, topography, and climate. The sites are located within the City of Clearlake and Lake County; both sites are adjacent to parking lots, existing urbanized development, open grassland, and vegetated areas.

The Project would improve M&O facility and transit infrastructure. The project would not house residents or other occupants, nor would the project increase the population of the Project area. Therefore, the Project would result in no impact.

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

The Project would not require the installation or maintenance of wildfire infrastructure. The Project would improve the existing emergency access to the Interregional Transit Center site, by increasing the paved vehicle movement and turnaround areas. Additionally, emergency access design for the Project will be reviewed and approved by the Lake County Fire Protection District through the required plan check process. Additionally, these components of the Project would improve access to the site for emergency vehicles and provide additional exit routes for users should a wildfire occur. Therefore, fire risk would not be exacerbated and a less than significant impact would occur.

D) Expose people or structures to significant risks, including downslope or downstream flooding or landslides as a result of runoff, post-fire slop instability, or drainage changes? (No Impact)

The Project would not construct new structures or residences that would create new risks for potential inhabitants. Additionally, the Project site is in a relatively flat area. The relatively flat terrain would make the Project site unlikely to result in landslides. The Project site is not located within a floodplain hazard area that could exacerbate flooding risks if a fire was to occur in the immediate vicinity of the site. Therefore, the Project would result in no impact.

3.21 Mandatory Findings of Significance

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

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

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

Mitigation Measures BIO-1 (Avoid Impacts to Special-Status Bats), BIO-2 (Avoid Impacts to Western Pond Turtles), BIO-3 (Avoid Impacts to Nesting Birds), BIO-4 (Avoid Construction-related Impacts to Potential Wetlands and other Waters of the U.S.), BIO-5 (Avoid and Mitigate Construction-related Impacts to Potential Wetlands and other Waters of the U.S. from Future Solar Facility), CR-1 (Archaeological Inadvertent Discovery Procedures), and CR-2 (Protect Human Remains If Encountered during Construction), TRC-1 (Tribal Monitoring during Construction, and TRC-2 (Implement Habematolel Pomo of Upper Lake's Treatment Protocol during Construction) would be required for the Project. For a full description of these mitigation measures, please see Sections 3.4, Biological Resources, and 3.5, Cultural Resources, and 3.18, Tribal Cultural Resources.

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

Cumulative impacts are defined as "two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts" (CEQA Guidelines Section 15355). Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time. This cumulative impact analysis uses the list approach. A search was undertaken to identify other reasonably foreseeable projects that may have overlapping or cumulative impacts with the Project. Efforts to identify cumulative projects included review for ongoing and planned projects within the City of Clearlake and Lake County (Planning Projects Viewer). The City's proposed ATP Dam Road Extension & South Center Drive Bike/Pedestrian Improvements project would be located in close proximity to the Project, and could be constructed in a similar timeframe as the Project.

As summarized in Section 3 of this IS/MND, the Project would not result in impacts on agriculture and forestry resources. Therefore, implementation of the Project would not contribute to any related cumulative impact on those resources.

The Project impacts summarized in this Initial Study would not add appreciably to any existing or foreseeable future significant cumulative impact, such as visual quality, cultural resources, biological, traffic impacts, or air quality degradation. The impacts of the proposed Project would be mitigated to less than significant. Incremental impacts, if any, would be very small, and the cumulative impact would be less than significant.

c) Does the project have environmental effects which would cause substantial adverse effects on human beings, either directly or indirectly? (Less than Significant with Mitigation)

With implementation of the recommended mitigation measures identified in this Initial Study, the potential for Project-related activities to cause substantial adverse effects on human beings would be reduced to less-than-significant levels.

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Appendices

Appendix A

Health Risk Assessment Memorandum

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M E M O

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RE: Lake County Transit Center - Clearlake, CA Job#21-160

SUBJECT: Exposure of Nearby Sensitive Receptors to Diesel Particulate Matter (DPM) from the Proposed Lake County Interregional Transit Center

BACKGROUND AND INTRODUCTION

Lake Transit is considering construction of a new transit center 0.2 miles northwest of their current transit hub which is located within the parking lot of the Clearlake Shopping Center. The existing transfer hub services six Lake Transit fixed routes (three regional routes and three local routes). The new Interregional Transit Center would be located on approximately 2 acres of land on the southwest corner of S. Center Drive and Dam Road Extension (See Figure 1). Additionally, the project would include the acquisition of four (4) hydrogen buses to expand their interregional service and would make improvements to the existing Lake Transit maintenance and operations (M&O) facility to support the use of the new hydrogen buses.

Illingworth & Rodkin (I&R) assessed the community health risks associated with the construction of the project and operations of the new transit center. Specifically, this assessment looked at the impacts bus emissions (i.e., diesel particulate matter [DPM]) would have on nearby sensitive receptors located within 1,000 feet (i.e., influence area) of the proposed site for the new transit center.

The project is located in Lake County, California, which is part of the Lake County Air Quality Management District (LCAQMD). Lake County is Unclassified/Attainment for all pollutants under the National Ambient Air Quality Standards (NAAQS) and in Attainment for all of the State Air quality Standards (CAAQS). As a result, the LCAQMD does not have thresholds of significance for land development projects. However, the Bay Area Air Quality Management District (BAAQMD), which is adjacent to the LCAQMD, has established project thresholds. Therefore, BAAQMD health risk thresholds were used for comparison purposes in this analysis.

PROJECT CONSTUCTION

Construction is anticipated to begin in spring 2023, and last approximately 10 months. These activities would temporarily affect local air quality, causing a temporary increase in particulate matter (i.e., dust) and other pollutants. Site preparation, use of construction equipment, and heavy-duty vehicle trips associated with construction would result in the greatest emissions of dust and DPM from the site(s). Ground disturbance combined with windy conditions during construction could also cause substantial fugitive dust emissions if there is exposed ground or on-site vehicle travel. Pollutant emission during periods of construction would increase particulate concentrations at neighboring properties. This increase is potentially significant, but normally is mitigated using best management practices (BMPs). These include:

1. All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times a day.

2. All haul trucks transporting soil, sand, or other loose material off-site shall be covered.

3. All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.

4. All vehicle speeds on unpaved roads shall be limited to 15 mph.

5. All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.

6. Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations [CCR]). Clear signage shall be provided for construction workers at all access points.

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

8. Post a publicly visible sign with the telephone number and person to contact at the Lead Agency regarding dust complaints. This person shall respond and take corrective action within 48 hours. The Air District's phone number shall also be visible to ensure compliance with applicable regulations.

TRANSIT CENTER OPERATION

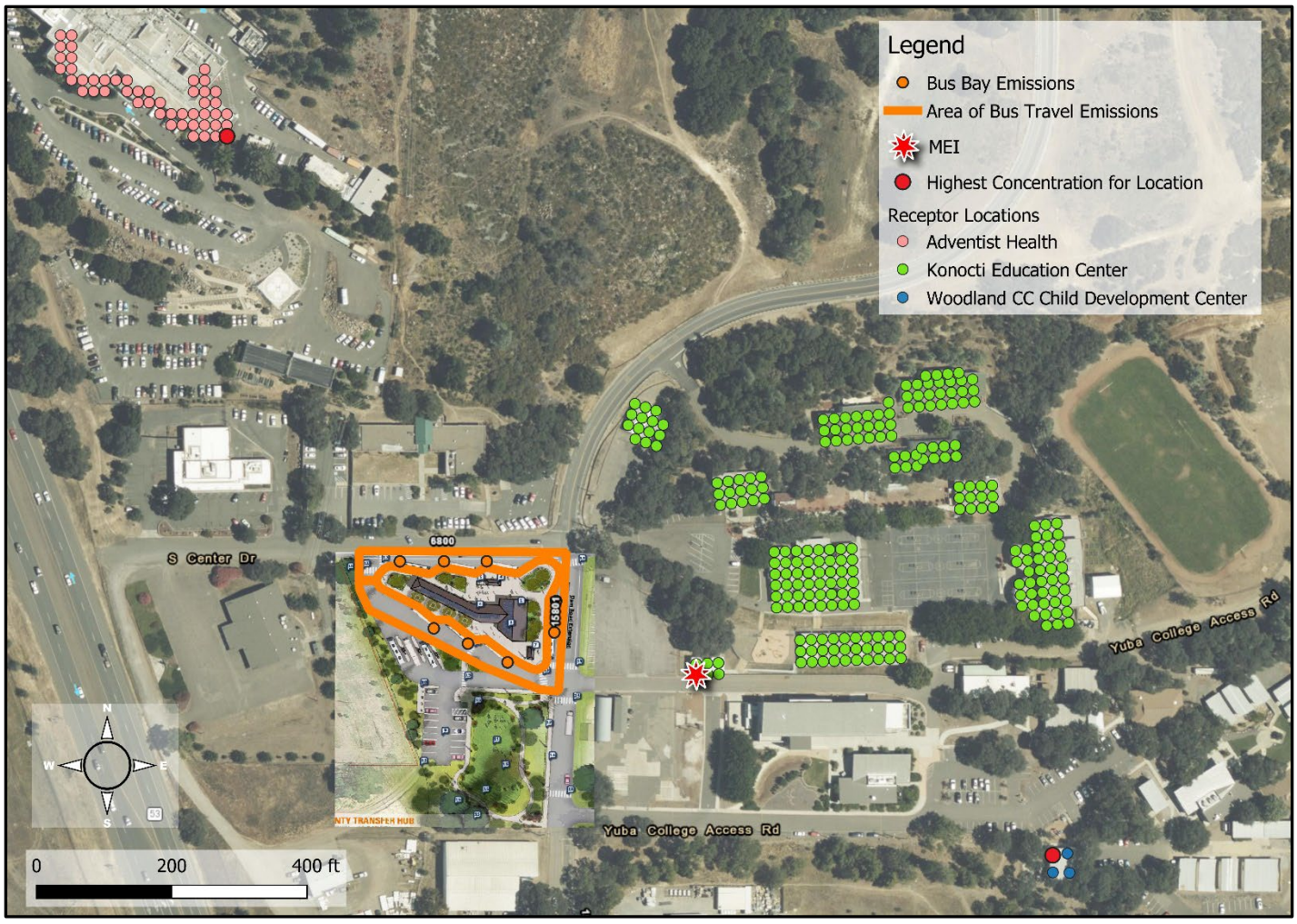
Operation of the Transit Center would generate DPM emissions from the idling and movement of diesel-fueled buses. The new center would serve six existing routes (Routes 1, 3, 4, 10, 11, and 12) with buses from their existing fleet, which are a mixture of gasoline and diesel-fueled busses. Table 1 provides the bus fleet used by Lake County Transit according to the 2017 *Lake Transit Hub Location Plan*. The health risks associated with the operation of the new transit center were estimated by using an emissions model and activity data assumptions to estimate daily emissions and a dispersion model to estimate DPM concentrations at nearby sensitive receptor locations. Figure 1 shows the location of the proposed transit center along with the modeled emissions sources and receptor locations where DPM concentrations were calculated.

Table 1. Lake County Transit Bus Fleet

Lake Transit Authority Vehicle Fleet

# in Fleet	Manufacturer	Wheelchair Capacity	Seating Capacity
2	Eldorado MST II	2	30
2	Eldorado Aerotech	2	16
5	Glaval Titan	2	29
3	Eldorado Aerotech	3	17
3	Glaval Entourage	2	28
7	Glaval Universal	2	18
1	Glaval Universal	4	12
1	Glaval Legacy	2	32
1	Glaval Titan II	2	16
4	Glaval Legacy	3	27
2	Glaval Legacy	2	29

Figure 1. Project Site, DPM Sources and Modeled Receptor Locations



DPM Emissions Estimates

DPM emissions from the new transit center were estimated based on the current schedules for the six existing routes that would use the center. New intercounty routes being proposed were assumed to use one of the four new hydrogen-powered buses, thus having zero DPM emissions. It was estimated that the station could have up to 119 total daily stops at the new center, with a maximum of eight buses idling at any one time. Based on current route information, it was estimated that the center would operate 14 hours each day for 310 days per year. To conservatively (i.e., over) estimate DPM emissions, it was assumed buses would idle for 10 minutes each stop, drive the perimeter of the site (estimated to be 754.7 feet or 0.14 miles) at 5 miles per hour, and that all the buses using the center would be diesel powered.

The latest version of CARB's EMFAC emissions model (EMFAC2021) was used to develop the emissions rates needed. EMFAC2021 includes the latest data on California's car and truck fleets and travel activity. There are two diesel bus categories included in EMFAC2021 for Lake County,

School Bus (SBUS) and Other Bus (OBUS). Therefore, $PM_{2.5}$ emissions rates specific to Lake County for the diesel OBUS category were used to calculate DPM emissions.

Total daily DPM emissions (in grams per day) were estimated for the transit center and then converted to grams per second. The grams per second (g/sec) emissions rate for the idling buses (i.e., bus bays) and the on-site bus travel were then input into an EPA-approved dispersion model (AERMOD) to develop annual off-site concentrations of DPM. Details on the emission calculations and information used are provided in the attachments.

Dispersion Modeling

Dispersion modeling of DPM emissions from the transit center was conducted using the U.S. EPA AERMOD dispersion model. AERMOD is the CARB-recommended model for estimating pollutant concentrations for CEQA purposes. DPM emission sources for the center were grouped into two categories: idle exhaust (bus bay) emissions and onsite bus travel emissions.

Bus bay emissions were modeled as eight separate point source while onsite travel emissions were modeled as one area source representing the perimeter around the transit center. Release heights were established to be 1.3 meters (4.25 feet) assuming each bus was equipped with an under-body street-side exhaust pipe.[1] Other bus emissions parameters, such as stack diameter and flow rate, were based on those associated with heavy-duty diesel vehicles.[2] The locations of the modeled emission sources are shown in Figure 1. Details on the dispersion modeling information for these sources are provided in the attachments.

A five-year data set (2016-2018, 2020 and 2021) of hourly meteorological data prepared for use with AERMOD by CARB from the nearest airport (i.e., Ukiah Municipal Airport, approximately 35 miles northwest in Ukiah, California) was used for the dispersion modeling analysis. Other inputs to the model included U.S. Geological Service terrain data, building downwash parameters associated with the new transit center building, and receptor locations corresponding to identified nearby sensitive receptors.

Sensitive receptors are groups of people more affected by air pollution than others. CARB has identified the following persons who are most likely to be affected by air pollution: children under 16, the elderly over 65, athletes, and people with cardiovascular and chronic respiratory diseases. These groups are classified as sensitive receptors. Locations that may contain a high concentration of these sensitive population groups include residential areas, hospitals, daycare facilities, elder care facilities, elementary schools, and parks. For cancer risk assessments, children are the most sensitive receptors, since they are more susceptible to cancer causing toxic air contaminates like DPM. The closest sensitive receptors to the site are the children attending the Konocti Education Center (4^{th} through 12^{th} grade school) 188 feet east of the new transit center site. The Woodland Community College Childcare Development Center (i.e., campus daycare) is located approximately 755 feet east of the new center and the Adventist Health Care Center (i.e., hospital) is located approximately 680 northwest of the new center.

[1] Assumption is based on bus fleet information in Table 1.
[2] Source Parameters from SJVAPCD Guidance for Air Dispersion Modeling.

There were 280 receptors were included in the dispersion model to represent the nearby sensitive receptors. A receptor height of 3.3 feet (1 meter) was used to represent the breathing heights of children at the school and daycare, while a height of 4.9 feet (1.5 meters) was used for hospital receptors. Figure 1 shows the receptor locations and the location of the receptor with the highest DPM concentration at each of the three sites.

Health Risks Associated with the New Transit Center

Community health risk impacts associated with operation of the new transit center were assessed by predicting increased lifetime cancer risk and computing the Hazard Index (HI) for non-cancer health risks. The most recent Office of Environmental Health Hazard Assessment (OEHHA) risk assessment guidelines were published in February of 2015 and were used for this analysis.[3] The OEHHA methodology used for computing community risks impacts, as well as the risk calculations, are provided in the attachments.

Because the LCAQMD has not developed health risk thresholds or guidance on conducting health risk assessments, the guidance and thresholds for the adjacent BAAQMD were used.[4] Unlike cancer risk, HI values are not cumulative but based on the highest (or maximum) annual DPM concentration. The maximally exposed individual (MEI) is identified as the receptor that is most impacted by the project's operation. As a result, the MEI would be located at the Konocti Education Center (see Figure 1).

Table 2 reports the community risk impacts at the three nearby sensitive receptor locations identified. Cancer risks and non-cancer HIs are compared against the BAAQMD single-source thresholds for comparison purposes. As shown, the cancer risks associated with operation of the new transit center would be less than 1 in a million and HIs would be well below 0.1. All of the impacts would be considered well below the BAAQMD single-source cancer risk and non-cancer thresholds.

Table 2. Health Risk Impacts from Operation of the Proposed Transit Center

Source	Cancer Risk (per million)	Hazard Index Maximum
Konocti Education Center (4 - 12 School)	0.36	< 0.1
Woodland CC Child Development Center (Daycare)	0.08	< 0.1
Adventist Health (Infant @ Hospital)	0.25	< 0.1
BAAQMD Single-Source Threshold	***>10.0***	***>1.0***

3 OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
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Conclusions

Construction of the proposed Lake County Transit project would generate emissions, specifically particulate matter from travel on unpaved roads, earth moving activities, and wind-blown fugitive dust and DPM emissions from diesel-powered construction equipment/vehicles. These sources of emissions would be temporary in nature (less than 10 months) and would be less than significant if construction emission BMPs are implemented.

Operation of the proposed new transit center would generate DPM emissions from diesel-fueled transit buses entering, idling at, and leaving the center. DPM emissions from operations of the new transit center were estimated using the latest version of CARB's EMFAC emissions model (i.e., EMFAC2021) and offsite DPM concentrations estimated using the U.S. EPA's AERMOD model. A health risk analysis showed that increased cancer risks associated with the operation of the new transit center at nearby sensitive receptor locations would be less than one in a million. Non-cancer health risks associated with chronic DPM exposure would be less than 0.1. The LCAQMD has not established health risk thresholds. However, the adjacent BAAQMD has, and the calculated risks are well below the single source thresholds established by BAAQMD.

Attachments

Health Risk Calculation Methodology

A health risk assessment (HRA) for exposure to Toxic Air Contaminants (TACs) requires the application of a risk characterization model to the results from the air dispersion model to estimate potential health risk at each sensitive receptor location. The State of California Office of Environmental Health Hazard Assessment (OEHHA) and California Air Resources Board (CARB) develop recommended methods for conducting health risk assessments. The most recent OEHHA risk assessment guidelines were published in February of 2015.[5] These guidelines incorporate substantial changes designed to provide for enhanced protection of children, as required by State law, compared to previous published risk assessment guidelines. CARB has provided additional guidance on implementing OEHHA's recommended methods.[6] This HRA used the 2015 OEHHA risk assessment guidelines and CARB guidance. The BAAQMD has adopted recommended procedures for applying the newest OEHHA guidelines as part of Regulation 2, Rule 5: New Source Review of Toxic Air Contaminants.[7] Exposure parameters from the OEHHA guidelines and the recent BAAQMD HRA Guidelines were used in this evaluation.

Cancer Risk

Potential increased cancer risk from inhalation of TACs is calculated based on the TAC concentration over the period of exposure, inhalation dose, the TAC cancer potency factor, and an age sensitivity factor to reflect the greater sensitivity of infants and children to cancer causing TACs. The inhalation dose depends on a person's breathing rate, exposure time and frequency and duration of exposure. These parameters vary depending on the age, or age range, of the persons being exposed and whether the exposure is considered to occur at a residential location or other sensitive receptor location.

The current OEHHA guidance recommends that cancer risk be calculated by age groups to account for different breathing rates and sensitivity to TACs. Specifically, they recommend evaluating risks for the third trimester of pregnancy to age zero, ages zero to less than two (infant exposure), ages two to less than 16 (child exposure), and ages 16 to 70 (adult exposure). Age sensitivity factors (ASFs) associated with the different types of exposure are an ASF of 10 for the third trimester and infant exposures, an ASF of 3 for a child exposure, and an ASF of 1 for an adult exposure. Also associated with each exposure type are different breathing rates, expressed as liters per kilogram of body weight per day (L/kg-day) or liters per kilogram of body weight per 8-hour period for the case of worker or school child exposures. As recommended by the BAAQMD for residential exposures, 95th percentile breathing rates are used for the third trimester and infant exposures, and 80th percentile breathing rates for child and adult exposures. For children at schools and daycare facilities, BAAQMD recommends using the 95th percentile 8-hour breathing rates. Additionally, CARB and the BAAQMD recommend the use of a residential exposure duration of 30 years for sources with long-term emissions (e.g., roadways). For workers, assumed to be adults,

5 OEHHA, 2015. *Air Toxics Hot Spots Program Risk Assessment Guidelines, The Air Toxics Hot Spots Program Guidance Manual for Preparation of Health Risk Assessments*. Office of Environmental Health Hazard Assessment. February.
6 CARB, 2015. *Risk Management Guidance for Stationary Sources of Air Toxics*. July 23.
7 BAAQMD, 2016. *BAAQMD Air Toxics NSR Program Health Risk Assessment (HRA) Guidelines*. December 2016.

a 25-year exposure period is recommended by the BAAQMD. For school children a 9-year exposure period is recommended by the BAAQMD.

Under previous OEHHA and BAAQMD HRA guidance, residential receptors are assumed to be at their home 24 hours a day, or 100 percent of the time. In the 2015 Risk Assessment Guidance, OEHHA includes adjustments to exposure duration to account for the fraction of time at home (FAH), which can be less than 100 percent of the time, based on updated population and activity statistics. The FAH factors are age-specific and are: 0.85 for third trimester of pregnancy to less than 2 years old, 0.72 for ages 2 to less than 16 years, and 0.73 for ages 16 to 70 years. Use of the FAH factors are allowed by the BAAQMD if there are no schools in the project vicinity have a cancer risk of one in a million or greater assuming 100 percent exposure (FAH = 1.0).

Functionally, cancer risk is calculated using the following parameters and formulas:

Cancer Risk (per million) = $CPF \times Inhalation\ Dose \times ASF \times ED/AT \times FAH \times 10^6$

Where:

CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = $C_{air} \times DBR^* \times A \times (EF/365) \times 10^{-6}$

Where:

C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
8HrBR = 8-hour breathing rate (L/kg body weight-8 hours)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

* An 8-hour breathing rate (8HrBR) is used for worker and school child exposures.

The health risk parameters used in this evaluation are summarized as follows:

Parameter	*Exposure Type* →	Infant		Child	Adult
	Age Range →	3rd Trimester	0<2	2 < 16	16 - 30
DPM Cancer Potency Factor $(mg/kg\text{-}day)^{-1}$		1.10E+00	1.10E+00	1.10E+00	1.10E+00
Daily Breathing Rate (L/kg-day) 80th Percentile Rate		273	758	572	261
Daily Breathing Rate (L/kg-day) 95th Percentile Rate		361	1,090	745	335
8-hour Breathing Rate (L/kg-8 hours) 95th Percentile Rate		-	1,200	520	240
Inhalation Absorption Factor		1	1	1	1
Averaging Time (years)		70	70	70	70
Exposure Duration (years)		0.25	2	14	14*
Exposure Frequency (days/year)		350	350	350	350*
Age Sensitivity Factor		10	10	3	1
Fraction of Time at Home (FAH)		0.85-1.0	0.85-1.0	0.72-1.0	0.73*

Non-Cancer Hazards

Non-cancer health risk is usually determined by comparing the predicted level of exposure to a chemical to the level of exposure that is not expected to cause any adverse effects (reference exposure level), even to the most susceptible people. Potential non-cancer health hazards from TAC exposure are expressed in terms of a hazard index (HI), which is the ratio of the TAC concentration to a reference exposure level (REL). OEHHA has defined acceptable concentration levels for contaminants that pose non-cancer health hazards. TAC concentrations below the REL are not expected to cause adverse health impacts, even for sensitive individuals. The total HI is calculated as the sum of the HIs for each TAC evaluated and the total HI is compared to the BAAQMD significance thresholds to determine whether a significant non-cancer health impact from a project would occur.

Typically, for residential projects located near roadways with substantial TAC emissions, the primary TAC of concern with non-cancer health effects is diesel particulate matter (DPM). For DPM, the chronic inhalation REL is 5 micrograms per cubic meter ($\mu g/m^3$).

Annual $PM_{2.5}$ Concentrations

While not a TAC, fine particulate matter ($PM_{2.5}$) has been identified by the BAAQMD as a pollutant with potential non-cancer health effects that should be included when evaluating potential community health impacts under the California Environmental Quality Act (CEQA). The thresholds of significance for $PM_{2.5}$ (project level and cumulative) are in terms of an increase in the annual average concentration. When considering $PM_{2.5}$ impacts, the contribution from all sources of $PM_{2.5}$ emissions should be included. For projects with potential impacts from nearby local roadways, the $PM_{2.5}$ impacts should include those from vehicle exhaust emissions, $PM_{2.5}$ generated from vehicle tire and brake wear, and fugitive emissions from re-suspended dust on the roads.

Vehicle Category	VMT Fraction Across Category	Diesel VMT Fraction Within Category	Gas VMT Fraction Within Category
OBUS	1	1	0

	<= 5 mph	10 mph	15 mph	20 mph	25 mph	30 mph	35 mph	40 mph	45 mph	50 mph	55 mph	60 mph	65 mph	70 mph	75 mph
PM2_5 Ex															
Dsl															
OBUS	0.104205888	0.088426606	0.063267418	0.045796946	0.03860857	0.03507973	0.033494636	0.033851	0.036147	0.040382	0.046555	0.052528	0.05733	0.05733	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

OBUS Onsite Travel Emissions - DPM

Area Source	RD Seg ID	Modeled Perimiter (ft)	Modeled Perimiter (m)	Plume Vertical (ft)	Plume Vertical (m)	Initial Vertical Dispersion	Release Height (ft)	Release Height (m)	Fraction that are OBUS	No. of Daily Buses	Travel Speed (mph)	DPM EF[b] (g/veh-mi)	Bus Travel DPM Emissions Daily (g/day)	Hourly (g/s)	Annual (lbs/yr)
On-site:		754.7	230.0	9.38	2.86	1.33	4.27	1.30	1	119.00	5	0.104206	1.772473	2.051E-05	1.211
		0.143													

[a]Source Parameters from SJVAPCD *Guidance for Air Dispersion Modeling*

[b]Emissions Factor from CT_EMFAC2017

OBUS Idle Emissions - DPM

On-Site	Stack Height (ft)	Stack Height (m)	Stack Diameter[a] (ft)	Stack Diameter[a] (m)	Stack Velocity[a] (m/s)	Temp[a] (K)	Fraction of OBUS	No. of:	Idle Emissions (g/veh-hr)	Idle Emissions Daily (g/day)	Idle Emissions Hourly (g/s)	Idle Emissions Annual (g/yr)	(lb/yr)	
Buses (total)	4.27	1.30	0.33	0.1	51.71	366	1	119	0.52102944	10.33375	0.000119604	3203.463	7.062426	Total All Buses
Bus Bay	4.27	1.30	0.33	0.1	51.71	366	1	8	0.52102944	1.291719	1.49504E-05	400.433	0.88280	per Bus Bay

[a]Source Parameters from SJVAPCD *Guidance for Air Dispersion Modeling*

[b]Emissions Factor from CT_EMFAC2017

Bus Info		
Total Bus Trips per day	=	238
Total Buses per day	=	119
Operation Days	=	310
Daily Operation Hours	=	14
Bus Idle DPM Emission Information		
Emissions Factor @ 5 mph (g/mi)	=	0.104205888
Bus Idle Emissions Rate (g/hr)	=	0.52102944
Idle Time per Bus (min)	=	10

Assume street-side under-bus exhaust

Lake County Transit Center - DPM Cancer Risks
AERMOD Risk Modeling Parameters and Maximum Concentrations
Child Exposures (1.0 meter receptor heights)

Emissions Years	2024
Receptor Information	
Number of Receptors	280
Receptor Height =	1.0 meters
Receptor distances =	5 meter spacing

Meteorological Conditions	
CARB Ukiah Muni Airport Met Data	2016-2018, 2020, 2021
Land Use Classification	urban
Wind speed =	variable
Wind direction =	variable

Terrain	
USGS NED 1/3 (USA ~10m)	Source and receptor base elevations

MEI at Konocti Education Center (4 - 12 School)

Emission Year	DPM Concentration ($\mu g/m^3$)	Hazard Index
2024	0.00358	0.00072

MEI at Woodland CC Child Development Center (Daycare)

Emission Year	DPM Concentration ($\mu g/m^3$)	Hazard Index
2024	0.00090	0.00018

MEI at Adventist Health (Hospital, 1.5m heights)

Emission Year	DPM Concentration ($\mu g/m^3$)	Hazard Index
2024	0.00140	0.00028

Lake County Transit Center - DPM Cancer Risks for Konocti Education Center MEI
Maximum Child Cancer Risk
1.0 meter receptor heights
School - 4th Grade through 12th Grade Exposure (Ages 8 - 18 years)

Cancer Risk Calculation Method

Student Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C_{air} x DAF x 8hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
AF = Adjustment Factor (unitless) for School operation and exposures different than 8 hours/day
= (24/SHR) x (EHR/8 hrs)
SHR = Hours of emission source operation
EHR = Activity exposure hours while emission source in operation
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
HR = Operation hours
A = Inhalation absorption factor
EF = Days per Year
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00

	Infant	Child	Adult
Age -->	**0 - <2**	**2 - < 16**	**16 - 30**
Parameter			
ASF	10	3	1
8-Hr BR* =	1200	520	240
EHR** =	8.00	8.00	8.00
HR =	8	8	8
SHR =	14	14	14
A =	1	1	1
EF =	180	180	180
AT =	70	70	70
AF =	1.00	1.00	1.00

* 95th percentile 8-hr breathing rates for moderate intensity activities

** EHR based on 8 hours

Transit Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Year	Exposure Duration (years)	Age	Maximum - Exposure Information: Age Sensitivity Factor	Annual DPM Conc	Cancer Risk (per million)
1	2024	1	8 - 9	3	0.0036	0.043
2	2025	1	9 - 10	3	0.0036	0.043
3	2026	1	10 - 11	3	0.0036	0.043
4	2027	1	11 - 12	3	0.0036	0.043
5	2028	1	12 - 13	3	0.0036	0.043
6	2029	1	13 - 14	3	0.0036	0.043
7	2030	1	14 - 15	3	0.0036	0.043
8	2031	1	15 - 16	3	0.0036	0.043
9	2032	1	16 - 17	1	0.0036	0.007
10	2033	1	17 - 18	1	0.0036	0.007
Total Increased Cancer Risk						**0.360**

Woodland CC Child Development Center
Maximum Child Cancer Risk
Child Exposures (1.0 meter receptor heights)
4-Year Exposure (Ages 2 - 5 years)

Cancer Risk Calculation Method

Student Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)

Inhalation Dose = C_{air} x DAF x 8hr BR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air ($\mu g/m^3$)
DAF = Daycare Adjustment Factor (unitless) for source operation and exposures different than 8 hours/day
= (24/SHR) x (DEHR/8 hrs)
SHR = Hours of emission source operation
DEHR = Daycare activity exposure hours while emission source in operation
8-Hr BR = Eight-hour breathing rate (L/kg body weight-per 8 hrs)
DHR = Daycare operation hours
EF = Days per Year
A = Inhalation absorption factor
10^{-6} = Conversion factor

Values

Cancer Potency Factors $(mg/kg\text{-}day)^{-1}$

TAC	CPF
DPM	1.10E+00

	Infant	Child
Age -->	0 - < 2	2 - < 5
Parameter		
ASF	10	3
8-Hr BR* =	1200	520
DEHR =	10.00	10.00
DHR =	10	10
SHR =	14	14
A =	1	1
EF =	260	260
AT =	70	70
DAF =	1.25	1.25

* 95th percentile 8-hr breathing rates for moderate intensity activities

Transit Cancer Risk by Year - Maximum Impact Receptor Location

Exposure Year	Year	Exposure Duration (years)	Age	Maximum - Exposure Information: Age Sensitivity Factor	Maximum - Exposure Information: Annual DPM Conc (ug/m3)	DPM Cancer Risk (per million)
1	2024	1	2	3	0.0009	0.0196
2	2025	1	3	3	0.0009	0.0196
3	2026	1	4	3	0.0009	0.020
4	2027	1	5	3	0.0009	0.020
Total Increased Cancer Risk						0.079

Adventist Health (Hospital, 1.5m heights)
Maximum DPM Cancer Risk From Transit Center Operations
Impacts at Hospital Receptors - 1.5 meter receptor height

Cancer Risk (per million) = CPF x Inhalation Dose x ASF x ED/AT x FAH x 1.0E6

Where: CPF = Cancer potency factor $(mg/kg\text{-}day)^{-1}$
ASF = Age sensitivity factor for specified age group
ED = Exposure duration (years)
AT = Averaging time for lifetime cancer risk (years)
FAH = Fraction of time spent at home (unitless)

Inhalation Dose = C_{air} x DBR x A x (EF/365) x 10^{-6}

Where: C_{air} = concentration in air $(\mu g/m^3)$
DBR = daily breathing rate (L/kg body weight-day)
A = Inhalation absorption factor
EF = Exposure frequency (days/year)
10^{-6} = Conversion factor

Values

	Infant/Child			Adult
Age -->	**3rd Trimester**	**0 - 2**	**2 - 16**	**16 - 30**
Parameter				
ASF =	10	10	3	1
CPF =	1.10E+00	1.10E+00	1.10E+00	1.10E+00
DBR* =	361	1090	572	261
A =	1	1	1	1
EF =	350	350	350	350
AT =	70	70	70	70
FAH =	1.00	1.00	1.00	0.73

* 95th percentile breathing rates for infants and 80th percentile for children and adults

Construction Cancer Risk by Year - Maximum Impact Receptor Location

		Exposure Information				Infant/Child	Adult			Adult
			DPM Conc (ug/m3)		Age	Cancer	Modeled DPM Conc (ug/m3)		Age	Cancer
Exposure Year	**Exposure Duration (years)**	**Age**	**Year**	**Annual**	**Sensitivity Factor**	**Risk (per million)**	**Year**	**Annual**	**Sensitivity Factor**	**Risk (per million)**
0	0.25	-0.25 - 0*	2024	0.0014	10	0.02				
1	1	0 - 1	2024	0.0014	10	0.23	2024	0.0014	1	0.004
Total Increased Cancer Risk						**0.25**				**0.004**

* Third trimester of pregnancy

Appendix B

Biological Resources Technical Memorandum

Memorandum

August 4, 2022

To	James Sookne, Lake Transit Authority Program Manager		
Copy to	Chryss Meier, GHD Senior Environmental Planner		
From	Miles Hartnett, GHD Wildlife Biologist	**Tel**	707-267-2217
Subject	Lake County Interregional Transit Center Project – Biological Memorandum	**Project no.**	12563411

1. Introduction

1.1 Purpose

The purpose of this biological memorandum is to provide baseline information and field survey results to support the Lake County Interregional Transit Center Project (hereafter "Project") in the avoidance and minimization of impacts to biological resources within the Project Study Boundary (PSB).

1.2 Project Description

The project consists of the following main components:

1. The Interregional Transit Center
2. The addition and use of zero-emission buses (ZEB) to expand existing Lake Transit service to further out-of-county destinations
3. M&O facility improvements to support ZEB
4. Existing Transfer Hub Decommissioning
5. Future solar facilities at the existing M&O facility

The first four components would be implemented upon project approval. The fifth component, installation and operation of a solar array facility, would be constructed at a later date dependent on funding procurement.

1.3 Location/Project Area

Proposed project-related construction activities are located within existing properties owned by Lake Transit Authority, adjacent roadways, and at the existing transfer hub. General land use within the vicinity of the PSB is largely commercial, rural, and residential. The PSB consists of two separate and non-contiguous project areas with some level of existing development. The Northern Project Area (NPA) includes an approximate 2.85-acre parcel (APN: 010-043-57) at the southwest corner of S. Center Drive and Dam Road Extension within the City of Clearlake, CA. The Southern Project Area (SPA) includes an approximate 4.0-acre parcel (APN: 012-025-72) at 9240 Hwy 53 Lower Lake, CA. Both properties are within the Lower Lake USGS 7.5 Minute Quadrangle Lake County, CA (Appendix A: Figure 1, Project Vicinity Map).

2. Methods

2.1 Preliminary Investigations/Database Scoping

Prior to field visits, database scoping for sensitive plant and wildlife species that may occur within the vicinity of the PSB was conducted by GHD biologists and/or botanists. The scoping encompassed nine U.S. Geological Survey (USGS) 7.5 minute quadrangles (quads) including the PSB quad (Lower Lake) and surrounding eight quads (Clearlake Highlands, Clearlake Oaks, Benmore Canyon, Middletown, Whispering Pines, Wilbur Springs, Wilson Valley, and Jericho Valley). Databases queried included the California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB), the California Native Plant Society (CNPS) Rare Plant Inventory (RPI), the National Oceanic and Atmospheric Administration (NOAA) Fisheries West Coast Region California Species List Tools, and the US Fish and Wildlife Service (USFWS) Information for Planning and Conservation (IPaC). Other sources of data used for preliminary investigations include the Natural Resource Conservation Service (NRCS) Soil Survey of Lake County, The USFWS National Wetland Inventory (NWI), the CDFW Biogeographic Information Observation System (BIOS) Viewer version 6.22.0711, and CDFW RareFind version 5.2.14. In addition, citizen science databases were reviewed for additional local wildlife information (BAMVT 2021, Bumble Bee Watch 2021, iNaturalist 2021).

