PUBLIC REVIEW DRAFT



Initial Study/Mitigated Negative Declaration

Tahoe Keys Marina Redevelopment Project

South Lake Tahoe, California

April 2026

CITY OF SOUTH LAKE TAHOE

Tahoe Keys Marina Redevelopment Project

South Lake Tahoe, California

Initial Study/Mitigated Negative Declaration

Prepared for:

CITY OF SOUTH LAKE TAHOE

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CITY OF SOUTH LAKE TAHOE

NOTICE OF INTENT TO ADOPT A MITIGATED NEGATIVE DECLARATION FOR THE TAHOE KEYS MARINA REDEVELOPMENT PROJECT

Project Title: Tahoe Keys Marina Redevelopment Project ("Project")

Project Location: The Project area, defined as the area where demolition would occur and planned improvements would be constructed, is located at 2435 Venice Drive East in the City of South Lake Tahoe, El Dorado County, California. The Project area encompasses approximately 16.5 acres comprised primarily of 3 parcels owned by TKSMI (APNs 022-210-032, 022-210-040, and 022-210-041), portions of the Tahoe Keys lagoon, and City right-of-way (ROW) including Venice Drive East and Tahoe Keys Boulevard ROW from Venice Drive East to Michael Drive. The Project area also includes a small segment of Tahoe Keys Beach and Harbor Association (TKBHA) property (APN 022-210-042) for landscape improvements; however, the parcel would remain under TKBHA ownership. Utility trenching may also occur within the paved entrance (APN 022-210-022).

Lead Agency: City of South Lake Tahoe ("City")

Project Description:

Tahoe Keys SMI, LLC (TKSMI) is proposing the redevelopment of the Tahoe Keys Marina (TKM) in order to revitalize the TKM landside facilities and operations. The Project would involve the demolition of 3 existing marina buildings, other ancillary structures on the site, and existing parking lots and utilities. Landside redevelopment would include new buildings, parking lots, entrances, and utilities (including upgraded water connections to mains in Venice Drive East and Tahoe Keys Boulevard). Buildings would include an approximately 52,600-square-foot indoor boat storage facility with indoor water tanks, 3 units of workforce housing (to replace the 3 existing units that would be demolished as part of the Project), and space for restaurants, retail, concessions, and boat sales. The existing boat launch and gantry crane would be relocated, and the existing bulkhead that borders the lagoon would be replaced. A significant element of the Project is bringing the site into compliance with water quality best management practices (BMPs) and assisting in controlling aquatic invasive species (AIS).

Review Period:

The 30-day public review period for the Initial Study/Mitigated Negative Declaration (IS/MND) begins on April 3, 2026, and ends on May 4, 2026. Comments will be accepted on the IS/MND until 5:00 p.m. on May 4, 2026, and should be mailed to 1052 Tata Lane, South Lake Tahoe, CA 96150, attention John Hitchcock, or by email: jhitchcock@cityofslt.us.

A copy of the IS/MND can be reviewed at the City office at the above address or online at https://www.cityofslt.gov/142/Planning-Division. For further information regarding the IS/MND and adoption of the document, please contact John Hitchcock, Planning Manager. The Development Services Department office is open to the public during the following business hours: Monday, Wednesday, Thursday, and Friday from 8:00 a.m. – 12:00 p.m. and 1:00 p.m. – 3:30 p.m.

Public Meeting:

In accordance with CEQA and the CEQA Guidelines, the City will consider the adoption of the Initial Study/Mitigated Negative Declaration of Environmental Impact for the Project at a regularly scheduled Planning Commission Meeting on the date, time, and location provided below.

Location:	City of South Lake Tahoe Council Chamber
Address:	1091 Lisa Maloff Way South Lake Tahoe, CA 96150 Date: May 14, 2026
Time:	3:00 p.m. or soon thereafter

Hazardous Materials/Waste On-Site:

The State of California maintains the EnviroStor and Geotracker databases of known contamination sites pursuant to Government Code Section 65962.5. Based on the information gathered from these databases, no sites located within the Project area are actively under evaluation, remediation, or verification monitoring.

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List of Abbreviations

Abbreviation	Definition
AFY	Acre-Feet per Year
APE	Area of Potential Effect
BMP	Best Management Practice
BRA	Biological Resource Assessment
BSA	Biological Study Area
CAAQS	California Ambient Air Quality Standards
CAL FIRE	California Department of Forestry and Fire Protection
CARB	California Air Resources Board
CBC	California Building Code
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Level
CRHR	California Register of Historical Resources
CTC	California Tahoe Conservancy
DOC	California Department of Conservation
EDCAQMD	El Dorado County Air Quality Management District
EPA	United States Environmental Protection Agency
ESA	Federal Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FGC	California Fish and Game Code
IS	Initial Study
LCT	Lahontan cutthroat trout
LSAA	Lake or Streambed Alteration Agreement
LTAB	Lake Tahoe Air Basin

MBTA	Migratory Bird Treaty Act
MND	Mitigated Negative Declaration
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
Phase I ESA	Phase I Environmental Site Assessment
PRC	Public Resources Code
Project	Tahoe Keys Marina Redevelopment Project
RWQCB	Regional Water Quality Control Board
SGMA	Sustainable Groundwater Management Act
SNYLF	Sierra Nevada yellow-legged frog
SR 89	State Route 89
STPUD	South Tahoe Public Utility District
SVP	Society of Vertebrate Paleontology
SWPPP	Stormwater Pollution Prevention Plan
TKSMI	Tahoe Keys SMI, LLC
TKBHA	Tahoe Keys Beach and Harbor Association
TKM	Tahoe Keys Marina
TRPA	Tahoe Regional Planning Agency
TTD	Tahoe Transportation District
TVS	Tahoe Valley – Tahoe South Groundwater Subbasin
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
US 50	United States Highway 50
VMT	Vehicle Miles Traveled
WOUS	Waters of the United States

1 Introduction

The City of South Lake Tahoe (City) has prepared this Draft Initial Study (IS)/Proposed Mitigated Negative Declaration (MND) pursuant to the California Environmental Quality Act (CEQA) for the proposed Tahoe Keys Marina Redevelopment Project (Project). CEQA requires that all state and local government agencies consider the environmental consequences of projects they propose to implement, or over which they have discretionary authority, before implementing or approving those projects. As specified in Section 15367 of the CEQA Guidelines, the public agency that has the principal responsibility for carrying out or approving a project is the lead agency for CEQA compliance. The City has principal responsibility for approving the Project and is therefore the lead agency under CEQA for the Project.

The purposes of this IS/MND are to: 1) determine whether implementation of the Project would result in potentially significant or significant effects on the environment; and 2) incorporate mitigation measures into the Project design, where feasible, to reduce the Project's potentially significant or significant effects to a less than significant level. An IS/MND presents environmental analysis and substantial evidence supporting its conclusions regarding the significance of environmental impacts. Substantial evidence may include expert opinion based on facts, technical studies, or reasonable assumptions based on facts (CEQA Guidelines, Sections 15063(a) and 15064(f)).

As specified in Section 15064(a) of the CEQA Guidelines, if there is substantial evidence (such as the results of an IS) that a project, either individually or cumulatively, may have a significant effect on the environment, then the lead agency must prepare an Environmental Impact Report (EIR). The lead agency may instead prepare a Negative Declaration if it determines there is no substantial evidence that a project may cause a significant impact on the environment. The lead agency may prepare an MND if, in the course of the IS analysis, it is recognized that a project may have a significant impact on the environment but that implementing specific mitigation measures would reduce any such impacts to a less than significant level (CEQA Guidelines, Section 15064(f)).

2 Project Description

Tahoe Keys SMI, LLC (TKSMI) is proposing the redevelopment of the Tahoe Keys Marina (TKM) in order to revitalize the TKM landside facilities and operations. The Project would involve the demolition of 3 existing marina buildings, other ancillary structures on the site, and existing parking lots and utilities. Landside redevelopment would include new buildings, parking lots, entrances, and utilities (including upgraded water connections to mains in Venice Drive East and Tahoe Keys Boulevard). Buildings would include an approximately 52,600-square-foot indoor boat storage facility with indoor water tanks, 3 units of workforce housing (to replace the 3 existing units that would be demolished as part of the Project), and space for restaurants, retail, concessions, and boat sales. The existing boat launch and gantry crane would be relocated, and the existing bulkhead that borders the lagoon would be replaced. A significant element of the Project is bringing the site into compliance with water quality best management practices (BMPs) and assisting in controlling aquatic invasive species (AIS). The City is acting as lead agency in accordance with CEQA (Public Resources Code [PRC] Sections 21000 – 21177) and the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000 – 15387).

2.1 Project Location

The Project area, defined as the area where demolition would occur and planned improvements would be constructed, is located at 2435 Venice Drive East (Error! Reference source not found.) in the City of South Lake Tahoe, El Dorado County, California. The Project area encompasses approximately 16.5 acres comprised primarily of 3 parcels owned by TKSMI (APNs 022-210-032, 022-210-040, and 022-210-041), portions of the Tahoe Keys lagoon, and City right-of-way (ROW) including Venice Drive East and Tahoe Keys Boulevard ROW from Venice Drive East to Michael Drive (**Figure 2**). The Project area also includes a small segment of Tahoe Keys Beach and Harbor Association (TKBHA) property (APN 022-210-042) for landscape improvements; however, that parcel would remain under TKBHA ownership. Utility trenching may also occur within the paved entrance located on parcel 022-210-022.

2.1.1 Background

TKM is located within the eastern portion of the broader Tahoe Keys development. Planning for the Tahoe Keys began in 1955 with the majority of construction occurring in the late 1960s and early 1970s. The Tahoe Keys development was created by dredging and filling a large portion of the Upper Truckee Marsh. Since the establishment of the Tahoe Keys development, most of the lots on the artificial islands within the community have been developed into private homes and townhouses.

The Project area was originally developed with 2 buildings by 1969. Subsequently, the artificial lagoon was expanded inland, providing TKM with more shoreline for marina development. By 1974, the Project area consisted of 3 buildings roughly within the footprint of the existing buildings on-site, as well as a marina developed within the now expanded artificial lagoon. The southwestern portion of the Project area remained undeveloped and largely unused prior to 1992. Based on a review of historic aerial



Figure 1. Project Location Map



Figure 2. Project Boundary Map

imagery from 1992 and 1998, the boatyard that is currently in a corner of parcel 022-210-040 was paved. This represents the last major land coverage development on the site.

TKM has been an important public recreation establishment since it was constructed in the late 1960s, serving as a major access point to Lake Tahoe for aquatic recreation. The marina and associated facilities have served South Lake Tahoe visitors since marina operations began in 1971, and the buildings on-site having supported many uses over their lifespans. The marina complex was developed adjacent to the larger Tahoe Keys development, an area envisioned as a community of vacation cabins situated on an artificially created harbor on the edge of Lake Tahoe (Chandler 2001).

Summer is the peak activity season for TKM, and marina recreational facilities are in high demand. Various businesses operate out of the marina during the summer. However, the existing facilities and infrastructure have deteriorated and require redevelopment in order to continue to serve the marina needs of the larger South Lake Tahoe community. Interim measures, such as stormwater BMPs and AIS management, have been implemented, but comprehensive redevelopment is required for lasting solutions.

The related but separate Tahoe Keys Marina Dock Replacement Project is currently updating the existing docks in the marina. The dock replacement project received a minor marina permit from TRPA and a building permit from the City in 2025 to replace the existing docks with a modernized dock system and associated piling, construct new dock utilities to service vessels, and construct Americans with Disabilities Act-related improvements. Replacement docks will be within the footprint of existing dock infrastructure and will not alter the number of available slips.

2.2 Project Objectives

The overarching goal of the Project is to replace aging facilities and infrastructure to maintain and improve the existing marina, consistent with the demands and expectations of the local community and visitors, and to redevelop the property into a premier marina that benefits Lake Tahoe, the City, and the surrounding communities. The redevelopment of TKM is also needed to install adequate stormwater management infrastructure and to provide the public with high-quality services for lake access and recreation.

The objectives of the Project are to:

- Enhance environmental protections through stormwater BMPs and AIS controls.
- Provide public amenities, including a waterfront promenade, non-motorized recreation access, public restrooms, and community gathering spaces.
- Construct new and modern commercial and marina support buildings while preserving scenic views.
- Replace an aging bulkhead.
- Provide on-site boat storage to reduce the need for vessels to be towed to off-site storage locations.

2.3 Existing Conditions

The Project area consists of the marina's landside improvements and operations, the marina bulkhead and boat launch ramp and boat lift, and City ROW on Venice Drive East and Michael Drive. The Project area contains 3 buildings, a boat launch ramp, boat lift, parking lots, exterior boat storage, sparse landscape/ruderal vegetation, and roadways (**Figures 3A and B**). The Project area also contains various small sheds/auxiliary buildings and part of an incomplete boat spray booth consisting of metal framing. The Project area is accessed from Tahoe Keys Boulevard. Tahoe Keys Boulevard connects to Venice Drive East, which provides vehicle access to the existing marina building complex and associated parking lot, boat storage yard, and boat launch ramp and boat lift. The Project area currently contains 325 parking spaces, which can be used by the public for free.

The east edge of the Project area borders the Cove East/Upper Truckee Marsh, owned by the California Tahoe Conservancy (CTC). This area contains nature trails, which lead to wildlife viewing areas and beaches. It is typically accessed via parking in the marina and along the shoulder of Venice Drive East. The west edge of the Project area, across the lagoon from TKM landside facilities, borders the Tahoe Keys residential development. The lagoon, which the marina is located on, is shared by marina facilities owned and operated by the Tahoe Keys Property Owners Association and the TKBHA (**Figure 3A**).

The existing 3 buildings contain 8 commercial spaces and 3 residential units. All 3 buildings are located on parcel 022-210-032 ("Parcel 1"). The buildings are in various states of use:

- Building 1: Marina Service Building, a 2-story building with approximately 12,600 square feet (sf) of commercial floor area currently used as a boat maintenance and repair shop for the marina.
- Building 2: Marina Administration Building, a 2-story building with approximately 22,200 sf of commercial floor area with offices and storage on the first floor, and 3 units of multi-family housing occupied by TKSMI employees on the second.
- Building 3: Marina Restaurant Building, a 2-story building with approximately 15,000 sf configured for use as a restaurant and formerly operated under the name "Fresh Ketch." Fresh Ketch opened in the 1980s and reported income through the end of December 2021. The building is currently vacant.

All 3 buildings are in poor condition. Buildings 2 and 3 were both identified during a hazardous building materials survey of the Project area as having building materials that contained asbestos and lead that would complicate repair and rehabilitation (Bureau Veritas 2021). All 3 buildings also contain universal wastes such as polychlorinated biphenyl light ballasts and mercury switches (Bureau Veritas 2021).

The upland parts of the Project area are separated from the lagoon by a sheet pile bulkhead. The bulkhead was constructed during the development of the marina in the late 1960s and early 1970s. It is at the end of its design life and is in need of replacement. Five boat fueling stations are located immediately adjacent to Buildings 2 and 3, along the bulkhead. Gasoline is stored in a 12,000-gallon aboveground storage tank on the southeastern edge of Parcel 1. Paved and unpaved boat storage areas are present on parcel 022-210-040 ("Parcel 2"). The unpaved area of Parcel 2 mostly consists of gravel mulch and shredded bark mulch materials. The paved storage area contains metal frame racks with multiple levels used for boat dry storage. Parcel 022-210-041 ("Parcel 3") is mostly undeveloped and contains low lying vegetation and sparse immature trees. The boat storage areas are designed to

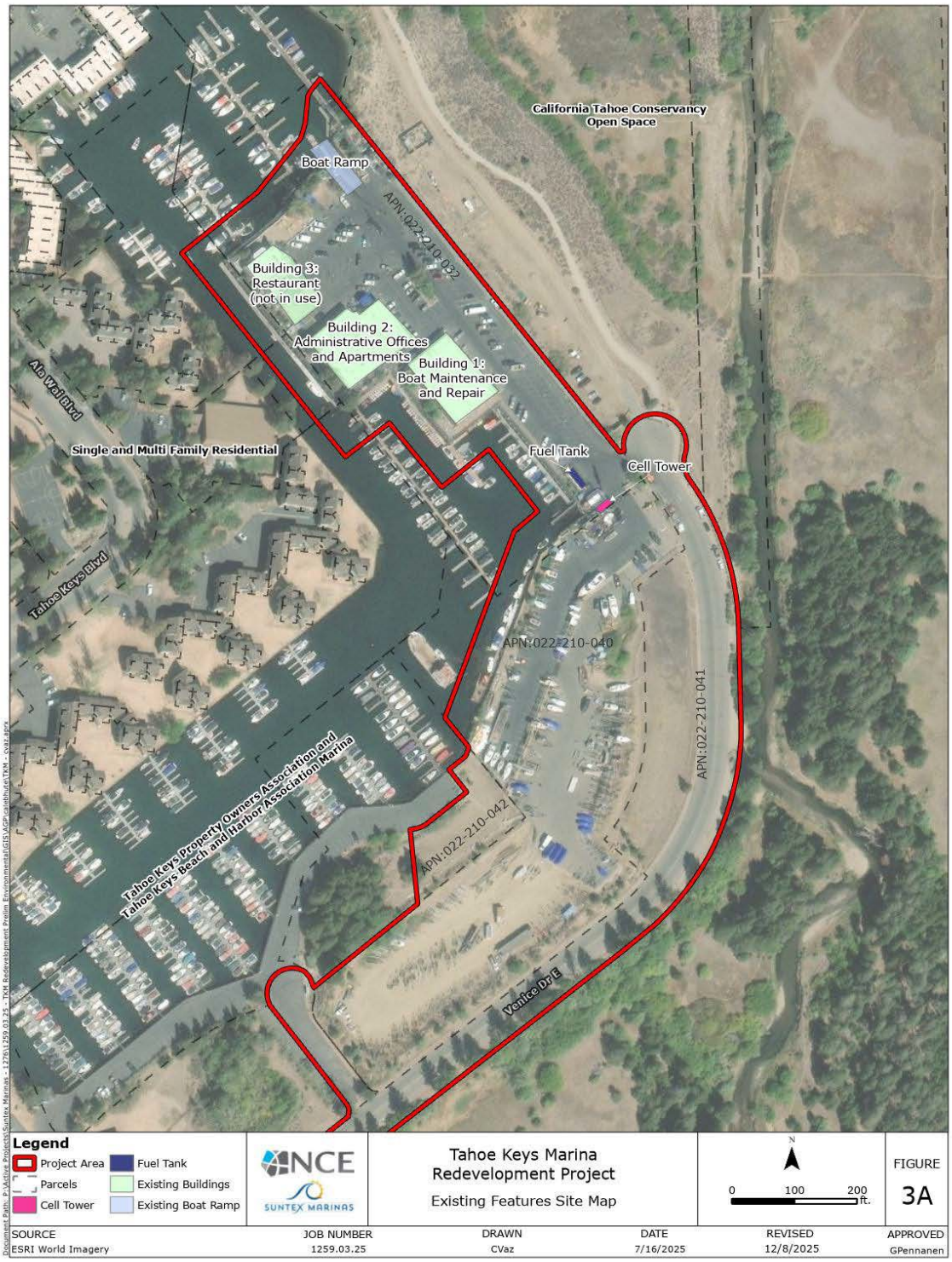


Figure 3A. Existing Features Map



Figure 3B. Existing Features Map

accommodate approximately 150 boats, however, based on a review of aerial photography, existing storage areas have accommodated between 200 and 250 boats. In general, existing manufactured facilities within the Project area are in disrepair, do not offer sufficient screening of unsightly storage and repair areas from off-site viewpoints, and lack architectural unity (i.e., consistency of design). The impervious surface of the loop road in the boat storage lot drains into a gravel mulch area where it infiltrates. Unpaved areas on Parcel 2 and Parcel 3 allow for stormwater to pond on the surface, evaporate, or infiltrate into the ground.

Water is currently provided to the Project area by the Tahoe Keys Water Company through an existing water line that enters the Project area at the cul-de-sac at the end of Venice Drive East. Sewage is conveyed away from the Project area to existing South Tahoe Public Utility District (STPUD) infrastructure through a 12-inch, cast-in-place pipe that continues in the ROW of Venice Drive East.

2.4 Project Features

The Project would involve demolition of the 3 existing buildings (Buildings 1, 2, and 3), as well as the existing boat launch ramp at the northern end of the Project area. Removal of these buildings would also coincide with the replacement of the existing bulkhead surrounding the foundation and parking lots within Parcels 1 and 2.

A total of 7 new buildings, with a combined floor area of approximately 153,200 sf, would be constructed. Of the 7 buildings, 4 buildings would be located within Parcel 1 and referred to as the Primary Marina Complex, and 3 buildings would be located within Parcel 2. A new/replacement boat launch would also be provided within Parcel 2. Site development would also include new water quality and drainage infrastructure, utility connections and services, relocation of the fuel tank, and site amenities such as a promenade, restrooms, and emergency command center for local emergency services. Approximately 32,000 square feet of land within the western edge of the Project area (APN 022-210-040) would not be developed as part of the Project. Ownership of this area may be transferred to the Tahoe Keys Property Owners Association at a later date and separate from the Project. All of the proposed buildings within the Project area are shown in **Figure 4A** and **Figure 4B**. A conceptual site plan for the Project, including parking, is shown in **Figure 5**.

2.4.1 Primary Marina Complex

The 4 proposed buildings within Parcel 1 would be constructed in the footprint of the existing marina building complex, as outlined below.

- Proposed Building A would be constructed approximately within the footprint of existing Building 1 and would provide approximately 17,600 sf of space within 2 floors with dedicated retail space, offices, restrooms, and a common area.
- Proposed Building B would be constructed adjacent to and in between proposed Building A and proposed Building C, approximately within the footprint of existing Building 2. Proposed Building B would consist of retail space, restrooms, common areas, and a fast casual restaurant facility. This 2-story building would be approximately 24,650 sf in size.

Proposed Building C would be constructed on the western corner of the existing marina facilities footprint, located partially within the footprint of the existing restaurant building and partially within the footprint of the existing parking lot. Proposed Building C would feature a restaurant and coffee retailer. The building would consist of 2 stories and would provide approximately 17,050 sf of interior space.

- Proposed Building D would be constructed on the northern edge of the existing marina facilities, located approximately within the existing parking lot and boat launch ramp. Proposed Building D would consist of restrooms, common areas, miscellaneous marina support, a valet, and a fine dining restaurant. The building would consist of 2 stories and would provide approximately 16,050 sf of interior space.

In total, the proposed buildings within the Primary Marina Complex would provide approximately 75,350 square feet of space for various uses. The final grade of the portion of the Project area around Buildings A through D would be raised approximately 2.5 feet from its current elevation, requiring approximately 3,550 cubic yards of imported fill. Reinforced concrete piles at various depths would be used to support the foundations of Buildings A through D. The proposed buildings would be constructed using a neutral color palette consisting of earth, stone, and wood tones (**Figure 6**). Height calculations of the proposed buildings were measured from existing and natural grade as reflected in the elevation drawings.

Within the Primary Marina Complex, a roundabout would be constructed southeast of Buildings A and B. A walkway/promenade would provide visual separation and pedestrian (i.e., non-motorized) access between the bulkhead and Buildings A through D. This walkway/promenade would extend southward to the proposed boat showroom, described below.

2.4.2 Public Restroom and Trash Storage Building

A restroom and trash storage facility (approximately 1,350 sf in size) would be constructed at the northeastern edge of Parcel 2, adjacent to the parking lot extending from the roundabout. This facility would include space for indoor trash, recycling and food waste storage, and a trash compactor, as well as public restrooms intended to serve visitors to the marina, the CTC recreation property, and Cove East/Upper Truckee Marsh, which is located immediately east of the Project area.

2.4.3 Boat Showroom

A boat showroom and marina support facility (**Figure 7**) would be constructed south of Buildings A through D on Parcel 2. This 2-story facility would provide approximately 23,900 sf of interior space and include a harbor master office, ship store, restrooms, miscellaneous support area, and an approximately 9,500-sf boat showroom area on the first floor. The second floor would consist of approximately 3,100 sf of office space, 550 sf of common area, and 2,150 sf of additional marina support space. Additionally, two 2-bedroom apartment units and one 3-bedroom unit would be constructed on the second story of the boat showroom building and would be a 1:1 replacement of the existing residences located on site. These apartment units would house TKSMI employees. These developments would occur in the footprint of the existing paved outdoor boat yard (Error! Reference source not found.**A**).



Figure 4A. Project Detail Map



Figure 4B. Project Detail Map



Figure 5. Conceptual Site Plan



Figure 6. Promenade, Bulkhead, and Plaza Concept Rendering



Figure 7. Boat Showroom Building Rendering

2.4.4 Boardwalk/Promenade and Central Plaza

A boardwalk/promenade would extend along the edge of the development adjacent to and between the bulkhead and the buildings and site amenities, terminating at the proposed site of the new boat launch ramp. The promenade would be publicly accessible and provide views of the lagoon and surrounding areas.

A central plaza/open space would be constructed central to proposed Buildings B through D. It would be located within the current footprint of the parking lot for the existing marina building complex. This plaza would consist of approximately 14,300 sf of open space with a central area of pervious landscaping. The plaza would be underlain by a stormwater underground storage and infiltration system for the Project area. Additionally, the plaza would provide several smaller landscaping areas with permeable surface and vegetation.

2.4.5 Boat Launch

The existing boat launch ramp, located on the northern edge of the existing marina building complex, would be removed and relocated adjacent to the south end of the boat showroom within Parcel 2. A boat lift would also be constructed at that location. Relocation of the boat launch ramp would require removal of the existing sheet pile bulkhead in the new location and extension of the bulkhead in the old location. The new boat launch would most likely have a temporary sheet pile perimeter to control turbidity and allow for the excavation of material to create the terminal slope into the water. Turbidity curtains would be installed around the temporary wall as secondary containment. The pre-cast ramps would be slid into place and secured with sheets and/or steel beams. Large rock or gravel would then be installed as a revetment to ensure the shoreline is stabilized. The existing lift well and gantry crane for load-in and load-out of boats and marine equipment would also be relocated adjacent to the boat launch ramps.

2.4.6 Water Tank and Boat Storage Facility

An approximately 52,600-sf water tank and boat storage facility would be constructed in the southwestern portion of Parcel 2. The building would be 42 feet tall at its tallest point. Most of the building space would be used for boat storage with 2 aisles and 3 levels of boat storage per aisle, separated by a drive aisle for boat movement within the facility. The facility is anticipated to provide storage for approximately 250 boats during the peak summer months and accommodate up to 430 boats during the winter. Interior boat storage is intended to improve the aesthetic qualities of TKM and reduce the use of plastic tarps for winter dry storage of boats. Based on existing usage (200-250 boats and boat trailers stored in the existing storage areas during peak summer months), this would not be considered an increase in capacity for recreational use since the boat storage facility would accommodate a similar range of boats as existing conditions during summer months.

Water facilities within the Water Tank and Boat Storage Facilities would include water tanks (with up to 500,000 gallons of capacity, combined), water pumps, and related equipment and are intended to ensure adequate fire flow to marina facilities and the water utility that serves the project. The proposed water tanks would provide redundancy and enhance existing service by increasing water pressure. As noted in greater detail in Section 2.4.11 below, the proposed water tanks would connect to existing

water lines in the vicinity, be located inside of the Water Tank and Boat Storage Facilities structure, and would not be visible from the remainder of the Tahoe Keys development.

The Project would also provide an emergency command center (approximately 1,050 sf in size) within the eastern corner of the water tank and boat storage facility. The command center would be available for use by the local police and fire departments as a communications center, as needed and to respond to emergency calls for service within the southern portion of Lake Tahoe. The foundation of the facility would include reinforced concrete piles with variable final depths.

2.4.7 Parking and Circulation

Parking (paid and valet lots) would be provided throughout the Project area and adjacent to the proposed buildings described above. Additionally, internal roads would connect to Venice Drive East at 3 primary points (**Figure 5**).

Most on-site parking would be paid public parking, and a valet parking lot would be provided in Parcel 3. The Project would provide 251 parking spaces, a decrease of 74 spaces compared to existing conditions. Of these, 69 would be reserved for valet parking and the remainder would be paid public parking.

Bicycle and kayak storage racks would be provided along the walkway/promenade to be located within Parcel 2. Publicly accessible launch points for kayaks would be accessible from the walkway/promenade and separate from the proposed boat launch ramp.

The Project would not involve modifications to the alignment of existing roadways (e.g., Venice Drive East), however, due to site constraints, the existing pavement of Venice Drive East may be affected during Project construction by equipment movement and storage and utility trenching. As part of the Project and pending coordination with the City, Venice Drive East would be repaved and restriped in accordance with City requirements.

2.4.8 Bulkhead

The Project would involve replacing approximately 1,600 linear feet of the existing sheet pile bulkhead. The bulkhead replacement would include installation of new 34-foot-long sheet piles directly in front of the existing sheet piles, which would be secured to the existing metal walers and reinforced with concrete caps. In many locations, existing brace pipe piles would need to be removed.

2.4.9 Lighting

Exterior lighting would be replaced throughout the Project area and would comply with TRPA and/or City standards with respect to light intensity, brightness, and dark sky view protection. Lighting would be designed for purposes of illumination only. All exterior lights shall be directed downward and use cutoff shields and/or limit lighting intensity to minimize light spillover.

2.4.10 Coverage

Consistent with TRPA's Regional Plan and overarching goal to protect and restore the clarity of Lake Tahoe, changes in land coverage (i.e., land surface converted from a natural condition to an impervious surface) are evaluated by TRPA in order to limit the potential for runoff (and associated sediment and

pollutants) to affect Lake Tahoe (TRPA 2025a). As part of this evaluation, TRPA has established criteria/classes of land capability that limit the amount of land coverage allowable for new development in order to achieve TRPA's broader goal of protecting Lake Tahoe. Two of the 3 primary parcels forming the Project area have been verified by TRPA to consist of Class 6 land capability, which allows for 30% land coverage (Design Workshop 2025). Under existing conditions, the Project area has a total coverage of 287,252 sf, which is greater than the allowable coverage by 189,586 sf (Design Workshop 2025). With implementation of the Project, site coverage would be 285,904 sf (Design Workshop 2025). Therefore, as a whole, the Project would reduce the overall coverage area compared to existing conditions by 1,348 sf (Design Workshop 2025).

2.4.11 Utilities and Boat Fueling

All utilities within the Project area would be upgraded to meet standard code requirements and demands as part of the Project.

Similar to existing conditions, the Project would provide a replacement aboveground gasoline storage tank and related fueling components within the southern portion of Parcel 2, adjacent to proposed on-site parking. All components would be compliant with all applicable standards.

As part of the Project, water service would be provided to the Project area via a new connection to existing Tahoe Keys Property Owners Association infrastructure in the area. Tahoe Keys Property Owners Association provided a will serve letter for the Project, indicating adequate capacity to serve the project on September 29, 2025 (Tahoe Keys Property Owners Association 2025). As an option, the Project may instead connect to STPUD infrastructure from the closest STPUD water main (an 8" line within Tahoe Keys Boulevard) to the Project area, located at the intersection of Tahoe Keys Boulevard and Michael Drive. To install this connection, a trench (approximately 4 feet deep and 2 feet wide) from approximately the entrance of the TKBHA marina parking along Venice Drive East to the intersection with Tahoe Keys Boulevard would be constructed. Trenching would continue approximately 620 feet southeast within Tahoe Keys Boulevard to the STPUD water main connection point near Michael Drive.

With respect to wastewater, the Project would connect to existing STPUD wastewater collection infrastructure within Venice Drive East. No additional wastewater facilities would be necessary (STPUD 2025a).

2.4.12 Construction

Construction is scheduled to take 24 months and would involve 5 primary phases (demolition, grubbing/rough grading, excavation and site work, building erection, and painting/paving/striping/landscaping).

Demolition

As part of this phase, on-site buildings would be demolished and removed from the Project area. Existing hardscape, lighting, boat storage, and other accessory structures would be removed.

Grubbing/Rough Grading

Within the limits of the Project area, existing paving, landscape areas, and vegetation that would interfere with construction or final design would be removed as part of this phase. Removal of existing landscaping (including up to 30 trees located primarily along the periphery of the Project area) would be necessary, especially within the southern portion of the Project area and around the existing buildings. Rough grading would shape the construction site and slopes.

Excavation and Site Work

Following rough grading, additional excavation would bring the Project area to final grade and prepare the soil for underground piping and structural supports. The replacement bulkhead would be located in front of the existing bulkhead that borders the lagoon, and the new boat launch would be constructed. The aforementioned 3,550 cubic yards of fill material would be imported to the Project area. Site work would involve installing underground utility pipes (some pipes may be 6-inch-diameter or larger), utility holes, structural foundations, curbs, gutters, pathways, and sidewalks. Excavation for concrete foundations and underground drainage pipes would be performed with excavators and/or backhoes.

Building Erection

During this phase, the 7 proposed buildings would be constructed. Site work would include establishing foundations, framing, exterior construction, mechanical/electrical/plumbing, and finishing.

Painting/Paving/Striping/Landscaping

During the final phase of construction, painting (both interior and exterior surfaces) of the proposed buildings would be conducted. All parking areas, roads, and designated locations would be paved and striped. Paving would be performed incrementally throughout the Project area as large construction and non-rubber tread equipment is removed. Landscaping includes the installation and/or construction of plantings and hardscapes, outdoor lighting, and drainage.

2.4.13 Equipment and Labor Force

Various types of equipment would be needed for the construction of the Project elements. Construction equipment which would be used during construction could include, but is not limited to backhoes, cement trucks, cranes, graders, auger drill rigs, compactors, air compressors, concrete saws, bulldozers, dump trucks, excavators, generators, jackhammers, pneumatic tools, vibratory hammers, and vibratory rollers/compactors.

The categories of workers required to complete this Project include, but are not limited to civil/earthwork personnel, excavators, masons, painters, plumbers, landscapers, carpenters, cement finishers, operating engineers, electricians, and craftsmen. The number of workers at the construction site would vary based on the phase and complexity of construction but, for the purposes of this analysis, it is generally assumed that up to 30 workers would be present on-site each day.

Work would generally be completed during daylight hours, typically 8:00 a.m. to 6:00 p.m., or as specified by the City's Municipal Code. During the construction period, construction would generally be

performed 5 days per week (weekend work may occur occasionally depending on schedule), year-round, except for standard U.S. holidays. There would be no on-site temporary workforce housing, and parking of employee recreational vehicles or trailers would be prohibited.

2.5 Construction Controls

Project implementation would comply with applicable local, state, and federal regulations pertaining to protection of human health, safety, and environment. As part of this, the Project would be required to comply with the South Lake Tahoe City Code, TRPA Code, El Dorado County Code of Ordinances, Lahontan Regional Water Quality Control Board (RWQCB) stormwater control requirements, and Lake Tahoe Regional Plan, where necessary. Construction controls would apply to both land and in-water construction activities (as identified in Sections 3.4.5 and 3.4.8 above). The following discussion outlines certain requirements and Project design features that would be implemented to comply with applicable regulations.

2.5.1 Air Quality

The El Dorado County Air Quality Management District (EDCAQMD) Rule 223 establishes requirements for construction projects. Control measures for construction and other earth moving activities must follow the guidelines presented in Table 1 of Rule 223-1 “Best Management Practice.” These requirements include, but are not limited to, creation and implementation of a Fugitive Dust Control Plan, trackout management practices at the construction site, visible emissions limitation, vehicle speed limitations, material handling, and control for stockpiles and disturbed areas. Most of these requirements are also part of TRPA protocol to protect water quality. Construction would implement the following EDCAQMD air quality control measures:

- Vehicle idle time shall be limited to 5 minutes or less (this is also a state regulation for diesel engines).
- U.S. Environmental Protection Agency (EPA) Tier 4F engines shall be used in all diesel equipment.
- Renewable diesel fuel shall be used in all diesel equipment.
- Dirt areas shall be exposed to water twice per day to prevent blowing dust.
- Vehicle speed on unpaved areas shall not exceed 10 mph.
- Tracked-out areas shall be swept once per week to reduce entrained road dust.

2.5.2 Biological Resources

All trees, major roots, and other vegetation not specifically designated and approved for removal in connection with a project would be protected according to methods approved by TRPA. Additional vegetation shall not be disturbed, injured, or removed except in accordance with the TRPA Code or conditions of Project approval.

2.5.3 Geology and Soils

Because the Project would disturb more than 1 acre, it is subject to the statewide Construction General Permit Order 2009-0009-DWQ, which regulates stormwater leaving construction sites. Under this order, site owners must notify the state and implement a stormwater pollution prevention plan (SWPPP) prepared by a Qualified SWPPP Developer. The SWPPP must outline measures that would protect hydrology and water quality resources, including groundwater, from negative impacts during construction through implementation of BMPs and monitoring the effectiveness of BMPs. This permit is administered by the State Water Resources Control Board and overseen by the Lahontan RWQCB.

BMPs would follow the Caltrans Construction Site BMP Manual (Caltrans 2024) and the TRPA Best Management Practices Handbook (TRPA 2014) to control and minimize the impacts of construction-related activities and further protect soil and water resources. At a minimum, the following geology and soils controls must be implemented:

- Install temporary erosion and sediment control BMPs to prevent the transport of earthen materials and other construction waste materials from disturbed land areas, stockpiles, and staging areas during periods of precipitation or runoff (such as silt fence, erosion control fabric, fiber rolls).
- Implement temporary BMPs to prevent wind erosion and sediment transport of disturbed areas, such as use of water for dust control and covering of stockpiles during windy conditions or during non-working hours.
- Use high visibility vegetation protection fencing to prevent damage to trees or other vegetation where possible.
- Use construction boundary fencing to limit land disturbance in areas not planned for construction.
- Parking shall be provided on paved and existing disturbed areas only.
- Limit grading to May 1 through October 15, unless an exemption is granted by TRPA. At the end of the grading season or before completion of the Project, all surplus or waste earthen materials from the Project area would be removed and disposed of at a TRPA-approved disposal site or stabilized on-site in accordance with TRPA regulations.
- Implement a spill prevention plan. Contractors would be responsible for storing on-site materials and temporary BMPs capable of capturing and containing pollutants. Equipment fueling and maintenance, if performed at the job site, shall be performed in a designated area utilizing secondary containment with a spill kit in accordance with National Pollutant Discharge Elimination System (NPDES) requirements.

2.5.4 Greenhouse Gas Emissions and Green Energy

California regulations limit idling from both on-road and off-road diesel-powered equipment. The California Air Resources Board (CARB) enforces idling limitations and compliance with diesel fleet regulations. The following practices would be incorporated to control exhaust emissions from diesel-powered fleets working at the construction site:

- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes (required by 33 California Code of Regulations 2449(d)(3) and 2485). Provide clear signage that posts this requirement for workers at the entrances to the site.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications. The equipment must be checked by a certified mechanic and determined to be running in proper condition before it is operated.
- Use a CARB-approved low-carbon fuel for construction equipment. Nitrogen oxide emissions from the use of low-carbon fuel must be reviewed and increases in emissions mitigated.

2.6 Responsible and Trustee Agencies

The following agencies may have responsibility for or jurisdiction over implementation of elements of the Project. The following list also identifies potential actions/permits and other approval actions that may be required before implementation of certain Project elements.

FEDERAL

- U.S. Army Corps of Engineers (USACE) (Responsible Agency) —Due to potential impacts to waters of the United States (WOUS) and the need to comply with Clean Water Act Section 404 requirements.
- U.S. Fish and Wildlife Service (USFWS) (Responsible Agency) – Due to potential take of listed species and the need to comply with Federal Endangered Species Act (ESA) requirements.

STATE

- CDFW (Responsible and Trustee Agency) – Due to Project's potential impacts to special species and its need to comply with CESA and Fish and Game Code.
- Lahontan RWQCB (Responsible agency)—Due to the Project's need to comply with waste discharge requirements for impacts on waters of the state and to implement a stormwater pollution prevention plan for construction/operation.
- State Water Resources Control Board (Responsible agency)—Due to the need for coverage under Construction General and Industrial Storm Water permits.

REGIONAL

- TRPA (Responsible Agency) – Due to potential impact to threshold standards set forth for water quality, air quality, soils, wildlife, noise, fisheries, vegetation, scenic quality, and recreation.

LOCAL

- South Tahoe Public Utility District (STPUD) (Responsible Agency) – Due to the Project's need to provide new utility connections to existing utility infrastructure.

3 Summary of Impacts and Proposed Mitigation Measures

3.1 Environmental Factors Potentially Affected

The environmental factors checked below would be potentially affected by the Project, involving at least 1 impact that is a "Potentially Significant Impact," as indicated by the checklist on the following pages.

☐ 1. Aesthetics
☐ 2. Agriculture and Forestry Resources
☐ 3. Air Quality
☐ 4. Biological Resources
☐ 5. Cultural Resources
☐ 6. Energy
☐ 7. Geology/Soils
☐ 8. Greenhouse Gas Emissions
☐ 9. Hazards and Hazardous Materials
☐ 10. Hydrology/Water Quality
☐ 11. Land Use/Planning
☐ 12. Mineral Resources
☐ 13. Noise
☐ 14. Population/Housing
☐ 15. Public Services
☐ 16. Recreation
☐ 17. Transportation
☐ 18. Tribal Cultural Resources
☐ 19. Utilities/Service Systems
☐ 20. Wildfire
☐ 21. Mandatory Findings of Significance

None of the above environmental factors are checked, indicating that no "Potentially Significant Impacts" are anticipated as the mitigation measures identified in the following sections reduce impacts to less than significant.

3.2 Lead Agency Determination

On the basis of this initial evaluation:

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

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

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

☐ I find that the 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 EIR is required, but it must analyze only the effects that remain to be addressed.

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



Signature

April 1, 2026

Date

John Hitchcock, Planning Manager

Name

City of South Lake Tahoe

For

4 Initial Study and Checklist

The following checklist evaluates the potential adverse impacts of the Project in compliance with CEQA. Appendix G of the CEQA Guidelines provides a sample checklist with a series of questions designed to enable the City, as the lead agency, to identify impacts associated with the Project with respect to 21 environmental topics; this IS generally follows this checklist. The information, analysis and conclusions contained in the checklist are the basis for deciding whether an EIR or Negative Declaration is to be prepared. If an EIR is determined to be necessary based on the conclusions of the IS, the checklist is used to focus the EIR on the effects determined to be potentially significant.

Except where a specific threshold has been adopted by a public agency and is specified in the sections below, such as an air quality threshold, Appendix G of the CEQA Guidelines are used as thresholds of significance for the CEQA checklist questions.

Potential environmental impacts are described as follows:

- **Potentially Significant Impact**: An environmental impact that could be significant and for which no feasible mitigation is known. If any potentially significant impacts are identified in this Checklist, an EIR must be prepared.
- **Less than Significant Impact with Mitigation Incorporated**: An environmental impact that requires the implementation of mitigation measures to reduce that impact to a less than significant level.
- **Less than Significant Impact**: An environmental impact may occur; however, the impact would not exceed significance thresholds.
- **No Impact**: No environmental impacts would result from implementation of the Project.

4.1 Aesthetics

Aesthetic resources are generally defined as both the natural and built features of the landscape that contribute to the public's experience and appreciation of the environment. Aesthetic impacts may occur depending on the extent to which a project's presence would negatively alter the perceived visual character and quality of the environment.

4.1.1 Environmental Setting

Site Characteristics

The Project area is approximately 16.5 acres in size and is relatively flat and open with 3 buildings in its northern portion. The 3 wood frame buildings are located adjacent to the existing lagoon and provide 8 commercial spaces and 3 residential units. Several small sheds are also located in the northern portion of the Project area, along with the existing boat lift and boat launch. The other portions of the Project area are primarily maintained as paved and lighted surface parking for TKM visitors with outdoor boat storage and a stormwater retention facility in the southeastern corner of the Project area. A telecommunications tower is located within the Project area, immediately west of the terminus of Venice Drive East. Sparse trees and ornamental vegetation are adjacent to the existing buildings, along the periphery, and within designated landscape areas.

View of and From the Project Site

The Project area is bounded by the existing marina lagoon to the north, residential uses further to the west, and open space to the east and south. Land uses surrounding the Project area are primarily recreational, commercial (primarily medical office), and residential in nature to the west and north and recreational (open space and the CTC Cove East Trail and associated property) to the south and east.

Views of the Project area are relatively open from the east due to its natural condition and the relatively flat topography east of the site. More limited views of the Project area are available from the marina lagoon and residential and commercial uses located west of the marina lagoon and Tahoe Keys Boulevard.

Scenic Resources

A scenic vista is generally defined as a distant public view along or through an opening or corridor that is recognized and valued for its scenic quality, or a natural or cultural resource that is indigenous to the area. Due to the adjacent development and existing vegetation, long-distance views of the Project area are generally precluded, except from certain viewpoints east of the Project area. The existing open space and CTC Cove East Trail located east of the Project area are not designated as scenic resources, part of a scenic highway corridor, nor as scenic public recreation areas by TRPA or the City (TRPA 1993).

U.S. Highway 50 (US 50), located approximately 0.9 miles southeast of the Project area, is listed as an eligible scenic highway, and State Route (SR) 89, located approximately 1.0 mile southwest of the Project area, is a designated scenic highway (Caltrans 2025). Roadways adjacent to the Project area are not considered scenic (City of South Lake Tahoe 2010).

The Project area is also located approximately 0.3 mile south of Shoreline Unit 1 (TRPA 1993). It is qualified as having low overall scenic quality (TRPA 1993).

Light and Glare

The Project area is largely developed with surface parking areas with limited lighting, primarily limited to a few scattered lightposts within parking lots and along Venice Drive East. Additional lighting is provided near the existing buildings for safety/security purposes. The Project area does not contain any features that create substantial glare (i.e., reflective surfaces, metal fixtures). Some minor glare may occur as a result of existing boat storage within the surface storage areas, however the majority of boats stored are covered with non-reflective covers.

4.1.2 Regulatory Setting

Regional

Tahoe Regional Planning Agency Regional Plan and Code of Ordinances

Projects within the Lake Tahoe Basin are subject to the jurisdiction of TRPA, which implements the Regional Plan to achieve and maintain established environmental threshold carrying capacities, including those for scenic quality. The TRPA Code of Ordinances contains enforceable standards related to aesthetics and scenic resources, including Chapters 35 (Design Standards), 37 (Height), and 66 (Scenic Quality). These chapters regulate building design, height, color, lighting, signage, and site development to ensure compatibility with the natural and built environment of the Tahoe region. TRPA also maintains Scenic Quality Threshold Standards for roadway and shoreline travel units, which evaluate scenic conditions to prevent degradation of identified scenic resources.

Local

City of South Lake Tahoe General Plan

The City General Plan Land Use and Community Design Element establishes policies to guide development, redevelopment, and visual character within the City. The element promotes compact, mixed-use development along major corridors such as US 50, and encourages infill and revitalization of existing urban areas. Policies require use of natural materials and colors, minimization of visual impacts from lighting, signage, and parking, and preservation of scenic views toward Lake Tahoe and surrounding ridgelines. The element also sets standards for building height, density, and land coverage consistent with TRPA requirements and requires that new development complement surrounding land uses and community character.

City of South Lake Tahoe Code of Ordinances

The City's Code of Ordinances provides regulatory tools for implementing General Plan policies related to visual quality and community design. Relevant provisions include Chapter 6.10 (Design Review), which establishes procedures for design review of new development to ensure visual compatibility with surrounding uses and the natural environment. Other chapters regulate signage, lighting, and landscaping to maintain the visual character of developed areas and minimize light spillover or glare.

4.1.3 CEQA Checklist Summary

Except as provided in Public Resources Code Section 21099, would the Project:

CEQA Question	Impact Determination
a) Have a substantial adverse effect on a scenic vista?	Less Than Significant Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	Less Than Significant Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the Project is in an urbanized area, would the Project conflict with applicable zoning and other regulations governing scenic quality?	Less Than Significant Impact
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	Less Than Significant Impact

4.1.4 Answers to CEQA Checklist Questions

Except as provided in Public Resources Code Section 21099:

a) Would the Project have a substantial adverse effect on a scenic vista?

Less Than Significant Impact

The Project would represent the redevelopment of an existing developed site with modern uses that would serve the same function as the existing on-site uses. As noted above, views of the Project area are generally not available or unimpeded from the south, west, and north (including from US 50 and SR 89). This is due in large part to existing development (primarily residential with some commercial) in the vicinity, existing vegetation, and some topographic changes between the 2 highway segments and the Project area. In general, the Project would represent a modification of an already developed area. Views of the proposed development would be limited to adjacent areas as described above. As noted above, the existing open space and CTC Cove East Trail located east of the Project area are not designated as scenic resources, part of a scenic highway corridor, nor as scenic public recreation areas by TRPA or the City (TRPA 1993). The Project would modify the visual conditions such that the Project area would enclose outdoor storage of boats and provide on-site structures such that visual conditions would be more uniform and would not be considered a substantial adverse change.

As noted above, the Project would not be visible from either the eligible scenic highway segment of US 50 or the designated scenic highway segment of SR 89 located nearby. The Project area is also located approximately 0.3 miles south from TRPA Shoreline Unit 1.[1] TRPA Shoreline Unit 1 is currently in

[1] TRPA developed a shoreline survey in 1982 for scenic resources, as part of TRPA's broader Environmental Thresholds Study. In total, there are 33 shoreline units, beginning with Shoreline Unit 1 in Tahoe Keys and proceeding clockwise around Lake Tahoe.

attainment based on the threshold standards established in the 1982 Lake Tahoe Basin Scenic Resource Inventory. The Project area is not visible from the shoreline unit, and the proposed redevelopment would not cause the Project to be visible from the shoreline due to the presence of intervening development and vegetation. Therefore, the Project would have a less-than-significant impact on the attainment status of a Scenic Shoreline Unit.

The Project would modify views of and through the Project area from the east (along Venice Drive East and from portions of the Cove East Trail, neither of which are designated as scenic resources or roadways) but only to the extent that such views are available in close proximity to the Project area. These views are already partially obscured by existing vegetation and landscaping. As noted above, the Project would remove existing outdoor storage of boats and provide an enclosed boat storage facility that would provide a more consistent design/aesthetic for the Project area, which varies substantially and based on the number and type of boats currently stored outside. For this reason, and although the Project would partially modify views from the east, the change in visual conditions at the Project area would not be considered a substantial adverse change, as it would provide a consistent design/aesthetic within the Project area. Impacts would be less than significant. No mitigation is required.

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

Less than Significant Impact

As discussed above, the Project area is not located within the viewshed of a state scenic highway or TRPA visual resource. The Project would not be visible from either the eligible scenic highway segment of US 50 or the designated scenic highway segment of SR 89 located nearby. As a result, the Project would not damage any scenic resource within a state scenic highway, including, but not limited to, trees, outcropping, and historic buildings. Additionally, the Project area would not be visible from Shoreline Unit 1, and the existing open space and CTC Cove East Trail located east of the Project area are not designated as scenic resources, part of a scenic highway corridor, nor as scenic public recreation areas by TRPA or the City (TRPA 1993). Therefore, impact to scenic resources as a result of the Project would be less than significant. No mitigation is required.

c) Would the Project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from 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?

Less Than Significant Impact

The Project is located within and adjacent to an urban area with a non-urbanized area located to the east and south. Existing manufactured facilities are in disrepair, do not offer sufficient screening of unsightly storage and repair areas from off-site viewpoints, and lack architectural unity (i.e., consistency of design). The Project area is zoned for commercial and residential development and currently provides a mix of commercial, recreation, public service and resource management uses with some residential

units. As a result, the Project is considered generally consistent with existing zoning and would provide enclosed storage for existing boats at TKM, which would be considered beneficial. Furthermore, Policy LU-8.1 of the City General Plan emphasizes the use of "mountain" architectural theme in all new and remodeled developments, which is considered to be the style of the Project. The Project would also include landscaping with native plants (consistent with Policy LU-8.2) and would provide parking interior to the site and screened by buildings and landscaping (consistent with Policy LU-8.3). For these reasons, the Project would be considered consistent with the City's General Plan regarding visual conditions. The Project would also provide a cohesive design that would more closely resemble existing development within the local area and region.

With respect to other regulations governing scenic quality, building height regulations are considered applicable, including Section 37 of TRPA Code. This section of the TRPA Code establishes requirements related to maximum height limits for new development and circumstances under which additional height may be considered with certain provisions. One of these requirements includes that any development will not exceed a height such that it would be visible from major arterials, scenic turnouts, public recreation areas, and/or the waters of Lake Tahoe from a distance of 300 feet. As noted above, the Project area is not located proximate to nor would it be visible from designated scenic resources (as determined by TRPA) (TRPA 1993). Further, Section 37.7 of the TRPA Code allows for additional height (pending consideration by TRPA) where the building would minimize interference with existing views in the vicinity. As noted above under 4.1.4 a), the Project would not result in a substantial adverse change to available long-distance views in the area and would provide a more consistent visual theme, consistent with City General Plan policies. Nonetheless, the boat storage facility would require consideration by TRPA due to its proposed height of 42 feet, which is the minimum height requirement for 3 levels of boat storage. Consistent with this requirement and the requirements of Section 37 of the TRPA Code, and pending TRPA consideration, the boat storage facility would be located within the western portion of the site, away from the CTC Cove East Trail in order to further minimize changes in views of and through the Project area. As a result, impacts would be less than significant, and no mitigation is required.

d) Would the Project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?

Less Than Significant Impact

The Project would involve the redevelopment of the existing TKM with new, modernized buildings, but the site would continue to operate as marina facilities with supporting operations. Due to the proposed development within the southern portion of the site and the expanded surface parking within the southeastern portion of the Project area, additional lighting (beyond existing conditions) would be provided to support safety for visitors to TKM. Light fixtures would be fitted with light-emitting diode (LED) lamps with lighting controls and would be shielded and deliberately located to reduce potential spillover light onto adjacent properties, including adjacent open space areas. No high-mast lighting fixtures (i.e., poles greater than 25 feet tall) would be installed. The maximum height of lighting standards would be consistent with those currently located in the area and along Venice Drive East. The new lighting would be partially obscured for residential uses to the west and north by the existing

commercial development and proposed on-site development. Visible light from the site would also be reduced upon establishment of proposed trees that would line the southern, western, and eastern edges of the site. As a result, although some exterior lighting within the Project area would be visible from adjacent development and open space, this would be considered consistent with existing conditions. The proposed lighting would not represent a substantial increase in lighting because there is currently lighting associated with on-site within the Project area. Existing lighting consists primarily of 12-foot light standards with 2-3 luminaries per standard. Proposed lighting, including within the promenade and publicly accessible areas of the Project area, would be angled down and away from the boundaries of the Project area so as to minimize light spillover and potential night lighting effects, consistent with TRPA requirements. As a result, the potential incremental increase is not anticipated to affect nearby land uses (e.g., residential) that are sensitive to nighttime lighting.

With respect to glare, minimal glare is associated with existing on-site operations, primarily associated with outdoor storage of boats. The proposed development would comply with Section 36.6.1.B. of the TRPA Code of Ordinances (Code) and Section 6.10.120 (City Code), which requires that roofs, including mechanical equipment and skylights, shall be constructed of non-glare finishes and earth tone colors that minimize reflectivity. Thus, compliance with these design standards and requirements would prohibit the use of reflective materials that could cause excessive daytime glare. This impact would be less than significant, and no mitigation is required.

4.2 Agricultural and Forestry Resources

4.2.1 Environmental Setting

The Project area contains no lands identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on the California Important Farmland Finder (DOC 2022). The Project area contains no land zoned for agricultural use (TRPA 2002) or under a Williamson Act contract (DOC 2025).

While some trees are present within landscaped areas and along the perimeter of the Project area, the Project area would not be considered forest land (as defined in PRC Section 12220[g]), timberland (as defined by PRC Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104[g]).

4.2.2 Regulatory Setting

State

California Department of Conservation Farmland Mapping and Monitoring Program

Important Farmland in California is classified and mapped according to the California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP). Authority for the FMMP comes from Government Code Section 65570(b) and Public Resources Code (PRC) Section 612. Government Code Section 65570(b) requires the Department of Conservation to collect or acquire information on the amount of land converted to or from agricultural use for every mapped county and to report this information to the Legislature. PRC Section 612 requires DOC to prepare, update, and maintain Important Farmland Series Maps and other soils and land capability information.

The California Land Conservation Act of 1965

The California Land Conservation Act of 1965, or Williamson Act, preserves agricultural and open space lands through property tax incentives and voluntary restrictive use contracts. Private landowners voluntarily restrict their land to agricultural and compatible open-space uses under minimum 10-year rolling term contracts. In return, restricted parcels are assessed for property tax purposes at a rate consistent with their actual use, rather than potential market value.

California Public Resources Code

Agricultural and forestry land within California are defined by the PRC as follows:

- Section 21060.1(a) defines "agricultural land" as prime farmland, farmland of statewide importance, or unique farmland, as defined by the United States Department of Agriculture land inventory and monitoring criteria, as modified for California.
- Section 21060.1(b) states the following: In those areas of the state where lands have not been surveyed for the classifications specified in subdivision (a), "agricultural land" means land that meets the requirements of "prime agricultural land" as defined in paragraph (1), (2), (3), or (4) of subdivision (c) of Section 51201 of the Government Code.

- Section 21095 amended the California Environmental Quality Act to provide lead agencies with an optional methodology, the Land Evaluation and Site Assessment (LESA) model, to ensure that significant effects on the environment of agricultural land conversions are quantitatively and consistently considered in the environmental review process. The LESA Model evaluates measures of soil resource quality, a given project's size, water resource availability, surrounding agricultural lands, and surrounding protected resource lands. For a given project, the factors are rated, weighted, and combined, resulting in a single numeric score. The project score becomes the basis for making a determination of a project's potential significance.
- Section 12220(g) defines "forest land" as land that can support 10 percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits.
- Section 4526 defines "timberland" as land, other than land owned by the federal government and land designated by the State Board of Forestry and Fire Protection as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species shall be determined by the board on a district basis.

4.2.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
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?	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	No Impact
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))?	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	No Impact
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?	No Impact

4.2.4 Answers to CEQA Checklist Questions

a) Would the Project 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 area does not contain Prime Farmland, Unique Farmland, or Farmland of Statewide or Local Importance (Farmland), as shown on the California Important Farmland Finder (DOC 2022). Implementation of the Project does not require conversion of land from the existing land use. Because the Project does not propose converting agricultural land or otherwise contain farmland, no impact would occur as a result of Project implementation, and no mitigation is necessary.

b) Would the Project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact

The Project area is zoned for primarily commercial uses with the southeastern parcel (APN No. 022-210-041) being zoned for residential use. There are no Williamson Act contracts within the Project area. Therefore, the Project would not conflict with existing zoning or Williamson Act contracts. No impact would occur, and no mitigation is necessary.

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

No Impact

As noted above, the Project area is zoned for commercial and residential uses. Further and per the Tahoe Keys Plan Area Statement (TRPA 2002), the Project area is designated for commercial, recreation, public service and resource management uses. The Tahoe Keys Plan Area Statement (2002) defines resource management as a broad category of management actions, including those associated with forestry. However, the highly disturbed nature of the Project area does not meet the definition of forest land as outlined in PRC Section 12220(g) as none of the parcels contains 10% or greater canopy cover. Based on a review of aerial imagery, existing canopy cover is limited to landscape trees along the periphery of the site and is present within less than 1% of the Project area. The Project area is not used for growing and harvesting timber, nor is it capable of producing timber due to its disturbed nature and current use as a marina. Therefore, the Project area does not meet the definition of Timberland Production (as defined by Government Code Section 51104(g)), and Project implementation would have no impact on forest land or timberland. No mitigation is required.

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

No Impact

As discussed in 4.2.3(c), the Project area contains developed land that does not meet the definition of forest land or timberland. Because the Project area does not contain such resources, the Project would not convert forest land to non-forest use. Therefore, the Project would not result in conversion of forest land. No impact would occur, and no mitigation is necessary.

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

No Impact

The Project area does not contain any lands identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance as shown on the California Important Farmland Finder (DOC 2022), and contains no land zoned for agricultural use. As discussed in 4.2.3(c) the Project area contains no forest land. Therefore, the Project would not result in the conversion of farmland to non-agricultural use or forest land to non-forest use. No impact would occur, and no mitigation is necessary.

4.3 Air Quality

4.3.1 Environmental Setting

The Project area is located at the south end of Lake Tahoe in a semi-urban setting, in the City of South Lake Tahoe, California, and within the Lake Tahoe Air Basin (LTAB). More broadly, the LTAB is comprised of the surface of Lake Tahoe and land up to the surrounding rim of mountain ridges and is located within both El Dorado and Placer counties. The LTAB is over 6,000 feet in elevation, and its meteorology is typified by large amounts of precipitation from Pacific storms that fall mainly as snow. Winter days are typically sunny with mild to cold temperatures, with storms that bring wind, clouds, and snow. In the summer, the LTAB experiences sunny, mild days with an occasional thunderstorm from southern flows of moisture.

With respect to air quality, criteria air pollutants are those pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), respirable particulate matter (particulate matter [PM] with an aerodynamic resistance diameter of 10 micrometers or less) (PM_{10}), fine particulate matter (PM with an aerodynamic resistance diameter of 2.5 micrometers or less) ($PM_{2.5}$), and lead. As explained further within Section 4.3.2 (Regulatory Setting), the federal and state standards have been set, with an adequate margin of safety, at levels above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive people from illness or discomfort. A brief description of key criteria air pollutants in the LTAB and their health effects are provided below.

Ozone

Ground-level ozone is not emitted directly into the air but is created by chemical reactions between reactive organic gas (ROG) and oxides of nitrogen (NO_X). This happens when pollutants emitted by cars, power plants, industrial boilers, refineries, chemical plants, and other sources chemically react in the presence of sunlight. Ozone at ground level is a harmful air pollutant because of its effects on people and the environment, and it is the main ingredient in smog (EPA 2025).

Acute health effects of ozone exposure include increased respiratory and pulmonary resistance, cough, pain, shortness of breath, and lung inflammation. Chronic health effects include permeability of respiratory epithelia and possibility of permanent lung impairment (EPA 2025). Emissions of the ozone precursors ROG and NO_X have decreased because of more stringent motor vehicle standards and cleaner burning fuels (CARB 2013).

Particulate Matter

PM_{10}, consisting of small particles that have an aerodynamic diameter of 10 micrometers or less, is emitted directly into the air, and can include fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires and natural windblown dust, and PM formed in the atmosphere by reaction of gaseous precursors (CARB 2013). $PM_{2.5}$ includes a subgroup of smaller particles that have an aerodynamic diameter of 2.5 micrometers or less. PM_{10} emissions are generally dominated by emissions from area sources, primarily fugitive dust from vehicle travel on unpaved and paved roads,

construction and demolition, and particles from residential fuel combustion. Direct emissions of PM_{10} and $PM_{2.5}$ are projected to remain relatively constant through 2035. Emissions of $PM_{2.5}$ in the LTAB are dominated by the same sources as emissions of PM_{10} (CARB 2013).

Acute health effects of PM_{10} and $PM_{2.5}$ exposure include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, and premature death. Chronic health effects include alterations to the immune system and carcinogenesis (EPA 2025).

Toxic Air Contaminants

According to the *California Almanac of Emissions and Air Quality,* the majority of the estimated health risks from toxic air contaminants (TACs) can be attributed to relatively few compounds, the most important being diesel PM (CARB 2013). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emissions control system is being used. Unlike the other TACs, no ambient monitoring data is available for diesel PM because no routine measurement method currently exists. However, CARB has made preliminary concentration estimates based on a PM exposure method. This method uses the CARB emissions inventory's PM10 database, ambient PM10 monitoring data, and the results from several studies to estimate concentrations of diesel PM. In addition to diesel PM, the TACs for which data are available that pose the greatest existing ambient risk in California are benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene.

Diesel PM poses the greatest health risk among these 10 TACs mentioned. Based on receptor modeling techniques, CARB estimated the average statewide cancer risk associated with diesel PM concentrations to be 360 excess cancer cases per million people in the year 2020 (CARB 2000). Overall, statewide emissions of diesel PM are forecasted to decline by 71 percent between 2000 and 2035 (CARB 2013).

Odors

Odors are generally regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and overall is quite subjective, however, some odors are more likely to cause disturbance than are others. Typical odor sources of concern include wastewater treatment plants, sanitary landfills, composting facilities, recycling facilities, petroleum refineries, chemical manufacturing plants, painting operations, rendering plants, and food packaging plants (Sacramento Metropolitan Air Quality Management District 2016).

4.3.2 Regulatory Setting

Air quality within the LTAB is regulated by several agencies including TRPA, the EPA, CARB, and the EDCAQMD. These agencies develop rules, regulations, policies, and/or plans to achieve the goals and directives imposed through legislation. Air quality in the LTAB is considered separate from the western

part of the County by the EDCAQMD because it is a distinct air basin with different emission sources and climate.

Federal

The EPA is responsible for implementing the federal Clean Air Act (1970), including establishing health-based National Ambient Air Quality Standards (NAAQS) for air pollutants. NAAQS established for criteria pollutants under the Clean Air Act are O3, CO, NO2, SO2, PM10, PM2.5, and lead. The standards set for criteria air pollutants are periodically reviewed and revised as applicable. Depending on measured air quality conditions, air basins (e.g., LTAB) are designated as being either in attainment or in non-attainment for specific criteria air pollutants. An "attainment" designation for an area signifies that pollutant concentrations did not violate the NAAQS and/or CAAQS for that pollutant in that area. A "non-attainment" designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event (e.g., wildfire). Currently, the LTAB is either considered to be in attainment or unclassified for all NAAQS.