2.2 Field Survey Methods

2.2.1 Wildlife Habitat Assessment

A reconnaissance level wildlife habitat assessment survey was conducted by Elizabeth Meisman, GHD Wildlife Biologist (hereafter surveyor), on December 28, 2021. Weather conditions during the survey was approximately 30°F-37°F, cloudy skies, and light winds (Beaufort scale 0-1).

The survey included both parcels within the PSB (NPA and SPA). The survey consisted of a physical search of the area, including inspecting the ground, shrubs, holes, and trees for the presence of any wildlife species (additionally, the bark of vegetation and the ground layer under vegetation were inspected for evidence of wildlife species, such as feathers, pellets, whitewash, scat, tracks, etc.). The surveyor also inspected Seigler Canyon Creek adjacent to the SPA. The survey methods were intended to assess habitat availability and potential to occur for special status wildlife species within the PSB.

No protocol-level surveys for special status wildlife species were conducted at this time.

2.2.2 Special Status Plant Survey

A seasonally appropriate, protocol level botanical survey was conducted by Christian Hernandez, GHD Botanist (hereafter surveyor), on April 25-26, 2022, and June 9-10, 2022. Weather conditions during the early season survey, April 25-26, 2022, was approximately 42°F-64°F, partly cloudy, and light winds (Beaufort scale 0-1). Weather conditions during the late season survey, June 9-10, 2022, was approximately 57°F-91°F, clear skies, and light winds (Beaufort scale 0-1).

Survey methods followed guidelines detailed in the *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities* (CDFW 2018). The survey area included both parcels within the PSB (NPA and SPA). The survey was floristic in nature and consisted of walking perimeters and meandering transects throughout the two parcels. All vascular plant species encountered during the survey were identified using *The Jepson Manual: Vascular Plants of California 2nd Edition* (Baldwin et al.2012) to the taxonomic level necessary to determine species rarity. Survey visits were conducted at the times of year when plants were most likely to be evident and identifiable. Survey methods were intended to maximize the likelihood of locating special status plants and Sensitive Natural Communities (SNCs) within the PSB.

3. Results

3.1 Climate, Hydrology, and Topography

The climate of Lake County is characterized by warm dry summers and cool, moist winters. The average annual precipitation within the PSB is 30 to 40 inches, the average annual air temperature is 55°F to 60°F, and the average frost-free period is 160 to 205 days. The NPA is within the Seigler Canyon Creek-Cache Creek watershed (HUC12-180201160602), is comprised of flat to gently sloped terrain, and is at an elevation of approximately 1,400 feet. The SPA is also within the Seigler Canyon Creek-Cache Creek watershed (HUC12-180201160602), is comprised of flat to gently sloped terrain, and is at an elevation of approximately 1,350 feet. The SPA is approximately 50 feet southwest of Seigler Canyon Creek, a tributary to Cache Creek and Clear Lake (Appendix A: Figure 2A, Northern Project Area; Figure 2B, Southern Project Area).

3.2 Soils

According the NRCS Soil Survey of Lake County, the NPA is comprised of Map Unit Symbol 103: Asbill clay loam, 5 to 8 percent slopes. The SPA is comprised of Map Unit Symbol 116: Benridge variant loam, 2 to 15 percent slopes, and Map Unit Symbol 147: Kelsey fine sandy loam (Appendix A: Figure 3A, Soil Map, Northern Project Area; Figure 4B, Soil Map Southern Project Area).

The soil survey shows no indications of soils derived from serpentinite and no serpentine outcrops were observed within the PSB. Map Unit Symbol 147: Kelsey fine sandy loam is listed on the NRCS Hydric Soils List.

3.3 Waters and Wetlands

No (0) watercourses were identified within the PSB, however, Seigler Canyon Creek is adjacent to the PSB, approximately 50 feet northeast of the SPA (Appendix A: Figure 2B, Southern Project Area).

The NPA contains a small area dominated by hydrophytic vegetation (*Juncus effusus* Association) located in the southwestern section of the parcel and comprises an area of approximately 411 sqft. The area may be the result of poor drainage from the adjacent roadway. The US Army Corps of Engineers (USACE) recognizes *Juncus effusus* as a facultative wetland (FACW) plant species (Appendix A: Figure 4A, Natural Communities Map, Northern Project Area).

The National Wetland Inventory (NWI) shows Seigler Canyon Creek as a PEM1C freshwater emergent wetland (Appendix A: Figure 5, NWI Map). The PEM1C classification is defined as a palustrine system (P) with emergent vegetation (EM), persistent vegetation (1), and is seasonally flooded (C). Wetlands mapped on the NWI are photo interpreted using 1:80,000 scale, black and white imagery from 1977 and are meant only to be used at the reconnaissance level. On the ground field inspection may be necessary to confirm wetland boundaries and/or classification established through image analysis.

A wetland delineation was not conducted for this site.

3.4 Natural Communities and Sensitive Natural Communities

Natural Communities are defined by Alliance and Association descriptions of vegetative communities used in the *Manual of California Vegetation, Second Edition* (Sawyer, J.O., T. Keeler-Wolf, and J.M. Evens. 2009) (MCV2). Sensitive Natural Communities are MCV2 Alliances or Associations with a state rarity rank of S1-S3 and/or are listed on the *List of California Sensitive Natural Communities* (CDFW 2021). USFS Claveg descriptions were used for urban or developed areas where MCV2 description were not appropriate.

The Northern Project Area (NPA) is comprised of *Quercus douglasii-Pinus sabiniana*/grass Association (S4/G4) (Appendix E, Photo 1), *Avena spp.-Bromus spp*. Herbaceous Semi-Natural Alliance (SNA) (Appendix E, Photo 2) with a small patch of *Juncus effusus* Association (S4/G4) approximately 411 sqft in area (Appendix E, Photos 3) (Appendix A: Figure 4A, Natural Communities Map, Northern Project Area).

The Southern Project Area (SPA) is comprised of a regularly mown field of *Avena spp.-Bromus spp*. Herbaceous Semi-Natural Alliance (SNA) (Appendix E, Photo 2) (Appendix E, Photo 2) and existing urban development at LTA facilities (Appendix E, Photo 4) (Appendix A, Figure 4B, Natural Communities Map, Southern Project Area).

No SNCs were observed within the PSB during the field surveys.

Appendix A: Figures 4A and 4B, Natural Communities Maps, shows maps of Natural Communities observed during field surveys.

3.5 Special Status Plants

The database scoping detailed in Section 2.1 showed one-hundred seven (107) special status plant species known to occur within a 9-quad vicinity of the PSB. Based on species specific habitat requirements and habitat availability within the PSB, two (2) special status plant species were determined to have moderate or high potential to occur within the PSB and include Konocti manzanita (*Arctostaphylos manzanita* ssp. *elegans)* and Baker's Navarretia *(Navarretia leucocephala* ssp*. bakeri).*

No (0) special status plants species were located within the PSB during the seasonally appropriate protocol level botanical survey.

Appendix A, Figure 6, CNDDB Map, shows all special status species occurrences tracked by the CNDDB within a 3-mile radius of the PSB.

Appendix B, details the query results of the database scoping listed above.

Appendix C includes tables that detail the habitat requirements and potential to occur within the PSB for each special status plant species known to occur within a 9-quad vicinity of the PSB.

Appendix D includes a list of all plant species detected during the seasonally appropriate protocol level botanical survey.

3.6 Special Status Wildlife

The database scoping detailed in Section 2.1 showed thirty-six (36) special status wildlife species known to occur within a 9-quad vicinity of the PSB. Based on species specific habitat requirements and habitat availability within the PSB, nine (9) special status wildlife species were determined to have moderate or high potential to occur within the PSB and include the pallid bat (*Antrozous paalidus*), silver-haired bat (*Lasionycteris noctivagans*), western red bat (*Lasarius blossevillii*), hoary bat (*Lasiurus cinereus),* long-eared myotis (*Myotis evotis),* fringed myotis (*Myotis thysanodes),* Cooper's hawk *(Accipiter cooperii),* purple martin *(Progne subis),* and western pond turtle *(Emys marmorata).*

No special status wildlife species were observed during wildlife habitat assessment field survey.

Appendix A, Figure 6, CNDDB Map shows all special status species occurrences tracked by the CNDDB within a 3-mile radius of the PSB.

Appendix B, details the query results of the database scoping listed above.

Appendix C contains tables that detail the habitat requirements and potential to occur within the PSB for each special status wildlife species known to occur within a 9-quad vicinity of the PSB.

Appendix D includes a list of all wildlife species detected during the field survey. Please note this list is not intended to be comprehensive lists of all wildlife species that could occur within the PSB (the wildlife habitat assessment was completed in the winter when numerous neotropical migrant bird species that breed in the region would be unlikely to occur).

3.7 Habitat Conservation Plans and Natural Community Conservation Plans

Habitat Conservation Plans (HCP) and Natural Community Conservation Plans (NCCP) are site-specific plans to address effects on sensitive species of plants and animals. According to the CDFW BIOS Viewer version 6.22.0711, the PSB is not located within any Habitat Conservation Plans and/or Natural Community Conservation Plans.

3.8 Critical Habitat

Critical habitat are specific areas designated by USFWS that are essential to conservation for an ESA listed species. According to the CDFW BIOS Viewer version 6.22.0711, and the USFW IPaC query detailed in Section 2.1, the PSB is not located within any United States Fish and Wildlife Service (USFWS)-designated critical habitat for ESA listed species.

3.9 Habitat Connectivity

Wildlife corridors refer to established migration routes commonly used by resident and migratory species for passage from one geographic location to another. Maintaining the continuity of established wildlife corridors is important to: a) sustain species with specific foraging requirements, b) preserve a species' distribution potential, and c) retain diversity among many wildlife populations. Therefore, resource agencies consider wildlife corridors to be a sensitive resource.

According to the CDFW BIOS Viewer version 6.22.0711, the PSB is not located within or near any natural landscape blocks identified by the California Essential Habitat Connectivity Project. The PSB is outside of the riparian habitat corridor associated with Siegler Canyon Creek and no other significant wildlife movement corridors or regional wildlife linkages were identified within the PSB.

3.10 Local Laws/Ordinances

Native trees located within the NPA are protected by the Clearlake Municipal Code, Native Tree Ordinance, Section 18-40. Exemptions may apply under Section 18-40.030.

Trees observed within the NPA during the botanical site visit are detailed in the table below:

Table 1. Details on trees located in the Northern Project Area.

Species	Status	Size Classes (inches at dbh)	Number of Trees/Saplings
Blue oak (*Quercus douglasii*)	Native	Regen/Sapling (<1")	273
		Small (1"-4")	0
		Medium (4"-18")	11
		Large (>18")	8
Gray pine (*Pinus sabiniana*)	Native	Regen/Sapling (<1")	1
		Small (<4")	2
		Medium (4-18")	2
		Large (>18")	0

4. Summary

The PSB consists of two separate and non-contiguous project areas with some level of existing development. The Northern Project Area (NPA) includes an approximate 2.85-acre parcel (APN: 010-043-57) at the southwest corner of S. Center Drive and Dam Road Extension within the City of Clearlake, CA. The Southern Project Area (SPA) includes an approximate 4.0-acre parcel (APN: 012-025-72) at 9240 Hwy 53 Lower Lake, CA. Natural communities and other potential habitat for plants and wildlife include *Quercus douglasii-Pinus sabiniana*/grass Association, *Avena spp.-Bromus spp.* Herbaceous Semi-Natural Alliance, urban development and a small patch of *Juncus effusus* Association. No (0) SNCs were observed during field visits.

Two (2) special status plant species and nine (9) special status wildlife species were determined to have moderate or high potential to occur within the PSB. No (0) special status plant or wildlife species were observed during site visits. The PSB is not within the boundaries of any known HCP, NCCP, essential habitat connectivity corridors, or USFWS designated critical habitat for ESA listed species.

There are no (0) watercourses within the PSB, however, Seigler Canyon Creek is adjacent to the PSB, approximately 50 feet northeast of the SPA, and is listed as a freshwater emergent wetland on the NWI.

The NPA contains a small area dominated by hydrophytic vegetation (*Juncus effusus* Association) located in the southwestern section of the parcel and comprises an area of approximately 411 sqft. A wetland delineation was not conducted for this site.

Native trees located within the NPA are protected by the Clearlake Municipal Code and a Native Tree Removal Permit may be necessary for proposed tree removal activities.

5. References

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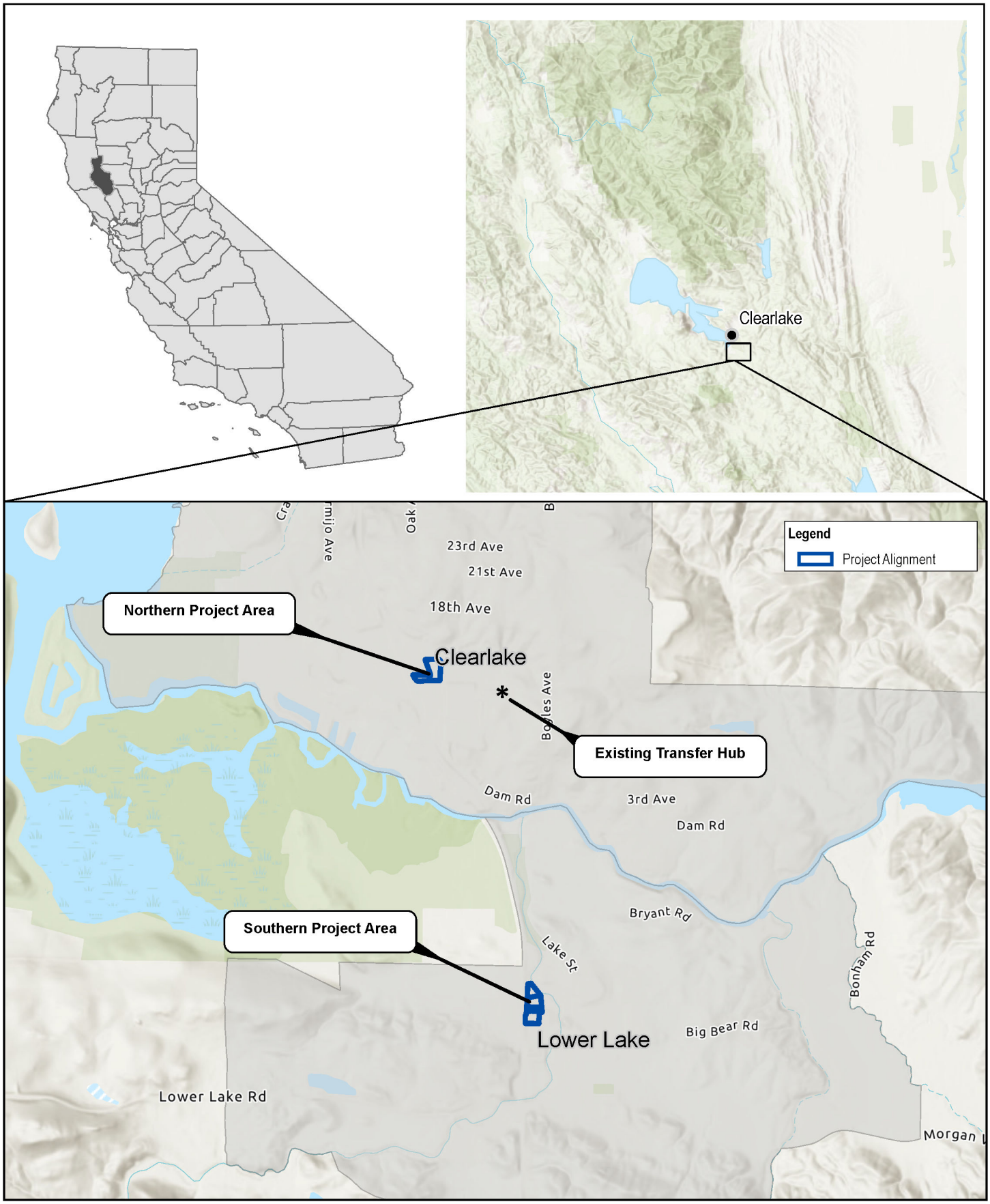
Biological Resources Technical Memorandum

Appendix A

Figures



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Lake County Transit Authority
Lake County
New Interregional Transit Center

Project No. **12563411**
Revision No. **-**
Date **7/22/2022**

Project Vicinity Map

FIGURE 1

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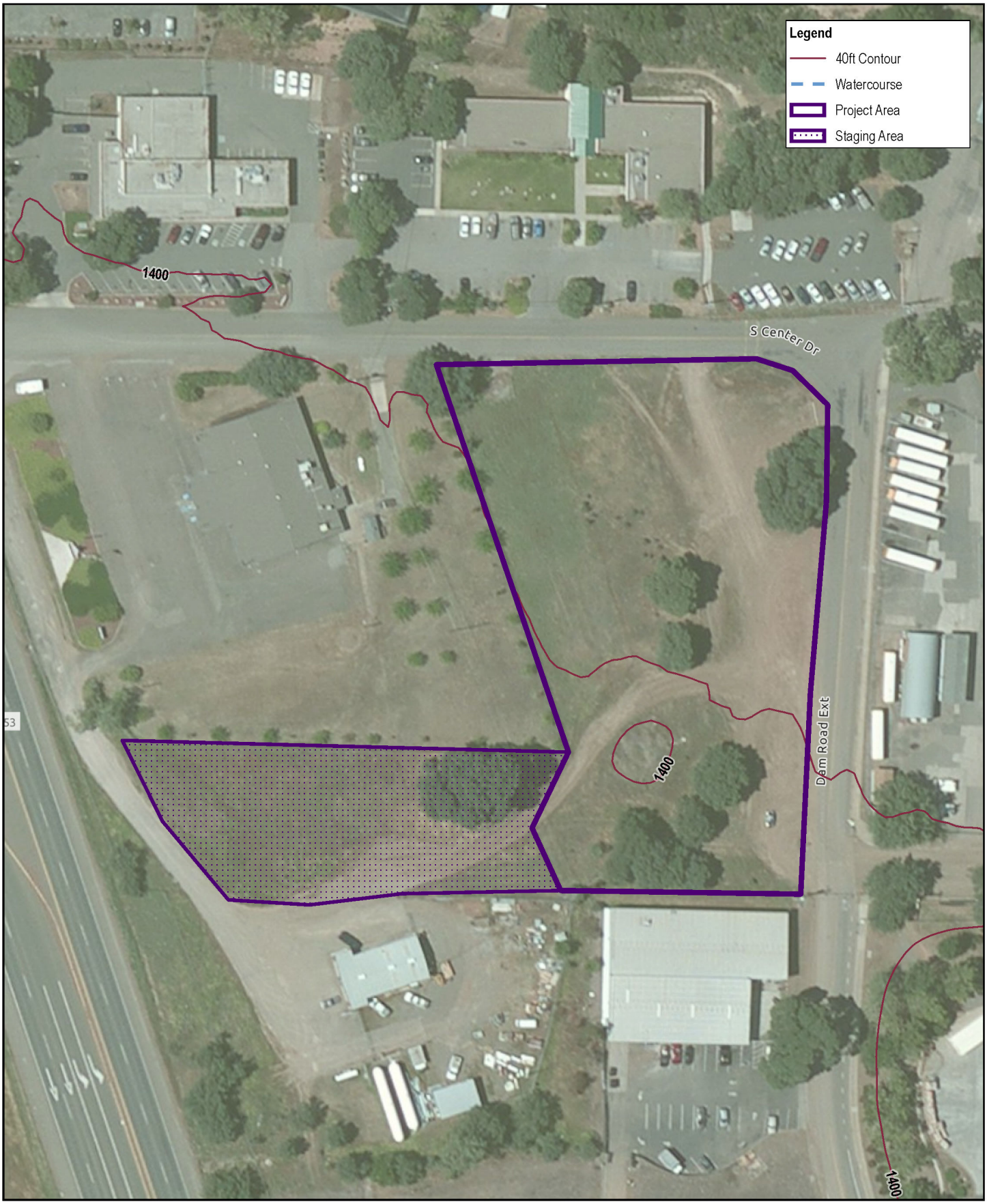

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Lake County Transit Authority
Lake County
Interregional Transit Center

Project No. **12563411**
Revision No. **-**
Date **7/22/2022**

Northern Project Area

FIGURE 2A

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Data source: World Imagery (Clarity): Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
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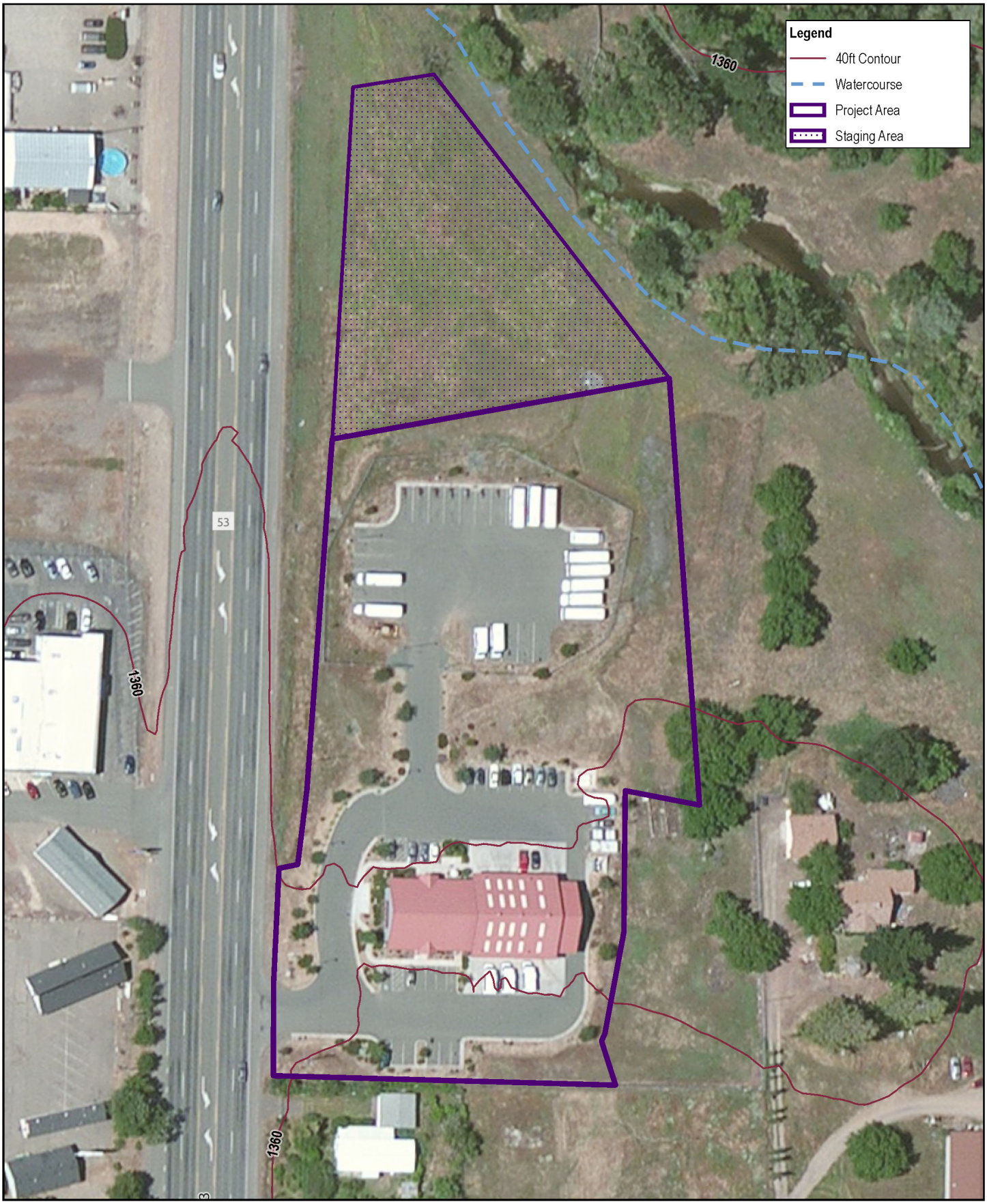

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Lake County
Interregional Transit Center

Project No. **12563411**
Revision No. **-**
Date **7/22/2022**

Southern Project Area

FIGURE 2B

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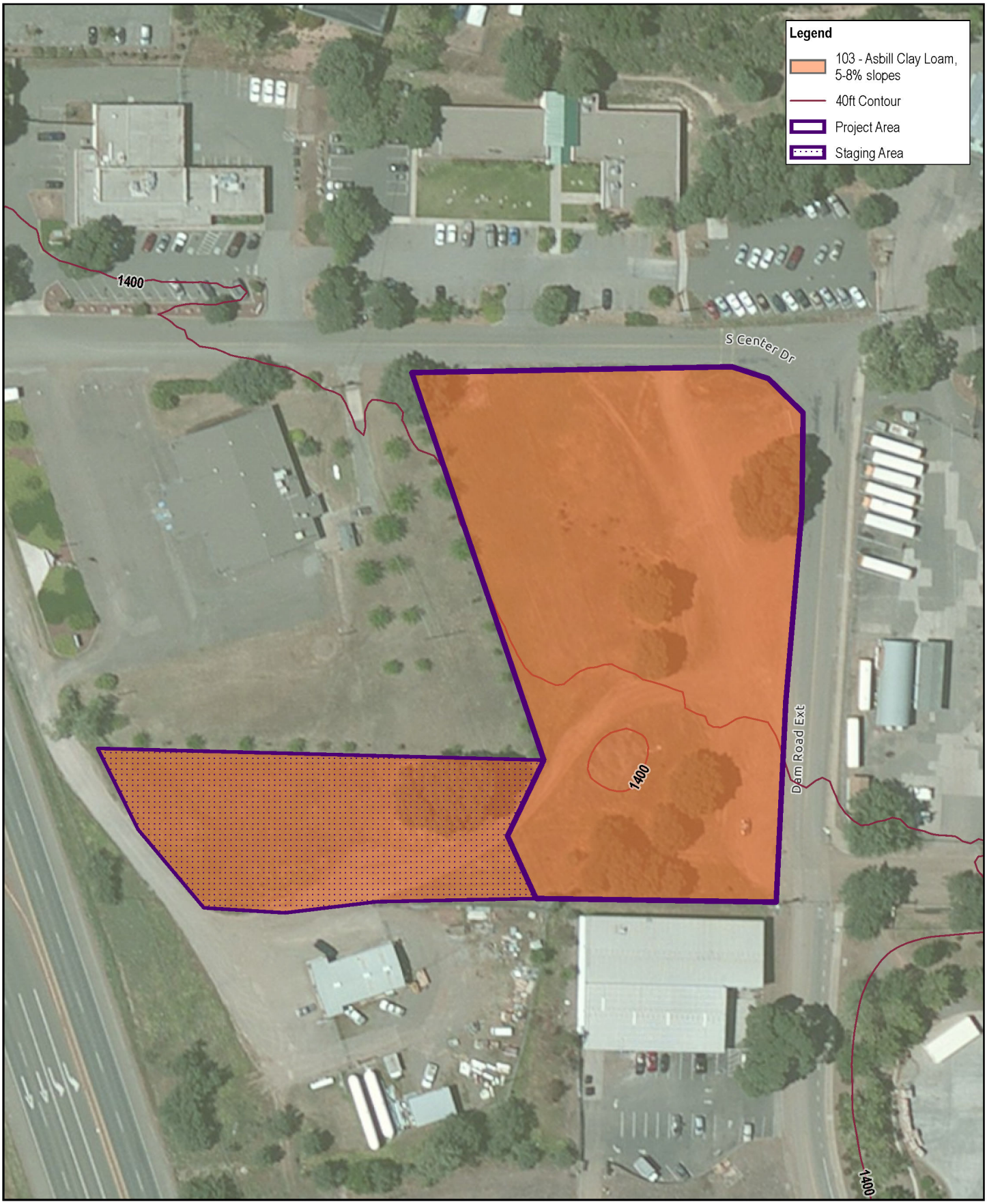

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Lake County Transit Authority
Lake County
Interregional Transit Center

Soils Map
Northern Project Area

Project No. **12563411**
Revision No. **-**
Date **7/22/2022**

FIGURE 3A

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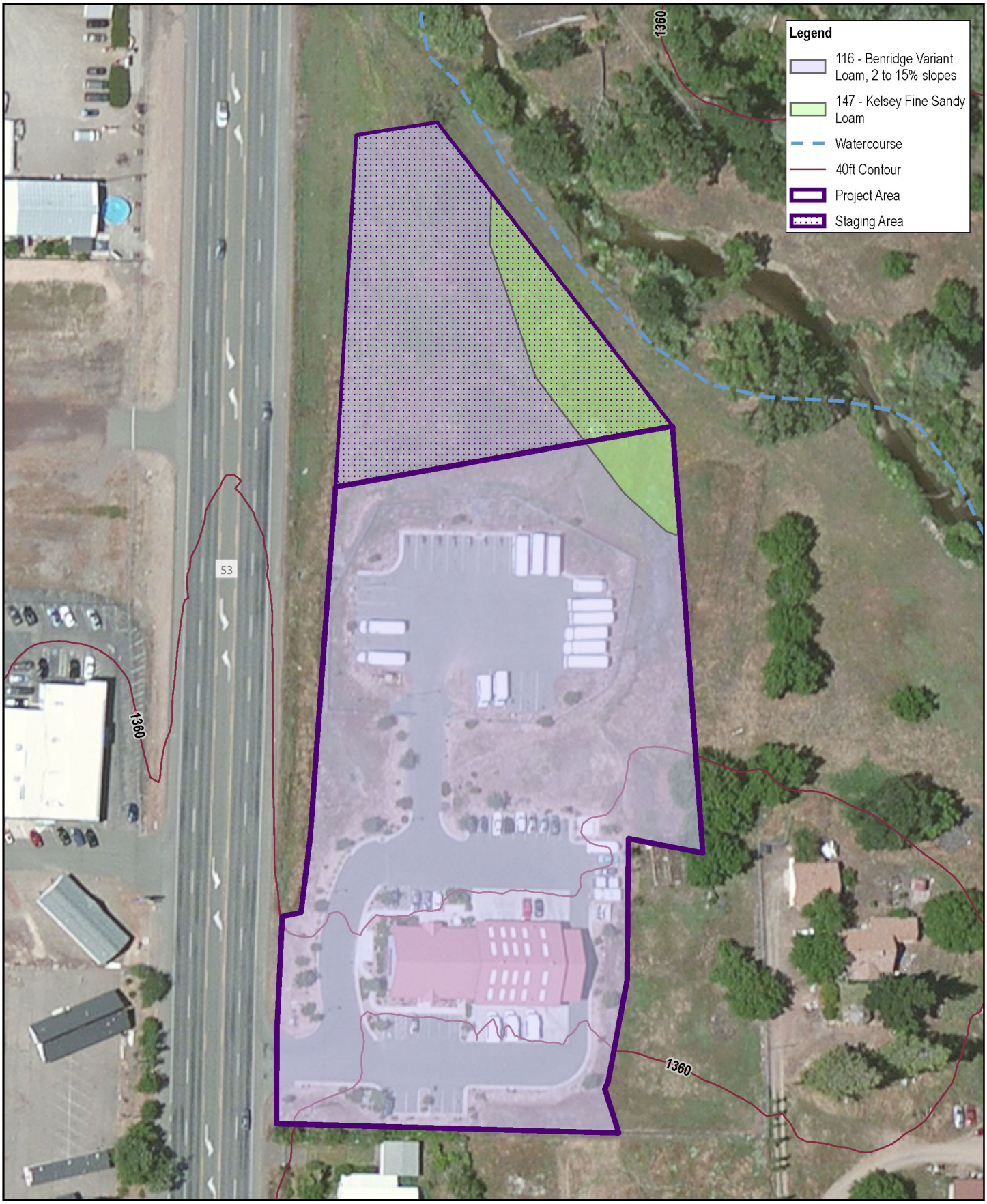

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Lake County
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Project No. **12563411**
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Date **7/22/2022**

Soils Map
Southern Project Area

FIGURE 3B

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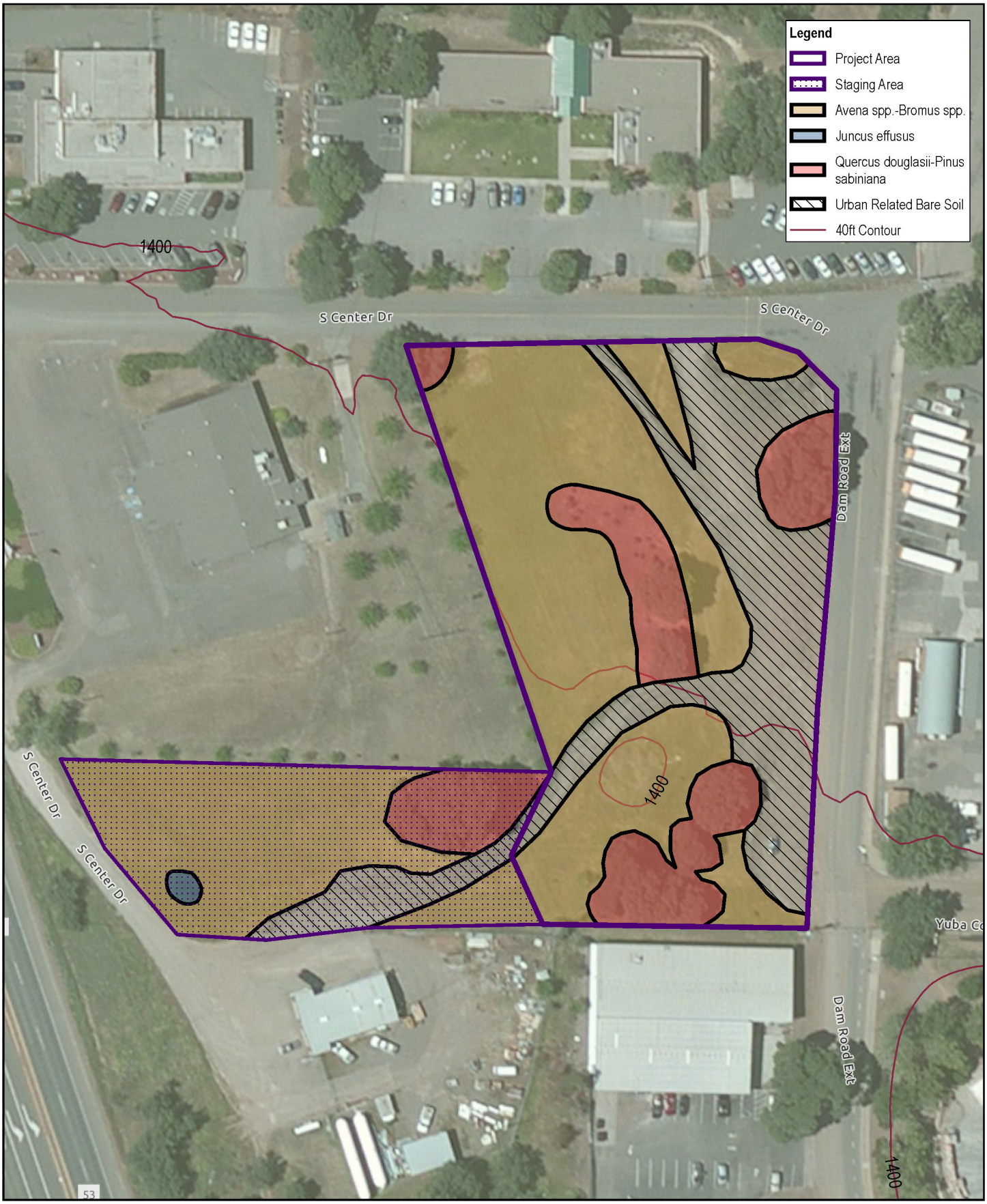

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Lake County Transit Authority
Lake County
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Natural Communities Map
Northern Project Area

Project No. **12563411**
Revision No. **-**
Date **8/4/2022**

FIGURE 4A

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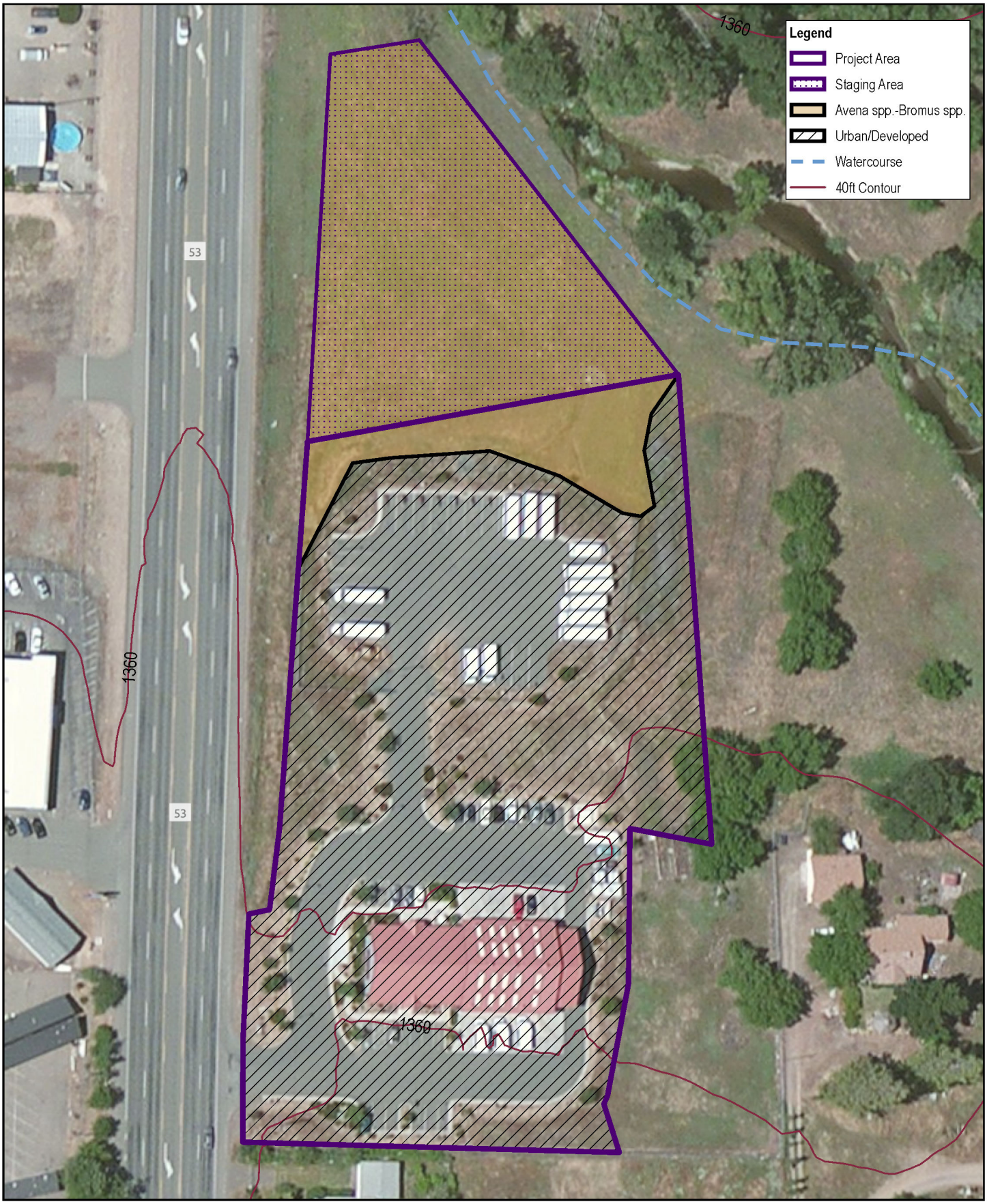

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Lake County Transit Authority
Lake County
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Natural Communities Map
Southern Project Area

Project No. **12563411**
Revision No. **-**
Date **8/4/2022**

FIGURE 4B

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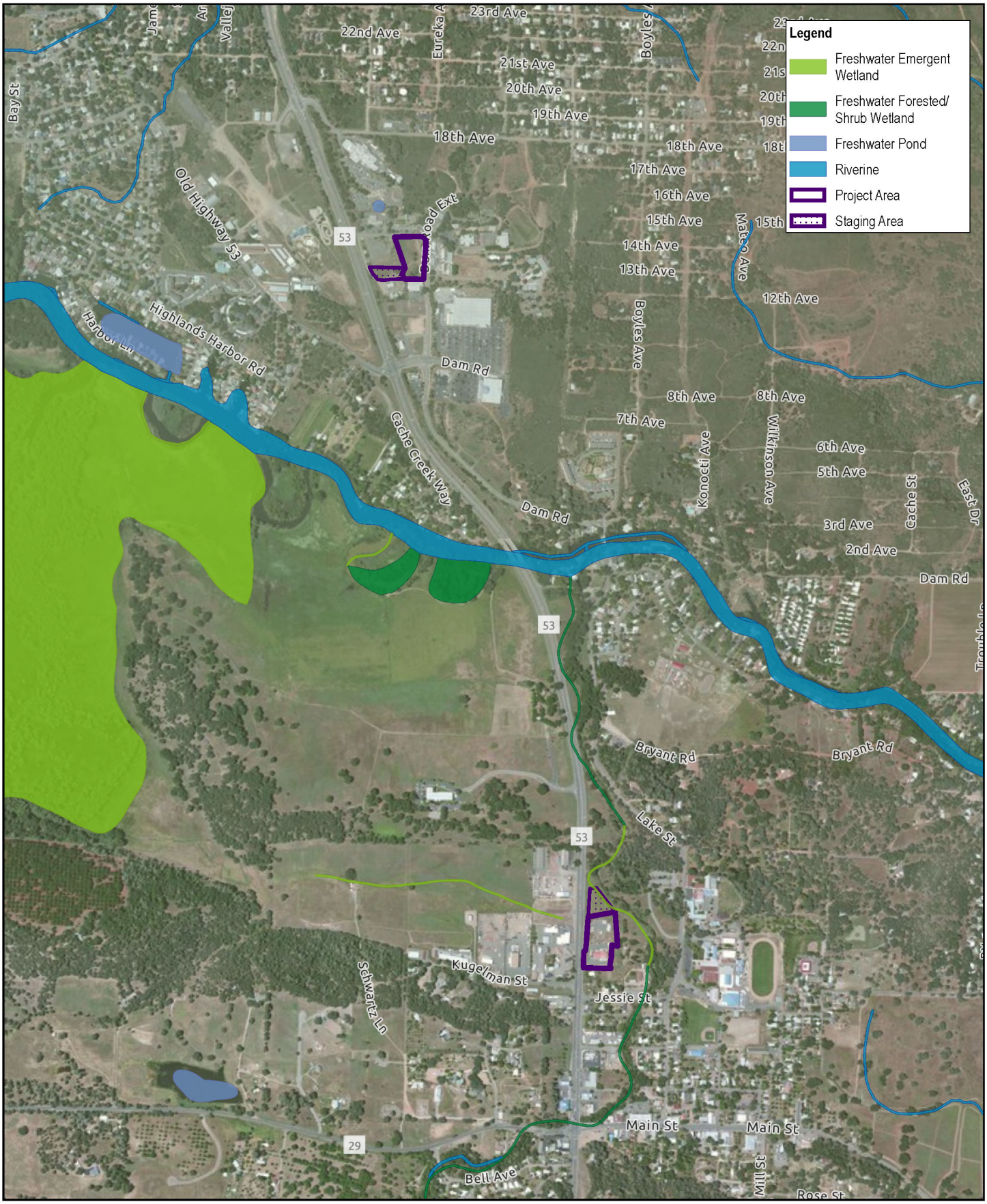

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Project No. **12563411**
Revision No. **-**
Date **7/22/2022**

NWI Map

FIGURE 5

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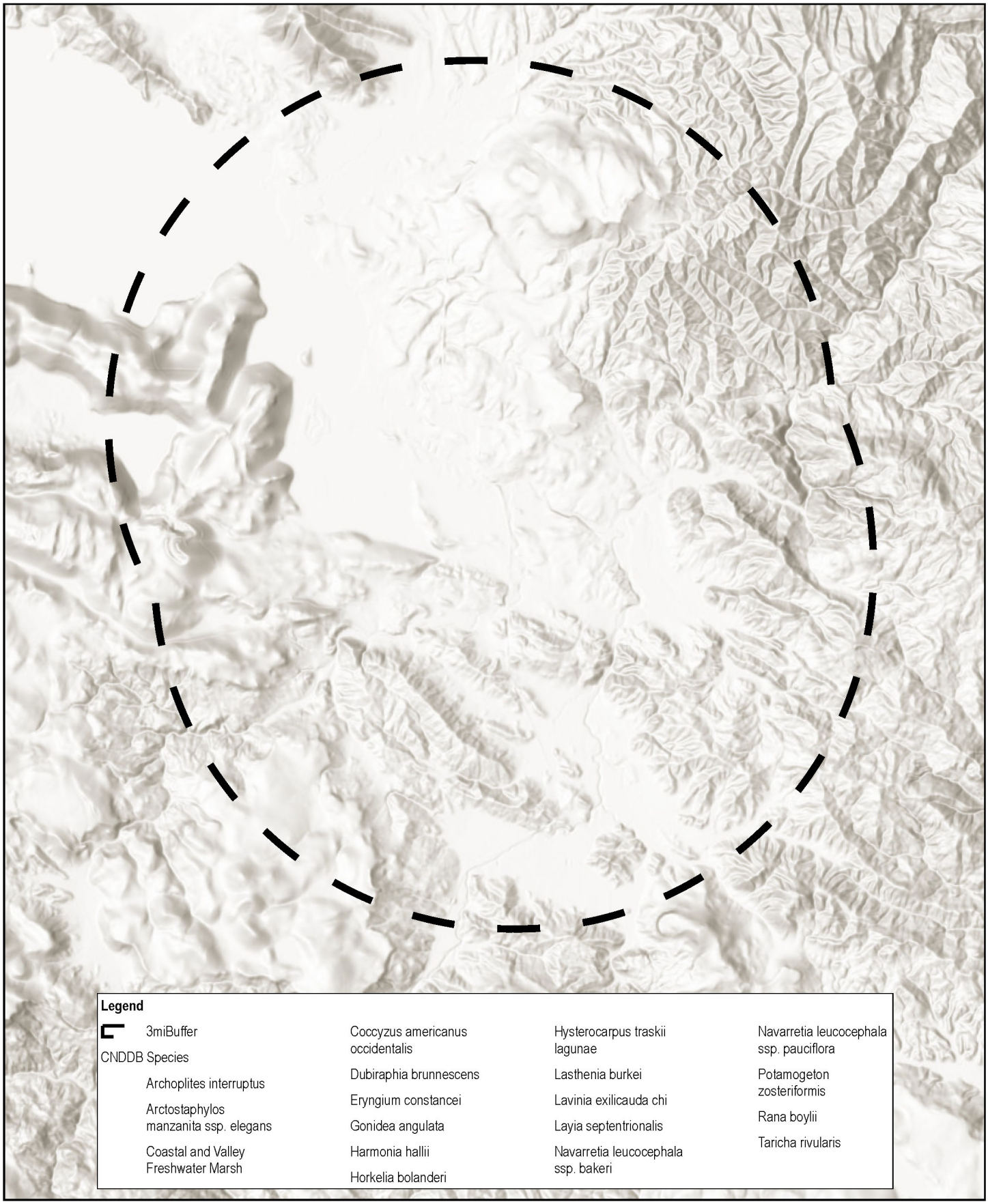

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Project No. **12563411**
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CNDDB Map

FIGURE 6

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Biological Resources Technical Memorandum

Appendix B

Database Searches (CNDD, CNPS, IPaC, and NMFS)

CNDDB 9-Quad Species List 358 records.

Element Type	Scientific Name	Common Name	Element Code	Federal Status	State Status	CDFW Status	CA Rare Plant Rank	Quad Code	Quad Name	Data Status	Taxonomic Sort
Animals - Amphibians	Dicamptodon ensatus	California giant salamander	AAAAH01020	None	None	SSC	-	3812276	WHISPERING PINES	Mapped and Unprocessed	Animals - Amphibians - Dicamptodontidae - Dicamptodon ensatus
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	3812276	WHISPERING PINES	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	3812284	WILSON VALLEY	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	3812275	MIDDLETOWN	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	3812274	JERICHO VALLEY	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	3912215	BENMORE CANYON	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	3912214	WILBUR SPRINGS	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana boylii	foothill yellow-legged frog	AAABH01050	None	Endangered	SSC	-	3812285	LOWER LAKE	Mapped	Animals - Amphibians - Ranidae - Rana boylii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3812286	CLEARLAKE HIGHLANDS	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Rana draytonii	California red-legged frog	AAABH01022	Threatened	None	SSC	-	3812276	WHISPERING PINES	Mapped and Unprocessed	Animals - Amphibians - Ranidae - Rana draytonii
Animals - Amphibians	Taricha rivularis	red-bellied newt	AAAAF02020	None	None	SSC	-	3812276	WHISPERING PINES	Mapped	Animals - Amphibians - Salamandridae - Taricha rivularis
Animals - Amphibians	Taricha rivularis	red-bellied newt	AAAAF02020	None	None	SSC	-	3812285	LOWER LAKE	Mapped	Animals - Amphibians - Salamandridae - Taricha rivularis
Animals - Birds	Accipiter cooperii	Cooper's hawk	ABNKC12040	None	None	WL	-	3912214	WILBUR SPRINGS	Mapped	Animals - Birds - Accipitridae - Accipiter cooperii
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3912214	WILBUR SPRINGS	Mapped and Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3812285	LOWER LAKE	Mapped and Unprocessed	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3812284	WILSON VALLEY	Mapped	Animals - Birds - Accipitridae - Aquila chrysaetos
Animals - Birds	Aquila chrysaetos	golden eagle	ABNKC22010	None	None	FP , WL	-	3812274	JERICHO VALLEY	Mapped	Animals - Birds - Accipitridae - Aquila chrysaetos

Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3812284	WILSON VALLEY	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3812274	JERICHO VALLEY	Mapped and Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3812275	MIDDLETOWN	Mapped and Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3812285	LOWER LAKE	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3912215	BENMORE CANYON	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Haliaeetus leucocephalus	bald eagle	ABNKC10010	Delisted	Endangered	FP	-	3912216	CLEARLAKE OAKS	Unprocessed	Animals - Birds - Accipitridae - Haliaeetus leucocephalus
Animals - Birds	Ardea alba	great egret	ABNGA04040	None	None	-	-	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Animals - Birds - Ardeidae - Ardea alba
Animals - Birds	Ardea herodias	great blue heron	ABNGA04010	None	None	-	-	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Animals - Birds - Ardeidae - Ardea herodias
Animals - Birds	Coccyzus americanus occidentalis	western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	-	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Animals - Birds - Cuculidae - Coccyzus americanus occidentalis
Animals - Birds	Falco mexicanus	prairie falcon	ABNKD06090	None	None	WL	-	3912214	WILBUR SPRINGS	Mapped and Unprocessed	Animals - Birds - Falconidae - Falco mexicanus
Animals - Birds	Falco mexicanus	prairie falcon	ABNKD06090	None	None	WL	-	3812274	JERICHO VALLEY	Mapped	Animals - Birds - Falconidae - Falco mexicanus
Animals - Birds	Progne subis	purple martin	ABPAU01010	None	None	SSC	-	3812276	WHISPERING PINES	Mapped	Animals - Birds - Hirundinidae - Progne subis
Animals - Birds	Pandion haliaetus	osprey	ABNKC01010	None	None	WL	-	3912216	CLEARLAKE OAKS	Mapped and Unprocessed	Animals - Birds - Pandionidae - Pandion haliaetus
Animals - Birds	Athene cunicularia	burrowing owl	ABNSB10010	None	None	SSC	-	3912214	WILBUR SPRINGS	Unprocessed	Animals - Birds - Strigidae - Athene cunicularia
Animals - Birds	Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	3812276	WHISPERING PINES	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
Animals - Birds	Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
Animals - Birds	Strix occidentalis caurina	Northern Spotted Owl	ABNSB12011	Threatened	Threatened	-	-	3912216	CLEARLAKE OAKS	Mapped	Animals - Birds - Strigidae - Strix occidentalis caurina
Animals - Fish	Archoplites interruptus	Sacramento perch	AFCQB07010	None	None	SSC	-	3912216	CLEARLAKE OAKS	Mapped	Animals - Fish - Centrarchidae - Archoplites interruptus
Animals - Fish	Archoplites interruptus	Sacramento perch	AFCQB07010	None	None	SSC	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Animals - Fish - Centrarchidae - Archoplites interruptus

Animals - Fish	Cottus asper ssp.	Clear Lake prickly sculpin	AFC4E02021	None	None	SSC	-	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Animals - Fish - Cottidae - Cottus asper ssp.
Animals - Fish	Cottus asper ssp.	Clear Lake prickly sculpin	AFC4E02021	None	None	SSC	-	3912216	CLEARLAKE OAKS	Unprocessed	Animals - Fish - Cottidae - Cottus asper ssp.
Animals - Fish	Hesperoleucus venustus navarroensis	northern coastal roach	AFCJB19031	None	None	SSC	-	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Animals - Fish - Cyprinidae - Hesperoleucus venustus navarroensis
Animals - Fish	Hesperoleucus venustus navarroensis	northern coastal roach	AFCJB19031	None	None	SSC	-	3812285	LOWER LAKE	Unprocessed	Animals - Fish - Cyprinidae - Hesperoleucus venustus navarroensis
Animals - Fish	Lavinia exilicauda chi	Clear Lake hitch	AFCJB19011	None	Threatened	-	-	3812285	LOWER LAKE	Mapped and Unprocessed	Animals - Fish - Cyprinidae - Lavinia exilicauda chi
Animals - Fish	Lavinia exilicauda chi	Clear Lake hitch	AFCJB19011	None	Threatened	-	-	3812286	CLEARLAKE HIGHLANDS	Mapped and Unprocessed	Animals - Fish - Cyprinidae - Lavinia exilicauda chi
Animals - Fish	Lavinia exilicauda chi	Clear Lake hitch	AFCJB19011	None	Threatened	-	-	3912216	CLEARLAKE OAKS	Mapped and Unprocessed	Animals - Fish - Cyprinidae - Lavinia exilicauda chi
Animals - Fish	Hysterocarpus traskii lagunae	Clear Lake tule perch	AFCQK02013	None	None	SSC	-	3912216	CLEARLAKE OAKS	Mapped	Animals - Fish - Embiotocidae - Hysterocarpus traskii lagunae
Animals - Fish	Hysterocarpus traskii lagunae	Clear Lake tule perch	AFCQK02013	None	None	SSC	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Animals - Fish - Embiotocidae - Hysterocarpus traskii lagunae
Animals - Insects	Bombus occidentalis	western bumble bee	IIHYM24250	None	None	-	-	3812276	WHISPERING PINES	Mapped and Unprocessed	Animals - Insects - Apidae - Bombus occidentalis
Animals - Insects	Hedychridium milleri	Borax Lake cuckoo wasp	IIHYM68020	None	None	-	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Animals - Insects - Chrysididae - Hedychridium milleri
Animals - Insects	Dubiraphia brunnescens	brownish dubiraphian riffle beetle	IICOL5A010	None	None	-	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Animals - Insects - Elmidae - Dubiraphia brunnescens
Animals - Insects	Dubiraphia brunnescens	brownish dubiraphian riffle beetle	IICOL5A010	None	None	-	-	3912216	CLEARLAKE OAKS	Mapped	Animals - Insects - Elmidae - Dubiraphia brunnescens
Animals - Insects	Paracoenia calida	Wilbur Springs shore fly	IIDIP13010	None	None	-	-	3912214	WILBUR SPRINGS	Mapped	Animals - Insects - Ephydridae - Paracoenia calida
Animals - Insects	Ochthebius recticulus	Wilbur Springs minute moss beetle	IICOL5S030	None	None	-	-	3912214	WILBUR SPRINGS	Mapped	Animals - Insects - Hydraenidae - Ochthebius recticulus
Animals - Insects	Saldula usingeri	Wilbur Springs shorebug	IIHEM07010	None	None	-	-	3912214	WILBUR SPRINGS	Mapped	Animals - Insects - Saldidae - Saldula usingeri
Animals - Insects	Saldula usingeri	Wilbur Springs shorebug	IIHEM07010	None	None	-	-	3812285	LOWER LAKE	Mapped	Animals - Insects - Saldidae - Saldula usingeri
Animals - Mammals	Pekania pennanti	Fisher	AMAJF01020	None	None	SSC	-	3912216	CLEARLAKE OAKS	Unprocessed	Animals - Mammals - Mustelidae - Pekania pennanti
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3912216	CLEARLAKE OAKS	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3912214	WILBUR SPRINGS	Unprocessed	Animals - Mammals - Vespertilionidae - Antrozous pallidus

Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3812285	LOWER LAKE	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3812284	WILSON VALLEY	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3812276	WHISPERING PINES	Mapped	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Antrozous pallidus	pallid bat	AMACC10010	None	None	SSC	-	3812274	JERICHO VALLEY	Unprocessed	Animals - Mammals - Vespertilionidae - Antrozous pallidus
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3812274	JERICHO VALLEY	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3812284	WILSON VALLEY	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3812276	WHISPERING PINES	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3812275	MIDDLETOWN	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3812285	LOWER LAKE	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3912216	CLEARLAKE OAKS	Mapped	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Corynorhinus townsendii	Townsend's big-eared bat	AMACC08010	None	None	SSC	-	3912214	WILBUR SPRINGS	Mapped and Unprocessed	Animals - Mammals - Vespertilionidae - Corynorhinus townsendii
Animals - Mammals	Lasionycteris noctivagans	silver-haired bat	AMACC02010	None	None	-	-	3812275	MIDDLETOWN	Mapped	Animals - Mammals - Vespertilionidae - Lasionycteris noctivagans
Animals - Mammals	Lasiurus blossevillii	western red bat	AMACC05060	None	None	SSC	-	3812276	WHISPERING PINES	Mapped	Animals - Mammals - Vespertilionidae - Lasiurus blossevillii
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3812276	WHISPERING PINES	Mapped	Animals - Mammals - Vespertilionidae - Lasiurus cinereus
Animals - Mammals	Lasiurus cinereus	hoary bat	AMACC05030	None	None	-	-	3812275	MIDDLETOWN	Mapped	Animals - Mammals - Vespertilionidae - Lasiurus cinereus

Animals - Mammals	Myotis evotis	long-eared myotis	AMACC01070	None	None	-	-	3812276	WHISPERING PINES	Mapped	Animals - Mammals - Vespertilionidae - Myotis evotis
Animals - Mammals	Myotis thysanodes	fringed myotis	AMACC01090	None	None	-	-	3812276	WHISPERING PINES	Mapped	Animals - Mammals - Vespertilionidae - Myotis thysanodes
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3812275	MIDDLETOWN	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3912216	CLEARLAKE OAKS	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3812285	LOWER LAKE	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mammals	Myotis yumanensis	Yuma myotis	AMACC01020	None	None	-	-	3812274	JERICHO VALLEY	Unprocessed	Animals - Mammals - Vespertilionidae - Myotis yumanensis
Animals - Mollusks	Pyrgulopsis ventricosa	Clear Lake pyrg	IMGASJ0F40	None	None	-	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Animals - Mollusks - Hydrobiidae - Pyrgulopsis ventricosa
Animals - Mollusks	Margaritifera falcata	western pearlshell	IMBIV27020	None	None	-	-	3812275	MIDDLETOWN	Unprocessed	Animals - Mollusks - Margaritiferidae - Margaritifera falcata
Animals - Mollusks	Gonidea angulata	western ridged mussel	IMBIV19010	None	None	-	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Animals - Mollusks - Unionidae - Gonidea angulata
Animals - Mollusks	Gonidea angulata	western ridged mussel	IMBIV19010	None	None	-	-	3912216	CLEARLAKE OAKS	Mapped	Animals - Mollusks - Unionidae - Gonidea angulata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3912216	CLEARLAKE OAKS	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3912215	BENMORE CANYON	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3912214	WILBUR SPRINGS	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812275	MIDDLETOWN	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812276	WHISPERING PINES	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812284	WILSON VALLEY	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812285	LOWER LAKE	Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Animals - Reptiles	Emys marmorata	western pond turtle	ARAAD02030	None	None	SSC	-	3812274	JERICHO VALLEY	Mapped and Unprocessed	Animals - Reptiles - Emydidae - Emys marmorata
Community - Aquatic	Central Valley Drainage Rainbow Trout/Cyprinid Stream	Central Valley Drainage Rainbow Trout/Cyprinid Stream	CARA2422CA	None	None	-	-	3812276	WHISPERING PINES	Mapped	Community - Aquatic - Central Valley Drainage Rainbow Trout/Cyprinid Stream

Community - Aquatic	Clear Lake Drainage Resident Trout Stream	Clear Lake Drainage Resident Trout Stream	CARA2520CA	None	None	-	-	3812276	WHISPERING PINES	Mapped	Community - Aquatic - Clear Lake Drainage Resident Trout Stream
Community - Aquatic	Clear Lake Drainage Resident Trout Stream	Clear Lake Drainage Resident Trout Stream	CARA2520CA	None	None	-	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Community - Aquatic - Clear Lake Drainage Resident Trout Stream
Community - Terrestrial	Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	CTT52410CA	None	None	-	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Community - Terrestrial - Coastal and Valley Freshwater Marsh
Community - Terrestrial	Great Valley Mixed Riparian Forest	Great Valley Mixed Riparian Forest	CTT61420CA	None	None	-	-	3912216	CLEARLAKE OAKS	Mapped	Community - Terrestrial - Great Valley Mixed Riparian Forest
Community - Terrestrial	Northern Basalt Flow Vernal Pool	Northern Basalt Flow Vernal Pool	CTT44131CA	None	None	-	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Community - Terrestrial - Northern Basalt Flow Vernal Pool
Community - Terrestrial	Northern Basalt Flow Vernal Pool	Northern Basalt Flow Vernal Pool	CTT44131CA	None	None	-	-	3812275	MIDDLETOWN	Mapped	Community - Terrestrial - Northern Basalt Flow Vernal Pool
Community - Terrestrial	Northern Interior Cypress Forest	Northern Interior Cypress Forest	CTT83220CA	None	None	-	-	3812274	JERICHO VALLEY	Mapped	Community - Terrestrial - Northern Interior Cypress Forest
Community - Terrestrial	Northern Volcanic Ash Vernal Pool	Northern Volcanic Ash Vernal Pool	CTT44133CA	None	None	-	-	3812286	CLEARLAKE HIGHLANDS	Mapped	Community - Terrestrial - Northern Volcanic Ash Vernal Pool
Community - Terrestrial	Serpentine Bunchgrass	Serpentine Bunchgrass	CTT42130CA	None	None	-	-	3812274	JERICHO VALLEY	Mapped	Community - Terrestrial - Serpentine Bunchgrass
Community - Terrestrial	Wildflower Field	Wildflower Field	CTT42300CA	None	None	-	-	3912214	WILBUR SPRINGS	Mapped	Community - Terrestrial - Wildflower Field
Plants - Bryophytes	Plagiobryoides vinosula	wine-colored tufa moss	NBMUS0Y090	None	None	-	4.2	3912214	WILBUR SPRINGS	Unprocessed	Plants - Bryophytes - Bryaceae - Plagiobryoides vinosula
Plants - Bryophytes	Grimmia torenii	Toren's grimmia	NBMUS32330	None	None	-	1B.3	3812276	WHISPERING PINES	Mapped	Plants - Bryophytes - Grimmiaceae - Grimmia torenii
Plants - Bryophytes	Grimmia torenii	Toren's grimmia	NBMUS32330	None	None	-	1B.3	3812274	JERICHO VALLEY	Mapped	Plants - Bryophytes - Grimmiaceae - Grimmia torenii
Plants - Bryophytes	Mielichhoferia elongata	elongate copper moss	NBMUS4Q022	None	None	-	4.3	3812276	WHISPERING PINES	Mapped and Unprocessed	Plants - Bryophytes - Mielichhoferiaceae - Mielichhoferia elongata
Plants - Vascular	Chlorogalum pomeridianum var. minus	dwarf soaproot	PMLIL0G042	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Agavaceae - Chlorogalum pomeridianum var. minus
Plants - Vascular	Allium fimbriatum var. purdyi	Purdy's onion	PMLIL020Y7	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Alliaceae - Allium fimbriatum var. purdyi
Plants - Vascular	Eryngium constancei	Loch Lomond button-celery	PDAPI0Z0W0	Endangered	Endangered	-	1B.1	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Apiaceae - Eryngium constancei
Plants - Vascular	Eryngium constancei	Loch Lomond button-celery	PDAPI0Z0W0	Endangered	Endangered	-	1B.1	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Apiaceae - Eryngium constancei
Plants - Vascular	Lomatium hooveri	Hoover's lomatium	PDAPI1B2K0	None	None	-	4.3	3812285	LOWER LAKE	Unprocessed	Plants - Vascular - Apiaceae - Lomatium hooveri

Plants - Vascular	Lomatium hooveri	Hoover's lomatium	PDAPI1B2K0	None	None	-	4.3	3812284	WILSON VALLEY	Unprocessed	Plants - Vascular - Apiaceae - Lomatium hooveri
Plants - Vascular	Lomatium hooveri	Hoover's lomatium	PDAPI1B2K0	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Apiaceae - Lomatium hooveri
Plants - Vascular	Lomatium hooveri	Hoover's lomatium	PDAPI1B2K0	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Apiaceae - Lomatium hooveri
Plants - Vascular	Lomatium repostum	Napa lomatium	PDAPI1B1M0	None	None	-	1B.2	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Apiaceae - Lomatium repostum
Plants - Vascular	Lomatium repostum	Napa lomatium	PDAPI1B1M0	None	None	-	1B.2	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Plants - Vascular - Apiaceae - Lomatium repostum
Plants - Vascular	Lomatium repostum	Napa lomatium	PDAPI1B1M0	None	None	-	1B.2	3812285	LOWER LAKE	Unprocessed	Plants - Vascular - Apiaceae - Lomatium repostum
Plants - Vascular	Lomatium repostum	Napa lomatium	PDAPI1B1M0	None	None	-	1B.2	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Apiaceae - Lomatium repostum
Plants - Vascular	Lomatium repostum	Napa lomatium	PDAPI1B1M0	None	None	-	1B.2	3812275	MIDDLETOWN	Unprocessed	Plants - Vascular - Apiaceae - Lomatium repostum
Plants - Vascular	Asclepias solanoana	serpentine milkweed	PDASC021R0	None	None	-	4.2	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Apocynaceae - Asclepias solanoana
Plants - Vascular	Asclepias solanoana	serpentine milkweed	PDASC021R0	None	None	-	4.2	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Apocynaceae - Asclepias solanoana
Plants - Vascular	Asclepias solanoana	serpentine milkweed	PDASC021R0	None	None	-	4.2	3912215	BENMORE CANYON	Unprocessed	Plants - Vascular - Apocynaceae - Asclepias solanoana
Plants - Vascular	Asclepias solanoana	serpentine milkweed	PDASC021R0	None	None	-	4.2	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Apocynaceae - Asclepias solanoana
Plants - Vascular	Balsamorhiza macrolepis	big-scale balsamroot	PDAST11061	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Asteraceae - Balsamorhiza macrolepis
Plants - Vascular	Balsamorhiza macrolepis	big-scale balsamroot	PDAST11061	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Asteraceae - Balsamorhiza macrolepis
Plants - Vascular	Centromadia parryi ssp. parryi	pappose tarplant	PDAST4R0P2	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Asteraceae - Centromadia parryi ssp. parryi
Plants - Vascular	Centromadia parryi ssp. parryi	pappose tarplant	PDAST4R0P2	None	None	-	1B.2	3812284	WILSON VALLEY	Mapped	Plants - Vascular - Asteraceae - Centromadia parryi ssp. parryi
Plants - Vascular	Centromadia parryi ssp. rudis	Parry's rough tarplant	PDAST4R0P3	None	None	-	4.2	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Asteraceae - Centromadia parryi ssp. rudis
Plants - Vascular	Erigeron greenei	Greene's narrow-leaved daisy	PDAST3M5G0	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Asteraceae - Erigeron greenei
Plants - Vascular	Erigeron greenei	Greene's narrow-leaved daisy	PDAST3M5G0	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Asteraceae - Erigeron greenei
Plants - Vascular	Erigeron greenei	Greene's narrow-leaved daisy	PDAST3M5G0	None	None	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Asteraceae - Erigeron greenei

Plants - Vascular	Harmonia hallii	Hall's harmonia	PDAST650A0	None	None	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Asteraceae - Harmonia hallii
Plants - Vascular	Harmonia hallii	Hall's harmonia	PDAST650A0	None	None	-	1B.2	3812284	WILSON VALLEY	Mapped	Plants - Vascular - Asteraceae - Harmonia hallii
Plants - Vascular	Harmonia hallii	Hall's harmonia	PDAST650A0	None	None	-	1B.2	3812285	LOWER LAKE	Mapped	Plants - Vascular - Asteraceae - Harmonia hallii
Plants - Vascular	Harmonia hallii	Hall's harmonia	PDAST650A0	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Asteraceae - Harmonia hallii
Plants - Vascular	Harmonia hallii	Hall's harmonia	PDAST650A0	None	None	-	1B.2	3912215	BENMORE CANYON	Mapped	Plants - Vascular - Asteraceae - Harmonia hallii
Plants - Vascular	Harmonia hallii	Hall's harmonia	PDAST650A0	None	None	-	1B.2	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Asteraceae - Harmonia hallii
Plants - Vascular	Harmonia hallii	Hall's harmonia	PDAST650A0	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Asteraceae - Harmonia hallii
Plants - Vascular	Hemizonia congesta ssp. calyculata	Mendocino tarplant	PDAST4R063	None	None	-	4.3	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Plants - Vascular - Asteraceae - Hemizonia congesta ssp. calyculata
Plants - Vascular	Hemizonia congesta ssp. calyculata	Mendocino tarplant	PDAST4R063	None	None	-	4.3	3912216	CLEARLAKE OAKS	Unprocessed	Plants - Vascular - Asteraceae - Hemizonia congesta ssp. calyculata
Plants - Vascular	Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	PDAST4R065	None	None	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Asteraceae - Hemizonia congesta ssp. congesta
Plants - Vascular	Lasthenia burkei	Burke's goldfields	PDAST5L010	Endangered	Endangered	-	1B.1	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Asteraceae - Lasthenia burkei
Plants - Vascular	Lasthenia burkei	Burke's goldfields	PDAST5L010	Endangered	Endangered	-	1B.1	3812285	LOWER LAKE	Mapped	Plants - Vascular - Asteraceae - Lasthenia burkei
Plants - Vascular	Lasthenia burkei	Burke's goldfields	PDAST5L010	Endangered	Endangered	-	1B.1	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Asteraceae - Lasthenia burkei
Plants - Vascular	Layia septentrionalis	Colusa layia	PDAST5N0F0	None	None	-	1B.2	3912215	BENMORE CANYON	Mapped	Plants - Vascular - Asteraceae - Layia septentrionalis
Plants - Vascular	Layia septentrionalis	Colusa layia	PDAST5N0F0	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Asteraceae - Layia septentrionalis
Plants - Vascular	Layia septentrionalis	Colusa layia	PDAST5N0F0	None	None	-	1B.2	3812285	LOWER LAKE	Mapped	Plants - Vascular - Asteraceae - Layia septentrionalis
Plants - Vascular	Layia septentrionalis	Colusa layia	PDAST5N0F0	None	None	-	1B.2	3812284	WILSON VALLEY	Mapped	Plants - Vascular - Asteraceae - Layia septentrionalis
Plants - Vascular	Layia septentrionalis	Colusa layia	PDAST5N0F0	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Asteraceae - Layia septentrionalis
Plants - Vascular	Layia septentrionalis	Colusa layia	PDAST5N0F0	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Asteraceae - Layia septentrionalis
Plants - Vascular	Senecio clevelandii var. clevelandii	Cleveland's ragwort	PDAST8H0R1	None	None	-	4.3	3812284	WILSON VALLEY	Unprocessed	Plants - Vascular - Asteraceae - Senecio clevelandii var. clevelandii
Plants - Vascular	Senecio clevelandii var. clevelandii	Cleveland's ragwort	PDAST8H0R1	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Asteraceae - Senecio clevelandii var. clevelandii
Plants - Vascular	Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Boraginaceae - Amsinckia lunaris

Plants - Vascular	Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-	1B.2	3912215	BENMORE CANYON	Mapped	Plants - Vascular - Boraginaceae - Amsinckia lunaris
Plants - Vascular	Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-	1B.2	3812284	WILSON VALLEY	Mapped	Plants - Vascular - Boraginaceae - Amsinckia lunaris
Plants - Vascular	Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-	1B.2	3812285	LOWER LAKE	Mapped	Plants - Vascular - Boraginaceae - Amsinckia lunaris
Plants - Vascular	Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Boraginaceae - Amsinckia lunaris
Plants - Vascular	Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Boraginaceae - Amsinckia lunaris
Plants - Vascular	Amsinckia lunaris	bent-flowered fiddleneck	PDBOR01070	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Boraginaceae - Amsinckia lunaris
Plants - Vascular	Cryptantha dissita	serpentine cryptantha	PDBOR0A0H2	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Boraginaceae - Cryptantha dissita
Plants - Vascular	Cryptantha excavata	deep-scarred cryptantha	PDBOR0A0W0	None	None	-	1B.1	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Boraginaceae - Cryptantha excavata
Plants - Vascular	Arabis modesta	modest rockcress	PDBRA06180	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Brassicaceae - Arabis modesta
Plants - Vascular	Arabis oregana	Oregon rockcress	PDBRA061A0	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Brassicaceae - Arabis oregana
Plants - Vascular	Streptanthus brachiatus ssp. brachiatus	Socrates Mine jewelflower	PDBRA2G072	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Brassicaceae - Streptanthus brachiatus ssp. brachiatus
Plants - Vascular	Streptanthus brachiatus ssp. hoffmanii	Freed's jewelflower	PDBRA2G071	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Brassicaceae - Streptanthus brachiatus ssp. hoffmanii
Plants - Vascular	Streptanthus brachiatus ssp. hoffmanii	Freed's jewelflower	PDBRA2G071	None	None	-	1B.2	3812284	WILSON VALLEY	Mapped	Plants - Vascular - Brassicaceae - Streptanthus brachiatus ssp. hoffmanii
Plants - Vascular	Streptanthus brachiatus ssp. hoffmanii	Freed's jewelflower	PDBRA2G071	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Brassicaceae - Streptanthus brachiatus ssp. hoffmanii
Plants - Vascular	Streptanthus hesperidis	green jewelflower	PDBRA2G510	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Brassicaceae - Streptanthus hesperidis
Plants - Vascular	Streptanthus hesperidis	green jewelflower	PDBRA2G510	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Brassicaceae - Streptanthus hesperidis
Plants - Vascular	Streptanthus hesperidis	green jewelflower	PDBRA2G510	None	None	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Brassicaceae - Streptanthus hesperidis
Plants - Vascular	Streptanthus morrisonii ssp. kruckebergii	Kruckeberg's jewelflower	PDBRA2G0S4	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Brassicaceae - Streptanthus morrisonii ssp. kruckebergii
Plants - Vascular	Thelypodium brachycarpum	short-podded thelypodium	PDBRA2N010	None	None	-	4.2	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Brassicaceae - Thelypodium brachycarpum
Plants - Vascular	Brasenia schreberi	watershield	PDCAB01010	None	None	-	2B.3	3912216	CLEARLAKE OAKS	Mapped	Plants - Vascular - Cabombaceae - Brasenia schreberi