State

In California, CARB is responsible for implementing the California Clean Air Act (1988) and has established California Ambient Air Quality Standards (CAAQS), which are to date more restrictive than the NAAQS. In general, the CARB works with local agencies to develop policies, guidance, and regulations related to state and federal ambient air quality standards; coordinates with local agencies on transportation plans and strategies; and provides assistance to local districts and transportation agencies to meet air quality standards established under both the federal and California clean air acts.

Currently, the LTAB is considered to be in attainment or unclassified for all criteria pollutants with the exception of O_3 and PM, for which the LTAB is classified as being in non-attainment. The state PM_{10} 24-hour average standard (not to exceed) is 50 micrograms per cubic meter. In 2024, the LTAB experienced average ambient concentrations of 38 micrograms per cubic meter over a 24-hour period (excluding exceptional events), which does not exceed the standard. The California and federal standard for 8-hour O_3 concentrations is 0.070 parts per million. The LTAB saw less than 0.1 day exceedance of this standard in 2024 (CARB 2025).

Regional

Tahoe Regional Planning Agency

TRPA has adopted environmental threshold carrying capacities related to air quality for the Tahoe region. Every 4 years, TRPA evaluates the environmental thresholds to determine whether each threshold standard is being achieved and/or maintained. TRPA also makes specific recommendations to address problem areas and directs general planning efforts for the next 4-year period. TRPA threshold standards address CO, O_3, regional and subregional visibility, PM_{10}, $PM_{2.5}$, and nitrate deposition. Numerical standards have been established for each of these parameters, and management standards have been developed that are intended to assist in attaining the threshold standards. TRPA has classified the LTAB as being in attainment for $PM_{2.5}$ and CO standards, but as being in non-attainment for PM_{10} and O_3 standards (TRPA 2018).

TRPA considers impacts to air in its planning and permitting activities to ensure compliance with state and district air quality standards. Because TRPA's authority is granted directly from Congress, TRPA has the authority to adopt air quality and other environmental quality thresholds, and to enforce ordinances designed to achieve those thresholds. The TRPA standards generally conform with the CARB and EPA.

Local

El Dorado County Air Quality Management District

The EDCAQMD is the primary agency responsible for air quality regulation in the Project area. As part of that role, the EDCAQMD has prepared the 2002 CEQA Guide to Air Quality Assessment (EDCAQMD 2002). The purpose of the guide is to facilitate the evaluation and review of air quality impacts for projects in El Dorado County that are subject to CEQA. The guide has established construction thresholds for air quality for the priority pollutants shown in Table 1.

Table 1. El Dorado County Air Quality Thresholds

Pollutant	Construction Threshold	Operational Threshold
ROG	82 lbs/day	82 lbs/day
NOx	82 lbs/day	82 lbs/day
PM_{10}	--	--

lbs/day = pounds per day
ROG = reactive organic gases
NOx = nitrogen oxides
PM = particulate matter; number refers to size of PM in microns in diameter or smaller
Source: EDCAQMD 2002, CARB 2016

Although EDCAQMD does not have an adopted quantitative threshold for PM_{10}, Chapter 4 (as it relates to construction emissions) and Chapter 6 (as it relates to operational emissions) of the EDCAQMD Guide to Air Quality Assessment (EDCAQMD 2002) provide guidance on determining significance of PM_{10} emissions. In general, EDCAQMD guidance indicates that if ROG and NO_X emissions are not significant then it can be assumed that other components of exhaust emissions, in this case PM_{10}, are also not significant. With respect to fugitive dust PM_{10} emissions, EDCAQMD recommends determining significance based on the consistency of the Project with dust control measures in EDCAQMD Rule 223.

4.3.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
a) Conflict with or obstruct implementation of the applicable air quality plan?	Less Than Significant Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?	Less Than Significant Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	Less Than Significant Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	Less Than Significant Impact

4.3.4 Answers to CEQA Checklist Questions

a) Would the Project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact

At the local level, air quality is managed through land use and development planning practices, which are implemented in the region through the general planning process. As noted above, EDCAQMD is responsible for establishing and enforcing local air quality rules and regulations that address the requirements of federal and state air quality laws. EDCAQMD and TRPA are responsible for implementing strategies for air quality improvement and recommending mitigation measures for new growth and development. The EDCAQMD's Guide to Air Quality Assessments, adopted in 2002, provides thresholds of significance for the Project area and guidance for mitigation measures required for each threshold (El Dorado County 2002). Given the modeled air quality emissions output from construction and operation of the Project (as summarized below under 4.3.4.b) and the amount of construction equipment and duration of the Project, the Project would not exceed applicable thresholds. As a result, it would not impede, conflict with, or obstruct implementation of regional air quality planning efforts or continued progress towards attainment for O_3 and PM_{10}. Therefore, impacts would be less than significant, and no mitigation is required.

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

Less Than Significant Impact

As noted above, the LTAB is designated as non-attainment for O_3 and PM_{10} with respect to the CAAQS and as unclassified for O_3 and PM_{10} with respect to NAAQS. As shown in **Tables 2** and **3** (below), the

Project would result in construction and operational emissions that would not exceed the thresholds of significance adopted by EDCAQMD.

Construction

Construction emissions are described as "short term" or temporary in duration. Construction-related activities would result in Project-generated emissions of ROG, NO_X, and PM_{10} from site preparation, grading, heavy off-road equipment, material delivery, worker commute vehicle travel to and from the site, building construction, paving, architectural coating, and other related activities. Emissions of NO_X would be primarily associated with off-road construction equipment exhaust; secondary sources would include on-road trucks for the hauling of materials and equipment, as well as worker vehicles for commuting. Worker commute trips in gasoline-fueled vehicles and the application of architectural coatings would be the principal sources of ROG, with additional ROG coming from off- and on-road construction equipment. Emissions of fugitive PM_{10} dust are associated primarily with ground disturbance activities during site preparation, excavation, and grading and may vary as a function of such soil parameters as silt content, soil moisture, wind speed, and the area of disturbance. Exhaust emissions from diesel equipment and worker commute trips also contribute to short-term increases in PM_{10}, but to a much lesser extent than fugitive dust emissions.

Temporary construction-related activities for the Project would include demolition of the existing on-site facilities, site preparation, grading, building construction, paving, and architectural coatings. The emissions from construction activities were calculated by using California Emissions Estimator Model (CalEEMod) Version 2020.4.0 with design information provided by the applicant and CalEEMod defaults where the information was not available. CalEEMod default phasing and duration of construction activities were modified to account for the conceptual phasing of construction, as well as to conservatively assume that interior painting and paving activities may occur concurrently. In addition, the construction controls and associated emissions reductions were incorporated (to the extent feasible) into the air quality modeling for the Project.

The modeling evaluates air quality emissions from construction of new/replacement buildings within the Project area. The construction worker trip numbers and lengths are assumed as CalEEMod defaults. **Table 2** summarizes the estimated construction-related annual ozone precursor and PM_{10} emissions over 24 months of the construction period. Refer to **Appendix A** for detailed modeling assumptions and results. The maximum daily emissions would not exceed the EDCAQMD adopted threshold of significance, therefore Project construction activities would not have a substantial impact on any air quality standard for which the region is in non-attainment. Also, the Project would not have substantial fugitive dust emissions, as Project construction would be conducted in a manner consistent with Rule 223-1 as required by EDCAQMD. Therefore, the impact would be less than significant. No mitigation is required.

Table 2. Projected Construction Emissions – Pounds Per Day Without Mitigation

	ROG	NO_X	PM_{10}
2027	<1	6	30
2028	32	4	30
2029	32	3	12
Maximum Daily Emissions	32	6	30
EDCAQMD Thresholds	82	82	--
Exceed EDCAQMD Thresholds?	No	No	No

Notes: See Appendix A for details on model inputs, assumptions, and Project-specific modeling parameters; Construction controls provided in Section 2.5 are reflected in modeling outputs as mitigations but are incorporated into the Project; EDCAQMD = El Dorado County Air Quality Management District; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; -- = no adopted threshold.

Operation

Project operation would result in the generation of long-term operational emissions of ROG, NO_X, and PM_{10} because of area-wide, energy, and mobile sources. Area-wide sources would include the periodic application of architectural coatings, the generation of ROG from the use of consumer products, and landscaping. Mobile-source emissions of criteria air pollutants and precursors would result from vehicle trips generated by employee commute trips, and visitor trips. As noted above in Section 2.4 (Project Features), the Project is not anticipated to increase boat usage (and associated fuel consumption and emissions). For estimating emissions from mobile sources, the change in vehicle miles traveled (VMT) due to the repurposing of the existing facilities and new construction was used to evaluate emissions related to operations. As stated in Section 4.17 (Transportation), the Project would generate an estimated 218 additional daily VMT. Operational emissions of criteria air pollutants and precursors due to implementation of the Project were calculated using CalEEMod and are based on the proposed land use type and number of trips (**Appendix A**). As shown in **Table 3**, Project's operational emissions would not exceed EDCAQMD's thresholds of significance. Hence the impact would be less than significant. No mitigation is required.

Table 3. Projected Operational Emissions – Pounds Per Day Without Mitigation

	ROG	NO_X	PM_{10}
Area	5	<1	--
Energy	<1	2	<1
Mobile	<1	<1	5
Total Daily Emissions	6	2	5
EDCAQMD Thresholds	82	82	--
Exceed EDCAQMD Thresholds?	No	No	No

Notes: See Appendix A for details on model inputs, assumptions, and Project-specific modeling parameters; EDCAQMD = El Dorado County Air Quality Management District; ROG = reactive organic gases; NO_X = oxides of nitrogen; PM_{10} = respirable particulate matter with an aerodynamic diameter of 10 micrometers or less; -- = no adopted threshold.

c) Would the Project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact

Construction activities associated with the Project would result in temporary, intermittent emissions of diesel PM from the exhaust of off-road equipment used during site preparation and construction and on-road heavy-duty trucks. On-road diesel-powered haul trucks traveling to and from the construction area to deliver materials and equipment are less of a concern because they do not operate at any 1 location for extended periods of time such that they would expose a single receptor to excessive diesel PM emissions. Based on the construction-related emissions modeling conducted (see **Appendix A**), maximum daily emissions of exhaust PM_{10} would be less than 1 lb/day during construction. A portion of these emissions would be due to haul trucks traveling to and from the Project area and would not occur within the Project area. In addition, all construction activities would occur during daytime hours, which is when many residents located to the north and west would typically not be at home, thus limiting exposure from construction-related emissions to these receptors. As a result, construction-related TAC emissions associated with the Project are not anticipated to expose sensitive receptors to an incremental increase in cancer risk greater than 10 in 1 million or a hazard index greater than 1.0. The low exposure level reflects the (i) relatively low mass of diesel PM emissions that would be generated by construction activity within the Project area; (ii) the relatively short duration of diesel PM-emitting construction activity within the Project area; and (iii) the highly dispersive properties of diesel PM. Further, the Project would not involve the operation of any land uses that would be considered major sources of substantial pollutant concentrations, including diesel PM. As such, the Project would not

generate substantial pollutant concentrations during operation. This impact would be less than significant. No mitigation is required.

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

Less Than Significant Impact

The Project would produce localized odors during construction activities from the use of heavy-duty diesel equipment, and application of architectural coatings. The use of the equipment would be intermittent and temporary, and it would dissipate rapidly from the source with an increase in distance. In addition, construction activities would not occur in the vicinity of any particular receptor for an extended period. Since the Project's land use does not include any of the above-named odor sources of concern, it would not have any long-term odor impact. Further, EDCAQMD Rule 205-Nuisance prohibits the discharge of quantities of air contaminants or other material that can cause injury, detriment, nuisance, or annoyance to any considerable number of persons. This would protect citizens from odors should they occur. Hence, this impact would be less than significant. No mitigation is required.

4.4 Biological Resources

The impact analysis presented in this section is based primarily on the Tahoe Keys Marina Redevelopment Project Biological Resources Assessment (BRA) prepared by NCE for the applicant. The BRA, which is included as **Appendix B**, provides additional data and information related to the evaluation of Project impacts.

4.4.1 Environmental Setting

Reconnaissance-level field surveys for the Project were completed on July 17 and 18, 2024; May 19 and 20, 2025; and October 29, 2025. These surveys focused on identifying vegetation types, identifying whether or not critical wildlife habitats are present within the Project area, and developing an inventory of possible wildlife and botanical resources. Within the Project area, the survey identified heavily disturbed conditions resulting from existing marina operations, paved and unpaved access roads, parking areas, and shoreline modification. Vegetation within the Project area is characterized primarily by landscaped and ruderal species, with patches of riparian vegetation occurring along the marina shoreline and adjacent lagoon edges. Big sagebrush shrubland was identified along the berms of the trailer storage area with forbs and ruderal species in the disturbed, undeveloped parcel along Venice Drive East. In terms of aquatic resources, wetland plant species and standing water were present within the regularly maintained stormwater basin, and the marina lagoon was identified as perennial open water (NCE 2025a). A formal wetland delineation of the potential aquatic resources within the Project area was conducted on July 30, 2024, and verified by USACE on September 19, 2025 (NCE 2025b). The 2024 wetland delineation was then supplemented in 2025 to include potential disturbance associated with utility work along Venice Drive East and Tahoe Keys Boulevard (NCE 2025b).

A Biological Study Area (BSA) (i.e., a 1-mile buffer around the Project area) was established for the purposes of database research and background review of the Project. Within the BSA, a search of the CDFW California Natural Diversity Database (CNDDB) was conducted. The query identified 13 special status species, including American goshawk (*Accipiter atricapillus*), bank swallow (*Riparia riparia*), Great Basin rams-horn (*Helisoma newberryi*), Lahontan Lake tui chub (*Siphateles bicolor pectinifer*), Lahontan mountain sucker (*Catostomus lahontan*), Lake Tahoe amphipod (*Stygobromus lacicolus*), Lake Tahoe benthic stonefly (*Capnia lacustra*), Lake Tahoe stygobromid (*Stygobromus tahoensis*), mountain whitefish (*Prosopium williamsoni*), northern leopard frog (*Lithobates pipiens*), Tahoe yellow cress (*Rorippa subumbellata*), western bumble bee (*Bombus occidentalis*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), that have been historically identified within the BSA. During the reconnaissance-level surveys, a bank swallow and yellow-headed blackbird were observed east of the Project area in the Upper Truckee Marsh. Habitat in the Project area is too heavily disturbed to support the species identified in the CNDDB, but bank swallow and yellow-headed blackbird are present in the BSA and may occur in the Project area as transients while flying or foraging. No nesting habitat for these species is present in the Project area. A TRPA special interest species, osprey (*Pandion haliaetus*), was observed during the reconnaissance-level surveys in the BSA flying over the Upper Truckee Marsh east of the Project area. Osprey nesting habitat is absent in the Project area, and no potential nests were

observed in the vicinity during the reconnaissance-level surveys. There are no osprey nests in the BSA as documented by TRPA (NCE 2025a).

A USFWS Information for Planning and Consultation (IPaC) report and species list was accessed through the IPaC website for the Project on July 3 and November 11, 2024. The IPaC report species list identified the potential for 7 species including: North American wolverine (*Gulo gulo luscus*), Sierra Nevada red fox (*Vulpes vulpes necator*), California spotted owl (*Strix occidentalis occidentalis*), northwestern pond turtle (*Actinemys marmorata*), Sierra Nevada yellow-legged frog (SNYLF) (*Rana sierrae*), Lahontan cutthroat trout (LCT) (*Oncorhynchus henshawi*) and monarch butterfly (*Danaus plexippus*). No critical habitat for these species is present within the BSA or Project area. During the reconnaissance-level field surveys, potential habitats for SNYLF and LCT were identified in the BSA and Project area, but these species were not observed. In addition, suitable habitat for SNYLF is identified in the BSA and Project area per Lake Tahoe Basin Management Unit GIS data (NCE 2025a). No other species identified in the IPaC report, or other federally listed/protected species, were observed during the reconnaissance-level surveys (NCE 2025a).

Two bald eagles, which are protected under the Bald and Golden Eagle Protection Act, were observed within the BSA, and 1 briefly flew over the Project area during the survey on July 18, 2024. There are no bald eagle nest sites in the BSA as documented by TRPA, and potential nest sites in the vicinity were not observed during the reconnaissance-level surveys (NCE 2025a).

A search of the California Native Plant Society rare plant inventory identified 14 California Rare Plant Rank 1 and 2 species with ranges that could overlap with the Project area. Habitat for these species was assessed during the reconnaissance-level surveys and it was determined 6 species are absent/precluded, 7 species are unlikely to occur, and 1 species, Tahoe yellow cress, has potential to occur based on elevation ranges, habitat requirements, and conditions in the Project area. Tahoe yellow cress was determined to have potential to occur considering the presence of lake margin habitat and proximity of CNDDB and Tahoe Yellow Cress Adaptive Management Working Group monitoring occurrences around the Project area. Lake margin habitat conditions in the Project area are developed, heavily disturbed, and/or artificial and provide limited habitat for the species. No Tahoe yellow cress or other special status plant species were observed during the reconnaissance-level surveys (NCE 2025a).

With respect to wetlands and WOUS, the marina lagoon, which borders the Project area to the north and west, would qualify as a jurisdictional feature and water of the U.S. due to its hydrologic connection to Lake Tahoe. The existing stormwater basin and ditch located within the southeast corner of the site is considered non-jurisdictional, both as a water of the U.S. and as a water of the State. This is primarily due to its lack of hydrologic connection to an aquatic resource and because it was built in upland habitat (NCE 2025b).

4.4.2 Regulatory Setting

Federal

Endangered Species Act

The federal Endangered Species Act (ESA) protects plants and wildlife that are listed as endangered or threatened by the USFWS. Section 9 of the ESA prohibits the taking of endangered wildlife, where taking is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). This statute also governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land in knowing violation of state law.

Under Section 7 of the ESA, federal agencies are required to consult with the USFWS and/or National Oceanic and Atmospheric Administration–National Marine Fisheries Service if their actions, including permit approvals or funding, could adversely affect a federally listed species (including plants) or its critical habitat.

Clean Water Act

The USACE Regulatory Branch regulates activities that discharge dredged or fill materials into WOUS, which includes wetlands under Sections 401 and 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act.

Section 401 requires that an applicant proposing to conduct any activity that may result in a discharge to a WOUS must apply for and secure a Water Quality Certification prior to construction activities. The Lahontan RWQCB administers Section 401 Water Quality Certifications in the region.

Migratory Bird Treaty Act

The MBTA makes it unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law applies to the removal of nests (such as swallow nests on bridges) occupied by migratory birds during the breeding season. California Fish and Game Code (FGC) Section 3500 also prohibits the destruction of any nest, egg, or nestling.

State

California Endangered Species Act

Pursuant to the California Endangered Species Act (CESA) and FGC Section 2081, an Incidental Take Permit from CDFW is required for projects that could result in the "take" of a State listed threatened or endangered species. Under the CESA, "take" is defined as an activity that would directly or indirectly kill an individual of a species proposed for listing (called "candidates" by the state). FGC Section 2080 prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Act provides the State with very broad authority to regulate "waters of the state" (which are defined as any surface water or groundwater, including saline waters). The State Regional Water Quality Control Board is granted ultimate authority over water quality policy in the state of California. Before allowing discharges that may affect the quality of waters of the state, a Report of Waste Discharge must be filed with the Lahontan RWQCB.

California Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (FGC Sections 1900 – 1913) was created to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by CDFW. The Fish and Wildlife Commission has the authority to designate native plants as "endangered" or "rare" and to protect endangered and rare plants from take. CESA provided further protection for rare and endangered plant species, but the NPPA remains part of the FGC.

California Fish and Wildlife

The CDFW is responsible for protecting and conserving fish and wildlife resources, and the habitats upon which they depend. Section 1602 of the FGC requires that the CDFW review any project that may do 1 or more of the following:

- Divert or obstruct the natural flow of any river, stream, or lake.
- Change the bed, channel, or bank of any river, stream, or lake.
- Use material from any river, stream, or lake.
- Deposit or dispose of material into any river, stream, or lake.

Under the Lake and Streambed Alteration (LSA) Program, entities are required to notify CDFW of proposed impacts through an LSA Notification. If it is determined by CDFW that the activity, as described in an LSA Notification, would substantially alter a river, stream, or lake, and may substantially adversely affect existing fish or wildlife resources, then an LSA Agreement must be prepared. The LSA Agreement includes necessary mitigation measures to protect fish and wildlife resources from significant impacts.

Regional

Tahoe Regional Planning Agency Code of Ordinances

The TRPA Code of Ordinances includes requirements for protection and management of "sensitive plants" and "uncommon plant communities" and regulations regarding tree removal (TRPA Code Chapter 61). The TRPA Code of Ordinances also includes protection of wildlife habitat (TRPA Code Chapter 61), and of certain animal species known as "special interest species" (TRPA Code Chapter 62). TRPA-designated special interest species are species that are "locally important because of rarity or other public interest, and threatened, endangered, or rare species as designated under state and federal endangered species acts."

Updated in 2025, the TRPA Regional Plan identifies goals for the region and policies that establish the strategies necessary to achieve those goals. This document integrates the requirements of the Bi-State Compact, the thresholds, related plans and legal requirements, and the public's input. As a result, the

Regional Plan provides coordinated and integrated direction for the TRPA's Code of Ordinances and implementation programs.

TRPA Code regulates the removal of trees under Section 61.1, including requirements for tree protection during construction and standards for soil and vegetation protection during tree removal.

Local

Chapter 6.50 of the South Lake Tahoe City Code regulates how and when tree removal is allowable within the City. It establishes that a permit is required to cut down, destroy, remove, or move any tree with a trunk diameter of 6 inches or greater, and that tree removal must also follow TRPA Code requirements.

4.4.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Less Than Significant Impact with Mitigation Incorporated
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	Less Than Significant Impact
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?	Less Than Significant Impact
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 Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	Less Than Significant Impact
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

4.4.4 Answers to CEQA Checklist Questions

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

Less Than Significant Impact with Mitigation Incorporated

The Project involves redevelopment of the Project area with new, modernized facilities. The existing stormwater basin would be removed and redeveloped as a parking lot, and existing landscaping vegetation (except along the site perimeter) would be replaced. In addition, the Project would include replacement of the existing bulkhead and relocation of the existing boat ramp. As noted above, the majority of the Project area is heavily disturbed and developed with existing structures. As such, it does not provide suitable habitat for special status terrestrial species, even the 13 species that were identified above as having historically occurred within the BSA and Tahoe yellow cress, which was observed northeast of the Project area. As no suitable habitat for special status species is located within the Project area, direct impacts to or modifications to habitat for special status species would not occur as a result of Project implementation.

The portions of the Project area that include the marina lagoon are not considered suitable habitat for special status aquatic species due to the continued presence and movement of watercraft and ongoing maintenance activities within the marina, which would discourage use by special status species. Additionally, the Project area does not present suitable habitat for spawning and/or nursery activities due to the lack of pools near cover and velocity breaks, well-vegetated stream banks, and riffle-run areas with a silt-free rocky substrate. However, the presence of LCT within the marina lagoon cannot be precluded. The Project would require certain in-water construction during replacement of the existing sheet pile bulkhead for approximately 1,600 linear feet and replacement/relocation of the existing boat ramp. In-water work will include the use of turbidity curtains or temporary sheet piles surrounding the specific work areas to control turbidity. Nonetheless, if individuals are present, impacts to LCT could occur as a result of noise, visual, sound pressure, and/or turbidity-related disturbances during in-water work for the Project.

In addition, the existing landscaping (e.g., trees) located throughout and adjacent to the Project area (predominantly to the east and south) may provide potential nesting habitat for migratory birds protected under the MBTA and FGC. If a migratory bird, regardless of its federal or state status, were to nest in trees on or near the site prior to or during Project remediation activities, such activities could result in the abandonment of active nests or direct mortality to these birds. Additionally, although the project area does not present suitable habitat for Tahoe yellow cress, potential establishment within existing landscape areas of the site cannot be precluded. Due to the potential for disturbance of special status birds, Tahoe yellow cress, and LCT during Project construction, impacts would be potentially significant.

Mitigation Measures

BIO-1: Project activities that could result in nesting migratory bird and raptor take, such as removal of vegetation or man-made structures and conducting activities that may cause excessive noise, vibrations, or otherwise have potential to cause nest abandonment (e.g., piling), will be performed outside the migratory bird and raptor nesting season (typically February 15th through September 15th). September 16th through February 14th is a suitable timeframe for completing such activities that pose a risk to nesting birds and raptors. If these activities are to occur during the nesting season, the Project proponent will require that a qualified biologist conduct a nesting bird and raptor survey no more than 14 days prior to the beginning of those activities within a recommended minimum 500-foot buffer of the Project area. The survey results shall be submitted to CDFW prior to the start of construction activities. If no active nest is found, no further action will be required. If an active nest is found and avoidance is not feasible, construction or other disturbance activity will initially be prohibited within 500 feet of a raptor nest and 250 feet of a non-raptor nest to minimize disturbance until the nest is no longer active. A qualified biologist will monitor the nest during project activities, to determine whether the exclusionary buffer is appropriately sized to minimize impacts to the nest during the start of disturbance activities. The qualified biologist will have the authority to stop work if project activities cause the nesting birds to vocalize, make defensive flights, displace from a brooding position, or fly off the nest. The buffer may be increased or decreased depending on the birds' level of tolerance to the disturbance. The results of the monitoring efforts and the professional judgment of the qualified biologist will be used to determine whether the exclusionary buffer can be modified or if other performance-based modifications are necessary. Other performance-based modifications may include visual or noise screens between the nest and project activities. The exclusionary buffer and/or other performance-based modifications will remain in place until the chicks have fledged or the nest is no longer active, as determined by a qualified biologist.

BIO-2: A preconstruction survey for special status plants and wildlife, including Tahoe yellow cress, SNYLF, LCT, and other species identified in the BRA/LSAA, shall be conducted by a qualified biologist no more than 3 days prior to the onset of construction activities. If any special status species (or sign of presence) are identified, the Project proponent shall consult with TRPA, USFWS, and/or CDFW, as appropriate depending on species status, to determine and implement appropriate measures to achieve no net loss of occupied habitat or individuals. Additional measures may include, but are not limited to, preserving and enhancing existing populations, creating offsite populations through seed collection or transplantation, and/or restoring or creating suitable habitat in sufficient quantities to achieve no net loss of occupied habitat and/or individuals. Potential mitigation sites could include suitable locations outside of the Project area but within Cove East/Upper Truckee Marsh.

BIO-3: A qualified biologist shall conduct environmental awareness training for all construction personnel. The training shall include basic visual identification of special status species, required preconstruction measures, general measures that are being implemented to conserve the species as they relate to the Project, penalties for non-compliance, and the boundaries of the

Project area and of the permitted disturbance zones. Supporting materials containing training information shall be prepared and distributed. Upon completion of training, all construction personnel shall sign a form stating that they have attended the training and understand the protection measures and consequences of permit/take violations. Proof of this instruction shall be kept on file with the Project proponent. The Project proponent or designated biologist shall provide CDFW with a copy of the training materials and copies of the signed forms indicating that training has been completed. If new construction personnel are added to the site, the crew foreman shall ensure that the personnel receive the mandatory training from the qualified or designated biologist before starting work.

BIO-4: To prevent the spread of AIS, any construction equipment and materials that enter or leave the lagoon will be inspected for AIS, and if needed, decontaminated prior to the start of the Project. Decontamination protocol will be implemented in a manner consistent with TRPA's Aquatic Invasive Species Management Program. Equipment and materials will be cleaned, free of dirt, vegetation material, and other debris prior to entering the lagoon. Re-inspection and decontamination of equipment and materials at the end of the Project will also be conducted to avoid spreading AIS from TKM to other locations. As the bulkhead is being removed, visual inspections will be conducted, and any attached plants or invertebrates will be removed and disposed of in a secure manner (e.g., dumpster). Floating plant fragments resulting from the Project work will be collected by hand or skim and disposed of in a secure manner. Bulkhead sections will be placed on pavement to dry for 1 week. If a rain event occurs during this drying time, the drying time will need to be restarted. If temperatures reach below freezing for 6 continuous hours during this drying time, this will count as a sufficient freeze period to kill AIS, and the drying period can be suspended. Any drainage inlets near where materials are placed for drying will be temporarily modified to prevent the flow of AIS contaminated water from flowing back into the lagoon.

BIO-5: Biological monitoring by a qualified biologist will be conducted weekly, or at an interval otherwise specified in permits acquired as part of the Project, to perform nest checks, search for bald eagles, and monitor for special status species including LCT, SNYLF, and other special status species with potential to occur. The monitoring is to ensure no take of special status species occurs during Project implementation and to ensure all permit conditions are followed. The biologist will have authority to stop any Project activity that may impact special status species in the Project area. Monitoring reports will be provided to the Project proponent weekly, or as otherwise required by the permits for the Project.

Significance After Mitigation

With implementation of Mitigation Measures BIO-1 through BIO-5, potential impacts to special status species would be reduced to a less than significant level because Mitigation Measures BIO-1 and BIO-2 would require schedule considerations or preconstruction surveys to ensure absence of special status species. Further, Mitigation Measure BIO-3 would require that all construction personnel undergo environmental awareness training, which would reduce the potential for unintended impacts on special status species, along with monitoring by a qualified biologist as part of BIO-5. Mitigation Measure BIO-4

would also require inspection and (as needed) decontamination of any equipment in order to prevent the introduction of invasive species.

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

Less Than Significant Impact

As discussed above, the Project area represents heavily disturbed habitat both within the marina lagoon and on land. Riparian habitat and other sensitive natural communities are not present within the Project area, and impacts would be less than significant. No mitigation is necessary.

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

Less Than Significant Impact

As noted above, the marina lagoon is considered a jurisdictional wetland feature (i.e., water of the U.S. and state). The Project would involve replacement of the bulkhead surrounding the marina and the existing boat launch, both of which would require in-water work within the jurisdictional feature. Both components of the Project would be in-kind replacements, and the Project is expected to require regulatory permits, pursuant to Clean Water Act Sections 401 and 404 and FGC. As noted in Section 2.6 (Responsible and Trustee Agencies) above and prior to Project implementation, the applicant would obtain an LSAA from CDFW, 404 permit from USACE, and 401 certification from the Lahontan RWQCB. In compliance with the Construction General Permit, a SWPPP would be developed for the Project by a qualified SWPPP professional. The objectives of the SWPPP are to identify pollutant sources that may affect the quality of stormwater associated with construction activity and identify, construct, and implement stormwater pollution prevention measures to reduce pollutants in stormwater discharges during and after construction. Therefore, the SWPPP would include a description of potential pollutants, the management of dredged sediments, and hazardous materials present on the site during construction (including vehicle and equipment fuels). The SWPPP would also include details of how BMPs for sediment and erosion control would be implemented to prevent sediment runoff into the marina lagoon. Prior to the issuance of grading and building permits by the City of South Lake Tahoe, the applicant shall provide evidence that the permits have been obtained from CDFW, USACE, and Lahontan RWQCB. Through compliance with existing regulations (e.g., Clean Water Act, California Fish and Game Code, and SWPPP requirements), the Project would minimize potential impacts to wetland features where possible and compensate for any permanent impacts to jurisdictional features to ensure no net loss of wetland functions or acreage. As a result, impacts would be less than significant. No mitigation is required.

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

Less Than Significant Impact

As described above, LCT have limited potential to occur within the Project area. In addition, habitat quality is low due to the disturbed condition of the marina lagoon and lack of suitable habitat nearby. Further, there are no CNDDB habitat corridors mapped in the area (NCE 2025a). Given the degraded habitat conditions and limited connectivity, the Project does not represent wildlife migratory or nursery habitat. While there is a potential for some nesting activity to occur in the vicinity, the Project area does not present optimal conditions for nesting due to lack of suitable nesting habitat and frequent human activity, and the potential for such species to occur within the Project area after project construction would be similar if not greater than existing conditions (due to the proposed on-site landscaping as part of the Project.) As a result, the Project would not substantially affect wildlife movement or fish passage (NCE 2025a). This impact would be less than significant, and no mitigation is required.

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

Less Than Significant Impact

The Project would comply with the TRPA Code of Ordinances that pertain to the protection of biological resources, including tree removal. As noted above, trees within the Project area are associated with existing landscaping and limited to the periphery of the site. In total, approximately 30 trees within the Project area may be removed during construction. Trees planned for removal would need to be approved by TRPA and the City depending on their size, measured as diameter at breast height. Specific provisions for tree removal in the Tahoe Basin are provided in the following chapters and sections of the TRPA Code (TRPA 2012): Chapter 61, Vegetation and Forest Health, Section 61.1, Tree Removal, Section 61.3.6, Sensitive and Uncommon Plant Protection and Fire Hazard Reduction, and Section 61.4, Revegetation; Chapter 36, Design Standards; Chapter 33, Grading and Construction, Section 33.6, Vegetation Protection During Construction; and Chapter 62, Wildlife Resources. The Project would also comply with TRPA requirements related to vegetation protection controls during construction, including limiting the area of disturbance to within 12 feet of facility construction (including parking) and installation of high visibility fencing (refer to Section 2.5.2 above), and would only remove vegetation necessary for Project implementation. The Project would require the removal of approximately 30 trees; however, per Chapter 61 of the TRPA Code, less than 100 trees removed does not constitute substantial tree removal. As such, preparation of a harvest or tree removal plan would not be required. As the Project would not constitute substantial tree removal, the Project would comply with appropriate provisions regarding tree removal, and would provide additional landscaping with native vegetation, no conflicts with local policies or ordinances protecting biological resources are anticipated. Impacts would be less than significant, and no mitigation is required.

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

No Impact

There are no adopted Habitat Conservation Plans, Natural Community Conservation Plans, or other regional Habitat Conservation Plans applicable to the Project area. Therefore, no conflicts would occur. No impact would occur, and no mitigation is required.

4.5 Cultural Resources

4.5.1 Environmental Setting

The Project area is located in the City of South Lake Tahoe, El Dorado County, California, within the developed Tahoe Keys subdivision on the southern shore of Lake Tahoe. The Project area lies within a built and previously disturbed environment that contains a mix of marina facilities, paved roads, and associated open space.

In 2025, a cultural resources evaluation was conducted for the Project. This included California Historical Resources Information System records search at the North Central Information Center, a Sacred Lands File Records Search with the Native American Heritage Commission, Native American tribal consultation (see Section 4.18), an intensive pedestrian survey, and recordation of any identified resources. An associated Cultural Resources Inventory Report (CRIR) was prepared to detail results of the screening efforts, establish an area of potential effect (APE) for the Project, and identify prehistoric, ethnohistoric, and/or historic period archaeological resources within or immediately adjacent to the APE (NCE 2025c).

For the purposes of the cultural resources study, NCE defined an APE encompassing approximately 154.9 acres, including an Area of Direct Impacts and an Area of Indirect Impacts. The Area of Direct Impacts consists of approximately 25.5 acres on the eastern side of the marina, encompassing existing upland facilities, boat storage areas, and Venice Drive East between the marina entrance and the intersection with Tahoe Keys Boulevard. The Area of Indirect Impacts encompasses the surrounding areas where visual impacts of the Project may occur, including the Tahoe Keys residential blocks along Tahoe Keys Boulevard and Ala Wai Boulevard to the west, and portions of the Truckee Marsh to the south and east.

The records search conducted at the North Central Information Center identified 2 previously recorded cultural resources within the APE: a historic-age sewage pump station located on Tahoe Keys Boulevard (P-09-006147), and portions of a historic fence line within the Truckee Marsh (P-09-003465). Both resources had been previously evaluated as not individually eligible for the California Register of Historical Resources (CRHR).

NCE conducted a pedestrian survey of the APE on February 25 and March 4, 2025. The survey documented 35 architectural resources and 1 archaeological resource. The architectural resources primarily consist of buildings, structures, and landscape features associated with the mid-twentieth-century Tahoe Keys residential and marina development. Because the majority of these resources share a common period of construction, ownership, or purpose, they were evaluated collectively as potential contributors to a single historic district.

NCE determined none of the individual architectural or archaeological resources is eligible for individual listing in the National Register of Historic Places (NRHP) or the CRHR (NCE 2025c). The resources within the Project area were also evaluated for their potential to contribute to a potential historic district associated with the broader Tahoe Keys development. The CRIR did not assess whether the Tahoe Keys development was eligible but solely focused on whether on-site structures would be considered contributors (NCE 2025c). All on-site structures were determined to not be contributors because of their lack of integrity (NCE 2025c).

4.5.2 Regulatory Setting

Federal

The National Historic Preservation Act (1966) defined the role and responsibilities of the federal government in historic preservation and established the NRHP. It also directs agencies to identify and manage historic properties under their control, to undertake actions that would advance its provisions and avoid actions contrary to its purposes, to consult with others while carrying out historic preservation activities, and to consider the effects of their actions on historic properties.

State

The CRHR is a guide to cultural resources that must be considered when a government agency undertakes a discretionary action subject to CEQA. The CRHR helps government agencies identify and evaluate California's historical resources and indicates which properties are to be protected, to the extent prudent and feasible, from substantial adverse change (PRC § 5024.1(a)). Any resource listed in, or eligible for listing in, the CRHR must be considered during the CEQA process.

Regional

Tahoe Regional Planning Agency Code of Ordinances

TRPA Code Section 67.3 outlines requirements for the accidental discovery of resources during construction and requirements for protection of known resources.

Local

City of South Lake Tahoe General Plan

The Natural and Cultural Resources Element of the City General Plan outlines policies for the City to achieve its vision for natural and cultural resource protection. The following policies apply to the Project:

- NCR-4.1: Significant Site Preservation. The City shall preserve sites of historical, cultural and architectural significance within the City, consistent with the Secretary of the Interior Standards for Treatment of Historic Properties.
- NCR-4.2: Historic Landmark Designation. The City shall designate structures or sites having special character or special historic, architectural, or aesthetic interest or value as local historic landmarks. The City shall protect local historic landmarks from demolition and inappropriate alterations, and develop criteria for evaluating the appropriateness for sites or structures to be designated as local historic landmarks, and provide incentives for preservation of local historic landmarks.
- NCR-4.3: Archaeological Investigations. The City shall require archaeological investigations for all applicable discretionary projects, in accordance with CEQA regulations, for areas not previously surveyed and/or that are determined sensitive for cultural resources (e.g., undeveloped parcels near water features). The City shall require the preservation of discovered archaeologically-significant resources (as determined based on TRPA, state, and federal standards by a qualified professional) in place if feasible, or provide mitigation (avoidance,

excavation, documentation, curation, data recovery, or other appropriate measures) prior to further disturbance.

4.5.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
a) Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?	Less Than Significant Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?	Less Than Significant Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	Less Than Significant Impact

4.5.4 Answers to CEQA Checklist Questions

a) Would the Project cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?

Less Than Significant Impact

The Project would involve demolition and redevelopment of existing structures and buildings within TKM (excluding the existing cell tower), as well as replacement of the existing bulkhead. As discussed above, the CRIR for the Project determined that there are no eligible historical resources within the Project area, including the 3 on-site buildings, supporting structures (e.g., boat launch), and the existing bulkhead. While the existing bulkhead is of historic age, it is not a historic structure in and of itself. Further, its replacement would not significantly impact the visual qualities or context of the area (i.e., the broader Tahoe Keys development) as it will be a replacement in kind (NCE 2025c). Therefore, the Project would not result in the removal, alteration, or modification of any historical resources, and impacts would be less than significant. No mitigation is required.

b) Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

Less Than Significant Impact

Based on the archival research and site reconnaissance conducted as part of the CRIR, 1 archaeological resource of historic age was recorded within the Area of Indirect Impacts. This resource was determined to not be eligible for listing on either the CRHR or NRHP (NCE 2025c). As a result, impacts to known archaeological resources are not anticipated as a result of Project implementation.

In addition and with respect to previously undiscovered archaeological resources, the majority of the Project area has undergone extensive past disturbance as part of the Tahoe Keys development. The soil underlaying most of the Project area is fill which was placed in its current configuration in the mid-

1960s. Given the previously disturbed conditions and the findings of the CRIR, the potential for encountering intact archaeological materials is considered low (NCE 2025c).

Because there are no identified archaeological resources eligible for listing on either the CRHR or NRHP within the Project area and because the Project would comply with federal, state, TRPA, and City General Plan policies developed to avoid or mitigate impacts to unanticipated cultural resources during construction, the Project would not cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Section 15064.5; therefore, impacts would be less than significant. No mitigation is required.

c) Would the Project disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact

There are no known past cemeteries or burials within the Project area or immediate vicinity. However, because earthmoving activities associated with Project construction would occur, there is potential to encounter buried human remains or unknown cemeteries in areas with little or no previous disturbance. California law recognizes the need to protect Native American human burials, skeletal remains, and items associated with Native American burials from vandalism and inadvertent destruction. The procedures for the treatment of Native American human remains are contained in California Health and Safety Code Section 7050.5 and California PRC Section 5097, which specify required protocol to implement when human remains are discovered. If human remains are discovered, the codes require that work cease within the immediate area and the County Coroner be notified. If the remains are determined to be Native American, the coroner will notify the NAHC, and the procedures outlined in CEQA Section 15064.5(d) and (e) shall be followed including notification of the most likely descendent.

Compliance with California Health and Safety Code Section 7050.5 and California PRC Section 5097 would provide an opportunity to avoid or minimize the disturbance of human remains, and to appropriately treat any remains that are discovered. As a result, the Project would not cause substantial alteration, substantial adverse effect to, or loss of these resources and their associated ethnic and cultural values. Impacts to human remains would be less than significant, and no mitigation is required.

4.6 Energy

4.6.1 Environmental Setting

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. One-third of the energy consumed in California is natural gas. In 2014, approximately 35 percent of natural gas consumed in the State was used to generate electricity. Residential land uses represented approximately 17 percent of California's natural gas consumption with the balance consumed by the industrial, resource extraction, and commercial sectors (U.S. Energy Information Administration 2017). Power plants in California generate approximately 78 percent of the in-state electricity demand, with power plants in the Pacific Northwest and Southwestern U.S. generating the remaining electricity (California Energy Commission 2024). The contribution of in- and out-of-state power plants depends on the precipitation that occurred in the previous year, the corresponding amount of hydroelectric power that is available, and other factors.

California relies on energy conservation, waste reduction practices, sustainable buildings, and innovative land use planning to reduce energy impacts. The means of achieving this goal include:

- Decreasing overall per capita energy consumption.
- Decreasing reliance on natural gas and oil.
- Increasing reliance on renewable energy resources.

Energy within the Project area is currently used by the existing marina facilities including the boat workshop and winch, site irrigation and lighting, employee housing, and various businesses which rent building space. Liberty Utilities provides electrical utilities to the Project area. Gas service is provided by Southwest Gas (City of South Lake Tahoe 2011).

4.6.2 Regulatory Setting

State

California Building Energy Efficiency Standards (Title 24, Part 6)

The energy consumption of new residential and nonresidential buildings in California is regulated by the State's Title 24, Part 6, Building Energy Efficiency Standards (California Energy Code). The California Energy Code was established by CEC in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and non-residential buildings.

The 2025 California Energy Code was adopted by CEC in September 2024 and applies to projects constructed after January 1, 2026. The 2025 California Energy Code is designed to move the State closer to its zero-net energy goals for new residential development. It does so by requiring all new residences to install enough renewable energy to offset all the electricity needs of each residential unit (California Code of Regulations Title 24, Part 6, Section 150.1(c)4). The California Energy Code is enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary due to local climatologic,

geologic, or topographic conditions, provided that these standards exceed those provided in the California Energy Code.

Regional

Tahoe Regional Planning Agency

TRPA has not specifically identified any goals, policies, or Environmental Threshold Carrying Capacities (environmental threshold standards) related to energy consumption. Through its Regional Plan and Code of Ordinances, however, TRPA has defined conformance requirements for area plans relative to energy consumption. In addition, through its Regional Transportation Plan and Sustainability Action Plan, both prepared in partnership with the Tahoe Metropolitan Planning Organization (TMPO), TRPA addresses greenhouse gas (GHG) reduction targets and subsequent reductions in energy consumption for cars and light trucks mandated by SB 375.

Local

City of South Lake Tahoe General Plan

Several policies in the City General Plan seek to encourage energy conservation that leads to lowering the carbon footprint of South Lake Tahoe. The following goals and policies would help in improving efficiency use of energy (City of South Lake Tahoe 2011).

- Policy LU-5.3: Commercial Center Enhancement**.** The City shall encourage the upgrade and/or expansion of existing commercial centers, including improvements to parking and landscaping areas; redesigns to accommodate bicycles, pedestrians, and transit facilities; and remodeling to include “green” technology and improve energy efficiency.
- Policy PQP-1.9: Comprehensive “Green” Infrastructure Strategies. The City shall create comprehensive “green” infrastructure strategies to address sustainability objectives in the supply and management of energy, solid waste and materials, water, and wastewater.
- Policy NCR-6.1: Decreasing Reliance on Non-Renewable Energy Sources. The City shall shift away from reliance on non-renewable sources, should emerging research show net environmental benefits in the use of biofuel.
- Policy NCR-6.3: Local, Clean, and Renewable Energy Support. The City shall increase energy efficiency, reduce emissions and support local, clean, and renewable energy sources.
- Policy NCR-6.11: Solar Photovoltaic System Program. The City shall promote voluntary participation in programs to increase the use of solar photovoltaic systems in new and existing residential, commercial, institutional, and public buildings.
- Policy NCR-6.14: EPA Energy Star Certified Appliances. The City shall encourage the use of “EPA Energy Star” certified appliances (e.g., water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units) for new private development and public facilities, where feasible.

4.6.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during Project construction or operation?	Less Than Significant Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	No Impact

4.6.4 Answers to CEQA Checklist Questions

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

Less Than Significant Impact

Project construction would require temporary energy use from on-site equipment and vehicle fuel consumption. Energy demand during construction would primarily involve fuel usage for heavy equipment and worker commute vehicles, as well as electricity for minor power tools and site lighting. As discussed in Section 3.6, Project construction would implement construction controls such as requiring the use of renewable diesel and Tier 4F construction equipment, which would serve to reduce the use of fossil fuels and increase energy efficiency of construction vehicles. These energy uses would be short term and typical for a project of this nature. Assuming an average fuel consumption of 10.5 miles per gallon (mpg) of diesel per haul/vendor truck, 27 mpg of gasoline per construction worker vehicle, and taking into account the on-site use of renewable diesel and Tier 4F equipment within the Project area (per the proposed Construction Controls listed in Section 2.6 above), the Project would result in the consumption of approximately 2,400 gallons of gasoline and 5,900 gallons of diesel. This calculation also takes into consideration the average miles per trip provided by CalEEMod (see **Appendix A**). As fuel consumption associated with construction of the Project would be directly attributable to the temporary transport of people and equipment necessary for Project implementation, it would not be considered wasteful or inefficient. The use of renewable diesel would be consistent with City General Plan Policy NCR-6.3.

During operation, the Project would consume energy for lighting, heating, cooling, and water/wastewater systems consistent with other similar facilities in the region. The redeveloped area would be reachable by car and by bicycle, and the Project would include bicycle and kayak storage racks to encourage non-motorized access, which would help minimize vehicle trips, and thereby minimize fossil fuel energy consumption. All new structures would comply with Title 24 California Building Energy Efficiency Standards and the California Green Building Standards Code, ensuring efficient design and operation. Building construction would be generally consistent with the goals and policies related to energy in the City of South Lake Tahoe Natural and Cultural Resources Element (City of South Lake

Tahoe 2011). During operation, on-site uses associated with the Project are anticipated to annually consume approximately 1,509,000 kilowatt-hours of electricity and approximately 5,995,000 kilo British Thermal Units (**Appendix A**). Based on the transportation estimate and taking into account an average fuel efficiency of 27 mpg of gasoline and the Project's net increase of 218 VMT per day, approximately 8 additional gallons of gasoline per day or 2,947 additional gallons of gasoline per year would be used during operation, which would not be considered wasteful, inefficient, or unnecessary. The boat storage capacity of the project (especially during winter) is intended to reduce the need for local/regional marina visitors to use other more distant winter storage facilities for their boats, thereby reducing boat transport-related VMT and increasing fuel efficiency.

Per Appendix F of the State CEQA Guidelines, the means to achieve the goal of conserving energy include decreasing overall per capita energy consumption, decreasing reliance on oil, and increasing reliance on renewable energy sources. The Project would provide modern commercial facilities intended to provide improved marina-related services within Tahoe Keys, consistent with City General Plan Policy LU-5.3 and NCR-6.14. All on-site buildings would also be developed consistent with current building code and efficiency standards. As such, the Project would not develop uses or involve activities that would result in wasteful, inefficient, or unnecessary consumption of energy. This impact would be less than significant, and no mitigation is required.

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

Less Than Significant Impact

The Project would involve the redevelopment of existing developed parcels, consistent with current California Building Code (CBC) requirements that reflect the sustainability goals for the state, the City, and TRPA. As discussed in Section 2.5 above, the Project would meet Title 24 construction requirements and implement BMPs to reduce fossil fuel use by construction vehicles. The Project would replace current inefficient and obsolete structures with modern, energy-efficient construction, which would be consistent with current state and local sustainability goals. In particular, the Project would reduce the need for the transport of boats to other long-term boat storage facilities. As noted above under Section 4.6.4 a), the Project would also be consistent with City General Plan policies (LU-5.3, NCR-6.3, and NCR-6.14) by providing energy-efficient and modern facilities. In addition, the Project would not hinder the City's ability to provide municipal energy supplies via renewable energy sources. The Project would therefore not conflict with adopted state and local goals and policies for energy efficiency and sustainability. Therefore, there would be no impact. No mitigation is required.

4.7 Geology and Soils

4.7.1 Environmental Setting

Regional Geologic Setting

Lake Tahoe lies within the Sierra Nevada Geomorphic Province, occupying a basin surrounded by peaks of the Sierra Nevada Mountains, with Freel Peak the highest at 10,891 feet. The eastern and western sides of the basin are composed of granite rock, with minor amounts of older metamorphic rock. Volcanic rock, some deposited as recently as 2.5 million years ago, covers most of the northern and some of the southern part of the basin. The Sierra Nevada is a gently sloping fault block mountain range that was uplifted along its eastern edge. This range is bounded on the east and west by a series of interconnected fault segments. The displacement has been greater on the eastern margin, giving the Sierra Nevada a western tilt. South of Lake Tahoe, there is a single crest dividing the gentle western slope from the steep eastern scarp. The crest splits south of the lake, with 1 crest trending northwesterly and the other crest trending northward creating the Carson Range. This range separates the Carson Valley from Lake Tahoe. Lake Tahoe occupies the basin between the 2 uplifted crests. During the past 2 million years, glaciers played an active role in shaping the Sierra Nevada Mountains and Lake Tahoe. Alpine glaciers extended below the current lake level along the west shoreline and Emerald Bay. The basement geology of the Lake Tahoe Basin is divided into 3 categories: granitic, metamorphic, and volcanic (Hyne et al. 1972).

Soils

Soils in the area have been mapped by the Department of Agriculture, Natural Resources Conservation Service (NRCS), and were downloaded from the Web Soil Survey (NRCS 2025). NRCS categorized on-site soils as Oxyaquic Xerorthents-Water association, 0 to 5 percent slopes. This soil is described as well-drained outwash derived from granodiorite consisting of very gravelly coarse sand and mucky silt loam (more than 80 inches to a restrictive layer). It has moderately low to moderately high permeability (Reno Tahoe Geo Associates, Inc. 2024).

Seismicity and Faulting

There are no active faults within the Project area or the immediate vicinity of the Project area as mapped on the California Geological Survey California Earthquake Hazards Zone Application. The closest mapped fault to the Project area is the West Tahoe Fault located approximately 3 miles west of the Project area. This fault is also a mapped Alquist-Priolo Earthquake Fault Zone with required investigation (California Geological Survey 2024). The Project area does not lie within an Alquist-Priolo Earthquake Fault Zone with required investigation and no unmapped faults were identified within the Project area during a 2024 geotechnical investigation for the Project.

The Project area is located in a seismically active area, and strong ground shaking from relatively powerful earthquakes may occur within the region (moment magnitude of 7). Ground shaking can result in secondary seismic hazards such as liquefaction, seismic settlement, differential compaction, seismically induced slope instability, and rock falls. There are no known ground rupture locations within

or in the general area of the Project. The absence of ground faults passing through the Project area suggests the potential for ground rupture is negligible (Reno Tahoe Geo Associates, Inc. 2024).

Liquefaction

Liquefaction can occur when wet or saturated cohesionless soils temporarily lose strength due to the buildup of excess water pressure during events such as earthquakes. Soil most susceptible to liquefaction is loose, clean, saturated, uniformly graded sand. As part of a geotechnical report prepared for the Project in 2024 (Reno Tahoe Geo Associates, Inc. 2024), a risk of liquefaction assessment was conducted to determine the extent to which liquefaction hazards are present within the Project area and evaluate the potential for liquefaction settlement and lateral spread.

Liquefaction can cause soil settlement and displacement immediately following a seismic event. During liquefaction, water and sand may be ejected to the surface as sand boils, which can result in localized flooding or minor surface damage unless structural foundations are situated directly above the affected area. In areas with gentle or adjacent slopes, liquefaction may also induce ground oscillation or lateral spreading, leading to horizontal soil movement. These deformations occur when shaking or slope forces cause surface soils to shift over the weakened, liquefied layer beneath, potentially resulting in structural or ground instability. Based on the 2024 geotechnical report, the Project area is underlain by artificial fill, generally made of silty sand material. During borings conducted within the Project area, loose soils (i.e., potentially susceptible to liquefaction) were detected at depths ranging from 3 feet to 15 feet below ground surface (Reno Tahoe Geo Associates, Inc. 2024).

Landslides and Slope Instability

Landslides and debris flows triggered by earthquake ground shaking have historically caused a great deal of property damage and loss of life. Areas most susceptible to earthquake-induced landslides are generally on steep slopes or adjacent to existing landslide deposits. The Project area ground surface is generally flat with an average slope of less than 1 percent. The possibility of landslides and seismically induced slope instability is considered low due to topography in the vicinity of the Project area and the flat nature of the Project area (Reno Tahoe Geo Associates, Inc. 2024).

Groundwater

The Project area overlies the Tahoe Valley – Tahoe South (TVS) Groundwater Subbasin (California Department of Water Resources 2018). The subbasin is managed by STPUD. The TVS subbasin is considered a medium priority basin by the California Department of Water Resources and is managed under an Alternate Groundwater Sustainability Plan (STPUD 2025b).

Paleontological Resources

The Society of Vertebrate Paleontology (SVP) has established guidelines for the identification, assessment, and mitigation of adverse impacts on nonrenewable paleontological resources. Most practicing paleontologists in the United States adhere closely to the SVP's assessment, mitigation, and monitoring requirements as outlined in these guidelines, which were approved through a consensus of professional paleontologists and reflect the currently accepted standard practices. Many federal, state,

county, and city agencies have either formally or informally adopted the SVP's standard guidelines for the mitigation of adverse construction-related impacts on paleontological resources. The SVP has helped define the value of paleontological resources and, in particular, indicates the following:

- Vertebrate fossils and fossiliferous (fossil-containing) deposits are considered significant non-renewable paleontological resources and are afforded protection by federal, state, and local environmental laws and guidelines.
- A paleontological resource is considered to be older than recorded history, or 5,000 years before present, and is not to be confused with an archaeological resource.
- Invertebrate fossils are not significant paleontological resources unless they are present within an assemblage of vertebrate fossils or they provide undiscovered information on the origin and character of a plant species, past climatic conditions, or the age of the rock unit itself.
- A Project paleontologist, special interest group, lead agency, or local government can designate certain plant or invertebrate fossils as significant.

In accordance with these principles, the SVP outlined criteria for screening the paleontological potential of rock units and established assessment and mitigation procedures tailored to such potential (SVP 2010). The Project area contains predominantly fill material (i.e., poorly graded sand with very thin silty-sand layers). Although not discussed in the SVP standards, artificial fills, surface soils, and high-grade metamorphic rocks do not contain paleontological resources. While such materials were originally derived from rocks, they have been altered, weathered, or reworked from construction and operation of the previously existing lumber mill, as well as demolition of the lumber mill, such that the discovery of intact fossils would be rare. Therefore, there is little potential for the Project area to contain fossils or paleontological resources.

4.7.2 Regulatory Setting

State

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 (Public Resources Code [PRC] Section 2621-2630) intends to reduce the risk to life and property from surface fault rupture during earthquakes by regulating construction in active fault corridors, and by prohibiting the location of most types of structures intended for human occupancy across the traces of active faults. The act defines criteria for identifying active faults, giving legal support to terms such as active and inactive, and establishes a process for reviewing building proposals in Earthquake Fault Zones. Under the Alquist-Priolo Act, faults are zoned and construction along or across these zones is strictly regulated if they are "sufficiently active" and "well-defined." A fault is considered sufficiently active if one or more of its segments or strands shows evidence of surface displacement during Holocene time (defined for purposes of the act as within the last 11,000 years). A fault is considered well defined if its trace can be clearly identified by a trained geologist at the ground surface or in the shallow subsurface, using standard professional techniques, criteria, and judgment. Before a project can be permitted in a designated Alquist-Priolo Earthquake Fault Zone, cities and counties must require a geologic investigation to demonstrate that

proposed buildings would not be constructed across active faults. The law addresses only the hazard of surface fault rupture and is not directed toward other earthquake hazards.

Seismic Hazards Mapping Act

The intention of the Seismic Hazards Mapping Act of 1990 (PRC Section 2690–2699.6) is to reduce damage resulting from earthquakes. While the Alquist-Priolo Act addresses surface fault rupture, the Seismic Hazards Mapping Act addresses other earthquake-related hazards, including ground shaking, liquefaction, and seismically induced landslides. The act's provisions are similar in concept to those of the Alquist-Priolo Act. The State is charged with identifying and mapping areas at risk of strong ground shaking, liquefaction, landslides, and other corollary hazards, and cities and counties are required to regulate development within mapped Seismic Hazard Zones. Under the Seismic Hazards Mapping Act, permit review is the primary mechanism for local regulation of development.

California Building Code

The CBC is based on the International Building Code. The CBC has been modified from the International Building Code for California conditions, with more detailed and/or more stringent regulations. Specific minimum seismic safety and structural design requirements are set forth in Chapter 16 of the CBC. The CBC identifies seismic factors that must be considered in structural design. Chapter 18 of the CBC regulates the excavation of foundations and retaining walls, while Chapter 18A regulates construction on unstable soils, such as expansive soils and areas subject to liquefaction. Appendix J of the CBC regulates grading activities, including drainage and erosion control. The CBC contains a provision that provides for a preliminary soils report to be prepared to identify "…the presence of critically expansive soils or other soil problems which, if not corrected, would lead to structural defects." (CBC Chapter 18, Section 1803.1.1.1).

Regional

Lahontan Regional Water Quality Control Board

The Lahontan RWQCB adopted the NPDES Construction Stormwater General Permit for the Lake Tahoe Basin in March 2016 (Order No. R6T-2016-0010). Projects disturbing more than 1 acre of land during construction must file a Notice of Intent with Lahontan RWQCB to be covered under this permit. Construction activities subject to the Lake Tahoe Construction Stormwater Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. A SWPPP must be developed and implemented for each site covered by the permit. The SWPPP must include BMPs designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving offsite into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control.

Tahoe Regional Planning Agency

TRPA Code implements the Regional Plan Goals and Policies. Chapter 60 of the TRPA Code sets forth requirements for installation of BMPs for the protection or restoration of water quality and attainment

of minimum discharge standards. Projects shall comply with temporary and permanent BMP programs as a condition of project approval.

Chapter 33 of TRPA Code describes the various standards and regulations that protect the environment against significant adverse effects from excavation, filling, and clearing, because of such conditions as exposed soils, unstable earthworks, or groundwater interference.

4.7.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
a) Directly or indirectly cause potential substantial adverse effects, including 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.	Less Than Significant Impact
ii. Strong seismic ground shaking?	Less Than Significant Impact
iii. Seismic-related ground failure, including liquefaction?	Less Than Significant Impact
iv. Landslides?	Less Than Significant Impact
b) Result in substantial soil erosion or the loss of topsoil?	Less Than Significant Impact
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	Less Than Significant Impact
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?	Less Than Significant Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	No Impact

4.7.4 Answers to CEQA Checklist Questions

a) Would the Project directly or indirectly cause potential substantial adverse effects, including 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.

Less Than Significant Impact

The Project area is not located within an Alquist-Priolo Earthquake Fault Zone (California Geological Survey 2024). The closest Alquist-Priolo Earthquake Fault Zone is located approximately 3 miles west of the Project area. Therefore, there is no expected adverse effect on people or structures with regard to earthquake rupture as a result of this Project (Reno Tahoe Geo Associates, Inc. 2024). Earthquakes centered on regional faults in the area would likely result in higher ground motion within the Project area than earthquakes centered on smaller faults that are mapped closer to the site. The proposed buildings would be designed in accordance with current seismic design standards included in the 2022 CBC Section 1613 and in accordance with American Society of Civil Engineers (ASCE) standards, specifically ASCE 7-10 Minimum Design Loads for Buildings and Other Structures. As a result, rupture of a known earthquake fault is not anticipated, and this impact would be less than significant. No mitigation is required.

ii. Strong seismic ground shaking?

Less Than Significant Impact

As indicated above, the Project area could experience seismic shaking due to its proximity to regional fault systems. However, the Project area is not located on a known fault and to avoid substantial adverse effects due to seismic shaking, the proposed buildings would be constructed in accordance with the 2025 CBC Section 1613 and with ASCE standards, specifically ASCE 7-10 Minimum Design Loads for Buildings and Other Structures. Therefore, impacts related to strong seismic shaking would be less than significant. No mitigation is required.

iii. Seismic-related ground failure, including liquefaction?

Less Than Significant Impact

The potential for soil liquefaction within the Project area was evaluated based on subsurface borings, laboratory testing, and site conditions, as described in the geotechnical survey report. As noted above, the Project area is underlain by granular soils consisting primarily of loose to medium dense sands and silty sands that are generally saturated due to a shallow groundwater table. These soil conditions indicate that portions of the site may be susceptible to liquefaction and associated settlement during a strong seismic event. As a result, there is a potential for lateral spreading and ground oscillation to

occur, particularly in areas adjacent to open water or where surface slopes are present (Reno Tahoe Geo Associates, Inc. 2024).

To address these conditions, the report recommends measures including using deep foundations, ground improvement techniques, or replacement of liquefiable soils with engineered structural fill, as determined appropriate by a California-registered geotechnical engineer. Foundation systems shall be designed to accommodate potential differential settlement and lateral spreading in accordance with CBC and ASCE 7-16 seismic provisions. Implementation of these design recommendations would ensure the Project's compliance with applicable geotechnical safety standards. Because the recommendations provided in the geotechnical report for the Project would be incorporated into site design, this impact would be less than significant, and no mitigation is required.

iv. Landslides?

Less Than Significant Impact

Due to the limited slope of the Project area and surrounding lakeside topography, the Project area is not at risk for landslides. Furthermore, the closest identified fault zones are approximately 3 miles west of the site and do not trend towards the site (Reno Tahoe Geo Associates, Inc. 2024), further limiting the risk of landslide. As a result, the Project would not expose individuals to risk of loss, injury, or death due to landslides. This impact would be less than significant, and no mitigation is required.

b) Would the Project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact

As noted above, the Project area is located on previously developed and graded parcels, underlain by artificial fill. The majority of the Project area is also currently paved. With redevelopment of the Project area, the existing development and paved areas would be replaced with similarly paved/developed surfaces. During construction, soils would be exposed to the elements, which could result in runoff and soil erosion. However, as noted above in Section 2.5 (Construction Controls) and in accordance with NPDES requirements and the Lahontan RWQCB Construction General Permit (Order No. R6T-2016-0010), the Project would be required to obtain a SWPPP, which would include BMPs (e.g., erosion control, site stabilization, etc.) to prevent construction-related silt or debris from affecting areas outside the site boundary. Compliance with various erosion and sediment-control measures (e.g., management, structural, and vegetative controls) is required as part of the SWPPP. After construction is completed, temporarily disturbed areas would be stabilized and revegetated in accordance with TRPA Code Section 61.4. Implementation of the required BMPs and compliance with General Permit Order No. R6T-2016-0010 would reduce the potential for soil erosion and loss of topsoil to a less-than-significant level. No mitigation is required.

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

Less Than Significant Impact

The geotechnical investigation identified that subsurface materials within the Project area consist primarily of loose to medium dense sands and silty sands underlain by denser granular soils. The groundwater table is relatively shallow and, in combination with these soil types, indicates a potential for localized liquefaction and associated lateral spreading under strong seismic shaking (Reno Tahoe Geo Associates, Inc. 2024). As discussed in Section 4.7.3(a)(iii), these conditions could result in limited settlement or lateral movement. The geotechnical report prepared for the Project area recommends ground improvement techniques and foundation design measures, including deep foundations or replacement of liquefiable soils with engineered fill, which would be implemented as part of the Project design and in accordance with CBC requirements. No evidence of unstable slopes or conditions prone to collapse was identified, and the flat topography of the site precludes landslide potential. With implementation of the design and construction recommendations from the geotechnical report and compliance with CBC seismic standards as part of the Project, the potential for instability or related ground failure is considered minimal, and impacts would be less than significant. No mitigation is required.

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

Less Than Significant Impact

As noted above, soils within the Project area consist primarily of non-plastic to low-plasticity sands and silty sands with minimal clay content (Reno Tahoe Geo Associates, Inc. 2024). These soil types exhibit low expansion potential and are not considered expansive under the Uniform Building Code (1994) criteria. The geotechnical report prepared for the Project did not identify expansive soils within the Project area, and no evidence of shrink-swell behavior or high plasticity clays was observed in the borings. Additionally, all Project structures would be designed and constructed in accordance with the CBC, which requires site-specific design measures to address soil conditions and mitigate any differential movement. Therefore, the Project would not expose people or structures to substantial risks from expansive soils, and impacts would be less than significant. No mitigation is required.

e) Would the Project have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?

No Impact

The Project does not propose the use of septic tanks and would not require use of alternative wastewater disposal services, including for boat pump out purposes. The Project area is served by an 8-inch width cast-in-place sewage pipe, connected to STPUD, with adequate capacity to serve the Project. Therefore, the Project would have no impact related to septic tanks or alternative wastewater systems, nor require the expansion of existing or installation of new alternative wastewater systems. No impact would occur, and no mitigation is required.

f) Would the Project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

No Impact

The Project area is located on previously developed parcels, generally consisting of highly disturbed imported soil (i.e., artificial fill.) No unique paleontological resource or site or unique geologic features are present within the Project area, and no construction is planned within a geological formation known to contain paleontological resources. Therefore, there would be no impact on paleontological resources or unique geologic features. No mitigation is required.

4.8 Greenhouse Gas Emissions

Certain gases in the earth's atmosphere, classified as GHGs, play a critical role in determining the earth's surface temperature. These include carbon dioxide (CO_2), methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface, and a smaller portion of this radiation is reflected toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation, which is then absorbed by GHGs. As a result, radiation that otherwise would have escaped back into space is trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth.

Measured increases in ambient GHG emission levels are believed to be a result of increased human activities and at least partly responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic forcing (IPCC 2014). Greenhouse gases differ by the amount of heat each traps in the atmosphere, known as global warming potential. Carbon dioxide is the most significant greenhouse gas, so amounts of other gases are expressed relative to carbon dioxide, using a metric called "carbon dioxide equivalent" (CO_2e). The global warming potential of carbon dioxide is assigned a value of 1, and the warming potential of other gases is assessed as multiples of carbon dioxide. Generally, estimates of all greenhouse gases are summed to obtain total emissions for a project or a given time period, usually expressed in metric tons of CO_2e ($MTCO_2e$).

GHGs are global pollutants, unlike criteria air pollutants and toxic air contaminants, which are pollutants of regional and local concern. The quantity of GHGs that ultimately results in climate change is not precisely known, but no single project alone would measurably contribute to an incremental change in the global average temperature, or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

4.8.1 Environmental Setting

The Project area is located in the City of South Lake Tahoe in El Dorado County. The primary sources of GHG within the City are natural gas used for heating, fossil fuel consumption from the transportation sector, and grid electricity, representing approximately 82 percent of citywide GHG emissions. Other sources of GHG emissions include solid waste (approximately 7 percent), and water and wastewater (approximately 2 percent) (City of South Lake Tahoe 2020).

4.8.2 Regulatory Setting

State

The State of California has taken several legislative steps including Assembly Bills (AB) and Executive Orders to reduce increases in GHG emissions. CARB is the lead agency in the development of reduction

strategies for greenhouse gases in California (CARB 2021). California's GHG reduction requirements aim to reduce VMT, thereby improving air quality by reducing GHG emissions from automobiles.

Regional

Tahoe Regional Planning Agency Regional Transportation Plan

GHG planning guidance for the Lake Tahoe Basin is outlined in the TRPA 2025 Regional Transportation Plan, which anticipates reducing GHG emissions by focusing on aligning with state GHG goals. Strategies in the 2025 Regional Transportation Plan include technology improvements and non-vehicle mobility improvements (TRPA 2025a).

Local

El Dorado County Air Quality Management District

At this time, El Dorado County has not adopted any quantitative federal or state guidelines for GHG emission impacts. However, the EDCAQMD was part of a committee of air districts in the Sacramento region involved in the development of GHG thresholds for the Sacramento Area Council of Governments region. The goal of the thresholds is to capture at least 90 percent of GHG emissions from new stationary sources and land development projects. The nearby Placer County Air Pollution Control District (PCAPCD), which also participated in the aforementioned committee and is responsible for air quality along Lake Tahoe's northern and western shores, has developed thresholds of significance for analyzing climate change impacts in consideration of this strategy. PCAPCD has adopted 10,000 and 1,100 metric tons of carbon dioxide equivalent (MTCO2e) bright-line thresholds of significance for analyzing construction and operational emissions, respectively. In lieu of adopted thresholds of significance governed by EDCAQMD and TRPA and because of PCAPCD's shared responsibility with EDCAQMD for air quality within the Lake Tahoe Basin, these thresholds of significance were considered appropriate and applied to the Project. Additionally, PCAPCD thresholds have been and continue to be used within the broader Lake Tahoe Basin and by the City of South Lake Tahoe.

City of South Lake Tahoe Climate Action Plan

In 2017, the City passed Resolution 2017-26, Establishing Renewable Energy and Carbon Emissions Reduction Goals. These goals include achieving 50 percent of municipal energy sources from renewable energy by 2025, 100 percent of municipal energy sources from renewable energy by 2032, and 100 percent of community energy sources from renewable electricity by 2032. The resolution additionally outlines the emissions reduction targets of a 50 percent reduction in community-wide emissions by 2030 and an 80 percent reduction in community-wide emissions by 2040.

After establishing these reduction targets, the City completed a community-wide GHG emissions inventory to identify the emissions-generating sources in the community. This inventory was used as the foundation for developing the City's first Climate Action Plan, and City Council adopted it on October 20, 2020. It serves as a long-term plan to reduce GHG emissions from community activities and prepare for the impacts of climate change. Per Resolution 2022-088 (as adopted by the City on June 21, 2022), the City has established goals of 59.2 percent reduction in community GHG emissions by 2030 and community-wide zero net carbon by 2045 or before.

City of South Lake Tahoe General Plan

The City of South Lake Tahoe General Plan includes several policies related to GHG emissions reductions, including:

- Policy LU-5.3: Commercial Center Enhancement**.** The City shall encourage the upgrade and/or expansion of existing commercial centers, including improvements to parking and landscaping areas; redesigns to accommodate bicycles, pedestrians, and transit facilities; and remodeling to include "green" technology and improve energy efficiency.
- Policy NCR-5.12: Greenhouse Gas Emission Reductions Support. The City shall support local, TRPA, and statewide efforts to reduce emission of greenhouse gases linked to climate change.
- Policy NCR-5.13: Citywide Greenhouse Gas Emission Inventory. The City shall develop a citywide greenhouse gas emission inventory and establish regular time frames for updating the inventory.
- Policy NCR-5.14: Greenhouse Gas Emission Reduction Target. The City shall establish a greenhouse gas emission reduction target consistent with AB 32 and SB 375 reduction efforts.
- Policy NCR-5.15: Carbon Emission Analysis and Mitigation. The City shall analyze and mitigate significant increases in carbon emissions during project review pursuant to the California Environmental Quality Act.
- Policy NCR-6.1: Decreasing Reliance on Non-Renewable Energy Sources. The City shall shift away from reliance on non-renewable sources, should emerging research show net environmental benefits in the use of biofuel.
- Policy NCR-6.2: Greenhouse Gas Emission Reduction Strategy. The City shall develop a comprehensive strategy to reduce GHG emissions and climate impacts.
- Policy NCR-6.3: Local, Clean, and Renewable Energy Support. The City shall increase energy efficiency, reduce emissions and support local, clean, and renewable energy sources.
- Policy NCR-6.11: Solar Photovoltaic System Program. The City shall promote voluntary participation in programs to increase the use of solar photovoltaic systems in new and existing residential, commercial, institutional, and public buildings.
- Policy NCR-6.14: EPA Energy Star Certified Appliances. The City shall encourage the use of "EPA Energy Star" certified appliances (e.g., water heaters, swimming pool heaters, cooking equipment, refrigerators, furnaces and boiler units) for new private development and public facilities, where feasible.
- Policy NCR-6.20: Protection from Climate Change. The City shall develop strategies to protect the City from the impacts of climate change, such as reduced snowpack, lower lake levels, and natural disasters.
- Policy PQP-1.9: Comprehensive "Green" Infrastructure Strategies. The City shall create comprehensive "green" infrastructure strategies to address sustainability objectives in the supply and management of energy, solid waste and materials, water, and wastewater.

4.8.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less Than Significant Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less Than Significant Impact

4.8.4 Answers to CEQA Checklist Questions

a) Would the Project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Less Than Significant Impact

The Project would result in GHG emissions due to its construction and operational activities. As noted above, EDCAQMD has accepted and the City (as lead agency under CEQA) has historically used PCAPCD's thresholds of significance for evaluating the construction- and operations-related GHG emissions. These thresholds are consistent with the GHG goals established by SB 32.

Construction

Temporary construction-related activities associated with the Project would include demolition, site preparation, grading, building construction, paving, and architectural coatings. The GHG emissions from construction activities were calculated by using CalEEMod Version 2020.4.0 with design information provided by the City of South Lake Tahoe and CalEEMod defaults where the information was not available. The construction worker trip numbers and lengths were estimated based on CalEEMod default values. **Table 4** summarizes the estimated construction-related annual GHG emissions over the 24-month construction period. Refer to **Appendix A** for detailed modeling assumptions and results.

Table 4. Projected GHG Emissions During Construction – Metric Tons per Year Without Mitigation

Year	GHG Emissions (MTCO2e/year)
2027	388
2028	353
2029	49
Maximum Emissions	388
PCAPCD Thresholds	10,000
Exceed PCAPCD Thresholds?	No

Notes: See Appendix A for details on model inputs, assumptions, and Project-specific modeling parameters; Construction controls provided in Section 2.5 are reflected in modeling outputs as mitigations but are incorporated into the Project; GHG = greenhouse gas; PCAPCD = Placer County Air Pollution Control District.

As shown in Table 4, maximum annual GHG emissions during construction would reach 388 MTCO2e/year, which would be well below the applicable emissions thresholds of 10,000 MTCO2e/year.

The Project would also result in GHG emissions from operational activities associated with the new on-site development. Operations would result in mobile-source GHG emissions associated with vehicle trips to and from the Project (i.e., Project-generated VMT); area-source emissions from the operation of landscape maintenance equipment; water-source emissions from water use and the conveyance and treatment of wastewater; and waste source emissions from the transport and disposal of solid waste. As stated in Section 4.17 (Transportation), the Project would generate an estimated 218 additional daily VMT. Table 5 provides a summary of operational emissions estimated for the Project. Refer to **Appendix A** for a detailed description of all calculations, model runs, and assumptions used to support the modeling. As shown in **Table 5**, annual GHG emissions would reach 946 MTCO2e/year, which would be below the applicable emissions threshold of 1,100 MTCO2e/year. Since operation and construction of the Project would result in annual GHG emissions below the applicable thresholds, the impact would be less than significant. No mitigation is required.

Table 5. Projected GHG Emissions During Operation – Metric Tons per Year Without Mitigation

Sector	GHG Emissions (MTCO2e/year)
Mobile	34
Area	3
Energy	634
Waste	17
Water	258
Total Annual Emissions	946
PCAPCD Thresholds	1,100
Exceed PCAPCD Thresholds?	No

Notes: See Appendix A for details on model inputs, assumptions, and Project-specific modeling parameters; Construction controls provided in Section 2.5 are reflected in modeling outputs as mitigations but are incorporated into the Project; GHG = greenhouse gas; PCAPCD = Placer County Air Pollution Control District.

b) Would the Project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact

As described above, the construction and operational GHG emissions of the Project would not exceed thresholds of significance recommended by EDCAQMD. Because PCAPCD's operational threshold of significance is based on the State's SB 32 2030 goal, the Project, by virtue of not exceeding that threshold, would not interfere with State's GHG reduction goals. Further, the buildings proposed for development as part of the Project would be designed to current building code requirements and would therefore be more energy efficient than the existing buildings on site. Further, the Project would create a more efficient Tahoe Keys Marina that would reduce VMT associated with boat storage activities (see Section 4.6 [Energy] above) and would not generate substantial VMT as a whole, consistent with the City's General Plan (esp. Policy LU-5.3) and CAP Strategy 1 to reduce transportation-related GHG emissions. Further, the Project would provide on-site residences for employees, similar to existing conditions, but would also serve to reduce VMT associated with employee commutes, consistent with the City's CAP Strategy 4 to reduce or redistribute travel by working with local business. It would also provide higher intensity development that could provide additional services within Tahoe Keys for local residents who could walk or bike to the Project area, consistent with CAP Strategy 7 to encourage high-

density, mixed-use neighborhoods. The Project would also provide greater energy efficiency than existing on-site development, consistent with CAP Strategies 9 and 11 to improve energy efficiency. Based on the Project's aforementioned consistency with CAP Strategies, the Project would be consistent with the City of South Lake Tahoe Climate Action Plan and would further the City's path towards achieving its GHG reduction goals (including those established by Resolution 2022-088.) As a result, the Project would be consistent with state and regional goals to reduce GHG emissions. Impacts would be less than significant, and no mitigation is required.

4.9 Hazards and Hazardous Materials

4.9.1 Environmental Setting

The Project area consists of the marina's landside improvements and operations, the marina bulkhead, boat launch ramp, and boat lift, and City ROW on Venice Drive East and Michael Drive. The Project area contains 3 buildings, a boat launch ramp, boat lift, parking lots, exterior boat storage, sparse landscape/ruderal vegetation, and roadway. The upland areas of the Project area are separated from the lagoon by a sheet pile bulkhead.

Hazardous materials that are stored within the Project area include gasoline and commercial cleaners used to maintain the existing buildings. Gasoline is stored in a 12,000-gallon aboveground storage tank and other fuel-storage-related facilities within the northeastern portion of the Project area. An asbestos, lead, polychlorinated biphenyls (PCBs), and universal waste survey was conducted in 2025 and identified the presence of asbestos and lead within 2 of the on-site buildings. Universal waste (primarily fluorescent lighting tubes) was also identified (Forensic Analytical Consulting Services, Inc. 2025).

In 2021, a Phase I Environmental Site Assessment (ESA) was prepared for the Project area and identified the following conditions on-site (Bureau Veritas 2021):

- A rusted pad-mounted transformer was identified in the northeastern portion of the Project area near the boat ramp.
- Approximately 45 to 50 drums and containers of unknown contents were observed in Building 1.
- One 500-gallon waste oil underground storage tank and one 11,000-gallon diesel underground storage tank were removed from the area between Buildings 2 and 3 in 1997 and impacts to the subsurface were discovered during this time. Soil and groundwater were investigated, and groundwater was remediated and monitored with oversite by the Lahontan RWQCB (RWQCB UST case no. 6T0267A). The RWQCB issued a No Further Action Required determination on May 19, 2020. Bureau Veritas concluded that no further action was warranted related to the USTs at the time of the Phase I ESA, but in the event of future redevelopment, impacted soil or groundwater encountered should be managed and properly disposed of in accordance with applicable regulatory requirements.
- Based on the dates of construction of the Site buildings, asbestos- and lead-containing materials may be present.

No evidence of recognized environmental conditions or controlled recognized environmental conditions were identified within the Project area (Bureau Veritas 2021).

Subsequent to the Phase I ESA, in 2025 NCE conducted a site visit and additional research to identify and confirm, to the extent feasible, the potential for recognized environmental conditions resulting from the improper use, manufacture, storage, and/or disposal of hazardous or toxic substances at or in the vicinity of the Project area that may be encountered during construction. A search of the GeoTracker and EnviroStor websites was conducted to determine the history of documented contamination within the Project area. These searches also identified RWQCB UST case no. 6T0267A, as documented in the Phase I ESA and summarized above. The pad-mounted transformer discussed in the 2021 Phase I ESA is

still present in the northeastern portion of the Project area. However, no drums and no other containers of unknown liquids were observed during the visit to the Project area.

Schools

There are no schools located within 0.25 miles of the Project area. The nearest school, Tahoe Valley Elementary School, is located 0.6 miles south of the Project area, adjacent to Lake Tahoe Boulevard.

Airports

The Lake Tahoe Airport is located approximately 1.6 miles southwest of the Project area, east of the portion of US 50 also known as Emerald Bay Road. No private airstrips are observed in proximity to the Project area.

Emergency Response and Evacuation Plans

The City adopted the Local Hazard Mitigation Plan in 2022 (City of South Lake Tahoe 2022a). It was prepared in collaboration with the El Dorado County Sheriff, Governor's Office Emergency Services, and other agencies and stakeholders. The City identifies both SR 89 and US 50 as primary evacuation routes serving the Project area.

Wildland Fire Hazards

The Tahoe region is at a high risk of wildfire spread because of the climate, steep topography, and high level of available fuel. Fire Hazard Severity Zones (FHSZs) are mapped by the California Department of Forestry and Fire Protection (CAL FIRE) for the entire state. FHSZs are based on an evaluation of fuels, fire history, terrain, housing density, and occurrence of severe fire weather and are intended to identify areas where urban fires could result in catastrophic losses. FHSZs are categorized as: Moderate, High, and Very High. Due in part to its proximity and connection to the marina lagoon, the Project area is located within a mix of locally-designated Moderate, High, and Very High FHSZs, trending higher in terms of risk from west to east (CAL FIRE 2025).

4.9.2 Environmental Setting

Federal

Management of Hazardous Materials

Various federal laws address the proper handling, use, storage, and disposal of hazardous materials, as well as requiring measures to prevent or mitigate injury to health or the environment if such materials are accidentally released. The EPA is the agency primarily responsible for enforcement and implementation of federal laws and regulations pertaining to hazardous materials. Applicable federal regulations pertaining to hazardous materials are primarily contained in Code of Federal Regulations (CFR) Titles 29, 40, and 49. Hazardous materials, as defined in the Code, are listed in 49 CFR 172.101. Management of hazardous materials is governed by the following laws:

- The Toxic Substances Control Act of 1976 (15 US Code [USC] Section 2601 et seq.) regulates the manufacturing, inventory, and disposition of industrial chemicals, including hazardous materials.

Section 403 of the Toxic Substances Control Act establishes standards for lead-based paint (LBP) hazards in paint, dust, and soil.

- The Resource Conservation and Recovery Act of 1976 (42 USC 6901 et seq.) is the law under which EPA regulates hazardous waste from the time the waste is generated until its final disposal ("cradle to grave").
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (also called the Superfund Act or CERCLA) (42 USC 9601 et seq.) gives EPA authority to seek out parties responsible for releases of hazardous substances and ensure their cooperation in site remediation.
- The Superfund Amendments and Reauthorization Act of 1986 (Public Law 99-499; USC Title 42, Chapter 116), also known as SARA Title III or the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA), imposes hazardous materials planning requirements to help protect local communities in the event of accidental release.
- The Spill Prevention, Control, and Countermeasure (SPCC) rule includes requirements for oil spill prevention, preparedness, and response to prevent oil discharges to navigable waters and adjoining shorelines. The rule requires specific facilities to prepare, amend, and implement SPCC plans. The SPCC rule is part of the Oil Pollution Prevention regulation, which also includes the Facility Response Plan rule.

Transport of Hazardous Materials

The US Department of Transportation (DOT) regulates transport of hazardous materials between states and is responsible for protecting the public from dangers associated with such transport. The federal hazardous materials transportation law, 49 USC 5101 et seq. (formerly the Hazardous Materials Transportation Act 49 USC 1801 et seq.) is the basic statute regulating transport of hazardous materials in the United States. Hazardous materials transport regulations are enforced by the Federal Highway Administration, the US Coast Guard, the Federal Railroad Administration, and the Federal Aviation Administration.

State

Management of Hazardous Materials

In California, both federal and state community right-to-know laws are coordinated through the Governor's Office of Emergency Services. The federal law, SARA Title III or EPCRA, described above, encourages and supports emergency planning efforts at the state and local levels and to provide local governments and the public with information about potential chemical hazards in their communities. Because of the community right-to-know laws, information is collected from facilities that handle (e.g., produce, use, store) hazardous materials above certain quantities. The provisions of EPCRA apply to four major categories:

- emergency planning,
- emergency release notification,
- reporting of hazardous chemical storage, and

- inventory of toxic chemical releases.

The corresponding state law is Chapter 6.95 of the California Health and Safety Code (Hazardous Materials Release Response Plans and Inventory). Under this law, qualifying businesses are required to prepare a Hazardous Materials Business Plan, which would include hazardous materials and hazardous waste management procedures and emergency response procedures, including emergency spill cleanup supplies and equipment. At such time as the applicant begins to use hazardous materials at levels that reach applicable state and/or federal thresholds, the plan is submitted to the administering agency.

DTSC, a division of the California Environmental Protection Agency, has primary regulatory responsibility over hazardous materials in California, working in conjunction with EPA to enforce and implement hazardous materials laws and regulations. As required by Section 65962.5 of the California Government Code, DTSC maintains a hazardous waste and substances site list for the state, known as the Cortese List. Individual regional water quality control boards (RWQCBs) are the lead agencies responsible for identifying, monitoring, and cleaning up leaking underground storage tanks (LUSTs). Lahontan RWQCB has jurisdiction over the Project area.

4.9.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	Less Than Significant Impact
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 Impact with Mitigation Incorporated
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 Impact
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?	Less Than Significant Impact with Mitigation Incorporated
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?	Less Than Significant Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	Less Than Significant Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	Less Than Significant Impact

4.9.4 Answers to CEQA Checklist Questions

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

Less Than Significant Impact

During construction, limited quantities of hazardous materials such as fuels, lubricants, solvents, and other construction-related chemicals would be used and stored on-site for equipment maintenance and operation. The use, storage, and management of construction-related fuels and other construction-related chemicals and construction materials would be managed in accordance with applicable regulations, including but not limited to the U.S. EPA, the U.S. Department of Transportation, the Department of Toxic Substances Control, the Occupational Safety and Health Administration (OSHA), the National Pollutant Discharge Elimination System (NPDES), and local technical specifications under the STPUD. For example, and as part of the Project's compliance with NPDES requirements, the SWPPP that would be prepared for the Project (refer to Section 2.5.3, above) would require that equipment fueling and maintenance, if performed at the job site, must be performed in a designated area utilizing secondary containment with a spill kit nearby.

During operation, the redeveloped marina would continue to support boat fueling activities. The replacement, 12,000-gallon, aboveground fuel storage tank would be located on the southeastern edge of the Project area, similar to existing conditions. The tank and associated fueling facilities would be operated consistent with federal, state, and Lahontan RWQCB requirements. This would include annual inspections and enforcement by the Lahontan RWQCB and the El Dorado County Environmental Management Department to ensure proper containment and maintenance.

Operational use of hazardous materials would otherwise be limited to small quantities of cleaning agents, landscaping chemicals, and maintenance supplies typical of marina and retail operations, as well as on-site fuel storage. The transport, use, and disposal of such materials would comply with state and local regulations. Because construction and operation of the Project would not involve new routine large-scale transport or disposal of hazardous substances and would comply with existing regulatory requirements (including those related to fuel storage), impacts would be less than significant. No mitigation is required.

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

Less Than Significant Impact with Mitigation Incorporated

As noted above, existing on-site buildings were identified as containing limited quantities of hazardous materials, asbestos, and lead within existing tiles. Demolition of existing buildings would disturb these materials, which could generate airborne asbestos fibers, lead dust, or other contaminants if not properly managed, posing potential risks to workers and nearby receptors. The potential risk associated with removal of these materials would be addressed through compliance with National Emission

Standard for Hazardous Air Pollutants requirements, Cal/OSHA Title 8, and EDCAQMD requirements for demolition and abatement such that no significant hazards would occur.

With respect to on-site fuel storage, the Project area currently contains a 12,000-gallon storage tank which is regularly inspected by the Lahontan RWQCB and the El Dorado County Environmental Management Department to ensure proper containment and maintenance. The Project would replace the existing storage tank with a new 12,000-gallon storage tank and would be subject to the same requirements for proper containment and maintenance, as well as regular inspection. As such, the Project would not result in an increase in the potential for upset and/or accident conditions related to the existing and proposed on-site fuel storage tank.

With respect to the historic recognized environmental condition identified at the site, the Project area is listed on the State Water Resources Control Board GeoTracker database for a 1997 release of petroleum hydrocarbons discovered during removal of a 1,000-gallon diesel underground storage tank, a 500-gallon waste oil underground storage tank, and associated piping and dispensers. Subsequent investigations identified residual contamination limited to soils and groundwater west of the existing marina buildings. Extraction and treatment systems operated from 1998 to 2008, and groundwater monitoring continued until 2014. Petroleum hydrocarbons and volatile organic compounds steadily declined and were not detected in upgradient wells after the early 2000s. As a result, the Lahontan RWQCB issued a No Further Action determination on May 19, 2020, confirming that remediation objectives had been met (Bureau Veritas 2021). Due to the historic presence of contaminated soils, there is a limited potential for impacted soil to persist underneath the existing on-site structures. For this reason, redevelopment of the Project area could result in release of hazardous materials associated with the prior storage tanks that were present within the Project area, and impacts would be potentially significant.

Mitigation Measures

HAZ-1: During construction (i.e., demolition, grading, or excavation) and if stained soil, hydrocarbon odor, or other indicators of contamination are encountered during excavation, the construction contractor shall halt all on-site activities until a qualified environmental professional can assess the potentially impacted soil. Impacted soil or groundwater shall be handled and disposed of in accordance with Lahontan RWQCB and Department of Toxic Substances Control requirements.

Significance After Mitigation

With implementation of Mitigation Measure HAZ-1, the potential for disturbance or accidental release of hazardous materials would be reduced to a less than significant level by requiring the assessment and treatment of any potentially affected soils identified on-site as soon as feasible. Following that initial determination, any affected soils would be disposed of in accordance with applicable regulations, thereby ensuring that impacts would be less than significant.

c) Would the Project 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 Impact

The nearest school, Tahoe Valley Elementary School, is located approximately 0.6 miles south of the Project area. Construction and operation of the Project would not involve emissions or handling of hazardous materials beyond typical quantities of fuels, paints, and other building materials used during construction. The Project would not include any new storage or emission of hazardous materials, substances, or waste. Tahoe Keys Boulevard, which provides the most direct route to Tahoe Keys and the Project area, passes within 0.15 mile of Tahoe Valley Elementary School. However, as noted above under Section 4.9.3 a), materials transported to and from the site would be conducted in accordance with existing state and local regulations. As a result, no significant impacts or increased risk related to hazardous emissions or handling of hazardous materials within 0.25 miles of a school would occur. Impacts would be less than significant, and no mitigation is required.

d) Would the Project 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?

Less Than Significant Impact with Mitigation Incorporated

The Project is located above a site which is included on a list compiled pursuant to Government Code Section 65962.5. However, as discussed in 4.9.3(b) a No Further Action determination has been issued for the site, and the extent of remaining contamination is limited, if present at all. In addition, the Project would implement Mitigation Measure HAZ-1, which would ensure that disturbance of known and unknown hazardous materials do not result in a significant risk to the public. With implementation of the aforementioned mitigation measures, development in the Project area would not pose a significant hazard to the public or environment, and the impact would be less than significant.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?

Less than Significant Impact

The Lake Tahoe Airport is located approximately 1.6 miles southeast of the Project area. The Project is located within and adjacent to residential areas and is not in the overflight zone of the airport. The Project area does not lie within a noise impacted area airport as defined in the Land Use Compatibility Plan for the Lake Tahoe Airport (Environmental Science Associates 2019). The Project is located within Review Area 2, but does not approach any of the Lake Tahoe Airport's airspace protection surfaces (transitional surface at 150 feet above the airport elevation and conical surface at 150 to 350 feet above the airport elevation) (Environmental Science Associates 2019). The elevation of the Project area is 20 feet below that of the existing runway and the proposed elevations for Project-related structures would not be sufficient to reach either surface. As such, the Project would not result in a change in airport operations or represent a safety hazard related to airport operations. Impacts would be less than significant, and no mitigation is required.

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

Less Than Significant Impact

Per the current Emergency Evacuation Map for the Tahoe Keys, Tahoe Keys Boulevard is an existing evacuation route for the eastern half of Tahoe Keys (City of South Lake Tahoe 2014). While the Project would temporarily impact Tahoe Keys Boulevard and Venice Drive East, this would result in temporary lane closures, and both roads would remain accessible with traffic controls during construction. More specifically, access for emergency vehicles and at least 1 lane of traffic with flaggers on either side of the lane closure would be maintained at all times in coordination with the South Lake Tahoe Fire Rescue and Public Works Department. However, the Project would not result in the modification of existing roadways or lane widths upon completion of construction. Further, the Project would not result in the physical modification of existing evacuation routes. Impacts would be less than significant, and no mitigation is required.

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

Less Than Significant Impact

While portions of the Project area are located within a locally-designated Very High FHSZ (CAL FIRE 2025), the proposed redevelopment would include new fire resistant landscaping and new firefighting infrastructure, which would be considered an improvement compared to existing conditions. Further, the Project area has not been subject to historic wildland fires (National Interagency Fire Center 2025). The Project represents a replacement/modernization of existing on-site uses and would not introduce new/different uses to the Project area. Construction of new on-site structures would also be required to implement other applicable requirements of the Uniform Fire Code and CBC, including ignition-resistant construction, automatic interior fire sprinklers, on-site fire hydrant minimum flows, and adequate emergency and fire apparatus access. Additionally, facilities constructed as part of the Project would be subject to design and defensible space requirements that are intended to protect development from loss due to wildfire included in Section 13.5.3.F.4.a of TRPA Code of Ordinances, which requires use of native vegetation whenever possible, consistent with fire defensible space requirements.

Implementation of the Project would not exacerbate wildfire risks because defensible space would be maintained or improved within the Project area, and construction would comply with all applicable fire-related codes and regulations. Although the Project would increase the number of people traveling to and from the Project area (based on the projected increase in daily vehicle trips of 175), the number of visitors exposed to wildfire risk would not be a substantial increase over existing conditions. Therefore, this impact would be less than significant. No mitigation is required.

4.10 Hydrology and Water Quality

4.10.1 Environmental Setting

Lake Tahoe is located in a basin that is fed by 63 tributary streams that drain directly into the lake. The Truckee River at the northwest end of the Tahoe Basin is the lake's only outlet, ultimately flowing to Pyramid Lake in Nevada. A dam constructed at Tahoe City in the early 1900s regulates water flow to the Truckee River from the natural rim (6,223 feet above sea level) to the maximum legal lake level of 6,229.1 feet. The lake is 12 miles wide and 22 miles long with 72 miles of shoreline. Average precipitation is almost 16 inches each year in South Lake Tahoe (Western Regional Climate Center 2025), and it generally falls from October to May as snow in the higher elevations and as a mix of snow and rain in the lower elevations. Peak stream runoff is typically triggered by spring snowmelt in May and June. The snowpack at lake level melts before the peak in snowmelt and runoff from the higher elevations.

The Project area primarily lies within the Upper Truckee River Watershed, the largest tributary watershed to Lake Tahoe. Other streams flow through the City, including Trout Creek, Heavenly Valley Creek, and several smaller ephemeral creeks including Bijou Creek, Bijou Park Creek, and Keller Creek. There are also many unnamed water courses within the city limits that can produce considerable discharges during storm events. Stream flows tend to be high in the spring during snowmelt, with much lower flows during the late summer and fall.

The Project area overlies the TVS Groundwater Subbasin (California Department of Water Resources 2018). The TVS Groundwater Subbasin is considered a medium priority basin by the California Department of Water Resources and is managed under an Alternate Groundwater Sustainability Plan by STPUD (STPUD 2025b). The Project is within the jurisdictional limits of the Lahontan RWQCB, which uses the Lahontan Basin Plan as its regulating document, and the Project area is located within the North Lahontan Basin, which includes Lake Tahoe and surrounding regions within the state of California (Lahontan RWQCB 2025). The Basin Plan outlines beneficial uses for the TVS subbasin. Beneficial uses are municipal and domestic water supply, industrial service water supply, and agricultural water supply. The 2021 STPUD Urban Groundwater Management plan also covers the City of South Lake Tahoe area (Kennedy Jenks 2021). Groundwater depths within the Project area are typically 3 to 4 feet below ground surface (Reno Tahoe Geo Associates, Inc. 2024).

Flood Risk

The Federal Emergency Management Agency (FEMA) implements the National Flood Insurance Program. Per Section 60.3(d)(3) of the National Flood Insurance Program regulations regarding floodplain management, the placement of fill, new construction, substantial improvements, and other development within the adopted regulatory floodway cannot result in any increase in flood levels during occurrences of the base flood discharge (100-year event). The Project area lies within Zone X, which is outside of the 100-year flood zone (FEMA 2024).

4.10.2 Regulatory Setting

Federal

Clean Water Act

The EPA is the lead federal agency responsible for water quality management. The Clean Water Act is the primary federal law that governs and authorizes water quality control activities by EPA as well as the states. Various elements of the Clean Water Act address water quality. These are discussed below.

Clean Water Act Water Quality Criteria/Standards

Pursuant to federal law, EPA has published water quality regulations under Title 40 of the Code of Federal Regulations. Section 303 of the Clean Water Act requires states to adopt water quality standards for all surface waters of the United States. As defined by the act, water quality standards consist of designated beneficial uses of the water body in question and criteria that protect the designated uses. Section 304(a) requires EPA to publish advisory water quality criteria that accurately reflect the latest scientific knowledge on the kind and extent of all effects on health and welfare that may be expected from the presence of pollutants in water. Where multiple uses exist, water quality standards must protect the most sensitive use. As described in the discussion of state regulations below, the State Water Resources Control Board and its nine RWQCBs, including the Lahontan RWQCB, have designated authority in California to identify beneficial uses and adopt applicable water quality objectives.

Clean Water Act Section 303(d) Impaired Waters List

Under Section 303(d) of the Clean Water Act, states are required to develop lists of water bodies that do not attain water quality objectives after implementation of required levels of treatment by point source dischargers (municipalities and industries). Section 303(d) requires that the state develop a total maximum daily load (TMDL) for each of the listed pollutants. A TMDL is the amount of the pollutant that the water body can receive and still comply with water quality objectives. The TMDL is also a plan to reduce loading of a specific pollutant from various sources to achieve compliance with water quality objectives. In California, implementation of TMDLs is achieved through water quality control plans, known as Basin Plans, of the state RWQCBs, which are explained in further detail below.

National Pollutant Discharge Elimination System

The National Pollutant Discharge Elimination System (NPDES) permit program was established in the Clean Water Act to regulate municipal and industrial discharges to surface waters of the United States. NPDES permit regulations have been established for broad categories of discharges including point source waste discharges and nonpoint source stormwater runoff. Each NPDES permit identifies limits on allowable concentrations and mass emissions of pollutants contained in the discharge. Sections 401 and 402 of the Clean Water Act contain general requirements regarding NPDES permits.

“Nonpoint source” pollution originates over a wide area rather than from a definable point. Nonpoint source pollution often enters receiving water in the form of surface runoff and is not conveyed by way of pipelines or discrete conveyances. Two types of nonpoint source discharges are controlled by the NPDES program: discharges caused by general construction activities and the general quality of

stormwater in municipal stormwater systems. The goal of the NPDES nonpoint source regulations is to improve the quality of stormwater discharged to receiving waters to the maximum extent practicable.

National Flood Insurance Act

The Federal Emergency Management Agency (FEMA) is tasked with responding to, planning for, recovering from, and mitigating against disasters. The Federal Insurance and Mitigation Administration within FEMA is responsible for administering the National Flood Insurance Program (NFIP) and administering programs that aid with mitigating future damages from natural hazards.

FEMA prepares Flood Insurance Rate Maps (FIRMs) that delineate the regulatory floodplain to assist local governments with the land use planning and floodplain management decisions needed to meet the requirements of NFIP. Floodplains are divided into flood hazard areas, which are areas designated per their potential for flooding, as delineated on FIRMs. Special Flood Hazard Areas are the areas identified as having a one percent chance of flooding each year (otherwise known as the 100-year flood). In general, the NFIP mandates that development is not to proceed within the regulatory 100-year floodplain if the development is expected to increase flood elevation by 1 foot or more.

State

Porter-Cologne Water Quality Control Act

California's primary statute governing water quality and water pollution issues with respect to both surface waters and groundwater is the Porter-Cologne Water Quality Control Act of 1970 (Porter-Cologne Act). The Porter-Cologne Act grants SWRCB and each of the nine RWQCBs power to protect water quality, and is the primary vehicle for implementation of California's responsibilities under the CWA. The applicable RWQCB for the proposed project is the San Francisco Bay RWQCB. SWRCB and the San Francisco Bay RWQCB have the authority and responsibility to adopt plans and policies, regulate discharges to surface and groundwater, regulate waste disposal sites, and require cleanup of discharges of hazardous materials and other pollutants. The Porter-Cologne Act also establishes reporting requirements for unintended discharges of any hazardous substances, sewage, or oil or petroleum products.

Under the Porter-Cologne Act, each RWQCB must formulate and adopt a water quality control plan (known as a "Basin Plan") for its region. The Basin Plan lists the beneficial uses that the San Francisco Bay RWQCB has identified for local aquifers, streams, marshes, rivers, and the San Francisco Bay, as well as Water Quality Objectives (WQOs) and criteria that must be met to protect these uses. The San Francisco Bay RWQCB implements the Basin Plan by issuing and enforcing waste discharge requirements (WDRs), including permits for nonpoint sources such as the urban runoff discharged by a City's stormwater drainage system. The Basin Plan also describes watershed management programs and water quality attainment strategies. Through the Basin Plan, the San Francisco Bay RWQCB executes its regulatory authority to enforce the implementation of TMDLs, and to ensure compliance with surface WQOs. The Basin Plan includes both narrative, and numerical WQOs designed to provide protection for all designated and potential beneficial uses in all its principal streams and tributaries. Applicable beneficial uses include municipal and domestic water supply, irrigation, non-contact and contact water

recreation, groundwater recharge, freshwater replenishment, hydroelectric power generation, and preservation and enhancement of wildlife, fish, and other aquatic resources.

Regional

Water Quality Control Plan for the Lahontan Region

Water quality standards and control measures for surface and ground waters of the Lahontan Region are contained in the Water Quality Control Plan for the Lahontan Region (Basin Plan). The Basin Plan designates beneficial uses for water bodies. It establishes water quality objectives, waste discharge prohibitions, and other implementation measures to protect those beneficial uses. Chapter 5 of the Basin Plan, Water Quality Standards and Control Measures for the Lake Tahoe Basin, summarizes a variety of control measures for the protection and enhancement of Lake Tahoe.

The Basin Plan was first adopted in 1975, and most recently updated in 2014. The Basin Plan contains both narrative and numeric water quality objectives for the region. The Basin Plan amendments include additional language related to: “mixing zones” for dilution of discharged water, compliance schedules for NPDES permits, discharge prohibition exemptions for low threat discharges such as incidental runoff from landscape irrigation or construction dewatering, simplification of existing prohibition exemptions, and the removal of language describing programs administered by TRPA.

General Permit for Stormwater Discharges Associated with Construction

The Lahontan RWQCB adopted the NPDES Construction Stormwater General Permit for the Lake Tahoe Basin in March 2016 (Order No. R6T-2016-0010). Projects disturbing more than 1 acre of land during construction must file a Notice of Intent with Lahontan RWQCB to be covered under this permit. Construction activities subject to the Lake Tahoe Construction Stormwater Permit include clearing, grading, stockpiling, and excavation. Dischargers are required to eliminate or reduce non-stormwater discharges to storm sewer systems and other waters. A SWPPP must be developed and implemented for each site covered by the permit. The SWPPP must include BMPs designed to prevent construction pollutants from contacting stormwater and keep products of erosion from moving offsite into receiving waters throughout the construction and life of the project; the BMPs must address source control and, if necessary, pollutant control. BMPs would conform to Chapter 4.5 of the Tahoe BMP Handbook.

Local

City of South Lake Tahoe Code of Ordinances

Chapter 7.20 of the City’s Code of Ordinances includes local provisions and requirements related to the manner in which grading and sediment control are to be performed within city limits, so as to limit erosion and transport of sediment off-site that may affect water quality. The City’s Code of Ordinances regulates grading on both public and private property with the intent of avoiding pollution of watercourses.

4.10.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	Less Than Significant Impact
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 Impact
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;	Less Than Significant Impact
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 Impact
iii. create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	Less Than Significant Impact
iv. impede or redirect flood flows?	Less Than Significant Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to Project inundation?	Less Than Significant Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	Less Than Significant Impact

4.10.4 Answers to CEQA Checklist Questions

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

Less Than Significant Impact

Project implementation would result in grading and excavation of the Project area, which would expose sediment and soil material. Exposed sediment could affect surface water quality if not properly controlled on-site. All projects in the Tahoe Basin are required to comply with TRPA water quality protections. Temporary construction BMPs that would be required through existing regulations, such as Chapter 33 and Section 60.4 of the TRPA Code, would include temporary erosion control BMPs, dust control measures, requirements to minimize soil disturbance, winterization by October 15, stockpile stabilization, spill prevention plans, tracking prevention, and permanent stabilization of any disturbed areas. All construction projects in the Tahoe Basin must be consistent with TRPA requirements (including Chapter 4.5 of the TRPA BMP Handbook; TRPA 2014), the federal antidegradation policy, and maintain designated beneficial uses of Lake Tahoe.

Further, installation of the replacement bulkhead would involve work within a Water of the State of California and WOUS, and a 1602 LSAA from CDFW and Clean Water Act Section 404 permit from USACE would be required, including the permit conditions (i.e., requirements) associated with each. These would include considerations related to maintaining water quality standards through on-site BMPs and waste discharge requirements. Additionally, and as part of the Project, the in-kind replacement of the bulkhead would occur in front of the existing bulkhead to protect water quality.

Lastly, because the Project would disturb more than 1 acre, a SWPPP would be prepared and implemented upon Project approval, consistent with NPDES requirements and to comply with Lahontan RWQCB Tahoe Construction General Permit (Order No. R6T-2016-0010). The SWPPP, consistent with the Construction General Permit, would identify and require temporary BMPs (e.g., tarping of any stockpiled materials or soil; use of silt fences, fiber rolls, dust control, tracking control, etc.) and permanent BMPs (e.g., structural containment, revegetation, stabilization) for use in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during all excavation, grading, trenching, repaving, or other ground-disturbing activities. The Project would also comply with the South Lake Tahoe City Code Chapter 7.20: Grading, Erosion, and Sediment Control. Through compliance with existing regulations, including the Clean Water Act, TRPA Code, NPDES requirements, and the South Lake Tahoe City Code, impacts related to erosion potential and the transport of sediment and other pollutants would be minimized, and impacts would be less than significant. No mitigation is required.

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

Less Than Significant Impact

The Project would involve redeveloping existing marina facilities with new/modern structures and maintaining the current use type. While there would be a modest increase in water consumption during operation due to the increased square footage, water consumption would be more efficient due to the modern facilities and would be provided to the site by STPUD, which is anticipated to have adequate supplies. Groundwater is the primary source of water for most communities in the Lake Tahoe Basin, and drawdown of groundwater levels has not been a significant problem within the region recently, indicating ample supply (STPUD 2019).

The Project would also replace existing pavement with permeable pavement, and areas not covered by pavement or facilities would include landscaping and be designed to capture stormwater and facilitate groundwater recharge. On-site storm drain facilities would be designed to infiltrate the 20-year 1 inch per hour storm event as required by TRPA Code Section 60.4. Therefore, the Project would not decrease groundwater supplies or interfere with recharge such that sustainable groundwater management within the basin would be impeded. Impacts would be less than significant, and no mitigation is required.

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

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

Less Than Significant Impact

The Project would involve the redevelopment of existing marina facilities at TKM. General locations of on-site facilities and overall drainage patterns of the site are anticipated to remain consistent with existing conditions (i.e., runoff would be collected on-site in accordance with NPDES requirements.) The Project would improve stormwater capture systems on site, including a new drainage system, permeable pavement, landscaping/bioswales for stormwater retention, and an underground stormwater storage and infiltration system. Landscaping/bioswale areas would primarily be located along the eastern and southern edges of the Project area with some additional areas provided within the proposed surface parking lot. This would be considered an improvement compared to the existing retention basin within the southeastern portion of the site and a few infiltration locations within the Project area. No streams or rivers traverse the Project area, and no modifications to such features would be required as part of the Project. The replacement boat ramp and bulkhead that would be installed within the existing marina lagoon would not modify existing drainage patterns. Further, the replacement bulkhead would be constructed in front of the existing bulkhead, so as to minimize the potential for inadvertent soil disturbance. Therefore, the Project would have a less than significant impact. No mitigation is required.

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 Impact

As discussed above, the Project would modify the Project area but would not substantially change the current level of permeability or drainage patterns. Further and consistent with NPDES and TRPA requirements, adequate stormwater capture systems would be provided, including bioswales, to prevent flooding and excess accumulation of surface runoff. Therefore, the Project would have a less than significant impact. No mitigation would be required.

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 Impact

As noted above, the Project would manage all stormwater on site, consistent with NPDES and TRPA requirements, including any discharge of stormwater into Lake Tahoe. The Project would comply with Section 7.15 Urban Runoff and Storm Water Quality Management of the City of South Lake Tahoe Code, which requires projects to prevent, control, and reduce storm water pollutants that would contribute pollution to stormwater, a storm drain system, or waters of the state. The Project would also modernize

and improve existing on-site stormwater collection and treatment infrastructure, and no substantial increase in stormwater discharge would occur due to compliance with federal, regional, and local regulatory requirements. As such, no additional runoff would be conveyed to the City stormwater infrastructure on Venice Drive East, and the Project would not result in stormwater flows that would exceed the capacity of existing or planned stormwater drainage facilities, nor would it subject existing facilities to polluted runoff. Impacts would be less than significant. No mitigation is required.

iv) Impede or redirect flood flows?

Less Than Significant Impact

As noted above, the Project area is located within Zone X, which represents areas between the 100- and 500-year floodplains or areas of shallow flooding less than one foot in depth. These areas are generally considered to have a minimal flood hazard. The Project would not alter the course of a stream or river such that the direction of flood flows would be redirected. Site grading and improvements would be designed to maintain existing drainage patterns and convey runoff through engineered on-site stormwater facilities consistent with the City of South Lake Tahoe Municipal Code and TRPA Code of Ordinances. Because the Project would occur in an area of minimal to moderate flood hazard and would not obstruct or redirect flood flows, the Project would not modify existing flood risk in the area, and impacts would be less than significant. No mitigation is required.

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

Less Than Significant Impact

As noted above, the Project area is not located within a flood hazard zone and would not increase risks associated with flooding as it would not result in a change of use. While never recorded in the region during historic times, geologic events could trigger a seiche in Lake Tahoe, sending waves up to 30 feet back and forth across the lake (Ichinose et al. 2000). An event of this kind could inundate the Project area, however, the Project would not result in a change in use or intensity such that an increased risk of release of pollutants due to emergency conditions associated with a seiche would occur. On-site facilities would be maintained in accordance with applicable requirements related to safety and stormwater controls, including the replacement 12,000-gallon fuel tank. As such, redevelopment of the Project area would not modify or increase existing risks associated with inundation by a seiche. impacts would be less than significant. No mitigation is required.

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

Less Than Significant Impact

As discussed above, the Project would obtain all applicable permitting prior to Project implementation. The Project is designed to be consistent with the Lahontan Basin Plan and TRPA Plan Area Statement, and would implement the BMPs outlined in Chapter 5 of the Basin Plan and TRPA Best Management Practices Handbook. Water quality standards and control measures for surface water and groundwater

within the Lahontan Region are contained in the Lahontan Basin Plan. The Basin Plan designates beneficial uses for water bodies. It establishes water quality objectives, waste discharge prohibitions, and other implementation measures to protect those beneficial uses. Chapter 5, "Water Quality Standards and Control Measures for the Tahoe Region," of the Basin Plan summarizes a variety of control measures for the protection and enhancement of Lake Tahoe. The Project does not include development of uses or activities that would conflict with the Basin Plan or with any other water quality control or sustainable groundwater management plan. Additionally, as discussed in item a), above, the Project would not adversely affect surface or groundwater quality. Impacts would be less than significant, and no mitigation is required.

4.11 Land Use and Planning

4.11.1 Environmental Setting

All parcels in the Project area are within the boundaries of the City of South Lake Tahoe. More specifically, the Project area is located within the southeast corner of the Tahoe Keys development, a predominantly residential development along the southern shore of Lake Tahoe. Three apartments are currently provided within existing on-site buildings. Neighboring uses consist of residential to the west and south, and recreation and conservation uses to the east and north. The majority of the Project area is zoned as commercial, with the southeastern parcel of the Project area zoned as residential.

4.11.2 Regulatory Setting

Regional

Tahoe Regional Planning Agency Regional Plan

Land use planning and regulation in the Tahoe Basin is guided by the TRPA Tahoe Regional Plan and Code of Ordinances. The Regional Plan is intended to establish a balance between the natural environment and the built environment; and attain and maintain TRPA's environmental thresholds. The Regional Plan includes Goals and Policies that guide decision making as it affects the Region's resources and environmental thresholds, and they are intended to provide opportunities for orderly growth and development consistent with those thresholds. The Goals and Policies are addressed in six major elements: land use, transportation, conservation, recreation, and public services and facilities Land in the Lake Tahoe Region is assigned to one of eight classifications: Wilderness, Backcountry, Conservation, Recreation, Resort Recreation, Residential, Mixed-Use, and Tourist. The classifications summarize major land uses that exist in the Region and are further supplemented by the plan area statements, community plans, master plans, and area plans. The Regional Plan designates the Project area as Mixed-Use (City of South Lake Tahoe n.d.). The Regional Plan identifies Mixed-Use areas as urban areas that have been designated to provide a mix of commercial, public services, light industrial, office, and residential uses to the Region or have the potential to provide future commercial, public service, light industrial, office, and residential uses. The purpose of this classification is to concentrate higher intensity land uses for public convenience and enhanced sustainability (TRPA 2012).

Local

City of South Lake Tahoe General Plan

The City's General Plan provides a comprehensive plan for the City through 2030. The General Plan vision for future land use and community design is:

> In 2030, the Highway 50 corridor has been transformed into an interconnected series of compact mixed-use (commercial, office, residential, and tourist accommodation) districts that serve the needs of residents and visitors alike. The corridor is the heart of the community and contains year-round sidewalks and bike paths. The transformation of the corridor has been

fueled by the cooperative efforts of local, regional, and state governments, and private investors who share the vision for a prosperous and healthy region (City of South Lake Tahoe 2011:LU-1).

Several policies in the City General Plan related to land use and enhancing compact development (and indirectly environmental impacts) are applicable to the project, including:

- Policy LU-1.2: Smart Growth. The City shall implement Smart Growth principles to create walkable, mixed-use centers, compact and complete neighborhoods, and enhance gateways and places.
- Policy LU-1.7: Live/Work Opportunities: The City shall encourage live/work and work/live opportunities with flexible buildings and mixed-use land use designations that allow local businesses to grow and evolve over time.
- Policy LU-3.2: Neighborhood and Recreation Connectivity: The City shall improve connections and access to a wide range of recreational opportunities, which will improve the quality of life of residents and visitors.
- Policy LU-5.3: Commercial Center Enhancement**.** The City shall encourage the upgrade and/or expansion of existing commercial centers, including improvements to parking and landscaping areas; redesigns to accommodate bicycles, pedestrians, and transit facilities; and remodeling to include "green" technology and improve energy efficiency.

4.11.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
a) Physically divide an established community?	No Impact
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?	Less Than Significant Impact

4.11.4 Answers to CEQA Checklist Questions

a) Would the Project physically divide an established community?

No Impact

The Project would consist of redevelopment of existing marina facilities. The Project would not increase the boundaries of the marina or result in the reduction or modification of the existing Tahoe Keys development. The 3 residential units provided within the Project area are for on-site employees and would be redeveloped as part of the Project, resulting in no net reduction in the number of on-site residences. As the Project area is located along the periphery of the Tahoe Keys development and would not result in a change in use, it would not physically divide an established community. Therefore, there would be no impact, and no mitigation is required.

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

Less Than Significant Impact

The Project would involve the redevelopment of existing marina facilities with the intent of providing more modern facilities that would be more efficient and consistent with existing development in the area. While the Project would temporarily remove existing housing on site, it would reconstruct the same number and same type of units, maintaining consistency with City General Plan Policy LU-1.7 and providing live/work opportunities within the City. In addition, the Project would enhance an existing marina amenity within the City by providing modernized marina facilities and enhancing ease of access to TKM, thereby encouraging engagement within Tahoe Keys and the broader city, consistent with Policies LU-1.2, LU-3.2, and LU-5.3. With respect to the Regional Plan, the Project would provide modernized facilities designed to enhance the experience and engagement at TKM, consistent with the purpose of mixed-use designation for the Project area to concentrate higher intensity land uses for public convenience and enhanced sustainability. Further, the Project would be required to comply with TRPA Regional Plan policies and TRPA Code of Ordinances, which are adopted for the purpose of minimizing development impacts to the environment.

With respect to the height of the Project, the proposed boat storage building would have a high point of 42 feet above ground surface. As noted above in Section 4.9 (Hazards), the Project is located within Review Area 2, but would not affect existing airport operations or increase risks associated with the operation of Lake Tahoe Airport due to its height. In addition, although the Project would exceed the stated maximum allowable height for buildings per TRPA Code 37.4.1-1, TRPA is considering an amendment to the TRPA Code of Ordinances that would allow for incrementally taller structures located further from the shoreline, taking into consideration the surrounding areas and limited potential for visual impacts. Upon issuance of the exception, implementation of the Project would not conflict with existing land use plans, policies, or regulations for the purpose of mitigating an environmental effect. This impact would be less than significant. No mitigation is required.

4.12 Mineral Resources

4.12.1 Environmental Setting

The Surface Mining and Reclamation Act of 1975 requires that the State Mining and Geology Board identify, map, and classify aggregate resources throughout California that contain regionally significant mineral resources. Designations of land areas are assigned by DOC and California Geological Survey following analysis of geologic reports and maps, field investigations, and using information about the locations of active sand and gravel mining operations. The California Mineral Land Classification System represents the relationship between knowledge of mineral deposits and their economic characteristics (grade and size). Lands classified as Mineral Resource Zones are considered important mineral resource areas.

There are no regionally significant aggregate resources (i.e., sand and gravel resources) in the Project area, as identified by DOC, and there are no ongoing mining activities in or near the Project area (DOC 2016). Mining is not an identified allowable use in the Tahoe Basin per Chapter 21 of the TRPA Code.

4.12.2 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
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?	No Impact
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?	No Impact

4.12.3 Answers to CEQA Checklist Questions

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

No Impact

According to the El Dorado County General Plan and DOC, there are no state or regionally valuable mineral resources within the Project boundary (El Dorado County 2003, DOC 2016). The Project would not result in the loss of a potential known mineral resource as no known important mineral resource areas exist within the Project area or vicinity. Therefore, there would be no impact. No mitigation is required.

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

No Impact

As stated above, the Project area is not located within or near any active mining operations (DOC 2016), and no known important mineral resource areas exist within the Project area (El Dorado County 2003). Therefore, there would be no impact. No mitigation is required.

4.13 Noise

The impact analysis presented in this section is based primarily on the Environmental Noise Assessment for Tahoe Keys Marina prepared by Saxelby Acoustics (2026). The Environmental Noise Assessment, which is included as **Appendix C**, provides additional data and information related to the assessment of Project impacts. The following analysis focuses on the potential noise impacts to humans and nearby land uses. Noise impacts that may affect biological resources are considered above in Section 4.4 (Biological Resources).

4.13.1 Environmental Setting

Noise

Noise is defined as a sound or series of sounds that are intrusive, objectional, or disruptive to daily life. Noise levels are measured to regulate ambient noise and protect people from exposure to excessive noise. Different land uses have different acceptability levels in terms of noise disturbance. For example, industrial uses have a higher noise threshold than residential uses. Noise standards provide a means of assessing exposure and compatibility based on specific uses.

Sound is measured in decibels (dB), a logarithmic scale that expresses sound pressure relative to the quietest sound the human ear can detect. To reflect how humans actually hear, sound levels are "A-weighted" and expressed as dBA, which adjusts for the ear's reduced sensitivity to very low or high frequencies. Under the decibel scale, a doubling of sound energy corresponds to a 3-dB increase. In typical noisy environments, changes in noise of 1 – 2 dB are generally not perceptible. However, it is widely accepted that people can begin to detect sound level increases of 3 dB in typical noisy environments. Further, a 5-dB increase is generally perceived as a distinctly noticeable increase, and a 10-dB increase is generally perceived as a doubling of loudness (Caltrans 2013).

Various noise descriptors have been developed to describe time-varying noise levels. The noise descriptors used in this chapter include:

- Equivalent Continuous Sound Level (L_{eq}): L_{eq} represents an average of the sound energy occurring over a specified period. In effect, L_{eq} is the steady-state sound level containing the same acoustical energy as the time-varying sound level that occurs during the same period (Caltrans 2013). For instance, the 1-hour equivalent sound level, also referred to as the hourly L_{eq}, is the energy average of sound levels occurring during a 1-hour period.
- Community Noise Equivalent Level (CNEL): CNEL is the energy average of the A-weighted sound levels occurring over a 24-hour period, with a 10-dB penalty applied to sound levels occurring during the nighttime hours between 10 p.m. and 7 a.m. and a 5-dB penalty applied to the sound levels occurring during evening hours between 7 p.m. and 10 p.m. (Caltrans 2013).
- Maximum Sound Level (L_{max}): L_{max} refers to the maximum instantaneous sound level recorded during a specific period, often used to describe the loudest moment of a noise event, such as a passing truck or construction activity.

With respect to surrounding land uses, residential land uses are located to the north and west with some commercial office space located directly adjacent to the Project area's western boundary, and open space is located to the east and south beyond Venice Drive East. Significant noise generators in the vicinity of the Project area include US 50, approximately 0.9 miles to the southeast, and SR 89, approximately 1 mile to the southwest. The existing noise environment in the Project area is primarily defined by traffic on Venice Road, car/truck circulation within the Project area, and boat noise (Saxelby Acoustics 2026).

Vibration

Vibration is the periodic oscillation of a medium or object with respect to a given reference point. Groundborne vibration is vibration of and through the ground. Sources of groundborne vibration include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) and those introduced by human activity (e.g., explosions, machinery, traffic, trains, construction equipment). Vibration sources may be continuous (e.g., operating factory machinery) or transient in nature (e.g., explosions). Within the context of construction, impact pile-driving and tracked equipment can result in perceptible vibration levels.

Groundborne vibration amplitudes are commonly expressed in peak particle velocity (PPV) or root-mean-square (RMS) vibration velocity. PPV and RMS vibration velocities are normally described in inches per second (in/sec) but can also be expressed in decibel notation (VdB), which is used mainly in evaluating human response to vibration.

Sensitive Receptors

Noise-sensitive land uses (i.e., sensitive receptors) are generally considered to include uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels, and because of the potential for nighttime noise to result in sleep disruption. Additional land uses such as schools, transient lodging, historic sites, cemeteries, and places of worship are also generally considered sensitive to increases in noise levels. Vibration-sensitive land uses are generally considered to be buildings or structures that could be damaged due to vibration or land uses where vibration levels could interfere with operations or cause human annoyance.

In the vicinity of the Project area, sensitive land uses include residential condominiums located to the north and west, along Tahoe Keys Boulevard and Ala Wai Boulevard.

4.13.2 Regulatory Setting

State

California Building Energy Efficiency Standards (Title 24, Part 6)

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations, establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses, and dwellings other than

single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB CNEL in any habitable room. Title 24 also mandates that for structures containing noise-sensitive uses to be located where the CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

Local

City of South Lake Tahoe General Plan

The City of South Lake Tahoe General Plan Health and Safety Element includes several relevant policies related to noise, as outlined below:

- Policy HS-8.1: Annoying and Excessive Non-Transportation Noise Protection: Establishes exterior noise level standards for new non-transportation noise sources, such as mechanical or stationary equipment, as measured at the property line of adjacent noise-sensitive uses. Projects must ensure that operational noise does not exceed the limits identified in Table HS-1 of the General Plan.
- Policy HS-8.2: Annoying and Excessive Non-Transportation Noise Mitigation: Requires the incorporation of appropriate mitigation measures into project design when non-transportation noise levels would adversely affect nearby noise-sensitive land uses or exceed the standards in Table HS-1. Mitigation is to be implemented at the property line or within designated outdoor activity areas as determined by the City.
- Policy HS-8.3: Overall Background Noise Mitigation: Prohibits projects from increasing existing background noise levels by 3 or more decibels (dB) at receiving land uses in cases where ambient noise levels already exceed the General Plan standards shown in Table HS-1.
- Policy HS-8.5: New Transportation Noise Source Mitigation: Requires that new transportation noise sources be mitigated to achieve the noise level standards identified in the General Plan. The standards apply to all outdoor activity areas and interior spaces of existing noise-sensitive land uses. Mitigation is required where transportation-related noise from new or modified sources would exceed the established exterior or interior noise limits.
- Policy HS-8.6: Acoustical Analysis Preparation: Requires preparation of an acoustical analysis during environmental review when proposed projects are located in areas exposed to existing or projected exterior noise levels that exceed the thresholds shown in the General Plan.

TRPA Code of Ordinances – Chapter 68: Noise Limitations

Chapter 68 identifies maximum allowable noise levels for single-event noises from short-duration sources. TRPA Code prohibits the creation of noise that would cause threshold exceedances in adjacent land use districts.

68.3.1 Single Noise Events:

Single noise event threshold standards adopted by TRPA are based on the numerical value associated with the maximum measured level in acoustical energy during an event. This threshold establishes maximum noise levels of 82 dBA L_{max} at 50 feet at 3,000 rpm, 75 dBA L_{max} at the shoreline, or 88-90 dBA at 3.3 feet from the engine exhaust.

68.4 Community Noise Levels:

TRPA shall use CNELs to measure community noise levels. The plan area statements shall set forth CNELs that shall not be exceeded by any one activity or combination of activities (See subsection 11.6.10). In addition, community noise levels shall not exceed levels existing on August 26, 1982, where such levels are known. The CNELs set forth in the plan area statements are based on the land use classification, the presence of transportation corridors, and the applicable threshold. The CNEL corridor GIS data layer indicates the location of special noise corridors for highways and the Lake Tahoe Airport. Consistent with the adopted TRPA Threshold Standards the maximum community noise equivalent levels (CNEL) for the Tahoe Keys Area Plan Statement 102 is 55 dBA CNEL.

68.9 Exemptions to Noise Limitations:

The standards of this chapter shall not apply to noise from TRPA-approved construction or maintenance project or the demolition of structures provides such activities are limited to the hours between 8 a.m. and 6:30 p.m. The standards of this chapter shall not apply to safety signals, warning devices or emergency pressure relief valves, and other similar devices. Emergency work to protect life property shall be exempt from noise standards, as shall be fireworks used in accordance with a state or local permit.

4.13.3 CEQA Checklist Summary

Would the Project result in:

CEQA Question	Impact Determination
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?	Less Than Significant Impact with Mitigation Incorporated
b) Generation of excessive groundborne vibration or groundborne noise levels?	Less Than Significant Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within 2 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?	Less Than Significant Impact

4.13.4 Answers to CEQA Checklist Questions

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

Less Than Significant Impact with Mitigation Incorporated

Construction

Construction activities would temporarily increase noise levels in the Project area, with maximum noise levels ranging from 76 to 90 dBA L_{max} at 50 feet. These activities would occur primarily during daytime hours (8:00 a.m. to 6:30 p.m.), consistent with the TRPA Code of Ordinances, which exempts daytime construction noise from noise limits. The nearest residences, located approximately 250 feet away, would experience maximum noise levels of approximately 76 dBA, representing an increase of no more than 6 dBA over existing ambient conditions (70 – 82 dBA). Because there is no established TRPA threshold for construction noise, the lead agency is utilizing the Caltrans standard of noise impact significance (12 dBA) for temporary construction noise, which is equivalent to a doubling of sound energy and has been the standard of significance for Caltrans projects for many years, including along the US 50 and SR 89 corridors. Application of this standard to construction activities is considered reasonable considering the temporary nature of construction activities. The predicted increase of 6 dBA is below the Caltrans significance threshold, indicating that typical daytime construction would not cause a significant noise impact.

However, if construction were to occur outside normal daytime hours, temporary exceedances could cause sleep disturbance at nearby sensitive receptors and would represent a potentially significant impact.