Plants - Vascular	Brasenia schreberi	watershield	PDCAB01010	None	None	-	2B.3	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Cabombaceae - Brasenia schreberi
Plants - Vascular	Downingia willamettensis	Cascade downingia	PDCAM060E0	None	None	-	2B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Campanulaceae - Downingia willamettensis
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Legenere limosa	legenere	PDCAM0C010	None	None	-	1B.1	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Campanulaceae - Legenere limosa
Plants - Vascular	Viburnum ellipticum	oval-leaved viburnum	PDCPR07080	None	None	-	2B.3	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Caprifoliaceae - Viburnum ellipticum
Plants - Vascular	Extriplex joaquinana	San Joaquin spearscale	PDCHE041F3	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Chenopodiaceae - Extriplex joaquinana
Plants - Vascular	Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	PDCON04032	None	None	-	4.2	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Convolvulaceae - Calystegia collina ssp. oxyphylla
Plants - Vascular	Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	PDCON04032	None	None	-	4.2	3812275	MIDDLETOWN	Mapped and Unprocessed	Plants - Vascular - Convolvulaceae - Calystegia collina ssp. oxyphylla
Plants - Vascular	Calystegia collina ssp. oxyphylla	Mt. Saint Helena morning-glory	PDCON04032	None	None	-	4.2	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Convolvulaceae - Calystegia collina ssp. oxyphylla
Plants - Vascular	Calystegia collina ssp. tridactylosa	three-fingered morning-glory	PDCON04036	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Convolvulaceae - Calystegia collina ssp. tridactylosa
Plants - Vascular	Sedella leiocarpa	Lake County stonecrop	PDCRA0F020	Endangered	Endangered	-	1B.1	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Crassulaceae - Sedella leiocarpa
Plants - Vascular	Sedella leiocarpa	Lake County stonecrop	PDCRA0F020	Endangered	Endangered	-	1B.1	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Crassulaceae - Sedella leiocarpa
Plants - Vascular	Sedella leiocarpa	Lake County stonecrop	PDCRA0F020	Endangered	Endangered	-	1B.1	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Crassulaceae - Sedella leiocarpa
Plants - Vascular	Carex praticola	northern meadow sedge	PMCYP03B20	None	None	-	2B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Cyperaceae - Carex praticola
Plants - Vascular	Equisetum palustre	marsh horsetail	PPEQU01050	None	None	-	3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Equisetaceae - Equisetum palustre
Plants - Vascular	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	PDERI04271	None	None	-	1B.3	3812276	WHISPERING PINES	Mapped and Unprocessed	Plants - Vascular - Ericaceae - Arctostaphylos manzanita ssp. elegans
Plants - Vascular	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	PDERI04271	None	None	-	1B.3	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos manzanita ssp. elegans
Plants - Vascular	Arctostaphylos manzanita ssp. elegans	Konocti manzanita	PDERI04271	None	None	-	1B.3	3912216	CLEARLAKE OAKS	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos manzanita ssp. elegans
Plants - Vascular	Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	PDERI041G2	None	None	-	1B.1	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos stanfordiana ssp. raichei
Plants - Vascular	Arctostaphylos stanfordiana ssp. raichei	Raiche's manzanita	PDERI041G2	None	None	-	1B.1	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Ericaceae - Arctostaphylos stanfordiana ssp. raichei

Plants - Vascular	Astragalus breweri	Brewer's milk-vetch	PDFAB0F1J0	None	None	-	4.2	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Fabaceae - Astragalus breweri
Plants - Vascular	Astragalus breweri	Brewer's milk-vetch	PDFAB0F1J0	None	None	-	4.2	3812275	MIDDLETOWN	Unprocessed	Plants - Vascular - Fabaceae - Astragalus breweri
Plants - Vascular	Astragalus breweri	Brewer's milk-vetch	PDFAB0F1J0	None	None	-	4.2	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Fabaceae - Astragalus breweri
Plants - Vascular	Astragalus breweri	Brewer's milk-vetch	PDFAB0F1J0	None	None	-	4.2	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Fabaceae - Astragalus breweri
Plants - Vascular	Astragalus clevelandii	Cleveland's milk-vetch	PDFAB0F250	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Fabaceae - Astragalus clevelandii
Plants - Vascular	Astragalus clevelandii	Cleveland's milk-vetch	PDFAB0F250	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Fabaceae - Astragalus clevelandii
Plants - Vascular	Astragalus clevelandii	Cleveland's milk-vetch	PDFAB0F250	None	None	-	4.3	3912215	BENMORE CANYON	Unprocessed	Plants - Vascular - Fabaceae - Astragalus clevelandii
Plants - Vascular	Astragalus clevelandii	Cleveland's milk-vetch	PDFAB0F250	None	None	-	4.3	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Fabaceae - Astragalus clevelandii
Plants - Vascular	Astragalus clevelandii	Cleveland's milk-vetch	PDFAB0F250	None	None	-	4.3	3812284	WILSON VALLEY	Unprocessed	Plants - Vascular - Fabaceae - Astragalus clevelandii
Plants - Vascular	Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	PDFAB0F7E1	None	None	-	1B.2	3812284	WILSON VALLEY	Mapped	Plants - Vascular - Fabaceae - Astragalus rattanii var. jepsonianus
Plants - Vascular	Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	PDFAB0F7E1	None	None	-	1B.2	3812285	LOWER LAKE	Mapped	Plants - Vascular - Fabaceae - Astragalus rattanii var. jepsonianus
Plants - Vascular	Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	PDFAB0F7E1	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Fabaceae - Astragalus rattanii var. jepsonianus
Plants - Vascular	Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	PDFAB0F7E1	None	None	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Fabaceae - Astragalus rattanii var. jepsonianus
Plants - Vascular	Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	PDFAB0F7E1	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Fabaceae - Astragalus rattanii var. jepsonianus
Plants - Vascular	Astragalus rattanii var. jepsonianus	Jepson's milk-vetch	PDFAB0F7E1	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Fabaceae - Astragalus rattanii var. jepsonianus
Plants - Vascular	Astragalus rattanii var. rattanii	Rattan's milk-vetch	PDFAB0F7E2	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Fabaceae - Astragalus rattanii var. rattanii
Plants - Vascular	Lupinus milo-bakeri	Milo Baker's lupine	PDFAB2B4E0	None	Threatened	-	1B.1	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Fabaceae - Lupinus milo-bakeri
Plants - Vascular	Lupinus sericatus	Cobb Mountain lupine	PDFAB2B3J0	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Fabaceae - Lupinus sericatus
Plants - Vascular	Lupinus sericatus	Cobb Mountain lupine	PDFAB2B3J0	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Fabaceae - Lupinus sericatus
Plants - Vascular	Trifolium hydrophilum	saline clover	PDFAB400R5	None	None	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Fabaceae - Trifolium hydrophilum

Plants - Vascular	Calochortus uniflorus	pink star-tulip	PMLIL0D1F0	None	None	-	4.2	3812275	MIDDLETOWN	Unprocessed	Plants - Vascular - Liliaceae - Calochortus uniflorus
Plants - Vascular	Calochortus uniflorus	pink star-tulip	PMLIL0D1F0	None	None	-	4.2	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Plants - Vascular - Liliaceae - Calochortus uniflorus
Plants - Vascular	Calochortus uniflorus	pink star-tulip	PMLIL0D1F0	None	None	-	4.2	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Liliaceae - Calochortus uniflorus
Plants - Vascular	Erythronium helenae	St. Helena fawn lily	PMLIL0U060	None	None	-	4.2	3912216	CLEARLAKE OAKS	Unprocessed	Plants - Vascular - Liliaceae - Erythronium helenae
Plants - Vascular	Erythronium helenae	St. Helena fawn lily	PMLIL0U060	None	None	-	4.2	3812275	MIDDLETOWN	Unprocessed	Plants - Vascular - Liliaceae - Erythronium helenae
Plants - Vascular	Erythronium helenae	St. Helena fawn lily	PMLIL0U060	None	None	-	4.2	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Liliaceae - Erythronium helenae
Plants - Vascular	Erythronium helenae	St. Helena fawn lily	PMLIL0U060	None	None	-	4.2	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Liliaceae - Erythronium helenae
Plants - Vascular	Fritillaria pluriflora	adobe-lily	PMLIL0V0F0	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Liliaceae - Fritillaria pluriflora
Plants - Vascular	Fritillaria pluriflora	adobe-lily	PMLIL0V0F0	None	None	-	1B.2	3812285	LOWER LAKE	Mapped	Plants - Vascular - Liliaceae - Fritillaria pluriflora
Plants - Vascular	Fritillaria pluriflora	adobe-lily	PMLIL0V0F0	None	None	-	1B.2	3812284	WILSON VALLEY	Mapped	Plants - Vascular - Liliaceae - Fritillaria pluriflora
Plants - Vascular	Fritillaria pluriflora	adobe-lily	PMLIL0V0F0	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped and Unprocessed	Plants - Vascular - Liliaceae - Fritillaria pluriflora
Plants - Vascular	Fritillaria purdyi	Purdy's fritillary	PMLIL0V0H0	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Liliaceae - Fritillaria purdyi
Plants - Vascular	Fritillaria purdyi	Purdy's fritillary	PMLIL0V0H0	None	None	-	4.3	3912215	BENMORE CANYON	Unprocessed	Plants - Vascular - Liliaceae - Fritillaria purdyi
Plants - Vascular	Fritillaria purdyi	Purdy's fritillary	PMLIL0V0H0	None	None	-	4.3	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Liliaceae - Fritillaria purdyi
Plants - Vascular	Fritillaria purdyi	Purdy's fritillary	PMLIL0V0H0	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Liliaceae - Fritillaria purdyi
Plants - Vascular	Limnanthes floccosa ssp. floccosa	woolly meadowfoam	PDLIM02043	None	None	-	4.2	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Plants - Vascular - Limnanthaceae - Limnanthes floccosa ssp. floccosa
Plants - Vascular	Hesperolinon adenophyllum	glandular western flax	PDLIN01010	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Linaceae - Hesperolinon adenophyllum
Plants - Vascular	Hesperolinon bicarpellatum	two-carpellate western flax	PDLIN01020	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Linaceae - Hesperolinon bicarpellatum
Plants - Vascular	Hesperolinon bicarpellatum	two-carpellate western flax	PDLIN01020	None	None	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Linaceae - Hesperolinon bicarpellatum
Plants - Vascular	Hesperolinon bicarpellatum	two-carpellate western flax	PDLIN01020	None	None	-	1B.2	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Linaceae - Hesperolinon bicarpellatum

Plants - Vascular	Hesperolinon bicarpellatum	two-carpellate western flax	PDLIN01020	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Linaceae - Hesperolinon bicarpellatum
Plants - Vascular	Hesperolinon bicarpellatum	two-carpellate western flax	PDLIN01020	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Linaceae - Hesperolinon bicarpellatum
Plants - Vascular	Hesperolinon didymocarpum	Lake County western flax	PDLIN01070	None	Endangered	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Linaceae - Hesperolinon didymocarpum
Plants - Vascular	Hesperolinon drymarioides	drymaria-like western flax	PDLIN01090	None	None	-	1B.2	3812284	WILSON VALLEY	Mapped	Plants - Vascular - Linaceae - Hesperolinon drymarioides
Plants - Vascular	Hesperolinon drymarioides	drymaria-like western flax	PDLIN01090	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Linaceae - Hesperolinon drymarioides
Plants - Vascular	Hesperolinon drymarioides	drymaria-like western flax	PDLIN01090	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Linaceae - Hesperolinon drymarioides
Plants - Vascular	Hesperolinon sharsmithiae	Sharsmith's western flax	PDLIN010E0	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Linaceae - Hesperolinon sharsmithiae
Plants - Vascular	Hesperolinon sharsmithiae	Sharsmith's western flax	PDLIN010E0	None	None	-	1B.2	3812285	LOWER LAKE	Mapped	Plants - Vascular - Linaceae - Hesperolinon sharsmithiae
Plants - Vascular	Hesperolinon sharsmithiae	Sharsmith's western flax	PDLIN010E0	None	None	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Linaceae - Hesperolinon sharsmithiae
Plants - Vascular	Malacothamnus helleri	Heller's bush-mallow	PDMAL0Q0G0	None	None	-	3.3	3812285	LOWER LAKE	Unprocessed	Plants - Vascular - Malvaceae - Malacothamnus helleri
Plants - Vascular	Malacothamnus helleri	Heller's bush-mallow	PDMAL0Q0G0	None	None	-	3.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Malvaceae - Malacothamnus helleri
Plants - Vascular	Malacothamnus helleri	Heller's bush-mallow	PDMAL0Q0G0	None	None	-	3.3	3912215	BENMORE CANYON	Unprocessed	Plants - Vascular - Malvaceae - Malacothamnus helleri
Plants - Vascular	Malacothamnus helleri	Heller's bush-mallow	PDMAL0Q0G0	None	None	-	3.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Malvaceae - Malacothamnus helleri
Plants - Vascular	Sidalcea keckii	Keck's checkerbloom	PDMAL110D0	Endangered	None	-	1B.1	3812274	JERICHO VALLEY	Mapped and Unprocessed	Plants - Vascular - Malvaceae - Sidalcea keckii
Plants - Vascular	Sidalcea keckii	Keck's checkerbloom	PDMAL110D0	Endangered	None	-	1B.1	3812285	LOWER LAKE	Unprocessed	Plants - Vascular - Malvaceae - Sidalcea keckii
Plants - Vascular	Sidalcea oregana ssp. hydrophila	marsh checkerbloom	PDMAL110K2	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Malvaceae - Sidalcea oregana ssp. hydrophila
Plants - Vascular	Sidalcea oregana ssp. hydrophila	marsh checkerbloom	PDMAL110K2	None	None	-	1B.2	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Malvaceae - Sidalcea oregana ssp. hydrophila
Plants - Vascular	Toxicoscordion fontanum	marsh zigadenus	PMLIL28050	None	None	-	4.2	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Plants - Vascular - Melanthiaceae - Toxicoscordion fontanum
Plants - Vascular	Toxicoscordion fontanum	marsh zigadenus	PMLIL28050	None	None	-	4.2	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Melanthiaceae - Toxicoscordion fontanum

Plants - Vascular	Calyptridium quadripetalum	four-petaled pussypaws	PDPOR09080	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Montiaceae - Calyptridium quadripetalum
Plants - Vascular	Calyptridium quadripetalum	four-petaled pussypaws	PDPOR09080	None	None	-	4.3	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Plants - Vascular - Montiaceae - Calyptridium quadripetalum
Plants - Vascular	Calyptridium quadripetalum	four-petaled pussypaws	PDPOR09080	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Montiaceae - Calyptridium quadripetalum
Plants - Vascular	Calyptridium quadripetalum	four-petaled pussypaws	PDPOR09080	None	None	-	4.3	3912216	CLEARLAKE OAKS	Unprocessed	Plants - Vascular - Montiaceae - Calyptridium quadripetalum
Plants - Vascular	Calyptridium quadripetalum	four-petaled pussypaws	PDPOR09080	None	None	-	4.3	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Montiaceae - Calyptridium quadripetalum
Plants - Vascular	Clarkia gracilis ssp. tracyi	Tracy's clarkia	PDONA050J4	None	None	-	4.2	3912215	BENMORE CANYON	Unprocessed	Plants - Vascular - Onagraceae - Clarkia gracilis ssp. tracyi
Plants - Vascular	Clarkia gracilis ssp. tracyi	Tracy's clarkia	PDONA050J4	None	None	-	4.2	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Onagraceae - Clarkia gracilis ssp. tracyi
Plants - Vascular	Clarkia gracilis ssp. tracyi	Tracy's clarkia	PDONA050J4	None	None	-	4.2	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Onagraceae - Clarkia gracilis ssp. tracyi
Plants - Vascular	Piperia leptopetala	narrow-petaled rein orchid	PMORC1X100	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Orchidaceae - Piperia leptopetala
Plants - Vascular	Piperia michaelii	Michael's rein orchid	PMORC1X110	None	None	-	4.2	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Plants - Vascular - Orchidaceae - Piperia michaelii
Plants - Vascular	Castilleja rubicundula var. rubicundula	pink creamsacs	PDSCR0D482	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Orobanchaceae - Castilleja rubicundula var. rubicundula
Plants - Vascular	Castilleja rubicundula var. rubicundula	pink creamsacs	PDSCR0D482	None	None	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Orobanchaceae - Castilleja rubicundula var. rubicundula
Plants - Vascular	Castilleja rubicundula var. rubicundula	pink creamsacs	PDSCR0D482	None	None	-	1B.2	3812284	WILSON VALLEY	Mapped	Plants - Vascular - Orobanchaceae - Castilleja rubicundula var. rubicundula
Plants - Vascular	Castilleja rubicundula var. rubicundula	pink creamsacs	PDSCR0D482	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Orobanchaceae - Castilleja rubicundula var. rubicundula
Plants - Vascular	Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	PDSCR0J0S1	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Orobanchaceae - Cordylanthus tenuis ssp. brunneus
Plants - Vascular	Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	PDSCR0J0S1	None	None	-	4.3	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Orobanchaceae - Cordylanthus tenuis ssp. brunneus
Plants - Vascular	Cordylanthus tenuis ssp. brunneus	serpentine bird's-beak	PDSCR0J0S1	None	None	-	4.3	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Plants - Vascular - Orobanchaceae - Cordylanthus tenuis ssp. brunneus
Plants - Vascular	Cordylanthus tenuis ssp. capillaris	Pennell's bird's-beak	PDSCR0J0S2	Endangered	Rare	-	1B.2	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Orobanchaceae - Cordylanthus tenuis ssp. capillaris

Plants - Vascular	Orobanche valida ssp. howellii	Howell's broomrape	PDORO040G1	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Orobanchaceae - Orobanche valida ssp. howellii
Plants - Vascular	Orobanche valida ssp. howellii	Howell's broomrape	PDORO040G1	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Orobanchaceae - Orobanche valida ssp. howellii
Plants - Vascular	Erythranthe nudata	bare monkeyflower	PDSCR1B200	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Phrymaceae - Erythranthe nudata
Plants - Vascular	Erythranthe nudata	bare monkeyflower	PDSCR1B200	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Phrymaceae - Erythranthe nudata
Plants - Vascular	Erythranthe nudata	bare monkeyflower	PDSCR1B200	None	None	-	4.3	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Phrymaceae - Erythranthe nudata
Plants - Vascular	Erythranthe nudata	bare monkeyflower	PDSCR1B200	None	None	-	4.3	3812275	MIDDLETOWN	Unprocessed	Plants - Vascular - Phrymaceae - Erythranthe nudata
Plants - Vascular	Erythranthe nudata	bare monkeyflower	PDSCR1B200	None	None	-	4.3	3812284	WILSON VALLEY	Unprocessed	Plants - Vascular - Phrymaceae - Erythranthe nudata
Plants - Vascular	Antirrhinum subcordatum	dimorphic snapdragon	PDSCR2S070	None	None	-	4.3	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Plantaginaceae - Antirrhinum subcordatum
Plants - Vascular	Antirrhinum virga	twig-like snapdragon	PDSCR2S090	None	None	-	4.3	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Plantaginaceae - Antirrhinum virga
Plants - Vascular	Antirrhinum virga	twig-like snapdragon	PDSCR2S090	None	None	-	4.3	3812284	WILSON VALLEY	Unprocessed	Plants - Vascular - Plantaginaceae - Antirrhinum virga
Plants - Vascular	Antirrhinum virga	twig-like snapdragon	PDSCR2S090	None	None	-	4.3	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Plants - Vascular - Plantaginaceae - Antirrhinum virga
Plants - Vascular	Antirrhinum virga	twig-like snapdragon	PDSCR2S090	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Plantaginaceae - Antirrhinum virga
Plants - Vascular	Gratiola heterosepala	Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	-	1B.2	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Plantaginaceae - Gratiola heterosepala
Plants - Vascular	Gratiola heterosepala	Boggs Lake hedge-hyssop	PDSCR0R060	None	Endangered	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Plantaginaceae - Gratiola heterosepala
Plants - Vascular	Penstemon newberryi var. sonomensis	Sonoma beardtongue	PDSCR1L483	None	None	-	1B.3	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Plantaginaceae - Penstemon newberryi var. sonomensis
Plants - Vascular	Calamagrostis ophitidis	serpentine reed grass	PMPOA170V0	None	None	-	4.3	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Poaceae - Calamagrostis ophitidis
Plants - Vascular	Calamagrostis ophitidis	serpentine reed grass	PMPOA170V0	None	None	-	4.3	3812275	MIDDLETOWN	Unprocessed	Plants - Vascular - Poaceae - Calamagrostis ophitidis
Plants - Vascular	Imperata brevifolia	California satintail	PMPOA3D020	None	None	-	2B.1	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Poaceae - Imperata brevifolia
Plants - Vascular	Imperata brevifolia	California satintail	PMPOA3D020	None	None	-	2B.1	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Poaceae - Imperata brevifolia
Plants - Vascular	Orcuttia tenuis	slender Orcutt grass	PMPOA4G050	Threatened	Endangered	-	1B.1	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Poaceae - Orcuttia tenuis
Plants - Vascular	Panicum acuminatum var. thermale	Geysers panicum	PMPOA24028	None	Endangered	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Poaceae - Panicum acuminatum var. thermale
Plants - Vascular	Puccinellia simplex	California alkali grass	PMPOA53110	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Poaceae - Puccinellia simplex

Plants - Vascular	Collomia diversifolia	serpentine collomia	PDPLM02020	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Polemoniaceae - Collomia diversifolia
Plants - Vascular	Collomia diversifolia	serpentine collomia	PDPLM02020	None	None	-	4.3	3912215	BENMORE CANYON	Unprocessed	Plants - Vascular - Polemoniaceae - Collomia diversifolia
Plants - Vascular	Collomia diversifolia	serpentine collomia	PDPLM02020	None	None	-	4.3	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Polemoniaceae - Collomia diversifolia
Plants - Vascular	Collomia diversifolia	serpentine collomia	PDPLM02020	None	None	-	4.3	3812275	MIDDLETOWN	Unprocessed	Plants - Vascular - Polemoniaceae - Collomia diversifolia
Plants - Vascular	Collomia diversifolia	serpentine collomia	PDPLM02020	None	None	-	4.3	3812284	WILSON VALLEY	Unprocessed	Plants - Vascular - Polemoniaceae - Collomia diversifolia
Plants - Vascular	Collomia diversifolia	serpentine collomia	PDPLM02020	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Polemoniaceae - Collomia diversifolia
Plants - Vascular	Eriastrum brandegeeae	Brandegee's eriastrum	PDPLM030H0	None	None	-	1B.1	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Polemoniaceae - Eriastrum brandegeeae
Plants - Vascular	Eriastrum tracyi	Tracy's eriastrum	PDPLM030C0	None	Rare	-	3.2	3912214	WILBUR SPRINGS	Mapped and Unprocessed	Plants - Vascular - Polemoniaceae - Eriastrum tracyi
Plants - Vascular	Leptosiphon acicularis	bristly leptosiphon	PDPLM09010	None	None	-	4.2	3912215	BENMORE CANYON	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon acicularis
Plants - Vascular	Leptosiphon acicularis	bristly leptosiphon	PDPLM09010	None	None	-	4.2	3912216	CLEARLAKE OAKS	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon acicularis
Plants - Vascular	Leptosiphon acicularis	bristly leptosiphon	PDPLM09010	None	None	-	4.2	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon acicularis
Plants - Vascular	Leptosiphon acicularis	bristly leptosiphon	PDPLM09010	None	None	-	4.2	3812285	LOWER LAKE	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon acicularis
Plants - Vascular	Leptosiphon acicularis	bristly leptosiphon	PDPLM09010	None	None	-	4.2	3812275	MIDDLETOWN	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon acicularis
Plants - Vascular	Leptosiphon acicularis	bristly leptosiphon	PDPLM09010	None	None	-	4.2	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon acicularis
Plants - Vascular	Leptosiphon grandiflorus	large-flowered leptosiphon	PDPLM090K0	None	None	-	4.2	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon grandiflorus
Plants - Vascular	Leptosiphon jepsonii	Jepson's leptosiphon	PDPLM09140	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Polemoniaceae - Leptosiphon jepsonii
Plants - Vascular	Leptosiphon jepsonii	Jepson's leptosiphon	PDPLM09140	None	None	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Polemoniaceae - Leptosiphon jepsonii
Plants - Vascular	Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-	4.3	3812275	MIDDLETOWN	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon latisectus
Plants - Vascular	Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon latisectus

Plants - Vascular	Leptosiphon latisectus	broad-lobed leptosiphon	PDPLM09150	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Polemoniaceae - Leptosiphon latisectus
Plants - Vascular	Navarretia cotulifolia	cotula navarretia	PDPLM0C040	None	None	-	4.2	3812275	MIDDLETOWN	Unprocessed	Plants - Vascular - Polemoniaceae - Navarretia cotulifolia
Plants - Vascular	Navarretia jepsonii	Jepson's navarretia	PDPLM0C0D0	None	None	-	4.3	3812275	MIDDLETOWN	Unprocessed	Plants - Vascular - Polemoniaceae - Navarretia jepsonii
Plants - Vascular	Navarretia jepsonii	Jepson's navarretia	PDPLM0C0D0	None	None	-	4.3	3812284	WILSON VALLEY	Unprocessed	Plants - Vascular - Polemoniaceae - Navarretia jepsonii
Plants - Vascular	Navarretia jepsonii	Jepson's navarretia	PDPLM0C0D0	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Polemoniaceae - Navarretia jepsonii
Plants - Vascular	Navarretia jepsonii	Jepson's navarretia	PDPLM0C0D0	None	None	-	4.3	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Polemoniaceae - Navarretia jepsonii
Plants - Vascular	Navarretia leucocephala ssp. bakeri	Baker's navarretia	PDPLM0C0E1	None	None	-	1B.1	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Polemoniaceae - Navarretia leucocephala ssp. bakeri
Plants - Vascular	Navarretia leucocephala ssp. bakeri	Baker's navarretia	PDPLM0C0E1	None	None	-	1B.1	3812285	LOWER LAKE	Mapped	Plants - Vascular - Polemoniaceae - Navarretia leucocephala ssp. bakeri
Plants - Vascular	Navarretia leucocephala ssp. bakeri	Baker's navarretia	PDPLM0C0E1	None	None	-	1B.1	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Polemoniaceae - Navarretia leucocephala ssp. bakeri
Plants - Vascular	Navarretia leucocephala ssp. bakeri	Baker's navarretia	PDPLM0C0E1	None	None	-	1B.1	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Polemoniaceae - Navarretia leucocephala ssp. bakeri
Plants - Vascular	Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	PDPLM0C0E4	Endangered	Threatened	-	1B.1	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Polemoniaceae - Navarretia leucocephala ssp. pauciflora
Plants - Vascular	Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	PDPLM0C0E4	Endangered	Threatened	-	1B.1	3812285	LOWER LAKE	Mapped	Plants - Vascular - Polemoniaceae - Navarretia leucocephala ssp. pauciflora
Plants - Vascular	Navarretia leucocephala ssp. pauciflora	few-flowered navarretia	PDPLM0C0E4	Endangered	Threatened	-	1B.1	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Polemoniaceae - Navarretia leucocephala ssp. pauciflora
Plants - Vascular	Navarretia leucocephala ssp. plieantha	many-flowered navarretia	PDPLM0C0E5	Endangered	Endangered	-	1B.2	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Polemoniaceae - Navarretia leucocephala ssp. plieantha
Plants - Vascular	Navarretia leucocephala ssp. plieantha	many-flowered navarretia	PDPLM0C0E5	Endangered	Endangered	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Polemoniaceae - Navarretia leucocephala ssp. plieantha
Plants - Vascular	Navarretia leucocephala ssp. plieantha	many-flowered navarretia	PDPLM0C0E5	Endangered	Endangered	-	1B.2	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Polemoniaceae - Navarretia leucocephala ssp. plieantha
Plants - Vascular	Navarretia linearifolia ssp. pinnatisecta	pinnate-leaved navarretia	PDPLM04211	None	None	-	4.3	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Polemoniaceae - Navarretia linearifolia ssp. pinnatisecta

Plants - Vascular	Navarretia nigelliformis ssp. nigelliformis	adobe navarretia	PDPLM0C0J1	None	None	-	4.2	3812284	WILSON VALLEY	Unprocessed	Plants - Vascular - Polemoniaceae - Navarretia nigelliformis ssp. nigelliformis
Plants - Vascular	Navarretia nigelliformis ssp. radians	shining navarretia	PDPLM0C0J2	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Polemoniaceae - Navarretia nigelliformis ssp. radians
Plants - Vascular	Navarretia paradoxinota	Porter's navarretia	PDPLM0C160	None	None	-	1B.3	3812275	MIDDLETOWN	Mapped	Plants - Vascular - Polemoniaceae - Navarretia paradoxinota
Plants - Vascular	Eriogonum nervulosum	Snow Mountain buckwheat	PDPGN08440	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Polygonaceae - Eriogonum nervulosum
Plants - Vascular	Eriogonum nervulosum	Snow Mountain buckwheat	PDPGN08440	None	None	-	1B.2	3812284	WILSON VALLEY	Mapped	Plants - Vascular - Polygonaceae - Eriogonum nervulosum
Plants - Vascular	Eriogonum nervulosum	Snow Mountain buckwheat	PDPGN08440	None	None	-	1B.2	3812274	JERICHO VALLEY	Mapped	Plants - Vascular - Polygonaceae - Eriogonum nervulosum
Plants - Vascular	Eriogonum tripodum	tripod buckwheat	PDPGN085Y0	None	None	-	4.2	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Polygonaceae - Eriogonum tripodum
Plants - Vascular	Eriogonum tripodum	tripod buckwheat	PDPGN085Y0	None	None	-	4.2	3912215	BENMORE CANYON	Unprocessed	Plants - Vascular - Polygonaceae - Eriogonum tripodum
Plants - Vascular	Potamogeton zosteriformis	eel-grass pondweed	PMPOT03160	None	None	-	2B.2	3912216	CLEARLAKE OAKS	Mapped	Plants - Vascular - Potamogetonaceae - Potamogeton zosteriformis
Plants - Vascular	Potamogeton zosteriformis	eel-grass pondweed	PMPOT03160	None	None	-	2B.2	3912215	BENMORE CANYON	Mapped	Plants - Vascular - Potamogetonaceae - Potamogeton zosteriformis
Plants - Vascular	Potamogeton zosteriformis	eel-grass pondweed	PMPOT03160	None	None	-	2B.2	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Potamogetonaceae - Potamogeton zosteriformis
Plants - Vascular	Potamogeton zosteriformis	eel-grass pondweed	PMPOT03160	None	None	-	2B.2	3812285	LOWER LAKE	Mapped	Plants - Vascular - Potamogetonaceae - Potamogeton zosteriformis
Plants - Vascular	Delphinium uliginosum	swamp larkspur	PDRAN0B1V0	None	None	-	4.2	3812285	LOWER LAKE	Unprocessed	Plants - Vascular - Ranunculaceae - Delphinium uliginosum
Plants - Vascular	Delphinium uliginosum	swamp larkspur	PDRAN0B1V0	None	None	-	4.2	3812284	WILSON VALLEY	Unprocessed	Plants - Vascular - Ranunculaceae - Delphinium uliginosum
Plants - Vascular	Delphinium uliginosum	swamp larkspur	PDRAN0B1V0	None	None	-	4.2	3812276	WHISPERING PINES	Unprocessed	Plants - Vascular - Ranunculaceae - Delphinium uliginosum
Plants - Vascular	Delphinium uliginosum	swamp larkspur	PDRAN0B1V0	None	None	-	4.2	3812275	MIDDLETOWN	Unprocessed	Plants - Vascular - Ranunculaceae - Delphinium uliginosum
Plants - Vascular	Delphinium uliginosum	swamp larkspur	PDRAN0B1V0	None	None	-	4.2	3912214	WILBUR SPRINGS	Unprocessed	Plants - Vascular - Ranunculaceae - Delphinium uliginosum
Plants - Vascular	Delphinium uliginosum	swamp larkspur	PDRAN0B1V0	None	None	-	4.2	3812274	JERICHO VALLEY	Unprocessed	Plants - Vascular - Ranunculaceae - Delphinium uliginosum
Plants - Vascular	Myosurus minimus ssp. apus	little mousetail	PDRAN0H031	None	None	-	3.1	3812286	CLEARLAKE HIGHLANDS	Unprocessed	Plants - Vascular - Ranunculaceae - Myosurus minimus ssp. apus

Plants - Vascular	Ceanothus confusus	Rincon Ridge ceanothus	PDRHA04220	None	None	-	1B.1	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Rhamnaceae - Ceanothus confusus
Plants - Vascular	Ceanothus divergens	Calistoga ceanothus	PDRHA04240	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Rhamnaceae - Ceanothus divergens
Plants - Vascular	Horkelia bolanderi	Bolander's horkelia	PDROS0W011	None	None	-	1B.2	3812276	WHISPERING PINES	Mapped	Plants - Vascular - Rosaceae - Horkelia bolanderi
Plants - Vascular	Horkelia bolanderi	Bolander's horkelia	PDROS0W011	None	None	-	1B.2	3812286	CLEARLAKE HIGHLANDS	Mapped	Plants - Vascular - Rosaceae - Horkelia bolanderi
Plants - Vascular	Horkelia bolanderi	Bolander's horkelia	PDROS0W011	None	None	-	1B.2	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Rosaceae - Horkelia bolanderi
Plants - Vascular	Horkelia bolanderi	Bolander's horkelia	PDROS0W011	None	None	-	1B.2	3912215	BENMORE CANYON	Mapped	Plants - Vascular - Rosaceae - Horkelia bolanderi
Plants - Vascular	Brodiaea rosea	Indian Valley brodiaea	PMLIL0C0K3	None	Endangered	-	3.1	3912214	WILBUR SPRINGS	Mapped	Plants - Vascular - Themidaceae - Brodiaea rosea

CNPS Rare Plant Inventory

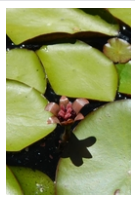
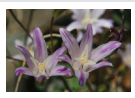
California Native Plant Society

Search Results

105 matches found. Click on scientific name for details

Search Criteria: 9-Quad include [**3912216:3812286:3912215:3912214:3812274:3812275:3812276:3812285:3812284**]

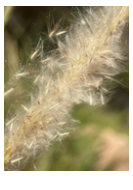
▲ SCIENTIFIC NAME	COMMON NAME	FAMILY	LIFEFORM	BLOOMING PERIOD	FED LIST	STATE LIST	GLOBAL RANK	STATE RANK	CA RARE PLANT RANK	PHOTO
Allium fimbriatum var. *purdyi*	Purdy's onion	Alliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4G5T3	S3	4.3	 © 2014 Steve Matson
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	None	None	G3	S3	1B.2	 © 2011 Neal Kramer
Antirrhinum subcordatum	dimorphic snapdragon	Plantaginaceae	annual herb	Apr-Jul	None	None	G3	S3	4.3	 © 2015 Dean Wm. Taylor
Antirrhinum virga	twig-like snapdragon	Plantaginaceae	perennial herb	Jun-Jul	None	None	G3?	S3?	4.3	 © 2013 Aaron Schusteff
Arabis modesta	modest rockcress	Brassicaceae	perennial herb	Mar-Jul	None	None	G3	S3	4.3	 ©2014 Scot Loring
Arabis oregana	Oregon rockcress	Brassicaceae	perennial herb	May	None	None	G3G4Q	S3	4.3	 ©2021 Scot Loring
Arctostaphylos manzanita ssp. *elegans*	Konocti manzanita	Ericaceae	perennial evergreen shrub	(Jan)Mar-May(Jul)	None	None	G5T3	S3	1B.3	 ©2018 Dean Wm. Taylor

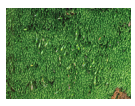
Arctostaphylos stanfordiana ssp. *raichei*	Raiche's manzanita	Ericaceae	perennial evergreen shrub	Feb-Apr	None	None	G3T2	S2	1B.1	No Photo Available
Asclepias solanoana	serpentine milkweed	Apocynaceae	perennial herb	May-Jul(Aug)	None	None	G3	S3	4.2	 © 2009 Julie Kierstead Nelson
Astragalus breweri	Brewer's milk-vetch	Fabaceae	annual herb	Apr-Jun	None	None	G3	S3	4.2	No Photo Available
Astragalus clevelandii	Cleveland's milk-vetch	Fabaceae	perennial herb	Jun-Sep	None	None	G4	S4	4.3	No Photo Available
Astragalus rattanii var. *jepsonianus*	Jepson's milk-vetch	Fabaceae	annual herb	Mar-Jun	None	None	G4T3	S3	1B.2	No Photo Available
Astragalus rattanii var. *rattanii*	Rattan's milk-vetch	Fabaceae	perennial herb	Apr-Jul	None	None	G4T4	S4	4.3	No Photo Available
Balsamorhiza macrolepis	big-scale balsamroot	Asteraceae	perennial herb	Mar-Jun	None	None	G2	S2	1B.2	 ©1998 Dean Wm. Taylor
Brasenia schreberi	watershield	Cabombaceae	perennial rhizomatous herb (aquatic)	Jun-Sep	None	None	G5	S3	2B.3	 ©2014 Kirsten Bovee
Brodiaea rosea	Indian Valley brodiaea	Themidaceae	perennial bulbiferous herb	May-Jun	None	CE	G2Q	S2	3.1	 © 2014 Robert E. Preston, Ph.D.
Calamagrostis ophitidis	serpentine reed grass	Poaceae	perennial herb	Apr-Jul	None	None	G3	S3	4.3	No Photo Available
Calochortus uniflorus	pink star-tulip	Liliaceae	perennial bulbiferous herb	Apr-Jun	None	None	G4	S4	4.2	 © 2021 Scot Loring
Calyptridium quadripetalum	four-petaled pussypaws	Montiaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3	No Photo Available
Calystegia collina	Mt. Saint	Convolvulaceae	perennial	Apr-Jun	None	None	G4T3	S3	4.2	

ssp. *oxyphylla*	Helena morning-glory		rhizomatous herb							No Photo Available
Calystegia collina ssp. *tridactylosa*	three-fingered morning-glory	Convolvulaceae	perennial rhizomatous herb	Apr-Jun	None	None	G4T1	S1	1B.2	No Photo Available
Carex praticola	northern meadow sedge	Cyperaceae	perennial herb	May-Jul	None	None	G5	S2	2B.2	 ©2013 Scot Loring
Castilleja rubicundula var. *rubicundula*	pink creamsacs	Orobanchaceae	annual herb (hemiparasitic)	Apr-Jun	None	None	G5T2	S2	1B.2	 ©2010 Vernon Smith
Ceanothus confusus	Rincon Ridge ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Jun	None	None	G1	S1	1B.1	No Photo Available
Ceanothus divergens	Calistoga ceanothus	Rhamnaceae	perennial evergreen shrub	Feb-Apr	None	None	G2	S2	1B.2	No Photo Available
Centromadia parryi ssp. *parryi*	pappose tarplant	Asteraceae	annual herb	May-Nov	None	None	G3T2	S2	1B.2	No Photo Available
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	Asteraceae	annual herb	May-Oct	None	None	G3T3	S3	4.2	No Photo Available
Chlorogalum pomeridianum var. *minus*	dwarf soaproot	Agavaceae	perennial bulbiferous herb	May-Aug	None	None	G5T3	S3	1B.2	No Photo Available
Clarkia gracilis ssp. *tracyi*	Tracy's clarkia	Onagraceae	annual herb	Apr-Jul	None	None	G5T3	S3	4.2	No Photo Available
Collomia diversifolia	serpentine collomia	Polemoniaceae	annual herb	May-Jun	None	None	G4	S4	4.3	 ©2019 Zoya Akulova
Cordylanthus tenuis ssp. *brunneus*	serpentine bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jul-Aug	None	None	G4G5T3	S3	4.3	No Photo Available
Cordylanthus tenuis ssp. *capillaris*	Pennell's bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Sep	FE	CR	G4G5T1	S1	1B.2	No Photo Available
Cryptantha dissita	serpentine cryptantha	Boraginaceae	annual herb	Apr-Jun	None	None	G3	S3	1B.2	 ©2019 Terry Gosliner
Cryptantha	deep-scarred	Boraginaceae	annual herb	Apr-May	None	None	G1	S1	1B.1	

excavata	cryptantha									No Photo Available
Delphinium uliginosum	swamp larkspur	Ranunculaceae	perennial herb	May-Jun	None	None	G3	S3	4.2	No Photo Available
Downingia willamettensis	Cascade downingia	Campanulaceae	annual herb	Jun-Jul(Sep)	None	None	G4	S2	2B.2	No Photo Available
Equisetum palustre	marsh horsetail	Equisetaceae	perennial rhizomatous herb	Unk	None	None	G5	S1S3	3	No Photo Available
Eriastrum brandegeeae	Brandegee's eriastrum	Polemoniaceae	annual herb	Apr-Aug	None	None	G1Q	S1	1B.1	No Photo Available
Eriastrum tracyi	Tracy's eriastrum	Polemoniaceae	annual herb	May-Jul	None	CR	G3Q	S3	3.2	 © 2012 Neal Kramer
Erigeron greenei	Greene's narrow-leaved daisy	Asteraceae	perennial herb	May-Sep	None	None	G3	S3	1B.2	No Photo Available
Eriogonum nervulosum	Snow Mountain buckwheat	Polygonaceae	perennial rhizomatous herb	Jun-Sep	None	None	G2	S2	1B.2	No Photo Available
Eriogonum tripodum	tripod buckwheat	Polygonaceae	perennial deciduous shrub	May-Jul	None	None	G4	S4	4.2	 ©2008 Steven Perry
Eryngium constancei	Loch Lomond button-celery	Apiaceae	annual/perennial herb	Apr-Jun	FE	CE	G1	S1	1B.1	No Photo Available
Erythranthe nudata	bare monkeyflower	Phrymaceae	annual herb	May-Jun	None	None	G4	S4	4.3	 John Doyen 2015
Erythronium helenae	St. Helena fawn lily	Liliaceae	perennial bulbiferous herb	Mar-May	None	None	G3	S3	4.2	No Photo Available
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	None	None	G2	S2	1B.2	No Photo Available
Fritillaria pluriflora	adobe-lily	Liliaceae	perennial bulbiferous herb	Feb-Apr	None	None	G2G3	S2S3	1B.2	 © 2015 Steve Matson

Fritillaria purdyi	Purdy's fritillary	Liliaceae	perennial bulbiferous herb	Mar-Jun	None	None	G4	S4	4.3	 Aaron Schusteff, 2004
Gratiola heterosepala	Boggs Lake hedge-hyssop	Plantaginaceae	annual herb	Apr-Aug	None	CE	G2	S2	1B.2	 ©2004 Carol W. Witham
Grimmia torenii	Toren's grimmia	Grimmiaceae	moss		None	None	G2	S2	1B.3	 ©2021 Scot Loring
Harmonia hallii	Hall's harmonia	Asteraceae	annual herb	(Mar)Apr-Jun	None	None	G2?	S2?	1B.2	 © 2015 John Doyen
Hemizonia congesta ssp. *calyculata*	Mendocino tarplant	Asteraceae	annual herb	Jul-Nov	None	None	G5T4	S4	4.3	 © 2015 John Doyen
Hemizonia congesta ssp. *congesta*	congested-headed hayfield tarplant	Asteraceae	annual herb	Apr-Nov	None	None	G5T2	S2	1B.2	 © 2015 Vernon Smith
Hesperolinon adenophyllum	glandular western flax	Linaceae	annual herb	May-Aug	None	None	G2G3	S2S3	1B.2	 © 2002 John Game
Hesperolinon bicarpellatum	two-carpellate western flax	Linaceae	annual herb	(Apr)May-Jul	None	None	G2	S2	1B.2	 © 2016 John Doyen
Hesperolinon didymocarpum	Lake County western flax	Linaceae	annual herb	May-Jul	None	CE	G1	S1	1B.2	 © 2018 Aaron Arthur
Hesperolinon drymarioides	drymaria-like western flax	Linaceae	annual herb	May-Aug	None	None	G2	S2	1B.2	 © Niall

										McCarten and CNPS
Hesperolinon sharsmithiae	Sharsmith's western flax	Linaceae	annual herb	May-Jul	None	None	G2Q	S2	1B.2	 © 2017 Aaron Arthur
Horkelia bolanderi	Bolander's horkelia	Rosaceae	perennial herb	(May)Jun-Aug	None	None	G1	S1	1B.2	 © 2012 Barry Rice
Imperata brevifolia	California satintail	Poaceae	perennial rhizomatous herb	Sep-May	None	None	G3	S3	2B.1	 © 2020 Matt C. Berger
Lasthenia burkei	Burke's goldfields	Asteraceae	annual herb	Apr-Jun	FE	CE	G1	S1	1B.1	 © 2015 Neal Kramer
Layia septentrionalis	Colusa layia	Asteraceae	annual herb	Apr-May	None	None	G2	S2	1B.2	 © 2013 Jake Ruygt
Legenere limosa	legenere	Campanulaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.1	 ©2000 John Game
Leptosiphon aureus	bristly leptosiphon	Polemoniaceae	annual herb	Apr-Jul	None	None	G4?	S4?	4.2	 © 2007 Len Blumin
Leptosiphon grandiflorus	large-flowered leptosiphon	Polemoniaceae	annual herb	Apr-Aug	None	None	G3G4	S3S4	4.2	 © 2003 Doreen L. Smith
Leptosiphon jepsonii	Jepson's leptosiphon	Polemoniaceae	annual herb	Mar-May	None	None	G2G3	S2S3	1B.2	 © 2012 Aaron Arthur
Leptosiphon latisectus	broad-lobed leptosiphon	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3	 © 2015 Steve Matson
Limnanthes floccosa ssp	woolly meadowfoam	Limnanthaceae	annual herb	Mar-May(Jun)	None	None	G4T4	S3	4.2	

floccosa ssp. floccosa	meadowfoam			May(Jun)						© 2021 Scot Loring
Lomatium hooveri	Hoover's lomatium	Apiaceae	perennial herb	Apr-Jul	None	None	G3	S3	4.3	No Photo Available
Lomatium repostum	Napa lomatium	Apiaceae	perennial herb	Mar-Jun	None	None	G2G3	S2S3	1B.2	No Photo Available
Lupinus milo-bakeri	Milo Baker's lupine	Fabaceae	annual herb	Jun-Sep	None	CT	G1Q	S1	1B.1	No Photo Available
Lupinus sericatus	Cobb Mountain lupine	Fabaceae	perennial herb	Mar-Jun	None	None	G2?	S2?	1B.2	No Photo Available
Malacothamnus helleri	Heller's bush-mallow	Malvaceae	perennial deciduous shrub	May-Jul	None	None	G2Q	S2	3.3	 © 2017 Keir Morse
Mielichhoferia elongata	elongate copper moss	Mielichhoferiaceae	moss		None	None	G5	S3S4	4.3	 © 2012 John Game
Myosurus minimus ssp. *apus*	little mousetail	Ranunculaceae	annual herb	Mar-Jun	None	None	G5T2Q	S2	3.1	No Photo Available
Navarretia cotulifolia	cotula navarretia	Polemoniaceae	annual herb	May-Jun	None	None	G4	S4	4.2	 © 2020 Zoya Akulova
Navarretia jepsonii	Jepson's navarretia	Polemoniaceae	annual herb	Apr-Jun	None	None	G4	S4	4.3	 © 2011 Vernon Smith
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	Polemoniaceae	annual herb	Apr-Jul	None	None	G4T2	S2	1B.1	 © 2018 Barry Rice
Navarretia leucocephala ssp. *pauciflora*	few-flowered navarretia	Polemoniaceae	annual herb	May-Jun	FE	CT	G4T1	S1	1B.1	 © 2013 Jake Ruygt
Navarretia leucocephala ssp. *plieantha*	many-flowered navarretia	Polemoniaceae	annual herb	May-Jun	FE	CE	G4T1	S1	1B.2	No Photo Available
Navarretia	pinnate-leaved	Polemoniaceae	annual herb	Jun-Aug	None	None	G4G5T4	S4	4.3	

linearifolia ssp. *pinnatisecta*	navarretia									No Photo Available
Navarretia nigelliformis ssp. *nigelliformis*	adobe navarretia	Polemoniaceae	annual herb	Apr-Jun	None	None	G4T3	S3	4.2	 © 2008 Zoya Akulova
Navarretia nigelliformis ssp. *radians*	shining navarretia	Polemoniaceae	annual herb	(Mar)Apr-Jul	None	None	G4T2	S2	1B.2	No Photo Available
Navarretia paradoxinota	Porter's navarretia	Polemoniaceae	annual herb	May-Jun(Jul)	None	None	G2	S2	1B.3	No Photo Available
Orcuttia tenuis	slender Orcutt grass	Poaceae	annual herb	May-Sep(Oct)	FT	CE	G2	S2	1B.1	 © 2013 Justy Leppert
Orobanche valida ssp. *howellii*	Howell's broomrape	Orobanchaceae	perennial herb (parasitic)	Jun-Sep	None	None	G4T3	S3	4.3	No Photo Available
Panicum acuminatum var. *thermale*	Geysers panicum	Poaceae	annual/perennial herb	Jun-Aug	None	CE	G5T2Q	S2	1B.2	 © Rick York and CNPS
Penstemon newberryi var. *sonomensis*	Sonoma beardtongue	Plantaginaceae	perennial herb	Apr-Aug	None	None	G4T3	S3	1B.3	 Jason Matthias Mills 2020
Piperia leptopetala	narrow-petaled rein orchid	Orchidaceae	perennial herb	May-Jul	None	None	G4	S4	4.3	No Photo Available
Piperia michaelii	Michael's rein orchid	Orchidaceae	perennial herb	Apr-Aug	None	None	G3	S3	4.2	No Photo Available
Plagiobryoides vinosula	wine-colored tufa moss	Bryaceae	moss		None	None	G3G4	S3S4	4.2	No Photo Available
Potamogeton zosteriformis	eel-grass pondweed	Potamogetonaceae	annual herb (aquatic)	Jun-Jul	None	None	G5	S3	2B.2	No Photo Available
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	None	None	G2	S2	1B.2	No Photo Available
Sedella leiocarpa	Lake County	Crassulaceae	annual herb	Apr-May	FE	CE	G1	S1	1B.1	

	stonecrop									No Photo Available
Senecio clevelandii var. *clevelandii*	Cleveland's ragwort	Asteraceae	perennial herb	Jun-Jul	None	None	G4?T3Q	S3	4.3	No Photo Available
Sidalcea keckii	Keck's checkerbloom	Malvaceae	annual herb	Apr-May(Jun)	FE	None	G2	S2	1B.1	No Photo Available
Sidalcea oregana ssp. *hydrophila*	marsh checkerbloom	Malvaceae	perennial herb	(Jun)Jul-Aug	None	None	G5T2	S2	1B.2	No Photo Available
Streptanthus brachiatus ssp. *brachiatus*	Socrates Mine jewelflower	Brassicaceae	perennial herb	May-Jun	None	None	G2T1	S1	1B.2	No Photo Available
Streptanthus brachiatus ssp. *hoffmanii*	Freed's jewelflower	Brassicaceae	perennial herb	May-Jul	None	None	G2T2	S2	1B.2	No Photo Available
Streptanthus hesperidis	green jewelflower	Brassicaceae	annual herb	May-Jul	None	None	G2G3	S2S3	1B.2	No Photo Available
Streptanthus morrisonii ssp. *kruckebergii*	Kruckeberg's jewelflower	Brassicaceae	perennial herb	Apr-Jul	None	None	G2T1	S1	1B.2	No Photo Available
Thelypodium brachycarpum	short-podded thelypodium	Brassicaceae	perennial herb	May-Aug	None	None	G3	S3	4.2	 © 2016 Dana York
Toxicoscordion fontanum	marsh zigadenus	Melanthiaceae	perennial bulbiferous herb	Apr-Jul	None	None	G3	S3	4.2	No Photo Available
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	None	None	G2	S2	1B.2	No Photo Available
Viburnum ellipticum	oval-leaved viburnum	Viburnaceae	perennial deciduous shrub	May-Jun	None	None	G4G5	S3?	2B.3	 © 2006 Tom Engstrom

Showing 1 to 105 of 105 entries

Suggested Citation:

California Native Plant Society, Rare Plant Program. 2022. Rare Plant Inventory (online edition, v9-01 1.5). Website https://www.rareplants.cnps.org [accessed 4 August 2022].

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IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Lake County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

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

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

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

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

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

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

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

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS

Northern Spotted Owl Strix occidentalis caurina — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/1123

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/2891

Fishes

NAME	STATUS

Delta Smelt Hypomesus transpacificus — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/321

Insects

NAME	STATUS

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

Flowering Plants

NAME	STATUS

Burke's Goldfields Lasthenia burkei — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4338

Few-flowered Navarretia Navarretia leucocephala ssp. pauciflora (=N. pauciflora) — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/8242

Slender Orcutt Grass Orcuttia tenuis Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/1063

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

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

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

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

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Common Yellowthroat *Geothlypis trichas sinuosa* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Lawrence's Goldfinch *Carduelis lawrencei* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Nuttall's Woodpecker *Picoides nuttallii* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse *Baeolophus inornatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

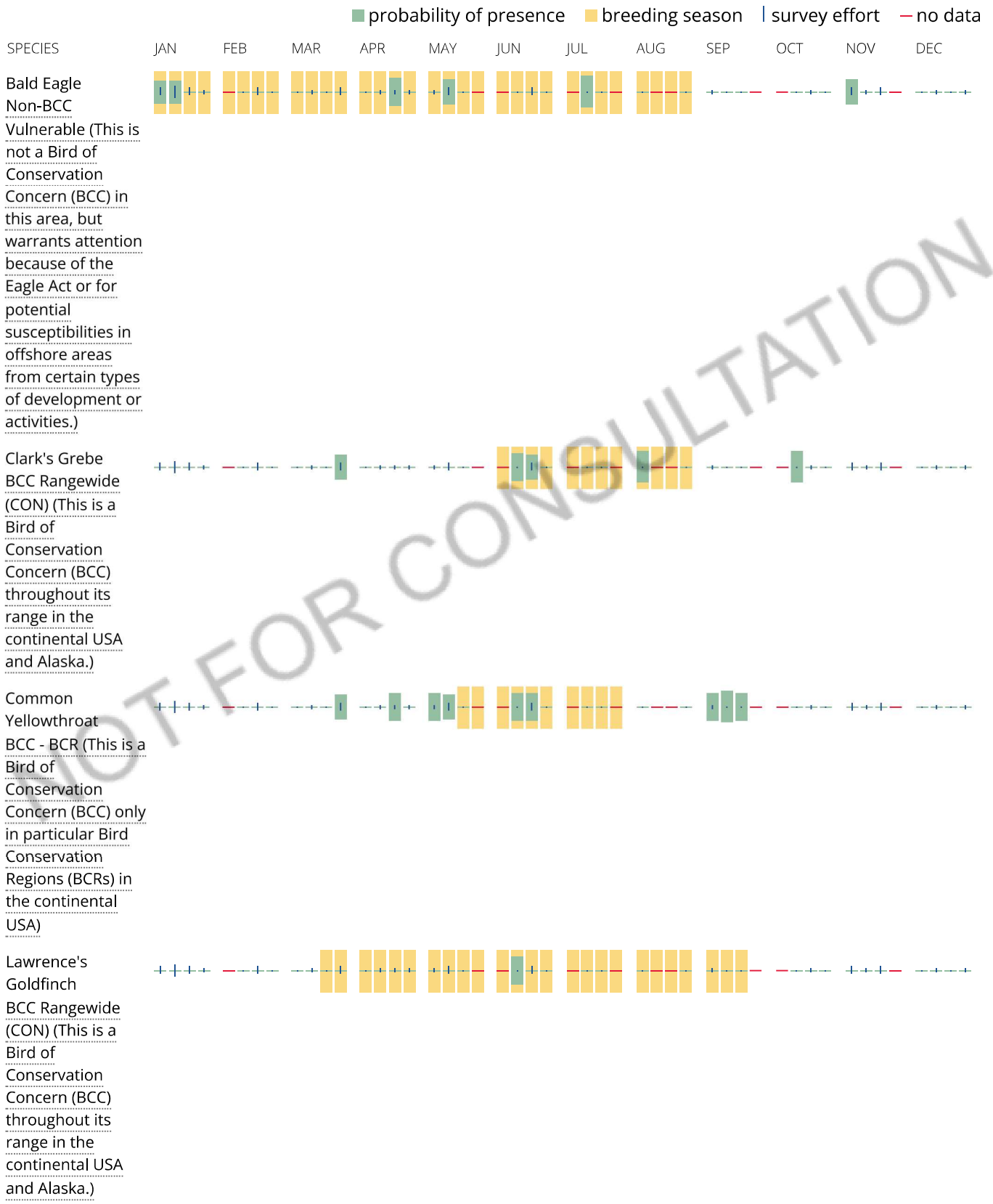
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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

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

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project

intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

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

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

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

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Lake County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

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

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

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

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

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

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

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

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS

Northern Spotted Owl Strix occidentalis caurina — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/1123

Amphibians

NAME	STATUS

California Red-legged Frog Rana draytonii — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/2891

Fishes

NAME	STATUS

Delta Smelt Hypomesus transpacificus — Threatened
Wherever found
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/321

Insects

NAME	STATUS

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

Flowering Plants

NAME	STATUS

Burke's Goldfields Lasthenia burkei — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4338

Few-flowered Navarretia Navarretia leucocephala ssp. pauciflora (=N. pauciflora) — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/8242

Slender Orcutt Grass Orcuttia tenuis Threatened

Wherever found

There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/1063

Critical habitats

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

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

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

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

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

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 1 to Aug 31
Common Yellowthroat *Geothlypis trichas sinuosa* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Lawrence's Goldfinch *Carduelis lawrencei* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Nuttall's Woodpecker *Picoides nuttallii* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse *Baeolophus inornatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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

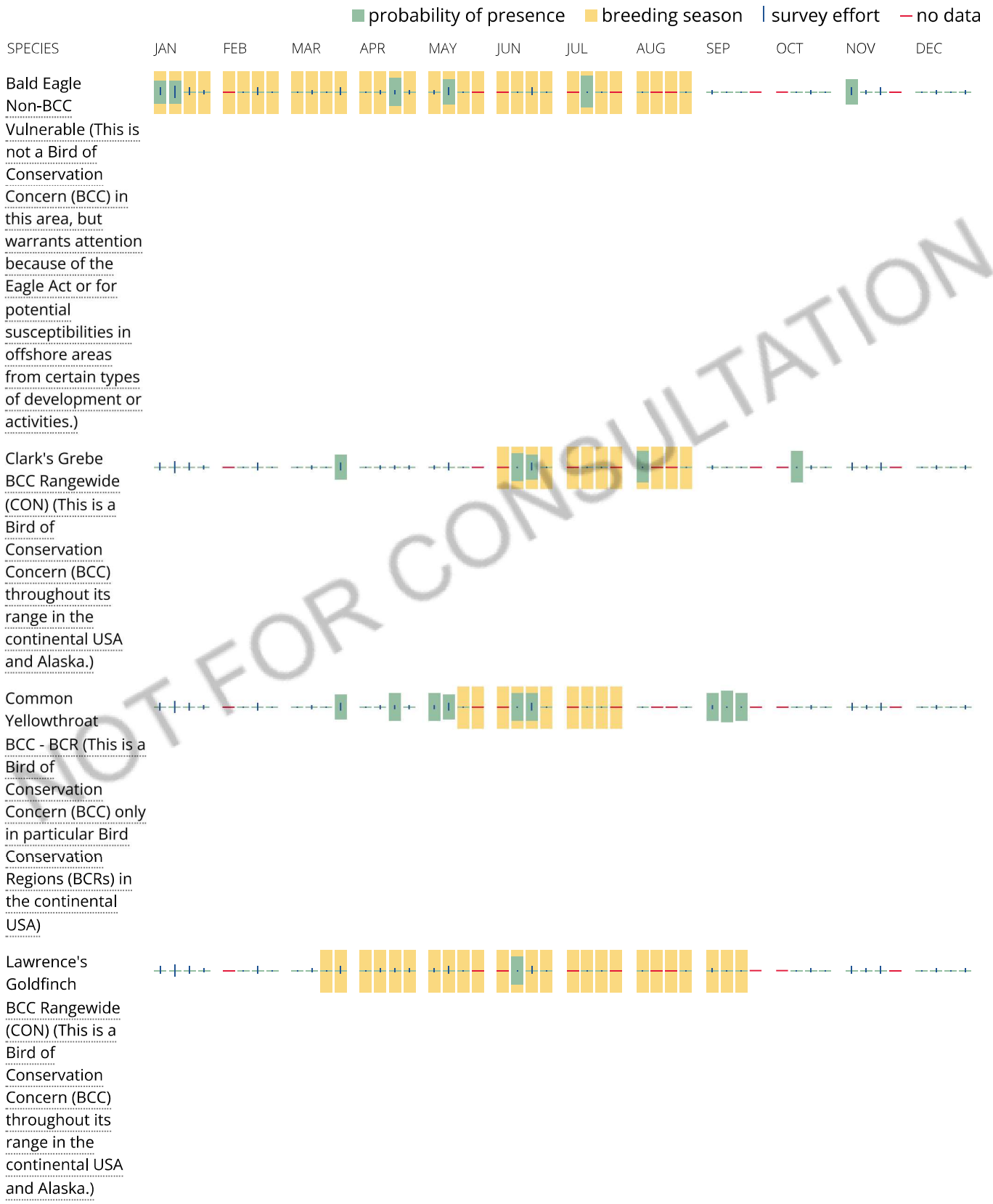
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



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

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

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project

intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

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

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

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

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

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

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

Details about birds that are potentially affected by offshore projects

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

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

What if I have eagles on my list?

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

Proper Interpretation and Use of Your Migratory Bird Report

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

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the NWI map to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Lake County Interregional Transit Center Project – 9-quad Database Search of the NOAA Fisheries West Coast Region California Species List Tool centered on the project quadrangle (Lower Lake) and covering the surrounding eight quadrangles (Clearlake Highlands, Clearlake Oaks, Benmore Canyon, Middletown, Whispering Pines, Wilbur Springs, Wilson Valley, and Jericho Valley).

Quad Name **Clearlake Highlands**
Quad Number **38122-H6**

1. ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

2. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

3. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

4. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

5. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

6. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

7. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

8. Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

9. MMPA Species (See list at left)

10. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Clearlake Oaks**
Quad Number **39122-A6**

11. ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

12. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

13. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

14. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

15. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

16. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

17. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

18. Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

19. MMPA Species (See list at left)

20. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Benmore Canyon**
Quad Number **39122-A5**

21. ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

22. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

23. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

24. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

25. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

26. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

27. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

28. Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

29. MMPA Species (See list at left)

30. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Lower Lake**
Quad Number **38122-H5**

31. ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

32. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

33. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

34. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

35. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

36. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

37. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

38. Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

39. MMPA Species (See list at left)
40. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Middletown**
Quad Number **38122-G5**

41. ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

42. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

43. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

44. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

45. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

46. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

47. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

48. Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

49. MMPA Species (See list at left)
50. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Whispering Pines**
Quad Number **38122-G6**

51. ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) - X
CC Chinook Salmon ESU (T) - X
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) - X
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

52. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat - X
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

53. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

54. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

55. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -
Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

56. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

57. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

58. Essential Fish Habitat

Coho EFH - **X**
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

59. MMPA Species (See list at left)

60. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Wilbur Springs**
Quad Number **39122-A4**

61. ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

62. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

63. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

64. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

65. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -

Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

66. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

67. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

68. Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH - **X**
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

69. MMPA Species (See list at left)

70. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Wilson Valley**
Quad Number **38122-H4**

71. ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

72. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

73. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

74. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

75. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -

Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

76. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

77. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

78. Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

79. MMPA Species (See list at left)
80. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Quad Name **Jericho Valley**
Quad Number **38122-G4**

81. ESA Anadromous Fish

SONCC Coho ESU (T) -
CCC Coho ESU (E) -
CC Chinook Salmon ESU (T) -
CVSR Chinook Salmon ESU (T) -
SRWR Chinook Salmon ESU (E) -
NC Steelhead DPS (T) -
CCC Steelhead DPS (T) -
SCCC Steelhead DPS (T) -
SC Steelhead DPS (E) -
CCV Steelhead DPS (T) -
Eulachon (T) -
sDPS Green Sturgeon (T) -

82. ESA Anadromous Fish Critical Habitat

SONCC Coho Critical Habitat -
CCC Coho Critical Habitat -
CC Chinook Salmon Critical Habitat -
CVSR Chinook Salmon Critical Habitat -
SRWR Chinook Salmon Critical Habitat -
NC Steelhead Critical Habitat -
CCC Steelhead Critical Habitat -
SCCC Steelhead Critical Habitat -
SC Steelhead Critical Habitat -
CCV Steelhead Critical Habitat -
Eulachon Critical Habitat -
sDPS Green Sturgeon Critical Habitat -

83. ESA Marine Invertebrates

Range Black Abalone (E) -
Range White Abalone (E) -

84. ESA Marine Invertebrates Critical Habitat

Black Abalone Critical Habitat -

85. ESA Sea Turtles

East Pacific Green Sea Turtle (T) -
Olive Ridley Sea Turtle (T/E) -

Leatherback Sea Turtle (E) -
North Pacific Loggerhead Sea Turtle (E) -

86. ESA Whales

Blue Whale (E) -
Fin Whale (E) -
Humpback Whale (E) -
Southern Resident Killer Whale (E) -
North Pacific Right Whale (E) -
Sei Whale (E) -
Sperm Whale (E) -

87. ESA Pinnipeds

Guadalupe Fur Seal (T) -
Steller Sea Lion Critical Habitat -

88. Essential Fish Habitat

Coho EFH -
Chinook Salmon EFH -
Groundfish EFH -
Coastal Pelagics EFH -
Highly Migratory Species EFH -

89. MMPA Species (See list at left)

90. ESA and MMPA Cetaceans/Pinnipeds

See list at left and consult the NMFS Long Beach office 562-980-4000

MMPA Cetaceans -
MMPA Pinnipeds -

Biological Resources Technical Memorandum

Appendix C

Species Potential to Occur On-site

Memorandum

Internal use only

Appendix C, Table 1. Special Status Wildlife Species Potential to Occur within the PSB

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
Mammals								
Antrozous pallidus	pallid bat	None	None	G4	S3	Species of Special Concern | IUCN_LC-Least Concern | WBWG_H-High Priority	Deserts, grasslands, shrublands, woodlands and forests. Day and night roosts include crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of coast redwoods and giant sequoias, bole cavities of oaks, exfoliating Ponderosa pine and valley oak bark, deciduous trees in riparian areas, and fruit trees in orchards), and various human structures such as bridges (especially wooden and concrete girder designs), barns, porches, bat boxes, and human-occupied as well as vacant buildings. Very sensitive to disturbance of roosting sites.	Moderate Potential. The PSB contains some suitable habitat requirements for this species. Closest known record is from 1954, ~5.7 miles northeast of the Project Area (CDFW 2022).
Corynorhinus townsendii	Townsend's big-eared bat	None	None	G4	S2	CDFW_SSC-Species of	Throughout California in a wide variety of habitats. Most	Low Potential. The PSB contains some suitable habitat

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
						Special Concern | IUCN_LC-Least Concern | WBWG_H-High Priority	common in mesic sites. Roosts in the open, hanging from walls and ceilings. Roosting sites limiting. Extremely sensitive to human disturbance.	requirements for foraging and only marginal habitat for roosting. Closest known record is from 1949, ~5.2 miles west of the Project Area (CDFW 2022).
Lasionycteris noctivagans	silver-haired bat	None	None	G3G4	S3S4	IUCN_LC-Least Concern | WBWG_M-Medium Priority	Primarily a coastal and montane forest dweller, feeding over streams, ponds and open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks. Needs drinking water.	Moderate Potential. The PSB contains some suitable habitat requirements for this species. Two historical records (from 1922 and 1930), ~18 miles north of the Project Area (CDFW 2022).
Lasiurus blossevillii	western red bat	None	None	G4	S3	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern | WBWG_H-High Priority	Roosts primarily in trees, 2-40 ft above ground, from sea level up through mixed conifer forests. Day roosts are commonly in edge habitats adjacent to streams or open fields, in orchards, and sometimes in urban areas.	Moderate Potential. The PSB contains some suitable habitat requirements for this species Closest known record is from 2000, ~6.75 miles southwest of the Project Area (CDFW 2022).
Lasiurus cinereus	hoary bat	None	None	G3G4	S4	IUCN_LC-Least Concern | WBWG_M-Medium Priority	Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees. Hoary bats are solitary and roost primarily in foliage of both coniferous and deciduous trees, near the ends of branches, 3-12 m above the ground. Roosts are usually at the edge of a clearing. Feeds primarily on moths. Requires water.	Moderate Potential. The PSB contains some suitable habitat requirements for this species. Closest known record is from 1999, ~6.75 miles southwest of the Project Area (CDFW 2022).
Myotis evotis	long-eared myotis	None	None	G5	S3	IUCN_LC-Least Concern | WBWG_M-Medium Priority	M. evotis occurs in semiarid shrublands, sage, chaparral, and agricultural areas, but is usually associated with	Moderate Potential: The PSB contains some suitable habitat. Closest known record is from

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
							coniferous forests. Individuals roost under exfoliating tree bark, and in hollow trees, caves, mines, cliff crevices, sinkholes, and rocky outcrops on the ground. They also sometimes roost in buildings and under bridges.	2000, ~6.75 miles southwest of the Project Area (CDFW 2022).
Myotis thysanodes	fringed myotis	None	None	G4	S3	IUCN_LC-Least Concern | WBWG_H-High Priority	In a wide variety of habitats, optimal habitats are pinyon-juniper, valley foothill hardwood and hardwood-conifer. Uses caves, mines, buildings or crevices for maternity colonies and roosts.	Moderate Potential. The PSB contains some suitable habitat Closest known record is from 1999, ~6.75 miles southwest of the Project Area (CDFW 2022).
Birds								
Accipiter cooperii	Cooper's hawk	None	None	G5	S4	CDFW_WL-Watch List | IUCN_LC-Least Concern	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.	Moderate Potential. Several recent records from the surrounding mile of the Project Areas (eBird 2022). Suitable nesting, foraging, and overwintering habitat on-site.
Aquila chrysaetos	golden eagle	None	None	G5	S3	CDF_S-Sensitive | CDFW_FP-Fully Protected | CDFW_WL-Watch List | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Rolling foothills, mountain areas, sage-juniper flats, and desert. Cliff-walled canyons provide nesting habitat in most parts of range; also, large trees in open areas.	Low Potential. Several records from within one mile of the Project Areas. No suitable nesting habitat (e.g., large trees or cliffs) on-site. Marginal foraging habitat on-site, specifically in the vacant lot adjacent to the existing LTA station. Highly unlikely to occur on-site.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	Threatened	Endangered	G5T2T3	S1	NABCI_RWL-Red Watch List | USFWS_BCC-Birds of Conservation Concern	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods,	Low Potential. Closest known record is from 1973, ~1.75 miles (CDFW 2022). No suitable nesting habitat (e.g., extensive riparian habitat) on-site.

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
							with lower story of blackberry, nettles, or wild grape.	
Falco mexicanus	prairie falcon	None	None	G5	S4	CDFW_WL-Watch List | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Inhabits dry, open terrain, either level or hilly. Breeding sites located on cliffs. Forages far afield, even to marshlands and ocean shores.	Low Potential. Closest known record is from 1982, ~2 miles north of the Project Area (CDFW 2022). No suitable nesting habitat (e.g., cliffs) on-site. Marginal foraging habitat on-site, specifically in the vacant lot adjacent to the existing LTA station. Highly unlikely to occur on-site.
Haliaeetus leucocephalus	bald eagle	Delisted	Endangered	G5	S3	CDF_S-Sensitive | CDFW_FP-Fully Protected | IUCN_LC-Least Concern | USFWS_BCC-Birds of Conservation Concern	Ocean shore, lake margins, and rivers for both nesting and wintering. Most nests within 1 mile of water. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	Low Potential. Several records from within one mile of the Project Areas. No suitable nesting habitat (e.g., large trees) on-site. Creek on-site is unlikely to provide suitable habitat. Highly unlikely to occur on-site.
Pandion haliaetus	osprey	None	None	G5	S4	CDF_S-Sensitive | CDFW_WL-Watch List | IUCN_LC-Least Concern	Ocean shore, bays, freshwater lakes, and larger streams. Large nests built in tree-tops within 15 miles of a good fish-producing body of water.	Low Potential. Several records from within one mile of the Project Areas. No suitable nesting habitat (e.g., large trees) on-site. Creek on-site is unlikely to provide suitable habitat. Highly unlikely to occur on-site.
Progne subis	purple martin	None	None	G5	S3	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Inhabits woodlands, low elevation coniferous forest of Douglas-fir, ponderosa pine, and Monterey pine. Nests in old woodpecker cavities mostly; also in human-made structures. Nest often located in tall, isolated tree/snag.	Moderate Potential. Closest known record is from 1971, ~4 miles west of the Project Area (eBird 2022). Suitable nesting, foraging, and overwintering habitat on-site.
Strix occidentalis caurina	northern spotted owl	Threatened	Threatened	G3G4T3	S2	CDF_S-Sensitive | IUCN_NT-Near Threatened | NABCI_YWL-	Old-growth forests or mixed stands of old-growth and mature trees. Occasionally in younger forests with patches of	No Potential. Closest known records are from Boggs Demonstration Forest ~8 miles south of the Project Area (CDFW

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
						Yellow Watch List	big trees. High, multistory canopy dominated by big trees, many trees with cavities or broken tops, woody debris, and space under canopy.	2022). The Project is located in an urban developed area and does not contain any suitable habitat (mature forest).
Reptiles								
Emys marmorata	western pond turtle	None	None	G3G4	S3	CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable | USFS_S-Sensitive	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Moderate Potential. Seigler Canyon Creek is adjacent to the SPA. The grassy field in SPA may provide suitable habitat for this species. Closest known record is from 6.25 miles west of the Project Area (CDFW 2022).
Amphibians								
Dicamptodon ensatus	California giant salamander	None	None	G3	S2S3	CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened	Known from wet coastal forests near streams and seeps from Mendocino County south to Monterey County, and east to Napa County. Aquatic larvae found in cold, clear streams, occasionally in lakes and ponds. Adults known from wet forests under rocks and logs near streams and lakes.	Low Potential. The PSB does not contain aquatic habitat suitable for this species. The PSB is approximately 5 miles outside of this species known range. Closest known record is from 1961, 8 miles southwest of the Project Area (CDFW 2022).
Rana boylii **Northwest clade*	foothill yellow-legged frog	None	None	G3	S3	CDFW_SSC-Species of Special Concern | IUCN_NT-Near Threatened | USFS_S-Sensitive	Partly-shaded, shallow streams and riffles with a rocky substrate in a variety of habitats. Needs at least some cobble-sized substrate for egg-laying. Needs at least 15 weeks to attain metamorphosis.	Low Potential. The PSB does not contain aquatic habitat suitable for this species, however, Seigler Canyon Creek, adjacent to the PSB, may provide suitable habitat. Historical record (from 1956) within Seigler Canyon Creek in the BSA adjacent to the Project Area (CDFW 2022). Recent records from on the shores of Clearlake (iNaturalist 2022).