Operational

Stationary Source

During on-site operations, the Project would generate noise associated with on-site circulation (i.e., in the parking lot area and promenade), boat launch operations, and HVAC. In order to assess stationary source operational noise associated with the aforementioned Project components, Saxelby Acoustics modeled operation noise using SoundPLAN, a noise prediction model. Inputs to the model included sound power levels for the proposed noise sources, existing and proposed buildings, terrain type, and locations of sensitive receptors. These predictions are made in accordance with International Organization for Standardization standard 9613-2:1996 (Acoustics – Attenuation of sound during propagation outdoors). This standard is the most commonly used method for calculating exterior noise propagation. Based on the modeling performed, noise levels associated with Project operations would range between 40 and 46 dBA CNEL at nearby sensitive receptors, which would be less than TRPA's noise level standard of 55 CNEL. Further, based on measured ambient noise levels, on-site noise levels generated by the Project would be consistent with existing conditions (Saxelby Acoustics 2026).

Traffic Noise

Existing land uses in the Project area include commercial and residential activities, as well as marina and boating activities. Based on noise measurements taken within the Project area and taking into account that the Project would not involve a change in use type, the Project is not predicted to cause traffic noise levels to increase by more than 1.5 dBA. The Project falls under the TRPA Tahoe Keys Area Plan Statement 102. The maximum allowable noise level within the Plan Area Statement is 55 dBA CNEL. Taking into account existing ambient noise levels (based on modeled roadway noise) in combination with the anticipated net increase in daily vehicle trips with Project implementation, the Project would result in a maximum increase of 1.5 dBA, which would not be considered perceptible (i.e., less than 3 dBA) (Saxelby Acoustics 2026). As a result, substantial transportation noise increases would not occur, and impacts would be less than significant.

Mitigation Measures

NOI-1: The following measures would be implemented by the contractor during construction:

- Construction shall be limited to 8:00 a.m. to 6:30 p.m.
- All construction equipment powered by internal combustion engines shall be properly muffled and maintained.
- Quiet construction equipment, particularly air compressors, is to be selected whenever possible.
- All stationary noise-generating construction equipment such as generators or air compressors are to be located as far as is practical from existing residences. In addition, the contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the Project area.
- Unnecessary idling of internal combustion engines is prohibited.
- The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the Project area during all Project construction.

Significance After Mitigation

Mitigation Measure NOI-1 would ensure construction activities are limited to allowable hours and that noise control practices are implemented, thereby reducing impacts to less than significant.

b) Would the Project result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Data collected for the Noise Report indicated that construction vibration levels anticipated for the Project are less than the 0.2 in/sec threshold at distances of 26 feet. Sensitive receptors that could be impacted by construction-related vibrations, especially vibratory compactors/rollers, are located approximately 26 feet, or further, from typical construction activities (Saxelby Acoustics 2026). At these

distances construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours. This is a less than significant impact, and no mitigation is required.

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 2 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?

Less than Significant Impact

As noted above, the Lake Tahoe Airport is located approximately 1.6 miles south of the Project area. The Project is located within and adjacent to residential areas and is not in the overflight zone of the airport. The Project area does not lie within a noise impacted area of the airport (Environmental Science Associates 2019). Furthermore, ambient noise levels, as measured over a 24-hour period, are compliant with all applicable standards (Saxelby Acoustics 2026). As noted in Section 4.9.4 e), the Project would not result in a change in air patterns as a result of Project implementation. As such, noise contours associated with the airport would change as a result of the Project. Therefore, the Project would not expose construction workers or residents to excessive aircraft noise. Impacts would be less than significant, and no mitigation is required.

4.14 Population and Housing

4.14.1 Environmental Setting

As of 2019, the City had an estimated population of 22,800 residents and an estimated housing stock of 15,831 dwelling units. The City's population grew approximately 6.5 percent between 2010 and 2019. Projections suggest that population growth will continue within the county (City of South Lake Tahoe 2022b). Per the California Department of Finance (DOF), the City's population has decreased slightly since 2019 and was estimated to be 21,022 residents in 2025 (DOF 2025). Overall City population is expected to increase by 12.4 percent between 2018 and 2045 (City of South Lake Tahoe 2022b).

Due to its status as a vacation destination, the Tahoe region experiences significant seasonal population fluctuations, and has a high proportion of rental properties. Of all housing stock, 49.9 percent of South Lake Tahoe's housing stock is seasonal or occasional use housing. The proportion of seasonal or occasional use units decreased slightly from 54.5 percent in 2010 (City of South Lake Tahoe 2022b).

The amended 2012 TRPA Regional Plan Land Use Element sets goals for housing development within the Tahoe Basin. Goals outlined in the plan include promoting housing opportunities for full time, seasonal residents and workers in the region, and promoting moderate income housing where it does not conflict with other planning goals. The policy outlines desired qualities of new development including 100% deed restricted housing whenever feasible (TRPA 2025a).

4.14.2 Regulatory Setting

Local

City of South Lake Tahoe Housing Element

The City's General Plan Housing Element was updated in 2022 and includes the City's goals, policies, quantified objectives, and housing programs for the maintenance, improvement, and development of housing within its jurisdiction. The City's Housing Element is intended to increase housing opportunities for South Lake Tahoe residents of all economic levels, to preserve and enhance the supply of housing within the city, and to encourage the construction and maintenance of affordable and workforce housing in South Lake Tahoe.

4.14.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
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)?	Less Than Significant Impact
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	Less Than Significant Impact

4.14.4 Answers to CEQA Checklist Questions

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

Less Than Significant Impact

As discussed above, the Project area is zoned for commercial and residential uses, however, the residentially zoned parcel is currently occupied by a stormwater basin and has never been developed with residential uses. Redevelopment or intensification of use within existing planned land uses is not considered "growth-inducing" under CEQA. The Project would redevelop the existing marina facilities, an allowed use, and replace existing on-site housing with the same number of units. While existing housing is not expressly permitted under current zoning, under Section 21.5.2(C) of the TRPA Code of Ordinances, existing housing that constitutes a nonconforming use may be maintained or replaced in kind. These units would be for the exclusive use of TKM employees. City of South Lake Tahoe Code of Ordinances Section 6.55.410 allows nonconforming housing density and non-conforming housing units to be reconstructed, provided the density of people housed in such a non-conforming location does not increase, which is what would occur as part of the Project.

The Project would include new utility connections for the proposed on-site buildings to existing utility lines in the area, including the potential connection to the STPUD water main within Tahoe Keys Boulevard. However, the Project area and surrounding developed parcels are already served by STPUD or the Tahoe Keys Water Company and the proposed connections are intended to ensure adequate utility service and fire flow to the Project area. Therefore, the installation of a new connection to this existing infrastructure would not be considered an extension of infrastructure that would induce development and therefore population growth. In addition, the proposed on-site water tanks would further ensure adequate fire flow within the Project area and are not associated with an increase in demand. Therefore, the Project would not result in substantial unplanned population growth or require expansion of public infrastructure. Impacts would be less than significant, and no mitigation would be required.

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

Less Than Significant Impact

The Project would involve the temporary removal of 3 residential units, until the replacement units are fully constructed and operational. Although the site is not zoned for residential use, replacement of these units is permissible under TRPA Code Section 21.5.2 (Existing Uses). Refer to Section 4.11, Land Use and Planning, for additional discussion of applicable land use regulations. The Project would replace the existing housing on the second floor of the Dock Master Building. The temporary displacement of residents of 3 apartments would represent a negligible portion of the local population and housing availability in the area. Upon completion of construction, the new units would be available to accommodate the same number of on-site residents. Therefore, the Project would not represent a displacement of a substantial number of people or housing. Impacts would be less than significant, and no mitigation is required.

4.15 Public Services

4.15.1 Environmental Setting

Fire Protection

South Lake Tahoe Fire Rescue provides fire and life safety, rescue and emergency medical service, and fire prevention to the City and the Project area. The closest South Lake Tahoe Fire Rescue fire station is approximately 1.1 miles south of the Project area. CAL FIRE also maintains its own station in the nearby community of Meyers. All fire departments in the Tahoe Basin, as well as some jurisdictions in northern Nevada, are members of the Lake Tahoe Regional Fire Chief Association. This group has a mutual aid agreement to share the resources of each jurisdiction during large emergency events.

Police Protection

The South Lake Tahoe Police Department serves the Project area. The South Lake Tahoe Police Department is a full-service police department that responds to about 2,350 calls for service per month, on average. The closest South Lake Tahoe Police Department office is located approximately 1.5 miles east of the Project area.

Schools

The Project area is located within Lake Tahoe Unified School District, which provides elementary, middle, and high school education for local residents. Tahoe Valley Elementary, located approximately 0.6 miles south of the Project area, South Tahoe Middle School, located approximately 1.3 miles east of the Project area, and South Tahoe High School, located approximately 1.5 miles south of the Project area, would serve the students within the Project area. Lake Tahoe Unified School District provides transportation from locations within the district to these schools. Higher education needs are met by Lake Tahoe Community College.

Medical Facilities

Barton Memorial Hospital is located off South Avenue, 1.3 miles south of the Project area. Barton Memorial Hospital offers comprehensive medical services including behavioral health/psychiatry, endocrinology, laboratory, medical imaging, orthopedics, pediatrics, primary care, and specialty care.

Parks

South Lake Tahoe Parks and Recreation Department maintains parks, recreational programs, and events in the South Lake Tahoe area. South Lake Tahoe Parks and Recreation manages 8 parks and beaches within the South Lake Tahoe area. Facilities also include a campground, senior center, ice skating rink, and recreation with swimming complex. The closest parks to the Project area include Al Tahoe Pioneers Cemetery and Regan Beach approximately 1.0 mile east of the Project area.

Other recreation opportunities include public access trails on the CTC Cove East property, which is adjacent to the east side of the Project area.

4.15.2 Regulatory Setting

State

California Fire Code

The 2022 California Fire Code, which is codified at Part 9 of Title 24 of the California Code of Regulations, incorporates by adoption the 2021 International Fire Code and contains regulations related to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and many other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The California Fire Code contains specialized technical regulations related to fire and life safety. The California Building Standards Code, including the California Fire Code, is revised and published every three years by the California Building Standards Commissions.

California Health and Safety Code

State fire regulations are set forth in Sections 13000 et seq. of the California Health and Safety Code, which includes regulations for building standards (as set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers, smoke alarms, high-rise building and childcare facility standards, and fire-suppression training.

4.15.3 CEQA Checklist Summary

Would the Project:

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

4.15.4 Answers to CEQA Checklist Questions

a) Would the Project result in substantial adverse physical impacts associated with the need and/or provision of new or physically altered governmental services and/or facilities in order to maintain acceptable service ratios, response times, or other performance objectives for any of the public services?

i) Fire protection?

Less Than Significant Impact

As noted above, South Lake Tahoe Fire Rescue provides fire and emergency medical services to the Project area, with the closest fire station located 1.1 miles south of the Project area. The Project would involve the redevelopment and modernization of existing marina facilities, including updating existing buildings to comply with current California Fire Code requirements. The Project would also provide additional access points to the Project area via Venice Drive East and would not modify the existing alignment or width of Venice Drive East. All internal circulation and parking lots in the Project area would be designed to accommodate emergency vehicle turn radiuses.

Policy PQP-6.6 of the City General Plan outlines target response time for fire and emergency incidents, at 4 minutes for a single engine response and 10 minutes for a multiple vehicle response (City of South Lake Tahoe 2011). Because the Project area is already developed and located within the existing South Lake Tahoe Fire Rescue's existing service area, as well as the fact that the Project would not permanently modify existing roads in the vicinity of the Project area, response times to the Project area would not be altered during operation of the Project. During construction, access for emergency vehicles and at least 1 lane of traffic with flaggers on either side of the lane closure would be maintained at all times in coordination with the South Lake Tahoe Fire Rescue and Public Works Department. Further, the height of the proposed on-site structures would not exceed the height of other facilities in the area and is not anticipated to require special equipment to provide adequate fire service. In addition, the Project would include an emergency command center which would be accessible for use by local emergency services in cases of emergency in the surrounding area, thereby increasing the ability of emergency responders to respond to calls for service within the lake. The impacts associated with its construction are evaluated throughout this IS/MND.

During construction, some temporary lane closures may be necessary along Venice Drive East while utility connections are installed. During these periods, access for emergency vehicles would be maintained at all times and in coordination with the South Lake Tahoe Fire Rescue and Public Works Department. Therefore, the Project would have a less than significant impact on fire protection. No mitigation is required.

ii) Police protection?

Less Than Significant Impact

The South Lake Tahoe Police Department provides police protection services to the area and the existing on-site buildings. Because the Project would replace existing uses on site with facilities that would serve

a similar function and would provide more secure storage of boats on-site, no substantial increase in demand for police protection is anticipated as a result of Project implementation. Further and as noted above, the Project would provide an emergency command center that would increase the ability for emergency responders to provide service within the vicinity of the Project area and Lake Tahoe. The impacts associated with construction of the emergency command center are evaluated as part of this IS/MND. Further, as the Project would not modify existing roadways or modify existing emergency access routes, access for the South Lake Tahoe Police Department (approximately 1.5 miles away) would be maintained. Therefore, the Project would not necessitate new or expanded police facilities. Impacts would be less than significant, and no mitigation is required.

iii) Schools?

No Impact

The Project area is currently served by the Lake Tahoe Unified School District. As the Project would maintain the same number of on-site residences upon completion of construction, the Project would not increase the number of residents and/or students within the Project area, and substantial indirect growth is not anticipated as a result of the projected increase in commercial square footage of the Project, which would be primarily attributed to the boat storage and boat showroom facilities (compared to existing conditions.) No impact to school capacity is anticipated, and no mitigation is required.

iv) Parks?

Less Than Significant Impact

The Project would involve redevelopment of existing marina facilities and would provide better access to water-based recreation opportunities for local residents. The Project would continue to allow access to bathrooms and public parking opportunities for adjacent open space and recreational opportunities to the east and would provide increased pedestrian access and amenities (e.g., an improved and expanded promenade.) As a result, the Project would not necessitate the provision of new or modified park facilities. Impacts would be less than significant, and no mitigation is required.

v) Other public facilities?

Less Than Significant Impact

Because the Project would maintain the number of existing on-site residences, no significant impacts to other public facilities (e.g., libraries) would occur as a result of increased local population. In general, the Project would improve local/regional access to modernized marina facilities, and no significant impacts to public services are anticipated. No mitigation is required.

4.16 Recreation

4.16.1 Environmental Setting

South Lake Tahoe Parks and Recreation Department maintains parks, recreational programs, and events in the South Lake Tahoe area. South Lake Tahoe Parks and Recreation manages 8 parks and beaches within the South Lake Tahoe area. Facilities also include a campground, senior center, ice skating rink and recreation complex with a swimming pool. The closest parks to the Project area include Al Tahoe Pioneers Cemetery and Regan Beach approximately 1.0 mile east of the Project area (South Lake Tahoe Parks and Recreation n.d.).

The CTC manages and protects nearly 4,700 state properties, totaling about 6,900 acres, for the purpose of protecting the natural environment and promoting public recreation and access to Lake Tahoe (CTC 2025). The Cove East CTC property borders the Project area to the east and provides hiking, walking and beach access for visitors. Visitors park along Venice Drive East to access the trailhead next to the existing entrance to TKM.

4.16.2 Regulatory Setting

State

Quimby Act

The Quimby Act (California Government Code Section 66477) preserves open space and parkland in urbanizing areas of the state by authorizing local governments to establish ordinances requiring developers of new subdivisions to dedicate land for parks, pay an in-lieu fee, or perform a combination of the two. The amount of land dedicated, or fees paid shall be based upon the residential density, which shall be determined on the basis of the approved or conditionally approved tentative map or parcel map and the average number of persons per household. The Quimby Act standards are used as a potential metric for assessing appropriate recreation acreage but are not a requirement under the impact analysis. As the Project would maintain the same number of residences on-site compared to existing conditions, this regulation is not considered applicable.

4.16.3 CEQA Checklist Summary

CEQA Question	Impact Determination
a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	Less Than Significant Impact
b) Does the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	Less Than Significant Impact

4.16.4 Answers to CEQA Checklist Questions

a) Would the Project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

Less Than Significant Impact

The Project would redevelop the existing marina facilities to provide modern amenities and improve access for aquatic recreation through the addition of new boat ramps and small watercraft storage. Although implementation of the Project may result in a modest increase in visitation to the marina, recreational, commercial, and dining activities would remain confined to the Project area. Some visitors may also access the adjacent CTC Cove East Trail and property; however, such use currently occurs and would not represent a new or intensified pattern of activity. Therefore, the Project would not result in a significant impact on recreational resources. No mitigation is required.

b) Would the Project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

Less Than Significant Impact

As discussed above, the Project would redevelop the existing TKM to enhance recreational access and improve existing facilities. The Project would not expand the marina or associated recreational facilities beyond the existing developed footprint of the Project area. The Project would replace on-site housing in kind and would not increase the number of residents within the Project area. Therefore, the Project would not result in the construction or expansion of recreational facilities that could cause an adverse physical effect on the environment. Impacts would be less than significant. No mitigation is required.

4.17 Transportation

The impact analysis presented in this section is based primarily on the 2025 SLT Tahoe Keys Marina Redevelopment Transportation Analysis (Transportation Analysis) prepared by LSC Transportation Consultants, Inc. for the applicant. The Transportation Analysis, which is included as **Appendix D**, provides additional data and information related to the assessment of Project impacts.

4.17.1 Environmental Setting

Roadway Network

Regional access to the Project area is provided by US 50 and SR 89. Local access to the Project area and other uses within the vicinity of the Project area include:

- **Venice Drive East**. Venice Drive East is a 2-lane road that travels in a northwest to southwest direction beginning at the entrance to TKM and becoming Venice Drive at the western edge of the Project area. Venice Drive, which continues from the intersection of Venice Drive East and Tahoe Keys Boulevard, continues west and terminates approximately 1.6 miles to the northwest of the Project area at Aloha Drive. Venice Drive East contains curb and gutter on both sides of the street.
- **Tahoe Keys Boulevard**. Tahoe Keys Boulevard is a 2-lane road that travels in a northwest to southwest direction towards Highway US 50. Tahoe Keys Boulevard contains curbs on both sides of the street and a dirt sidewalk intermittently. The northern portion of the street, beginning from Michaels Drive, is separated by a dirt median with trees. Both directions of travel contain bike lanes or space for bicyclists. Tahoe Keys Boulevard begins at US 50 approximately 4,010 feet southeast of the Project area and extends to a dead end approximately 4,040 feet northeast of the Project area.
- **Venice Drive**. Venice Drive East's western extension, Venice Drive, is located west of Tahoe Keys Boulevard. It provides the other primary access point to the Tahoe Keys development, along with 15th Street which connects to Venice Drive further to the west.

All 3 streets (Tahoe Keys Boulevard, Venice Drive, and Venice Drive East) are considered collector streets under the City of South Lake Tahoe General Plan (City of South Lake Tahoe 2011).

Transit Network

Public transit within the City is provided primarily by the Tahoe Transportation District (TTD), which operates the South Shore Transit System (also known as BlueGO). Transit routes connect major destinations such as the "Y" area, Stateline, and the Lake Tahoe Community College, with stops along US 50 and within nearby residential and commercial districts. The marina does not currently have any nearby transit options. The closest bus stop, which is serviced by TTD, is located 275 ft east of the Tahoe Keys Blvd/US 50 signalized intersection or 1.5 miles south of the site. Microtransit options are also unavailable near the site. South Lake Tahoe's Lake Link microtransit service is available as far west as the Grocery Outlet located at 2358 Lake Tahoe Boulevard, South Lake Tahoe, California 96150, or 1.8 miles south of the site.

Bicycle and Pedestrian Facilities

The City General Plan identifies a network of bicycle and pedestrian routes to promote safe, multimodal travel. A Class II bike lane is found along Tahoe Keys Boulevard between Venice Drive East and Eloise Avenue. This bike lane (Class III) continues along Venice Drive from Tahoe Keys Boulevard east until it concludes at the CTC Cove East recreational trail. Additional unmarked bicycle routes are located throughout the neighborhood south of the Project area along Washington Avenue, Eloise Avenue, Tahoe Island Drive, and 12th Street. Both Class II bike lanes as well as sidewalks are located along US 50 near the intersection with Tahoe Keys Boulevard. A permanent bike map showing the nearby bicycle routes is posted at the intersection of Tahoe Keys Boulevard and Venice Drive just below the northbound stop sign. Sidewalk coverage is intermittent, with segments of paved pedestrian access near intersections and unpaved paths along sections of Venice Drive East and Tahoe Keys Boulevard (LSC Transportation Consultants, Inc. 2026).

4.17.2 Regulatory Setting

State

Senate Bill 743

SB 743, passed in 2013, required the Governor's Office of Planning and Research to develop new State CEQA Guidelines that address traffic metrics under CEQA. As stated in the legislation, upon adoption of the new guidelines, "automobile delay, as described solely by level of service (LOS) or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment pursuant to this division, except in locations specifically identified in the guidelines, if any."

These updates indicated that VMT would be the primary metric used to identify transportation impacts. State CEQA Guidelines Section 15064.3 was added on December 28, 2018, to further address that the significance of transportation impacts should be determined based on VMT instead of congestion (such as level of service [LOS]). The updated State CEQA Guidelines were approved, and lead agencies had an opt-in period until July 1, 2020, to implement the updated guidelines regarding VMT. As of July 1, 2020, implementation of Section 15064.3 of the updated CEQA Guidelines apply statewide.

Local

TRPA Regional Plan and Code of Ordinances

The TRPA regulates land use and transportation throughout the Lake Tahoe Basin. TRPA's Regional Plan and Code of Ordinances require that all projects be consistent with regional transportation, air quality, and scenic quality thresholds.

The TRPA 2025 Regional Transportation Plan (TRPA 2025b) provides guidance for multimodal transportation network buildout. The plan encourages actions that reduce reliance on private vehicles, support walkable and transit-oriented communities, and meet TRPA's environmental threshold carrying capacities. Key objectives include:

- Reducing regional VMT and improving air quality through expanded transit service.

- Implementing bicycle and pedestrian facilities to enhance active transportation connectivity.
- Managing parking and roadway operations to support the environmental and scenic goals of the basin.

Projects located within TRPA's jurisdiction must demonstrate consistency with the 2025 Regional Transportation Plan, applicable transportation thresholds, and TRPA Code Chapter 90 (Transportation), which governs roadway improvements, transit service, and transportation demand management requirements.

On August 26, 2024, TRPA provided updated guidance for the assessment of Project-generated VMT within its jurisdiction. Per the updated guidance, VMT analysis is conducted on an annual average daily basis, reflecting the standard for overall greenhouse gas emissions. VMT for each existing and proposed land use is calculated by multiplying peak day trip generation by a peak day-to-average annual daily factor to get average annual daily trips. Next, the average annual daily trips are multiplied by the zone's average trip length to obtain daily VMT. Per TRPA standards, the annual daily trips are multiplied by the average trip length within the Tahoe Basin, as TRPA only regulates VMT within the Tahoe Basin.

City of South Lake Tahoe General Plan – Transportation and Circulation Element

The Transportation and Circulation Element of the City of South Lake Tahoe General Plan establishes policies for the local transportation system. Relevant goals include improving public transit and non-motorized travel options, maintaining safe and efficient vehicular circulation, and coordinating transportation planning with TRPA regional objectives. The following goals and policies would help in improving transportation within the City (City of South Lake Tahoe 2011).

- Policy TC-1.1: Overall Street Design**.** The City shall develop: all arterial streets to provide infrastructure for vehicles, transit, bicycles, and pedestrians; all collector streets to provide at a minimum infrastructure for vehicles, transit, bicycles and pedestrians; and local streets to provide adequate shared infrastructure for vehicles, bicycles, and pedestrians. The City shall develop a network of routes along collector and local streets for pedestrians and bicyclists.
- Policy TC-3.6: Bicycle Parking and Storage. The City shall require new multi-family residential and commercial properties to provide accommodations for bicycle parking.
- Policy TC-3.12: Bicycle Parking and Storage. The City shall provide bike racks and bike storage at all public building, parks, and recreation areas, and shall require bicycle racks or lockers for significant new private development projects or substantial additions.
- Policy TC-3.14: Pedestrian-Friendly Districts. The City shall create a pedestrian-friendly, village atmosphere within the Valley and Stateline community plan areas.
- Policy TC-3.18: Commercial Building Access. The City shall facilitate pedestrian access to commercial buildings by requiring building entries to be oriented towards sidewalks or walkways.

The General Plan classifies Tahoe Keys Boulevard and Venice Drive East as collector streets, designed to provide local circulation and access to residential, commercial, and recreational areas while connecting

to US 50 and SR 89. Projects must be consistent with City roadway classifications, design standards, and multimodal goals outlined in the General Plan.

4.17.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	Less Than Significant Impact
b) Conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	Less Than Significant 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 Impact
d) Result in inadequate emergency access?	Less Than Significant Impact

4.17.4 Answers to CEQA Checklist Questions

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

Less Than Significant Impact

The Project would involve the modification/redevelopment of existing facilities within TKM to provide modernized marina facilities that would serve residents and visitors. As noted above, primary access to the Project area would occur along Venice Drive East and Tahoe Keys Boulevard. These roadways are classified as collector streets under the City of South Lake Tahoe General Plan and provide local circulation to residential, commercial, and recreational uses, with regional access via US 50 and SR 89.

The Project would provide features to reduce vehicle trips and to promote non-motorized transportation. Transportation features include:

- Non-Motorized Vehicle Accessibility. The facility would include bicycle racks for visitors. In addition, the facility would also include racks for kayaks, adjacent to the promenade and accessible to all visitors.
- Sidewalks, Walking Paths, and Greenery. The redevelopment would be designed to encourage walking, with benches, green spaces, trees, appropriate lighting, and signage.
- Housing. The redevelopment would reconstruct employee housing on-site to maintain/reduce employee trips.

According to the Tahoe Keys Marina Redevelopment Transportation Analysis (LSC Transportation Consultants, Inc. 2026), the Project would generate approximately 1,839 daily vehicle trips, which would represent an increase of 175 daily vehicle trips compared to existing conditions. Morning peak-hour trips would remain unchanged, and evening peak-hour trips would increase by 37. Taking into

consideration trip capture and what uses associated with the Project would generate vehicle trips, daily VMT is anticipated to increase by 218, which would be below the low-VMT screening criteria established by TRPA of 715 daily VMT (LSC Transportation Consultants, Inc. 2026). As the Project would not exceed the low-VMT screening threshold, it would not conflict with TRPA or City of South Lake Tahoe plans, policies, or regulations (including the Regional Transportation Plan) as it would not represent a substantial increase in daily VMT.

With respect to alternative transportation (i.e., bicycle, transit, pedestrian), the Project would not modify existing facilities in the vicinity of the Project area (i.e., local roadways). Bike lanes are present along Tahoe Keys Boulevard and Venice Drive East and are noted in the General Plan as Class II bike lanes; however, because the bike lanes do not include designated striping to separate the vehicle and bike lanes, these bike lanes are considered Class III (i.e., shared facilities). No public transit routes currently serve the site; however, the Project would not impede or alter existing or planned transit services. The Project may temporarily disrupt full access to bike lanes on Venice Drive East during construction; however, these impacts would be temporary and at least 1 lane of travel would be maintained at all times.

The Project would also provide additional on-site bicycle parking and an updated promenade within which local residents and visitors could walk through the Project area. This would be consistent with the 2025 Regional Transportation Plan's objective regarding enhancing bicycle and pedestrian facilities to encourage alternative transportation. In addition, the Project would internalize and provide additional landscaping around the Project's parking facilities, which would be consistent with the 2025 Regional Plan's objective to manage parking operations to support scenic goals of the Tahoe Basin.

As the Project would not modify or reduce existing pedestrian or bicycle facilities along Tahoe Keys Boulevard and Venice Drive East, it would be consistent with the City's General Plan goals and Policy TC-1.1 related to the provision and maintenance of complete streets that allow for walking, cycling, and driving. As noted above, additional pedestrian and bicycle facilities would be provided within the Project area, which would be consistent with City General Plan policies TC-3.6, TC-3.12, and TC-3.14. As a result, the Project would be considered to be consistent with existing local and regional policies related to the provision and maintenance of alternative transportation and would not represent a conflict with plans, policies, or regulations related to alternative transportation. Impacts would be less than significant. No mitigation is required.

b) Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?

Less Than Significant Impact

During construction, daily worker commute would generate additional vehicle trips over the 2-year construction period. However, these trips would be temporary and cease upon completion of construction. Further, as the Project would involve modernization of existing marina facilities, it is not anticipated to induce further construction near the Project area. As a result, the Project would have a less than significant temporary impact on VMT during construction.

With respect to operation and as noted above, the Project would generate 218 additional VMT per day, which would be less than TRPA's low-VMT screening criteria. As the Project would not exceed screening criteria, it would not be considered in conflict or inconsistent with CEQA Guidelines 15064.3 subdivision (b) related to the generation of VMT. Impacts would be less than significant, and no mitigation is required.

c) Would the Project 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 Impact

Vehicle access to the Project area would continue via Venice Drive East, which provides adequate sight distance and geometric design consistent with City roadway standards. No new roadways, intersections, or modifications to existing street alignments are proposed that would alter existing circulation patterns or introduce incompatible uses. Construction of the Project may create temporary modified traffic patterns for trenching to install a water line connection from the Project area to local utility lines located in the vicinity. Temporary lane closures may occur during construction along Venice Drive East and Tahoe Keys Boulevard; however, access for emergency vehicles and at least 1 lane of traffic would be maintained at all times in coordination with the South Lake Tahoe Fire Rescue and Public Works Department. The Project would not permanently modify roadway geometry, intersection control, or bicycle/pedestrian facilities in a manner that would increase operational hazards. Therefore, impacts related to geometric design features or incompatible uses would be less than significant, and no mitigation is required.

d) Would the Project result in inadequate emergency access?

Less Than Significant Impact

Emergency vehicle access would be maintained via Venice Drive East and Tahoe Keys Boulevard, which are designated collector roadways capable of accommodating emergency response vehicles. The proposed site layout includes drive aisles, parking configurations, and turnaround areas designed to meet South Lake Tahoe Fire Rescue and California Fire Code access requirements.

During construction, temporary lane closures may occur along adjacent roadways; however, access for emergency vehicles would be maintained in coordination with the South Lake Tahoe Fire Rescue and Public Works Department and in accordance with Chapter 33 of the California Fire Code, which requires that fire apparatus access must be maintained at all times.

Through compliance with applicable fire and access requirements, the Project would not result in the provision of inadequate emergency access during construction or operation, and impacts would be less than significant. No mitigation is required.

4.18 Tribal Cultural Resources

4.18.1 Environmental Setting

As of the mid-1800s, the Washoe inhabited the region of the Project area. A Hokan-speaking hunting and gathering group, the Washoe inhabited the chain of valleys along the eastern slope of the Sierra Nevada, from Honey Lake to Antelope Valley. The Pine Nut Mountains and the Virginia Range formed the eastern boundary of Washoe territory, while the western boundary extended several miles beyond the Sierra crest.

A great deal of information has been written about Washoe land use in the Tahoe Basin and their use of the region's resources. Lake Tahoe is the center of the Washoe world, both geographically and socially. Legendary and mythological associations to places within the basin are common. Semi-sedentism and higher population densities are reported and may have developed in conjunction with their residential and subsistence resource stability.

Native American Consultation

In accordance with AB 52, as identified in the PRC Section 21080.3.1(b)(2) of CEQA and Section 106 of the National Historic Preservation Act, Native American tribes identified by the NAHC must be invited to consult on projects. Section 106, 33 CFR Part 325 and the USACE Tribal Consultation Policy specify tribal consultation will be directed by the USACE under the guidance of a Tribal Liaison. The environmental review, consultation, and any other actions required by applicable federal environmental laws for this Project are being, or have been, carried out by USACE under Section 106, 33 CFR Part 325.

On April 11, 2025, the NAHC provided a record search of the Sacred Lands File for the Project area and a contact list for regional tribes that may have knowledge of cultural or tribal resources within or immediately adjacent to the Project area. The City provided additional contacts for 2 additional regional tribes that may have knowledge of cultural or tribal resources within or immediately adjacent to the Project area. In all, 4 tribes were contacted as part of the CEQA process and in accordance with CEQA requirements. Inquiry letters were mailed and emailed to the tribes identified by the NAHC on April 25, 2025. Two tribes, the United Auburn Indian Community of the Auburn Rancheria and the Wilton Rancheria responded. The United Auburn Indian Community subsequently deferred consultation responsibilities to the Washoe Tribe, which did not provide a response. The Wilton Rancheria declined consultation. Follow-up phone calls were made on May 27, 2025. Tribal consultation for the purposes of compliance with AB 52 was concluded after a response period elapsed for the remaining tribes (NCE 2025c).

4.18.2 Regulatory Setting

State

California Environmental Quality Act

CEQA requires public agencies to consider the effects of their actions on "[T]ribal cultural resources." PRC Section 21084.2 establishes that "[a] project with an effect that may cause a substantial adverse

change in the significance of a [T]ribal cultural resource is a project that may have a significant effect on the environment." PRC Section 21074 states:

a) "Tribal cultural resources" are either of the following:

    1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American Tribe that are either of the following:

        A) Included or determined to be eligible for inclusion in the CRHR.

        B) Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.

    2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American Tribe.

b) A cultural landscape that meets the criteria of subdivision (a) is a Tribal cultural resource to the extent that the landscape is geographically defined in terms of the size and scope of the landscape.

c) A historical resource described in Section 21084.1, a unique archaeological resource as defined in subdivision (g) of Section 21083.2, or a "nonunique archaeological resource" as defined in subdivision (h) of Section 21083.2 may also be a Tribal cultural resource if it conforms with the criteria of subdivision (a).

AB 52, signed by the California Governor in September of 2014, established a new class of resources under CEQA: "[T]ribal cultural resources," defined in PRC Section 21074. Pursuant to CEQA requirements, lead agencies undertaking CEQA review must, upon written request of a California Native American Tribe, begin consultation before the release of an EIR, negative declaration, or mitigated negative declaration.

4.18.3 CEQA Checklist Summary

CEQA Question	Impact Determination
a) Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: i. Listed or eligible for listing in California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	Less Than Significant Impact
ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	Less Than Significant Impact

4.18.4 Answers to CEQA Checklist Questions

Would the Project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:

i. Listed or eligible for listing in California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

Less Than Significant Impact

As noted above in Section 4.5 (Cultural Resources), an investigation of both cultural and tribal cultural resources was conducted to locate, describe, and evaluate tribal cultural resources that may be present within the APE. The APE has experienced significant previous disturbance (e.g., construction of the Tahoe Keys development from dredged fill and urban development). Based on the results of the records search conducted at the North Central Information Center, the NAHC Sacred Lands File, and responses received from the tribes in the area, no tribal cultural resources were identified (NCE 2025c).

While there is some potential for buried prehistoric deposits, the likelihood of encountering resources during ground disturbance is considered low due to the results of the investigations conducted within the APE and because much of the Project area is highly disturbed. Therefore, due to historic disturbance within the Project area, the limited ground disturbance in the area, and available information regarding the lack of resources within the Project area, the Project is not anticipated to result in a substantial adverse change in the significance of any site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe. Impacts would be less than significant, and no mitigation is required.

ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Less Than Significant Impact

As previously discussed, the Project area is highly disturbed, and no evidence of potential tribal cultural resources was found through records search information or provided by the tribes. As a result, the potential for tribal cultural resources to be identified within the Project area is considered minimal, and no resources are known to be present. While there is some potential for deeply buried prehistoric deposits below the dredged fill of the Tahoe Keys development, the likelihood of encountering intact archaeological resources during ground disturbance is considered low due to the previous disturbance of the Project area and lack of recorded resources. Impacts would be less than significant impact, and no mitigation is required.

4.19 Utilities and Service Systems

4.19.1 Environmental Setting

Water and Wastewater

The Project area overlies the TVS Groundwater Subbasin (California Department of Water Resources 2018). The subbasin is managed by the STPUD. Groundwater from the TVS is the primary source of water for the area (Kennedy Jenks 2021). Water service is currently provided to the Project area by the Tahoe Keys Property Owners Association water company through a connection at the western edge of the existing marina.

Sewage collection and treatment is provided in the vicinity of the Project area by STPUD. The Sanitary Sewer Collection System includes 312 miles of sewer gravity main, 106 miles of sewer laterals, 20 miles of pressurized sewer transmission lines; and 43 pump stations to convey all the wastewater to the wastewater treatment plant. All secondary treated effluent is exported 30 miles to Alpine County for agricultural use (STPUD 2020). Sewage is conveyed away from the Project area via an existing 8-inch diameter cast-in-place sewage pipe connected to STPUD wastewater infrastructure.

Electricity and Natural Gas

Electricity is provided to the area by Liberty Utilities and natural gas is provided by Southwest Gas. Electrical is provided to the site from 4 Liberty Utilities transformers located in various positions both within and outside of the Project area.

Telecommunications

Telecommunication services are provided by a number of companies, including AT&T and Charter. These companies provide television, internet, and telephone services to the residences and other buildings in the vicinity of the Project area through aboveground infrastructure.

Storm Water Drainage

Existing stormwater drainage structures in the Project area are limited to localized catch basins and storm drain pipe, gravel swales and infiltration trenches, and the vegetated wet basin. All stormwater within the Project area is conveyed to on-site catch basins, swales, or basins which eventually drain into the lagoon.

Solid Waste

South Tahoe Refuse is under contract with the City to collect solid waste from City households and businesses as well as to process and transfer all solid waste for disposal or recycling. South Tahoe Refuse's main facility, which consists of a transfer station, materials recovery facility, and the Tahoe Basin Container Service, has a total permitted capacity of 370 tons per day, but currently receives 200 to 250 tons per day. Solid waste is transported to Lockwood Regional Landfill (a Class I landfill) in Storey County, Nevada, which receives approximately 5,000 tons per day and has an estimated closure date of 2050 (Nevada Division of Environmental Protection 2009).

4.19.2 Regulatory Setting

State

California Fire Code

The 2022 California Fire Code, which is codified as Part 9 of Title 24 of the California Code of Regulations, incorporates by adoption the 2021 International Fire Code and contains regulations related to construction, maintenance, and use of buildings. Topics addressed in the California Fire Code include fire department access, fire hydrants, automatic sprinkler systems, fire alarm systems, fire and explosion hazards safety, hazardous materials storage and use, provisions intended to protect and assist fire responders, industrial processes, and other general and specialized fire-safety requirements for new and existing buildings and the surrounding premises. The California Fire Code contains specialized technical regulations related to fire and life safety. The California Building Standards Code, including the California Fire Code, is revised and published every three years by the California Building Standards Commission.

California Integrated Waste Management Act

The California Integrated Waste Management Act (CIWMA or Assembly Bill [AB] 939) of 1989 created the California Integrated Waste Management Board, now known as CalRecycle. CalRecycle is the agency designated to oversee, manage, and track California's 92 million tons of waste generated each year. AB 939 requires each jurisdiction to divert 50% of its solid waste from being disposed in landfills, and was supplemented by AB 341 which establishes a statewide policy of 75% diversion. CalRecycle provides grants and loans to help cities, counties, businesses, and organizations meet the State's waste reduction, reuse, and recycling goals. CalRecycle promotes a sustainable environment in which these resources are not wasted but can be reused or recycled. In addition to many programs and incentives, CalRecycle promotes the use of new technologies to divert resources away from landfills. CalRecycle is responsible for ensuring that waste management programs are carried out primarily through local enforcement agencies.

California Building Energy Efficiency Standards (Title 24)

Energy consumption of new buildings in California is regulated by State Building Energy Efficiency Standards contained in Title 24 of the California Code of Regulations, Part 2, Chapter 2-53. Title 24 applies to all new construction of both residential and nonresidential buildings, and regulates energy consumed for heating, cooling, ventilation, water heating, and lighting. Current Building Energy Efficiency Standards have improved efficiency requirements from previous codes and the updated standards are expected to result in a statewide energy consumption reduction. Title 24 establishes mandatory minimum green building standards as well as more stringent voluntary measures, which are known as Tier 1 and Tier 2 measures, respectively. Cities and counties, at their discretion, may adopt Tier 1 or Tier 2 as mandatory, or adopt and enforce other standards that are more stringent than Title 24.

Where a local jurisdiction has not adopted a more stringent construction and demolition (C&D) ordinance, construction activities are required to implement Section 5.408 of the Part 11 of Title 24. Under Title 24, Part 11, Section 5.408, construction activities are required to recycle and/or salvage for reuse a minimum of 65 percent of their nonhazardous C&D waste. Applicable projects are required to

prepare and implement a Construction Waste Management Plan, which is submitted to the local jurisdiction before issuance of building permits. The City of South Lake Tahoe does not currently have an adopted C&D waste management ordinance that is more stringent than Title 24 requirements.

Regional

Tahoe Regional Planning Agency

The TRPA Code of Ordinances includes requirements for basic water, wastewater, and electrical services in Chapter 32. Section 32.4 of the Code contains a basic water service requirement for projects proposing a new structure, reconstruction, or expansion of an existing structure, designed or intended for human occupancy, specifically directing that such projects shall have adequate water rights and water supply systems. If the local fire district has not adopted fire flow standards, Section 32.4.2 of the Code identifies minimum adequate fire flows based on land use type within the Tahoe Basin.

Section 32.5 of the Code specifically directs that such projects that would generate wastewater shall be served by facilities for the treatment and export of wastewater from the Tahoe Basin. To be considered served, a service connection shall be required to transport wastewater from the parcel to a treatment plant. Section 32.6 of the Code requires that adequate electrical supply shall be served to structures intended for human occupancy.

4.19.3 CEQA Checklist Summary

Would the Project:

CEQA Question	Impact Determination
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	Less Than Significant Impact
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 Impact
c) Result in a determination by the waste water 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 Impact
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 Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	Less Than Significant Impact

4.19.4 Answers to CEQA Checklist Questions

a) Would the Project require or result in the relocation or construction of new or expanded water, wastewater treatment or stormwater drainage, electric power, natural gas, or

telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

Less Than Significant Impact

Water

While the Project area currently receives water service from the Tahoe Keys Property Owners Association water company, water service and connection would either continue to be provided by the water company via existing infrastructure along the Project area perimeter or be transferred to STPUD as part of the Project. Water service would either be provided to the Project area via a new connection to existing Tahoe Keys Property Owners Association infrastructure in the area or, as an option, to STPUD via an existing water main located just northwest of the intersection of Tahoe Keys Boulevard and Michaels Street, within the Tahoe Keys Boulevard right-of-way. A connection to this main would be established by trenching along Tahoe Keys Boulevard and Venice Drive East.

As discussed in Section 4.10 (Hydrology and Water Quality), STPUD water supply is derived from groundwater within the South Tahoe Subbasin. STPUD's 2005 Groundwater Management Plan established a safe pumping yield of 9,528 acre-feet per year (AFY). Historical and current groundwater demand remains below this value and has generally declined since 2007. Following the adoption of the Sustainable Groundwater Management Act (SGMA), STPUD has incorporated updated sustainability criteria consistent with SGMA requirements. The established sustainable yield as defined by SGMA must not exceed the basin's average annual recharge, which was approximately 39,000 AFY between 1983 and 2015. The total available groundwater for extraction in the Tahoe South Subbasin, which the Project area overlies, is estimated at 32,050 AFY. STPUDs groundwater extraction remains well below these levels, ranging between 5,886 and 6,432 AFY (Kennedy Jenks 2021). While the Project would increase the square footage of on-site facilities, much of this would be associated with storage of watercraft that has little to no water demand. In general and taking into consideration the efficiency of the proposed on-site buildings, the Project would result in a minor increase in water demand relative to existing uses and remaining regional supply capacity. As noted above, the Project has already received a will serve letter from the Tahoe Keys Property Owners Association, indicating that adequate water and water service are available to the Project (Tahoe Keys Property Owners Association 2025). Therefore, the Project's water needs can be accommodated without affecting STPUD infrastructure beyond the planned installation of a connection to an existing water main as part of the Project. Impacts associated with the construction of the optional connection to STPUD infrastructure are addressed throughout this document, including trenching within and repaving of Tahoe Keys Boulevard and Venice Drive East. Impacts would be less than significant, and no mitigation is required.

Wastewater

Wastewater is conveyed from the site to the STPUD Sanitary Sewer Collection System. The permitted wet-weather flow into the STPUD wastewater plant is 18.5 million gallons per day (MGD). The peak season for the marina is summer, and normal dry-weather flow to the wastewater plant is 4 MGD (STPUD 2020). Taking into consideration a potential peaking factor of 3, the existing plant has a remaining capacity for more than 2 MGD of normal dry-weather flow. Although the Project proposes to

increase commercial, retail, and restaurant space that may require sewer service, the Project would not result in inadequate capacity within STPUD Sanitary Sewer Collection System such that new or modified facilities would be necessary per a will-serve letter issued by STPUD on December 10, 2025 (STPUD 2025a). Based on STPUD estimated flow calculations for the project, existing infrastructure has adequate capacity to provide sewer service for the Project. As a result, impacts would be less than significant, and no mitigation is required.

Stormwater

As discussed in detail in Section 4.10 (Hydrology and Water Quality), stormwater is currently and would continue to be treated within the Project area consistent with applicable federal, state, and local requirements (including TRPA). A SWPPP would be prepared and implemented upon Project approval, consistent with NPDES requirements and to comply with Lahontan RWQCB Tahoe Construction General Permit (Order No. R6T-2016-0010) related to stormwater control during construction. The SWPPP, consistent with the Construction General Permit, would identify and require temporary BMPs (e.g., tarping of any stockpiled materials or soil; use of silt fences, fiber rolls, dust control, tracking control, etc.) and permanent BMPs (e.g., structural containment, revegetation, stabilization) for use in all construction areas to reduce or eliminate the discharge of soil, surface water runoff, and pollutants during all excavation, grading, trenching, repaving, or other ground-disturbing activities. The Project would also comply with the South Lake Tahoe City Code Chapter 7.20: Grading, Erosion, and Sediment Control. Through compliance with existing regulations, including the Clean Water Act, TRPA Code, NPDES requirements, and the South Lake Tahoe City Code, the Project would improve stormwater capture systems within the Project area, compared to existing site conditions, including the provision of an underground infiltration basin, landscaping, and permeable pavement. No significant impacts would occur, and no mitigation is required.

Electricity, Natural Gas, and Telecommunications

The Project area, which is fully developed, currently receives electricity from Liberty Utilities transformers located on and surrounding the Project area and natural gas from Southwest Gas via existing underground lines. The Project area also hosts a cell tower that would be retained in its current location. Because the site already functions as an active marina with connections to electrical and natural gas utilities and taking into consideration that the Project would provide more efficient fixtures, the need for expanded electricity, natural gas, and/or telecommunications infrastructure is not anticipated. Impacts would be less than significant, and no mitigation is required.

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

Less Than Significant Impact

As discussed above, groundwater is the primary source of water for most communities in the Lake Tahoe Basin, and recent data indicate that groundwater levels have remained stable, suggesting that adequate water supplies are available (STPUD 2019). Furthermore, the STPUD Urban Groundwater Management Plan predicts approximately 29,472 AFY available for use, without causing over-extraction

of the South Tahoe Subbasin, while existing demand ranges from 5,886 and 6,432 AFY (Kennedy Jenks 2021). As the Project would result in a minor increase in water demand relative to regional supply capacity, Tahoe Keys Property Owners Association anticipates that it has adequate capacity to serve the Project and reasonably foreseeable future development (Tahoe Keys Property Owners Association 2025). Therefore, the Project would have a less than significant impact, and no mitigation is required.

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

Less Than Significant Impact

The Project area is currently served by STPUD, and no new connection is required. Further, as noted above with respect to the need for new or expanded wastewater infrastructure, the Project is not anticipated to exceed the capacity of existing wastewater collection and treatment infrastructure, including the STPUD wastewater plant. Further, the Project would be required to comply with the requirements of the California Green Building Code including low-flow toilets and other water-efficient fixtures to achieve a 20 percent reduction in indoor water use. With respect to wastewater from boats and as noted above, the Project is not anticipated to increase boat usage in the area but rather provide modernized and improved boat storage facilities within the Project area. Wastewater from boats would continue to be collected at existing pump out stations in the area, including Tahoe Keys Marina, Zephyr Cove Marina, Homewood Marina, North Tahoe Marina, and Obexer's Marina. Therefore, the Project would have a less than significant impact on the existing wastewater treatment system, and no mitigation is required.

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

Less Than Significant Impact

Demolition and construction activities associated with the Project would generate solid waste requiring disposal at area landfills. Waste generated during Project construction would include vegetation debris, concrete, wood, and other building materials. Construction and demolition (C&D) waste would be generated by construction of the Project. In accordance with Section 5.408 of the CALGreen Code (Part 11 of Title 24), the Project would implement a Construction Waste Management Plan for recycling and/or salvaging for reuse of a minimum of 65 percent of C&D debris generated during Project construction.

Operation of the Project may increase solid waste output from the Project area compared to existing conditions. However, this would not impair the attainment of solid waste reduction goals. The Project area is already served by South Tahoe Refuse and would continue to utilize solid waste collection services during Project operation. Additionally, the Lockwood Regional Landfill, which would likely receive solid waste generated by the Project, has a projected closure date in 2050 with an average daily throughput of 5,000 tons per day (Nevada Division of Environmental Protection 2009). Any solid waste

generated by the Project would likely only be a relatively small increase over existing conditions. Based on the projected closure date of the nearby landfill, adequate capacity is considered to be available for the Project. Therefore, the Project would have a less than significant impact, and no mitigation is required.

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

Less Than Significant Impact

Waste generation from construction would be temporary and would not reduce available capacities at existing landfills, including Lockwood Regional Landfill. Disposal of construction waste would comply with federal, state, and local statutes and regulations related to solid waste. Future waste from residential use would be separated into waste, recyclables, and compost per AB 1826. Further, the City in partnership with South Tahoe Refuse is working to comply with current and applicable diversion requirements. In 2022, the City received a waiver from SB 1383, which requires 75% of all organic waste to be diverted. The City is currently working with El Dorado County and other cities within the County to ensure adherence to AB 341 waste diversion goal of 75% of all waste. As of 2018, the City of South Lake Tahoe has been achieving approximately 68% diversion (South Lake Tahoe Waste Management Authority 2018). Similar to existing conditions and in compliance with TRPA Policy PS-3.3 requiring garbage pick-up service in the Tahoe Basin, the Project area would continue to have solid waste collected provided by South Tahoe Refuse. Because the Project would be served by South Tahoe Refuse, the Project would comply with federal, state, and local management and reduction statutes and regulations related to solid waste. Therefore, the Project would have a less than significant impact, and no mitigation is required.

4.20 Wildfire

4.20.1 Environmental Setting

CAL FIRE designates fire hazard severity zones for areas under State jurisdiction. For areas under local jurisdiction, CAL FIRE identifies areas that they consider to be Very High FHSZs; the local jurisdiction must choose whether to adopt the CAL FIRE recommendations. The City has adopted the recommended local designation of Very High FHSZ (City of South Lake Tahoe 2022a); the vast majority of the City is identified as a Very High FHSZ (CAL FIRE 2025). Within the Project area, there is a mix of Moderate, High, and Very High FHSZs, and fire hazard severity trends higher from west to east (CAL FIRE 2025).

As noted above, the Project area is developed but has some vegetation along the perimeter, in the existing stormwater basin, and within landscaped areas. There are 3 existing wood frame buildings on-site, located within the northern portion of the Project area.

4.20.2 Regulatory Setting

State

Title 24 Regulations

The Office of the State Fire Marshal is responsible for promulgating regulations that promote fire and life safety for inclusion into the state building codes including the CBC, California Fire Code, California Electrical Code, California Mechanical Code, California Plumbing Code and California Historical Building Code. These documents are also referred to as California Code of Regulations, Title 24. The Office of the State Fire Marshal works with local government, fire officials, building officials and the private sector to develop fire and life safety building standards addressing roof coverings, fire alarm systems, motion picture production facilities, hazardous materials, and organized camps. The Office of the State Fire Marshal also regulates the adoption of building standards in assembly, institutional, educational, and residential buildings, as well as high-rises and any building containing State employees.

Local

City of South Lake Tahoe General Plan – Health and Safety Element

This element provides the policy context for the City to achieve its vision for future health and safety. The following policies apply to the Project (City of South Lake Tahoe 2011):

- **Policy HS-2.1**: Fire Resistant Construction: The City shall require new, remodeled, and/or rehabilitated developments to be constructed using fire resistant materials, particularly roofing, and state-of-the-art fire prevention techniques.
- **Policy HS-2.2**: Fire-Safe Landscaping: The City shall require defensible space plans for all new and rehabilitated structures to conform to the principles of fire-safe landscaping, including incorporation of fire-resistant plants and strategic planting, to create defensible space.

- **Policy HS-2.3**: Defensible Landscaping Space Requirements: The City shall require property owners to maintain defensible space through annual landscaping maintenance, including the removal of dead/dying material and pruning/thinning of flammable vegetation.
- **Policy HS-2.5**: Fire Flow Requirements: The City shall require that all new construction meets the minimum fire flow requirements as set forth in the California Building and Fire Codes.

4.20.3 CEQA Checklist Summary

CEQA Question	Impact Determination
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	Less Than Significant Impact
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?	Less Than Significant 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 Impact
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?	Less Than Significant Impact

4.20.4 Answers to CEQA Checklist Questions

a) Would the Project substantially impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact

The Project would involve redevelopment of existing marina facilities, and would not result in the modification of existing adjacent roadways or emergency access routes. Temporary roadway restrictions to Venice Drive East and Tahoe Keys Boulevard are anticipated as part of the Project due to the installation of utility line connections, however these roads would remain accessible during construction as discussed in Section 4.16.4 (Transportation).

The City has partnered with El Dorado County and the CodeRED emergency notification service to alert residents and business by telephone, cell, text, email, and social media when there is a threat to the health or safety of residents. The City encourages all residents to sign up for the notification. If there is a wildfire, the notification system will inform residents with directions on evacuation procedures, as necessary. As noted above in Section 4.9 (Hazards), the City has an approved emergency evacuation map for Tahoe Keys. As the Project would not modify existing emergency evacuation routes or plans and would participate in the CodeRED emergency notification service, the Project would not substantially impair implementation of the emergency evacuation plan for Tahoe Keys (refer to Section 4.9 [Hazards] above). Impacts would be less than significant, and no mitigation is required.

b) Would the Project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Less Than Significant Impact

Portions of the Project area are within a locally-designated Very High FHSZ (CAL FIRE 2025). The Project does not include construction on steep slopes, and existing vegetation would be removed and replaced with fire resistant landscaping consistent with the City's defensible space requirements. The Project would demolish existing structures on the site and replace existing tree and vegetation coverage that provides fuel for fires. Structures would be designed according to current City of South Lake Tahoe Code standards and California Building and Fire Codes which provide for more effective and efficient fire protection, such as automatic sprinkler systems and automatic smoke detection systems and fire-retardant roof coverings. In addition, Chapter 7A of California Building Code, which became effective in 2008, includes specific requirements related to the design and construction (including materials, such as fire-retardant wood and roofing materials) of new buildings within an area that may be subject to wildfire. Existing hydrants along Venice Drive East would be maintained, similar to existing conditions, and be available for fire suppression purposes, as necessary. The Project area is generally surrounded by fire breaks afforded by the existing marina and Venice Drive East, which would further reduce wildfire risk. Further, the Project would replace outdated buildings and replace them with newly constructed buildings that are in compliance with the most current codes that require fire resistance measures (including Chapter 7A), and may alleviate current fire hazards on the site, such as buildings with out-of-date fire abatement measures and materials. As a result, the Project would not exacerbate wildfire risks in the vicinity. Therefore, the potential for residential exposure to possible pollutants and the uncontrolled spread of wildfire due to the Project would be less than significant. No mitigation is required.

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

Less Than Significant Impact

The Project includes the installation of three water storage tanks with a combined capacity of up to 500,000 gallons for the purpose of water storage and increased firefighting flow capacity within the Project area and vicinity. Additionally, and as part of the Project, existing electrical lines would be moved underground, which would further reduce fire risk compared to existing conditions. The Project requires no infrastructure that would exacerbate fire risk and would provide new connections to existing water infrastructure (either via Tahoe Keys Property Owners Association infrastructure or the STPUD 8" water main within Tahoe Keys Boulevard). Both of these connections are addressed as part of the Project and throughout this IS/MND. The Project would replace existing buildings originally constructed in the late 1960's and early 1970s with new construction built to current code requirements pertaining to fire prevention. Because the Project would improve firefighting capability of the marina and comply with

current fire codes for construction, the Project would not result in increased fire risk compared to existing conditions. Impacts would be less than significant. No mitigation is required.

d) Would the Project 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?

Less Than Significant Impact

The Project area is located adjacent to Truckee Marsh and the marina lagoon and is flat and previously developed. The Project would construct new buildings to enhance marina functions and would involve grading parts of the Project area to construct the proposed structures. The Project would also replace and upgrade existing stormwater collection systems. If a fire were to occur, the location of the Project area at the low point in the watershed would preclude downslope hazards. New stormwater conveyance systems would be designed to meet the capacity as defined by applicable standards, and runoff would be treated on site. The Project area and adjacent areas are largely developed and/or flat with a gradual slope towards Lake Tahoe in the north and do not contain burn scars or steep terrain that would be subject to post-fire slope instability. As a result, the Project would not expose people or structures to significant risk, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes. Impacts would be less than significant, and no mitigation is required.

4.21 Mandatory Findings of Significance

4.21.1 CEQA Checklist Summary

CEQA Question	Impact Determination
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 Impact with Mitigation Incorporated
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, or the effects of probable future projects.)	Less Than Significant Impact
c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	Less Than Significant Impact with Mitigation Incorporated

4.21.2 Answers to CEQA Mandatory Findings of Significance Questions

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 Impact with Mitigation Incorporated

As discussed in Section 4.4 (Biological Resources), Project construction could impact protected migratory bird species during breeding and nesting season and other special status species with potential to occur. However, with implementation of **Mitigation Measures BIO-1** through **BIO-5**, and compliance with permit conditions, impacts would be reduced to less than significant levels. The quality and functions of biological resources in the Project area would not change substantially with implementation of the Project. With implementation of the aforementioned mitigation measures, the construction and operation of facilities within the Project area would not substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of endangered, rare, or threatened species.

As discussed in Section 4.5 (Cultural Resources) and Section 4.18 (Tribal Cultural Resources), no historical, archaeological, or tribal cultural resources would be significantly impacted by the Project, and

no mitigation is required with respect to historic and prehistoric resources. With implementation of mitigation measures pertaining to biological resources, this impact would be less than significant.

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, or the effects of probable future projects.)?

Less Than Significant Impact

The Project would involve redevelopment of existing marina facilities, which are currently served by various municipal services and utilities. The Project would involve the construction and operation of multiple new buildings and facilities within a previously developed area, adjacent to residential, recreational, and commercial uses. Other projects located within the immediate vicinity of the Project are limited to utility modernization efforts to the west of the Project area. More specifically, the City is also lead agency under CEQA for the Well #4 Site Improvements and Waterline Upgrades Project, which would provide a 1,600 sf well building with separate restroom and a new 12-inch water line within Venice Drive and Tahoe Kyes Boulevard. Construction of the utility modernization project is expected to begin in March 2026 and December 2026, which could overlap with implementation of the Project.

For the most part, the Project would not be considered cumulatively considerable with other projects located in the area due to its relatively isolated location within the eastern portion of the Tahoe Keys development. Further, the Project (as demonstrated above) would not result in an exceedance for any criteria air pollutant for which the region is in non-attainment; therefore, there would be no cumulatively considerable net increase in criteria pollutants or GHGs. The Project would also not contribute to a significant loss of cultural or biological resources, decrease in water quality, or degradation of regional VMT.

With respect to construction noise, it is possible that residents located east of Tahoe Keys Boulevard and west of the marina lagoon may perceive construction noise from both the Project and the aforementioned cumulative project. However, due to the approximate distance between the 2 construction sites (850 feet), intervening structures and vegetation, and noise attenuation over distance, construction noise associated with the 2 projects is not considered additive or cumulatively considerable. Therefore, the Project would not result in impacts that are individually limited but cumulatively considerable.

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

Less Than Significant Impact with Mitigation Incorporated

As discussed in Section 3.9 (Hazards and Hazardous Materials), the Project has the potential to result in adverse effects on human beings related to hazardous materials during construction should contaminated soils be encountered upon removal of existing on-site buildings. With implementation of mitigation measures committed to by the lead agency (**Mitigation Measure HAZ-1**), impacts from the Project related to the risk of an accidental release of hazardous substances that could adversely affect human health or the environment during construction would be reduced to a less than significant level.

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Tahoe Keys Marina redevelopment Detailed Report

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1. Basic Project Information

1.1. Basic Project Information

Data Field	Value
Project Name	Tahoe Keys Marina redevelopment
Construction Start Date	4/1/2027
Operational Year	2029
Lead Agency	—
Land Use Scale	Project/site
Analysis Level for Defaults	County
Windspeed (m/s)	2.70000
Precipitation (days)	44.8000
Location	38.93488773069947, -120.00233697278776
County	El Dorado-Lake Tahoe
City	South Lake Tahoe
Air District	El Dorado County AQMD
Air Basin	Lake Tahoe
TAZ	415
EDFZ	0-A
Electric Utility	Liberty Utilities
Gas Utility	—
App Version	2022.1.1.39

1.2. Land Use Types

Land Use Subtype	Size	Unit	Lot Acreage	Building Area (sq ft)	Landscape Area (sq ft)	Special Landscape Area (sq ft)	Population	Description
Racquet Club	144.600	1000sqft	3.31956	144,600	4,000.00	—	—	—

Condo/Townhouse	3.00000	Dwelling Unit	0.18750	3,180.00	0.00000	—	8.00000	Workforce housing units to replace existing

1.3. User-Selected Emission Reduction Measures by Emissions Sector

Sector	#	Measure Title
Construction	C-2*	Limit Heavy-Duty Diesel Vehicle Idling
Construction	C-5	Use Advanced Engine Tiers
Construction	C-8	Use Renewable Diesel
Construction	C-10-A	Water Exposed Surfaces
Construction	C-10-B	Water Active Demolition Sites
Construction	C-10-C	Water Unpaved Construction Roads
Construction	C-11	Limit Vehicle Speeds on Unpaved Roads
Construction	C-12	Sweep Paved Roads
Transportation	T-34*	Provide Bike Parking

* Qualitative or supporting measure. Emission reductions not included in the mitigated emissions results.

2. Emissions Summary

2.1. Construction Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Unmit.	3.14250	28.7760	1.18066	32.0485	33.2291	5,891.98
Mit.	0.63319	5.75466	0.10852	29.8947	29.9751	5,891.98
% Reduced	80%	80%	91%	7%	10%	—
Daily, Winter (Max)	—	—	—	—	—	—
Unmit.	32.8473	10.5841	0.34335	29.8947	30.2381	3,253.87
Mit.	32.3495	4.01051	0.08129	29.8947	29.9760	3,253.87

% Reduced	2%	62%	76%	—	1%	—
Average Daily (Max)	—	—	—	—	—	—
Unmit.	5.78154	10.4627	0.40679	16.9705	17.1804	2,340.56
Mit.	5.69630	2.66478	0.05394	16.9705	17.0245	2,340.34
% Reduced	1%	75%	87%	—	1%	< 0.5%
Annual (Max)	—	—	—	—	—	—
Unmit.	1.05513	1.90945	0.07424	3.09712	3.13543	387.506
Mit.	1.03958	0.48632	0.00984	3.09712	3.10697	387.471
% Reduced	1%	75%	87%	—	1%	< 0.5%

2.2. Construction Emissions by Year

2.2.1. Total Construction Emissions by Year, Unmitigated

Includes both onsite and offsite emissions.

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

Year	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—
2027	3.14250	28.7760	1.18066	32.0485	33.2291	5,891.98
2028	1.29647	9.96462	0.30649	29.8947	30.2012	3,237.88
Daily - Winter (Max)	—	—	—	—	—	—
2027	1.35571	10.5841	0.34335	29.8947	30.2381	3,253.87
2028	32.8473	10.0276	0.30702	29.8947	30.2017	3,237.02
2029	32.8291	6.62516	0.21056	12.2921	12.5027	1,674.36
Average Daily	—	—	—	—	—	—
2027	1.18396	10.4627	0.40679	12.6377	13.0444	2,340.56
2028	4.69964	6.77470	0.20988	16.9705	17.1804	2,132.87
2029	5.78154	1.16525	0.03709	1.90245	1.93954	294.973
Annual	—	—	—	—	—	—
2027	0.21607	1.90945	0.07424	2.30637	2.38061	387.506

2028	0.85768	1.23638	0.03830	3.09712	3.13543	353.120
2029	1.05513	0.21266	0.00677	0.34720	0.35397	48.8361

2.2.2. Onsite Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—
2027	3.05170	27.9724	1.17173	19.6601	20.8318	5,316.00
2028	0.99143	8.92495	0.30024	0.00000	0.30024	2,405.68
Daily - Winter (Max)	—	—	—	—	—	—
2027	1.02988	9.39093	0.33657	0.00000	0.33657	2,405.30
2028	32.6962	8.92495	0.30024	0.00000	0.30024	2,405.68
2029	32.6823	6.52196	0.21056	0.00000	0.21056	1,488.41
Average Daily	—	—	—	—	—	—
2027	1.09377	9.95103	0.40226	4.09088	4.49314	1,978.43
2028	4.49483	6.12182	0.20615	0.00000	0.20615	1,613.61
2029	5.75619	1.14868	0.03709	0.00000	0.03709	262.147
Annual	—	—	—	—	—	—
2027	0.19961	1.81606	0.07341	0.74658	0.82000	327.551
2028	0.82031	1.11723	0.03762	0.00000	0.03762	267.152
2029	1.05050	0.20963	0.00677	0.00000	0.00677	43.4014

2.2.3. Offsite Construction Emissions by Year, Unmitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—
2027	0.09080	1.24941	0.01432	14.9451	14.9595	847.200
2028	0.30504	1.03967	0.00625	29.8947	29.9010	832.200

Daily - Winter (Max)	—	—	—	—	—	—
2027	0.32584	1.19319	0.00678	29.8947	29.9015	848.566
2028	0.31540	1.10264	0.00678	29.8947	29.9015	831.339
2029	0.14681	0.10321	0.00000	12.2921	12.2921	185.951
Average Daily	—	—	—	—	—	—
2027	0.09019	0.51170	0.00452	8.54678	8.55130	362.129
2028	0.20481	0.65288	0.00373	16.9705	16.9743	519.253
2029	0.02535	0.01657	0.00000	1.90245	1.90245	32.8257
Annual	—	—	—	—	—	—
2027	0.01646	0.09339	0.00083	1.55979	1.56061	59.9546
2028	0.03738	0.11915	0.00068	3.09712	3.09780	85.9682
2029	0.00463	0.00302	0.00000	0.34720	0.34720	5.43467

2.2.4. Total Construction Emissions by Year, Mitigated

Includes both onsite and offsite emissions.