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
Rana draytonii	California red-legged frog	Threatened	None	G2G3	S2S3	CDFW_SSC-Species of Special Concern | IUCN_VU-Vulnerable	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.	Low Potential. The PSB does not contain aquatic habitat suitable for this species, Closest known record is from 1961, ~6.75 miles southwest of the Project Area (CDFW 2022). Seigler Canyon Creek adjacent to the Project Site is unlikely to provide habitat to this species given the lack of deep ponded water with emergent vegetation.
Taricha rivularis	red-bellied newt	None	None	G2	S2	CDFW_SSC-Species of Special Concern | IUCN_LC-Least Concern	Coastal drainages from Humboldt County south to Sonoma County, inland to Lake County. Isolated population of uncertain origin in Santa Clara County. Lives in terrestrial habitats, juveniles generally underground, adults active at surface in moist environments. Will migrate over 1 km to breed, typically in streams with moderate flow and clean, rocky substrate.	Low Potential. The PSB does not contain aquatic habitat suitable for this species, however, Seigler Canyon Creek, adjacent to the PSB, may contain suitable habitat. Closest known record is from 1960, ~10 miles west of the Project Area (CDFW 2022). Recent records from Lake County (iNaturalist 2022).
Fish								
Archoplites interruptus	Sacramento perch	None	None	G2G3	S1	AFS_TH-Threatened | CDFW_SSC-Species of Special Concern	Historically found in the sloughs, slow-moving rivers, and lakes of the Central Valley. Prefers warm water. Aquatic vegetation is essental for young. Tolerates wide range of physio-chemical water conditions.	No Potential. The PSB does not contain aquatic habitat suitable for this species. Siegler Canyon Creek is adjacent to the PSB and may contain suitable habitat. Historical record (1937) from Clear Lake, but may be extirpated.
Hysterocarpus traskii lagunae	Clear Lake tule perch	None	None	G5T2T3	S3	CDFW_SSC-Species of Special Concern	The Clear Lake tule perch is endemic to three highly altered lakes, (Clear Lake, Upper Blue Lake, and Lower Blue Lake). A key habitat requirement of Clear Lake tule perch is cover, especially for pregnant females	No Potential. The PSB does not contain aquatic habitat suitable for this species. Siegler Canyon Creek is adjacent to the PSB and may contain suitable habitat. Known to occur in Clear Lake as recently as 2015 (CDFW 2022).

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
							and small juveniles. They are usually found in small shoals in deep (3+m) tule beds, among rocks (especially along steep rocky shores), or among the branches of fallen trees. Piers may also provide some cover but, in Clear Lake, such cover is usually occupied by alien sunfishes	
Lavinia exilicauda chi	Clear Lake hitch	None	Threatened	G4T1	S1	AFS_VU-Vulnerable | USFS_S-Sensitive	Found only in Clear Lake, Lake County, and associated ponds. Spawns in streams flowing into Clear Lake. Adults found in the limnetic zone. Juveniles found in the nearshore shallow-water habitat hiding in the vegetation.	No Potential. The PSB does not contain aquatic habitat suitable for this species. Siegler Canyon Creek is adjacent to the PSB and may contain suitable habitat. Historical record (1962) from Clear Lake, presumed extant.
Hypomesus transpacificus	Delta smelt	Threatened	Endangered	G1	S1	AFS_TH-Threatened | IUCN_EN-Endangered	Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait and San Pablo Bay. Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt.	No Potential. The Project is located beyond the known range of this species.
Oncorhynchus kisutch pop. 4	coho salmon - central California coast ESU	Endangered	Endangered	G5T2T3Q	S2	AFS_EN-Endangered	Federal listing = pops between Punta Gorda and San Lorenzo River. State listing = pops south of Punta Gorda. Require beds of loose, silt-free, coarse gravel for spawning. Also need cover, cool water and sufficient dissolved oxygen.	No Potential. Clear Lake and the Project Area are located upstream of the Cache Creek dam, a complete fish passage barrier.
Oncorhynchus tshawytscha pop. 17	chinook salmon - California coastal ESU	Threatened	None	G5T2Q	S2	AFS_TH-Threatened	Federal listing refers to wild spawned, coastal, spring and fall runs between Redwood Cr, Humboldt Co and Russian River, Sonoma Co.	No Potential. Clear Lake and the Project Area are located upstream of the Cache Creek dam, a complete fish passage barrier.
Insects								
Bombus occidentalis	*western bumble bee*	None	None	G2G3	S1	USFS_S-Sensitive	Once common and widespread, species has	Low Potential. Closest known record is from 1960, ~11 miles

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
							declined precipitously from central CA to southern B.C., perhaps from disease.	southwest of the Project Area (CDFW 2022). No recent known records from Lake County (BumbleBeeWatch 2022). Although the BSA falls within the species pre-2002 range (according to ICUN Redlist), the range has contracted significantly in the last decade and now primarily includes the intermountain west and cascade regions of the U.S. (Hatfield et al. 2015). Thus, this species is not expected to occur.
Dubiraphia brunnescens	brownish dubiraphian riffle beetle	None	None	G1	S1		Aquatic; known only from the NE shore of Clear Lake, Lake County. Inhabits exposed, wave-washed willow roots.	Low Potential. The PSB does not contain aquatic habitat suitable for this species, however, Seigler Canyon Creek, adjacent to the PSB, may contain suitable habitat. Known from Clear Lake as recently as 1988 (CDFW 2022).
Hedychridium milleri	Borax Lake cuckoo wasp	None	None	G1	S1		Endemic to Central California. Only collection is from the type locality. External parasite of wasp and bee larva.	Low Potential. Closest known record and type locality is from 1963, ~4.5 miles northwest of the Project Area at Borax Lake (CDFW 2022).
Ochthebius recticulus	Wilbur Springs minute moss beetle	None	None	G1	S1		Aquatic; known only from Wilbur Hot Springs area, Colusa County; 1250 ft elev. Inhabits the shoreline of the creek at Wilbur Hot Springs.	No Potential. Closest known record is from 1974, ~13 miles northeast of the Project Area (CDFW 2022). The Project Area is located 13+ miles from the only known locality of this species.
Paracoenia calida	Wilbur Springs shore fly	None	None	G1	S1		Endemic to Wilbur Hot Springs, Colusa County. Inhabits all but the hottest portion of the hot spring effluent; water temp 20-40 deg C.	No Potential. Closest known record is from 1984, ~13 miles northeast of the Project Area (CDFW 2022). The Project Area is located 13+ miles from the

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
								only known locality of this species.
Saldula usingeri	Wilbur Springs shorebug	None	None	G1	S1		Requires springs/creeks with high concentrations of Na, Cl, and Li. Found only on wet substrate of spring outflows.	No Potential. Closest known record is from 1979, ~12 miles northeast of the Project Area (CDFW 2022). The Project Area is located 12+ miles from the only known locality of this species.
Danaus plexippus pop. 1	monarch - California overwintering population	Candidate	None	G4T2T3	S2S3	USFS_S-Sensitive	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	No Potential. No known overwintering sites from Lake County (Xerces Society 2022). No stands of eucalyptus, pine, or cypress trees located on-site. Overwintering sites are usually within 1 miles of the Pacific coastline.
Mollusks								
Gonidea angulata	western ridged mussel	None	None	G3	S1S2		Primarily creeks and rivers and less often lakes. Originally in most of state, now extirpated from Central and Southern California.	No Potential. The PSB does not contain aquatic habitat suitable for this species, however, Seigler Canyon Creek, adjacent to the PSB, may contain suitable habitat.. Known to occur in Clear Lake as recently as 1947, but none observed during 2009 surveys (CDFW 2022)..
Pyrgulopsis ventricosa	Clear Lake pyrg	None	None	G1	S1	IUCN_CR-Critically Endangered	This species inhabits springs and small spring-fed streams, where it is found on vegetation (IUCN 2022).	No Potential. The PSB does not contain aquatic habitat suitable for this species, however, Seigler Canyon Creek, adjacent to the PSB, may contain suitable habitat. Closest known record is from 2000 at Seigler Springs, ~4.75 miles (CDFW 2022).
Plants								

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
Allium fimbriatum var. *purdyi*	Purdy's onion	None	None	G4G5T3	S3	4.3	Chaparral, Cismontane woodland, Clay, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Amsinckia lunaris	bent-flowered fiddleneck	None	None	G3	S3	1B.2	Cismontane woodland, Coastal bluff scrub, Valley and foothill grassland	Low potential. Marginally suitable habitat is present in the PSB.
Antirrhinum subcordatum	dimorphic snapdragon	None	None	G3	S3	4.3	Chaparral, Lower montane coniferous forest, Serpentinite (sometimes)	Low potential. Serpentine soils are not present in PSB.
Antirrhinum virga	twig-like snapdragon	None	None	G3?	S3?	4.3	Chaparral, Lower montane coniferous forest, Openings, Rocky, Serpentinite (often)	Low potential. Serpentine soils are not present in PSB.
Arabis modesta	modest rockcress	None	None	G3	S3	4.3	Chaparral, Lower montane coniferous forest	Low potential. Marginally suitable habitat is present in the PSB.
Arabis oregana	Oregon rockcress	None	None	G3G4Q	S3	4.3	Chaparral, Lower montane coniferous forest, Serpentinite	No potential. The PSB is outside of the elevational range for this species (1,970 - 6,005 feet).
Arctostaphylos manzanita ssp. *elegans*	Konocti manzanita	None	None	G5T3	S3	1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest, Volcanic	Moderate potential. There are many CNDDB occurrences of this species along Highway 26. The nearest occurrence is 1.7 miles southwest of the PSB. Marginally suitable habitat is present in the PSB; however, this species was not observed in the floristic surveys.
Arctostaphylos stanfordiana ssp. *raichei*	Raiche's manzanita	None	None	G3T2	S2	1B.1	Chaparral, Lower montane coniferous forest, Rocky, Serpentinite (often)	No potential. The PSB is outside of the elevational range for this species (1,475 - 3,395 feet).
Asclepias solanoana	serpentine milkweed	None	None	G3	S3	4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Astragalus breweri	Brewer's milk-vetch	None	None	G3	S3	4.2	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland, Serpentinite (often), Volcanic	Low potential. Serpentine soils are not present in PSB.

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
Astragalus clevelandii	Cleveland's milk-vetch	None	None	G4	S4	4.3	Chaparral, Cismontane woodland, Riparian forest	Low potential. Marginally suitable habitat is present in the PSB.
Astragalus rattanii var. *jepsonianus*	Jepson's milk-vetch	None	None	G4T3	S3	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland, Serpentinite (often)	Low potential. Serpentine soils are not present in PSB.
Astragalus rattanii var. *rattanii*	Rattan's milk-vetch	None	None	G4T4	S4	4.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	Low potential. Marginally suitable habitat is present in the PSB.
Balsamorhiza macrolepis	big-scale balsamroot	None	None	G2	S2	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland, Serpentinite (sometimes)	Low potential. Serpentine soils are not present in PSB.
Brasenia schreberi	watershield	None	None	G5	S3	2B.3	Marshes and swamps	No potential. No suitable habitat is present in the PSB.
Brodiaea rosea	Indian Valley brodiaea	None	SE	G2Q	S2	3.1	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Valley and foothill grassland, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Calamagrostis ophitidis	serpentine reed grass	None	None	G3	S3	4.3	Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Rocky, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Calochortus uniflorus	pink star-tulip	None	None	G4	S4	4.2	Coastal prairie, Coastal scrub, Meadows and seeps, North Coast coniferous forest	Low potential. Marginally suitable habitat is present in the PSB.
Calyptridium quadripetalum	four-petaled pussypaws	None	None	G4	S4	4.3	Chaparral, Lower montane coniferous forest, Gravelly (sometimes), Sandy (sometimes), Serpentinite (usually)	Low potential. Serpentine soils are not present in PSB.
Calystegia collina ssp. *oxyphylla*	Mt. Saint Helena morning-glory	None	None	G4T3	S3	4.2	Chaparral, Lower montane coniferous forest, Valley and foothill grassland, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Calystegia collina ssp. *tridactylosa*	three-fingered morning-glory	None	None	G4T1	S1	1B.2	Chaparral, Cismontane woodland, Gravelly, Openings, Rocky, Serpentinite	No potential. Serpentine soils are not present in the PSB.

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
Carex praticola	northern meadow sedge	None	None	G5	S2	2B.2	Meadows and seeps	Low potential. Marginally suitable habitat is present in the PSB.
Castilleja rubicundula var. rubicundula	pink creamsacs	None	None	G5T2	S2	1B.2	Chaparral, Cismontane woodland, Meadows and seeps, Valley and foothill grassland, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Ceanothus confusus	Rincon Ridge ceanothus	None	None	G1	S1	1B.1	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Serpentinite (sometimes), Volcanic (sometimes)	No potential. No suitable habitat is present in the PSB.
Ceanothus divergens	Calistoga ceanothus	None	None	G2	S2	1B.2	Chaparral	No potential. No suitable habitat is present in the PSB.
Centromadia parryi ssp. *parryi*	pappose tarplant	None	None	G3T2	S2	1B.2	Chaparral, Coastal prairie, Marshes and swamps, Meadows and seeps, Valley and foothill grassland, Alkaline (often)	Low potential. Marginally suitable habitat is present in the PSB.
Centromadia parryi ssp. *rudis*	Parry's rough tarplant	None	None	G3T3	S3	4.2	Valley and foothill grassland, Vernal pools, Alkaline, Roadsides (sometimes), Seeps, Vernally Mesic	No potential. The PSB is outside of the elevational range for this species (0 - 330 feet).
Chlorogalum pomeridianum var. minus	dwarf soaproot	None	None	G5T3	S3	1B.2	Chaparral	No potential. No suitable habitat is present in the PSB.
Clarkia gracilis ssp. *tracyi*	Tracy's clarkia	None	None	G5T3	S3	4.2	Chaparral	No potential. No suitable habitat is present in the PSB.
Collomia diversifolia	serpentine collomia	None	None	G4	S4	4.3	Chaparral, Cismontane woodland, Gravelly (sometimes), Rocky (sometimes), Serpentinite (sometimes)	Low potential. Serpentine soils are not present in PSB.
Cordylanthus tenuis ssp. *brunneus*	serpentine bird's-beak	None	None	G4G5T3	S3	4.3	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Serpentinite (usually)	No potential. Serpentine soils are not present in the PSB.

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
Cordylanthus tenuis ssp. *capillaris*	Pennell's bird's-beak	FE	SR	G4G5T1	S1	1B.2	Chaparral, Closed-cone coniferous forest, Serpentinite	No potential. The PSB is outside of the elevational range for this species (150 - 1,000 feet).
Cryptantha dissita	serpentine cryptantha	None	None	G3	S3	1B.2	Chaparral	No potential. No suitable habitat is present in the PSB.
Cryptantha excavata	deep-scarred cryptantha	None	None	G1	S1	1B.1	Cismontane woodland	Low potential. Marginally suitable habitat is present in the PSB.
Delphinium uliginosum	swamp larkspur	None	None	G3	S3	4.2	Chaparral, Valley and foothill grassland, Seeps, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Downingia willamettensis	Cascade downingia	None	None	G4	S2	2B.2	Cismontane woodland, Valley and foothill grassland, Vernal pools	Low potential. Marginally suitable habitat is present in the PSB.
Equisetum palustre	marsh horsetail	None	None	G5	S1S3	3	Marshes and swamps	No potential. No suitable habitat is present in the PSB.
Eriastrum brandegeeae	Brandegee's eriastrum	None	None	G1Q	S1	1B.1	Chaparral, Cismontane woodland, Sandy, Volcanic	Low potential. Marginally suitable habitat is present in the PSB.
Eriastrum tracyi	Tracy's eriastrum	None	SR	G3Q	S3	3.2	Chaparral, Cismontane woodland, Valley and foothill grassland	Low potential. Marginally suitable habitat is present in the PSB.
Erigeron greenei	Greene's narrow-leaved daisy	None	None	G3	S3	1B.2	Chaparral	No potential. No suitable habitat is present in the PSB.
Eriogonum nervulosum	Snow Mountain buckwheat	None	None	G2	S2	1B.2	Chaparral	No potential. No suitable habitat is present in the PSB.
Eriogonum tripodum	tripod buckwheat	None	None	G4	S4	4.2	Chaparral, Cismontane woodland, Serpentinite (often)	Low potential. Serpentine soils are not present in PSB.
Eryngium constancei	Loch Lomond button-celery	FE	SE	G1	S1	1B.1	Vernal pools	No potential. The PSB is outside of the elevational range for this species (1,510 - 2,805 feet).
Erythranthe nudata	bare monkeyflower	None	None	G4	S4	4.3	Chaparral, Cismontane woodland, Seeps, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Erythronium helenae	St. Helena fawn lily	None	None	G3	S3	4.2	Chaparral, Cismontane woodland, Lower montane	Low potential. Serpentine soils are not present in PSB.

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
							coniferous forest, Valley and foothill grassland, Serpentinite (sometimes), Volcanic (sometimes)	
Extriplex joaquinana	San Joaquin spearscale	None	None	G2	S2	1B.2	Chenopod scrub, Meadows and seeps, Playas, Valley and foothill grassland, Alkaline	Low potential. Marginally suitable habitat is present in the PSB.
Fritillaria pluriflora	adobe-lily	None	None	G2G3	S2S3	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland, Adobe (often)	Low potential. Marginally suitable habitat is present in the PSB.
Fritillaria purdyi	Purdy's fritillary	None	None	G4	S4	4.3	Chaparral, Cismontane woodland, Lower montane coniferous forest, Serpentinite (usually)	No potential. Serpentine soils are not present in the PSB.
Gratiola heterosepala	Boggs Lake hedge-hyssop	None	SE	G2	S2	1B.2	Marshes and swamps, Vernal pools, Clay	No potential. No suitable habitat is present in the PSB.
Grimmia torenii	Toren's grimmia	None	None	G2	S2	1B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest, Carbonate, Openings, Rocky, Volcanic	Low potential. Marginally suitable habitat is present in the PSB.
Harmonia hallii	Hall's harmonia	None	None	G2?	S2?	1B.2	Chaparral	Low potential. There is a historic CNDDB occurrence (from 1893) overlapping the southern PSB, but mapped to an uncertain location. Marginally suitable habitat is present.
Helianthus exilis	serpentine sunflower	None	None	G3	S3	4.2	Chaparral, Cismontane woodland, Seeps, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Hemizonia congesta ssp. calyculata	Mendocino tarplant	None	None	G5T4	S4	4.3	Cismontane woodland, Valley and foothill grassland, Serpentinite (sometimes)	No potential. Serpentine soils are not present in the PSB.
Hemizonia congesta ssp. congesta	congested-headed hayfield tarplant	None	None	G5T2	S2	1B.2	Valley and foothill grassland, Roadsides (sometimes)	Low potential. Suitable habitat is present in the PSB; however, this species is only known in Lake County from one uncertain occurrence (from 1980)

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
								approximately 9 miles south of the PSB.
Hesperolinon adenophyllum	glandular western flax	None	None	G2G3	S2S3	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland, Serpentinite (usually)	No potential. Serpentine soils are not present in the PSB.
Hesperolinon bicarpellatum	two-carpellate western flax	None	None	G2	S2	1B.2	Chaparral	No potential. No suitable habitat is present in the PSB.
Hesperolinon didymocarpum	Lake County western flax	None	SE	G1	S1	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland, Serpentinite	No potential. The PSB is outside of the elevational range for this species (1,085 - 1,200 feet).
Hesperolinon drymarioides	drymaria-like western flax	None	None	G2	S2	1B.2	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Valley and foothill grassland, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Hesperolinon sharsmithiae	Sharsmith's western flax	None	None	G2Q	S2	1B.2	Chaparral, Serpentinite	No potential. The PSB is outside of the elevational range for this species (885 - 985 feet).
Horkelia bolanderi	Bolander's horkelia	None	None	G1	S1	1B.2	Chaparral, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Edges, Vernally mesic	No potential. The PSB is outside of the elevational range for this species (1,475 - 3,610 feet).
Imperata brevifolia	California satintail	None	None	G4	S3	2B.1	Chaparral, Coastal scrub, Meadows and seeps, Mojavean desert scrub, Riparian scrub, Mesic	Low potential. Marginally suitable habitat is present in the PSB.
Lasthenia burkei	Burke's goldfields	FE	SE	G1	S1	1B.1	Meadows and seeps, Vernal pools	No potential. No suitable habitat is present in the PSB.
Layia septentrionalis	Colusa layia	None	None	G2	S2	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland, Sandy, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Legenere limosa	legenere	None	None	G2	S2	1B.1	Vernal pools	No potential. No suitable habitat is present in the PSB.

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
Leptosiphon acicularis	bristly leptosiphon	None	None	G4?	S4?	4.2	Chaparral, Cismontane woodland, Coastal prairie, Valley and foothill grassland	Low potential. Marginally suitable habitat is present in the PSB.
Leptosiphon grandiflorus	large-flowered leptosiphon	None	None	G3G4	S3S4	4.2	Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, Valley and foothill grassland, sandy (usually)	Low potential. Marginally suitable habitat is present in the PSB.
Leptosiphon jepsonii	Jepson's leptosiphon	None	None	G2G3	S2S3	1B.2	Chaparral, Cismontane woodland, Valley and foothill grassland (usually), Volcanic (usually)	Low potential. Marginally suitable habitat is present in the PSB.
Leptosiphon latisectus	broad-lobed leptosiphon	None	None	G4	S4	4.3	Broadleafed upland forest, Cismontane woodland	Low potential. Marginally suitable habitat is present in the PSB.
Limnanthes floccosa ssp. *floccosa*	woolly meadowfoam	None	None	G4T4	S3	4.2	Chaparral, Cismontane woodland, Valley and foothill grassland, Vernal pools, Vernally Mesic	Low potential. Marginally suitable habitat is present in the PSB.
Lomatium hooveri	Hoover's lomatium	None	None	G3	S3	4.3	Chaparral, Cismontane woodland, Serpentinite, Volcanic (rarely)	No potential. Serpentine soils are not present in the PSB.
Lomatium repostum	Napa lomatium	None	None	G2G3	S2S3	1B.2	Chaparral, Cismontane woodland, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Lupinus milo-bakeri	Milo Baker's lupine	None	ST	G1Q	S1	1B.1	Cismontane woodland, Valley and foothill grassland	Low potential. Marginally suitable habitat is present in the PSB.
Lupinus sericatus	Cobb Mountain lupine	None	None	G2?	S2?	1B.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest	Low potential. Marginally suitable habitat is present in the PSB.
Malacothamnus helleri	Heller's bush-mallow	None	None	G2Q	S2	3.3	Chaparral, Riparian woodland	Low potential. Marginally suitable habitat is present in the PSB.
Mielichhoferia elongata	elongate copper moss	None	None	G5	S3S4	4.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Coastal scrub, Lower montane coniferous	Low potential. Marginally suitable habitat is present in the PSB.

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
							forest, Meadows and seeps, Subalpine coniferous forest, Acidic (usually), Carbonate (sometimes), Metamorphic, Roadsides (often), Vernally Mesic (usually)	
Myosurus minimus ssp. *apus*	little mousetail	None	None	G5T2Q	S2	3.1	Valley and foothill grassland, Vernal pools	Low potential. Marginally suitable habitat is present in the PSB.
Navarretia cotulifolia	cotula navarretia	None	None	G4	S4	4.2	Chaparral, Cismontane woodland, Valley and foothill grassland, Adobe	Low potential. Marginally suitable habitat is present in the PSB.
Navarretia jepsonii	Jepson's navarretia	None	None	G4	S4	4.3	Chaparral, Cismontane woodland, Valley and foothill grassland, Serpentinite	No potential. Serpentine soils are not present in the PSB.
Navarretia leucocephala ssp. *bakeri*	Baker's navarretia	None	None	G4T2	S2	1B.1	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Valley and foothill grassland, Vernal pools, Mesic	Moderate potential. There is one historic CNDDB occurrence (from 1945) approximately 1 mile north of the PSB mapped as best guess along SR53. Marginally suitable habitat is present in the PSB; however this species was not observed in the floristic surveys.
Navarretia leucocephala ssp. *pauciflora*	few-flowered navarretia	FE	ST	G4T1	S1	1B.1	Vernal pools	No potential. No suitable habitat is present in the PSB.
Navarretia leucocephala ssp. *plieantha*	many-flowered navarretia	FE	SE	G4T1	S1	1B.2	Vernal pools	No potential. No suitable habitat is present in the PSB.
Navarretia linearifolia ssp. *pinnatisecta*	pinnate-leaved navarretia	None	None	G4G5T4	S4	4.3	Chaparral, Lower montane coniferous forest, Serpentinite, Volcanic	No potential. Serpentine soils are not present in the PSB.
Navarretia nigelliformis ssp. *nigelliformis*	adobe navarretia	None	None	G4T3	S3	4.2	Valley and foothill grassland, Vernal pools, Clay, Serpentinite (sometimes)	Low potential. Serpentine soils are not present in PSB.

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
Navarretia nigelliformis ssp. *radians*	shining navarretia	None	None	G4T2	S2	1B.2	Cismontane woodland, Valley and foothill grassland, Vernal pools	Low potential. Marginally suitable habitat is present in the PSB.
Navarretia paradoxinota	Porter's navarretia	None	None	G2	S2	1B.3	Meadows and seeps	Low potential. Marginally suitable habitat is present in the PSB.
Orcuttia tenuis	slender Orcutt grass	FT	SE	G2	S2	1B.1	Vernal pools	No potential. No suitable habitat is present in the PSB.
Orobanche valida ssp. *howellii*	Howell's broomrape	None	None	G4T3	S3	4.3	Chaparral	No potential. No suitable habitat is present in the PSB.
Panicum acuminatum var. *thermale*	Geysers panicum	None	SE	G5T2Q	S2	1B.2	Closed-cone coniferous forest, Riparian forest, Valley and foothill grassland	Low potential. Marginally suitable habitat is present in the PSB.
Penstemon newberryi var. *sonomensis*	Sonoma beardtongue	None	None	G4T3	S3	1B.3	Chaparral	No potential. The PSB is outside of the elevational range for this species (2,295 - 4,495 feet).
Piperia leptopetala	narrow-petaled rein orchid	None	None	G4	S4	4.3	Cismontane woodland, Lower montane coniferous forest, Upper montane coniferous forest	Low potential. Marginally suitable habitat is present in the PSB.
Piperia michaelii	Michael's rein orchid	None	None	G3	S3	4.2	Chaparral, Cismontane woodland, Closed-cone coniferous forest, Coastal bluff scrub, Coastal scrub, Lower montane coniferous forest	No potential. No suitable habitat is present in the PSB.
Plagiobryoides vinosula	wine-colored tufa moss	None	None	G4	S3S4	4.2	Cismontane woodland, Meadows and seeps, Mojavean desert scrub, Pinyon and juniper woodland, Riparian woodland	Low potential. Marginally suitable habitat is present in the PSB.
Potamogeton zosteriformis	eel-grass pondweed	None	None	G5	S3	2B.2	Marshes and swamps	No potential. No suitable habitat is present in the PSB.
Puccinellia simplex	California alkali grass	None	None	G3	S2	1B.2	Chenopod scrub, Meadows and seeps, Valley and foothill grassland, Vernal pools	Low potential. Marginally suitable habitat is present in the PSB.

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
Sedella leiocarpa	Lake County stonecrop	FE	SE	G1	S1	1B.1	Cismontane woodland, Valley and foothill grassland, Vernal pools	Low potential. Marginally suitable habitat is present in the PSB.
Senecio clevelandii var. *clevelandii*	Cleveland's ragwort	None	None	G4?T3Q	S3	4.3	Chaparral	No potential. No suitable habitat is present in the PSB.
Sidalcea keckii	Keck's checkerbloom	FE	None	G2	S2	1B.1	Cismontane woodland, Valley and foothill grassland	Low potential. Marginally suitable habitat is present in the PSB.
Sidalcea oregana ssp. *hydrophila*	marsh checkerbloom	None	None	G5T2	S2	1B.2	Meadows and seeps, Riparian forest	No potential. The PSB is outside of the elevational range for this species (3,610 - 7,545 feet).
Streptanthus brachiatus ssp. *brachiatus*	Socrates Mine jewelflower	None	None	G2T1	S1	1B.2	Chaparral, Closed-cone coniferous forest	No potential. The PSB is outside of the elevational range for this species (1,790 - 3,280 feet).
Streptanthus brachiatus ssp. *hoffmanii*	Freed's jewelflower	None	None	G2T2	S2	1B.2	Chaparral, Cismontane woodland	No potential. The PSB is outside of the elevational range for this species (1,610 - 4,005 feet).
Streptanthus hesperidis	green jewelflower	None	None	G2G3	S2S3	1B.2	Chaparral, Cismontane woodland	No potential. No suitable habitat is present in the PSB.
Streptanthus morrisonii ssp. *kruckebergii*	Kruckeberg's jewelflower	None	None	G2T1	S1	1B.2	Cismontane woodland	Low potential. Marginally suitable habitat is present in the PSB.
Thelypodium brachycarpum	short-podded thelypodium	None	None	G3	S3	4.2	Chaparral, Lower montane coniferous forest, Meadows and seeps	No potential. The PSB is outside of the elevational range for this species (2,200 - 8,400 feet).
Toxicoscordion fontanum	marsh zigadenus	None	None	G3	S3	4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps	Low potential. Marginally suitable habitat is present in the PSB.
Trifolium hydrophilum	saline clover	None	None	G2	S2	1B.2	Marshes and swamps, Valley and foothill grassland, Vernal pools	No potential. The PSB is outside of the elevational range for this species (0 - 985 feet).
Viburnum ellipticum	oval-leaved viburnum	None	None	G4G5	S3?	2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	Low potential. Marginally suitable habitat is present in the PSB.

SciName	ComName	FedList	CalList	GRank	SRank	OthrStatus/ CRPR rank	Habitat Requirements	Potential to Occur at the Project Sites
Streptanthus morrisonii ssp. *kruckebergii*	Kruckeberg's jewelflower	None	None	G2T1	S1	1B.2	Cismontane woodland	Low potential. Marginally suitable habitat is present in the PSB.
Thelypodium brachycarpum	short-podded thelypodium	None	None	G3	S3	4.2	Chaparral, Lower montane coniferous forest, Meadows and seeps	No potential. The PSB is outside of the elevational range for this species (2,200 - 8,400 feet).
Toxicoscordion fontanum	marsh zigadenus	None	None	G3	S3	4.2	Chaparral, Cismontane woodland, Lower montane coniferous forest, Marshes and swamps, Meadows and seeps	Low potential. Marginally suitable habitat is present in the PSB.
Trifolium hydrophilum	saline clover	None	None	G2	S2	1B.2	Marshes and swamps, Valley and foothill grassland, Vernal pools	No potential. The PSB is outside of the elevational range for this species (0 - 985 feet).
Viburnum ellipticum	oval-leaved viburnum	None	None	G4G5	S3?	2B.3	Chaparral, Cismontane woodland, Lower montane coniferous forest	Low potential. Marginally suitable habitat is present in the PSB.

Footnotes:
1 General habitat, and microhabitat column information, reprinted from CNDDB (March 2022).
2 Rankings from CNDDB (March 2022).

Column Header Categories and Abbreviations:
FESA Listing status under the federal Endangered Species Act (ESA)
FE Federal Endangered; FT = Federal Threatened; FC = Federal Candidate; FD = Federally Delisted
CESA Listing status under the California state Endangered Species Act (CESA)
SE State Endangered; SD = State Delisted; ST = State Threatened.

GRank: Global Rank from NatureServe's Heritage Methodology (NatureServe 2022) (ranking according to degree of global imperilment - G1 = Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Secure—Common; widespread and abundant. Subspecies/variety level: "Subspecies/varieties receive a T-rank attached to the G-rank. With the subspecies/varieties, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety" (CDFW 2022b); ? = " Denotes inexact numeric rank" (NatureServe 2022); Q = " Questionable taxonomy that may reduce conservation priority" (NatureServe 2022)

SRank: State Rank from NatureServe's Heritage Methodology (NatureServe 2022) (ranking according to degree of imperilment in the state (California) - S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state; S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state; S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state; S4 = Apparently Secure—Uncommon but not rare in the state; some cause for long-term concern due to declines or other factors; S5 = Secure—Common, widespread, and abundant in the state; SNR = State Not Ranked.

CRPR: CNPS rankings for rare plants (CNPS 2022) - 1A = Plants presumed extinct in California; 1B = Plants rare, threatened or endangered in California and elsewhere; 2 = Plants rare, threatened, or endangered in California, but more common elsewhere; 3 = Plants about which more information is needed (a review list); 4 = Plants of limited distribution (a watch list); n/a = not applicable; Threat Code extensions and their meanings: ".1 - Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat); .2 – Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat); .3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)" (CDFW 2022b).

Potential to Occur:

No potential: Habitat in and adjacent to the PSB is clearly unsuitable for the species requirements (cover, substrate, elevation, hydrology, plant community, site history, disturbance regime).

Low potential: Few of the habitat components meeting the species requirements are present, and/or the majority of habitat on and adjacent to the site is unsuitable or of very poor quality. The species is not likely to be found in the PSB.

Moderate potential: Some of the habitat components meeting the species requirements are present, and/or only some of the habitat on or adjacent to the site is unsuitable. The species has a moderate probability of being found in the PSB.

High potential: All of the habitat components meeting the species requirements are present and/or most of the habitat on or adjacent to the site is highly suitable. The species has a high probability of being found on in the PSB

Present: Detected or documented on-site.

Appendix C, Table 2. Sensitive Natural Communities mapped in CNDDB within the 9-quad search area of the PSB.

Habitat Type	Global Rank[1]	State Rank[1]	Characteristic species[1]	Potential to Occur in the PSB
Coastal and Valley Freshwater Marsh	G3	S2.1	*Carex lanuginose, C. senta, Cyperus esculentus, C. eragrostis, Eleocharis spp.*	**No potential.** This vegetation community is mapped 0.5 mile west of the PSB; however, no marsh habitat is present in the PSB.
Great Valley Mixed Riparian Forest	G2	S2.2	*Acer negundo californica, Cephalanthus occidentalis, Clematis ligusticifolia*	**No potential.** No riparian forest is present in the PSB.
Northern Basalt Flow Vernal Pool	G3	S2.2	*Blennosperma nanum, Boisduvalia densiflora, Callitriche marginata*	**No potential.** This vegetation community is mapped 4.2 miles west of the PSB; however, no vernal pools are present in the PSB.
Northern Interior Cypress Forest	G2	S2.2	*Cupressus abramsiana, C. bakeri, C. macnabiana, C. sargentii*	**No potential.** No cypress trees are present in the PSB.
Serpentine Bunchgrass	G2	S2.2	*Calamagrostis ophitidis, Eschscholtzia californica, Melica californica, Poa scabrella*	**No potential.** No serpentine soils are present in the PSB.
Wildflower Field	G2	S2.2	*Eschscholtzia californica, Gilia bicolor, Layia platyglossa, Lupinus bicolor, Orthocarpus attenuatus*	**No potential.** The nearest mapped wildflower field is 20 miles southeast of the PSB.

Footnotes:

[1] Characteristic species and rankings from A Manual of California Vegetation (Sawyer et al 2009).

Column Header Categories and Abbreviations:

GRank: Global Rank from NatureServe's Heritage Methodology (NatureServe 2021 (ranking according to degree of global imperilment - G1 = Critically Imperiled—At very high risk of extinction due to extreme rarity (often 5 or fewer populations), very steep declines, or other factors; G2 = Imperiled—At high risk of extinction due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors; G3 = Vulnerable—At moderate risk of extinction due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors; G4 = Apparently Secure—Uncommon but not rare; some cause for long-term concern due to declines or other factors; G5 = Secure—Common; widespread and abundant. Subspecies/variety level: "Subspecies/varieties receive a T-rank attached to the G-rank. With the subspecies/varieties, the G-rank reflects the condition of the entire species, whereas the T-rank reflects the global situation of just the subspecies or variety" (CDFW 2021b); ? = " Denotes inexact numeric rank" (NatureServe 2020); Q = " Questionable taxonomy that may reduce conservation priority" (NatureServe 2022)

State Rank: State Rank from NatureServe's Heritage Methodology (NatureServe 2022) (ranking according to degree of imperilment in the state (California) – S1 = Critically Imperiled—Critically imperiled in the state because of extreme rarity (often 5 or fewer populations) or because of factor(s) such as very steep declines making it especially vulnerable to extirpation from the state; S2 = Imperiled—Imperiled in the state because of rarity due to very restricted range, very few populations (often 20 or fewer), steep declines, or other factors making it very vulnerable to extirpation from the state; S3 = Vulnerable—Vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation from the state.

Threat code extensions and their meanings: ".1 – Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat); .2 – Moderately threatened in California (20-80% of occurrences threatened / moderate degree and immediacy of threat); .3 – Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)" (CDFW 2022b).

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Appendix D

Lists of Species Detected On-site

Appendix D, Table 1. List of Terrestrial Wildlife Detected within the PSB

Scientific Name	Common Name	Detection Type	Special Status	Origin
Otospermophilus beecheyi	California Ground Squirrel	burrows	None	native
Thomomys bottae	Pocket Gopher	burrows	None	native

Appendix D, Table 2. List of Avian Wildlife Detected within the PSB

Alpha Code	Common Name	Scientific Name	Highest Breeding Status	Breeding Code	Special Status
EUCD	Eurasian Collared-Dove	*Streptopelia decaocto*	Encountered in study area	E	FGC/MBTA
MODO	Mourning Dove	*Zenaida macroura*	Encountered in study area	E	FGC/MBTA
TUVU	Turkey Vulture	*Cathartes aura*	Encountered flying over the study area	O	FGC/MBTA
NUWO	Nuttall's Woodpecker	*Dryobates nuttallii*	Encountered in study area	E	FGC/MBTA
BLPH	Black Phoebe	*Sayornis nigricans*	Encountered in study area	E	FGC/MBTA
CASJ	California Scrub-Jay	*Aphelocoma californica*	Encountered in study area	E	FGC/MBTA
WCSP	White-crowned Sparrow	*Zonotrichia leucophrys*	Encountered in study area	E	FGC/MBTA

Footnotes: ***FGC = protected by California Fish and Game Code; MBTA = protected by the federal Migratory Bird Treaty Act***

Appendix D, Table 2. List of Breeding Codes, Associated Bird Behavior, and Breeding Status (the highest-ranking code was recorded for each species during the survey).

Breeding Rank	Breeding Code	Description	Breeding Status
1	N	Active nest	Breeding
2	M	Carrying nesting material	Breeding
3	F	Carrying food or fecal sac	Breeding
4	D	Distraction display/feigning	Breeding
5	L	Local young fed by parents	Breeding
6	Y	Local young incapable of sustained flight	Breeding
7	C	Copulation or courtship observed	Breeding
8	T	Territorial behavior	Unconfirmed
9	S	Territorial song or drumming heard	Unconfirmed
10	E	Encountered in study area	Unconfirmed
11	O	Encountered flying over the study area	Unconfirmed

Appendix C, Table 4. Plant species observed within the PSB.

Scientific Name	Common Name	Status	Form	Date
Achyrachaena mollis	Blow wives	native	Annual herb	4/25/2022
Acmispon americanus	American bird's foot trefoil	native	Annual herb	4/26/2022
Ailanthus altissima	Tree of heaven	invasive non-native	Tree	4/26/2022
Amsinckia intermedia	Common fiddleneck	native	Annual herb	4/26/2022
Avena barbata	Slim oat	invasive non-native	Annual grass	4/25/2022
Avena sativa	Wild oat	non-native	Annual, Perennial grass	4/25/2022
Baccharis pilularis	Coyote brush	native	Shrub	4/25/2022
Bromus diandrus	Ripgut brome	invasive non-native	Annual grass	4/25/2022
Bromus hordeaceus	Soft chess	invasive non-native	Annual grass	4/25/2022
Bromus rubens	Red brome	invasive non-native	Annual grass	4/26/2022
Cardamine hirsuta	Hairy bitter cress	non-native	Annual herb	4/25/2022
Carduus pycnocephalus	Italian thistle	invasive non-native	Annual herb	4/25/2022
Centaurea solstitialis	Yellow starthistle	invasive non-native	Annual herb	4/25/2022
Cercis occidentalis	Western redbud	native	Tree, Shrub	4/26/2022
Chenopodium album	Lambs quarters	non-native	Annual herb	4/26/2022
Chlorogalum pomeridianum	Amole	native	Perennial herb	4/25/2022
Crassula tillaea	Mediterranean pygmy weed	non-native	Annual herb	4/26/2022
Daucus pusillus	Wild carrot	native	Annual herb	4/25/2022
Dipterostemon capitatus	Blue dicks	native	Perennial herb	4/25/2022
Elaeagnus sp.				4/26/2022
Epilobium brachycarpum	Willow herb	native	Annual herb	4/26/2022
Erodium brachycarpum	White stemmed filaree	non-native	Annual herb	4/25/2022
Erodium cicutarium	Coastal heron's bill	invasive non-native	Annual herb	4/26/2022
Eschscholzia californica	California poppy	native	Annual, Perennial herb	4/26/2022
Euphorbia spathulata	Reticulate seeded spurge	native	Annual herb	4/25/2022
Galium porrigens	Climbing bedstraw	native	Vine, Shrub	4/25/2022

Hirschfeldia incana	Mustard	invasive non-native	Perennial herb	4/26/2022
Hordeum brachyantherum	Meadow barley	native	Perennial grass	4/25/2022
Hordeum murinum	Foxtail barley	invasive non-native	Annual grass	4/25/2022
Hypochaeris glabra	Smooth cats ear	invasive non-native	Annual herb	4/26/2022
Hypochaeris radicata	Hairy cats ear	invasive non-native	Perennial herb	4/26/2022
Juncus effusus	Common bog rush	native	Perennial grass	4/25/2022
Juniperus sp.				4/26/2022
Lactuca serriola	Prickly lettuce	non-native	Annual herb	4/25/2022
Lamium amplexicaule	Henbit	non-native	Annual herb	4/26/2022
Leontodon saxatilis	Hawkbit	non-native	Annual herb	4/25/2022
Lolium multiflorum	Italian rygrass	non-native	Annual grass	4/25/2022
Lonicera interrupta	Chaparral honeysuckle	native	Vine, Shrub	4/25/2022
Lupinus bicolor	Lupine	native	Annual, Perennial herb	4/26/2022
Lysimachia arvensis	Scarlet pimpernel	non-native	Annual herb	4/26/2022
Lythrum hyssopifolia	Hyssop loosestrife	invasive non-native	Annual, Perennial herb	4/25/2022
Madia gracilis	Gumweed	native	Annual herb	4/26/2022
Marrubium vulgare	White horehound	invasive non-native	Perennial herb	4/26/2022
Matricaria discoidea	Pineapple weed	native	Annual herb	4/25/2022
Medicago polymorpha	California burclover	invasive non-native	Annual herb	4/25/2022
Melilotus indicus	Annual yellow sweetclover	non-native	Annual herb	4/26/2022
Nemophila menziesii	Baby blue eyes	native	Annual herb	4/26/2022
Parthenocissus tricuspidata	Japanese Creeper	non-native	Vine, Shrub	4/26/2022
Pectocarya penicillata	Winged pectocarya	native	Annual herb	4/25/2022
Photinia sp.				4/26/2022
Pinus sabiniana	Gray pine	native	Tree	4/25/2022
Plagiobothrys cognatus	Popcorn flower	native	Annual herb	4/26/2022
Poa annua	Annual blue grass	non-native	Annual grass	4/25/2022

Quercus douglasii	Blue oak	native	Tree	4/25/2022
Quercus lobata	Valley oak	native	Tree	4/26/2022
Rumex acetosella	Sheep sorrel	invasive non-native	Perennial herb	4/25/2022
Senecio vulgaris	Common groundsel	non-native	Annual herb	4/26/2022
Toxicodendron diversilobum	Poison oak	native	Vine, Shrub	4/25/2022
Trifolium hirtum	Rose clover	invasive non-native	Annual herb	4/25/2022
Triteleia laxa	Ithuriel's spear	native	Perennial herb	4/25/2022
Vicia villosa	Hairy vetch	non-native	Annual herb, Vine	4/25/2022
Washingtonia sp.				4/26/2022

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Appendix E

Site Visit Photographs

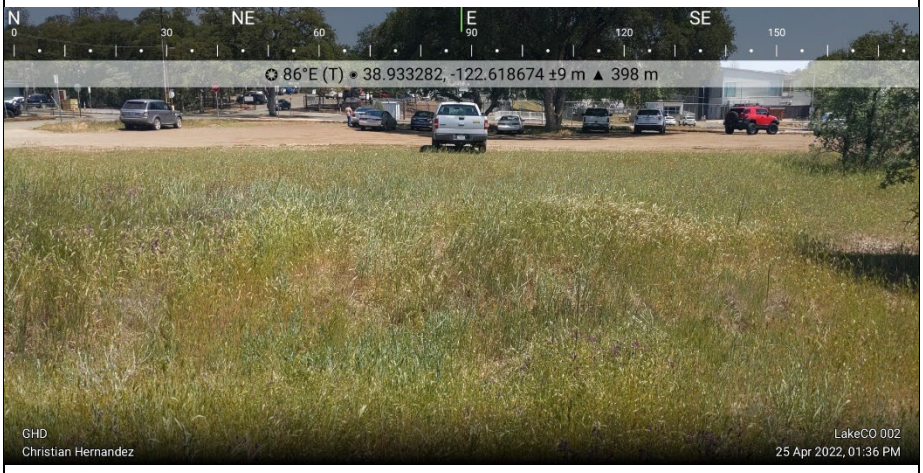
Photo 1: Representative photo of *Quercus douglasii-Pinus sabiniana*/grass Association Coordinates: 38.932659,-12261815 Date: June 9, 2022	
Photo 2: Representative photo of *Avena spp.-Bromus spp*. Herbaceous Semi-Natural Alliance (SNA) Coordinates: 38.933282, -122.618674 Date: April 25. 2022	
Photo 3: Representative photo of *Juncus effusus* Association (S4/G4) approximately 411 sqft in area Coordinates: 38.932425, -122.619422 Date: June 9, 2022	

Photo 4: Representative photo of existing development at the LTA facility Coordinates: 38.914658, -122.611029 Date: January 12, 2022	

Appendix C

Noise Report

LAKE COUNTY INTEREGIONAL TRANSIT CENTER PROJECT NOISE AND VIBRATION ASSESSMENT

Lake County, California

July 25, 2022

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INTRODUCTION

The Lake County Transit Authority (Lake Transit) is considering construction of a new transit center, relocation of route services from the existing transit hub to the new transit center, acquisition of four (4) hydrogen buses, improvements to the existing Lake Transit maintenance and operations (M&O) facility to support the use of the new hydrogen buses, and expansion of interregional transit service.

The Interregional Transit Center would be located on approximately 2 acres of land on the southwest corner of S. Center Drive and Dam Road Extension in Clearlake, California. Additionally, construction staging would occur on approximately 0.76 acre-portion of the property immediately west and adjacent to the proposed transit center. The M&O improvements would be located within the 3.2-acre Lake Transit M&O facility at 9240 Hwy 53, in Lake County, California.

This report evaluates the Project's potential to result in significant noise and vibration impacts with respect to applicable California Environmental Quality Act (CEQA) guidelines. The report is divided into two sections: 1) the Setting Section provides a brief description of the fundamentals of environmental noise and vibration, summarizes applicable regulatory criteria, and discusses the results of the ambient noise monitoring survey completed to document existing conditions; and, 2) the Impacts and Mitigation Measures Section describes the significance criteria used to evaluate project impacts, provides a discussion of each project impact, and presents mitigation measures, where necessary, to reduce the identified impacts to a less-than-significant level.

SETTING

Fundamentals of Environmental Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be caused by its *pitch* or its *loudness*. *Pitch* is the height or depth of a tone or sound, depending on the relative rapidity (*frequency*) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. *Loudness* is intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level (dBA).* This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This *energy-equivalent sound/noise descriptor* is called L_{eq}. The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the *sound level meter*. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the sensitivity to noise increases during the evening and at night -- because excessive noise interferes with the ability to sleep -- 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The *Community Noise Equivalent Level* (*CNEL*) is a measure of the cumulative noise exposure in a community, with a 5 dB penalty added to evening (7:00 p.m. - 10:00 p.m.) and a 10 dB addition to nocturnal (10:00 p.m. - 7:00 a.m.) noise levels. The *Day/Night Average Sound Level* (L_{dn}) is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

Effects of Noise

Sleep and Speech Interference

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noises of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn}. Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57-62 dBA L_{dn} with open windows and 65-70 dBA L_{dn} if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, those facing major roadways and freeways typically need special glass windows.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 50 dBA L_{dn}. At a L_{dn} of about 60 dBA, approximately 12 percent of the population is highly annoyed. When the L_{dn} increases to 70 dBA, the percentage of the population highly annoyed increases to about 25-30 percent of the population. There is, therefore, an increase of about 2 percent per dBA between a L_{dn} of 60-70 dBA. Between a L_{dn} of 70-80 dBA, each decibel increase increases by about 3 percent the percentage of the population highly annoyed. People appear to respond more adversely to aircraft noise. When the L_{dn} is 60 dBA, approximately 30-35 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 3 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 4 percent increase in the percentage of the population highly annoyed.

Fundamentals of Groundborne Vibration

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One method is the Peak Particle Velocity (PPV). The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. In this report, a PPV descriptor with units of mm/sec or in/sec is used to evaluate construction generated vibration for building damage and human complaints. Table 3 displays the reactions of people and the effects on buildings that continuous or frequent intermittent vibration levels produce. The guidelines in Table 3 represent syntheses of vibration criteria for human response and potential damage to buildings resulting from construction vibration.

Construction activities can cause vibration that varies in intensity depending on several factors. The use of pile driving and vibratory compaction equipment typically generates the highest construction related groundborne vibration levels. Because of the impulsive nature of such activities, the use of the PPV descriptor has been routinely used to measure and assess groundborne vibration and almost exclusively to assess the potential of vibration to cause damage and the degree of annoyance for humans.

The two primary concerns with construction-induced vibration, the potential to damage a structure and the potential to interfere with the enjoyment of life, are evaluated against different vibration limits. Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Structural damage can be classified as cosmetic only, such as paint flaking or minimal extension of cracks in building surfaces; minor, including limited surface cracking; or major, that may threaten the structural integrity of the building. Safe vibration limits that can be applied to assess the potential for damaging a structure vary by researcher. The damage criteria presented in Table 3 include several categories for ancient, fragile, and historic structures, the types of structures most at risk to damage. Most buildings are included within the categories ranging from “Historic and some old buildings” to “Modern industrial/commercial buildings”. Construction-induced vibration that can be detrimental to the building is very rare and has only been observed in instances where the structure is at a high state of disrepair and the construction activity occurs immediately adjacent to the structure.

The annoyance levels shown in Table 3 should be interpreted with care since vibration may be found to be annoying at lower levels than those shown, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage.

TABLE 1 Definition of Acoustical Terms Used in this Report

Term	Definition
Decibel, dB	A unit describing, the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20 micro Pascals.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e. g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	The average A-weighted noise level during a 24-hour day, obtained after addition of 10 decibels to levels measured in the night between 10:00 p.m. and 7:00 a.m.
Community Noise Equivalent Level, CNEL	The average A-weighted noise level during a 24-hour day, obtained after addition of 5 decibels in the evening from 7:00 p.m.to 10:00 p.m. and after addition of 10 decibels to sound levels measured in the night between 10:00 p.m. and 7:00 a.m.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control, Harris, 1998.

TABLE 2 Typical Noise Levels in the Environment

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	110 dBA	Rock band
Jet fly-over at 1,000 feet		
	100 dBA	
Gas lawn mower at 3 feet		
	90 dBA	
Diesel truck at 50 feet at 50 mph		Food blender at 3 feet
	80 dBA	Garbage disposal at 3 feet
Noisy urban area, daytime		
Gas lawn mower, 100 feet	70 dBA	Vacuum cleaner at 10 feet
Commercial area		Normal speech at 3 feet
Heavy traffic at 300 feet	60 dBA	
		Large business office
Quiet urban daytime	50 dBA	Dishwasher in next room
Quiet urban nighttime	40 dBA	Theater, large conference room
Quiet suburban nighttime	30 dBA	Library
Quiet rural nighttime		Bedroom at night, concert hall (background)
	20 dBA	
		Broadcast/recording studio
	10 dBA	
	0 dBA	

Source: Technical Noise Supplement (TeNS), California Department of Transportation, September 2013.

TABLE 3 Reaction of People and Damage to Buildings from Continuous or Frequent Intermittent Vibration Levels

Velocity Level, PPV (in/sec)	Human Reaction	Effect on Buildings
0.01	Barely perceptible	No effect
0.04	Distinctly perceptible	Vibration unlikely to cause damage of any type to any structure
0.08	Distinctly perceptible to strongly perceptible	Recommended upper level of the vibration to which ruins and ancient monuments should be subjected
0.1	Strongly perceptible	Threshold at which there is a risk of damage to fragile buildings with no risk of damage to most buildings
0.25	Strongly perceptible to severe	Threshold at which there is a risk of damage to historic and some old buildings.
0.3	Strongly perceptible to severe	Threshold at which there is a risk of damage to older residential structures
0.5	Severe - Vibrations considered unpleasant	Threshold at which there is a risk of damage to new residential and modern commercial/industrial structures

Source: Transportation and Construction Vibration Guidance Manual, California Department of Transportation, April 2020.

Regulatory Background

This section describes the relevant guidelines, policies, and standards established by State Agencies, Lake County, and the City of Clearlake. The State CEQA Guidelines, Appendix G, are used to assess the potential significance of impacts pursuant to local General Plan policies, Municipal Code standards, or the applicable standards of other agencies. A summary of the applicable regulatory criteria is provided below.

State CEQA Guidelines. CEQA contains guidelines to evaluate the significance of effects of environmental noise attributable to a proposed project. Under CEQA, noise impacts would be considered significant if the project would result in:

(a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;

(b) Generation of excessive groundborne vibration or groundborne noise levels;

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

Lake County General Plan. The goal of the Lake County General Plan Noise Element is to, "protect County residents from the harmful exposure of excessive noise and prevent incompatible land uses from encroaching upon existing and planned land uses." To achieve this goal, the Noise Element sets forth the following policies relevant to the project:

Policy N-1.1 Noise Compatibility Guidelines

The County shall consider the compatibility of proposed land uses, utilizing the standards in Table 8-1, with the noise environment when preparing or revising community and/or specific plans and when reviewing development proposals. Where proposed land uses are likely to produce noise levels exceeding the "normally acceptable" criteria (e.g. "conditionally acceptable", "normally unacceptable"), the County shall require an acoustical analysis prior to development approval to ensure noise mitigation measures are included. Land uses should be prohibited from locating in areas with a noise environment within the "unacceptable" range.

Policy N-1.2 Sensitive Receptors

The County shall prohibit the development of new commercial, industrial, or other noise generating land uses adjacent to existing residential uses, and other sensitive noise receptors such as schools, health care facilities, and libraries if noise levels are expected to exceed 55 dBA during daytime (7AM to 10PM) or 45 dBA during nighttime (10PM to 7AM), measured at the property line of the noise sensitive land use, unless effective mitigation measures are incorporated into the project design.

Policy N-1.5 Transportation Noise Abatement

The County shall consider the compatibility of existing and proposed land uses located near highways and major roads. Noise abatement measures should be implemented in these circumstances to reduce noise impacts. These measures could include:

- Erection of walls or landscaped berms;
- Restriction of building multistory dwellings within fixed distances of major roads unless setbacks are increased and additional insulation used;
- Use of open space as a buffer; and,
- Incorporation of site planning or architectural treatments, and alternative technologies (e.g., muffle geothermal-related noise emission).

Where possible, less intrusive noise mitigation (e.g., landscaped berms, open space buffers) should be encouraged rather than sound walls to preserve view corridors.

Policy N-1.7 Noise Control During Construction

The County shall require contractors to implement noise-reducing mitigation measures during construction when residential uses or other sensitive receptors are located within 500 feet.

Policy N-1.12 County Vehicles

The County shall ensure that new equipment and vehicles purchased by the County are equipped with the best available noise reduction technology, when feasible, and kept in working order to reduce noise impacts.

Lake County Municipal Code. The Lake County Municipal Code, Chapter 21, Article 41, Section 21-41.11 sets forth noise performance standards to promote compatibility among various land uses within the County as follows:

41.11 Noise:

Maximum sound emissions for any use shall not exceed equivalent sound pressure levels in decibels, A-Weighted Scale, for any one (1) hour as stipulated in Table 11.1. These maximums are applicable beyond any property lines of the property containing the noise. (Note: Equivalent sound pressure level (Leq) is a measure of the sound level for any one (1) hour. It is the energy average of all the various sounds emitted from the source during the hour. A-Weighted Scale is used to adjust sound measurements to simulate the sensitivity of the human ear.)

Table 11.1 Maximum one-hour equivalent sound pressure levels (A-Weighted - dBA)

	Receiving Property Zoning District		
Time of Day	Residential*	Commercial	Industrial
7 am - 10 pm	55	60	65
10 pm - 7 am	45	55	60

*Note: The Residential category also includes all agricultural and resource zoning districts.

(a) In the event the receiving property or receptor is a dwelling, hospital, school, library or nursing home, even though it may be otherwise zoned for commercial or industrial and related uses, maximum one-hour equivalent sound pressure received shall be as indicated in Table 11.2.

Table 11.2 Maximum one-hour equivalent sound pressure levels (A-Weighted - dBA)

Time of Day	Level
7 am - 10 pm	57
10 pm - 7 am	50

(b) Noises of short duration: For noises of short duration or impulsive character, such as hammering, maximum one-hour sound pressure levels permitted beyond the property of origin shall be seven decibels less than those listed in Table 11.2 above.

(c) Noises of unusual periodic character: For noises of unusual periodic character, such as humming, screeching, and pure tones, the median octave band sound pressure levels as indicated in Table 11.3 shall not be exceeded beyond the property of origin when the receiving property is zoned residential or is occupied by a dwelling, hospital, school, library, or nursing home.

Table 11.3 Median octave band sound pressure levels

Octave Band Center Frequency, Hz	7 am - 10 pm	10 pm - 7 am
31.5	68	65
63	65	62
25	61	56
250	55	50
500	52	46
1,000	49	43
2,000	46	40
4,000	43	37
8,000	40	34

(d) Additional allowance: When the receiving property is zoned commercial or industrial and is not a dwelling, hospital, school, library, or nursing home, an additional sound decibel emission above the pressure levels specified in Table 11.3 above shall be permitted as indicated in Table 11.4.

Table 11.4 Additional allowance

Receiving Property Zone	Additional Decibels Allowed
Commercial	5
Industrial	10

(e) Exemptions: Local noise standards set forth in this Section do not apply to the following situations and sources of noise provided standard, reasonable practices are being followed:

1. Emergency equipment operated on an irregular or unscheduled basis.
2. Warning devices operated continuously for no more than five (5) minutes.
3. Bells, chimes, or carillons.
4. Non-electronically amplified sounds at sporting, amusement, and entertainment events.
5. Construction site sounds between 7:00 am and 7:00 pm[1].
6. Lawn and plant care machinery fitted with correctly functioning sound suppression equipment and operated between 7:00 am and 8:00 pm.
7. Aircraft when subject to federal or state regulations.
8. Agricultural equipment when operated on property zoned for agricultural activities.

(f) Exceptions: Upon written application from the owner or operator of an industrial or commercial noise source, the Zoning Administrator or Planning Commission, as part of a use permit approval, may conditionally authorize exceptions to local noise emission standards in the following situations:

1. Infrequent noise.
2. Noise levels at or anywhere beyond the property lines of the property of origin when exceeded by an exempt noise, as listed in Section (e) above, in the same

[1] By exempting daytime (7am to 7 pm) construction noise from the one-hour equivalent sound pressure levels listed in Tables 11.1 and 11.2 and section 41.11c, the allowable CNEL level for construction noise is effectively increased to the hourly daytime level minus 3 dB, thus making a CNEL in excess of 60 dBA allowable.

location.

3. If after applying Best Available Control Technology (BACT), a use existing prior to the effective date of this ordinance is unable to conform to the standards established by this section.

Clearlake General Plan. The goal of the Clearlake General Plan Noise Element is, "A community with minimal exposure to excessive noise and/or vibration." To achieve this goal, the Noise Element sets forth the following policies relevant to the project:

Policy NO 1.1.1
The City shall avoid placing noise and vibration generators next to sensitive land uses such as residences, churches, schools, parks and hospitals.

Policy NO 1.2.1
The City shall adopt regulations that encourage the enforcement of state vehicle code regulations limiting public exposure to noise from automobiles, trucks and motorcycles.

Policy NO 1.5.1
Regulate long-term increases in ambient noise levels during review of development proposals. For projects that are required by the California Environmental Quality Act (CEQA) to analyze noise impacts, the following criteria shall be used to determine the significance of those impacts:

Stationary and Non-Transportation Noise Sources

- A significant impact may occur if the project results in an exceedance of the noise level standards contained in this element, or the project will result in an increase in ambient noise levels by more than 3 dB, whichever is greater. This does not apply to construction activities which are conducted according to City regulations for construction activities. Compliance with the City's construction requirements shall be sufficient to reduce construction-related noise impacts to a less than significant level.

Transportation Noise Sources

- Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5 dB L_{dn} increase in roadway noise levels will be considered significant; and
- Where existing traffic noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +3 dB L_{dn} increase in roadway noise levels will be considered significant; and
- Where existing traffic noise levels are greater than 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a + 1.5 dB L_{dn} increase in roadway noise levels will be considered significant.

Clearlake Municipal Code. The Clearlake Municipal Code, Chapter V, Article 5-4, Section 5-4.4 sets forth the following noise performance standards:

5-4.4 Noise Restrictions; Exceptions.
a. No person shall produce any noise by any means between the hours of 10:00 p.m. and 7:00 a.m. which when measured within fifty (50') feet of any dwelling or transient accommodation exceeds 55 decibels. "Dwelling" includes apartments, duplexes, mobile homes, and conventional single-family residences. "Transient accommodation" includes hotels, motels, hospitals, travel trailer parks and campgrounds.

b. No person shall produce any noise by any means which measures in excess of 65 decibels at a distance within fifty (50') feet of any dwelling or transient accommodation between the hours of 7:00 a.m. and 10:00 p.m. with the following exceptions:

> 1. Pursuant to permission granted by the Building Official in any case where a building permit has been obtained, or by the City Engineer in any case where public work not requiring a building permit is being performed, construction equipment may be operated during daylight hours which produces noise up to a level of 80 decibels when measured at a distance of one hundred (100') feet from the source. The Building Official and City Engineer may impose a lesser maximum permissible level in any situation where local complaints demonstrate the existence of a problem and where, in the opinion of the official involved, the lesser limit would not impose an unreasonable burden on the work of construction. The preceding noise limit shall not apply to impact tools and equipment if the official is satisfied that the contractor or other builder has taken reasonable steps to control and reduce noise, such as mufflers and acoustically attenuating shields.

5-4.6 Noise Restricted Near Schools and Churches.
It shall be unlawful for any person to exceed the noise limits established in subsection 5-4.4 above within one hundred fifty (150') feet of any school or church during the regular hours of instruction or worship, respectively. (Ord. #25, A4, S6; Ord. #50)

Existing Noise Environment

The project site is located at the southwest corner of the intersection of Dam Road Extension and South Center Drive, just east of State Route 53 (SR 53) in the City of Clearlake, California. The Clearlake Masonic Lodge is located to the west, and the Lake County Superior Court building and Lake County Behavioral Services building are located to the northwest, and north, respectively. The Konocti Education Center is located to the east on the opposite side of Dam Road Extension. Commercial uses exist adjacent to the site along the southern property line. The nearest residential land uses are approximately 1,000 feet to the north.

The noise environment at the site and in the surrounding area results primarily from local vehicular traffic along SR 53, Dam Road Extension, and South Center Drive. A noise monitoring survey consisting of two long-term (LT-1 and LT-2) and three short-term (ST-1 through ST-3) noise measurements was conducted in the vicinity of the site between Wednesday, June 22, 2022, and

Friday, June 24, 2022 to quantify existing noise levels. All measurement locations are shown in Figure 1.

Long-term noise measurement LT-1 was made along College Access Road, approximately 55 feet east of the centerline of Dam Road Extension, to represent typical noise levels at the nearby college and along Dam Road Extension. Hourly average noise levels at LT-1 typically ranged from 58 to 66 dBA L_{eq} during daytime hours (7:00 a.m. and 10:00 p.m.) and from 46 to 63 dBA L_{eq} during nighttime hours (10:00 p.m. and 7:00 a.m.). The day-night average noise level was 63 dBA on Thursday, June 23, 2022. Figure 2 summarizes the data collected at LT-1.

Long-term noise measurement LT-2 was made along South Center Drive, approximately 230 feet east of the centerline of SR 53 to represent typical noise levels at the nearby Clearlake Masonic Lodge and at the Lake County Superior Court building. Hourly average noise levels at LT-1 typically ranged from 57 to 65 dBA L_{eq} during daytime hours (7:00 a.m. and 10:00 p.m.) and from 50 to 61 dBA L_{eq} during nighttime hours (10:00 p.m. and 7:00 a.m.). The day-night average noise level was 65 dBA on Thursday, June 23, 2022. Figure 3 summarizes the data collected at LT-2.

Short-term noise measurement ST-1 was made on Wednesday, June 22, 2022, between 10:40 a.m. and 10:50 a.m. ST-1 was made at the proposed site, approximately 35 feet south of the South Center Road centerline to represent typical noise levels at the western property line and nearby office building. During the measurement, eighteen vehicles passed the site on Dam Road Extension, while three vehicles passed the site along South Center Drive. Typical local traffic noise levels from SR 53 ranged from 50 to 62 dBA, while intermittent traffic noise levels from Dam Road Extension ranged from 50 to 64 dBA, and infrequent traffic noise levels from South Center Drive were 62 to 63 dBA. The 10-minute L_{eq} measured at ST-1 was 54 dBA.

Short-term noise measurement ST-2 was made on Wednesday, June 22, 2022, between 11:00 a.m. and 11:10 a.m. ST-2 was made at center of the site, approximately 135 feet west of the Dam Road Extension centerline to represent typical noise levels in the vicinity. During the measurement, twenty-five vehicles passed the site on Dam Road Extension, while two vehicles passed the site along South Center Drive. Typical local traffic noise levels from SR 53 ranged from 47 to 56 dBA, while intermittent traffic noise levels from Dam Road Extension ranged from 52 to 68 dBA, and infrequent traffic noise levels from South Center Drive were around 53 dBA. The 10-minute L_{eq} measured at ST-1 was 54 dBA.

Short-term noise measurement ST-3 was made on Friday, June 24, 2022, between 10:40 a.m. and 10:50 a.m. ST-2 was made approximately 160 feet east of the Dam Road Extension centerline to document the typical noise environment at the nearby college. During the measurement, seventeen vehicles passed the site on Dam Road Extension. Typical local traffic noise levels from Dam Road Extension ranged from 50 to 63 dBA, while distant SR 53 traffic noise levels from ranged from 43 to 51 dBA. The 10-minute L_{eq} measured at ST-1 was 51 dBA. Results of the short-term measurements are summarized in Table 4.

TABLE 4 Summary of Short-Term Noise Measurements (dBA)

Noise Measurement Location	Date, Time	Measured Noise Level, dBA					
		L_{max}	$L_{(1)}$	$L_{(10)}$	$L_{(50)}$	$L_{(90)}$	L_{eq}
ST-1: ~35 feet south of the centerline of South Center Drive	6/22/2022, 10:40-10:50	68	63	57	52	46	54
ST-2: ~135 feet west of the centerline of Dam Road Extension	6/22/2022, 11:00-11:20	68	65	57	50	45	54
ST-3: ~165 feet east of the centerline of Dam Road Extension	6/24/2022, 10:40-10:50	66	60	54	47	44	51

FIGURE 1 Aerial Image Showing the Project Site and Noise Measurement Locations

Source: Google Earth, 2022.

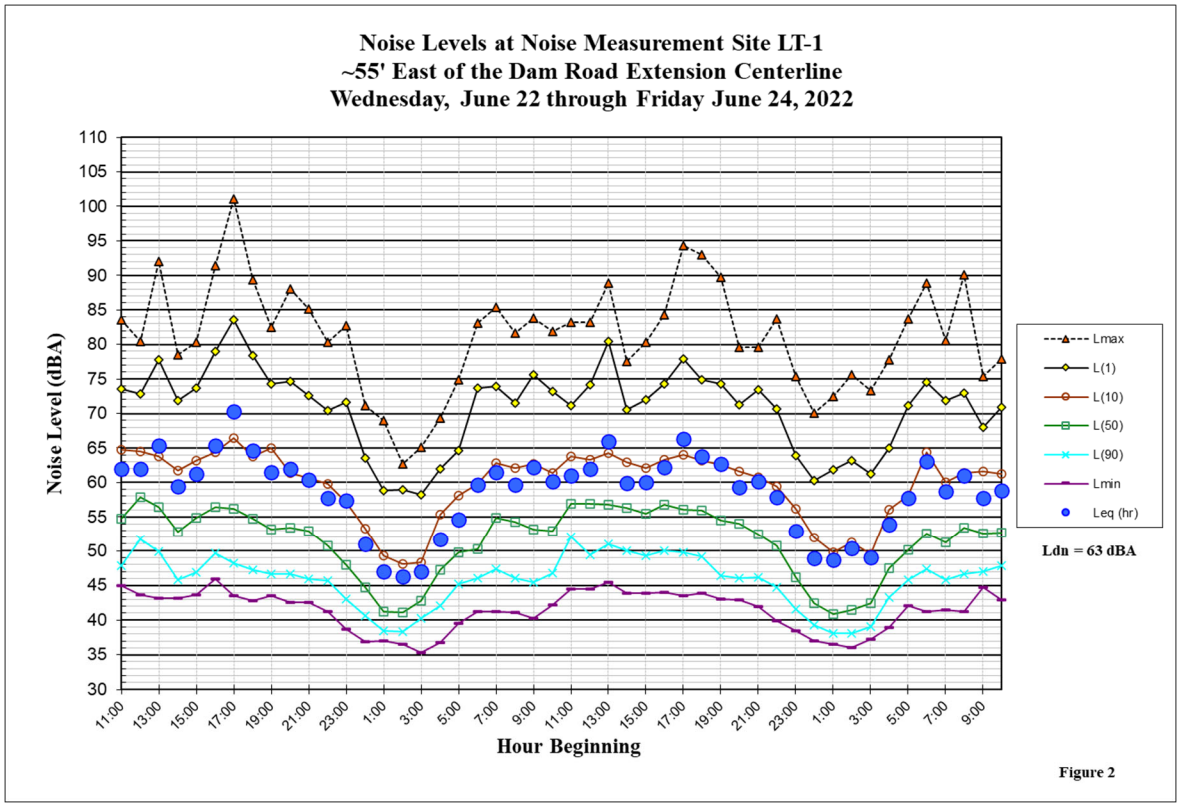

Figure 2

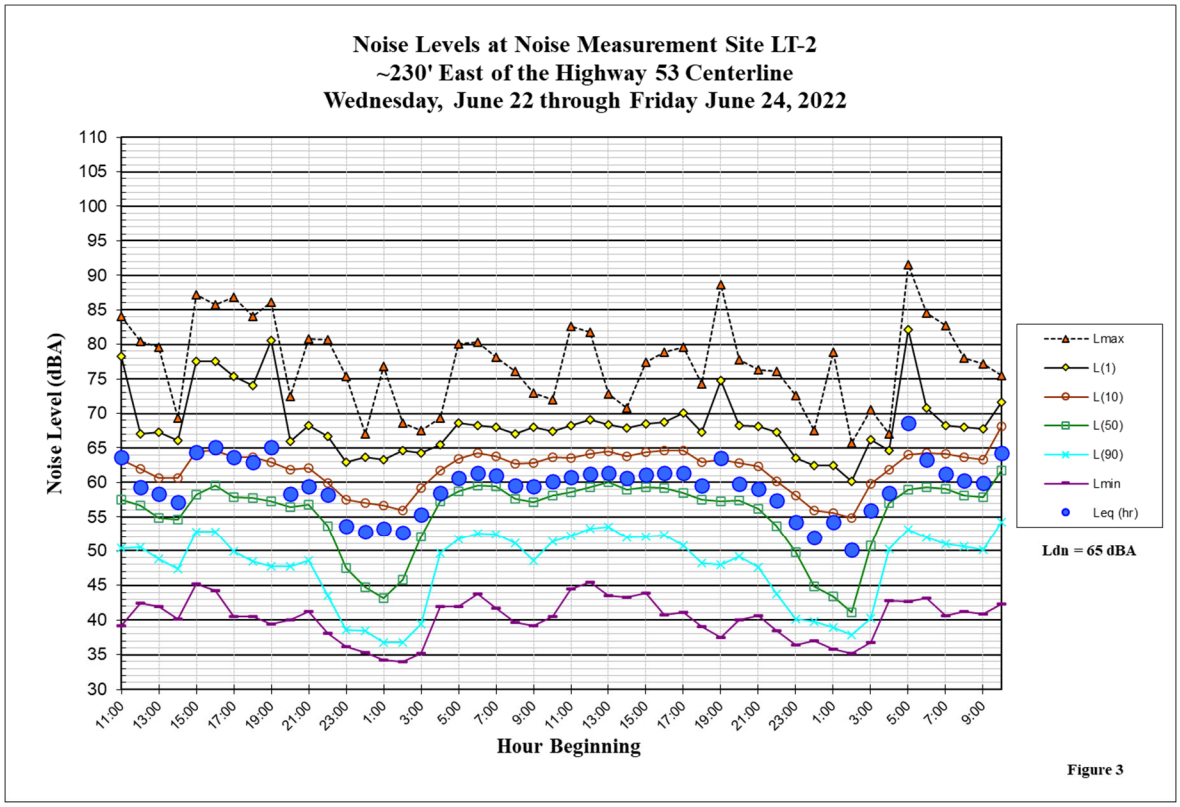

Figure 3

NOISE IMPACTS AND MITIGATION MEASURES

This section describes the significance criteria used to evaluate project impacts under CEQA, provides a discussion of each project impact, and presents mitigation measures, where necessary, to provide a compatible project in relation to adjacent land uses.

Significance Criteria

The following criteria were used to evaluate the significance of environmental noise resulting from the project:

- A significant noise impact would be identified if the project would generate a substantial temporary or permanent noise level increase over ambient noise levels at existing noise-sensitive receptors surrounding the project site and that would exceed applicable noise standards presented in the General Plan or Municipal Code at existing noise-sensitive receptors surrounding the project site.

    - A significant temporary noise impact would be identified if construction of the project would occur outside of the allowable hours specified by Lake County (7:00 a.m. to 7:00 p.m.). In the City of Clearlake, construction activities producing noise levels exceeding 80 dBA at 100 feet would be considered significant.

    - For permanent transportation noise sources, a +3 dB L_{dn} increase in roadway noise levels will be considered significant where existing traffic noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses

    - A significant noise impact would be identified if the project would expose persons to or generate noise levels that would exceed applicable noise standards presented in the General Plan or Municipal Code.