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

Year	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—
2027	0.58880	5.75466	0.10852	20.0558	20.1643	5,891.98
2028	0.63319	3.85402	0.08037	29.8947	29.9751	3,237.88
Daily - Winter (Max)	—	—	—	—	—	—
2027	0.65432	4.01051	0.08129	29.8947	29.9760	3,253.87
2028	32.3495	3.91699	0.08090	29.8947	29.9756	3,237.02
2029	32.3452	2.88499	0.05004	12.2921	12.3421	1,674.36
Average Daily	—	—	—	—	—	—
2027	0.29936	2.14105	0.04674	10.1695	10.2162	2,340.34
2028	4.24433	2.66478	0.05394	16.9705	17.0245	2,132.87
2029	5.69630	0.50651	0.00881	1.90245	1.91126	294.973

Annual	—	—	—	—	—	—
2027	0.05463	0.39074	0.00853	1.85593	1.86446	387.471
2028	0.77459	0.48632	0.00984	3.09712	3.10697	353.120
2029	1.03958	0.09244	0.00161	0.34720	0.34881	48.8361

2.2.5. Onsite Construction Emissions by Year, Mitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—
2027	0.49800	4.50525	0.09960	7.66744	7.76704	5,316.00
2028	0.32816	2.81436	0.07412	0.00000	0.07412	2,405.68
Daily - Winter (Max)	—	—	—	—	—	—
2027	0.32849	2.81733	0.07451	0.00000	0.07451	2,405.30
2028	32.1984	2.81436	0.07412	0.00000	0.07412	2,405.68
2029	32.1984	2.78178	0.05004	0.00000	0.05004	1,488.41
Average Daily	—	—	—	—	—	—
2027	0.20916	1.62935	0.04222	1.62269	1.66491	1,978.22
2028	4.03951	2.01190	0.05021	0.00000	0.05021	1,613.61
2029	5.67095	0.48994	0.00881	0.00000	0.00881	262.147
Annual	—	—	—	—	—	—
2027	0.03817	0.29736	0.00771	0.29614	0.30385	327.516
2028	0.73721	0.36717	0.00916	0.00000	0.00916	267.152
2029	1.03495	0.08941	0.00161	0.00000	0.00161	43.4014

2.2.6. Offsite Construction Emissions by Year, Mitigated

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

Year	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily - Summer (Max)	—	—	—	—	—	—

2027	0.09080	1.24941	0.01432	14.9451	14.9595	847.200
2028	0.30504	1.03967	0.00625	29.8947	29.9010	832.200
Daily - Winter (Max)	—	—	—	—	—	—
2027	0.32584	1.19319	0.00678	29.8947	29.9015	848.566
2028	0.31540	1.10264	0.00678	29.8947	29.9015	831.339
2029	0.14681	0.10321	0.00000	12.2921	12.2921	185.951
Average Daily	—	—	—	—	—	—
2027	0.09019	0.51170	0.00452	8.54678	8.55130	362.129
2028	0.20481	0.65288	0.00373	16.9705	16.9743	519.253
2029	0.02535	0.01657	0.00000	1.90245	1.90245	32.8257
Annual	—	—	—	—	—	—
2027	0.01646	0.09339	0.00083	1.55979	1.56061	59.9546
2028	0.03738	0.11915	0.00068	3.09712	3.09780	85.9682
2029	0.00463	0.00302	0.00000	0.34720	0.34720	5.43467

2.3. Operations Emissions Compared Against Thresholds

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

Un/Mit.	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Unmit.	5.97382	1.95588	0.13739	4.85739	4.99478	5,723.11
Mit.	5.97382	1.95588	0.13739	4.85739	4.99478	5,723.11
% Reduced	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Unmit.	5.99721	1.99440	0.13740	4.85739	4.99479	5,724.93
Mit.	5.99721	1.99440	0.13740	4.85739	4.99479	5,724.93
% Reduced	—	—	—	—	—	—
Average Daily (Max)	—	—	—	—	—	—
Unmit.	5.57044	1.95627	0.13293	4.27553	4.40845	5,713.87

Mit.	5.57044	1.95627	0.13293	4.27553	4.40845	5,713.87
% Reduced	—	—	—	—	—	—
Annual (Max)	—	—	—	—	—	—
Unmit.	1.01661	0.35702	0.02426	0.78028	0.80454	945.997
Mit.	1.01661	0.35702	0.02426	0.78028	0.80454	945.997
% Reduced	—	—	—	—	—	—

2.4. Operations Emissions by Sector, Unmitigated

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

Sector	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Mobile	0.72809	0.27354	0.00234	4.85739	4.85973	202.983
Area	5.15614	0.05451	0.01125	—	0.01125	26.4111
Energy	0.08959	1.62783	0.12380	—	0.12380	3,831.25
Water	—	—	—	—	—	103.240
Waste	—	—	—	—	—	1,558.51
Refrig.	—	—	—	—	—	0.71695
Total	5.97382	1.95588	0.13739	4.85739	4.99478	5,723.11
Daily, Winter (Max)	—	—	—	—	—	—
Mobile	0.74990	0.31174	0.00235	4.85739	4.85974	204.720
Area	5.15772	0.05484	0.01125	—	0.01125	26.4960
Energy	0.08959	1.62783	0.12380	—	0.12380	3,831.25
Water	—	—	—	—	—	103.240
Waste	—	—	—	—	—	1,558.51
Refrig.	—	—	—	—	—	0.71695
Total	5.99721	1.99440	0.13740	4.85739	4.99479	5,724.93
Average Daily	—	—	—	—	—	—
Mobile	0.74086	0.29555	0.00235	4.27553	4.27787	204.228

Area	4.73998	0.03289	0.00678	—	0.00678	15.9283
Energy	0.08959	1.62783	0.12380	—	0.12380	3,831.25
Water	—	—	—	—	—	103.240
Waste	—	—	—	—	—	1,558.51
Refrig.	—	—	—	—	—	0.71695
Total	5.57044	1.95627	0.13293	4.27553	4.40845	5,713.87
Annual	—	—	—	—	—	—
Mobile	0.13521	0.05394	0.00043	0.78028	0.78071	33.8123
Area	0.86505	0.00600	0.00124	—	0.00124	2.63712
Energy	0.01635	0.29708	0.02259	—	0.02259	634.307
Water	—	—	—	—	—	17.0926
Waste	—	—	—	—	—	258.029
Refrig.	—	—	—	—	—	0.11870
Total	1.01661	0.35702	0.02426	0.78028	0.80454	945.997

2.5. Operations Emissions by Sector, Mitigated

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

Sector	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Mobile	0.72809	0.27354	0.00234	4.85739	4.85973	202.983
Area	5.15614	0.05451	0.01125	—	0.01125	26.4111
Energy	0.08959	1.62783	0.12380	—	0.12380	3,831.25
Water	—	—	—	—	—	103.240
Waste	—	—	—	—	—	1,558.51
Refrig.	—	—	—	—	—	0.71695
Total	5.97382	1.95588	0.13739	4.85739	4.99478	5,723.11
Daily, Winter (Max)	—	—	—	—	—	—
Mobile	0.74990	0.31174	0.00235	4.85739	4.85974	204.720

Area	5.15772	0.05484	0.01125	—	0.01125	26.4960
Energy	0.08959	1.62783	0.12380	—	0.12380	3,831.25
Water	—	—	—	—	—	103.240
Waste	—	—	—	—	—	1,558.51
Refrig.	—	—	—	—	—	0.71695
Total	5.99721	1.99440	0.13740	4.85739	4.99479	5,724.93
Average Daily	—	—	—	—	—	—
Mobile	0.74086	0.29555	0.00235	4.27553	4.27787	204.228
Area	4.73998	0.03289	0.00678	—	0.00678	15.9283
Energy	0.08959	1.62783	0.12380	—	0.12380	3,831.25
Water	—	—	—	—	—	103.240
Waste	—	—	—	—	—	1,558.51
Refrig.	—	—	—	—	—	0.71695
Total	5.57044	1.95627	0.13293	4.27553	4.40845	5,713.87
Annual	—	—	—	—	—	—
Mobile	0.13521	0.05394	0.00043	0.78028	0.78071	33.8123
Area	0.86505	0.00600	0.00124	—	0.00124	2.63712
Energy	0.01635	0.29708	0.02259	—	0.02259	634.307
Water	—	—	—	—	—	17.0926
Waste	—	—	—	—	—	258.029
Refrig.	—	—	—	—	—	0.11870
Total	1.01661	0.35702	0.02426	0.78028	0.80454	945.997

3. Construction Emissions Details

3.1. Demolition (2027)

3.1.1. Onsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Off-Road Equipment	2.21478	19.9005	0.79594	—	0.79594	3,438.66
Demolition	—	—	—	0.92527	0.92527	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—
Off-Road Equipment	0.26092	2.34445	0.09377	—	0.09377	405.102
Demolition	—	—	—	0.10900	0.10900	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Off-Road Equipment	0.04762	0.42786	0.01711	—	0.01711	67.0693
Demolition	—	—	—	0.01989	0.01989	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.1.2. Offsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Worker	0.06792	0.04620	0.00000	5.65962	5.65962	88.5178
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.01855	1.20321	0.01432	9.28552	9.29984	758.682
Daily, Winter (Max)	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—
Worker	0.00831	0.00628	0.00000	0.58591	0.58591	10.4335
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00213	0.14379	0.00169	0.96195	0.96363	89.3187

Annual	—	—	—	—	—	—
Worker	0.00152	0.00115	0.00000	0.10693	0.10693	1.72739
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00039	0.02624	0.00031	0.17556	0.17586	14.7877

3.1.3. Onsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Demolition	—	—	—	0.59217	0.59217	—
Off-Road Equipment	0.36229	4.50525	0.06327	—	0.06327	3,438.66
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—
Demolition	—	—	—	0.06976	0.06976	—
Off-Road Equipment	0.04268	0.53076	0.00745	—	0.00745	405.102
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Demolition	—	—	—	0.01273	0.01273	—
Off-Road Equipment	0.00779	0.09686	0.00136	—	0.00136	67.0693
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.1.4. Offsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Worker	0.06792	0.04620	0.00000	5.65962	5.65962	88.5178
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Hauling	0.01855	1.20321	0.01432	9.28552	9.29984	758.682
Daily, Winter (Max)	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—
Worker	0.00831	0.00628	0.00000	0.58591	0.58591	10.4335
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00213	0.14379	0.00169	0.96195	0.96363	89.3187
Annual	—	—	—	—	—	—
Worker	0.00152	0.00115	0.00000	0.10693	0.10693	1.72739
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00039	0.02624	0.00031	0.17556	0.17586	14.7877

3.2. Site Preparation (2027)

3.2.1. Onsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Off-Road Equipment	3.05170	27.9724	1.17173	—	1.17173	5,316.00
Dust From Material Movement	—	—	—	19.6601	19.6601	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—
Off-Road Equipment	0.55181	5.05803	0.21188	—	0.21188	961.249
Dust From Material Movement	—	—	—	3.55498	3.55498	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Off-Road Equipment	0.10071	0.92309	0.03867	—	0.03867	159.146

Dust From Material Movement	—	—	—	0.64878	0.64878	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.2.2. Offsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Worker	0.07925	0.05390	0.00000	6.60290	6.60290	103.271
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.01156	0.74968	0.00892	5.78548	5.79440	472.708
Daily, Winter (Max)	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—
Worker	0.01489	0.01124	0.00000	1.04918	1.04918	18.6833
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00204	0.13752	0.00161	0.91994	0.92155	85.4183
Annual	—	—	—	—	—	—
Worker	0.00272	0.00205	0.00000	0.19148	0.19148	3.09323
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00037	0.02510	0.00029	0.16789	0.16818	14.1420

3.2.3. Onsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Dust From Material Movement	—	—	—	7.66744	7.66744	—
Off-Road Equipment	0.49800	2.58959	0.09960	—	0.09960	5,316.00
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Daily, Winter (Max)	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—
Dust From Material Movement	—	—	—	1.38644	1.38644	—
Off-Road Equipment	0.09005	0.46825	0.01801	—	0.01801	961.249
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Dust From Material Movement	—	—	—	0.25303	0.25303	—
Off-Road Equipment	0.01643	0.08546	0.00329	—	0.00329	159.146
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.2.4. Offsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Worker	0.07925	0.05390	0.00000	6.60290	6.60290	103.271
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.01156	0.74968	0.00892	5.78548	5.79440	472.708
Daily, Winter (Max)	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—
Worker	0.01489	0.01124	0.00000	1.04918	1.04918	18.6833
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00204	0.13752	0.00161	0.91994	0.92155	85.4183
Annual	—	—	—	—	—	—
Worker	0.00272	0.00205	0.00000	0.19148	0.19148	3.09323
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00037	0.02510	0.00029	0.16789	0.16818	14.1420

3.3. Grading (2027)

3.3.1. Onsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Off-Road Equipment	1.58640	14.2321	0.59767	—	0.59767	2,970.23
Dust From Material Movement	—	—	—	7.08259	7.08259	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—
Off-Road Equipment	0.09562	0.85783	0.03602	—	0.03602	179.028
Dust From Material Movement	—	—	—	0.42690	0.42690	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Off-Road Equipment	0.01745	0.15655	0.00657	—	0.00657	29.6401
Dust From Material Movement	—	—	—	0.07791	0.07791	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.3.2. Offsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Worker	0.06792	0.04620	0.00000	5.65962	5.65962	88.5178
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Daily, Winter (Max)	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—
Worker	0.00425	0.00321	0.00000	0.29977	0.29977	5.33808
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.00078	0.00059	0.00000	0.05471	0.05471	0.88378
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.3.3. Onsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Dust From Material Movement	—	—	—	2.76221	2.76221	—
Off-Road Equipment	0.28690	2.04249	0.05545	—	0.05545	2,966.70
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—
Dust From Material Movement	—	—	—	0.16649	0.16649	—
Off-Road Equipment	0.01729	0.12311	0.00334	—	0.00334	178.815
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Dust From Material Movement	—	—	—	0.03038	0.03038	—
Off-Road Equipment	0.00316	0.02247	0.00061	—	0.00061	29.6049
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.3.4. Offsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Worker	0.06792	0.04620	0.00000	5.65962	5.65962	88.5178
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—
Average Daily	—	—	—	—	—	—
Worker	0.00425	0.00321	0.00000	0.29977	0.29977	5.33808
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.00078	0.00059	0.00000	0.05471	0.05471	0.88378
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4. Building Construction (2027)

3.4.1. Onsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Off-Road Equipment	1.02988	9.39093	0.33657	—	0.33657	2,405.30
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Off-Road Equipment	0.18542	1.69074	0.06060	—	0.06060	433.049

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Off-Road Equipment	0.03384	0.30856	0.01106	—	0.01106	71.6962
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4.2. Offsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Worker	0.30005	0.24098	0.00000	23.7297	23.7297	370.888
Vendor	0.02579	0.95221	0.00678	6.16505	6.17182	477.678
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Worker	0.05327	0.04022	0.00000	3.75426	3.75426	66.8538
Vendor	0.00530	0.16945	0.00122	0.97578	0.97700	86.0834
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.00972	0.00734	0.00000	0.68515	0.68515	11.0684
Vendor	0.00097	0.03092	0.00022	0.17808	0.17830	14.2521
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4.3. Onsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Off-Road Equipment	0.32849	2.81733	0.07451	—	0.07451	2,405.30

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Off-Road Equipment	0.05914	0.50723	0.01342	—	0.01342	433.049
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Off-Road Equipment	0.01079	0.09257	0.00245	—	0.00245	71.6962
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.4.4. Offsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Worker	0.30005	0.24098	0.00000	23.7297	23.7297	370.888
Vendor	0.02579	0.95221	0.00678	6.16505	6.17182	477.678
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Worker	0.05327	0.04022	0.00000	3.75426	3.75426	66.8538
Vendor	0.00530	0.16945	0.00122	0.97578	0.97700	86.0834
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.00972	0.00734	0.00000	0.68515	0.68515	11.0684
Vendor	0.00097	0.03092	0.00022	0.17808	0.17830	14.2521
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5. Building Construction (2028)

3.5.1. Onsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Off-Road Equipment	0.99143	8.92495	0.30024	—	0.30024	2,405.68
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—
Off-Road Equipment	0.99143	8.92495	0.30024	—	0.30024	2,405.68
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Off-Road Equipment	0.59176	5.32703	0.17920	—	0.17920	1,435.88
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Off-Road Equipment	0.10800	0.97218	0.03270	—	0.03270	237.726
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5.2. Offsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Worker	0.27925	0.17886	0.00000	23.7297	23.7297	365.218
Vendor	0.02579	0.86081	0.00625	6.16505	6.17129	466.981
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—
Worker	0.29173	0.21408	0.00000	23.7297	23.7297	365.021
Vendor	0.02367	0.88856	0.00678	6.16505	6.17182	466.318
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Worker	0.17164	0.11727	0.00000	12.4462	12.4462	218.118

Vendor	0.01539	0.52346	0.00373	3.23492	3.23865	278.538
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.03132	0.02140	0.00000	2.27143	2.27143	36.1119
Vendor	0.00281	0.09553	0.00068	0.59037	0.59105	46.1151
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5.3. Onsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Off-Road Equipment	0.32816	2.81436	0.07412	—	0.07412	2,405.68
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—
Off-Road Equipment	0.32816	2.81436	0.07412	—	0.07412	2,405.68
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Off-Road Equipment	0.19587	1.67980	0.04424	—	0.04424	1,435.88
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Off-Road Equipment	0.03575	0.30656	0.00807	—	0.00807	237.726
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.5.4. Offsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Worker	0.27925	0.17886	0.00000	23.7297	23.7297	365.218

Vendor	0.02579	0.86081	0.00625	6.16505	6.17129	466.981
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Daily, Winter (Max)	—	—	—	—	—	—
Worker	0.29173	0.21408	0.00000	23.7297	23.7297	365.021
Vendor	0.02367	0.88856	0.00678	6.16505	6.17182	466.318
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Worker	0.17164	0.11727	0.00000	12.4462	12.4462	218.118
Vendor	0.01539	0.52346	0.00373	3.23492	3.23865	278.538
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.03132	0.02140	0.00000	2.27143	2.27143	36.1119
Vendor	0.00281	0.09553	0.00068	0.59037	0.59105	46.1151
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.6. Paving (2028)

3.6.1. Onsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Off-Road Equipment	0.62588	5.84990	0.21041	—	0.21041	1,354.92
Paving	0.00388	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Off-Road Equipment	0.07471	0.69832	0.02512	—	0.02512	161.741
Paving	0.00046	—	—	—	—	—

Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Off-Road Equipment	0.01364	0.12744	0.00458	—	0.00458	26.7781
Paving	0.00008	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.6.2. Offsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Worker	0.09277	0.06808	0.00000	7.54617	7.54617	116.079
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Worker	0.01092	0.00746	0.00000	0.79159	0.79159	13.8725
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.00199	0.00136	0.00000	0.14447	0.14447	2.29675
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.6.3. Onsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—

Paving	0.00388	—	—	—	—	—
Off-Road Equipment	0.21425	2.13595	0.04771	—	0.04771	1,354.92
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Paving	0.00046	—	—	—	—	—
Off-Road Equipment	0.02558	0.25498	0.00570	—	0.00570	161.741
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Paving	0.00008	—	—	—	—	—
Off-Road Equipment	0.00467	0.04653	0.00104	—	0.00104	26.7781
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.6.4. Offsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Worker	0.09277	0.06808	0.00000	7.54617	7.54617	116.079
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Worker	0.01092	0.00746	0.00000	0.79159	0.79159	13.8725
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.00199	0.00136	0.00000	0.14447	0.14447	2.29675
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.7. Paving (2029)

3.7.1. Onsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Off-Road Equipment	0.61696	5.72780	0.19772	—	0.19772	1,354.44
Paving	0.00388	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Off-Road Equipment	0.10866	1.00881	0.03482	—	0.03482	238.552
Paving	0.00068	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Off-Road Equipment	0.01983	0.18411	0.00636	—	0.00636	39.4950
Paving	0.00012	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.7.2. Offsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Worker	0.09012	0.06336	0.00000	7.54617	7.54617	114.156
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—

Worker	0.01556	0.01017	0.00000	1.16792	1.16792	20.1518
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.00284	0.00186	0.00000	0.21315	0.21315	3.33636
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.7.3. Onsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Paving	0.00388	—	—	—	—	—
Off-Road Equipment	0.21423	2.13574	0.04769	—	0.04769	1,354.44
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Paving	0.00068	—	—	—	—	—
Off-Road Equipment	0.03773	0.37616	0.00840	—	0.00840	238.552
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Paving	0.00012	—	—	—	—	—
Off-Road Equipment	0.00689	0.06865	0.00153	—	0.00153	39.4950
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.7.4. Offsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Worker	0.09012	0.06336	0.00000	7.54617	7.54617	114.156
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Worker	0.01556	0.01017	0.00000	1.16792	1.16792	20.1518
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.00284	0.00186	0.00000	0.21315	0.21315	3.33636
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.8. Architectural Coating (2028)

3.8.1. Onsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Off-Road Equipment	0.10731	0.80814	0.01536	—	0.01536	133.975
Architectural Coatings	31.9591	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Off-Road Equipment	0.01281	0.09647	0.00183	—	0.00183	15.9931
Architectural Coatings	3.81508	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

Annual	—	—	—	—	—	—
Off-Road Equipment	0.00234	0.01761	0.00033	—	0.00033	2.64784
Architectural Coatings	0.69625	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.8.2. Offsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Worker	0.05835	0.04282	0.00000	4.74593	4.74593	73.0041
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Worker	0.00687	0.00469	0.00000	0.49785	0.49785	8.72471
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.00125	0.00086	0.00000	0.09086	0.09086	1.44447
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.8.3. Onsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Architectural Coatings	31.9591	—	—	—	—	—

Off-Road Equipment	0.02114	0.64604	0.00235	—	0.00235	133.975
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Architectural Coatings	3.81508	—	—	—	—	—
Off-Road Equipment	0.00252	0.07712	0.00028	—	0.00028	15.9931
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Architectural Coatings	0.69625	—	—	—	—	—
Off-Road Equipment	0.00046	0.01407	0.00005	—	0.00005	2.64784
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.8.4. Offsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Worker	0.05835	0.04282	0.00000	4.74593	4.74593	73.0041
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Worker	0.00687	0.00469	0.00000	0.49785	0.49785	8.72471
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.00125	0.00086	0.00000	0.09086	0.09086	1.44447
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.9. Architectural Coating (2029)

3.9.1. Onsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Off-Road Equipment	0.10236	0.79416	0.01284	—	0.01284	133.968
Architectural Coatings	31.9591	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Off-Road Equipment	0.01803	0.13987	0.00226	—	0.00226	23.5951
Architectural Coatings	5.62881	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Off-Road Equipment	0.00329	0.02553	0.00041	—	0.00041	3.90644
Architectural Coatings	1.02726	—	—	—	—	—
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.9.2. Offsite - Unmitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Worker	0.05668	0.03985	0.00000	4.74593	4.74593	71.7950
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—

Worker	0.00979	0.00640	0.00000	0.73453	0.73453	12.6739
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.00179	0.00117	0.00000	0.13405	0.13405	2.09830
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.9.3. Onsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Architectural Coatings	31.9591	—	—	—	—	—
Off-Road Equipment	0.02114	0.64604	0.00235	—	0.00235	133.968
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Architectural Coatings	5.62881	—	—	—	—	—
Off-Road Equipment	0.00372	0.11378	0.00041	—	0.00041	23.5951
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Architectural Coatings	1.02726	—	—	—	—	—
Off-Road Equipment	0.00068	0.02077	0.00008	—	0.00008	3.90644
Onsite truck	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

3.9.4. Offsite - Mitigated

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

Location	ROG	NOx	PM10E	PM10D	PM10T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Worker	0.05668	0.03985	0.00000	4.74593	4.74593	71.7950
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Average Daily	—	—	—	—	—	—
Worker	0.00979	0.00640	0.00000	0.73453	0.73453	12.6739
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Annual	—	—	—	—	—	—
Worker	0.00179	0.00117	0.00000	0.13405	0.13405	2.09830
Vendor	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
Hauling	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

4. Operations Emissions Details

4.1. Mobile Emissions by Land Use

4.1.1. Unmitigated

Mobile source emissions results are presented in Sections 2.6. No further detailed breakdown of emissions is available.

4.1.2. Mitigated

Mobile source emissions results are presented in Sections 2.5. No further detailed breakdown of emissions is available.

4.2. Energy

4.2.1. Electricity Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—

Racquet Club	—	—	—	—	—	1,862.95
Condo/Townhouse	—	—	—	—	—	19.3034
Total	—	—	—	—	—	1,882.25
Daily, Winter (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	1,862.95
Condo/Townhouse	—	—	—	—	—	19.3034
Total	—	—	—	—	—	1,882.25
Annual	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	308.433
Condo/Townhouse	—	—	—	—	—	3.19590
Total	—	—	—	—	—	311.628

4.2.2. Electricity Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	1,862.95
Condo/Townhouse	—	—	—	—	—	19.3034
Total	—	—	—	—	—	1,882.25
Daily, Winter (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	1,862.95
Condo/Townhouse	—	—	—	—	—	19.3034
Total	—	—	—	—	—	1,882.25
Annual	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	308.433
Condo/Townhouse	—	—	—	—	—	3.19590
Total	—	—	—	—	—	311.628

4.2.3. Natural Gas Emissions By Land Use - Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Racquet Club	0.08856	1.61024	0.12238	—	0.12238	1,926.61
Condo/Townhouse	0.00103	0.01759	0.00142	—	0.00142	22.3869
Total	0.08959	1.62783	0.12380	—	0.12380	1,949.00
Daily, Winter (Max)	—	—	—	—	—	—
Racquet Club	0.08856	1.61024	0.12238	—	0.12238	1,926.61
Condo/Townhouse	0.00103	0.01759	0.00142	—	0.00142	22.3869
Total	0.08959	1.62783	0.12380	—	0.12380	1,949.00
Annual	—	—	—	—	—	—
Racquet Club	0.01616	0.29387	0.02233	—	0.02233	318.972
Condo/Townhouse	0.00019	0.00321	0.00026	—	0.00026	3.70640
Total	0.01635	0.29708	0.02259	—	0.02259	322.679

4.2.4. Natural Gas Emissions By Land Use - Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Racquet Club	0.08856	1.61024	0.12238	—	0.12238	1,926.61
Condo/Townhouse	0.00103	0.01759	0.00142	—	0.00142	22.3869
Total	0.08959	1.62783	0.12380	—	0.12380	1,949.00
Daily, Winter (Max)	—	—	—	—	—	—
Racquet Club	0.08856	1.61024	0.12238	—	0.12238	1,926.61
Condo/Townhouse	0.00103	0.01759	0.00142	—	0.00142	22.3869
Total	0.08959	1.62783	0.12380	—	0.12380	1,949.00
Annual	—	—	—	—	—	—

Racquet Club	0.01616	0.29387	0.02233	—	0.02233	318.972
Condo/Townhouse	0.00019	0.00321	0.00026	—	0.00026	3.70640
Total	0.01635	0.29708	0.02259	—	0.02259	322.679

4.3. Area Emissions by Source

4.3.1. Unmitigated

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

Source	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Consumer Products	3.16249	—	—	—	—	—
Architectural Coatings	0.94564	—	—	—	—	—
Landscape Equipment	1.04801	0.05451	0.01125	—	0.01125	26.4111
Total	5.15614	0.05451	0.01125	—	0.01125	26.4111
Daily, Winter (Max)	—	—	—	—	—	—
Consumer Products	3.16249	—	—	—	—	—
Architectural Coatings	0.94564	—	—	—	—	—
Landscape Equipment	1.04959	0.05484	0.01125	—	0.01125	26.4960
Total	5.15772	0.05484	0.01125	—	0.01125	26.4960
Annual	—	—	—	—	—	—
Consumer Products	0.57715	—	—	—	—	—
Architectural Coatings	0.17258	—	—	—	—	—
Landscape Equipment	0.11531	0.00600	0.00124	—	0.00124	2.63712
Total	0.86505	0.00600	0.00124	—	0.00124	2.63712

4.3.2. Mitigated

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

Source	ROG	NOx	PM10E	PM10D	PM10T	CO2e

Daily, Summer (Max)	—	—	—	—	—	—
Consumer Products	3.16249	—	—	—	—	—
Architectural Coatings	0.94564	—	—	—	—	—
Landscape Equipment	1.04801	0.05451	0.01125	—	0.01125	26.4111
Total	5.15614	0.05451	0.01125	—	0.01125	26.4111
Daily, Winter (Max)	—	—	—	—	—	—
Consumer Products	3.16249	—	—	—	—	—
Architectural Coatings	0.94564	—	—	—	—	—
Landscape Equipment	1.04959	0.05484	0.01125	—	0.01125	26.4960
Total	5.15772	0.05484	0.01125	—	0.01125	26.4960
Annual	—	—	—	—	—	—
Consumer Products	0.57715	—	—	—	—	—
Architectural Coatings	0.17258	—	—	—	—	—
Landscape Equipment	0.11531	0.00600	0.00124	—	0.00124	2.63712
Total	0.86505	0.00600	0.00124	—	0.00124	2.63712

4.4. Water Emissions by Land Use

4.4.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	102.096
Condo/Townhouse	—	—	—	—	—	1.14471
Total	—	—	—	—	—	103.240
Daily, Winter (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	102.096
Condo/Townhouse	—	—	—	—	—	1.14471

Total	—	—	—	—	—	103.240
Annual	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	16.9031
Condo/Townhouse	—	—	—	—	—	0.18952
Total	—	—	—	—	—	17.0926

4.4.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	102.096
Condo/Townhouse	—	—	—	—	—	1.14471
Total	—	—	—	—	—	103.240
Daily, Winter (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	102.096
Condo/Townhouse	—	—	—	—	—	1.14471
Total	—	—	—	—	—	103.240
Annual	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	16.9031
Condo/Townhouse	—	—	—	—	—	0.18952
Total	—	—	—	—	—	17.0926

4.5. Waste Emissions by Land Use

4.5.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—

Racquet Club	—	—	—	—	—	1,554.12
Condo/Townhouse	—	—	—	—	—	4.39101
Total	—	—	—	—	—	1,558.51
Daily, Winter (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	1,554.12
Condo/Townhouse	—	—	—	—	—	4.39101
Total	—	—	—	—	—	1,558.51
Annual	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	257.302
Condo/Townhouse	—	—	—	—	—	0.72698
Total	—	—	—	—	—	258.029

4.5.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	1,554.12
Condo/Townhouse	—	—	—	—	—	4.39101
Total	—	—	—	—	—	1,558.51
Daily, Winter (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	1,554.12
Condo/Townhouse	—	—	—	—	—	4.39101
Total	—	—	—	—	—	1,558.51
Annual	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	257.302
Condo/Townhouse	—	—	—	—	—	0.72698
Total	—	—	—	—	—	258.029

4.6. Refrigerant Emissions by Land Use

4.6.1. Unmitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	0.69417
Condo/Townhouse	—	—	—	—	—	0.02278
Total	—	—	—	—	—	0.71695
Daily, Winter (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	0.69417
Condo/Townhouse	—	—	—	—	—	0.02278
Total	—	—	—	—	—	0.71695
Annual	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	0.11493
Condo/Townhouse	—	—	—	—	—	0.00377
Total	—	—	—	—	—	0.11870

4.6.2. Mitigated

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	0.69417
Condo/Townhouse	—	—	—	—	—	0.02278
Total	—	—	—	—	—	0.71695
Daily, Winter (Max)	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	0.69417
Condo/Townhouse	—	—	—	—	—	0.02278

Total	—	—	—	—	—	0.71695
Annual	—	—	—	—	—	—
Racquet Club	—	—	—	—	—	0.11493
Condo/Townhouse	—	—	—	—	—	0.00377
Total	—	—	—	—	—	0.11870

4.7. Offroad Emissions By Equipment Type

4.7.1. Unmitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Annual	—	—	—	—	—	—
Total	—	—	—	—	—	—

4.7.2. Mitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Annual	—	—	—	—	—	—
Total	—	—	—	—	—	—

4.8. Stationary Emissions By Equipment Type

4.8.1. Unmitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Annual	—	—	—	—	—	—
Total	—	—	—	—	—	—

4.8.2. Mitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Annual	—	—	—	—	—	—
Total	—	—	—	—	—	—

4.9. User Defined Emissions By Equipment Type

4.9.1. Unmitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—

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

4.9.2. Mitigated

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

Equipment Type	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Annual	—	—	—	—	—	—
Total	—	—	—	—	—	—

4.10. Soil Carbon Accumulation By Vegetation Type

4.10.1. Soil Carbon Accumulation By Vegetation Type - Unmitigated

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

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Annual	—	—	—	—	—	—
Total	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Annual	—	—	—	—	—	—
Total	—	—	—	—	—	—

4.10.3. Avoided and Sequestered Emissions by Species - Unmitigated

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

Species	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Avoided	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
Removed	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Avoided	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
Removed	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—

—	—	—	—	—	—	—
Annual	—	—	—	—	—	—
Avoided	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
Removed	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
—	—	—	—	—	—	—

4.10.4. Soil Carbon Accumulation By Vegetation Type - Mitigated

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

Vegetation	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Annual	—	—	—	—	—	—
Total	—	—	—	—	—	—

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

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

Land Use	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Total	—	—	—	—	—	—
Annual	—	—	—	—	—	—

Total	—	—	—	—	—	—

4.10.6. Avoided and Sequestered Emissions by Species - Mitigated

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

Species	ROG	NOx	PM10E	PM10D	PM10T	CO2e
Daily, Summer (Max)	—	—	—	—	—	—
Avoided	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
Removed	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
—	—	—	—	—	—	—
Daily, Winter (Max)	—	—	—	—	—	—
Avoided	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
Removed	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
—	—	—	—	—	—	—
Annual	—	—	—	—	—	—
Avoided	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
Sequestered	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—
Removed	—	—	—	—	—	—
Subtotal	—	—	—	—	—	—

—	—	—	—	—	—	—

5. Activity Data

5.1. Construction Schedule

Phase Name	Phase Type	Start Date	End Date	Days Per Week	Work Days per Phase	Phase Description
Demolition	Demolition	4/1/2027	5/31/2027	5.00000	43.0000	—
Site Preparation	Site Preparation	6/1/2027	8/31/2027	5.00000	66.0000	—
Grading	Grading	9/1/2027	9/30/2027	5.00000	22.0000	—
Building Construction	Building Construction	10/1/2027	10/31/2028	5.00000	283.000	—
Paving	Paving	11/1/2028	3/31/2029	5.00000	108.000	—
Architectural Coating	Architectural Coating	11/1/2028	3/31/2029	5.00000	108.000	—

5.2. Off-Road Equipment

5.2.1. Unmitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Average	1.000000	8.00000	33.0000	0.73000
Demolition	Excavators	Diesel	Average	3.00000	8.00000	36.0000	0.38000
Demolition	Rubber Tired Dozers	Diesel	Average	2.00000	8.00000	367.000	0.40000
Site Preparation	Rubber Tired Dozers	Diesel	Average	3.00000	8.00000	367.000	0.40000
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Average	4.00000	8.00000	84.0000	0.37000
Grading	Excavators	Diesel	Average	1.000000	8.00000	36.0000	0.38000
Grading	Graders	Diesel	Average	1.000000	8.00000	148.000	0.41000
Grading	Rubber Tired Dozers	Diesel	Average	1.000000	8.00000	367.000	0.40000
Grading	Tractors/Loaders/Backhoes	Diesel	Average	3.00000	8.00000	84.0000	0.37000

Building Construction	Cranes	Diesel	Average	1.000000	7.00000	367.000	0.29000
Building Construction	Forklifts	Diesel	Average	3.00000	8.00000	82.0000	0.20000
Building Construction	Generator Sets	Diesel	Average	1.000000	8.00000	14.0000	0.74000
Building Construction	Tractors/Loaders/Backhoes	Diesel	Average	3.00000	7.00000	84.0000	0.37000
Building Construction	Welders	Diesel	Average	1.000000	8.00000	46.0000	0.45000
Paving	Cement and Mortar Mixers	Diesel	Average	2.00000	6.00000	10.00000	0.56000
Paving	Pavers	Diesel	Average	1.000000	8.00000	81.0000	0.42000
Paving	Paving Equipment	Diesel	Average	2.00000	6.00000	89.0000	0.36000
Paving	Rollers	Diesel	Average	2.00000	6.00000	36.0000	0.38000
Paving	Tractors/Loaders/Backhoes	Diesel	Average	1.000000	8.00000	84.0000	0.37000
Architectural Coating	Air Compressors	Diesel	Average	1.000000	6.00000	37.0000	0.48000

5.2.2. Mitigated

Phase Name	Equipment Type	Fuel Type	Engine Tier	Number per Day	Hours Per Day	Horsepower	Load Factor
Demolition	Concrete/Industrial Saws	Diesel	Tier 4 Final	1.000000	8.00000	33.0000	0.73000
Demolition	Excavators	Diesel	Tier 4 Final	3.00000	8.00000	36.0000	0.38000
Demolition	Rubber Tired Dozers	Diesel	Tier 4 Final	2.00000	8.00000	367.000	0.40000
Site Preparation	Rubber Tired Dozers	Diesel	Tier 4 Final	3.00000	8.00000	367.000	0.40000
Site Preparation	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	4.00000	8.00000	84.0000	0.37000
Grading	Excavators	Diesel	Tier 4 Final	1.000000	8.00000	36.0000	0.38000
Grading	Graders	Diesel	Tier 4 Final	1.000000	8.00000	148.000	0.41000
Grading	Rubber Tired Dozers	Diesel	Tier 4 Final	1.000000	8.00000	367.000	0.40000
Grading	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00000	8.00000	84.0000	0.37000
Building Construction	Cranes	Diesel	Tier 4 Final	1.000000	7.00000	367.000	0.29000

Building Construction	Forklifts	Diesel	Tier 4 Final	3.00000	8.00000	82.0000	0.20000
Building Construction	Generator Sets	Diesel	Average	1.000000	8.00000	14.0000	0.74000
Building Construction	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	3.00000	7.00000	84.0000	0.37000
Building Construction	Welders	Diesel	Tier 4 Final	1.000000	8.00000	46.0000	0.45000
Paving	Cement and Mortar Mixers	Diesel	Average	2.00000	6.00000	10.00000	0.56000
Paving	Pavers	Diesel	Tier 4 Final	1.000000	8.00000	81.0000	0.42000
Paving	Paving Equipment	Diesel	Tier 4 Final	2.00000	6.00000	89.0000	0.36000
Paving	Rollers	Diesel	Tier 4 Final	2.00000	6.00000	36.0000	0.38000
Paving	Tractors/Loaders/Backhoes	Diesel	Tier 4 Final	1.000000	8.00000	84.0000	0.37000
Architectural Coating	Air Compressors	Diesel	Tier 4 Final	1.000000	6.00000	37.0000	0.48000

5.3. Construction Vehicles

5.3.1. Unmitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	Worker	15.0000	8.70000	LDA,LDT1,LDT2
Demolition	Vendor	—	5.90000	HHDT,MHDT
Demolition	Hauling	10.6512	20.0000	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	Worker	17.5000	8.70000	LDA,LDT1,LDT2
Site Preparation	Vendor	—	5.90000	HHDT,MHDT
Site Preparation	Hauling	6.63636	20.0000	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	Worker	15.0000	8.70000	LDA,LDT1,LDT2
Grading	Vendor	—	5.90000	HHDT,MHDT
Grading	Hauling	0.00000	20.0000	HHDT

Grading	Onsite truck	—	—	HHDT
Building Construction	Worker	62.8920	8.70000	LDA,LDT1,LDT2
Building Construction	Vendor	24.0206	5.90000	HHDT,MHDT
Building Construction	Hauling	0.00000	20.0000	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	Worker	20.0000	8.70000	LDA,LDT1,LDT2
Paving	Vendor	—	5.90000	HHDT,MHDT
Paving	Hauling	0.00000	20.0000	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	Worker	12.5784	8.70000	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	5.90000	HHDT,MHDT
Architectural Coating	Hauling	0.00000	20.0000	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.3.2. Mitigated

Phase Name	Trip Type	One-Way Trips per Day	Miles per Trip	Vehicle Mix
Demolition	Worker	15.0000	8.70000	LDA,LDT1,LDT2
Demolition	Vendor	—	5.90000	HHDT,MHDT
Demolition	Hauling	10.6512	20.0000	HHDT
Demolition	Onsite truck	—	—	HHDT
Site Preparation	Worker	17.5000	8.70000	LDA,LDT1,LDT2
Site Preparation	Vendor	—	5.90000	HHDT,MHDT
Site Preparation	Hauling	6.63636	20.0000	HHDT
Site Preparation	Onsite truck	—	—	HHDT
Grading	Worker	15.0000	8.70000	LDA,LDT1,LDT2
Grading	Vendor	—	5.90000	HHDT,MHDT
Grading	Hauling	0.00000	20.0000	HHDT
Grading	Onsite truck	—	—	HHDT

Building Construction	Worker	62.8920	8.70000	LDA,LDT1,LDT2
Building Construction	Vendor	24.0206	5.90000	HHDT,MHDT
Building Construction	Hauling	0.00000	20.0000	HHDT
Building Construction	Onsite truck	—	—	HHDT
Paving	Worker	20.0000	8.70000	LDA,LDT1,LDT2
Paving	Vendor	—	5.90000	HHDT,MHDT
Paving	Hauling	0.00000	20.0000	HHDT
Paving	Onsite truck	—	—	HHDT
Architectural Coating	Worker	12.5784	8.70000	LDA,LDT1,LDT2
Architectural Coating	Vendor	—	5.90000	HHDT,MHDT
Architectural Coating	Hauling	0.00000	20.0000	HHDT
Architectural Coating	Onsite truck	—	—	HHDT

5.4. Vehicles

5.4.1. Construction Vehicle Control Strategies

Non-applicable. No control strategies activated by user.

5.5. Architectural Coatings

Phase Name	Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
Architectural Coating	6,439.50	2,146.50	216,900	72,300.0	—

5.6. Dust Mitigation

5.6.1. Construction Earthmoving Activities

Phase Name	Material Imported (Cubic Yards)	Material Exported (Cubic Yards)	Acres Graded (acres)	Material Demolished (Building Square Footage)	Acres Paved (acres)
Demolition	0.00000	0.00000	0.00000	39,800.0	0.00000

Site Preparation	3,500.00	—	99.0000	0.00000	0.00000
Grading	—	—	22.0000	0.00000	0.00000
Paving	0.00000	0.00000	0.00000	0.00000	4.00000

5.6.2. Construction Earthmoving Control Strategies

Non-applicable. No control strategies activated by user.

5.7. Construction Paving

Phase Name	Land Use	Area Paved (acres)	% Asphalt
Paving	Racquet Club	4.00000	4%
Paving	Condo/Townhouse	—	0%

5.8. Construction Electricity Consumption and Emissions Factors

kWh per Year and Emission Factor (lb/MWh)

Year	kWh per Year	CO2	CH4	N2O
2027	0.00000	453.209	0.03300	0.00400
2028	0.00000	453.209	0.03300	0.00400
2029	0.00000	453.209	0.03300	0.00400

5.9. Operational Mobile Sources

5.9.1. Unmitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	175.000	175.000	175.000	63,875.0	218.000	218.000	218.000	79,570.0

5.9.2. Mitigated

Land Use Type	Trips/Weekday	Trips/Saturday	Trips/Sunday	Trips/Year	VMT/Weekday	VMT/Saturday	VMT/Sunday	VMT/Year
Total all Land Uses	175.000	175.000	175.000	63,875.0	218.000	218.000	218.000	79,570.0

5.10. Operational Area Sources

5.10.1. Hearths

Land Use	Hearth Type	Unmitigated (number)	Mitigated (number)
Racquet Club	Wood Fireplaces	0	0
Racquet Club	Gas Fireplaces	0	0
Racquet Club	Propane Fireplaces	0	0
Racquet Club	Electric Fireplaces	0	0
Racquet Club	No Fireplaces	0	0
Racquet Club	Conventional Wood Stoves	0	0
Racquet Club	Catalytic Wood Stoves	0	0
Racquet Club	Non-Catalytic Wood Stoves	0	0
Racquet Club	Pellet Wood Stoves	0	0
Condo/Townhouse	Wood Fireplaces	0	0
Condo/Townhouse	Gas Fireplaces	0	0
Condo/Townhouse	Propane Fireplaces	0	0
Condo/Townhouse	Electric Fireplaces	0	0
Condo/Townhouse	No Fireplaces	0	0
Condo/Townhouse	Conventional Wood Stoves	0	0
Condo/Townhouse	Catalytic Wood Stoves	0	0
Condo/Townhouse	Non-Catalytic Wood Stoves	0	0
Condo/Townhouse	Pellet Wood Stoves	0	0

5.10.2. Architectural Coatings

Residential Interior Area Coated (sq ft)	Residential Exterior Area Coated (sq ft)	Non-Residential Interior Area Coated (sq ft)	Non-Residential Exterior Area Coated (sq ft)	Parking Area Coated (sq ft)
6,439.50	2,146.50	216,900	72,300.0	—

5.10.3. Landscape Equipment

Season	Unit	Value
Snow Days	day/yr	40.0000
Summer Days	day/yr	180.000

5.10.4. Landscape Equipment - Mitigated

Season	Unit	Value
Snow Days	day/yr	40.0000
Summer Days	day/yr	180.000

5.11. Operational Energy Consumption

5.11.1. Unmitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Racquet Club	1,493,712	453.209	0.0330	0.0040	5,994,915
Condo/Townhouse	15,477.5	453.209	0.0330	0.0040	69,659.8

5.11.2. Mitigated

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

Land Use	Electricity (kWh/yr)	CO2	CH4	N2O	Natural Gas (kBTU/yr)
Racquet Club	1,493,712	453.209	0.0330	0.0040	5,994,915
Condo/Townhouse	15,477.5	453.209	0.0330	0.0040	69,659.8

5.12. Operational Water and Wastewater Consumption

5.12.1. Unmitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Racquet Club	8,552,099	39,325.9
Condo/Townhouse	95,954.9	0.00000

5.12.2. Mitigated

Land Use	Indoor Water (gal/year)	Outdoor Water (gal/year)
Racquet Club	8,552,099	39,325.9
Condo/Townhouse	95,954.9	0.00000

5.13. Operational Waste Generation

5.13.1. Unmitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Racquet Club	824.220	0.00000
Condo/Townhouse	2.32875	0.00000

5.13.2. Mitigated

Land Use	Waste (ton/year)	Cogeneration (kWh/year)
Racquet Club	824.220	0.00000
Condo/Townhouse	2.32875	0.00000

5.14. Operational Refrigeration and Air Conditioning Equipment

5.14.1. Unmitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Racquet Club	Other commercial A/C and heat pumps	R-410A	2,088.00	0.00180	4.00000	4.00000	18.0000

Racquet Club	Stand-alone retail refrigerators and freezers	R-134a	1,430.00	0.03750	1.000000	0.00000	1.000000
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088.00	0.00225	2.50000	2.50000	10.00000
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430.00	0.11538	0.60000	0.00000	1.000000

5.14.2. Mitigated

Land Use	Equipment Type	Refrigerant	GWP	Quantity (kg)	Operations Leak Rate	Service Leak Rate	Times Serviced
Racquet Club	Other commercial A/C and heat pumps	R-410A	2,088.00	0.00180	4.00000	4.00000	18.0000
Racquet Club	Stand-alone retail refrigerators and freezers	R-134a	1,430.00	0.03750	1.000000	0.00000	1.000000
Condo/Townhouse	Average room A/C & Other residential A/C and heat pumps	R-410A	2,088.00	0.00225	2.50000	2.50000	10.00000
Condo/Townhouse	Household refrigerators and/or freezers	R-134a	1,430.00	0.11538	0.60000	0.00000	1.000000

5.15. Operational Off-Road Equipment

5.15.1. Unmitigated

5.15.2. Mitigated

5.16. Stationary Sources

5.16.1. Emergency Generators and Fire Pumps

5.16.2. Process Boilers

5.17. User Defined

5.18. Vegetation

5.18.1. Land Use Change

5.18.1.1. Unmitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Vegetation Land Use Type	Vegetation Soil Type	Initial Acres	Final Acres

5.18.1. Biomass Cover Type

5.18.1.1. Unmitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.1.2. Mitigated

Biomass Cover Type	Initial Acres	Final Acres

5.18.2. Sequestration

5.18.2.1. Unmitigated

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

5.18.2.2. Mitigated

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

6. Climate Risk Detailed Report

6.1. Climate Risk Summary

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

Climate Hazard	Result for Project Location	Unit
Temperature and Extreme Heat	30.5000	annual days of extreme heat
Extreme Precipitation	10.9000	annual days with precipitation above 20 mm
Sea Level Rise	—	meters of inundation depth
Wildfire	6.85000	annual hectares burned

Temperature and Extreme Heat data are for grid cell in which your project are located. The projection is based on the 98th historical percentile of daily maximum/minimum temperatures from observed historical data (32 climate model ensemble from Cal-Adapt, 2040–2059 average under RCP 8.5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Extreme Precipitation data are for the grid cell in which your project are located. The threshold of 20 mm is equivalent to about ¾ an inch of rain, which would be light to moderate rainfall if received over a full day or heavy rain if received over a period of 2 to 4 hours. Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.
Sea Level Rise data are for the grid cell in which your project are located. The projections are from Radke et al. (2017), as reported in Cal-Adapt (Radke et al., 2017, CEC-500-2017-008), and consider inundation location and depth for the San Francisco Bay, the Sacramento-San Joaquin River Delta and California coast resulting different increments of sea level rise coupled with extreme storm events. Users may select from four scenarios to view the range in potential inundation depth for the grid cell. The four scenarios are: No rise, 0.5 meter, 1.0 meter, 1.41 meters
Wildfire data are for the grid cell in which your project are located. The projections are from UC Davis, as reported in Cal-Adapt (2040–2059 average under RCP 8.5), and consider historical data of climate, vegetation, population density, and large (> 400 ha) fire history. Users may select from four model simulations to view the range in potential wildfire probabilities for the grid cell. The four simulations make different assumptions about expected rainfall and temperature are: Warmer/drier (HadGEM2-ES), Cooler/wetter (CNRM-CM5), Average conditions (CanESM2), Range of different rainfall and temperature possibilities (MIROC5). Each grid cell is 6 kilometers (km) by 6 km, or 3.7 miles (mi) by 3.7 mi.

6.2. Initial Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	0	0	N/A
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	0	0	N/A
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A

Snowpack Reduction	0	0	0	N/A
Air Quality Degradation	N/A	N/A	N/A	N/A

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

6.3. Adjusted Climate Risk Scores

Climate Hazard	Exposure Score	Sensitivity Score	Adaptive Capacity Score	Vulnerability Score
Temperature and Extreme Heat	N/A	N/A	N/A	N/A
Extreme Precipitation	2	1	1	3
Sea Level Rise	N/A	N/A	N/A	N/A
Wildfire	1	1	1	2
Flooding	N/A	N/A	N/A	N/A
Drought	N/A	N/A	N/A	N/A
Snowpack Reduction	1	1	1	2
Air Quality Degradation	N/A	N/A	N/A	N/A

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

6.4. Climate Risk Reduction Measures

7. Health and Equity Details

7.1. CalEnviroScreen 4.0 Scores

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

Indicator	Result for Project Census Tract
Exposure Indicators	—
AQ-Ozone	60.6596
AQ-PM	0.68451
AQ-DPM	44.4306
Drinking Water	36.6429
Lead Risk Housing	35.5514
Pesticides	0.00000
Toxic Releases	7.15179
Traffic	31.4375
Effect Indicators	—
CleanUp Sites	0.00000
Groundwater	83.4468
Haz Waste Facilities/Generators	76.2012
Impaired Water Bodies	77.2995
Solid Waste	91.0424
Sensitive Population	—
Asthma	30.1969
Cardio-vascular	3.25274
Low Birth Weights	83.5001
Socioeconomic Factor Indicators	—
Education	—
Housing	62.8264
Linguistic	30.6943
Poverty	43.8945
Unemployment	—

7.2. Healthy Places Index Scores

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

Indicator	Result for Project Census Tract
Economic	—
Above Poverty	51.85422815
Employed	43.12844861
Median HI	47.42717824
Education	—
Bachelor's or higher	72.4111382
High school enrollment	100
Preschool enrollment	22.25073784
Transportation	—
Auto Access	65.16104196
Active commuting	70.73014244
Social	—
2-parent households	57.83395355
Voting	55.38303606
Neighborhood	—
Alcohol availability	72.26998588
Park access	52.48299756
Retail density	30.54022841
Supermarket access	35.95534454
Tree canopy	96.76632876
Housing	—
Homeownership	74.34877454
Housing habitability	67.99692031
Low-inc homeowner severe housing cost burden	15.89888361
Low-inc renter severe housing cost burden	87.80957269
Uncrowded housing	68.66418581
Health Outcomes	—

Insured adults	65.30219428
Arthritis	0.0
Asthma ER Admissions	92.2
High Blood Pressure	0.0
Cancer (excluding skin)	0.0
Asthma	0.0
Coronary Heart Disease	0.0
Chronic Obstructive Pulmonary Disease	0.0
Diagnosed Diabetes	0.0
Life Expectancy at Birth	78.8
Cognitively Disabled	64.4
Physically Disabled	33.4
Heart Attack ER Admissions	93.6
Mental Health Not Good	0.0
Chronic Kidney Disease	0.0
Obesity	0.0
Pedestrian Injuries	56.2
Physical Health Not Good	0.0
Stroke	0.0
Health Risk Behaviors	—
Binge Drinking	0.0
Current Smoker	0.0
No Leisure Time for Physical Activity	0.0
Climate Change Exposures	—
Wildfire Risk	86.6
SLR Inundation Area	0.0
Children	20.9
Elderly	20.5

English Speaking	98.1
Foreign-born	9.8
Outdoor Workers	39.6
Climate Change Adaptive Capacity	—
Impervious Surface Cover	88.3
Traffic Density	42.0
Traffic Access	0.0
Other Indices	—
Hardship	24.5
Other Decision Support	—
2016 Voting	59.9

7.3. Overall Health & Equity Scores

Metric	Result for Project Census Tract
CalEnviroScreen 4.0 Score for Project Location (a)	41.0000
Healthy Places Index Score for Project Location (b)	62.0000
Project Located in a Designated Disadvantaged Community (Senate Bill 535)	No
Project Located in a Low-Income Community (Assembly Bill 1550)	No
Project Located in a Community Air Protection Program Community (Assembly Bill 617)	No

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

7.4. Health & Equity Measures

No Health & Equity Measures selected.

7.5. Evaluation Scorecard

Health & Equity Evaluation Scorecard not completed.

7.6. Health & Equity Custom Measures

No Health & Equity Custom Measures created.

8. User Changes to Default Data

8.1. Justifications

Screen	Justification
Construction: Construction Phases	Total construction period is estimated to be 24 months.
Construction: Paving	Based on current site plan.
Operations: Hearths	No wood fireplaces or stoves would be provided.
Operations: Landscape Equipment	Modified to reflect average snowfall days per year in South Lake Tahoe.

8.4. Construction

8.4.1. Construction Phases

Phase Type	Phase Name	Model Parameter	Default Value	New Value
Demolition	Demolition	End Date	4/29/2027	5/31/2027
Demolition	Demolition	Work Days per Phase	20.0000	43.0000
Site Preparation	Site Preparation	Start Date	4/30/2027	6/1/2027
Site Preparation	Site Preparation	End Date	5/7/2027	8/31/2027
Site Preparation	Site Preparation	Work Days per Phase	5.00000	66.0000
Grading	Grading	Start Date	5/8/2027	9/1/2027
Grading	Grading	End Date	5/19/2027	9/30/2027
Grading	Grading	Work Days per Phase	8.00000	22.0000
Building Construction	Building Construction	Start Date	5/20/2027	10/1/2027
Building Construction	Building Construction	End Date	4/6/2028	10/31/2028
Building Construction	Building Construction	Work Days per Phase	230.000	283.000
Paving	Paving	Start Date	4/7/2028	11/1/2028
Paving	Paving	End Date	5/2/2028	3/31/2029
Paving	Paving	Work Days per Phase	18.0000	108.000

Architectural Coating	Architectural Coating	Start Date	5/3/2028	11/1/2028
Architectural Coating	Architectural Coating	End Date	5/28/2028	3/31/2029
Architectural Coating	Architectural Coating	Work Days per Phase	18.0000	108.000

8.4.9. Paving

Phase Name	Land Use	Model Parameter	Units	Default Value	New Value
Paving	Racquet Club	Area Paved	acres	0.00000	4.00000
Paving	Racquet Club	% Asphalt	%	0.00000	4.00000

8.5. Operations

8.5.2. Area Sources

8.5.2.4. Landscape Equipment

Model Parameter	Units	Default Value	New Value
Snow Days	day/yr	0.00000	40.0000

Appendix B

Biological Resources Assessment

Biological Resources Assessment

Tahoe Keys Marina Redevelopment Project

South Lake Tahoe, CA

Tahoe Keys SMI, LLC

17330 Preston Road Suite #100c
Dallas, TX 75252



December 2025

NCE
P.O. Box 1760
Zephyr Cove, NV 89448
NCE Project No. 1259.03.25

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Biological Resources Assessment

Tahoe Keys Marina Redevelopment Project

South Lake Tahoe, CA

December 2025

Prepared for:

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NCE Project No. 1259.03.25

Executive Summary

Tahoe Keys SMI, LLC (TKSMI) is proposing the redevelopment of the Tahoe Keys Marina (TKM), hereafter referred to as the Tahoe Keys Marina Redevelopment Project (Project), in order to revitalize the TKM land side facilities and operations. The Project would involve the demolition of 3 existing marina buildings, other ancillary structures on the site, and existing parking lots and utilities. Landside redevelopment would include new buildings, parking lots, entrances, and utilities (including upgraded water connections to mains in Venice Drive and Tahoe Keys Boulevard). Buildings would include an approximately 52,600-square-foot (sf) indoor boat storage facility with indoor water tanks, 3 units of workforce housing (to replace the 3 existing units that would be demolished as part of the Project), and space for restaurants, retail, concessions, and boat sales. The existing boat launch and gantry crane would be relocated, and the existing bulkhead that borders the lagoon would be replaced. A significant element of the Project is bringing the site into compliance with water quality best management practices and assisting in controlling aquatic invasive species. The City of South Lake Tahoe is acting as lead agency, in accordance with the California Environmental Quality Act (CEQA) (Public Resources Code Sections 21000-21177) and the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387).

The approximately 16.5-acre Project area is predominately developed or open water. Perennial open water in the lagoon is an extension of Lake Tahoe created by dredging during the development of the Tahoe Keys in the 1960s and 1970s. Aquatic vegetation present in the lagoon includes native Andean watermilfoil (*Myriophyllum quitense*) and non-native Eurasian watermilfoil (*M. spicatum*). Vegetation in the upland portion of the Project area includes:

- Trees, shrubs, and ornamental landscaping around the existing paved areas, buildings, bulkhead, and boat launch.
- Big sagebrush (*Artemisia tridentata*) shrubland along the berms of the dredge spoils containment area and current boat trailer storage area.
- Forbs and ruderal species in the undeveloped parcel along Venice Drive.
- Wetland plant species and standing water in the 2,449-sf regularly maintained stormwater basin.

A Biological Study Area (BSA) was established for database research and background review of the Project. The BSA is defined as a 1-mile buffer of the Project area. Dominant vegetation communities in the BSA include Jeffrey pine (*Pinus jeffreyi*) and lodgepole pine (*P. contorta*) forests, quaking aspen (*Populus tremuloides*) forest and shrubland, wet meadow, willow (*Salix* spp.) scrub, upper montane mixed chaparral, and perennial grassland. The BSA includes urbanized areas including the Tahoe Keys, Tahoe Island, Highland Woods, and Al Tahoe. The BSA also includes the Upper Truckee Marsh wetland which is an environmentally sensitive area that provides habitat for numerous special status species (SSS). SSS refers broadly to plants and animals that receive some level of protection or designation under federal, state, or local regulations because of their rarity, threat of extinction, or other conservation concerns.

Reconnaissance-level field surveys of the Project area were performed on July 17 and 18, 2024, May 19 and 20, 2025, and October 29, 2025, to evaluate vegetation communities and habitats, develop an inventory of plants and wildlife, and determine the potential for SSS to occur in the Project area and immediate vicinity in the BSA.

A California Natural Diversity Database (CNDDB) search was conducted for the BSA on October 4, 2025, which identified occurrences of 13 SSS including American goshawk (*Accipiter atricapillus*), bank swallow (*Riparia riparia*), Great Basin rams-horn (*Helisoma newberryi*), Lahontan Lake tui chub (*Siphateles bicolor pectinifer*), Lahontan mountain sucker (*Catostomus lahontan*), Lake Tahoe amphipod (*Stygobromus lacicolus*), Lake Tahoe benthic stonefly (*Capnia lacustra*), Lake Tahoe stygobromid (*S. tahoensis*), mountain whitefish (*Prosopium williamsoni*), northern leopard frog (*Lithobates pipiens*), Tahoe yellow cress (*Rorippa subumbellata*), western bumble bee (*Bombus occidentalis*), and yellow-headed blackbird (*Xanthocephalus xanthocephalus*). During the reconnaissance-level surveys, a bank swallow and yellow-headed blackbird were observed east of the Project area in the Upper Truckee Marsh. In addition, Tahoe yellow cress was observed northeast of the Project area along the shore of Lake Tahoe. Habitat in the Project area is either lacking or heavily disturbed for the species identified by the CNDDB, but bank swallow and yellow headed blackbird are present in the BSA and may occur in the Project area as transients or flyovers. Bald eagles (*Haliaeetus leucocephalus*) and ospreys (*Pandion haliaetus*) were also observed in the BSA during the reconnaissance-level surveys, but there are no known nest sites for these species in the BSA.

A United States Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) report and species list was accessed through the IPaC website for the Project area on October 30, 2025. The IPaC report species list identified the potential for 7 SSS including gray wolf (*Canis lupus*), Sierra Nevada red fox (*Vulpes vulpes necator*), California spotted owl (*Strix occidentalis occidentalis*), northwestern pond turtle (*Actinemys marmorata*), Sierra Nevada yellow-legged frog (SNYLF) (*Rana sierrae*), Lahontan cutthroat trout (LCT) (*Oncorhynchus clarkii henshawi*), and monarch butterfly (*Danaus plexippus*). The IPaC report indicated no critical habitat for these species is present within the Project area. During the surveys, potential habitat for LCT was identified in the Project area. LCT were not observed; however, LCT are assumed to be present based on the Project area's connection to Lake Tahoe and the ongoing restoration and stocking efforts in the Tahoe Basin. Following the reconnaissance-level surveys, evaluation of suitable habitats, and review of the best available information, it was determined that the Project "may affect but is not likely to adversely affect" LCT during replacement of the bulkhead and relocation of the boat launch. Therefore, the United States Army Corps of Engineers (USACE) as the federal action agency will initiate informal consultation with USFWS for LCT. It was determined the Project will have no effect on the other species included on the IPaC species list considering known population ranges, habitat conditions, and lack of occurrence data in the BSA.

This Project is located outside of National Oceanic and Atmospheric Administration (NOAA) Fisheries jurisdiction; therefore, a NOAA Fisheries species list is not required and no effects to NOAA Fisheries species are anticipated.

A California Native Plant Society (CNPS) rare plant inventory 1-quad search was conducted, and 13 California Rare Plant Rank 1 and 2 species were identified. Habitat for these species was assessed during the reconnaissance-level surveys. NCE determined, based on elevation ranges, habitat requirements, and conditions in the Project area, that 5 of these species are absent, 7 are unlikely to occur, and 1 has potential to occur. The species unlikely to occur include upswept moonwort (*Botrychium ascendens*), watershield (*Brasenia schreberi*), Davy's sedge (*Carex davyi*), American manna grass (*Glyceria grandis*), broad-nerved hump-moss (*Meesia uliginosa*), marsh skullcap (*Scutellaria galericulata*), and slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpina*). Tahoe yellow cress has potential to occur considering the presence of lake margin habitat and proximity of CNDDB and Tahoe Yellow Cress Adaptive Management Working Group (AMWG) monitoring occurrences around the Project area. Publicly available AMWG monitoring data shows that Tahoe yellow cress was present

at the Upper Truckee East, Upper Truckee West, Tahoe Keys, and Lighthouse monitoring sites in the BSA in 2019, which is the most recently available online data (TRPA 2025). A localized cluster of approximately 15 Tahoe yellow cress individuals was observed in the BSA during the May 20, 2025, reconnaissance-level survey along the shoreline of Lake Tahoe approximately 800 feet north of the Project area (Upper Truckee West AMWG monitoring site). Lake margin habitat conditions in the Project area are developed, heavily disturbed, and/or artificial (from dredging) and provide limited habitat for the species.

Avoidance and minimization measures described in this Biological Resources Assessment will be incorporated into the Project environmental document, as appropriate, to prevent impacts to SSS, including those listed (or candidates for listing) under the California Endangered Species Act and Federal Endangered Species Act, and those protected under the Migratory Bird Treaty Act and other state, federal, or local laws.

Permitting requirements will depend on final Project improvements and potential impacts. However, based on review of the biological factors and Waters of the United States/Waters of the State conditions, the following permits will be required:

- USACE Section 404 Nationwide Permit 28 – Modifications of Existing Marinas
- Regional Water Quality Control Board Section 401 Water Quality Certification/Report of Waste Discharge Notice of Intent (Covered under the 404 Nationwide Permit 28)
- California Department of Fish and Wildlife Section 1602 Lake and Streambed Alteration Agreement
- Tahoe Regional Planning Agency Major Marina Project Application
- City of South Lake Tahoe Building Permit

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List of Abbreviations

Abbreviation	Definition
AIS	Aquatic Invasive Species
AMWG	Adaptive Management Working Group
BIOS	Biogeographic Information and Observation System
BMP	Best Management Practice
BRA	Biological Resources Assessment
BSA	Biological Study Area
Cal-IPC	California Invasive Plant Council
CALVEG	Classification and Assessment with Landsat of Visible Ecological Groupings
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CWA	Clean Water Act
FESA	Federal Endangered Species Act
GIS	Geographic Information System
IPaC	Information for Planning and Consultation
LCT	Lahontan cutthroat trout
LSAA	Lake and Streambed Alteration Agreement
LTBMU	Lake Tahoe Basin Management Unit
LTBWCG	Lake Tahoe Basin Weed Coordinating Group
MBTA	Migratory Bird Treaty Act
NOAA	National Oceanic and Atmospheric Administration

NPPA	Native Plant Protection Act
NWI	National Wetland Inventory
RWQCB	Regional Water Quality Control Board
SF	Square Feet
SNYLF	Sierra Nevada Yellow-legged Frog
SSS	Special Status Species
TKM	Tahoe Keys Marina
TKSMI	Tahoe Keys SMI, LLC
TRPA	Tahoe Regional Planning Agency
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USFS	United States Forest Service
USFWS	United States Fish and Wildlife Service
WOUS	Waters of the United States

1 Introduction

The Tahoe Keys Marina (TKM) has been a central feature of boating, public recreation, and waterway access to Lake Tahoe since its construction in the 1960s and 1970s. TKM is located in the City of South Lake Tahoe (City) on the south shore of Lake Tahoe and includes parcels 022-210-021, 022-210-032, 022-210-040, and 022-210-044. Under the watch of its previous owners, TKM suffered substantial physical deterioration, deferred maintenance, general neglect, and a lack of adequate investment to maintain the marina as a world-class destination. Tahoe Keys SMI, LLC (TKSMI) purchased TKM in December 2021 with the intended goal and objective of redeveloping the property into a marquee marina commensurate with the caliber of Lake Tahoe, the City, and the surrounding communities. Since its purchase, TKSMI has diligently worked to improve the existing physical and environmental shortcomings of the marina by implementing stormwater/water management controls, actively managing upland storage of boats, and working with agencies to implement aquatic invasive species (AIS) controls. However, to achieve sustainable long-term environmental improvements, TKSMI must reconstruct the physical infrastructure required to achieve applicable environmental performance standards now and into the future.

This Biological Resources Assessment (BRA) was prepared for the Tahoe Keys Redevelopment Project on behalf of Tahoe Keys SMI, LLC (TKSMI). This BRA describes the biological resources in the Project area and the potential for impacts to biological resources that must be considered for permit applications and compliance with various regulations under the California and Federal Endangered Species Acts (CESA and FESA, respectively), the California Environmental Quality Act (CEQA), and the Tahoe Regional Planning Agency (TRPA) Code of Ordinances.

The objectives of this report are to:

- Summarize all site-specific information related to existing biological resources.
- Draw reasonable conclusions about the biological resources that could occur in the Project area based on habitat suitability, historical occurrences, existing data, and the proximity of the Project to a species' known range.
- Identify and discuss the potential impacts to biological resources from the proposed Project likely to occur on and near the site within the context of CEQA.
- Identify avoidance and minimization measures that would reduce potential impacts and that are generally consistent with recommendations of the resource agencies for affected biological resources.

1.1 Project Description

TKSMI is proposing the redevelopment of the TKM, hereafter referred to as the Tahoe Keys Marina Redevelopment Project (Project), in order to revitalize the TKM land side facilities and operations. The Project would involve the demolition of 3 existing marina buildings, other ancillary structures on the site, and existing parking lots and utilities. Landside redevelopment would include new buildings, parking lots, entrances, and utilities (including upgraded water connections to mains in Venice Drive and Tahoe Keys Boulevard). Buildings would include an approximately 52,600-square-foot (sf) indoor boat storage facility with indoor water tanks, 3 units of workforce housing (to replace the 3 existing units that would be demolished as part of the Project), and space for restaurants, retail, concessions, and boat sales. The existing boat launch and gantry crane would be relocated, and the existing bulkhead that borders the lagoon would be replaced. A significant element of the

Project is bringing the site into compliance with water quality best management practices (BMPs) and assisting in controlling AIS. The City is acting as lead agency in accordance with CEQA (Public Resources Code Sections 21000-21177) and the State CEQA Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387).

1.2 Surrounding Land Use and Setting

A Biological Study Area (BSA), defined as a 1-mile buffer of the Project area (**Appendix A, Figure 1**), was established for database research and background review of the Project. Dominant vegetation communities in the BSA include Jeffrey pine (*Pinus jeffreyi*) and lodgepole pine (*P. contorta*) forests, quaking aspen (*Populus tremuloides*) forest and shrubland, wet meadow, willow (*Salix* spp.) scrub, upper montane mixed chaparral, and perennial grassland. The BSA includes urbanized areas including the Tahoe Keys, Tahoe Island, Highland Woods, and Al Tahoe. The BSA also includes the Upper Truckee Marsh wetland, which is an environmentally sensitive area that provides high-quality habitat for numerous special status species (SSS) and non-SSS. SSS refers broadly to plants and animals that receive some level of protection or designation under federal, state, or local regulations because of their rarity, threat of extinction, or other conservation concerns.

Within the BSA, land use is approximately 50 percent urban, consisting of roadways, residences, docks, businesses, restaurants, and a school. Approximately 25 percent of the BSA is open space associated with the Upper Truckee Marsh, Trout Creek, and Upper Truckee River corridors, and the remaining 25 percent is open water associated with the TKM lagoon. The open space northeast of the Project area along the Upper Truckee River and Marsh is undergoing restoration by the California Tahoe Conservancy (Conservancy) and includes an unpaved pedestrian trail providing access to the shore of Lake Tahoe.

TKM is an inland marina offering a comprehensive range of boating and recreational services. The marina provides amenities such as boat rentals, maintenance services, fueling stations, boat trailer storage, dry storage, and full service launching and landing. The marina serves as a hub for boating enthusiasts in the Lake Tahoe region and on peak summer days experiences substantial boating activity and traffic. TKM maintains a high occupancy rate, with its slips often fully booked and a waiting list for annual rentals.

1.3 Relevant Regulations

1.3.1 Federal

Endangered Species Act

The FESA protects plants and wildlife that are listed as endangered or threatened by the United States Fish and Wildlife Service (USFWS). Section 9 of the FESA prohibits the taking of endangered wildlife, where taking is defined as “harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct” (50 Code of Federal Regulations [CFR] 17.3). This statute also governs removing, possessing, maliciously damaging, or destroying any endangered plant on federal land and removing, cutting, digging up, damaging, or destroying any endangered plant on non-federal land, in knowing violation of state law.

Under Section 7 of the FESA, federal agencies are required to consult with the USFWS or National Oceanic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries), as applicable, if their actions, including permit approvals or funding, could adversely affect an endangered species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS or NOAA

Fisheries may issue an incidental take statement allowing take of the species that is incidental to another authorized activity provided the action will not jeopardize the continued existence of the species. Section 10 of the FESA provides for issuance of incidental take permits to private parties provided a habitat conservation plan is developed.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA; 16 United States Code [U.S.C.] Section 703 *et seq.*) states it is unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, or kill migratory birds. The law also applies to the removal of nests occupied by migratory birds during the breeding season. The list of bird species protected under the MBTA, which includes raptors, can be found in CFR Title 50, Part 10.13.

Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act, enacted in 1940, prohibits take of bald eagles (*Haliaeetus leucocephalus*) or golden eagles (*Aquila chrysaetos*), including nests, eggs, feathers, or other parts without a permit issued by the Secretary of the Interior. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb." Regulations further define "disturb" as “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, 1) injury to an eagle, 2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or 3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior" (50 CFR 22.6).

Clean Water Act

The Clean Water Act (CWA) provides guidance for the restoration and maintenance of the chemical, physical, and biological integrity of the nation’s waters. Section 404 of the CWA gives the United States Army Corps of Engineers (USACE) jurisdiction over fill materials in essentially all water bodies, including wetlands. All federal agencies are to avoid impacts to wetlands whenever there is a practicable alternative. Section 404 establishes a permit program administered by USACE regulating the discharge of dredged or fill material into Waters of the United States (WOUS), including wetlands. Section 401 of the CWA requires that an applicant for a federal license or permit that allows activities resulting in a discharge to WOUS must obtain a state certification that the discharge complies with other provisions of the CWA. The State Water Resources Control Board and Regional Water Quality Control Board (RWQCB) administer the certification program in California. The guidelines allow the discharge of dredged or fill material into the aquatic system only if there is no practicable alternative that would have less adverse impacts.

1.3.2 State

California Endangered Species Act and California Fish and Game Code

Pursuant to the CESA and Section 2081 of the California Fish and Game Code, an Incidental Take Permit from the California Department of Wildlife (CDFW) is required for Projects that could result in the “take” of a State listed threatened or endangered species. Under the CESA, “take” is defined as an activity that would directly or indirectly kill an individual of a species proposed for listing (called “candidates” by the state). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of

endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. A Section 2081 permit is issued when a Project is consistent with an existing Biological Opinion.

California Native Plant Protection Act

The Native Plant Protection Act (NPPA) of 1977 (California Fish and Game Code Sections 1900 – 1913) was created to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by CDFW. The Fish and Wildlife Commission has the authority to designate native plants as "endangered" or "rare" and to protect endangered and rare plants from take. CESA provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code.

California Fish and Game Code Section 1602 - Streambed Alteration Agreement

Sections 1600 – 1616 of the California Fish and Game Code protect Waters of the State. Section 1602 of the code regulates any work that will: 1) substantially divert or obstruct the natural flow of any river, stream, or lake; 2) substantially change or use any material from the bed, channel, or bank of any river, stream, or lake; or 3) deposit or dispose of debris, waste, or other material containing crumbled, flaked, or ground pavement where it may pass into any river, stream, or lake. For Project activities that may affect stream channels and/or riparian vegetation regulated under Sections 1600 through 1603, CDFW authorization is required in the form of a Lake and Streambed Alteration Agreement (LSAA).

California Fish and Game Code Section 3503 – Nesting Birds

Nesting birds are protected in California under CDFG Code Section 3503. Section 3503 states, "It is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto." Birds of prey are also protected in California under provisions of the CDFG Code Section 3503.5, which states that it is "unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered take by the CDFW.

1.3.3 Local

Tahoe Regional Planning Agency Code of Ordinances and Regional Plan

The TRPA Code of Ordinances includes requirements for protection and management of "sensitive plants" and "uncommon plant communities," regulations regarding tree removal, and protection of wildlife habitat, including stream environment zones (TRPA Code Chapter 61). The TRPA Code also includes regulations regarding protection of certain animal species known as "special interest species" (TRPA Code Chapter 62). TRPA designated special interest species are species that are "locally important because of rarity or other public interest, and threatened, endangered, or rare species as designated under state and federal endangered species acts."

Updated in 2012, the TRPA Regional Plan identifies goals for the region and policies that establish the strategies necessary to achieve those goals. The TRPA Regional Plan integrates the requirements of the Bi-State Compact,

the thresholds for special interest species and their habitats, related plans and legal requirements, and the public's input. As a result, the TRPA Regional Plan provides coordinated and integrated direction for the TRPA's regulatory Code of Ordinances and implementation programs.

El Dorado County General Plan, Objective 7.4.2: Identify and Protect Resources

The El Dorado County General Plan identifies and protects critical fish and wildlife habitat where feasible, including deer winter, summer, and fawning ranges; deer migration routes; stream and river riparian habitat; lake shore habitat; fish spawning areas; wetlands; wildlife corridors; and diverse wildlife habitat.

1.4 Permitting Requirements

Based on a review of the biological factors and WOUS/Waters of the State conditions the following permits will be required for the Project. Permitting requirements will depend on final Project design and potential impacts:

- USACE Section 404 Nationwide Permit 28 – Modifications of Existing Marinas
- RWQCB Section 401 Water Quality Certification/Report of Waste Discharge Notice of Intent (Covered under the 404 Nationwide Permit 28)
- CDFW Section 1602 LSAA
- TRPA Major Marina Project Application
- City of South Lake Tahoe Building Permit

2 Study Methods

2.1 Database Research

SSS databases were reviewed to determine the presence, absence, and potential for SSS to occur within the Project area. The following site-specific references and background information were reviewed:

- California Native Plant Society (CNPS) Rare Plant Inventory (CNPS 2025)
    - 2025 Inventory of rare and endangered plants occurrences
- California Natural Diversity Database (CNDDB) (CDFW 2025a)
    - 2025 Inventory of rare plants and wildlife occurrences
- USFWS Information for Planning and Consultation (IPaC) (USFWS 2025a)
    - Federally endangered and threatened species, and their critical habitats, that may occur or be affected by the Project (**Appendix B**)
- CDFW Special Animals List (CNDDB 2025)
    - 2025 state listed species
- TRPA and Lake Tahoe Basin Management Unit (LTBMU) open Geographic Information System (GIS) data (TRPA 2025)
    - Sensitive and special interest plant and wildlife species information

2.2 Reconnaissance-level Surveys

Reconnaissance-level field surveys of the Project area were performed on July 17 and 18, 2024, May 19 and 20, 2025, and October 29, 2025, by an NCE scientist to evaluate and verify vegetation communities, assess habitat for SSS, and develop a baseline inventory of SSS and non-SSS wildlife and botanical resources (**Table 1**). The reconnaissance-level surveys involved walking meandering transects through the Project area identifying suitable habitats for SSS, identifying plants and vegetation communities, observing aquatic species in the lagoon from the marina shore and docks, observing birds and noting any potential nest sites, identifying potential bat roosts, and noting any other wildlife observations, including tracks and other signs. Microhabitats, structures, or other biological features that may provide refugia for SSS, such as ponds, snags, and burrows were also noted. The botanical component was conducted by walking the entire Project area following the CDFW Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018). All plant and animal species observed were identified and recorded to the taxonomic level necessary to determine their rarity or listing status.

Table 1. Reconnaissance-level survey dates, times, and weather conditions.

Date	Start-End Time	Temperature (°F)	Wind Speed (mph)	Cloud Cover (%)
July 17, 2024	13:00 – 16:52	81 – 82	1 – 5	0 – 10
July 18, 2024	09:40 – 14:40	66 – 80	0 – 3	10 – 50
May 19, 2025	07:40 – 15:16	58 – 74	1 – 3	0 – 10
May 20, 2025	08:28 – 12:17	49 – 62	0 – 6	0
October 29, 2025	10:14 – 13:03	53 – 63	1 – 3	0

Seasonal and daily timing was appropriate for reconnaissance-level field surveys of biological resources in the Project area. Survey equipment used included binoculars, a Kestrel 3000 pocket weather meter, notebook, and an iPhone utilizing ESRI Field Maps software to document field observations.

3 Results

3.1 Physical Conditions

The Project area is located within Sections 4 and 5, Township 12 north, Range 18 east within the United States Geological Survey Emerald Bay 7.5-minute quadrangle map. The elevation within the Project area is approximately 6,240 feet above mean sea level. Topography in the BSA is generally flat, with moderate gentle slopes in the upland areas, and flat open areas associated with the Upper Truckee Marsh and Upper Truckee River corridor (**Appendix A, Figure 1**). Photographs of the Project area are presented in **Appendix C**.

The regional climate in South Lake Tahoe consists of mild, warm summers and cold winters. Temperatures vary throughout the year from an average maximum temperature of 79.7 degrees Fahrenheit in July to an average minimum temperature in December of 16.2 degrees Fahrenheit. Most precipitation falls from October to April, averaging 16.3 inches per year. Average annual snow depth is 2 inches, with a maximum monthly average snow depth of 8 inches in January (Western Regional Climate Center 2023).

According to the Natural Resource Conservation Service Web Soil Survey, the Project area contains 15.7 acres of Oxyaquic Xerorthents-Water association, 0 to 5 percent slopes, 0.6 acres of Tahoe complex, 0 to 2 percent slopes, and 0.3 acres of Marla loamy coarse sand, 0 to 5 percent slopes (United States Department of Agriculture [USDA] 2025).

3.2 Biological Conditions

3.2.1 National Wetland Inventory and Aquatic Resources

The USFWS National Wetland Inventory (NWI) identifies freshwater forested/shrub wetland, freshwater emergent wetland, and lake features within the Project area (**Appendix A, Figure 2**). Jurisdictional aquatic resources were delineated by NCE for USACE and CDFW permit applications on July 30, 2024, and it was determined that open water in the lagoon, which is connected to Lake Tahoe, a Traditionally Navigable Waterway, is jurisdictional. No other jurisdictional aquatic resources were determined to be present (Suntex Marinas 2024).

3.2.2 CALVEG

Natural communities and vegetation types in the BSA were initially analyzed with Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) data and verified during the reconnaissance-level surveys. Vegetation alliances in the BSA include Jeffrey pine, lodgepole pine, mixed conifer - fir, big sagebrush (*Artemisia tridentata*), upper montane mixed chaparral, wet meadow, perennial grass/forb, quaking aspen, aspen (shrub), willow (riparian scrub), rivers and streams, perennial lakes and ponds, open water, urban/developed, and barren (USDA 2018). The Project area resides within areas mapped as urban/developed, rivers and streams, perennial grasses and forbs, willow (riparian scrub), wet meadow, and Jeffrey pine alliances (**Appendix A, Figure 3**). Unless otherwise referenced, the descriptions of the habitats found in the BSA and Project area below are taken from the United States Forest Service (USFS) Vegetation Descriptions for the Great Basin Ecological Province, CALVEG Zone 9 (USDA 2009).

Jeffrey Pine Alliance

The Jeffrey Pine Alliance is present in the BSA and Project area. Jeffrey pine assumes dominance without a Great Basin understory occasionally in the Pine Nut Mountains, Fort Sage Mountains - Lemmon Valley and Glass Mountain Subsections (Mono) on flat to moderately steep slopes. Elevations are commonly in the range of approximately 5,200 – 8,600 feet (1,586 – 2,623 meters). Incense cedar (*Calocedrus decurrens*) is associated with this type as well as shrubs of the Upper Montane Mixed Chaparral Alliance, such as greenleaf manzanita (*Arctostaphylos patula*) and mountain whitethorn (*Ceanothus cordulatus*). The Mixed Conifer - Fir Alliance commonly occurs adjacent to these sites.

Lodgepole Pine Alliance

The Lodgepole Pine Alliance is present in the BSA but absent in the Project area. This alliance has been mapped extensively in the Glass Mountain Subsection and more sparsely in the Sweetwater Mountains - Pine Grove Hills and White Mountains Subsections (Mono) and Sheldon Range Subsection (Northwest). Sites tend to be on flat to low gradient slopes having volcanic and pyroclastic deposits at elevations mainly between 6,800 – 10,600 feet (2,074 – 3,233 meters). Quaking aspen occasionally forms a hardwood understory at elevations below approximately 9,400 feet (2,867 meters). The Eastside Pine Alliance is often found adjacent to this alliance.

Mixed Conifer - Fir Alliance

The Mixed Conifer - Fir Alliance is present in the BSA but absent in the Project area. The Mixed Conifer - Fir Alliance occurs at elevations up to about 9000 feet (2,745 meters), typically on eastside soils. Three major species define this mixed conifer type: white fir (*Abies concolor*), Jeffrey pine, and/or lodgepole Pine (*P. contorta*). At lower elevations the Mixed Conifer Pine Alliance associates such as Pacific Douglas-Fir (*Pseudotsuga menziesii*) and ponderosa pine (*P. ponderosa*) may occur in trace amounts. As elevations begin to increase, red fir (*A. magnifica*) becomes more prominent. Other associates at all elevations may include sugar pine (*P. lambertiana*) and incense cedar. Upper elevation and Great Basin shrubs are often found on or next to these locations, including greenleaf manzanita, huckleberry oak (*Quercus vaccinifolia*), curlleaf mountain mahogany (*Cercocarpus ledifolius*), snowbrush (*Ceanothus velutinus*), mountain alder (*Alnus incana* ssp. *tenuifolia*), mountain sagebrush (*Artemisia tridentata* ssp. *vaseyana*), and bitterbrush (*Purshia tridentata*). Black oak (*Q. kelloggii*), willows and quaking aspen are also likely to occur.

Big Sagebrush Alliance

The Big Sagebrush Alliance is present in the BSA, and although it is not mapped in the Project area, big sagebrush is present around the perimeter of the boat trailer storage area. The Big Sagebrush Alliance, consisting of dominant big and/or mountain sagebrush (*Artemisia tridentata* ssp. *vaseyana*), is the most extensively mapped shrub type in this zone, occurring in 16 subsections of the Mono, Northwest, and Southeast Sections. Developing on a wide range of substrates, this alliance has been mapped within the elevation range of approximately 4,200 – 11,000 feet (1,280 – 3,355 meters). It occurs in association with other Great Basin shrubs such as bitterbrush, curlleaf mountain mahogany and black sagebrush (*Artemisia nova*). In association with Jeffrey pine, it is one of the understory indicator species that identifies the Eastside Pine Alliance. It is strongly associated with singleleaf pinyon pine (*P. monophylla*) and Utah juniper (*Juniperus osteosperma*) at lower elevations as well as bristlecone (*P. longaeva*), limber (*P. flexilis*), and lodgepole pines on higher elevation sites.

Upper Montane Mixed Chaparral Alliance

The Upper Montane Mixed Chaparral Alliance is present in the BSA but absent in the Project area. This alliance is a mid to high elevation shrub type in which no single species is dominant. Not well represented in this zone, it has been mapped sparsely in 6 subsections of the Mono Section and 1 in the Northwest Section. Characteristic, non-dominant species in this area generally include only greenleaf manzanita, mountain whitethorn, and snowbrush. Slopes tend to be south and west facing within the general elevation mapped, approximately 4,400 – 10,400 feet (1,342 – 3,172 meters).

Wet Meadows Alliance

The Wet Meadows Alliance is present in the BSA but absent in the Project area. Despite the general aridity of this zone, surface and near-surface waters are plentiful in some areas, such as the Owens River watershed in the Crowley Flowlands Subsection of the Mono Section. These seasonally or permanently wet herbaceous sites have been mapped in widely scattered areas over 17 subsections. The Wet Meadows Alliance has been chiefly identified on saturated alluvium and coarse substrates within a wide elevation range from below 4,000 feet (1,220 meters) to approximately 12,000 feet (3,660 meters). Indicator forbs and graminoids of this area include Hartweg iris (*Iris hartwegii*) and western blue flag (*I. missouriensis*), various rushes (*Juncus* spp.), false hellebore (*Veratrum californicum*), buttercup (*Ranunculus* spp.), stinging nettle (*Urtica dioica*), water sedge (*Carex aquatilis*) and various other sedges (*Carex* spp.), mat muhly (*Muhlenbergia richardsonis*), streamside bluebells (*Mertensia ciliata*), scented shootingstar (*Dodecatheon redolens*), dwarf larkspur (*Delphinium depauperatum*), fringed willowherb (*Epilobium ciliatum*), and Sierra woodrush (*Luzula orestera*). Since this alliance has been mapped extensively within all subsections of the Northwest Section, some of these sites share alkaline-tolerant species more characteristic of the Alkaline Mixed Grasses and Forbs Alliance as well.

Perennial Grass and Forb Alliance

The Perennial Grass and Forb Alliance is present in the BSA and Project area. It has been identified in scattered patches within the broad elevation range of approximately 4,000 – 12,000 feet (1,220 – 3,660 meters). It has been mapped within 12 subsections of the Mono, Northwest, and Southeast Sections. Mule's ears (*Wyethia mollis*) is a diagnostic species on many sites, but this alliance includes some species within the Alpine Grasses and Forbs Alliance at the highest elevations. The mixture may include both native and introduced bluegrass (*Poa* spp.), the natives Indian ricegrass (*Achnatherum hymenoides*), Nevada needlegrass (*A. nevadense*), pine needlegrass (*A. pinetorum*), thingrass (*Agrostis pallens*), Great Basin wild rye (*Elymus cinereus*), and squirreltail (*Elymus elymoides*) at most elevations; the non-native crested wheatgrass (*Agropyron desertortum*), tall wheatgrass (*Elytrigia elongata*), and quackgrass (*Elytrigia repens*) on the lowest and more disturbed sites; and many native perennial forbs such as Eaton's daisy (*Erigeron eatonii*), glaucous willowherb (*Epilobium glaberrimum*), Congdon's false horkelia (*Horkeliella congdonis*), and desert biscuitroot (*Lomatium foeniculaceum*).

Quaking Aspen Alliance

The Quaking Aspen Alliance is present in the BSA but is absent in the Project area. Quaking aspen occurs as an indicator of moist conditions in high elevation meadows and other moist areas. It is generally dominant on more productive sites, often forming dense, long-lived clonal patches on the landscape in the Sweetwater Mountains - Pine Grove Hills and Glass Mountain Subsections, and more sparsely in 8 other subsections of the Mono Section

and 3 subsections of the Northwest Section. In this area, it has been mapped chiefly at elevations above 6,000 feet (1,830 meters) on a variety of geologic substrates. Quaking aspen has been identified as the principal hardwood understory species in bristlecone pine, Jeffrey pine, lodgepole pine, and limber pine sites. Along with arboreal curlleaf mountain mahogany, it forms the hardwood associates of singleleaf pinyon pine stands. Shrub associates on moist sites include interior rose (*Rosa woodsii*), currants (*Ribes* spp.), and silver sagebrush (*Artemisia cana*) and on drier sites big sagebrush, and bitterbrush. Other associated taxa are herbaceous species in dry and seasonally moist grasslands and meadows and riparian hardwoods such as willows and water birch (*Betula occidentalis*).

Aspen (Shrub) Alliance

The Aspen (Shrub) Alliance is present in the BSA but absent in the Project area. Quaking aspen will persist in a shrub form as snow-sculpted clones in leeward slopes. Such "krummholz aspen" stands have been mapped prominently only in the extreme northwestern border of the Sheldon Range Subsection of the Northwest Section adjacent to the northeastern edge of the Warner Mountains in Modoc County. Elevations are between approximately 6,000 – 8,000 feet (1,830 – 2,440 meters). Such sites are often surrounded by tree-sized aspen clones where conditions are favorable and are associated with species such as lodgepole pine and mountain sagebrush.

Willow (Riparian Scrub) Alliance

The Willow (Riparian Scrub) Alliance is present in the BSA and Project area. Any single or combination of shrub willow(s) dominate the species composition of this alliance. It has been mapped within a wide elevation range from about 2,200 – 9600 feet (671 – 2,928 meters). In the Northern Sierras, species may include Arctic (*S. arctica*), Booth's (*S. boothii*), Drummond's (*S. drummondiana*), mountain (*S. eastwoodiae*), narrow-leaved (*S. exigua*), Geyer's (*S. geyeriana*), Jepson's (*S. jepsonii*), Arroyo (*S. lasiolepis*), Lemmon's (*S. lemmonii*), strapleaf (*S. ligulifolia*), shining (*S. lucida*), dusky (*S. melanopsis*), Sierra (*S. orestera*), Mackenzie's (*S. prolixa*), snow (*S. reticulata*), or Scouler's (*S. scouleriana*) willows. Many of these sites are adjacent to or include small quantities of quaking aspen, white alder (*Alnus rhombifolia*), and other riparian species.

Water

Rivers and streams and perennial lakes and ponds are present in the BSA and Project area. Water is labeled in CALVEG mapping in those cases in which permanent sources of surface water are identified within a landscape unit of sufficient size to be mapped. The category includes lakes, streams, and canals of various sizes, bays, and estuaries, and similar water bodies. These areas are considered to have a minimum of vegetation components, except along the edges, which may be mapped as types such as Wet Meadows, Tule-Cattail freshwater marshes, or Pickleweed-Cordgrass saline or mixed marshes. Islands within water bodies may be mapped according to their terrestrial dominant vegetation types.

Barren

Barren areas are present in the BSA but absent in the Project area. Landscapes generally devoid of vegetation as seen from a high-altitude image source such as aerial photography, are labeled as Barren. This includes mappable landscape units in which surface lithology is dominant, such as exposed bedrock, cliffs, interior sandy or gypsum areas, etc. It does not include areas considered modified or developed, as in urban areas.

Urban

Urban areas are mapped in the BSA and Project area. This category applies to landscapes that are dominated by urban structures, residential units, or other developed land use elements such as highways, city parks, cemeteries, etc. In those cases, in which the managed landscapes may have a considerable vegetation component, other land use categories may be more appropriate, such as ornamental conifer and hardwood mixtures within city parks.

3.3 Database Search and Survey Results

The CNDDB search conducted for the BSA on October 4, 2025, identified occurrences of 13 SSS (**Appendix A, Figure 4**):

- American goshawk (*Accipiter atricapillus*)
- bank swallow (*Riparia riparia*)
- Great Basin rams-horn (*Helisoma newberryi*)
- Lahontan Lake tui chub (*Siphateles bicolor pectinifer*)
- Lahontan mountain sucker (*Catostomus lahontan*)
- Lake Tahoe amphipod (*Stygobromus lacicolus*)
- Lake Tahoe benthic stonefly (*Capnia lacustra*)
- Lake Tahoe stygobromid (*Stygobromus tahoensis*)
- mountain whitefish (*Prosopium williamsoni*)
- northern leopard frog (*Lithobates pipiens*)
- Tahoe yellow cress (*Rorippa subumbellata*)
- western bumble bee (*Bombus occidentalis*)
- yellow-headed blackbird (*Xanthocephalus xanthocephalus*)

During the reconnaissance-level surveys, a bank swallow and yellow-headed blackbird were observed east of the Project area in the Upper Truckee Marsh (**Appendix A, Figure 5a**). Habitat in the Project area is either lacking or heavily disturbed for the species identified by the CNDDB, but bank swallow and yellow-headed blackbird are present in the BSA and may occur in the Project area as transients while flying or foraging. No nesting habitat for these species is present in the Project area. In addition, ospreys (*Pandion haliaetus*), a TRPA special interest species, have been observed during the reconnaissance-level surveys in the BSA flying over the Upper Truckee Marsh east of the Project area. Osprey nesting habitat is absent in the Project area, and no potential nests were observed in the vicinity during the reconnaissance-level surveys. There are no osprey nests in the BSA as documented by the TRPA.

A USFWS IPaC report and species list was accessed through the IPaC website for the Project on October 30, 2025. The IPaC report species list identified the potential for 7 species:

- gray wolf (*Canis lupus*)
- Sierra Nevada red fox (*Vulpes vulpes necator*)

- California spotted owl (*Strix occidentalis occidentalis*)
- northwestern pond turtle (*Actinemys marmorata*)
- SNYLF
- LCT
- monarch butterfly (*Danaus plexippus*)

The IPaC report indicated no critical habitat for these species is present within the BSA or Project area. During the reconnaissance-level field surveys, potential habitat for LCT was identified in the BSA and Project area, but this species was not observed during the survey. In addition, LTBMU suitable habitat for SNYLF is mapped in the BSA and Project area. Following habitat evaluations during the reconnaissance-level surveys, it was determined that the Project may affect, but is not likely to adversely affect LCT; therefore, informal consultation between the USACE and USFWS will be necessary for LCT.

In addition, 2 bald eagles, which are protected under the Bald and Golden Eagle Protection Act, were observed in the BSA, and 1 briefly flew over the Project area during the July 18, 2024, survey (**Appendix A, Figure 5a**). There are no bald eagle nest sites in the BSA as documented by the TRPA, and potential nest sites in the vicinity were not observed during the reconnaissance-level surveys. No other species identified in the IPaC report, or other federally listed/protected species, were observed during the reconnaissance-level surveys. This Project is located outside of NOAA Fisheries jurisdiction; therefore, a NOAA Fisheries species list is not required and no effects to NOAA Fisheries species are anticipated. A summary of special status wildlife species identified by the database research or otherwise considered for analysis is presented in **Table 2**.

The CNPS rare plant inventory 1-quad search (Emerald Bay) conducted on May 29, 2025, identified 13 California Rare Plant Rank 1 and 2 species with ranges that could overlap with the Project area. Habitat for these species was assessed during the reconnaissance-level surveys, and it was determined 5 species are absent/precluded, 7 species are unlikely to occur, and 1 species has potential to occur based on elevation ranges, habitat requirements, and conditions in the Project area. The species unlikely to occur are:

- upswept moonwort (*Botrychium ascendens*)
- watershield (*Brasenia schreberi*)
- Davy's sedge (*Carex davyi*)
- American manna grass (*Glyceria grandis*)
- broad-nerved hump-moss (*Meesia uliginosa*)
- marsh skullcap (*Scutellaria galericulata*)
- slender-leaved pondweed (*Stuckenia filiformis* ssp. *alpina*)

One plant species, Tahoe yellow cress, was determined to have potential to occur considering the presence of occupied lake margin habitat in the BSA and proximity of CNDDB and Tahoe Yellow Cress Adaptive Management Working Group (AMWG) monitoring occurrences around the Project area. A localized cluster of 15 Tahoe yellow cress plants were observed along the shoreline of Lake Tahoe approximately 800 feet north of the Project area during the May 20, 2025, reconnaissance-level survey (Upper Truckee West AMWG monitoring site). Publicly available AMWG monitoring data shows that Tahoe yellow cress was present at the Upper Truckee East, Upper

Truckee West, Tahoe Keys, and Lighthouse monitoring sites in the BSA in 2019, which is the most recently available online data (TRPA 2025). Lake margin habitat conditions in the Project area are developed, heavily disturbed, and/or artificial (from dredging) and provide limited habitat for the species. A summary of special status plant species identified by the database research or otherwise considered for analysis is presented in **Table 3**.

Table 2. Special status wildlife species evaluated for the Project.

Scientific Name Common Name	Federal Status	State Status	Habitat Requirements	Potential for Occurrence
Mammals				
Canis lupus gray wolf	FE	SE	Wolves can adapt to a wide variety of habitats provided there is abundant prey (CDFW 2025b), large open areas, and minimal human disturbance. They may utilize burrows of other animals or dig new burrows for pup rearing (Heard and Williams 1992). California currently has nine confirmed wolf packs active in Lassen, Modoc, Shasta, and Tehama Counties. There are at least 44 wolves known to be in the state (CDFW 2025b).	**Absent.** Suitable habitat is absent in the Project area and the BSA is located outside of known pack territories and areas of activity. This species is remarkably rare, and no individuals are currently known to occur in the Lake Tahoe basin. Not observed during the reconnaissance-level surveys.
Vulpes vulpes necator Sierra Nevada red fox	FE FS:S	ST	In the Sierra Nevada, high-elevation (8,100 – 11,608 feet) forests interspersed with meadows or alpine fell-fields. Open areas are used for hunting while forested habitats are used for cover and reproduction. Forest edges are utilized extensively (Seidensticker 1999). The Sierra Nevada Distinct Population Segment sightings have been limited to federal lands in Alpine, Fresno, Inyo, Madera, Mono and Tuolumne counties. Less than 50 individuals exist in the wild (USFWS 2021).	**Absent.** The Project area does not contain suitable habitat and is outside of typical elevation range. This species is remarkably rare, and no individuals are currently known to occur in the Lake Tahoe basin. Not observed during the reconnaissance-level surveys.
Birds				
Accipiter atricapillus American goshawk	BLM:S FS:S	SI SSC	American goshawks are distributed throughout California in middle to higher elevation forested areas, particularly in the North Coast Ranges through the Sierra Nevada, Klamath, Cascade, and Warner Mountains (Zeiner et al. 1990). Locally, they can be yearlong residents and seasonal migrants. Goshawks usually nest on north-facing slopes near water and require mature conifer or aspen forests with large diameter trees, dense canopy cover, and an open understory interspersed with meadows or shrub patches. Open areas provide foraging opportunities, while logs, snags, and broken-top trees are used as "plucking posts" to de-feather prey (Woodbridge and Hargis 2006).	**Unlikely.** There is 1 occurrence listed in the CNDDB within 1 mile of the Project area, from 1981 at the Tahoe Valley Campground to the south. This species could occur in the BSA or Project area as a transient because suitable conifer and foraging habitat is present along the Upper Truckee Marsh adjacent to the Project area. Suitable nesting and foraging habitat is absent in the Project area and goshawks are unlikely to nest in the BSA considering the level of development and lack of preferred nesting habitat. Not observed during the reconnaissance-level surveys.
Empidonax traillii willow flycatcher	FS:S	SE	A rare to locally uncommon summer resident in wet meadow and montane riparian habitats at 2,000 – 8,000 feet (600 – 2,500 meters) in the Sierra Nevada and Cascade Range. They most often occur in broad, open river valleys	**Unlikely.** Suitable nesting habitat is absent within the Project area. Suitable habitat is present in the BSA (Upper Truckee Marsh/Upper Truckee River); however, this species is rare, and occurrence data is lacking. Not observed

Scientific Name Common Name	Federal Status	State Status	Habitat Requirements	Potential for Occurrence
			or large mountain meadows with lush growth of shrubby willows associated with surface water or saturated soils within the defended territory in the early breeding season. Dense willow thickets are required for nesting and roosting. Low, exposed branches are used for singing posts and hunting perches (Bombay et al. 1999, Sanders and Flett 1989, Serena 1982). This species was once locally abundant along willow dominated riparian and meadow communities across California, including the Upper Truckee River (Bombay et al. 2003).	during the reconnaissance-level surveys, and no diagnostic "fitz-bew" calls were heard. According to personal communication with the Conservancy, there are recent willow flycatcher detections in a specific area of the Upper Truckee Marsh, estimated 1,500 feet northeast of the Project area.
Haliaeetus leucocephalus bald eagle	FS:S	SE SI	Bald eagles have an expansive range with breeding areas in Northern California, wintering mostly in the Klamath Basin, and a few favored inland areas of Southern California. Locally, they are yearlong residents and migrants in the Tahoe Basin. Bald eagles use shorelines along large bodies of water and river courses for both nesting and wintering. Snags, broken-topped trees, or rocks near water are required for foraging and nesting. Most nests are in large trees with open branches within 1 mile of a water body. In Lake Tahoe, known nesting sites include Emerald Bay and Marlette Lake. Wintering sites are in Taylor, Tallac, Pope, and the Upper Truckee Marsh (Romsos 2000).	**Present**. Suitable habitat is present in the BSA, including TRPA bald eagle wintering habitat mapped in the Upper Truckee Marsh and partially overlapping the southeast corner of the Project area. Two individuals (adult and juvenile) were observed in the Jeffrey pine stand 900 feet northeast of the Project area, then proceeded to briefly fly over the Project area. No nesting habitat is present in the Project area, and bald eagles are unlikely to nest in the BSA considering the level of disturbance/development.
Pandion haliaetus osprey		SI WL	Ospreys occur along rivers, lakes, reservoirs, and seacoasts and often cross land between water bodies. They build large stick nests on living or dead trees or manmade structures, usually near or above water (Campbell et al. 1990, Palmer 1988). In the Lake Tahoe basin, osprey nests are located near the northeastern and southwestern shorelines and near Fallen Leaf Lake (TRPA 2025).	**Present.** Ospreys have been observed in the BSA, over the Upper Truckee Marsh, during the reconnaissance-level surveys. No nest sites were observed, and none are documented in the BSA.
Riparia riparia bank swallow	BLM:S	ST	Occurs in open habitats, often near flowing water (American Ornithologists' Union [AOU] 1983). Nests in burrows dug near the tops of steep banks, along the edge of inland water, or along the coast. May also nest in gravel pits, road embankments, etc. Bank swallows typically dig a new burrow each season but sometimes they will use old burrows	**Present.** One individual was observed foraging in the BSA, over the Upper Truckee River adjacent to the Project area. Suitable foraging habitat is present in the BSA, and bank swallows may forage over open water in the Project area. Nesting habitat is absent in the Project area; however, nesting habitat may be present in the BSA. CNDDB

Scientific Name Common Name	Federal Status	State Status	Habitat Requirements	Potential for Occurrence
			or abandoned belted kingfisher (*Megaceryle alcyon*) cavities. Individuals often return to the same nesting area in successive years, depending on nesting success (Turner and Rose 1989). Individuals may forage up to several kilometers from the nesting area over fields, wetlands, water, etc. Bank swallows are neotropical migrants and migrate to South America in late July or early August. They typically arrive to breeding habitats in North America between March and May.	occurrences are from a colony documented by CDFW in 1962, and 1 individual observed in 1976.
Strix occidentalis occidentalis California spotted owl	BLM:S FS:S PT	SSC	An uncommon, permanent resident in dense, old-growth, multi-layered mixed conifer, redwood, and Douglas fir habitats from sea level up to approximately 7,600 feet (2,300 meters). Often associated with sources of water (Garrett and Dunn 1981). May move downslope in winter along the eastern and western slopes of the Sierra Nevada, and in other areas. Uses dense, multi-layered canopy cover for roost seclusion. Complex (multi-layered), high canopy cover (approximately 70 percent) forests provide microclimates, protection, and habitat for prey species. Large trees (>24-inch diameter at breast height), and the canopy cover they provide, are the best predictor for California spotted owl occupancy. The nest tree within a territory is usually the oldest, largest (living or dead), defected tree (cracks, disease scars, decaying wood). Heterogenous habitat (structurally complex forests) with coarse woody debris, vegetation diversity, forest edges, etc., are important characteristics for prey species habitat, such as woodrats, and California spotted owl foraging (USFWS 2022a).	**Unlikely.** The Project area does not contain suitable nesting, roosting, or foraging habitat. Suitable but limited foraging habitat may be present in the BSA; therefore, the species may occur as a nocturnal transient. Not observed during the reconnaissance-level surveys.
Xanthocephalus xanthocephalus yellow-headed blackbird		SSC	Breeding habitat includes freshwater marshes with bulrush, cattail, and tule. Nests are baskets of woven grasses, reeds, and cattails around stems. Non-breeding habitat includes open agriculture lands, pastures, and fields (AOU 1983). Migrates to the southwest United States and Mexico in the fall. Returns to breeding sites across the United States in the spring.	**Present.** Several territorial Individuals were observed in the BSA, in the Upper Truckee Marsh east of the Project area, during the reconnaissance-level surveys in 2024 and 2025. Suitable foraging and nesting habitats are absent in the Project area, but present in the BSA (Upper Truckee Marsh). CNDDB includes occurrences in the Upper Truckee Marsh in the BSA.

Scientific Name Common Name	Federal Status	State Status	Habitat Requirements	Potential for Occurrence
Reptiles				
Actinemys marmorata northwestern pond turtle	BLM:S FS:S PT	SSC	Western pond turtles are semi-aquatic and use a wide range of ephemeral water bodies including rivers, streams, lakes, natural and artificial ponds, wetlands, marshes, vernal pools, reservoirs, irrigation ditches, and estuaries for breeding, feeding, and overwintering. Preferred aquatic conditions include standing or slow-moving water containing underwater shelter sites (vegetation, undercut banks, logs, etc.), and basking sites. Upland habitats are also used for nesting and overwintering. Upland nesting habitat varies but is near aquatic habitat and typically contains sparse vegetation with short grasses and forbs, and little to no canopy cover (USFWS 2023a).	**Absent.** Suitable habitat is absent in the Project area. The Upper Truckee Marsh in the BSA provides suitable habitat; however, the species is not known to occur in the Lake Tahoe basin or other high-elevation habitats in the Sierra Nevada. Not observed during the reconnaissance-level surveys.
Amphibians				
Lithobates pipiens northern leopard frog		SSC	Found in springs, slow streams, marshes, bogs, ponds, canals, flood plains, reservoirs, and lakes, usually in or near permanent water with rooted aquatic vegetation. In summer, they commonly inhabit wet meadows and fields. Shelter underwater, in damp niches, or in caves when inactive. Wintering sites are usually underwater, though some frogs possibly overwinter underground. Eggs are laid and larvae develop in typically shallow, still, permanent water, in areas well exposed to sunlight. Generally, eggs are attached to vegetation just below the surface of the water (NatureServe 2023a).	**Unlikely.** Suitable habitat is absent in the Project area, but present in the BSA (Upper Truckee Marsh). A buffered CNDDB occurrence from 1933 is present in the BSA, documenting an observation near Tallac Village and Camp Richardson to the west. Not observed during the reconnaissance-level surveys.
Rana sierrae Sierra Nevada yellow-legged frog	FE FS:S	ST WL	Inhabit the Sierra Nevada mountains in lakes, ponds, marshes, meadows, and streams at elevations ranging from 4,500 – 12,000 feet (1,370 – 3,660 meters). Their range extends from the western Sierra Nevada north of Fresno County to the eastern Sierra Nevada in Inyo and Mono counties. Breed in the shallows of ponds and lakes or in inlet streams and deposit their eggs underwater in clusters, which they attach to rocks, gravel, or vegetation (USFWS n.d.).	**Absent.** Suitable habitat is mapped by the USFS in the Project area. However, the USFS suitable habitat GIS layer is a buffer of all wetland features in the range of the species. Suitable habitat is absent in the Project area, but present in the BSA (Upper Truckee Marsh). However, the species has not been documented along the Upper Truckee River for numerous decades, as channelization of the river has led to the absence of backwater ponds/pools, streams, and marshes free of predatory fish species. Critical habitat is absent in the BSA. Not observed during the reconnaissance-level surveys.

Scientific Name Common Name	Federal Status	State Status	Habitat Requirements	Potential for Occurrence
Fish				
Catostomus lahontan Lahontan mountain sucker		SSC	Inhabit shallow (less than 2 meters), clear, low-gradient streams in the Lahontan basin associated with diverse substrates from sand to boulders, in areas with dense cover, macrophytes, logs, and undercut banks. May also be found in larger, more turbid rivers and smaller lakes and reservoirs, but not large lakes such as Tahoe, Eagle, or Pyramid lakes. Largely absent from California reservoirs (CDFW 2015).	**Unlikely.** Suitable habitat is not present in the Project area but is present in the BSA (Upper Truckee River). CNDDB occurrences are present along the Upper Truckee River adjacent to the Project area. However, the species is unlikely to occur in the lagoon and was not observed during the reconnaissance-level surveys.
Prosopium williamsoni mountain whitefish		SSC	Found in cold mountain lakes at least 10 meters deep and fast, clear, or silty streams with large pools. Stream populations spawn in riffles over gravel and small rubble. Lake populations move into tributaries to spawn between October and early December or seek gravel shallows in lakes. Eggs stick to bottom substrate. No nest is constructed (NatureServe 2023b).	**Unlikely.** The CNDDB includes records of occurrences in Lake Tahoe and along the Upper Truckee River in the BSA. The species is unlikely to occur in the lagoon considering the presence of invasive species and disturbed/absent preferred aquatic habitat. Spawning habitat is not present in the Project area, and the species was not observed during the reconnaissance-level surveys.
Siphateles bicolor pectinifer Lahontan Lake tui chub		SSC	Found in large, deep lakes. In Lake Tahoe, larger individuals occupy deeper water during the day and shallow water at night. They stay in the upper water column in summer and move deeper in the water column in winter (Miller 1951). When young reach 1 – 2 cm they move from beds of aquatic vegetation to deeper offshore areas. Successful spawning, egg hatching, and larval survival appear to depend on access to algal beds in shallow, inshore areas (Moyle et al. 1995, 1989).	**Unlikely.** The CNDDB includes records of occurrences in Lake Tahoe and along the Upper Truckee River in the BSA. The species is unlikely to occur in the lagoon considering the presence of invasive species and disturbed/absent preferred aquatic habitat. Spawning habitat is not present in the Project area, and the species was not observed during the reconnaissance-level surveys.
Oncorhynchus clarkii henshawi Lahontan cutthroat trout	FT		Inhabits cool, well-oxygenated freshwater lakes, rivers, and streams. Requires spawning and nursery habitat characterized by cool water pools in close proximity to cover and velocity breaks, well vegetated and stable stream banks, and silt-free rocky substrate in riffle-run areas. Found in drainages of the Truckee, Humboldt, Carson, Walker, and Quinn Rivers (USFWS 1995).	**Potential.** There is low potential the species would occur in the lagoon considering the presence of invasive species and disturbed/absent preferred aquatic habitat. Spawning habitat is not present in the Project area, and the species was not observed during the reconnaissance-level surveys. Since 2022, 100,000 individuals are stocked annually into Lake Tahoe by the Lahontan National Fish Hatchery Complex each year. The Upper Truckee River has also been subject to various LCT restocking efforts.

Scientific Name Common Name	Federal Status	State Status	Habitat Requirements	Potential for Occurrence
Insects				
Bombus occidentalis western bumble bee	FS:S	SC	Historical distribution is from the Pacific coast to the Colorado Rocky Mountains; severe population decline west of the Sierra-Cascade Crest, but populations are known from the Great Basin, the Rocky Mountains and Alaska; several subspecies have been suggested. Food plant genera include *Melilotus, Cirsium, Trifolium, Centaurea, Chrysothamnus,* and *Eriogonum* (Koch et al. 2012).	**Potential.** Numerous individuals of 2 bumble bee species were observed during the surveys, but *Bombus occidentalis* was not observed. A CNDDB occurrence from 1975 is present at Pope Beach in the BSA. Suitable habitat including food plants and suitable conditions for burrows are present in the Project area, but the species was not observed during the reconnaissance-level surveys.
Danaus plexippus monarch butterfly	FS:S PT		Utilizes fields, roadsides, open areas, grassland, tundra, wetlands, and mountains. During the breeding season, monarchs lay their eggs on obligate milkweed host plants (*Asclepias* spp.). Multiple generations can breed year-round. Monarchs migrate from the coastal regions of California in fall and return in the spring (USFWS n.d.).	**Unlikely.** The Project area contains suitable nectar plants but lacks host plant species required for reproduction. No overwintering habitat is present. May occur as a transient during migration. Not observed during the reconnaissance-level surveys.
Capnia lacustra Lake Tahoe benthic stonefly			This species is found in deep water (30 – 90 meters) habitats of Lake Tahoe where adults and larvae feed on dead plant material and diatoms on macroalgae. Adults are wingless and spend their lives underwater. It is the only stonefly that does not emerge from the water to mate and lay eggs (Nevada Division of Natural Heritage 2016; Caires et al. 2016, 2013). This species is endemic to Lake Tahoe where it has become threatened by eutrophication and invasive species. In Nevada, half of the populations known in the 1960s are extinct, and the species and its associated plant beds have declined. This species has been recommended for listing under the state and federal Endangered Species Acts.	**Unlikely.** Deepwater habitats are absent in the Project area. The species is unlikely to occur considering disturbance levels, habitat conditions, and presence of invasive species in the Project area. CNDDB occurrences are present in the BSA, in Lake Tahoe north of the Project area. Not observed during the reconnaissance-level surveys.
Amphipods				
Stygobromus lacicolus Lake Tahoe amphipod			This species prefers deep water lake habitat and is endemic to Lake Tahoe (Wang and Holsinger 2001).	**Unlikely.** Deep water habitats are absent in the Project area. The species is unlikely to occur considering disturbance levels, habitat conditions, and presence of invasive species in the Project area. CNDDB occurrences are present in the BSA, in Lake Tahoe north of the Project area. Not observed during the reconnaissance-level surveys.

Scientific Name Common Name	Federal Status	State Status	Habitat Requirements	Potential for Occurrence
Stygobromus tahoensis Lake Tahoe stygobromid			This species prefers deep water lake habitat (60 – 495 meters) and is endemic to Lake Tahoe (Wang and Holsinger 2001).	**Unlikely.** Deepwater habitats are absent in the Project area. The species is unlikely to occur considering disturbance levels, habitat conditions, and presence of invasive species in the Project area. CNDDB occurrences are present in the BSA, in Lake Tahoe north of the Project area. Not observed during the reconnaissance-level surveys.
Gastropods				
Helisoma newberryi Great Basin rams-horn	FS:S		Suitable habitat includes well-oxygenated substrates in large lakes and slow rivers, including larger spring sources and spring-fed creeks. They are detritivores and burrow in soft mud just beneath the surface (Taylor 1981).	**Unlikely.** There is 1 CNDDB occurrence in Lake Tahoe north of the Project area. The species is unlikely to occur considering disturbance levels, habitat conditions, and presence of invasive species in the Project area. Not observed during the reconnaissance-level surveys.

Sources:
United States Fish and Wildlife Service (USFWS)
California Department of Fish and Wildlife (CDFW)
California Natural Diversity Database (CNDDB)
Tahoe Regional Planning Agency (TRPA)

Federally Listed Species:
C = Candidate
FE = Federally Endangered
FT = Federally Threatened
FSC = Species of Concern
PT = Proposed Threatened
FCE = Candidate for Endangered
FPD = Proposed for Delisting
Other
FS:S = Forest Service Sensitive
BCC = Bird of Conservation Concern
BLM:S = Bureau of Land Management Sensitive
TRPA
SI = Special Interest Species

California State Listed Species:
SE = State Endangered
ST = State Threatened
SR = State Rare
SC = State Candidate
WL = CDFW Watch List
SSC = CDFW Species of Special Concern

Table 3. Special status plant species evaluated for the Project.

Scientific Name Common Name	Regulatory Status			Habitat Requirements	Blooming Period	Potential for Occurrence
	Federal	State	CNPS			
Astragalus austiniae Austin's astragalus			1B.3	Alpine boulder and rock field, subalpine coniferous forest. Elevation range 8,005 – 9,727 feet.	July to September	**Absent**. Outside of elevation range, suitable habitat is not present. Not observed during the surveys.
Boechera tularensis Tulare rockcress			1B.3	Perennial herb that prefers rocky slopes, subalpine coniferous forest, and upper montane coniferous forest. Elevation range 6,000 – 11,000 feet.	June to July	**Absent**. Project area lacks suitable habitat. Not observed during the surveys.
Botrychium ascendens upswept moonwort	FS:S		2B.3	Wet or moist soils in lower montane coniferous forests, such as along the edges of lakes and streams. Elevation range 4,950 – 6,039 feet.	Fertile early July to early September	**Unlikely**. Stormwater basin in the Project area may provide habitat. Not observed during the surveys.
Botrychium crenulatum scalloped moonwort	FS:S		2B.2	Lower montane coniferous forests, meadows and seeps, marshes and swamps. Elevation range 4,950 – 10,800 feet.	Fronds mature June to September	**Absent**. Project area lacks suitable habitat. Not observed during the surveys.
Brasenia schreberi watershield			2B.3	Freshwater marshes and swamps. Elevation range 95 – 7,220 feet.	June to September	**Unlikely**. Stormwater basin with wetland species is present in the Project area, which may provide habitat. Not observed during the surveys.
Carex davyi Davy's sedge			1B.3	Perennial herb that prefers subalpine and upper montane coniferous forests between 5,000 and 10,500 feet. Usually in wetlands.	May to August	**Unlikely**. Stormwater basin with wetland species is present in the Project area, which may provide habitat. Not observed during the surveys.
Claytonia megarhiza fell-fields claytonia			2B.3	Alpine boulder and rock field, subalpine coniferous forest. Elevation range 8,530 – 11,590 feet.	July to September	**Absent**. Outside of elevation range, suitable habitat is not present. Not observed during the surveys.
Erigeron miser starved daisy	FS:S		1B.3	Upper montane coniferous forests in rocky areas. Elevation range 2,600 – 8,600 feet.	June to October	**Absent**. Project area lacks suitable habitat. Not observed during the surveys.
Glyceria grandis American manna grass			2B.3	Perennial rhizomatous herb that prefers bogs, fens, meadows, seeps, marshes, and swamps along stream banks, or lake margins. Elevation range 50 – 6,500 feet.	June to August	**Unlikely**. Stormwater basin with wetland species is present in the Project area, which may provide habitat. Lake margin habitat in the Project area is developed/disturbed. Not observed during the surveys.
Meesia uliginosa broad-nerved hump-moss	FS:S		2B.2	Bogs and fens, meadows and seeps in montane coniferous forests. Elevation range 4,290 – 8,250 feet.	July to October	**Unlikely**. Stormwater basin with wetland species is present in the Project area, which may provide habitat. Not observed during the surveys.

Scientific Name Common Name	Regulatory Status			Habitat Requirements	Blooming Period	Potential for Occurrence
	Federal	State	CNPS			
Rorippa subumbellata Tahoe yellow cress		SE SI	1B.1	Shoreline supporting decomposed granitic soils; known only from the shoreline of Lake Tahoe. Elevation range 6,210 – 6,230 feet.	Blooms May to September	**Potential**. Lake margin habitat in the Project area is developed/disturbed, but CNDDB and AMWG monitoring occurrences are in proximity. 15 individuals were observed along the shore of Lake Tahoe approximately 800 feet north of the Project area during the May 20, 2025, reconnaissance-level survey near the Upper Truckee West AMWG monitoring site (TRPA 2025).
Scutellaria galericulata marsh skullcap			2B.2	Perennial rhizomatous herb that prefers lower montane coniferous forests, meadows, seeps, marshes, and swamps. Elevation range 0 – 6,800 feet.	June to September	**Unlikely**. Stormwater basin with wetland species is present in the Project area, which may provide habitat. Not observed during the surveys.
Stuckenia filiformis* ssp. *alpina slender-leaved pondweed			2B.2	Perennial rhizomatous herb that prefers marshes, swamps, and a variety of shallow freshwater habitats. Elevation range 980 – 7,000 feet.	May to July	**Unlikely**. Stormwater basin with wetland species is present in the Project area, which may provide habitat. Not observed during the surveys.

Special Status Codes

Federally Listed Species (Federal):
FE = Federally Endangered
FT = Federally Threatened
FD = Federally Delisted
PT = Proposed Threatened
FCE = Federally Endangered Candidate
FPD = Proposed for Delisting
FS:S = Forest Service Sensitive

Source: CNPS 2025

California Listed Species (State):
SE = State Endangered
ST = State Threatened
SR = State Rare
SC = State Candidate

Tahoe Regional Planning Agency
SI = Special Interest Species

California Native Plant Society (CNPS) List Categories:
1 = Rare in California and elsewhere
2 = Rare in California, but not elsewhere
A = Presumed extirpated or extinct
B = Rare, threatened, or endangered
3 = Plants about which we need more information
4 = Plants of limited distribution

CNPS Threat Code Extensions:
.1 = Seriously endangered in California (Over 80% of occurrences threatened)
.2 = Fairly endangered in California (20-80% occurrences threatened)
.3 = Not very endangered in California (<20% of occurrences threatened)

3.3.1 Habitat Conditions in the Project Area

Habitats in the Project area were heavily modified in the 1960s and 1970s. TKM is located within a former wetland which was dredged and filled, resulting in the Upper Truckee River being channelized eastward. Open water in the Project area is essentially an artificial extension of Lake Tahoe, lacking a natural lakebed for fish and other aquatic species habitat otherwise found in undeveloped shoreline areas nearby. Aquatic habitat in the Project area is separated from terrestrial habitat by a sheet pile bulkhead; therefore, there is minimal lakeshore or transition zone habitat. The Tahoe Keys development area, including the lagoon, has become infested with AIS such as Eurasian watermilfoil (*Myriophyllum spicatum*), curly-leaf pondweed (*Potamogeton crispus*), and New Zealand mudsnails (*Potamopyrgus antipodarum*). Landowners and regulatory agencies alike have invested in the study, removal, treatment, and ongoing monitoring and management of these AIS in the Tahoe Keys area.

Aquatic species observed in the lagoon during the reconnaissance-level surveys (visible depth of water from the marina shore and docks) included Andean watermilfoil, Eurasian watermilfoil, bluegill (*Lepomis macrochirus*), and largemouth bass (*Micropterus salmoides*). Removal of aquatic species in the marina with a mowing boat/removal machine was ongoing during the surveys, and piles of Eurasian watermilfoil were observed on the docks from the recent removal activities.

Upland habitat in the Project area is primarily paved, developed, or disturbed with ornamental trees and landscaping around the buildings with minimal native vegetation or habitats. The main parking lot and boat storage area are paved, while the trailer storage yard in the southwest corner of the Project area is unpaved and surrounded by big sagebrush, conifers, and non-natives such as cheatgrass (*Bromus tectorum*) and Canada thistle (*Cirsium arvense*).

The parcel along Venice Drive is dominated by pygmy weed (*Crassula* sp.), mountain tarweed (*Madia glomerata*), quack grass (*Elymus repens*), squirreltail, bulbous blue grass (*Poa bulbosa*), western aster (*Symphyotrichum ascendens*), and Pacific lupine (*Lupinus lepidus*). The stormwater basin located near the boat storage area is dominated by Baltic rush (*Juncus balticus*), northwest territory sedge (*Carex utriculata*), tall willowherb (*Epilobium brachycarpum*), fringed willowherb, floating pondweed (*Potamogeton natans*), and willows. The roadways along Venice Drive and Tahoe Keys Boulevard are typical of an urban interface zone in South Lake Tahoe, with lodgepole and Jeffrey pines and various shrubs and forbs in the understory.

3.3.2 Invasive Species

During the reconnaissance-level surveys, AIS observed included largemouth bass, bluegill, and Eurasian watermilfoil. However, the surveys were terrestrial in nature; therefore, additional AIS may be present in the Project area. Other invasive species observed during the surveys included American bullfrog (*Lithobates catesbeianus*) in the stormwater basin and along the shoreline of Lake Tahoe, and plants listed by the California Invasive Plant Council (Cal-IPC) and/or the Lake Tahoe Basin Weeds Coordinating Group (LTBWCG) (**Appendix A, Figure 5b**) including:

- cheatgrass – LTBWCG Weed of Interest, Cal-IPC high
- bull thistle (*Cirsium vulgare*) – LTBWCG Group 2, Cal-IPC moderate
- Canada thistle – LTBWCG Group 1, Cal-IPC moderate
- common sheep sorrel (*Rumex acetosella*) – Cal-IPC moderate

- curly-leaf pondweed – Cal-IPC moderate
- flix weed (*Descurainia sophia*) – Cal-IPC limited
- red stemmed filaree (*Erodium cicutarium*) – Cal-IPC limited
- Eurasian watermilfoil – Cal-IPC high
- narrow leaved plantain (*Plantago lanceolata*) – Cal-IPC limited
- Kentucky blue grass (*Poa pratensis*) – Cal-IPC limited
- woolly mullein (*Verbascum thapsus*) – Cal-IPC limited

LTBWCG Group 1 species should be reported to TRPA and eradicated immediately. These are species that are not established in the Lake Tahoe Basin but are either documented in areas adjacent to the basin where potential for introduction is high, or are present as small, manageable populations. Group 2 species should be managed with a goal of control to prevent further spread into the Lake Tahoe Basin. Isolated populations should be targeted for eradication. LTBWCG Weeds of Interest should be reported immediately if seen (https://ucanr.edu/sites/tahoeinvasiveweeds/Get_Involved/Report_a_Weed/).

Cal-IPC rating definitions are as follows:

- High – These species have severe ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal and establishment. Most are widely distributed ecologically.
- Moderate – These species have substantial and apparent, but generally not severe, ecological impacts on physical processes, plant and animal communities, and vegetation structure. Their reproductive biology and other attributes are conducive to moderate to high rates of dispersal, though establishment is generally dependent upon ecological disturbance. Ecological amplitude and distribution may range from limited to widespread.
- Limited – These species are invasive, but their ecological impacts are minor on a statewide level or there was not enough information to justify a higher score. Their reproductive biology and other attributes result in low to moderate rates of invasiveness. Ecological amplitude and distribution are generally limited, but these species may be locally persistent and problematic.