- A significant impact would be identified if the construction of the project would generate excessive vibration levels surrounding receptors. Groundborne vibration levels exceeding 0.25 in/sec PPV would have the potential to result in cosmetic damage to normal buildings.

Impact 1a: **Temporary Construction Noise.** Existing noise-sensitive land uses would be exposed to a temporary increase in ambient noise levels due to project construction activities, but the temporary increase would not be considered substantial. This is a **less-than-significant** noise impact.

Noise impacts resulting from construction depend upon the noise generated by various pieces of construction equipment, the timing and duration of noise-generating activities, and the distance between construction noise sources and noise-sensitive areas. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas near noise-sensitive land uses, or when construction lasts over extended periods of time.

Typically, construction activities would be carried out in stages. During each stage of construction, there would be a different mix of equipment operating, and noise levels would vary by stage and vary within stages, based on the amount of equipment in operation and the location at which the equipment is operating. Typical construction noise levels at a distance of 50 feet are shown in Tables 5 and 6. Table 5 shows the average noise level ranges, by construction phase, and Table 6 shows the maximum noise level ranges for different construction equipment. Most demolition and construction noise falls in the range of 80 to 90 dBA at 50 feet from the source. Construction-generated noise levels drop off/increase at a rate of about 6 dBA per doubling/halving of the distance between the source and receptor. Shielding by buildings or terrain can provide an additional 5 to 10 dBA noise reduction at distant receptors.

TABLE 5 Typical Ranges of Construction Noise Levels at 50 Feet, L_{eq} (dBA)

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I – All pertinent equipment present at site.
II – Minimum required equipment present at site.

Source: U.S.E.P.A., Legal Compilation on Noise, Vol. 1, p. 2-104, 1973.

TABLE 6 Construction Equipment 50-foot Noise Emission Limits

Equipment Category	L_{max} Level (dBA)[1,2]	Impact/Continuous
Arc Welder	73	Continuous
Auger Drill Rig	85	Continuous
Backhoe	80	Continuous
Ballast Equalizer[3]	82	Continuous
Ballast Tamper[3]	83	Continuous
Bar Bender	80	Continuous
Chain Saw	85	Continuous
Compressor (air)	80	Continuous
Concrete Mixer	85	Continuous
Concrete Pump	82	Continuous
Concrete Saw	90	Continuous
Concrete Vibrator	80	Continuous
Crane	85	Continuous
Dozer	85	Continuous
Excavator	85	Continuous
Front End Loader	80	Continuous
Generator	82	Continuous
Generator (25 KVA or less)	70	Continuous
Gradall	85	Continuous
Grader	85	Continuous
Grinder Saw	85	Continuous
Horizontal Boring Hydro Jack	80	Continuous
Hydra Break Ram	90	Impact
Impact Pile Driver	105	Impact
Jackhammer	85	Impact
Mounted Impact Hammer (hoe ram)	90	Impact
Paver	85	Continuous
Pneumatic Tools	85	Continuous
Pumps	77	Continuous
Rail Saw[3]	90	Continuous
Rock Drill	85	Continuous
Scraper	85	Continuous
Slurry Trenching Machine	82	Continuous
Soil Mix Drill Rig	80	Continuous
Street Sweeper	80	Continuous
Tie Cutter[3]	84	Continuous
Tie Handler[3]	80	Continuous
Tie Inserter[3]	85	Continuous
Tractor	84	Continuous
Truck	84	Continuous
Vibratory Compactor	80	Continuous
Vibratory Pile Driver	95	Continuous
All other equipment with engines larger than 5 HP	85	Continuous

Notes: [1] Measured at 50 feet from the construction equipment, with a "slow" (1 sec.) time constant. [2]Noise limits apply to total noise emitted from equipment and associated components operating at full power while engaged in its intended operation.[3] Transit Noise and Vibration Impact Assessment Manual, Federal Transit Administration, Office of Planning and Environment, U.S. Department of Transportation, FTA Report No. 0123, September 2018., [4] Mitigation of Nighttime Construction Noise, Vibrations and Other Nuisances, National Cooperative Highway Research Program, 1999.

Construction of the transit center is anticipated to begin in spring 2023, and last approximately 10 months. Construction phases would include site preparation, grading, building construction, paving, and architectural coating. Equipment expected to be used in each construction phase are summarized in Table 7, along with the estimated noise levels at 100 feet. Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM) was used to calculate the hourly average noise levels for each phase of construction, assuming the simultaneous operation of all proposed equipment. This construction noise model includes representative sound levels for the most common types of construction equipment and the approximate usage factors of such equipment that were developed based on an extensive database of information gathered during the construction of the Central Artery/Tunnel Project in Boston, Massachusetts (CA/T Project or "Big Dig"). The usage factors represent the percentage of time that the equipment would be operating at full power.

TABLE 7 Construction Noise Levels - Transit Center

Phase (Work Days)	Construction Equipment (Quantity)	Noise Level (dBA) at 100 feet	
		L_{max}	L_{eq}
Site Preparation (2 days)	Grader (1) Rubber-Tired Dozer (1) Tractor/Loader/Backhoe (1)	79	79
Grading (6 days)	Grader (1) Rubber Tired Dozer (1) Tractor/Loader/Backhoe (2)	79	79
Building Construction (280 days)	Crane (1) Forklift (1) Generator Set (1) Tractor/Loader/Backhoe (1) Welders (3)	78	77
Paving (14 days)	Cement and Mortar Mixer (1) Tractor/Loader/Backhoe (1) Paver (1) Paving Equipment (1) Roller (1)	78	78
Architectural Coating (14 days)	Air Compressor (1)	78	74

Based on the modeling results summarized in Table 7, construction activities would not produce noise levels exceeding 80 decibels when measured at a distance of one hundred feet from the source. Compliance with the City's construction requirements is sufficient to reduce construction-related noise impacts to a less than significant level.

Construction phases for the hydrogen facility on the M&O Yard would consist of demolition and site preparation, excavation/foundations/trenching, facility installation, and repaving. The overall construction schedule for the hydrogen facility on the M&O Yard is approximately 2 months

beginning in summer 2023. Similar construction noise levels to those described for the transit center would be expected at the M&O Yard.

The Lake County Municipal Code exempts construction site sounds between 7:00 am and 7:00 pm. However, Lake County General Plan Policy N-1.7 require contractors to implement noise-reducing mitigation measures during construction when residential uses or other sensitive receptors are located within 500 feet. Therefore, the following best management practices would be implemented as part of the project to ensure consistency with the Lake County General Plan, reduce construction noise levels emanating from the site, and minimize disruption and annoyance:

- Construction activities shall be limited to the hours between 7:00 am and 7:00 pm, Monday through Friday in accordance with the Lake County General Plan, unless permission is granted with a development permit or other planning approval.

- Equip all internal combustion engine-driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.

- Prohibit unnecessary idling of internal combustion engines.

- Locate stationary noise-generating equipment such as air compressors or portable power generators as far as possible from sensitive receptors. Construct temporary noise barriers to screen stationary noise-generating equipment when located near adjoining sensitive land uses.

- Utilize "quiet" air compressors and other stationary noise sources where technology exists.

- Control noise from construction workers' radios to a point where they are not audible at existing residences bordering the project site.

- Notify all adjacent businesses, residences, and other noise-sensitive land uses of the construction schedule in writing.

- Designate a "disturbance coordinator" who would be responsible for responding to any complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., bad muffler, etc.) and will require that reasonable measures be implemented to current the problem. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

With the implementation of these measures, construction operations would comply with the requirements of the City of Clearlake and Lake County. Noise generated by construction activities would occur over a temporary period of less than one year, and the impact would be considered **less-than-significant**.

Impact 1b: **Permanent Operational Noise.** Noise generated by the project would not substantially increase existing noise levels at outdoor activity areas of noise-sensitive uses or violate the standards established in the Clearlake Municipal Code. This is a **less-than-significant** noise impact.

Transit Center

The predominant noise source attributable to the project operations would be bus operations. Noise measurements were made on Friday, June 24, 2022, between 10:55 a.m. and 11:30 a.m. at the existing Lake County Transit Authority station located approximately 1,100 feet southeast of the proposed site. The purpose of these measurements was to document existing noise levels produced by Lake County Transit Authority buses. Between 10:55 a.m. and 11:00 a.m. three buses were parked in a row idling at the bus stop. Sustained noise levels of 62 to 64 dBA were recorded at a distance of approximately 130 feet. When these buses passed by the monitoring location, noise levels of 69 to 77 dBA were recorded at approximately 20 feet, and noise levels of 55 dBA were noted at 150 feet. An additional bus was observed to produce noise levels of 55 dBA at approximately 100 feet away. The average noise level at 85 feet from the acoustic center of the activity was 61 dBA L_{eq}, and assuming a similar level of activity throughout the day (between the hours of 6:00 a.m. to 8:00 p.m., consistent with existing schedules), the L_{dn} attributable to these activities would also be 61 dBA at 85 feet.

The City of Clearlake identifies transportation-related noise increases to be 3 dB L_{dn} or greater as significant where existing traffic noise levels range between 60 and 65 dB L_{dn} at the outdoor activity areas of noise-sensitive uses. Where existing traffic noise levels are less than 60 dB L_{dn} at the outdoor activity areas of noise-sensitive uses, a +5 dB L_{dn} increase in roadway noise levels is considered significant. No formalized outdoor activity areas exist at the Lake County Superior Court building to the northwest, at the Lake County Behavioral Services building to the north, or at the commercial buildings to the south (Freedom Heating and Air Conditioning, Sears Appliance Store, and Walmart), and operational noise levels at these land uses are not discussed further.

The outdoor activity area at the Clearlake Masonic Lodge, located west of the project site, includes a covered barbeque near the southeast corner of the building. The barbecue area is located approximately 150 feet from the primary noise sources at the transit center and would be exposed to operational noise levels of 56 dBA L_{dn}. With the operation of the project, the existing noise level at the barbeque area (63 dBA L_{dn}) would increase by approximately 1 dBA L_{dn} and reach 64 dBA L_{dn}. The operation of the project would not increase noise levels by 3 dB L_{dn} or more at the at the Clearlake Masonic Lodge barbeque area.

The nearest outdoor activity areas at the Konocti Education Center are located approximately 200 feet from the primary noise sources at the transit center and would be exposed to operational noise levels of 51 dBA L_{dn}. With the operation of the project, the existing noise level at the outdoor activity areas at the Konocti Education Center (55 dBA L_{dn}) would increase by 1 to 2 dBA L_{dn} and reach 56 to 57 dBA L_{dn}. The operation of the project would not increase noise levels by 5 dB L_{dn} or more at the nearest outdoor activity areas at the Konocti Education Center.

The nearest dwellings are approximately1,000 feet north of the project site. At 1,000 feet, and assuming no intervening acoustical shielding, operational noise levels would be 40 dBA or less. As noted above, the nearest sensitive school building is approximately 200 feet east. At 200 feet, and assuming no intervening acoustical shielding, operational noise levels would be 54 dBA or less. No transient accommodations exist in the project vicinity. Based on the above, predicted noise levels would not exceed 55 dBA between the hours of 10:00 p.m. and 7:00 a.m. or 65 dBA between the hours of 7:00 a.m. and 10:00 p.m. and would comply with the Clearlake Municipal Code. This is a less-than-significant impact.

M&O Facility

Lake Transit proposes to purchase four (4) hydrogen buses to supplement the existing fleet. Buses would be stored at the M&O facility, consistent with existing practices. Improvements to the M&O facility are proposed to support hydrogen buses. Improvements would consist of hydrogen fueling infrastructure and retrofits to the existing maintenance facility to allow for the proper air flow and ventilation needed to safely work on the hydrogen buses. In addition to the retrofitting the building, solar panels will be installed on the south-facing pitched roofs. No new substantial operational noise sources are proposed at the M&O Facility. This is a less-than-significant impact.

Mitigation Measure 1b: None required.

Impact 2: Exposure to Excessive Groundborne Vibration. Construction-related vibration levels are not expected to exceed applicable vibration thresholds. **This is a less-than-significant impact.**

The construction of the project may generate perceptible vibration when heavy equipment or impact tools are used close to sensitive receptors. Transit center construction phases would include site preparation, grading, building construction, paving, and architectural coating. utilizing such equipment or tools would include demolition, site preparation, grading, trenching, building construction, and paving. Such activities could occur as close as 25 feet from the nearest building. Construction phases for the hydrogen facility on the M&O Yard would consist of demolition and site preparation, excavation/foundations/trenching, facility installation, and repaving. Such activities could occur as close as 75 feet from the nearest building. Foundation construction techniques involving impact or vibratory pile driving equipment, which can cause excessive vibration, are not expected with the proposed project.

Neither Lake County nor the City of Clearlake specify a construction vibration limit to apply to project construction activities. The California Department of Transportation recommends a vibration limit of 0.5 in/sec PPV for buildings structurally sound and designed to modern engineering standards, 0.3 in/sec PPV for buildings that are found to be structurally sound but where structural damage is a major concern, and a conservative limit of 0.25 in/sec PPV for historic and some old buildings (see Table 3). For the purposes of this study, groundborne vibration levels exceeding the conservative 0.25 in/sec PPV limit at the existing adjacent buildings would have the potential to result in a significant vibration impact.

Vibration levels are highest close to the source, and then attenuate with increasing distance at the rate $(D_{ref}/D)^{1.1}$, where D is the distance from the source in feet and D_{ref} is the reference distance of 25 feet. Vibration levels also vary depending on soil conditions, construction methods, and equipment used.

Table 8 presents typical vibration levels from construction equipment at 25 feet. This distance represents the nearest building south of the transit center. Jackhammers typically generate vibration levels of 0.035 in/sec PPV and drilling typically generates vibration levels of 0.089 in/sec PPV at 25 feet. Vibratory rollers generate vibration levels reaching 0.210 in/sec PPV at 25 feet. Table 8 also presents construction vibration levels calculated at the location of the nearest building about 50 feet east of transit center and 75 feet from the hydrogen facility on the M&O Yard. As indicated in Table 8, construction-related vibration levels would not exceed 0.25 in/sec PPV at the nearest structures. All other buildings and receptors in the vicinity are located further from areas of the project site where construction vibration would be produced. This is a less-than-significant impact.

TABLE 8 Vibration Levels for Construction Equipment

Equipment		PPV at 25 ft. (in/sec)	PPV at 50 ft. (in/sec)	PPV at 75 ft. (in/sec)
Clam shovel drop		0.202	0.094	0.060
Hydromill (slurry wall)	in soil	0.008	0.004	0.002
	in rock	0.017	0.008	0.005
Vibratory Roller		0.210	0.098	0.063
Hoe Ram		0.089	0.042	0.027
Large bulldozer		0.089	0.042	0.027
Caisson drilling		0.089	0.042	0.027
Loaded trucks		0.076	0.035	0.023
Jackhammer		0.035	0.016	0.010
Small bulldozer		0.003	0.001	0.001

Source: Transit Noise and Vibration Impact Assessment Manual, United States Department of Transportation, Office of Planning and Environment, Federal Transit Administration, September 2018, as modified by Illingworth & Rodkin, Inc., June 2022.

Mitigation Measure 2: None required.

Appendix D

GHG Modeling Output

LTA - Interregional Transit Center Construction - Lake County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

LTA - Interregional Transit Center Construction

Lake County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government (Civic Center)	2.16	1000sqft	0.05	2,160.00	0
Other Non-Asphalt Surfaces	0.45	Acre	0.45	19,602.00	0
Parking Lot	0.76	Acre	0.76	33,105.60	0
City Park	0.60	Acre	0.60	26,136.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	67
Climate Zone	1			**Operational Year**	2023
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	160	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO intensity factor modified to PG&E 2020 PCL value of 160. A

Land Use - 2,160 sf Transit Center, 0.6-acre Green Space, 0.76-acre of Parking Lot, 0.45 acre Concrete Plaza

Construction Phase - Model Default Phasing Types and Durations

Off-road Equipment - Default Equipment, Number, and Hours

Trips and VMT - Default Worker and Vendor Trips

Grading - No Import/Export. Onsite Balancing.

LTA - Interregional Transit Center Construction - Lake County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	ConstArea_Parking	0.00	3,162.00
tblAreaCoating	Area_Parking	0	3162
tblLandUse	GreenSpaceAllowEdit	0.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	203.98	160

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					
2023	0.1850	1.3367	1.4848	2.8700e-003	0.0564	0.0552	0.1117	0.0196	0.0532	0.0728	0.0000	243.1553	243.1553	0.0355	4.9800e-003	245.5276
2024	0.0449	9.1700e-003	0.0150	2.0000e-005	3.3000e-004	4.5000e-004	7.7000e-004	9.0000e-005	4.4000e-004	5.2000e-004	0.0000	2.1423	2.1423	2.7000e-004	1.0000e-005	2.1523
Maximum	**0.1850**	**1.3367**	**1.4848**	**2.8700e-003**	**0.0564**	**0.0552**	**0.1117**	**0.0196**	**0.0532**	**0.0728**	**0.0000**	**243.1553**	**243.1553**	**0.0355**	**4.9800e-003**	**245.5276**

LTA - Interregional Transit Center Construction - Lake County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	3/6/2023	3/7/2023	5	2	
2	Grading	Grading	3/8/2023	3/13/2023	5	4	
3	Building Construction	Building Construction	3/14/2023	12/18/2023	5	200	
4	Paving	Paving	12/19/2023	1/1/2024	5	10	
5	Architectural Coating	Architectural Coating	1/2/2024	1/15/2024	5	10	

Acres of Grading (Site Preparation Phase): 1.88

Acres of Grading (Grading Phase): 4

Acres of Paving: 1.21

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 3,240; Non-Residential Outdoor: 1,080; Striped Parking Area: 3,162

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Site Preparation	Graders	1	8.00	187	0.41
Site Preparation	Rubber Tired Dozers	1	7.00	247	0.40
Site Preparation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56

LTA - Interregional Transit Center Construction - Lake County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
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
Site Preparation	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	34.00	13.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

LTA - Interregional Transit Center Construction - Lake County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Site Preparation - 2023

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					6.2700e-003	0.0000	6.2700e-003	3.0000e-003	0.0000	3.0000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.1300e-003	0.0124	6.6400e-003	2.0000e-005		5.1000e-004	5.1000e-004		4.7000e-004	4.7000e-004	0.0000	1.5114	1.5114	4.9000e-004	0.0000	1.5236
Total	**1.1300e-003**	**0.0124**	**6.6400e-003**	**2.0000e-005**	**6.2700e-003**	**5.1000e-004**	**6.7800e-003**	**3.0000e-003**	**4.7000e-004**	**3.4700e-003**	**0.0000**	**1.5114**	**1.5114**	**4.9000e-004**	**0.0000**	**1.5236**

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-005	3.0000e-005	3.2000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0547	0.0547	0.0000	0.0000	0.0554
Total	**5.0000e-005**	**3.0000e-005**	**3.2000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0547**	**0.0547**	**0.0000**	**0.0000**	**0.0554**

LTA - Interregional Transit Center Construction - Lake County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2023

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					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6700e-003	0.0289	0.0174	4.0000e-005		1.2100e-003	1.2100e-003		1.1100e-003	1.1100e-003	0.0000	3.6208	3.6208	1.1700e-003	0.0000	3.6501
Total	**2.6700e-003**	**0.0289**	**0.0174**	**4.0000e-005**	**0.0142**	**1.2100e-003**	**0.0154**	**6.8500e-003**	**1.1100e-003**	**7.9600e-003**	**0.0000**	**3.6208**	**3.6208**	**1.1700e-003**	**0.0000**	**3.6501**

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	1.3000e-004	8.0000e-005	8.0000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1367	0.1367	1.0000e-005	1.0000e-005	0.1385
Total	**1.3000e-004**	**8.0000e-005**	**8.0000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1367**	**0.1367**	**1.0000e-005**	**1.0000e-005**	**0.1385**

LTA - Interregional Transit Center Construction - Lake County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2023

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	0.1523	1.1710	1.2611	2.2100e-003		0.0515	0.0515		0.0497	0.0497	0.0000	181.5991	181.5991	0.0308	0.0000	182.3701
Total	**0.1523**	**1.1710**	**1.2611**	**2.2100e-003**		**0.0515**	**0.0515**		**0.0497**	**0.0497**	**0.0000**	**181.5991**	**181.5991**	**0.0308**	**0.0000**	**182.3701**

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	2.6400e-003	0.0820	0.0206	2.9000e-004	8.5000e-003	4.8000e-004	8.9800e-003	2.4600e-003	4.6000e-004	2.9200e-003	0.0000	27.3039	27.3039	1.1000e-004	3.9800e-003	28.4941
Worker	0.0219	0.0139	0.1359	2.5000e-004	0.0268	2.0000e-004	0.0270	7.1300e-003	1.8000e-004	7.3200e-003	0.0000	23.2315	23.2315	1.1800e-003	9.7000e-004	23.5510
Total	**0.0246**	**0.0959**	**0.1566**	**5.4000e-004**	**0.0353**	**6.8000e-004**	**0.0360**	**9.5900e-003**	**6.4000e-004**	**0.0102**	**0.0000**	**50.5354**	**50.5354**	**1.2900e-003**	**4.9500e-003**	**52.0451**

LTA - Interregional Transit Center Construction - Lake County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2023

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	2.9000e-003	0.0281	0.0396	6.0000e-005		1.3900e-003	1.3900e-003		1.2800e-003	1.2800e-003	0.0000	5.2976	5.2976	1.6800e-003	0.0000	5.3396
Paving	9.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.8000e-003**	**0.0281**	**0.0396**	**6.0000e-005**		**1.3900e-003**	**1.3900e-003**		**1.2800e-003**	**1.2800e-003**	**0.0000**	**5.2976**	**5.2976**	**1.6800e-003**	**0.0000**	**5.3396**

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	3.8000e-004	2.4000e-004	2.3400e-003	0.0000	4.6000e-004	0.0000	4.6000e-004	1.2000e-004	0.0000	1.3000e-004	0.0000	0.3997	0.3997	2.0000e-005	2.0000e-005	0.4052
Total	**3.8000e-004**	**2.4000e-004**	**2.3400e-003**	**0.0000**	**4.6000e-004**	**0.0000**	**4.6000e-004**	**1.2000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.3997**	**0.3997**	**2.0000e-005**	**2.0000e-005**	**0.4052**

LTA - Interregional Transit Center Construction - Lake County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2024

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	3.1000e-004	2.9300e-003	4.4100e-003	1.0000e-005		1.4000e-004	1.4000e-004		1.3000e-004	1.3000e-004	0.0000	0.5887	0.5887	1.9000e-004	0.0000	0.5934
Paving	1.0000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.1000e-004**	**2.9300e-003**	**4.4100e-003**	**1.0000e-005**		**1.4000e-004**	**1.4000e-004**		**1.3000e-004**	**1.3000e-004**	**0.0000**	**0.5887**	**0.5887**	**1.9000e-004**	**0.0000**	**0.5934**

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	4.0000e-005	2.0000e-005	2.3000e-004	0.0000	5.0000e-005	0.0000	5.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0434	0.0434	0.0000	0.0000	0.0439
Total	**4.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**0.0000**	**0.0434**	**0.0434**	**0.0000**	**0.0000**	**0.0439**

LTA - Interregional Transit Center Construction - Lake County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2024

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	0.0434					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.0000e-004	6.0900e-003	9.0500e-003	1.0000e-005		3.0000e-004	3.0000e-004		3.0000e-004	3.0000e-004	0.0000	1.2766	1.2766	7.0000e-005	0.0000	1.2784
Total	**0.0443**	**6.0900e-003**	**9.0500e-003**	**1.0000e-005**		**3.0000e-004**	**3.0000e-004**		**3.0000e-004**	**3.0000e-004**	**0.0000**	**1.2766**	**1.2766**	**7.0000e-005**	**0.0000**	**1.2784**

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	2.1000e-004	1.3000e-004	1.2600e-003	0.0000	2.8000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2336	0.2336	1.0000e-005	1.0000e-005	0.2366
Total	**2.1000e-004**	**1.3000e-004**	**1.2600e-003**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2336**	**0.2336**	**1.0000e-005**	**1.0000e-005**	**0.2366**

LTA - M&O Construction - Lake County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

LTA - M&O Construction

Lake County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
User Defined Parking	0.30	User Defined Unit	0.30	0.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	67
Climate Zone	1			**Operational Year**	2023
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	160	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO intensity factor modified to PG&E 2020 PCL value of 160.

Land Use - Assumed Conservative Footprint of 0.3 acre

Construction Phase - Estimated Construction Timeframe/Activity

Off-road Equipment - Default Equipment, Number, and Hours

Trips and VMT - Default Worker and Vendor Trips

Grading - No Import/Export. Onsite Balancing.

Off-road Equipment - Estimated Const. Equipment and Activity

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	100.00	26.00
tblConstructionPhase	NumDays	2.00	16.00
tblConstructionPhase	NumDays	5.00	6.00

LTA - M&O Construction - Lake County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	NumDays	1.00	4.00
tblConstructionPhase	PhaseEndDate	7/26/2023	9/29/2023
tblConstructionPhase	PhaseEndDate	3/8/2023	8/28/2023
tblConstructionPhase	PhaseEndDate	8/2/2023	9/5/2023
tblConstructionPhase	PhaseEndDate	3/6/2023	8/4/2023
tblConstructionPhase	PhaseStartDate	3/9/2023	8/25/2023
tblConstructionPhase	PhaseStartDate	3/7/2023	8/7/2023
tblConstructionPhase	PhaseStartDate	7/27/2023	8/29/2023
tblConstructionPhase	PhaseStartDate	3/6/2023	8/1/2023
tblLandUse	LotAcreage	0.00	0.30
tblOffRoadEquipment	LoadFactor	0.38	0.38
tblOffRoadEquipment	LoadFactor	0.20	0.20
tblOffRoadEquipment	OffRoadEquipmentType		Concrete/Industrial Saws
tblOffRoadEquipment	OffRoadEquipmentType		Excavators
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Welders
tblOffRoadEquipment	OffRoadEquipmentType		Paving Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	UsageHours	4.00	3.00
tblOffRoadEquipment	UsageHours	6.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblOffRoadEquipment	UsageHours	7.00	4.00
tblProjectCharacteristics	CH4IntensityFactor	0	0.033
tblProjectCharacteristics	CO2IntensityFactor	0	160
tblProjectCharacteristics	N2OIntensityFactor	0	0.004

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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					
2023	0.0143	0.1152	0.1486	2.6000e-004	1.0900e-003	5.4100e-003	6.5000e-003	2.9000e-004	5.2000e-003	5.4900e-003	0.0000	21.9133	21.9133	3.7700e-003	4.0000e-005	22.0193
Maximum	**0.0143**	**0.1152**	**0.1486**	**2.6000e-004**	**1.0900e-003**	**5.4100e-003**	**6.5000e-003**	**2.9000e-004**	**5.2000e-003**	**5.4900e-003**	**0.0000**	**21.9133**	**21.9133**	**3.7700e-003**	**4.0000e-005**	**22.0193**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	1_Site Preparation and Demolition	Site Preparation	8/1/2023	8/4/2023	5	4	
2	2_Excavation/Foundations/Trenching	Grading	8/7/2023	8/28/2023	5	16	
3	3_Facility Installation	Building Construction	8/25/2023	9/29/2023	5	26	
4	4_Repaving	Paving	8/29/2023	9/5/2023	5	6	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.3

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating –

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
1_Site Preparation and Demolition	Concrete/Industrial Saws	1	4.00	81	0.73
1_Site Preparation and Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
2_Excavation/Foundations/Trenching	Tractors/Loaders/Backhoes	1	4.00	97	0.37
2_Excavation/Foundations/Trenching	Excavators	1	6.00	158	0.38
2_Excavation/Foundations/Trenching	Forklifts	1	4.00	89	0.20
2_Excavation/Foundations/Trenching	Generator Sets	1	6.00	84	0.74
2_Excavation/Foundations/Trenching	Welders	1	4.00	46	0.45
3_Facility Installation	Cranes	1	3.00	231	0.29
3_Facility Installation	Forklifts	1	4.00	89	0.20
3_Facility Installation	Generator Sets	1	6.00	84	0.74
3_Facility Installation	Welders	1	4.00	46	0.45
4_Repaving	Rollers	1	4.00	80	0.38
4_Repaving	Tractors/Loaders/Backhoes	1	4.00	97	0.37
4_Repaving	Paving Equipment	1	4.00	132	0.36

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
1_Site Preparation and Demolition	2	5.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
2_Excavation/Foundations/Trenching	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
3_Facility Installation	4	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
4_Repaving	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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3.2 1_Site Preparation and Demolition - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.4000e-004	5.6600e-003	8.1200e-003	1.0000e-005		2.8000e-004	2.8000e-004		2.7000e-004	2.7000e-004	0.0000	1.0848	1.0848	2.0000e-004	0.0000	1.0899
Total	**6.4000e-004**	**5.6600e-003**	**8.1200e-003**	**1.0000e-005**	**0.0000**	**2.8000e-004**	**2.8000e-004**	**0.0000**	**2.7000e-004**	**2.7000e-004**	**0.0000**	**1.0848**	**1.0848**	**2.0000e-004**	**0.0000**	**1.0899**

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	6.0000e-005	4.0000e-005	4.0000e-004	0.0000	8.0000e-005	0.0000	8.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0683	0.0683	0.0000	0.0000	0.0693
Total	**6.0000e-005**	**4.0000e-005**	**4.0000e-004**	**0.0000**	**8.0000e-005**	**0.0000**	**8.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0683**	**0.0683**	**0.0000**	**0.0000**	**0.0693**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 2_Excavation/Foundations/Trenching - 2023

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					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0100e-003	0.0413	0.0619	1.0000e-004		1.9900e-003	1.9900e-003		1.9100e-003	1.9100e-003	0.0000	8.5141	8.5141	1.6400e-003	0.0000	8.5552
Total	**5.0100e-003**	**0.0413**	**0.0619**	**1.0000e-004**	**0.0000**	**1.9900e-003**	**1.9900e-003**	**0.0000**	**1.9100e-003**	**1.9100e-003**	**0.0000**	**8.5141**	**8.5141**	**1.6400e-003**	**0.0000**	**8.5552**

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	6.7000e-004	4.2000e-004	4.1600e-003	1.0000e-005	8.2000e-004	1.0000e-005	8.3000e-004	2.2000e-004	1.0000e-005	2.2000e-004	0.0000	0.7106	0.7106	4.0000e-005	3.0000e-005	0.7204
Total	**6.7000e-004**	**4.2000e-004**	**4.1600e-003**	**1.0000e-005**	**8.2000e-004**	**1.0000e-005**	**8.3000e-004**	**2.2000e-004**	**1.0000e-005**	**2.2000e-004**	**0.0000**	**0.7106**	**0.7106**	**4.0000e-005**	**3.0000e-005**	**0.7204**

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3.4 3_Facility Installation - 2023

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	7.0200e-003	0.0606	0.0631	1.2000e-004		2.7700e-003	2.7700e-003		2.6800e-003	2.6800e-003	0.0000	10.0785	10.0785	1.4600e-003	0.0000	10.1149
Total	**7.0200e-003**	**0.0606**	**0.0631**	**1.2000e-004**		**2.7700e-003**	**2.7700e-003**		**2.6800e-003**	**2.6800e-003**	**0.0000**	**10.0785**	**10.0785**	**1.4600e-003**	**0.0000**	**10.1149**

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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 4_Repaving - 2023

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	7.1000e-004	7.1200e-003	9.9600e-003	1.0000e-005		3.6000e-004	3.6000e-004		3.3000e-004	3.3000e-004	0.0000	1.2929	1.2929	4.2000e-004	0.0000	1.3034
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.1000e-004**	**7.1200e-003**	**9.9600e-003**	**1.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.3000e-004**	**3.3000e-004**	**0.0000**	**1.2929**	**1.2929**	**4.2000e-004**	**0.0000**	**1.3034**

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	1.5000e-004	1.0000e-004	9.6000e-004	0.0000	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.1640	0.1640	1.0000e-005	1.0000e-005	0.1662
Total	**1.5000e-004**	**1.0000e-004**	**9.6000e-004**	**0.0000**	**1.9000e-004**	**0.0000**	**1.9000e-004**	**5.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1640**	**0.1640**	**1.0000e-005**	**1.0000e-005**	**0.1662**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

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1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government (Civic Center)	2.16	1000sqft	0.05	2,160.00	0
Other Non-Asphalt Surfaces	0.45	Acre	0.45	19,602.00	0
Parking Lot	0.76	Acre	0.76	33,105.60	0
City Park	0.60	Acre	0.60	26,136.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	67
Climate Zone	1			**Operational Year**	2023
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	160	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - CO intensity factor modified to PG&E 2020 PCL value of 160.

Land Use - 2,160 sf Transit Center, 0.6-acre Green Space, 0.76-acre of Parking Lot, 0.45 acre Concrete Plaza

Construction Phase - Operations Only

Vehicle Trips - Existing operations to move to facility. No increase in empoloyees or other vehicular trip generation above existing conditions.

Table Name	Column Name	Default Value	New Value
tblLandUse	GreenSpaceAllowEdit	0.00	1.00
tblProjectCharacteristics	CO2IntensityFactor	203.98	160
tblVehicleTrips	ST_TR	1.96	0.00

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tblVehicleTrips	SU_TR	2.19	0.00
tblVehicleTrips	WD_TR	0.78	0.00
tblVehicleTrips	WD_TR	33.98	0.00

2.0 Emissions Summary

2.1 Overall Construction

Not Applicable

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	0.0121	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Energy	2.3000e-004	2.0500e-003	1.7200e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	4.7444	4.7444	5.6000e-004	1.0000e-004	4.7893
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	2.5090	0.0000	2.5090	0.1483	0.0000	6.2159
Water						0.0000	0.0000		0.0000	0.0000	0.1361	0.4169	0.5530	0.0141	3.4000e-004	1.0062
Total	**0.0123**	**2.0500e-003**	**1.7600e-003**	**1.0000e-005**	**0.0000**	**1.6000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**1.6000e-004**	**2.6451**	**5.1614**	**7.8065**	**0.1629**	**4.4000e-004**	**12.0115**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.0 Construction Detail

Not Applicable

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	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	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
City Park	0.00	0.00	0.00		
Government (Civic Center)	0.00	0.00	0.00		
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Parking Lot	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

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
City Park	9.50	7.30	7.30	33.00	48.00	19.00	66	28	6
Government (Civic Center)	9.50	7.30	7.30	75.00	20.00	5.00	50	34	16
Other Non-Asphalt Surfaces	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Parking Lot	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0

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4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
City Park	0.456449	0.066493	0.191214	0.159357	0.054432	0.010008	0.008352	0.006045	0.000425	0.000000	0.038112	0.001232	0.007880
Government (Civic Center)	0.456449	0.066493	0.191214	0.159357	0.054432	0.010008	0.008352	0.006045	0.000425	0.000000	0.038112	0.001232	0.007880
Other Non-Asphalt Surfaces	0.456449	0.066493	0.191214	0.159357	0.054432	0.010008	0.008352	0.006045	0.000425	0.000000	0.038112	0.001232	0.007880
Parking Lot	0.456449	0.066493	0.191214	0.159357	0.054432	0.010008	0.008352	0.006045	0.000425	0.000000	0.038112	0.001232	0.007880

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures 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	2.5151	2.5151	5.2000e-004	6.0000e-005	2.5468
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	2.5151	2.5151	5.2000e-004	6.0000e-005	2.5468
NaturalGas Mitigated	2.3000e-004	2.0500e-003	1.7200e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2292	2.2292	4.0000e-005	4.0000e-005	2.2425
NaturalGas Unmitigated	2.3000e-004	2.0500e-003	1.7200e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2292	2.2292	4.0000e-005	4.0000e-005	2.2425

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					
City Park	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
Government (Civic Center)	41774.4	2.3000e-004	2.0500e-003	1.7200e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.6000e-004	1.6000e-004	0.0000	2.2292	2.2292	4.0000e-005	4.0000e-005	2.2425
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
Parking Lot	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
Total		**2.3000e-004**	**2.0500e-003**	**1.7200e-003**	**1.0000e-005**		**1.6000e-004**	**1.6000e-004**		**1.6000e-004**	**1.6000e-004**	**0.0000**	**2.2292**	**2.2292**	**4.0000e-005**	**4.0000e-005**	**2.2425**

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
City Park	0	0.0000	0.0000	0.0000	0.0000
Government (Civic Center)	23068.8	1.6742	3.5000e-004	4.0000e-005	1.6953
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	11587	0.8409	1.7000e-004	2.0000e-005	0.8515
Total		**2.5151**	**5.2000e-004**	**6.0000e-005**	**2.5468**

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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	0.0121	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Unmitigated	0.0121	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005

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	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0121					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	4.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	7.0000e-005	7.0000e-005	0.0000	0.0000	8.0000e-005
Total	**0.0121**	**0.0000**	**4.0000e-005**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.0000**	**8.0000e-005**

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7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.5530	0.0141	3.4000e-004	1.0062
Unmitigated	0.5530	0.0141	3.4000e-004	1.0062

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
City Park	0 / 0.714889	0.1816	4.0000e-005	0.0000	0.1839
Government (Civic Center)	0.429105 / 0.263	0.3715	0.0140	3.4000e-004	0.8224
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.5530**	**0.0141**	**3.4000e-004**	**1.0062**

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8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	2.5090	0.1483	0.0000	6.2159
Unmitigated	2.5090	0.1483	0.0000	6.2159

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
City Park	0.05	0.0102	6.0000e-004	0.0000	0.0252
Government (Civic Center)	12.31	2.4988	0.1477	0.0000	6.1907
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Parking Lot	0	0.0000	0.0000	0.0000	0.0000
Total		**2.5090**	**0.1483**	**0.0000**	**6.2159**

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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