Complete lists of plant and wildlife species observed during the reconnaissance-level surveys are presented in **Tables 4** and **5**, respectively.

Table 4. Plant species observed during the reconnaissance-level surveys.

Scientific Name	Common Name	Native?
Abies concolor	white fir	Y
Acer macrophyllum	big leaf maple	Y
Achillea filipendulina	fernleaf yarrow	N

Scientific Name	Common Name	Native?
Achillea millefolium	common yarrow	Y
Acmispon americanus	American bird's foot trefoil	Y
Agrostis scabra	rough bentgrass	Y
Alnus incana	mountain alder	Y
Alopecurus pratensis	meadow foxtail	N
Amaranthus blitoides	mat amaranth	Y
Amelanchier sp.	service berry	Y
Arctostaphylos patula	greenleaf manzanita	Y
Artemisia tridentata	big sagebrush	Y
Astragalus sp.	milkvetch	Y
Berberis aquifolium	mountain grape	Y
Betula occidentalis	water birch	Y
Bromus tectorum	cheatgrass	N
Caragana arborescens	Siberian pea tree	N
Carex utriculata	northwest territory sedge	Y
Ceanothus prostratus	mahala mat	Y
Ceanothus velutinus	snowbrush	Y
Ceratophyllum demersum	coon's tail	Y
Cirsium arvense	Canada thistle	N

Scientific Name	Common Name	Native?
Cirsium vulgare	bull thistle	N
Collinsia parviflora	small flowered blue eyed mary	Y
Cornus sericea	American dogwood	Y
Crassula sp.	pygmy weed	N
Dasiphora fruticosa	shrubby cinquefoil	Y
Delphinium glaucum	Sierra larkspur	Y
Descurainia sophia	flix weed	N
Draba verna	spring draba	N
Elymus elymoides	squirreltail	Y
Elymus repens	quack grass	N
Epilobium brachycarpum	tall willowherb	Y
Epilobium ciliatum	fringed willowherb	Y
Ericameria nauseosa	rubber rabbitbrush	Y
Erigeron canadensis	Canada horseweed	Y
Eriogonum umbellatum	sulphur buckwheat	Y
Erodium cicutarium	red stemmed filaree	N
Fraxinus sp.	ash	-
Gayophytum diffusum	spreading groundsmoke	Y
Geranium sp.	geranium	N

Scientific Name	Common Name	Native?
Hordeum jubatum	fox tail barley	Y
Iris missouriensis	western blue flag	Y
Juncus balticus	Baltic rush	Y
Juniperus communis	common juniper	Y
Lactuca serriola	prickly lettuce	N
Lepidium nitidum	shining pepper grass	Y
Lepidium perfoliatum	clasping pepperweed	N
Linum lewisii	Lewis' flax	Y
Lonicera sp.	honeysuckle	-
Lupinus lepidus	Pacific lupine	Y
Madia glomerata	mountain tarweed	Y
Matricaria discoidea	pineapple weed	Y
Melilotus albus	white sweetclover	N
Myriophyllum quitense	Andean watermilfoil	Y
Myriophyllum spicatum	Eurasian watermilfoil	N
Oenothera elata	Hooker's evening primrose	Y
Penstemon sp.	beardtongue	Y
Persicaria maculosa	spotted ladysthumb	N
Phacelia hastata	mountain phacelia	Y

Scientific Name	Common Name	Native?
Picea pungens	blue spruce	N
Pinus contorta	lodgepole pine	Y
Pinus ponderosa	ponderosa pine	Y
Plantago lanceolata	narrow leaved plantain	N
Poa bulbosa	bulbous blue grass	N
Poa pratensis	Kentucky blue grass	N
Populus tremuloides	quaking aspen	Y
Portulaca oleracea	common purslane	N
Potamogeton crispus	curly-leaf pondweed	N
Potamogeton natans	floating pondweed	Y
Potentilla gracilis	slender cinquefoil	Y
Pseudognaphalium stramineum	cottonbatting plant	Y
Purshia tridentata	antelope bitterbrush	Y
Pyrus calleryana	Callery pear	N
Ribes aureum	golden currant	Y
Rorippa sinuata	spreading yellow cress	Y
Rorippa subumbellata	Tahoe yellow cress	Y
Rosa woodsii	Woods' rose	Y
Rumex acetosella	common sheep sorrel	N

Scientific Name	Common Name	Native?
Rumex salicifolius	willow dock	Y
Salix geyeriana	Geyer's willow	Y
Salix lemmonii	Lemmon's willow	Y
Salix lucida ssp. *lasiandra*	shining willow	Y
Sambucus mexicana	blue elderberry	Y
Sisymbrium altissimum	tall tumblemustard	N
Solidago velutina	threenerve goldenrod	Y
Spergularia rubra	red sandspurry	N
Symphyotrichum ascendens	western aster	Y
Tanacetum parthenium	feverfew	N
Tragopogon dubius	yellow salsify	N
Turritis glabra	tower rockcress	Y
Verbascum thapsus	woolly mullein	N

Table 5. Wildlife species observed during the reconnaissance-level surveys.

Scientific Name	Common Name	Native?
Birds		
Actitis macularius	spotted sandpiper	Y
Agelaius phoeniceus	red-winged blackbird	Y
Anas platyrhynchos	mallard	Y

Scientific Name	Common Name	Native?
Ardea alba	great egret	Y
Ardea herodias	great blue heron	Y
Aythya collaris	ring-necked duck	Y
Bombycilla cedrorum	cedar waxwing	Y
Branta canadensis	Canada goose	Y
Buteo jamaicensis	red-tailed hawk	Y
Buteo lineatus	red-shouldered hawk	Y
Calypte anna	Anna’s hummingbird	Y
Cardellina pusilla	Wilson's warbler	Y
Cathartes aura	turkey vulture	Y
Certhia americana	brown creeper	Y
Charadrius vociferus	killdeer	Y
Colaptes auratus	northern flicker	Y
Contopus sordidulus	western wood-pewee	Y
Corvus corax	common raven	Y
Cyanocitta stelleri	Steller's jay	Y
Euphagus cyanocephalus	Brewer’s blackbird	Y
Fulica americana	American coot	Y
Gallinago delicata	Wilson's snipe	Y

Scientific Name	Common Name	Native?
Genus podilymbus	pied-billed grebe	Y
Haliaeetus leucocephalus	bald eagle	Y
Hirundo rustica	barn swallow	Y
Larus californicus	California gull	Y
Leuconotopicus villosus	hairy woodpecker	Y
Mareca strepera	gadwall	Y
Melospiza melodia	song sparrow	Y
Mergus merganser	common merganser	Y
Pandion haliaetus	osprey	Y
Phalacrocorax auritus	double-crested cormorant	Y
Phalaropus tricolor	Wilson's phalarope	Y
Pheucticus melanocephalus	black-headed grosbeak	Y
Pica hudsonia	black-billed magpie	Y
Plegadis chihi	white-faced ibis	Y
Poecile gambeli	mountain chickadee	Y
Psaltriparus minimus	bushtit	Y
Quiscalus mexicanus	great-tailed grackle	Y
Riparia riparia	bank swallow	Y
Setophaga coronata	yellow-rumped warbler	Y

Scientific Name	Common Name	Native?
Sphyrapicus ruber	red-breasted sapsucker	Y
Spinus psaltria	lesser goldfinch	Y
Stelgidopteryx serripennis	northern rough-winged swallow	Y
Sterna forsteri	Forster's tern	Y
Sturnella neglecta	western meadowlark	Y
Sturnus vulgaris	European starling	N
Tachycineta thalassina	violet-green swallow	Y
Turdus migratorius	American robin	Y
Tyrannus verticalis	western kingbird	Y
Xanthocephalus xanthocephalus	yellow-headed blackbird	Y
Zenaida macroura	mourning dove	Y
Insects		
Ammophila procera	common thread-waisted wasp	Y
Andrena sp.	mining bee	Y
Argia vivida	vivid dancer	Y
Bombus fervidus	golden northern bumble bee	Y
Bombus vosnesenskii	yellow-faced bumble bee	Y
Colias eurytheme	orange sulfur	Y
Cupido amyntula	western tailed-blue	Y
Nymphalis antiopa	mourning cloak	Y

Scientific Name	Common Name	Native?
Phyciodes sp.	crescent	Y
Pieris rapae	cabbage white	N
Satyrium behrii	Behr's hairstreak	Y
Sympetrum corruptum	variegated meadowhawk	Y
Mammals		
Castor canadensis	North American beaver	Y
Neotamias senex	shadow chipmunk	Y
Otospermophilus beecheyi	California ground squirrel	Y
Sylvilagus audubonii	desert cottontail	Y
Tamiasciurus douglasii	Douglas squirrel	Y
Amphibians		
Lithobates catesbeianus	American bullfrog	N
Pseudacris sierra	Sierran treefrog	Y
Fish		
Lepomis macrochirus	bluegill	N
Micropterus salmoides	largemouth bass	N

3.3.3 Habitat Connectivity and Wildlife Corridors

Wildlife corridors generally include migration routes used by resident and migratory species for passage from one location to another. Corridors exist in a variety of situations and are considered a sensitive resource as they connect otherwise fragmented areas of suitable habitat for wildlife. Maintaining the continuity of wildlife corridors is essential to support species with specific foraging requirements, preserve species' distributions, and maintain gene flow among populations.

Movement corridors and linkages were assessed using the CDFW Biogeographic Information and Observation System (BIOS). The information reviewed included the Essential Connectivity Area-California Essential Habitat Connectivity layer (CDFW 2010), the Natural Landscape Blocks layer (CDFW 2017), and the Missing Linkages in

California layer (CDFW 2001). The BSA does not overlap within these layers, and because of the high level of disturbance in the developed and dredged artificial lake habitat, the Project area does not provide any significant connectivity or corridor for wildlife or SSS.

4 Discussion

4.1 Special Status Wildlife

Certain wildlife is considered special status based on federal, state, or local laws regulating their development, limited distributions, or other factors leading to increased management or monitoring among public and private organizations. Special status wildlife and plant species were found to be present within or immediately adjacent to the Project area during the reconnaissance-level surveys. SSS observed during the surveys included bald eagle, osprey, bank swallow, yellow-headed blackbird, and Tahoe yellow cress. In addition, the Project area is directly adjacent to the Upper Truckee Marsh, which provides habitat for various SSS in the BSA. These species, including their regulatory status, habitat, and potential to be impacted by the Project, are discussed below.

4.1.1 Lahontan Cutthroat Trout

The LCT was listed under the FESA as threatened in 1975. Critical habitat has not been designated for the species. This species inhabits freshwater lakes, streams, and rivers in the Lahontan Basin which includes hydrographic systems in northern Nevada, northeastern Sierra Nevada mountains of California, and southeastern Oregon. Historically, LCT were found in cold-water habitats including Pyramid Lake, Walker Lake, Lake Tahoe, and Independence Lake, low gradient rivers including Humboldt, Carson, Truckee, Walker, and Marys Rivers, and headwater tributaries including Donner and Prosser Creeks. Riverine habitat is characterized by small, cool, silt-free streams with pools associated with velocity breaks and vegetation cover, stable banks, and riffle-run areas with rocky substrates (USFWS 1995).

At the time of listing, anthropogenic impacts and other threats including mining, logging, grazing, pollution, water diversions, dams and reservoirs, and non-native trout introduction had resulted in declining habitat quality and connectedness leading to reduced population numbers and viability across its range. The most recent 5-year review of LCT was published in 2023 and states that non-native trout, habitat loss, fragmentation, and degradation remain the primary threats to LCT. A rising contemporary threat is hybridization with non-native rainbow trout (USFWS 2023b).

The Upper Truckee River and Lake Tahoe are part of the Tahoe LCT Management Unit. This management unit is unique in that LCT are frequently stocked in several water bodies by the Lahontan National Fish Hatchery, the Numana Fish Hatchery, and several state hatcheries to restore and artificially maintain LCT populations in waterbodies in which the species has gone extinct. Only 1 of the potential LCT recovery populations in the Truckee River watershed and Tahoe LCT Management Unit, the Upper Truckee River/Meiss Meadow population approximately 14 miles south of the BSA, is resilient (USFWS 2023b). Stocking and restoration efforts for LCT in Lake Tahoe and its tributaries, including the annual release of 100,000 individuals from the Lahontan National Fish Hatchery Complex to Lake Tahoe since 2022, are ongoing (USFWS 2022b). However, predation from nonnative fish results in low survival and abundance of LCT (Al-Chokhachy et al. 2009). Occurrences of LCT in the lower reaches of the Upper Truckee River appear to be rare, but hatchery LCT have been documented in the Upper Truckee River near the Truckee Marsh (USDA 2011).

Critical habitat has not been designated for this species, but the Upper Truckee River and Lake Tahoe are identified by resource agencies as suitable habitat. No LCT were observed during the reconnaissance-level surveys; however, these surveys were terrestrial in nature and only involved scanning the surface and visible depth of water in the lagoon from the marina docks and shore. Habitat for LCT in the Project area is low quality

because of development, AIS, and lack of suitable riverine spawning habitat. Habitats in the TKM would not be utilized for LCT spawning and nursery because of the lack of pools near cover and velocity breaks, well-vegetated stream banks, and riffle-run areas with a silt-free rocky substrate. Despite this, the marina's connection to Lake Tahoe makes it reasonable to assume LCT can occur within the Project area, especially when considering recent stocking efforts.

The Project involves replacing approximately 1,600 linear feet of the existing sheet pile bulkhead. The bulkhead replacement will involve installing new 34-foot-long sheet piles directly in front of the existing sheet piles, which will be secured to the existing metal walers and reinforced with concrete caps. In many locations, brace pipe piles will also need to be removed. Equipment anticipated to be used for the bulkhead replacement work will include barges (most likely sectional), barge and land-based cranes, a vibratory hammer (most likely an American Piledriving Equipment [APE] model 150 vibratory hammer with an APE model 327 or 375 power unit for pile installation), assist cranes on the upland, and miscellaneous hand tools and equipment as needed. At maximum revolutions per minute, the vibratory hammer and power unit are expected to produce sound up to 80 dB at 50 feet and 58 dB at 100 feet away. All in-water work will have deployed turbidity curtains surrounding specific work areas, and equipment and materials will be staged in the paved upland area inside covered storage and secondary containment, as appropriate. No dewatering activities are anticipated to occur, but dewatering may be required for foundation and utility trench work that encounter groundwater in the upland areas.

The Project also proposes relocation of the boat launch ramp, which will require removal of the existing sheet pile bulkhead in the new location and extension of the bulkhead in the old location. Equipment to be used for the boat launch relocation will include long-reach excavators and a vibratory hammer. The new boat launch will most likely have a temporary sheet pile perimeter to control turbidity and allow for the excavation of material to create the terminal slope into the water. Turbidity curtains would be installed around the temporary wall as secondary containment. No dewatering is proposed. Once final grade is established by the excavators, the pre-cast ramps would be slid into place and anchored with sheets and/or steel beams to secure the ramp in place. Large rock or gravel would then be installed as a revetment to ensure the shoreline is stabilized.

Construction of the new sheet pile bulkhead and new boat launch are the Project elements with the greatest risk to cause "take" of LCT through noise, visual, sound pressure, and turbidity-related disturbances that may interrupt behaviors or cause physical injury. For take or adverse effects to occur, LCT must be present and unable to avoid adverse conditions. LCT, while unlikely to occur, are expected to respond to construction activity by avoiding the area and potential adverse conditions (USFWS 2025b).

Turbidity monitoring will be required within and outside the turbidity curtains. If turbidity levels exceed the threshold established by the RWQCB during the permitting process, then the construction approach and BMPs will be modified so the Project can proceed within the compliance threshold. Since a vibratory hammer will be used, no underwater attenuation devices are proposed for sound pressure reduction, as vibratory hammers are generally considered a minimization measure for sheet piling impacts on fish and other wildlife. This is because vibratory hammers are considered a continuous source of noise, with lower peak sound pressure levels, while impact hammers are an impulsive source of noise with peak sound pressure levels that have potential to reach the threshold (206 dB) for onset of physical injury to fish (NOAA Fisheries 2023, Fisheries Hydroacoustic Working Group 2008). There are no established injury criteria for vibratory pile driving. Resource agencies, in general, agree that vibratory pile driving is an alternative to impact driving that minimizes single-strike peak sound pressure and reduces adverse effects to fish (Caltrans 2020). No dewatering or other activities that could trap or harm LCT are proposed.

Based on the LCT stocking efforts in Lake Tahoe, existing aquatic habitat conditions, presence of non-native fish species, results of the reconnaissance-level surveys, and proposed Project impacts, it was determined the Project **may affect, but is not likely to adversely affect** LCT. The federal action agency, USACE, will initiate informal consultation with the USFWS.

4.1.2 Sierra Nevada Yellow-legged frog

The SNYLF was listed as endangered under the FESA in 2014 and 24 critical habitat units covering 1,082,147 acres were designated in 2016 (USFWS 2016). Threats contributing to the danger of extinction throughout the species' range include habitat destruction due to dams, water diversions, recreation, grazing, road construction, and timber harvesting; predation by trout, bullfrogs, and other non-native species; climate change; drought; and chytrid fungus. Historically, SNYLF inhabited lakes, ponds, marshes, meadows, and streams at elevations between 4,500 and 12,000 feet in the western Sierra Nevada from Fresno, Inyo, and Mono Counties and areas north of Lake Tahoe. Generally, they are not found more than 1 meter from water and breed in a variety of habitats including shallows of still lakes or ponds and slow-flowing inlet streams. Egg masses are deposited underwater and attach to rocks, gravel, or vegetation, or are deposited under banks. At high elevations, both frogs and tadpoles overwinter under ice in lakes and streams. Throughout its range, SNYLF did not co-evolve with any species of fish, as they predominantly occur in water bodies above natural fish barriers (USFWS 2014).

Estimates of SNYLF population losses range between 69 percent and 93 percent, with an estimated 44 percent reduction of suitable watershed habitat (USFWS 2014). Current SNYLF population trends are unknown but are assumed to remain declining or artificially stable with reintroduction efforts. The USFWS has not yet published a 5-year review of the species.

The Upper Truckee River corridor, and nearly all tributaries and wetland areas in the Lake Tahoe Basin, have been identified by the LTBMU as suitable habitat for SNYLF. According to the LTBMU, known occurrences of SNYLF in the Lake Tahoe Basin are in the Desolation Wilderness at Tamarack, Cagwin, Lucille, Margery, Jabu, and Upper, Middle, and Lower Velmas Lakes and the headwaters of Trout Creek at Hell Hole. The LTBMU conducts annual surveys for herpetofauna, including SNYLF, throughout the Lake Tahoe Basin. Within the BSA, LTBMU herpetofauna surveys have been conducted in the Upper Truckee Marsh east of the Project area in 2013 and 2014, and at Pope Beach west of the Project area in 2016, with no SNYLF detections (pers. comm. with Erin Miller [LTBMU] and unpublished LTBMU GIS data). SNYLF historical occurrences documented by the CNDDB in the South Lake Tahoe region are from 1913 at Fallen Leaf Lake approximately 3 miles southwest of the Project area, 1863 at the summit of Johnson Pass approximately 8 miles south of Project area, 2013 at Hell Hole meadow approximately 7 miles southeast of the Project area, and 1935 at Star Lake approximately 6 miles southeast of the Project area.

Based on the results of the reconnaissance-level surveys, presence of predatory fish species in the TKM, lack of suitable habitat in the Project area, lack of recent occurrence information, and unlikelihood of occurrence, the Project will have no effect on SNYLF. There is no designated federal critical habitat for SNYLF in the Project area or BSA; therefore, no impacts to critical habitat will result from the Project.

4.1.3 Western Bumble Bee

The western bumble bee is a candidate for listing under the CESA and is under review for FESA listing. It was once one of the most common bumble bee species in the western United States and Canada, but its abundance and distribution have declined severely since the mid-20th century because of disease, insecticides, and habitat

loss/modification associated with agriculture, urbanization, conifer encroachment, grazing, logging, and climate change (Jepsen and Foltz Jordan 2013, Evans et al. 2008). As a candidate species under the CESA, it is temporarily afforded protections under the act as if it was state listed as endangered or threatened. Western bumble bees usually nest underground and are found in a variety of habitats including woodlands, farmlands, urban areas, montane meadows, and prairie grasslands (Committee on the Status of Endangered Wildlife in Canada 2014, Williams et al. 2014). Food plant genera include, but are not limited to, *Melilotus*, *Cirsium*, *Trifolium*, *Centaurea*, *Chrysothamnus*, and *Eriogonum* (Koch et al. 2012).

No western bumble bees were observed during the reconnaissance-level surveys; however, numerous flowering plants that could provide food sources were observed, and numerous golden northern bumble bees (*B. fervidus*) and yellow-faced bumble bees (*B. vosnesenskii*) were observed in the Project area and BSA. Suitable underground nesting habitat is present in the Project area, specifically in the open area along Venice Drive and in the trailer storage yard, considering the presence of small mammal burrows, friable soils, and other artificial structures such as partially buried plywood boards, etc. However, no bumble bee nests were observed during the surveys.

Western bumble bee habitat in the Project area is minimal and low-quality because of existing development and disturbance; therefore, they have a low potential to occur. Considering the presence of potential underground nesting habitat, the presence of other bumble bee species in the Project area, and an occurrence of western bumble bee documented by the CNDDB in the BSA, there is a low potential for the species to be impacted by construction activity in the upland areas. Coordination with CDFW regarding western bumble bees, if necessary, will occur during the LSAA application.

4.1.4 Bank Swallow

Bank swallows are listed as threatened under the CESA. The species has declined in California because of habitat destruction and streamflow alteration. The species prefers open habitats, frequently near flowing water and nests in burrows dug near the tops of steep banks, along the edge of inland water, or along the coast (AOU 1983). Bank swallows may also nest in gravel pits, road embankments, or similar artificial structures. Individuals are known to forage over fields, wetlands, and water up to several kilometers from nesting sites. They are neotropical migrants and migrate to South America in late July or early August and arrive at breeding habitats in North America between March and May (Smith et al. 2022).

During the reconnaissance-level surveys, 1 bank swallow was observed foraging over the Upper Truckee River adjacent to the Project area. Suitable foraging habitat is present along the Upper Truckee River and across the Upper Truckee Marsh in the BSA, and bank swallows may forage over the open water in the Project area. Nesting habitat is absent in the Project area; however, nesting habitat may be present in the BSA. There is a buffered CNDDB occurrence, which overlaps the Project area, from a colony documented by CDFW in 1962, and another observation of 1 individual in 1976.

Nesting habitat was not observed in the Project area or immediate vicinity during the reconnaissance-level surveys and there are no known active nesting bank swallow colonies in the BSA. Therefore, the Project would not impact bank swallows. It is likely that the single individual observed during the survey was a migrant stopping to forage at the marsh adjacent to the Project area. Coordination with CDFW regarding bank swallows, if necessary, will occur during the LSAA application process.

4.1.5 Yellow-headed blackbird

The yellow-headed blackbird is a CDFW species of special concern. Breeding habitat for the species includes freshwater marshes with bulrush (*Schoenoplectus* spp.), tule (*Schoenoplectus acutus*), and cattail (*Typha* spp.). Non-breeding habitat includes open agriculture lands, pastures, and fields (AOU 1983). Yellow-headed blackbirds migrate to the southwest United States and Mexico in the fall and return to breeding sites across the United States in the spring (Smith et al. 2022). The species is listed as a CDFW species of special concern because of habitat loss resulting from the alteration and loss of wetlands throughout the state.

During the reconnaissance-level surveys, several territorial individuals were observed in the Upper Truckee Marsh adjacent to the Project area. Suitable foraging and nesting habitats are absent in the Project area considering the high degree of development and disturbed site conditions, but these habitats are present in the BSA, specifically in the Upper Truckee Marsh. In addition, the CNDDB documents numerous occurrences within the Upper Truckee Marsh in the BSA.

The Project has potential to impact yellow-headed blackbirds should they attempt to nest in the Upper Truckee Marsh adjacent to the Project area. The potential impact would be primarily from noise during pile driving or other construction activities. There are no other anticipated Project activities with the potential to impact yellow-headed blackbirds. Coordination with CDFW regarding yellow-headed blackbirds, if necessary, will occur during the LSAA application process.

4.1.6 Osprey

The osprey is a CDFW watch list species and TRPA special interest species. Ospreys occur along rivers, lakes, reservoirs, and seacoasts, and often cross land between water bodies. They build large stick nests on living or dead trees or manmade structures, usually near or above water (Campbell et al. 1990, Palmer 1988). In the Lake Tahoe Basin, known osprey nests are located on the north, northeastern, and southwestern shorelines and near Fallen Leaf Lake.

Ospreys were observed flying over the Upper Truckee Marsh during the reconnaissance-level surveys. Nesting habitat is absent in the Project area and limited in the BSA considering the level of human development and disturbance within the vicinity of conifer stands. Foraging habitat is present in the Upper Truckee Marsh and in the marina, specifically in areas of open water. Urban structures in the Project area may provide suitable perches for osprey and other raptors.

While osprey nesting sites are not known to be present in the BSA and nesting is unlikely, the Project has the potential to impact nesting ospreys should they establish a nest site within the vicinity of the Project area prior to or during construction. In a worst-case scenario, noise-related impacts from construction activities could disturb an osprey attempting to nest near the Project, potentially resulting in nest abandonment. In addition, noise from construction activity may temporarily discourage foraging over high-quality habitat in the Upper Truckee Marsh. Coordination with CDFW and TRPA regarding osprey, if necessary, will occur during the permitting process.

4.1.7 Bald Eagle

During the reconnaissance-level surveys, no nest sites were observed in the Project area or BSA, but 1 adult and 1 juvenile bald eagle were observed in the Jeffrey pine stand approximately 900 feet northeast of the Project

area. The bald eagles were perched at the top of the Jeffrey pines near the shore of Lake Tahoe for approximately 1 hour, then proceeded to fly over the Project area to the west during the survey.

Bald eagles are listed as endangered under the CESA, are a TRPA special interest species, and are protected by the Bald and Golden Eagle Protection Act. Locally, they are yearlong residents and migrants in the Lake Tahoe Basin. Bald eagles use shorelines along large bodies of water and river courses for both nesting and wintering. Snags, broken-topped trees, or rocks near water are required for foraging and nesting. Most nests are in large trees with open branches within 1 mile of a water body. In the Lake Tahoe Basin, known nesting sites include Emerald Bay, Camp Richardson, Fallen Leaf Lake, Marlette Lake, and Skunk Harbor. Wintering sites are located at Taylor, Tallac, Pope, and the Upper Truckee Marsh (Romsos 2000).

Suitable foraging habitat is present in the BSA, including TRPA bald eagle wintering habitat mapped in the Upper Truckee Marsh and partially overlapping the southeast corner of the Project area. No nesting habitat is present in the Project area, and bald eagles are unlikely to nest in the BSA due to human disturbance and development. While bald eagle nesting sites are not known to be present in the BSA and nesting is unlikely, the Project has the potential to impact nesting bald eagles should they establish a nest site within the vicinity of the Project area prior to or during construction. In a worst-case scenario, noise-related impacts from pile driving activities could disturb a bald eagle attempting to nest near the Project, potentially resulting in nest abandonment. In addition, noise from construction activity may temporarily discourage foraging over high-quality habitat in the Upper Truckee Marsh. Coordination with CDFW, TRPA, and USFWS regarding bald eagles, if necessary, will occur during the permit application process.

4.1.8 Migratory Nesting Birds

Nesting bird activity, or evidence of previous nesting activity, was not observed in the Project area during the reconnaissance-level surveys. However, nesting bird activity was observed immediately outside of the Project area in the BSA (**Appendix A, Figure 5a**). Habitat for nesting birds in the Project area is limited to the vegetation along the berms surrounding the trailer storage area, the disturbed open area along Venice Drive, various native and ornamental trees/plants, and on the existing buildings/structures. Vegetation removal is anticipated as part of the Project and has potential to impact nesting birds if conducted during the nesting season (February 1st to August 31st).

The Upper Truckee Marsh, located east of the Project area, provides high-quality habitat for riparian/wetland nesting birds, including nesting habitat for special status bird species such as the yellow-headed blackbird. There is a potential risk of indirect, noise-related impacts to nesting birds in the Upper Truckee Marsh from construction activity depending on peak dB levels, frequency, duration, seasonal timing, nest location, and a species and/or individual's tolerance to noise.

4.2 Special Status Plants

4.2.1 Tahoe Yellow Cress

Tahoe yellow cress is listed as endangered under the CESA and is a TRPA special interest species. This plant occurs on sandy soils in the shore zone of Lake Tahoe including active beaches, stream inlets, beach dunes, and backshore depressions (Morefield 2001). Tahoe yellow cress occurs within a narrow 3-meter elevation band; therefore, available habitat along the shore is highly dependent on lake level (USFWS 2010). This species is threatened by recreational activity within the shore zone, artificially prolonged high-water levels, and shore

zone development (USFWS 2010, Morefield 2001). A conservation strategy is being implemented by various organizations and agencies in the Lake Tahoe Basin, including the LTBMU, the Conservancy, the California Department of Parks and Recreation, and the Tahoe Lakefront Owners Association.

Habitat for Tahoe yellow cress is limited in the Project area. TKM is located within a dredged shore zone that was once a wetland, likely resulting in shore zone soil conditions that are unsuitable for the species. In addition, most of the shore zone and water edge habitat in the marina is non-existent, as sheet piles divide the lake from the land on which the existing development resides. The only potential habitat in the Project area is located along the water's edge in the northeastern Project area, following the trail adjacent to the Upper Truckee River and Conservancy restoration area; however, this habitat is overcrowded with wetland species and shrubs. It also lacks the sandy soils and open spaces with minimal competition that Tahoe yellow cress requires.

Tahoe yellow cress was observed approximately 800 feet north of the Project area during the reconnaissance-level surveys along the shore of Lake Tahoe. There are numerous CNDDB and AMWG monitoring occurrences near the Project area. Considering the habitat conditions in the Project area, the species has low potential to occur and no impacts to Tahoe yellow cress are anticipated as result of the Project. Additional coordination with CDFW and TRPA for Tahoe yellow cress, if necessary, will occur during the permit application process.

4.3 Habitats and Natural Communities of Special Concern

4.3.1 TRPA Threshold Habitats

Numerical and management standards apply to certain areas specified by TRPA as habitat for special interest species identified in the TRPA Regional Plan. The Bi-State Compact gives TRPA authority to establish environmental quality standards, called thresholds, and to enforce ordinances to achieve thresholds. Habitat threshold areas including bald eagle wintering habitat, fish habitat, and waterfowl habitat are mapped by TRPA in the BSA and partially overlap the Project area (**Appendix A, Figure 6**). Based on the existing development and lack of habitat observed in the Project area during the reconnaissance-level surveys, it is assumed that impacts to these threshold habitats are previously mitigated, and these habitats are no longer present in the Project area, except perhaps, fish habitat mapped in the north end of the TKM lagoon. No impacts will occur on these habitats because of the Project, and no mitigation will be required. In addition, the LTBMU has provided a buffer of all wetlands associated with the Lake Tahoe Basin as suitable habitat for SNYLF. TRPA has adopted this SNYLF suitable habitat into their open GIS wildlife data, but there are no TRPA threshold standards for SNYLF or its habitat. TKM is mapped as suitable habitat for SNYLF, but as previously discussed, suitable habitat is not present in the Project area because of development and the presence of predatory fish species. Additional coordination with TRPA for threshold habitat areas, if necessary, will occur during the permitting process.

4.3.2 Jurisdictional Aquatic Resources

The lagoon within the Project area consists of open water with a hydrological connection to Lake Tahoe. The lagoon has a lacustrine Cowardin classification. It was determined that open water associated with the marina is WOUS/Waters of the State of California because of the nexus to Lake Tahoe, a Traditionally Navigable Waterway.

Runoff from pavement was designed to flow to a concrete swale and then into a sand/oil separator which then discharges into the man-made stormwater basin. The basin has a standpipe which discharges to the marina in

the event a 20-year 1-hour storm occurs. The 2,449 sf regularly maintained stormwater basin is a non-federal jurisdictional aquatic resource because it is man-made for a waste treatment system.

A man-made stormwater ditch is in the southeastern portion of the study area near East Venice Drive. The stormwater ditch begins near the entrance of the TKM trailer storage lot and travels north towards the man-made stormwater basin. The stormwater ditch flows in the direction of the stormwater basin but because of an increase in the elevation of the ditch, flow is not delivered to the stormwater basin during storm events. The stormwater ditch is a non-federal aquatic resource because it is man-made in an upland for stormwater purposes, and the ditch is not hydrologically connected to an aquatic resource.

Additional information on aquatic resources is provided in the Aquatic Resources Delineation Report (Suntex Marinas 2024).

4.4 Invasive Species

For the purposes of this assessment, an “invasive” species is a non-native species whose introduction causes, or is likely to cause, environmental harm or harm to human health. The Tahoe Keys is an area of high concern for the spread and introduction of AIS. For example, an infestation of New Zealand mudsnails was discovered in a 3-mile stretch on the south shore of Lake Tahoe between Tahoe Keys and Ski Run Marina in 2023. In addition, the Tahoe Keys harbors the largest Lake Tahoe populations of AIS, including non-native warm water fish such as largemouth bass and bluegill, aquatic plants including Eurasian watermilfoil and curly-leaf pondweed, and invertebrates such as Asian clams (*Corbicula fluminea*). The Tahoe Keys is a location of discussion and analysis in the Lake Tahoe AIS Management Plan (TRPA 2014) and the Lake Tahoe AIS Implementation Plan (Wittmann 2015). In compliance with TRPA Code Subsection 84.6.2.B.1, the Project proponent submitted an AIS Management Plan for the TKM property to TRPA. The plan identifies measures to prevent the establishment of AIS in the marina, control or eradicate AIS, and reduce the potential for their spread, and identifies an early detection program.

Considering the infestation of invasive species described above and in Section 3.3.2, the Project has the potential to cause the spread of invasive species unless appropriate construction controls and avoidance and minimization measures are followed. Measures to prevent the spread or introduction of invasive species are also anticipated to be included in the permit requirements and in the AIS Management Program, which is updated annually. All measures regarding aquatic and terrestrial invasive species in the permit requirements and AIS Management Program will be implemented into the Project design.

5 Conclusions and Recommendations

5.1 Special Status Species

5.1.1 Federal Endangered Species Act

Following the database research and reconnaissance-level surveys, NCE determined the Project may affect, but is not likely to adversely affect LCT. Therefore, NCE will develop a Biological Assessment and the USACE, as the federal action agency, will initiate informal consultation with USFWS for this species. The Project proponent will implement the avoidance and minimization measures in Section 5.2 below to ensure that no take of federally listed or protected species, including bald eagles, occurs. Additional avoidance and minimization measures may be required following informal consultation and issuance of the letter of concurrence.

5.1.2 California Endangered Species Act

Following the database research and the reconnaissance-levels surveys, an Incidental Take Permit from CDFW is not anticipated to be required. Impacts to the species listed as a candidate, threatened, or endangered species under the CESA with potential to occur, including bank swallow, western bumble bee, Tahoe yellow cress, and bald eagle are not anticipated as the avoidance and minimization measures described in Section 5.2 will be followed. Additional coordination with CDFW, if necessary, will occur during the LSAA application process. Additional requirements, such as construction monitoring, may be stipulated by the Project's LSAA.

5.1.3 Tahoe Regional Planning Agency

Project-related impacts to TRPA special interest species or threshold habitats are not anticipated and will be avoided by implementation of the avoidance and minimization measures below. Additional requirements or conditions of approval may be stipulated by the Project's TRPA permit.

5.2 Avoidance and Minimization Measures

BIO-1: Project activities that could result in nesting migratory bird and raptor take, such as removal of vegetation or man-made structures and conducting activities that may cause noise or vibrations to the extent of causing nest abandonment (e.g., sheet piling), will be performed outside the migratory bird and raptor nesting season defined as February 1st through August 31st. If these activities are to occur during the nesting season, the Project proponent will hire a qualified biologist to conduct a nesting bird and raptor survey no more than 15 days prior to the beginning of those activities within a minimum 500-foot buffer of the Project area. The survey results shall be submitted to CDFW prior to the start of construction activities, or as otherwise required by the LSAA. If nesting birds or raptors are detected within or near the Project area during the nesting bird survey, the designated biologist (as named under the LSAA) will coordinate with CDFW to establish a suitable activity-free buffer around active nest sites and implement a monitoring program. The size of the buffer, duration of buffer, acceptable activities, and monitoring requirements will be established through coordination with CDFW. In addition, the Project proponent may consider installing a sound barrier wall to reduce potential noise impacts to nesting birds in the Upper Truckee Marsh. The location, design, material, and timeframe for the sound barrier wall will be established through coordination with CDFW during the LSAA permitting process.

BIO-2: A pre-construction survey for special status plants and wildlife, including those identified in the Biological Resources Assessment, BA, and LSAA, shall be conducted by a qualified biologist no more than 14 days prior to

the onset of construction activities, or at an interval specified in the LSAA. If any SSS (or sign of presence) are identified within an appropriate buffer distance of the Project area, as determined by the biologist or CDFW/USFWS, the biologist will coordinate with CDFW/USFWS and the Project proponent shall plan to implement additional measures to avoid impacts on SSS, including relocating or rescheduling Project activities, or other measures specified by CDFW/USFWS.

BIO-3: A qualified biologist shall conduct environmental awareness training for construction personnel conducting in-water work. The training shall include basic visual identification of SSS including LCT, required pre-construction measures, general measures that are being implemented to conserve the species as they relate to the Project, penalties for non-compliance, and the boundaries of the Project area and of the permitted disturbance zones. Supporting materials containing training information shall be prepared and distributed. Upon completion of training, all construction personnel shall sign a form stating that they have attended the training and understand the measures. Proof of this instruction shall be kept on file with the Project proponent.

BIO-4: To prevent the spread of AIS, any construction equipment and materials that enter or leave the lagoon will be inspected for AIS, and if needed, decontaminated prior to the start of the Project. Decontamination protocol will be consistent with the Project permits and AIS Management Program. Equipment and materials will be cleaned and free of dirt, vegetation material, and other debris prior to entering the lagoon. Re-inspection and decontamination of equipment and materials at the end of the Project will also be conducted to avoid spreading AIS from TKM to other locations. Floating plant fragments resulting from the Project work will be collected by hand or skim and disposed of in a secure manner. Materials removed from the existing bulkhead will be placed on pavement to dry for 1 week. If a rain event occurs during this drying time, the drying time will need to be restarted. If temperatures reach below freezing for 6 continuous hours during this drying time, this will count as a sufficient freeze period to kill AIS, and the drying period can be suspended. Any drainage inlets near where materials are placed for drying will be temporarily modified to prevent the flow of AIS contaminated water from flowing back into the lagoon.

BIO-5: Biological monitoring by a qualified biologist will be conducted weekly, or at an interval specified in the Project permits, to survey for nests and monitor for SSS. The monitoring is to ensure no take of SSS occurs during the Project and to ensure all Project permit conditions are followed. Biological monitoring will also include searching for LCT and other native fish inside the temporary sheet pile wall around the new boat launch construction location. The biologist will have authority to stop any Project activity that may impact SSS in the Project area. Monitoring reports will be provided to the Project proponent weekly, or as otherwise required by the Project permits.

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Appendix A

Figures



County: El Dorado
USGS 7.5' Quad Map: Emerald Bay
TRS: T.12N., R.18E., Sec. 4 & 5

Project Area
Biological Study Area

NCE
SUNTEX MARINAS

Tahoe Keys Marina Redevelopment Project

Project Location Map

N

1 in. = 2,000 ft.

0 1,000 2,000 ft.

FIGURE 1

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
USGS Topographic Basemap	1259.03.25	D. Karlowicz	7/3/2024	10/29/2025	D. Rios

Document Path: P:\Active Projects\Suntex Marinas - 1276\1259.01.25 - Tahoe Keys Marina Redevelopment\GIS\AGP\dkarlowicz\TKM - dkarlowicz.aprx



Project Area
Freshwater Emergent Wetland
Freshwater Forested/Shrub Wetland
Freshwater Pond
Lake
Riverine

Tahoe Keys Marina Redevelopment Project

National Wetland Inventory (NWI) Map

NCE
N
SUNTEX MARINAS

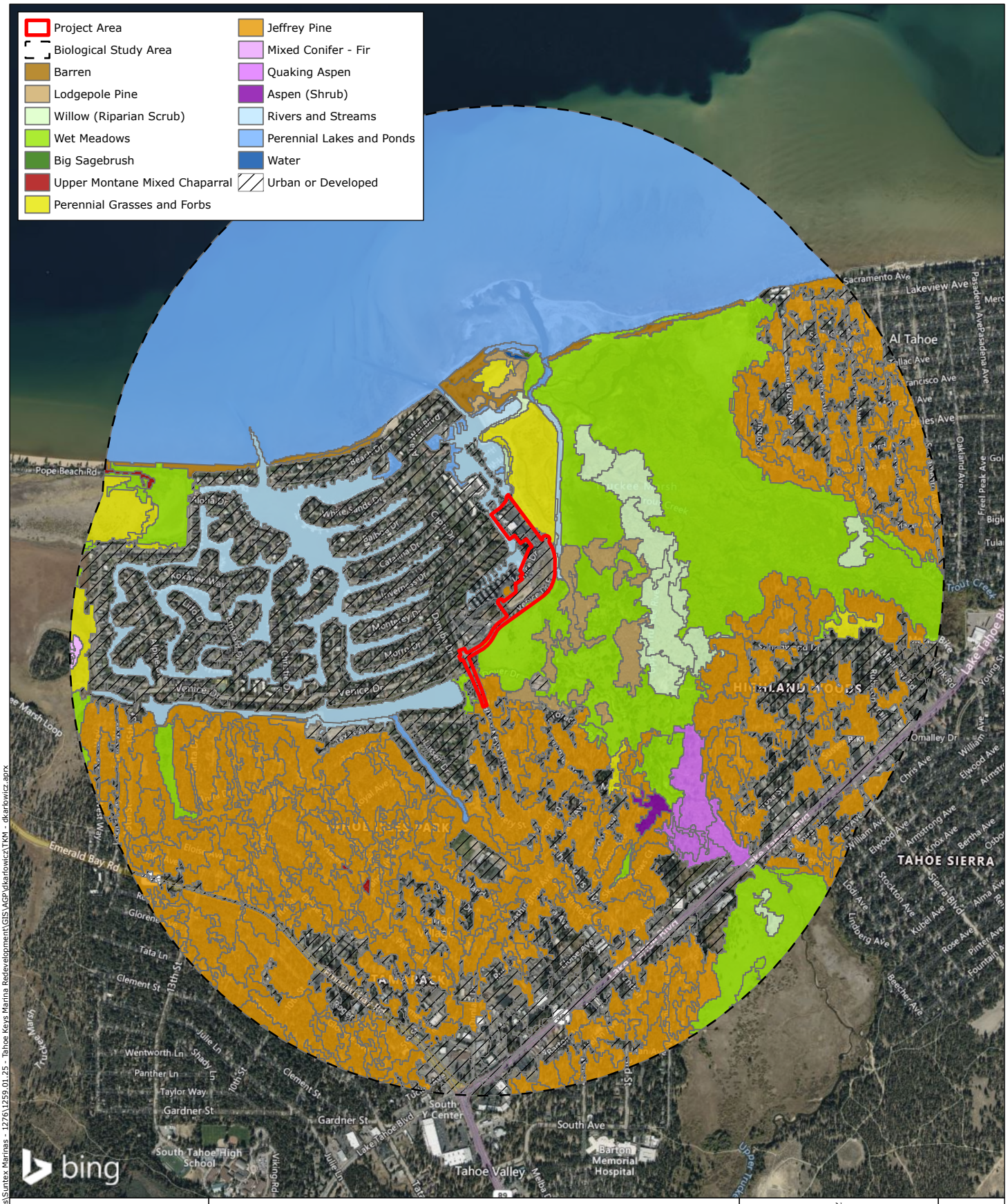
1 in. = 500 ft.

0 500 ft.

FIGURE 2

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap, USFWS	1259.03.25	D. Karlowicz	8/26/2024	10/30/2025	D. Rios

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NCE

SUNTEX MARINAS

Tahoe Keys Marina Redevelopment Project

Classification and Assessment with Landsat of Visible Ecological Groupings (CALVEG) Map

N

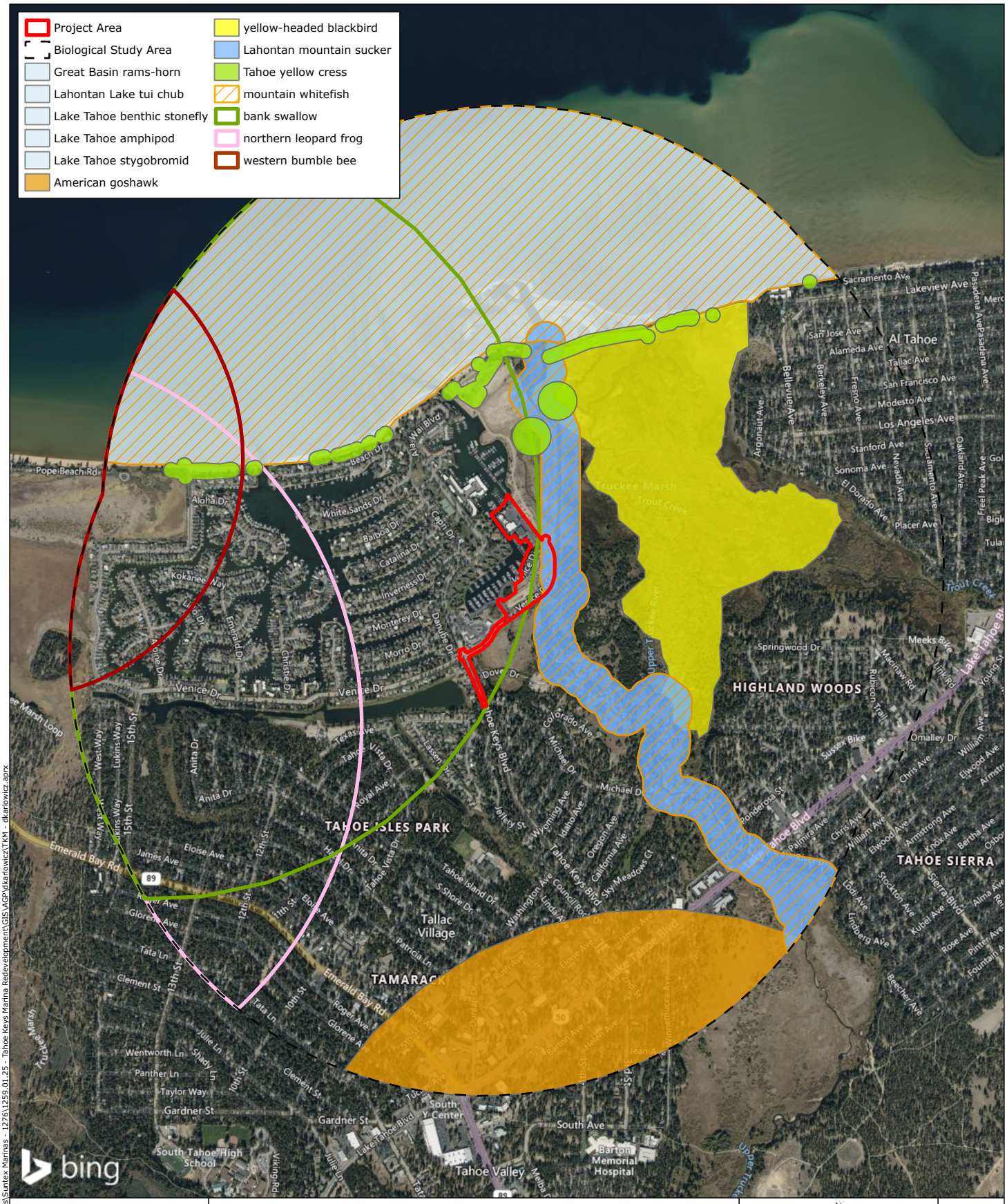
1 in. = 1,800 ft.

0 600 1,200 1,800 ft.

FIGURE 3

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap, USDA	1259.03.25	D. Karlowicz	7/3/2024	10/30/2025	D. Rios

Document Path: P:\Active Projects\Suntex Marinas - 1276\1259.01.25 - Tahoe Keys Marina Redevelopment\GIS\AGP\dkarlowicz\TKM - dkarlowicz.aprx



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NCE

SUNTEX MARINAS

Tahoe Keys Marina Redevelopment Project

California Natural Diversity Database (CNDDB) Map

N

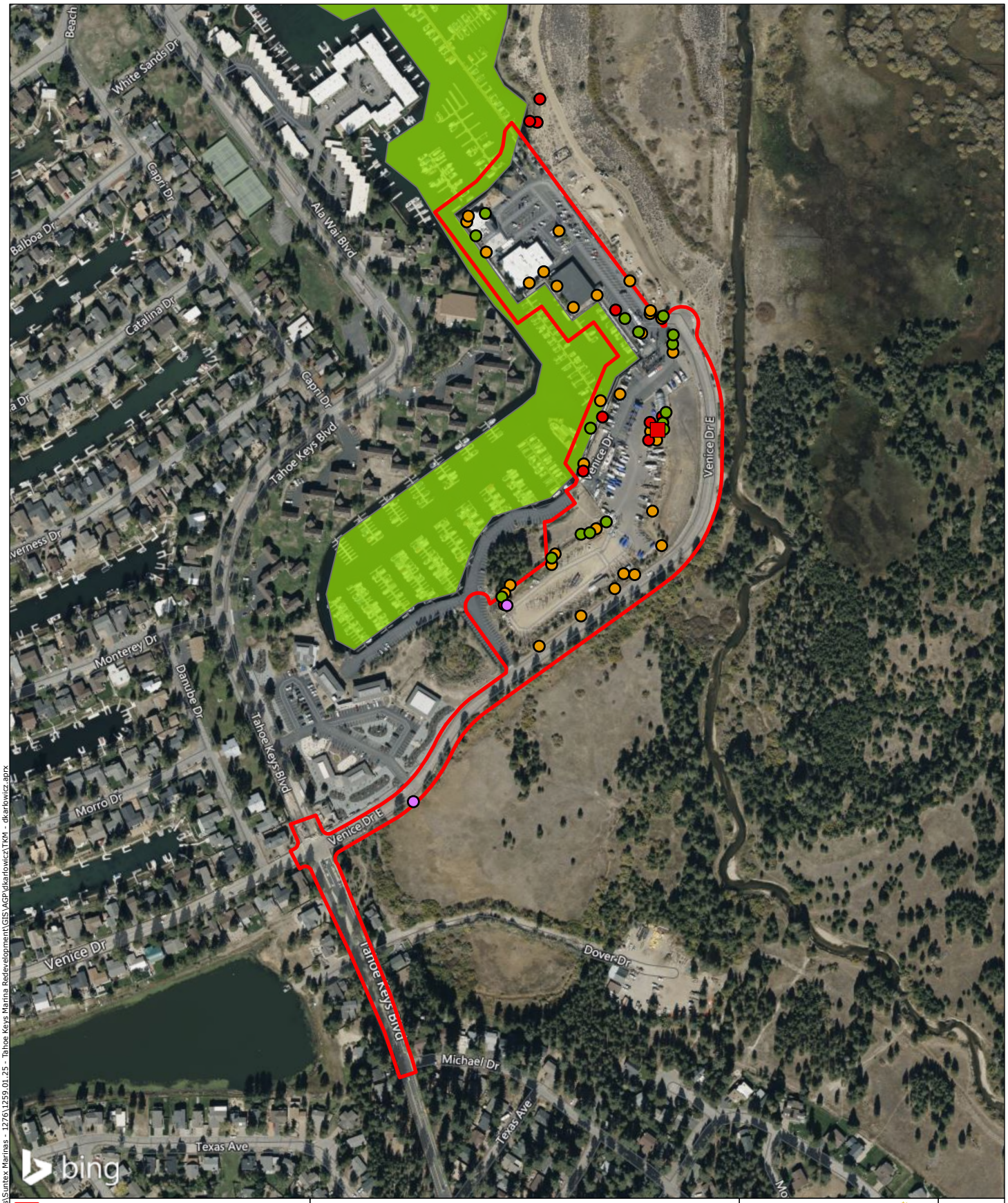
1 in. = 1,800 ft.

0 600 1,200 1,800 ft.

FIGURE 4

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap, CDFW	1259.03.25	D. Karlowicz	7/2/2024	10/30/2025	D. Rios


Project Area
bald eagle
bank swallow
black-billed magpie nest
osprey
Steller's jay nest
yellow-headed blackbird
Tahoe yellow cress
American beaver den
Tahoe Keys Marina Redevelopment Project
Biological Resources Observations Map
NCE
N
SUNTEX MARINAS
1 in. = 800 ft.
0
800 ft.
FIGURE
5a
SOURCE
Bing Aerial Basemap, NCE
JOB NUMBER
1259.03.25
DRAWN
D. Karlowicz
DATE
6/9/2025
REVISED
10/30/2025
APPROVED
D. Rios
Document Path: P:\Active Projects\Suntex Marinas - 1276\1259.01.25 - Tahoe Keys Marina Redevelopment\GIS\AGP\dkarlowicz\TKM - dkarlowicz.aprx
TAHOE ISLES PARK
Upper Truckee River
Truckee Marsh
Trout Creek
Ala Wai Blvd
Beach Dr
White Sands Dr
Balboa Dr
Capri Dr
Catalina Dr
Inverness Dr
Venice Dr
Venice Dr E
Christie Dr
Monterey Dr
Danube Dr
Morro Dr
Lucerne Way
Tahoe Keys Blvd
Dover Dr
Texas Ave
Tahoe Vista Dr
Whitney Dr
Shasta Ct
Lassen Dr
Tioga Dr
Arizona Ave
Colorado Ave
Michael Dr
Utah Ave
Butler Ave
Royal Ave
Big Pine Ave
Anita Dr
Hazel Dr
Jeffery St
Montana Ave
Wyoming Ave
Idaho Ave
Washington Ave
Oregon Ave
bing



Project Area
Eurasian watermilfoil
Canada thistle
cheatgrass
bull thistle
woolly mullein
American bullfrog

Tahoe Keys Marina Redevelopment Project

Invasive Species Observations Map

NCE
SUNTEX MARINAS

N

1 in. = 400 ft.

0 400 ft.

FIGURE 5b

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap, NCE	1259.03.25	D. Karlowicz	6/9/2025	10/30/2025	D. Rios

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Project Area
Biological Study Area
Bald Eagle Winter Habitat
Waterfowl Habitat
Fish Habitat
SNYLF Suitable Habitat (LTBMU)

NCE
SUNTEX MARINAS

Tahoe Keys Marina Redevelopment Project
Tahoe Regional Planning Agency (TRPA)
Resource Map

N

1 in. = 1,800 ft.
0 600 1,200 1,800 ft.

FIGURE 6

SOURCE	JOB NUMBER	DRAWN	DATE	REVISED	APPROVED
Bing Aerial Basemap, TRPA, LTBMU	1259.03.25	D. Karlowicz	7/3/2024	10/30/2025	D. Rios

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Appendix B

USFWS Information for Planning and Consultation Report

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Reno Fish And Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147
Phone: (775) 861-6300 Fax: (775) 861-6301

In Reply Refer To: 10/30/2025 19:23:11 UTC
Project Code: 2026-0010738
Project Name: Tahoe Keys Marina Redevelopment Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed, and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through IPaC by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological

evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see Migratory Bird Permit | What We Do | U.S. Fish & Wildlife Service (fws.gov).

It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries

- Bald & Golden Eagles
- Migratory Birds
- Wetlands

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Reno Fish And Wildlife Office
1340 Financial Boulevard, Suite 234
Reno, NV 89502-7147
(775) 861-6300

PROJECT SUMMARY

Project Code: 2026-0010738
Project Name: Tahoe Keys Marina Redevelopment Project
Project Type: Marina - Maintenance/Modification
Project Description: The proposed Project includes:

- Replacement of the existing bulkhead and reconfiguration of the existing boat launch and marine fueling facilities.
- Installation of site-wide stormwater infrastructure, drainage facilities, and Best Management Practices (BMPs).
- Demolition of all existing upland buildings.
- Construction of 4 new 2-story buildings with a total floor area of approximately 60,000 square feet (sf) containing concession spaces, marina accessory retail, food and beverage establishments and office space.
- Construction of a 52,615-sf water and fire flow storage tank(s) and marina facility (Marina Facility) to, respectively, accommodate large indoor potable water tank(s) to provide the greater Tahoe Keys area additional fire flow and indoor storage of vessels.
- Construction of a 2-story, approximately 23,250-sf marina support building which will also house office space, 3 residential units, boat sales, and a dock master with supportive marina services.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@38.931845100000004,-120.00204844966181,14z



Counties: El Dorado County, California

ENDANGERED SPECIES ACT SPECIES

There is a total of 7 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. 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.

MAMMALS

NAME	STATUS
Gray Wolf *Canis lupus* Population: U.S.A.: All of AL, AR, CA, CO, CT, DE, FL, GA, IA, IN, IL, KS, KY, LA, MA, MD, ME, MI, MO, MS, NC, ND, NE, NH, NJ, NV, NY, OH, OK, PA, RI, SC, SD, TN, TX, VA, VT, WI, and WV; and portions of AZ, NM, OR, UT, and WA. Mexico. There is **final** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/4488 General project design guidelines: https://ipac.ecosphere.fws.gov/project/UZT3K3D2QFHSXIGHK7V2ZO6FL4/documents/generated/11040.pdf	Endangered
Sierra Nevada Red Fox *Vulpes vulpes necator* Population: No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4252	Endangered

BIRDS

NAME	STATUS
California Spotted Owl *Strix occidentalis occidentalis* Population: Sierra Nevada No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7266 General project design guidelines: https://ipac.ecosphere.fws.gov/project/UZT3K3D2QFHSXIGHK7V2ZO6FL4/documents/generated/11040.pdf	Proposed Threatened

REPTILES

NAME	STATUS
Northwestern Pond Turtle *Actinemys marmorata* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1111 General project design guidelines: https://ipac.ecosphere.fws.gov/project/UZT3K3D2QFHSXIGHK7V2ZO6FL4/documents/generated/11040.pdf	Proposed Threatened

AMPHIBIANS

NAME	STATUS
Sierra Nevada Yellow-legged Frog *Rana sierrae* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9529	Endangered

FISHES

NAME	STATUS
Lahontan Cutthroat Trout *Oncorhynchus clarkii henshawi* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3964 General project design guidelines: https://ipac.ecosphere.fws.gov/project/UZT3K3D2QFHSXIGHK7V2ZO6FL4/documents/generated/11040.pdf	Threatened

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9743 General project design guidelines: https://ipac.ecosphere.fws.gov/project/UZT3K3D2QFHSXIGHK7V2ZO6FL4/documents/generated/11040.pdf	Proposed Threatened

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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 OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act [2] and the Migratory Bird Treaty Act (MBTA) [1]. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

---

1. The Bald and Golden Eagle Protection Act of 1940.
2. The Migratory Birds Treaty Act of 1918.

3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

There are Bald Eagles and/or Golden Eagles in your project area.

Measures for Proactively Minimizing Eagle Impacts
For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the National Bald Eagle Management Guidelines. You may employ the timing and activity-specific distance recommendations in this document when designing your project/ activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to Bald Eagle Nesting and Sensitivity to Human Activity.

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

If disturbance or take of eagles cannot be avoided, an incidental take permit may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the Do I Need A Permit Tool. For assistance making this determination for golden eagles, please consult with the appropriate Regional Migratory Bird Office or Ecological Services Field Office.

Ensure Your Eagle List is Accurate and Complete
If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the Supplemental Information on Migratory Birds and Eagles, to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
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
Golden Eagle *Aquila chrysaetos* 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/1680	Breeds Dec 1 to Aug 31

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 "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

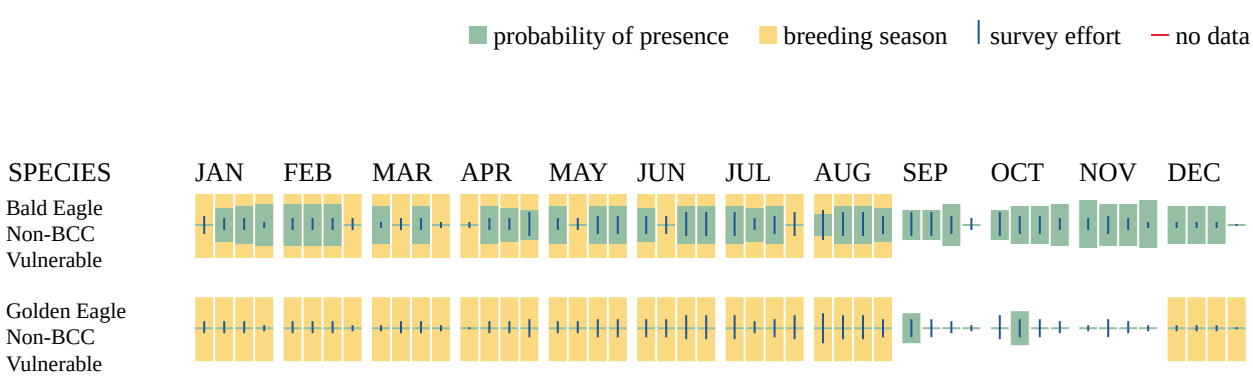
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

The Migratory Bird Treaty Act (MBTA) [1] prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

---

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Dipper *Cinclus mexicanus* 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/11928	Breeds Mar 21 to Aug 21
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
Black-throated Gray Warbler *Setophaga nigrescens* 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/9584	Breeds May 1 to Jul 20
California Gull *Larus californicus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10955	Breeds Mar 1 to Jul 31
Calliope Hummingbird *Selasphorus calliope* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9526	Breeds May 1 to Aug 15
Cassin's Finch *Haemorhous cassinii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9462	Breeds May 15 to Jul 15

NAME	BREEDING SEASON
Clark's Grebe *Aechmophorus clarkii* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10575	Breeds Jun 1 to Aug 31
Evening Grosbeak *Coccothraustes vespertinus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9465	Breeds May 15 to Aug 10
Golden Eagle *Aquila chrysaetos* 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/1680	Breeds Dec 1 to Aug 31
Hermit Warbler *Setophaga occidentalis* 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/11957	Breeds May 5 to Jul 15
Lewis's Woodpecker *Melanerpes lewis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Long-eared Owl *asio otus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Olive-sided Flycatcher *Contopus cooperi* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3914	Breeds May 20 to Aug 31
Western Grebe *aechmophorus occidentalis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10669	Breeds Apr 20 to Aug 5

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 "Supplemental

Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

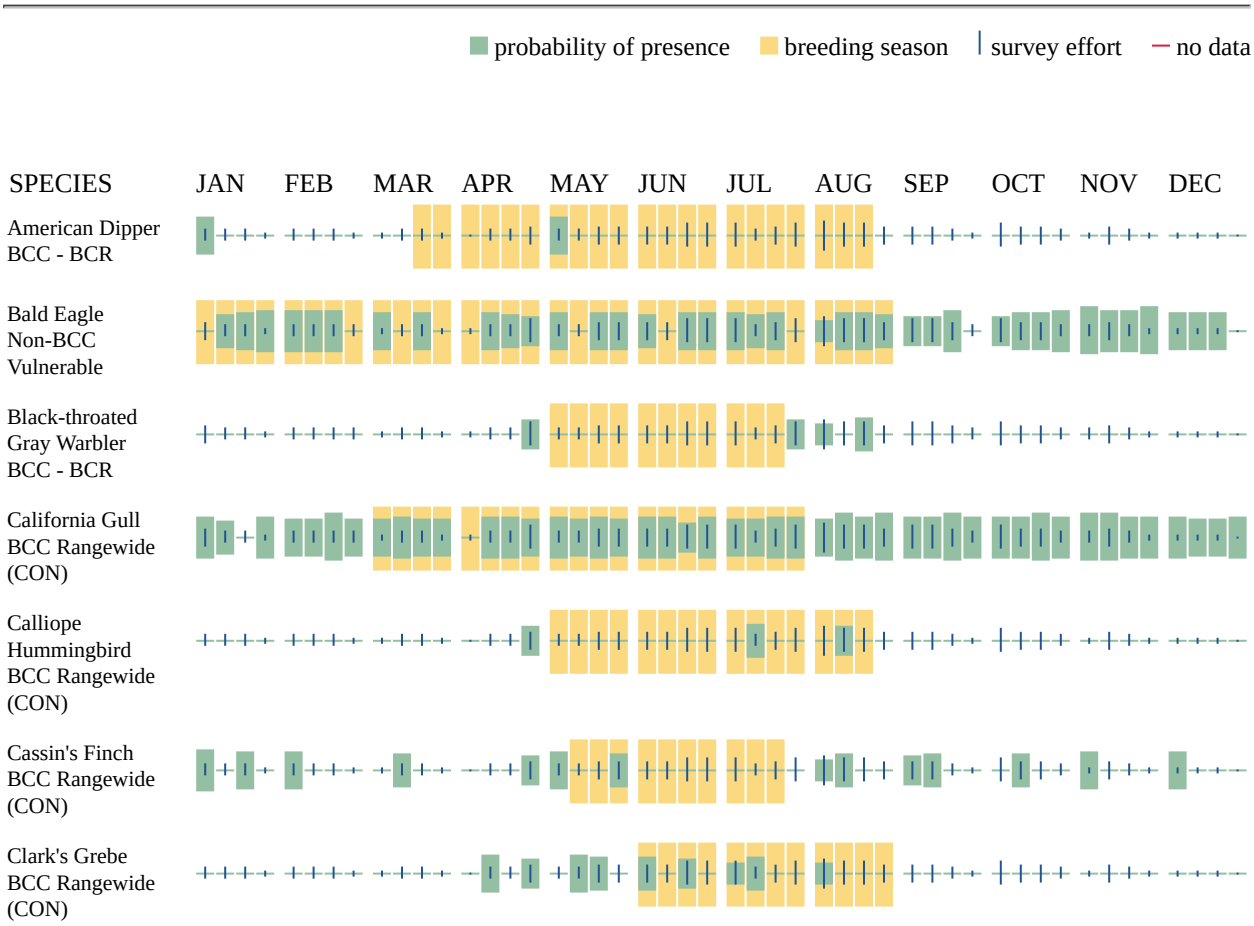
Probability of Presence (■)

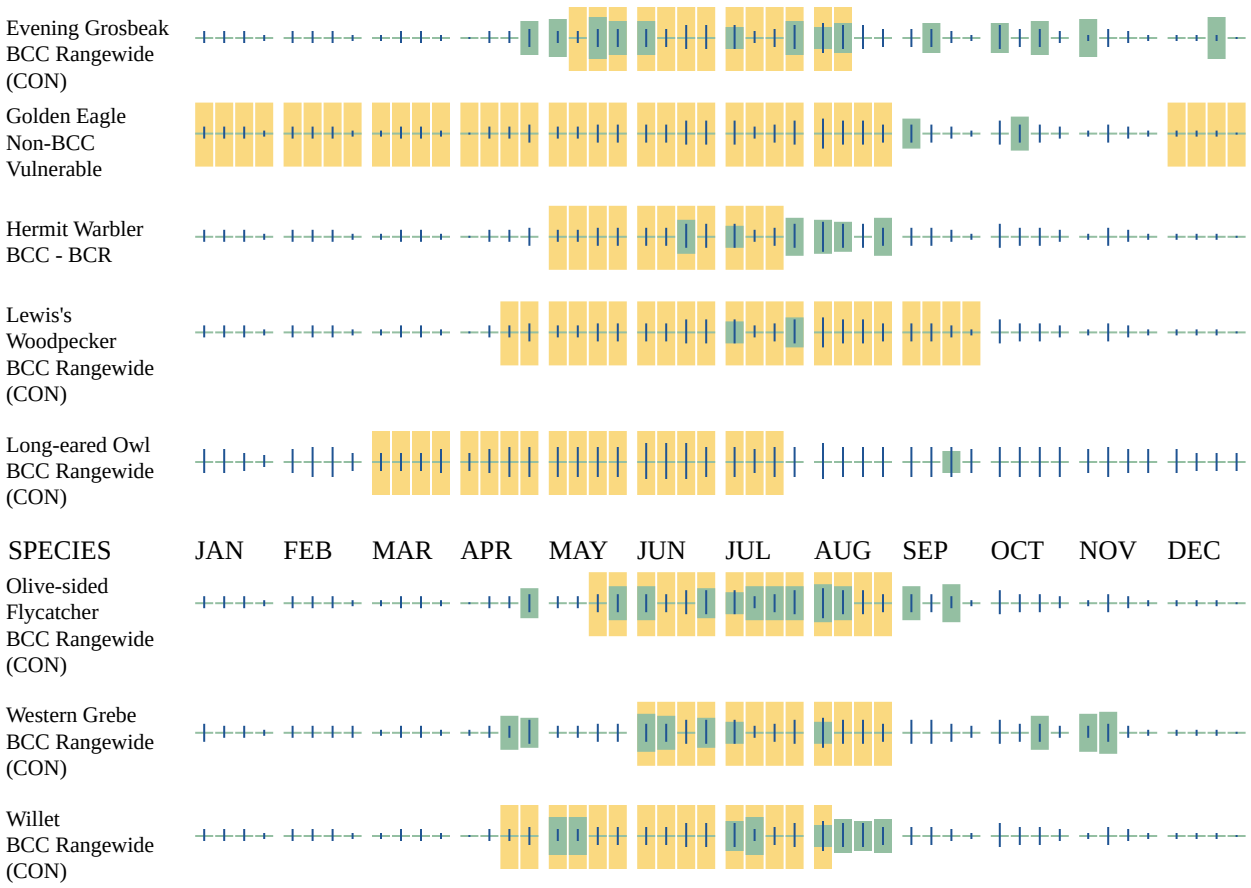
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.





Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

WETLANDS

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.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

LAKE

- L1UBHx

FRESHWATER EMERGENT WETLAND

- PEM1C

FRESHWATER FORESTED/SHRUB WETLAND

- PSS1B
- PSSC

RIVERINE

- R3UBF

IPAC USER CONTACT INFORMATION

Agency: NCE
Name: Dylan Karlowicz
Address: PO Box 1760
City: Zephyr Cove
State: NV
Zip: 89448
Email dkarlowicz@ncenet.com
Phone: 7755882505

Appendix C

Photographs



Photograph 1: West-facing view of the unpaved trailer storage area and surrounding berm with big sagebrush, ruderal species, and conifers.



Photograph 2: North-facing view of the vacant disturbed parcel along Venice Drive dominated by grasses, forbs, and ruderal species.



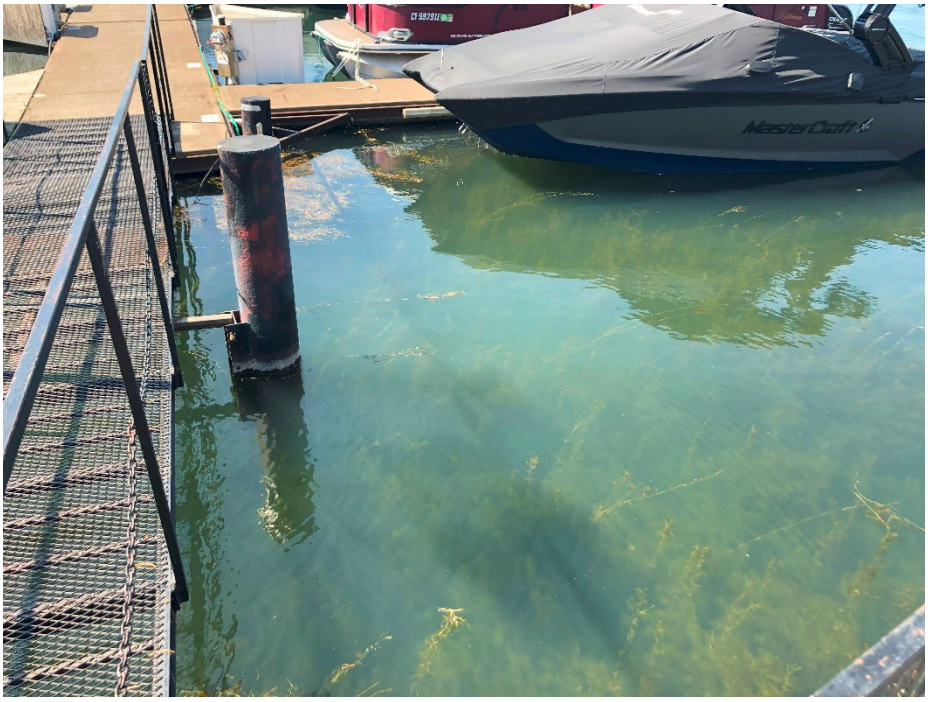
Photograph 3: Southwest-facing view of the paved boat storage area and stormwater basin with standing water and wetland plant species.



Photograph 4: South-facing view of the paved boat storage area.



Photograph 5: South-facing view of the paved parking area and adjacent Conservancy restoration area.



Photograph 6: View of Eurasian watermilfoil around the marina docks and bulkhead.



Photograph 7: Southeast-facing view of the bulkhead division between the upland and lagoon.



Photograph 8: Southwest-facing view of the docks, sheet pile bulkhead, boat ramp, and marina landscaping.



Photograph 9: Northeast-facing view of the approximate new boat launch location and existing bulkhead.



Photograph 10: Northeast-facing view of the shoreline area in the lagoon dominated by emergent wetland species and big sagebrush.



Photograph 11: East-facing view of the Upper Truckee River and Marsh adjacent to the Project area.



Photograph 12: East-facing view of a juvenile bald eagle perched in the stand of Jeffrey pines northeast of the Project area.



Photograph 13: Southwest-facing view of Venice Drive in the Project area.



Photograph 14: Northwest-facing view of Tahoe Keys Boulevard in the Project area.

Appendix C

Noise Study

Environmental Noise Assessment

Tahoe Keys Marina

City of South Lake Tahoe, California

March 16, 2026

Project #250201

Prepared for:

NCE Lake Tahoe Office
224 Kingsbury Grade Road, Suite 203
Stateline, NV 89449
(775) 588-2505

Prepared by:

Saxelby Acoustics LLC





Luke Saxelby, INCE Bd. Cert.
Principal Consultant
Board Certified, Institute of Noise Control Engineering (INCE)

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www.SaxNoise.com | Luke@SaxNoise.com
915 Highland Pointe Drive, Suite 250
Roseville, CA 95678

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Appendices

Appendix A: Acoustical Terminology
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INTRODUCTION

The Tahoe Keys Marina project consists of the redevelopment of the existing marina. This involves the construction of a storage facility, dock master building, park, boat launch area, parking, plaza, and four buildings. The project site is bordered by residential land use to the north and west, public land use to the east, and Venice Road to the south.

Figure 1 shows the project site plan. **Figure 2** shows an aerial photo of the project site.

ENVIRONMENTAL SETTING

BACKGROUND INFORMATION ON NOISE

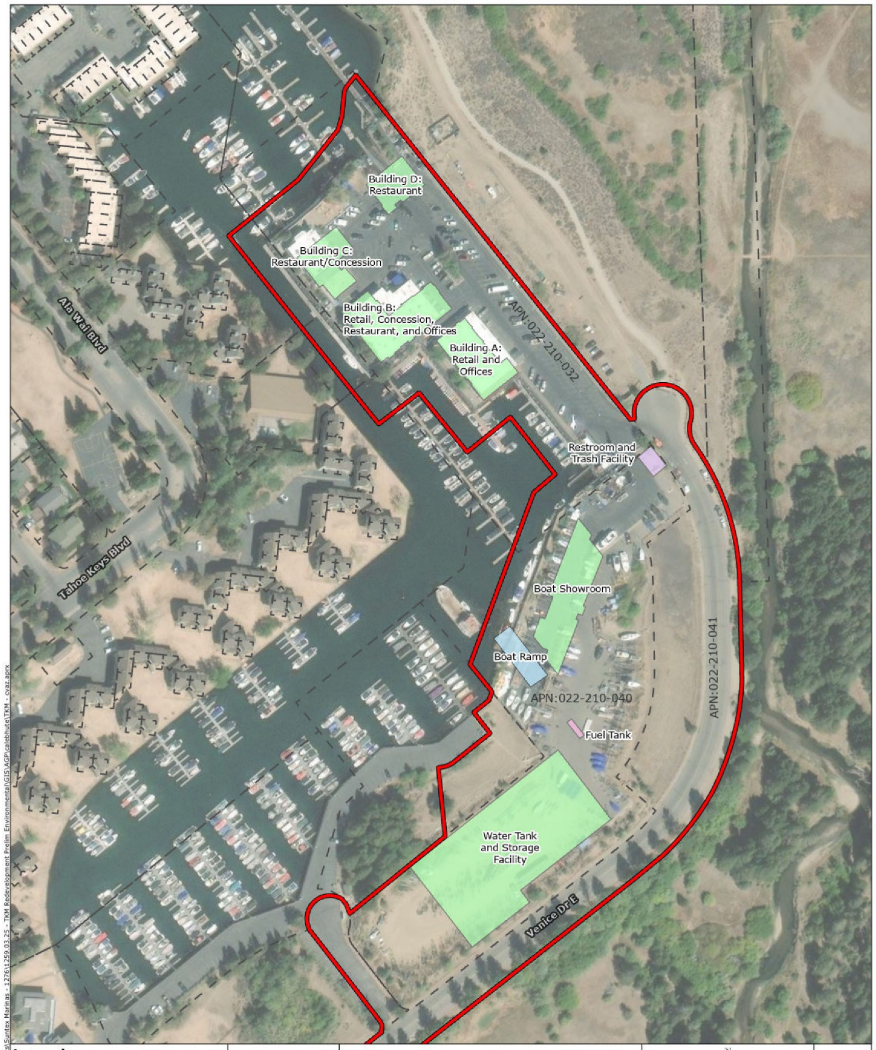
Fundamentals of Acoustics

Acoustics is the science of sound. Sound may be thought of as mechanical energy of a vibrating object transmitted by pressure waves through a medium to human (or animal) ears. If the pressure variations occur frequently enough (at least 20 times per second), then they can be heard and are called sound. The number of pressure variations per second is called the frequency of sound and is expressed as cycles per second or Hertz (Hz).

Noise is a subjective reaction to different types of sounds. Noise is typically defined as (airborne) sound that is loud, unpleasant, unexpected or undesired, and may therefore be classified as a more specific group of sounds. Perceptions of sound and noise are highly subjective from person to person.

Measuring sound directly in terms of pressure would require a very large and awkward range of numbers. To avoid this, the decibel scale was devised. The decibel scale uses the hearing threshold (20 micropascals), as a point of reference, defined as 0 dB. Other sound pressures are then compared to this reference pressure, and the logarithm is taken to keep the numbers in a practical range. The decibel scale allows a million-fold increase in pressure to be expressed as 120 dB, and changes in levels (dB) correspond closely to human perception of relative loudness.

The perceived loudness of sounds is dependent upon many factors, including sound pressure level and frequency content. However, within the usual range of environmental noise levels, perception of loudness is relatively predictable, and can be approximated by A-weighted sound levels. There is a strong correlation between A-weighted sound levels (expressed as dBA) and the way the human ear perceives sound. For this reason, the A-weighted sound level has become the standard tool of environmental noise assessment.

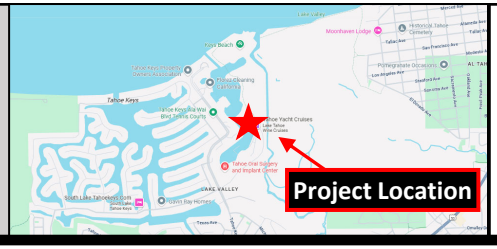


Tahoe Keys Marina TRPA CEQA

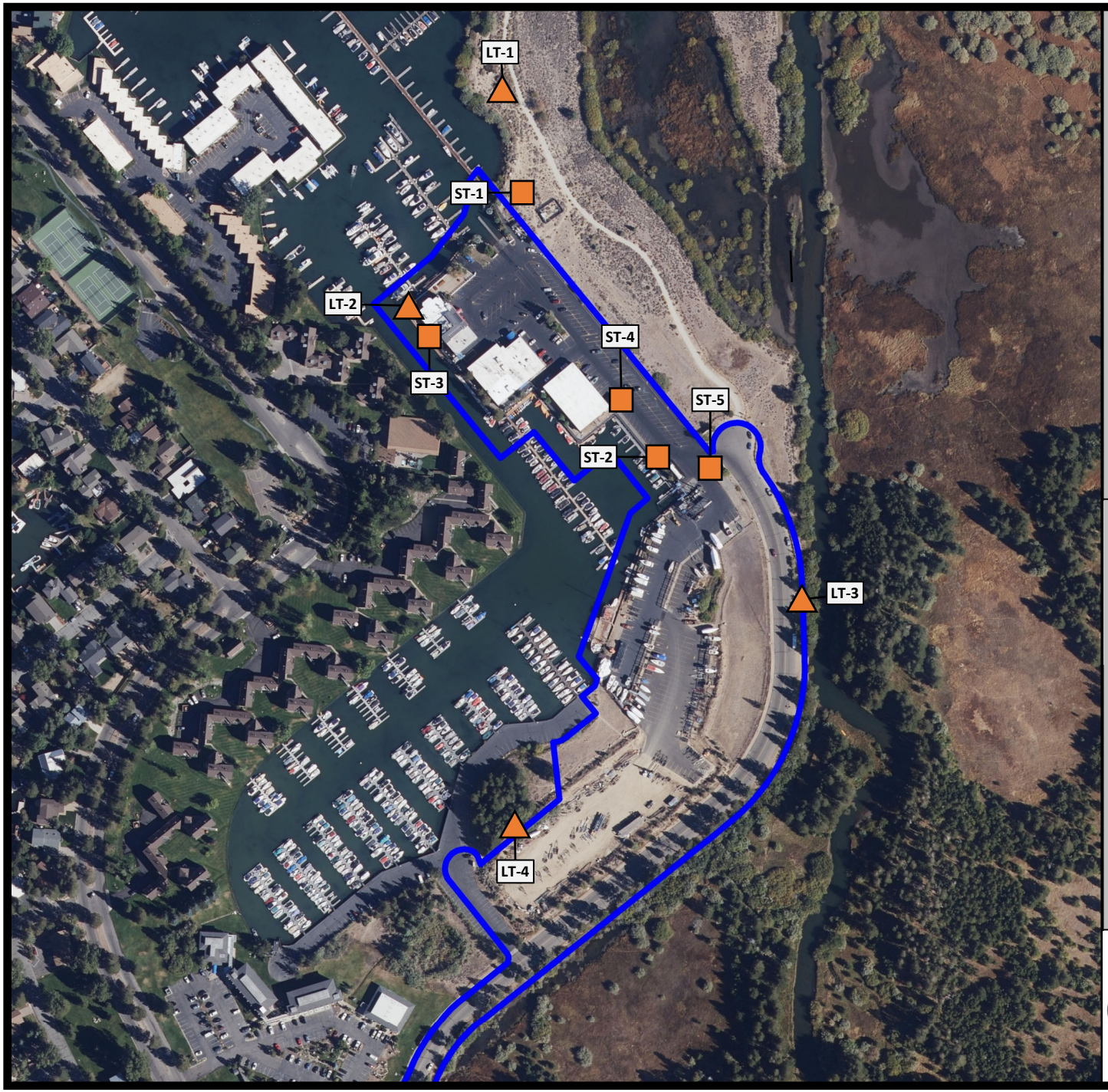
City of South Lake Tahoe, California

Figure 1

Project Site Plan



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Figure 2

Noise Measurement Sites

Legend

- Project Site
- Long Term Measurement
- Short Term Measurement

0 ft 250 ft 500 ft

Projection: UTM Zone 10 / WGS84 / meters
Rev. Date: 12/10/2025

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The decibel scale is logarithmic, not linear. In other words, two sound levels 10-dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted, an increase of 10-dBA is generally perceived as a doubling in loudness. For example, a 70-dBA sound is half as loud as an 80-dBA sound, and twice as loud as a 60-dBA sound.

Community noise is commonly described in terms of the ambient noise level, which is defined as the all-encompassing noise level associated with a given environment. A common statistical tool is the average, or equivalent, sound level (L_{eq}), which corresponds to a steady-state A-weighted sound level containing the same total energy as a time varying signal over a given time period (usually one hour). The L_{eq} is the foundation of the composite noise descriptor, L_{dn}, and shows very good correlation with community response to noise.

The day/night average level (DNL or L_{dn}) is based upon the average noise level over a 24-hour day, with a +10-decibel weighing applied to noise occurring during nighttime (10:00 p.m. to 7:00 a.m.) hours. The nighttime penalty is based upon the assumption that people react to nighttime noise exposures as though they were twice as loud as daytime exposures. Because L_{dn} represents a 24-hour average, it tends to disguise short-term variations in the noise environment.

Table 1 lists several examples of the noise levels associated with common situations. **Appendix A** provides a summary of acoustical terms used in this report.

TABLE 1: TYPICAL NOISE LEVELS

Common Outdoor Activities	Noise Level (dBA)	Common Indoor Activities
	--110--	Rock Band
Jet Fly-over at 300 m (1,000 ft.)	--100--	
Gas Lawn Mower at 1 m (3 ft.)	--90--	
Diesel Truck at 15 m (50 ft.), at 80 km/hr. (50 mph)	--80--	Food Blender at 1 m (3 ft.) Garbage Disposal at 1 m (3 ft.)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft.)	--70--	Vacuum Cleaner at 3 m (10 ft.)
Commercial Area Heavy Traffic at 90 m (300 ft.)	--60--	Normal Speech at 1 m (3 ft.)
Quiet Urban Daytime	--50--	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	--40--	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	--30--	Library
Quiet Rural Nighttime	--20--	Bedroom at Night, Concert Hall (Background)
	--10--	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	--0--	Lowest Threshold of Human Hearing

Source: Caltrans, Technical Noise Supplement, Traffic Noise Analysis Protocol. September, 2013.

Effects of Noise on People

The effects of noise on people can be placed in three categories:

- Subjective effects of annoyance, nuisance, and dissatisfaction
- Interference with activities such as speech, sleep, and learning
- Physiological effects such as hearing loss or sudden startling

Environmental noise typically produces effects in the first two categories. Workers in industrial plants can experience noise in the last category. There is no completely satisfactory way to measure the subjective effects of noise or the corresponding reactions of annoyance and dissatisfaction. A wide variation in individual thresholds of annoyance exists and different tolerances to noise tend to develop based on an individual's past experiences with noise.

Thus, an important way of predicting a human reaction to a new noise environment is the way it compares to the existing environment to which one has adapted: the so-called ambient noise level. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by those hearing it.

With regards to increases in A-weighted noise level, the following relationships occur:

- Except in carefully controlled laboratory experiments, a change of 1-dBA cannot be perceived;
- Outside of the laboratory, a 3-dBA change is considered a just-perceivable difference;
- A change in level of at least 5-dBA is required before any noticeable change in human response would be expected; and
- A 10-dBA change is subjectively heard as approximately a doubling in loudness and can cause an adverse response.

Stationary point sources of noise – including stationary mobile sources such as idling vehicles – attenuate (lessen) at a rate of approximately 6-dB per doubling of distance from the source, depending on environmental conditions (i.e. atmospheric conditions and either vegetative or manufactured noise barriers, etc.). Widely distributed noises, such as a large industrial facility spread over many acres or a street with moving vehicles, would typically attenuate at a lower rate.

EXISTING NOISE AND VIBRATION ENVIRONMENTS

EXISTING NOISE RECEPTORS

Some land uses are considered more sensitive to noise than others. Land uses often associated with sensitive receptors generally include residences, schools, libraries, hospitals, and passive recreational areas. Sensitive noise receptors may also include threatened or endangered noise-sensitive biological species, although many jurisdictions have not adopted noise standards for wildlife areas. Noise sensitive land uses are typically given special attention in order to achieve protection from excessive noise.

Sensitivity is a function of noise exposure (in terms of both exposure duration and insulation from noise) and the types of activities involved. In the vicinity of the project site, sensitive land uses include residential condominiums located to the north and west, along Tahoe Keys Boulevard and Ala Wai Boulevard.

EXISTING GENERAL AMBIENT NOISE LEVELS

The existing noise environment in the project area is primarily defined by traffic on Venice Road, car/truck circulation on the project site, and boat noise. To quantify the existing ambient noise environment in the project vicinity, Saxelby Acoustics conducted continuous (24-hr.) noise level measurements at four locations on the project site and five additional short-term sites and observations. Noise measurement locations are shown on **Figure 2**. A summary of the noise level measurement survey results is provided in **Table 2**. **Appendix B** contains the complete results of the noise monitoring.

The sound level meters were programmed to record the maximum, median, and average noise levels at each site during the survey. The maximum value, denoted L_{max}, represents the highest noise level measured. The average value, denoted L_{eq}, represents the energy average of all the noise received by the sound level meter microphone during the monitoring period. The median value, denoted L_{50}, represents the sound level exceeded 50 percent of the time during the monitoring period.

Larson Davis Laboratories (LDL) model 820 precision integrating sound level meters were used for the ambient noise level measurement survey. The meters were calibrated before and after use with a CAL200 acoustical calibrator to ensure the accuracy of the measurements. The equipment used meets all pertinent specifications of the American National Standards Institute for Type 1 sound level meters (ANSI S1.4).

TABLE 2: SUMMARY OF EXISTING BACKGROUND NOISE MEASUREMENT DATA

Location	Date	L_{dn}	Daytime L_{eq}	Daytime L_{50}	Daytime L_{max}	Nighttime L_{eq}	Nighttime L_{50}	Nighttime L_{max}
LT-1	6/27/25	47	47	41	64	38	35	52
	6/28/25	49	47	43	65	41	36	54
	6/29/25	48	48	42	65	38	35	53
Average		**48**	**47**	**42**	**65**	**39**	**35**	**53**
LT-2	6/27/25	52	52	47	71	40	37	53
	6/28/25	53	53	47	71	42	37	54
	6/29/25	53	54	48	72	40	37	56
Average		**53**	**53**	**47**	**71**	**41**	**37**	**54**
LT-3	6/27/25	57	54	47	75	50	40	67
	6/28/25	55	55	47	75	46	40	64
	6/29/25	55	55	47	75	45	41	63
Average		**56**	**55**	**47**	**75**	**47**	**40**	**65**
LT-4	6/27/25	46	45	39	64	37	34	51
	6/28/25	46	44	39	62	37	34	49
	6/29/25	48	47	39	66	39	34	55
Average		**47**	**45**	**39**	**64**	**38**	**34**	**52**
ST-1	6/26/25	N/A	44	43	62	N/A	N/A	N/A
ST-2	6/26/25	N/A	56	55	71	N/A	N/A	N/A
ST-3	6/30/25	N/A	52	51	59	N/A	N/A	N/A
ST-4	6/30/25	N/A	52	47	72	N/A	N/A	N/A
ST-5	6/30/25	N/A	55	50	69	N/A	N/A	N/A

- *All values shown in dBA*
- *Daytime hours: 7:00 a.m. to 10:00 p.m.*
- *Nighttime Hours: 10:00 p.m. to 7:00 a.m.*
- *Source: Saxelby Acoustics, 2025.*

FUTURE TRAFFIC NOISE ENVIRONMENT AT OFF-SITE RECEPTORS

OFF-SITE TRAFFIC NOISE IMPACT ASSESSMENT METHODOLOGY

To assess noise impacts due to project-related traffic increases on the local roadway network, traffic noise levels are predicted at sensitive receptors for existing and future, project and no-project conditions.

Existing noise levels due to traffic are calculated using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD-77-108). The model is based upon the Calveno reference noise factors for automobiles, medium trucks and heavy trucks, with consideration given to vehicle volume, speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site.

The FHWA model was developed to predict hourly L_{eq} values for free-flowing traffic conditions. To predict traffic noise levels in terms of L_{dn}, it is necessary to adjust the input volume to account for the day/night distribution of traffic.

Project trip generation volumes were provided by the project traffic engineer (LSC), truck usage and vehicle speeds on the local area roadways were estimated from field observations. The predicted increases in traffic noise levels on the local roadway network for Existing conditions which would result from the project are provided in terms of L_{dn}.

Traffic noise levels are predicted at the sensitive receptors located at the closest typical setback distance along each project-area roadway segment. In some locations sensitive receptors may not receive full shielding from noise barriers or may be located at distances which vary from the assumed calculation distance.

Tables 3 summarize the modeled traffic noise levels at the nearest sensitive receptors along each roadway segment in the Project area. **Appendix C** provides the complete inputs and results of the FHWA traffic modeling.

TABLE 3: PREDICTED TRAFFIC NOISE LEVEL AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Existing Counts (dBA L_{dn})	Existing + Project (dBA L_{dn})	Change (dBA)
Marina Access Driveway	North of Venice Dr	41.1	42.6	1.5
Venice Dr	East of Beach and Harbor Driveway	37.5	38.8	1.3
Venice Dr	West of Beach and Harbor Driveway	44.5	45.7	1.2

TABLE 4: PREDICTED TRAFFIC NOISE LEVEL AND PROJECT-RELATED TRAFFIC NOISE LEVEL INCREASES

Roadway	Segment	Existing No Project[1] (dBA L_{dn})	Existing + Project (dBA L_{dn})	Change (dBA)
Marina Access Driveway	North of Venice Dr	42.4	42.6	0.2
Venice Dr	East of Beach and Harbor Driveway	38.5	38.8	0.3
Venice Dr	West of Beach and Harbor Driveway	45.5	45.7	0.2

[1] Existing No Project conditions assumes the Fresh Ketch restaurant is operational.

Based upon the **Tables 3** data, the proposed project is predicted to result in an increase in a maximum traffic noise level increase of 1.5 dBA or 0.3 dBA if the Fresh Ketch restaurant is operational.

EVALUATION OF PROJECT OPERATIONAL NOISE ON EXISTING SENSITIVE RECEPTORS

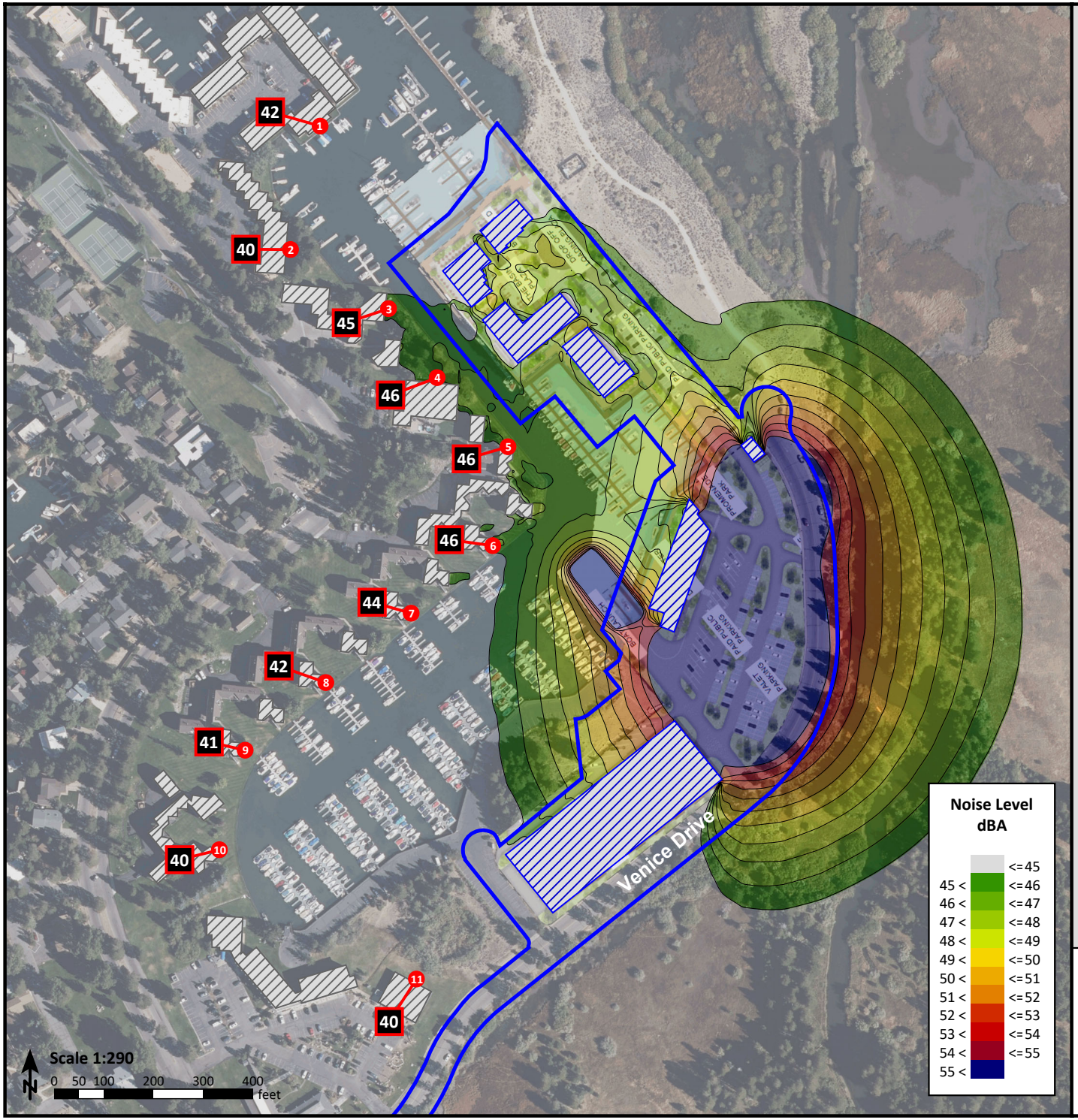
Project site traffic circulation, boat launch ramp, and HVAC noise are considered to be the primary noise sources for this project. The following is a list of assumptions used for noise modeling. The data used is based upon a combination of manufacturer's provided data and Saxelby Acoustics data from similar operations.

Boat Launch Ramp: Assumes typical boat activity will occur mostly during daytime hours. Noise sources include vehicle and trailer movements as well as boat engine startup and idle noise. The boat ramp is predicted to generate noise levels of 44 dBA at 100 feet for 15 daytime hours and two nighttime hours, based on existing boat launch operations.

On-Site Circulation: Saxelby Acoustics used the data provided by LSC Transportation Consultants Inc. for the proposed project. The project is predicted to generate approximately 191 trips in the peak hour (with a net increase of only 37 in the peak hour). Saxelby Acoustics included an additional two heavy truck trips to account for garbage collection and deliveries. Parking lot movements are predicted to generate a sound exposure level (SEL) of 71 dBA SEL at 50 feet for cars and 85 dBA SEL at 50 feet for trucks. Nighttime traffic outside of the AM or PM peak hour is estimated to be approximately 20% of daytime trips during nighttime hours (10:00 p.m. to 7:00 a.m.).

HVAC: Assumes 2-4 six-ton HVAC units for each building. The units were assumed to have a sound power level of 82 dBA with continuous daytime operation and 25% nighttime operation.

Saxelby Acoustics used the SoundPLAN noise prediction model. Inputs to the model included sound power levels for the proposed noise sources, existing and proposed buildings, terrain type, and locations of sensitive receptors. These predictions are made in accordance with International Organization for Standardization (ISO) standard 9613-2:1996 (Acoustics – Attenuation of sound during propagation outdoors). ISO 9613 is the most commonly used method for calculating exterior noise propagation. **Figure 3** shows the project operational noise level contours. Please note that these contours do not account for existing operations, only proposed future operations.



Tahoe Keys Marina TRPA CEQA

City of South Lake Tahoe, CA

Figure 3

Project Generated Noise Levels
(Noise level Day/Night, dBA)

Legend

- Project Boundary
- Project Building
- Existing Building
- Noise Level

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CONSTRUCTION NOISE ENVIRONMENT

During the construction of the proposed project, noise from construction activities would temporarily add to the noise environment in the project vicinity. As shown in **Table 4**, activities involved in construction would generate maximum noise levels ranging from 76 to 90 dB at a distance of 50 feet.

TABLE 5: CONSTRUCTION EQUIPMENT NOISE

Type of Equipment	Maximum Level, dBA at 50 feet
Auger Drill Rig	84
Backhoe	78
Compactor	83
Compressor (air)	78
Concrete Saw	90
Dozer	82
Dump Truck	76
Excavator	81
Generator	81
Jackhammer	89
Pneumatic Tools	85

Source: Roadway Construction Noise Model User's Guide. Federal Highway Administration. FHWA-HEP-05-054. January 2006.

CONSTRUCTION VIBRATION ENVIRONMENT

The primary vibration-generating activities associated with the proposed project would occur during construction when activities such as grading, utilities placement, and parking lot construction occur. **Table 5** shows the typical vibration levels produced by construction equipment.

TABLE 6: VIBRATION LEVELS FOR VARIOUS CONSTRUCTION EQUIPMENT

Type of Equipment	Peak Particle Velocity at 25 feet (inches/second)	Peak Particle Velocity at 50 feet (inches/second)	Peak Particle Velocity at 100 feet (inches/second)
Large Bulldozer	0.089	0.031	0.011
Loaded Trucks	0.076	0.027	0.010
Small Bulldozer	0.003	0.001	0.000
Auger/drill Rigs	0.089	0.031	0.011
Jackhammer	0.035	0.012	0.004
Vibratory Hammer	0.070	0.025	0.009
Vibratory Compactor/roller	0.210 (Less than 0.20 at 26 feet)	0.074	0.026

Source: Transit Noise and Vibration Impact Assessment Guidelines. Federal Transit Administration. May 2006.

REGULATORY CONTEXT

FEDERAL

HUD Criteria

The U.S. Department of Housing and Urban Development (HUD) establishes an acceptable exterior noise environment of 65 dBA L_{dn} (also expressed as "DNL" or Day/Night Level) at exterior areas of residential uses. Noise levels in the 65-75 dBA DNL range are considered Normally Unacceptable. However, 65-75 dBA DNL may be allowed, but require special approvals and additional sound attenuation measures. Such measures include a 5 dBA improvement to the building facade noise level reduction (NLR) for exterior noise levels in the 65-70 dBA range, and an improvement of 10 dBA for exterior noise levels in the 70-75 dBA range. The improvement is required in addition to "attenuation provided by buildings as commonly constructed in the area and requiring open windows for ventilation."

Noise levels exceeding 75 dBA DNL are considered unacceptable and may only be allowed under special circumstances.

In addition, HUD established an interior noise level goal of 45 dBA DNL, while assuming a typical exterior-to-interior NLR of 20 dBA.

STATE

California Environmental Quality Act

The California Environmental Quality Act (CEQA) Guidelines, Appendix G, indicate that a significant noise impact may occur if a project exposes persons to noise or vibration levels in excess of local general plans or noise ordinance standards, or cause a substantial permanent or temporary increase in ambient noise levels. CEQA standards are discussed in more detail under the Thresholds of Significance section.

State Building Code, Title 24, Part 2 of the State of California Code of Regulations

The State Building Code, Title 24, Part 2 of the State of California Code of Regulations, establishes uniform minimum noise insulation performance standards to protect persons within new buildings which house people, including hotels, motels, dormitories, apartment houses, and dwellings other than single-family dwellings. Title 24 mandates that interior noise levels attributable to exterior sources shall not exceed 45 dB L_{dn} or CNEL in any habitable room. Title 24 also mandates that for structures containing noise-sensitive uses to be located where the L_{dn} or CNEL exceeds 60 dB, an acoustical analysis must be prepared to identify mechanisms for limiting exterior noise to the prescribed allowable interior levels. If the interior allowable noise levels are met by requiring that windows be kept closed, the design for the structure must also specify a ventilation or air conditioning system to provide a habitable interior environment.

LOCAL

TRPA Code of Ordinances

68.3.1 Single Noise Events

Single noise event threshold standards adopted by TRPA are based on the numerical value associated with the maximum measured level in acoustical energy during an event. This threshold establishes maximum noise levels of 82 dBA L_{max} at 50 feet at 3,000 rpm, 75 dBA Lmax at the shoreline, or 88-90 dBA at 3.3 feet from the engine exhaust.

68.4 Community Noise Levels

TRPA shall use community noise equivalent levels (CNELs) to measure community noise levels. The plan area statements shall set forth CNELs that shall not be exceeded by any one activity or combination of activities (See subsection 11.6.10). In addition, community noise levels shall not exceed levels existing on August 26, 1982, where such levels are known. The CNELs set forth in the plan area statements are based on the land use classification, the presence of transportation corridors, and the applicable threshold. The CNEL corridor GIS data layer indicates the location of special noise corridors for highways and the South Lake Tahoe Airport. Consistent with the adopted TRPA Threshold Standards the maximum community noise equivalent levels (CNEL) for the Tahoe Keys Area Plan 102 is 55 dBA CNEL.

68.9 Exemptions to Noise Limitations

The standards of this chapter shall not apply to noise from TRPA-approved construction or maintenance project or the demolition of structures provides such activities are limited to the hours between 8 a.m. and 6:30 p.m. The standards of this chapter shall not apply to safety signals, warning devices or emergency pressure relief valves, and other similar devices. Emergency work to protect life property shall be exempt from noise standards, as shall be fireworks used in accordance with a state or local permit.

CRITERIA FOR ACCEPTABLE VIBRATION

Vibration is like noise in that it involves a source, a transmission path, and a receiver. While vibration is related to noise, it differs in that noise is generally considered to be pressure waves transmitted through air, whereas vibration usually consists of the excitation of a structure or surface. As with noise, vibration consists of an amplitude and frequency. A person's perception to the vibration will depend on their individual sensitivity to vibration, as well as the amplitude and frequency of the source and the response of the system which is vibrating.

Vibration can be measured in terms of acceleration, velocity, or displacement. A common practice is to monitor vibration measures in terms of peak particle velocities in inches per second. Standards pertaining to perception as well as damage to structures have been developed for vibration levels defined in terms of peak particle velocities.

Human and structural response to different vibration levels is influenced by a number of factors, including ground type, distance between source and receptor, duration, and the number of perceived vibration events. **Table 6**, which was developed by Caltrans, shows the vibration levels which would normally be required to

result in damage to structures. The vibration levels are presented in terms of peak particle velocity in inches per second.

Table 6 indicates that the threshold for architectural damage to structures is 0.20 in/sec p.p.v. A threshold of 0.20 in/sec p.p.v. is considered to be a reasonable threshold for short-term construction projects.

TABLE 7: EFFECTS OF VIBRATION ON PEOPLE AND BUILDINGS

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

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

IMPACTS AND MITIGATION MEASURES

THRESHOLDS OF SIGNIFICANCE

Appendix G of the CEQA Guidelines states that a project would normally be considered to result in significant noise impacts if noise levels conflict with adopted environmental standards or plans or if noise generated by the project would substantially increase existing noise levels at sensitive receivers on a permanent or temporary basis. Significance criteria for noise impacts are drawn from CEQA Guidelines Appendix G (Items XI [a-c]).

Would the project:

a. Generate 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. Generate excessive groundborne vibration or groundborne noise levels?

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

Noise Level Increase Criteria for Long-Term Project-Related Noise Level Increases

The California Environmental Quality Act (CEQA) guidelines define a significant impact of a project if it "increases substantially the ambient noise levels for adjoining areas." Generally, a project may have a significant effect on the environment if it will substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. These standards state that a noise impact may be considered significant if it would generate noise that would conflict with local project criteria or ordinances, or substantially increase noise levels at noise sensitive land uses. The potential increase in traffic noise from the project is a factor in determining significance. Research into the human perception of changes in sound level indicates the following:

- A 3-dB change is barely perceptible,
- A 5-dB change is clearly perceptible, and
- A 10-dB change is perceived as being twice or half as loud.

A limitation of using a single noise level increase value to evaluate noise impacts is that it fails to account for pre-project noise conditions. **Table 7** is based upon recommendations made by the Federal Interagency Committee on Noise (FICON) to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based upon studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, it has been accepted that they are applicable to all sources of noise described in terms of cumulative noise exposure metrics such as the L_{dn}.

TABLE 8: SIGNIFICANCE OF CHANGES IN NOISE EXPOSURE

Ambient Noise Level Without Project, L_{dn}	Increase Required for Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more

Source: Federal Interagency Committee on Noise (FICON).

Based on the FICON data, an increase in the traffic noise level of 5 dB or more would be significant where the pre-project noise levels are less than 60 dB L_{dn}, or 3 dB or more where existing noise levels are between 60 to 65 dB L_{dn}. Extending this concept to higher noise levels, an increase in the traffic noise level of 1.5 dB or more may be significant where the pre-project traffic noise level exceeds 65 dB L_{dn}. The rationale for the FICON

criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause annoyance.

Temporary Construction Noise Impacts

With temporary noise impacts (construction), identification of "substantial increases" depends upon the duration of the impact, the temporal daily nature of the impact, and the absolute change in decibel levels. Per the TRPA Code of Ordinances, construction activities operating between 8:00 a.m. and 6:30 p.m. are exempt from the ordinance (68.9).

TRPA has not adopted any formal standard for evaluating temporary construction noise which occurs within allowable hours. For short-term noise associated with Project construction, Saxelby Acoustics recommends use of the Caltrans increase criteria of 12 dBA (Caltrans Traffic Noise Protocol, 2020), applied to existing residential receptors in the project vicinity. This level of increase is approximately equivalent to a doubling of sound energy and has been the standard of significance for Caltrans projects at the state level for many years. Application of this standard to construction activities is considered reasonable considering the temporary nature of construction activities.

PROJECT-SPECIFIC IMPACTS AND MITIGATION MEASURES

Impact 1: ***Would the project generate 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?***

Traffic Noise Increases at Off-Site Receptors

The proposed project is not predicted to cause traffic noise levels to increase by more than 1.5 dBA. At this location traffic noise levels are predicted to increase from 41.1 dBA L_{dn} to 42.6 dBA L_{dn}. If the Fresh Ketch is operational, the net increase in traffic noise level is predicted to be no more than 0.3 dBA. These increases are less than the allowable 5.0 dBA increase where existing noise levels are less than 60 dBA, as shown in **Table 7**.

Additionally, while cumulative traffic volumes were not available, it is expected that the project's contribution to cumulative noise level increases would become less as background traffic volumes increase due to non-project related traffic. Therefore, under cumulative plus project conditions, it is expected that the increase due to the proposed project would be less than 1.5 dBA.

Therefore, impacts resulting from increased traffic noise would be considered ***less-than-significant***, and no mitigation is required.

Operational Noise at Existing Sensitive Receptors

Compliance with TRPA Standards

The proposed project falls under the TRPA Tahoe Kets Area Plan 102. The maximum allowable noise level within this Plan Area is 55 dBA CNEL. The closest sensitive receptors are shown in **Figure 2**. **Figure 3** shows the noise level contours emanating from the project site. **Table 8** below compares project-generated noise levels with the TRPA standards.

TABLE 9: PROJECT-GENERATED NOISE LEVELS AT SENSITIVE RECEPTORS

Receiver	Zoning District	Noise Level Standard (dBA CNEL)	Project Noise Levels (dBA CNEL)	Complies?
1	Tahoe Keys Area Plan 102	55	42	Yes
2	Tahoe Keys Area Plan 102	55	40	Yes
3	Tahoe Keys Area Plan 102	55	45	Yes
4	Tahoe Keys Area Plan 102	55	46	Yes
5	Tahoe Keys Area Plan 102	55	46	Yes
6	Tahoe Keys Area Plan 102	55	46	Yes
7	Tahoe Keys Area Plan 102	55	44	Yes
8	Tahoe Keys Area Plan 102	55	42	Yes
9	Tahoe Keys Area Plan 102	55	41	Yes
10	Tahoe Keys Area Plan 102	55	40	Yes
11	Tahoe Keys Area Plan 102	55	40	Yes

As shown in the table, the project is predicted to expose nearby residences to noise levels up to 46 dBA CNEL. These noise levels are predicted to comply with the TRPA noise level standards.

Analysis of Significance of Long-Term Project-Related Noise Increases

The TRPA Code of Ordinances does not establish a significance threshold for increases in stationary noise sources. In the absence of a specific threshold, Saxelby Acoustics utilizes the FICON criteria to assess increases in ambient noise environment. At the nearby residences, the average ambient noise level is predicted to be 47-53 dBA CNEL based upon the ambient noise level survey at sites LT-2 and LT-4. An increase of +5.0 dBA or greater would constitute a significant increase based upon **Table 7**. The resulting sum of ambient noise (47 dBA CNEL) plus project generated noise (46 dBA CNEL) would be 49.5 dBA CNEL. This would represent a maximum noise level increase of 2.5 dBA over ambient, which is less than the +5 dBA increase criterion.

Therefore, this is a ***less-than-significant*** impact, and no mitigation is required.

Construction Noise

During the construction phases of the project, noise from construction activities would add to the noise environment in the immediate project vicinity. As indicated in **Table 4,** activities involved in construction would generate maximum noise levels ranging from 76 to 90 dBA L_{max} at a distance of 50 feet. Construction activities would also be temporary in nature and are anticipated to occur during normal daytime working hours. The TRPA Code of Ordinances exempts construction noise from the noise ordinance between the hours of 8:00 a.m. and 6:30 p.m.

Caltrans defines a significant increase due to noise as an increase of 12 dBA over existing ambient noise levels; Saxelby Acoustics used this criterion to evaluate increases due to construction noise associated with the project. As shown in **Table 4**, construction equipment is predicted to generate noise levels of up to 90 dBA L_{max} at 50 feet. Construction noise is evaluated as occurring at the center of the site to represent average noise levels generated over the duration of construction across the project site. The nearest residential uses are located approximately 250 feet to the west as measured from the center of the project site. At this distance, maximum construction noise levels would be up to 76 dBA. Existing maximum noise levels in the vicinity of the sensitive receptors ranged from 70-82 dBA during daytime hours, as measured at sites LT-2 and LT-4. This would result in an increase above existing ambient maximum noise levels of up to 6 dBA, or less. Therefore, project construction would not cause an increase of greater than 12 dBA over existing ambient noise levels.

Noise would also be generated during the construction phase by increased truck traffic on area roadways. A project-generated noise source would be truck traffic associated with transport of heavy materials and equipment to and from the construction site. This noise increase would be of short duration and would occur during daytime hours.

The project also includes off-site improvements which include trenching for a water line connection along Venice Drive East and on Tahoe Keys Blvd to the intersection with Michel Drive. This would likely include the use of a pavement cutting saw, backhoe, paving equipment, and other miscellaneous equipment within 50 feet of existing noise-sensitive receptors. At this distance, construction noise would also be expected to range between 76 to 90 dBA L_{max}. Receptors along this Tahoe Keys Blvd are located within approximately 50 feet of this activity. Therefore, construction noise would be expected to range between 76 to 90 dBA L_{max}. Based upon noise measurements collected at site LT-3, existing daytime maximum noise levels were found to range between 68-87 dBA L_{max}. Based upon the predicted off-site construction noise levels of up to 76-90 dBA L_{max}, project construction is not expected to cause an increase of greater than 12 dBA over existing ambient noise levels.

Although construction activities are temporary in nature and would occur during normal daytime working hours, construction-related noise could result in sleep interference at existing noise-sensitive land uses in the vicinity of the construction if construction activities were to occur outside the normal daytime hours. Therefore, impacts resulting from noise levels temporarily exceeding the threshold of significance due to construction would be considered ***potentially significant***. Mitigation measure 1(a) would reduce construction noise impacts to ***less-than-significant***.

Mitigation Measures

1(a) TRPA shall establish the following as conditions of approval for any permit that results in the use of construction equipment:

- Construction shall be limited to 8:00 a.m. to 6:30 p.m.
- All construction equipment powered by internal combustion engines shall be properly muffled and maintained.
- Quiet construction equipment, particularly air compressors, are to be selected whenever possible.
- All stationary noise-generating construction equipment such as generators or air compressors are to be located as far as is practical from existing residences. In addition, the project contractor shall place such stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site.
- Unnecessary idling of internal combustion engines is prohibited.
- The construction contractor shall, to the maximum extent practical, locate on-site equipment staging areas to maximize the distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.

Timing/Implementation: Implemented prior to approval of grading and/or building permits
Enforcement/Monitoring: Tahoe Regional Planning Agency

Implementation of mitigation measures 1(a) would help to reduce construction-generated noise levels. With mitigation, this impact would be considered ***less-than-significant***.

Impact 2: Would the project generate excessive groundborne vibration or groundborne noise levels?

Construction vibration impacts include human annoyance and building structural damage. Human annoyance occurs when construction vibration rises significantly above the threshold of perception. Building damage can take the form of cosmetic or structural.

The **Table 5** data indicate that construction vibration levels anticipated for the project are less than the 0.2 in/sec threshold at distances of 26 feet. Sensitive receptors which could be impacted by construction related vibrations, especially vibratory compactors/rollers, are located approximately 26 feet, or further, from typical construction activities. At these distances construction vibrations are not predicted to exceed acceptable levels. Additionally, construction activities would be temporary in nature and would likely occur during normal daytime working hours.

This is a **less-than-significant** impact and no mitigation is required.

Impact 3: ***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?***

There are no airports within two miles of the project vicinity. Therefore, this impact is not applicable to the proposed project. This is a **less-than-significant** impact, and no mitigation is required.

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Appendix A: Acoustical Terminology

Acoustics	The science of sound.
Ambient Noise	The distinctive acoustical characteristics of a given space consisting of all noise sources audible at that location. In many cases, the term ambient is used to describe an existing or pre-project condition such as the setting in an environmental noise study.
ASTC	Apparent Sound Transmission Class. Similar to STC but includes sound from flanking paths and correct for room reverberation. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Attenuation	The reduction of an acoustic signal.
A-Weighting	A frequency-response adjustment of a sound level meter that conditions the output signal to approximate human response.
Decibel or dB	Fundamental unit of sound, A Bell is defined as the logarithm of the ratio of the sound pressure squared over the reference pressure squared. A Decibel is one-tenth of a Bell.
CNEL	Community Noise Equivalent Level. Defined as the 24-hour average noise level with noise occurring during evening hours (7 - 10 p.m.) weighted by +5 dBA and nighttime hours weighted by +10 dBA.
DNL	See definition of Ldn.
IIC	Impact Insulation Class. An integer-number rating of how well a building floor attenuates impact sounds, such as footsteps. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Frequency	The measure of the rapidity of alterations of a periodic signal, expressed in cycles per second or hertz (Hz).
Ldn	Day/Night Average Sound Level. Similar to CNEL but with no evening weighting.
Leq	Equivalent or energy-averaged sound level.
Lmax	The highest root-mean-square (RMS) sound level measured over a given period of time.
L(n)	The sound level exceeded a described percentile over a measurement period. For instance, an hourly L50 is the sound level exceeded 50% of the time during the one-hour period.
Loudness	A subjective term for the sensation of the magnitude of sound.
NIC	Noise Isolation Class. A rating of the noise reduction between two spaces. Similar to STC but includes sound from flanking paths and no correction for room reverberation.
NNIC	Normalized Noise Isolation Class. Similar to NIC but includes a correction for room reverberation.
Noise	Unwanted sound.
NRC	Noise Reduction Coefficient. NRC is a single-number rating of the sound-absorption of a material equal to the arithmetic mean of the sound-absorption coefficients in the 250, 500, 1000, and 2,000 Hz octave frequency bands rounded to the nearest multiple of 0.05. It is a representation of the amount of sound energy absorbed upon striking a particular surface. An NRC of 0 indicates perfect reflection; an NRC of 1 indicates perfect absorption.
RT60	The time it takes reverberant sound to decay by 60 dB once the source has been removed.
Sabin	The unit of sound absorption. One square foot of material absorbing 100% of incident sound has an absorption of 1 Sabin.
SEL	Sound Exposure Level. SEL is a rating, in decibels, of a discrete event, such as an aircraft flyover or train pass by, that compresses the total sound energy into a one-second event.
SPC	Speech Privacy Class. SPC is a method of rating speech privacy in buildings. It is designed to measure the degree of speech privacy provided by a closed room, indicating the degree to which conversations occurring within are kept private from listeners outside the room.
STC	Sound Transmission Class. STC is an integer rating of how well a building partition attenuates airborne sound. It is widely used to rate interior partitions, ceilings/floors, doors, windows and exterior wall configurations. The STC rating is typically used to rate the sound transmission of a specific building element when tested in laboratory conditions where flanking paths around the assembly don't exist. A larger number means more attenuation. The scale, like the decibel scale for sound, is logarithmic.
Threshold of Hearing	The lowest sound that can be perceived by the human auditory system, generally considered to be 0 dB for persons with perfect hearing.
Threshold of Pain	Approximately 120 dB above the threshold of hearing.
Impulsive	Sound of short duration, usually less than one second, with an abrupt onset and rapid decay.
Simple Tone	Any sound which can be judged as audible as a single pitch or set of single pitches.

Appendix B: Contious Ambient Noise Measurement Results

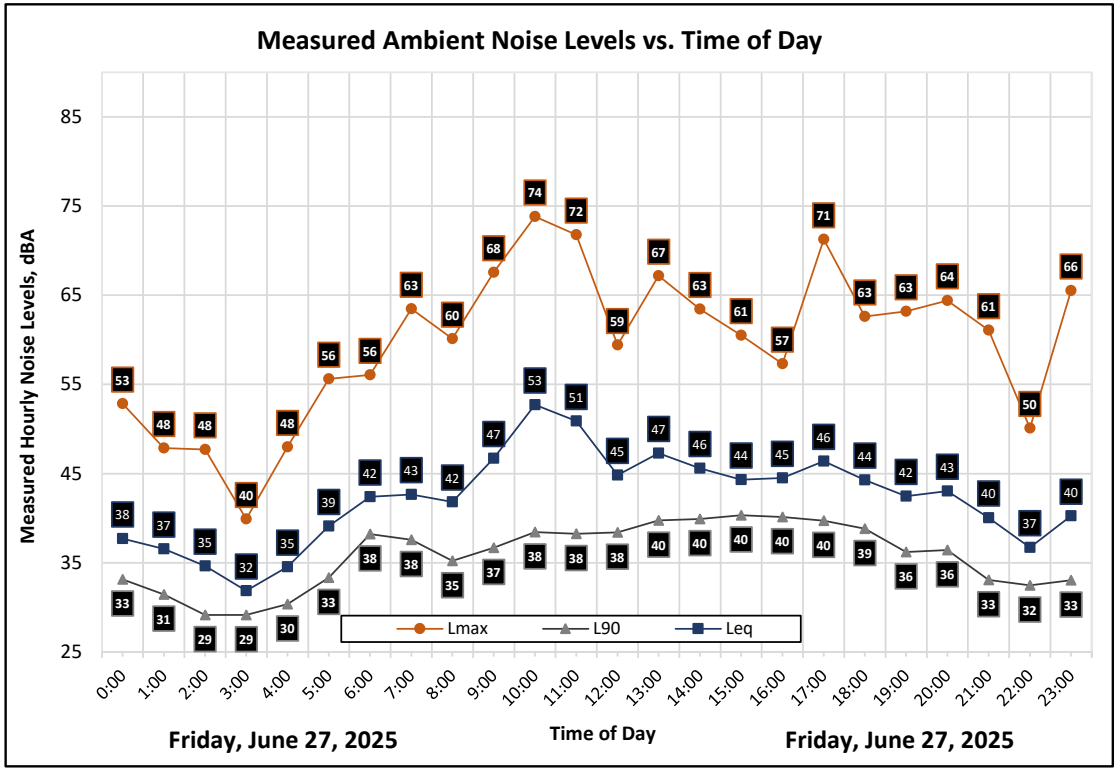


Appendix B1a: Continuous Noise Monitoring Results

Site: LT-1
Project: Tahoe Keys Marina TRPA CEQA
Location: Northern Project Boundary
Coordinates: (38.936256, -120.0025)
Meter: LDL 820-6
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, June 27, 2025	0:00	38	53	36	33
Friday, June 27, 2025	1:00	37	48	34	31
Friday, June 27, 2025	2:00	35	48	32	29
Friday, June 27, 2025	3:00	32	40	31	29
Friday, June 27, 2025	4:00	35	48	33	30
Friday, June 27, 2025	5:00	39	56	37	33
Friday, June 27, 2025	6:00	42	56	40	38
Friday, June 27, 2025	7:00	43	63	40	38
Friday, June 27, 2025	8:00	42	60	38	35
Friday, June 27, 2025	9:00	47	68	41	37
Friday, June 27, 2025	10:00	53	74	43	38
Friday, June 27, 2025	11:00	51	72	43	38
Friday, June 27, 2025	12:00	45	59	42	38
Friday, June 27, 2025	13:00	47	67	42	40
Friday, June 27, 2025	14:00	46	63	42	40
Friday, June 27, 2025	15:00	44	61	42	40
Friday, June 27, 2025	16:00	45	57	43	40
Friday, June 27, 2025	17:00	46	71	43	40
Friday, June 27, 2025	18:00	44	63	42	39
Friday, June 27, 2025	19:00	42	63	39	36
Friday, June 27, 2025	20:00	43	64	39	36
Friday, June 27, 2025	21:00	40	61	36	33
Friday, June 27, 2025	22:00	37	50	35	32
Friday, June 27, 2025	23:00	40	66	36	33

Statistics	Leq	Lmax	L50	L90
Day Average	47	64	41	38
Night Average	38	52	35	32
Day Low	40	57	36	33
Day High	53	74	43	40
Night Low	32	40	31	29
Night High	42	66	40	38
Ldn	47	Day %		92
CNEL	48	Night %		8



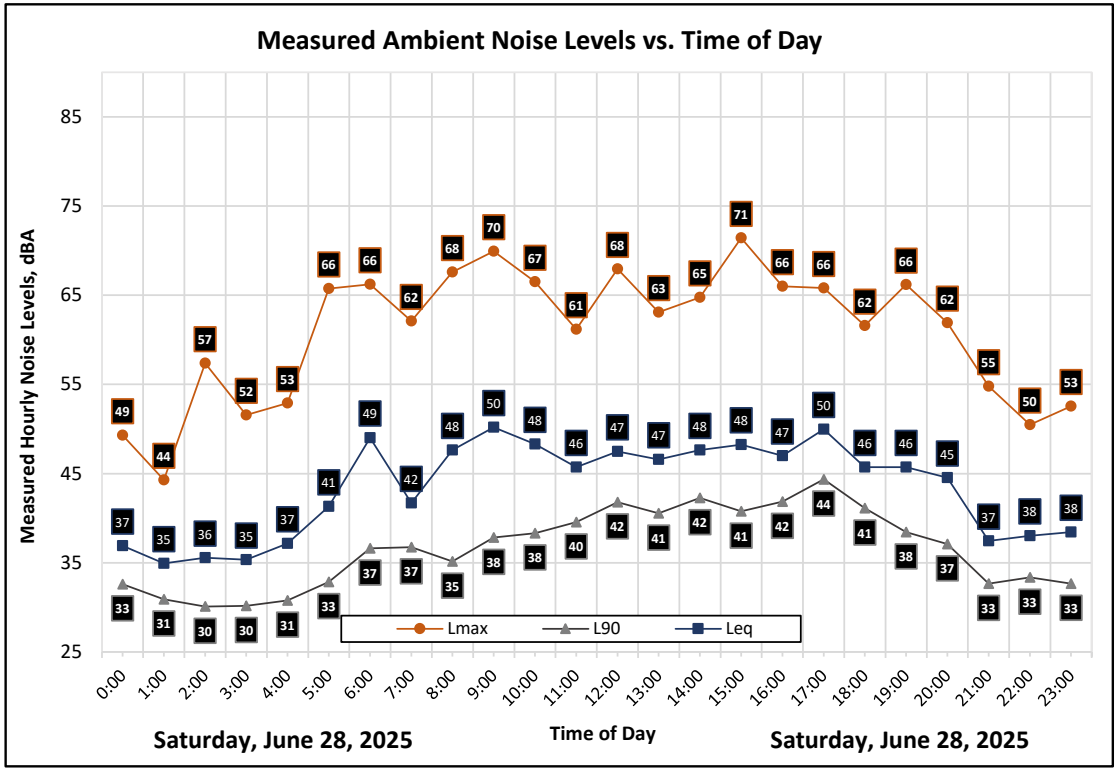


Appendix B1b: Continuous Noise Monitoring Results

Site: LT-1
Project: Tahoe Keys Marina TRPA CEQA
Location: Northern Project Boundary
Coordinates: (38.936256, -120.0025)
Meter: LDL 820-6
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, June 28, 2025	0:00	37	49	36	33
Saturday, June 28, 2025	1:00	35	44	33	31
Saturday, June 28, 2025	2:00	36	57	33	30
Saturday, June 28, 2025	3:00	35	52	33	30
Saturday, June 28, 2025	4:00	37	53	34	31
Saturday, June 28, 2025	5:00	41	66	38	33
Saturday, June 28, 2025	6:00	49	66	41	37
Saturday, June 28, 2025	7:00	42	62	39	37
Saturday, June 28, 2025	8:00	48	68	39	35
Saturday, June 28, 2025	9:00	50	70	42	38
Saturday, June 28, 2025	10:00	48	67	43	38
Saturday, June 28, 2025	11:00	46	61	43	40
Saturday, June 28, 2025	12:00	47	68	44	42
Saturday, June 28, 2025	13:00	47	63	44	41
Saturday, June 28, 2025	14:00	48	65	45	42
Saturday, June 28, 2025	15:00	48	71	44	41
Saturday, June 28, 2025	16:00	47	66	44	42
Saturday, June 28, 2025	17:00	50	66	48	44
Saturday, June 28, 2025	18:00	46	62	44	41
Saturday, June 28, 2025	19:00	46	66	42	38
Saturday, June 28, 2025	20:00	45	62	40	37
Saturday, June 28, 2025	21:00	37	55	36	33
Saturday, June 28, 2025	22:00	38	50	37	33
Saturday, June 28, 2025	23:00	38	53	37	33

Statistics	Leq	Lmax	L50	L90
Day Average	47	65	43	39
Night Average	41	54	36	32
Day Low	37	55	36	33
Day High	50	71	48	44
Night Low	35	44	33	30
Night High	49	66	41	37
Ldn	49	Day %		86
CNEL	50	Night %		14



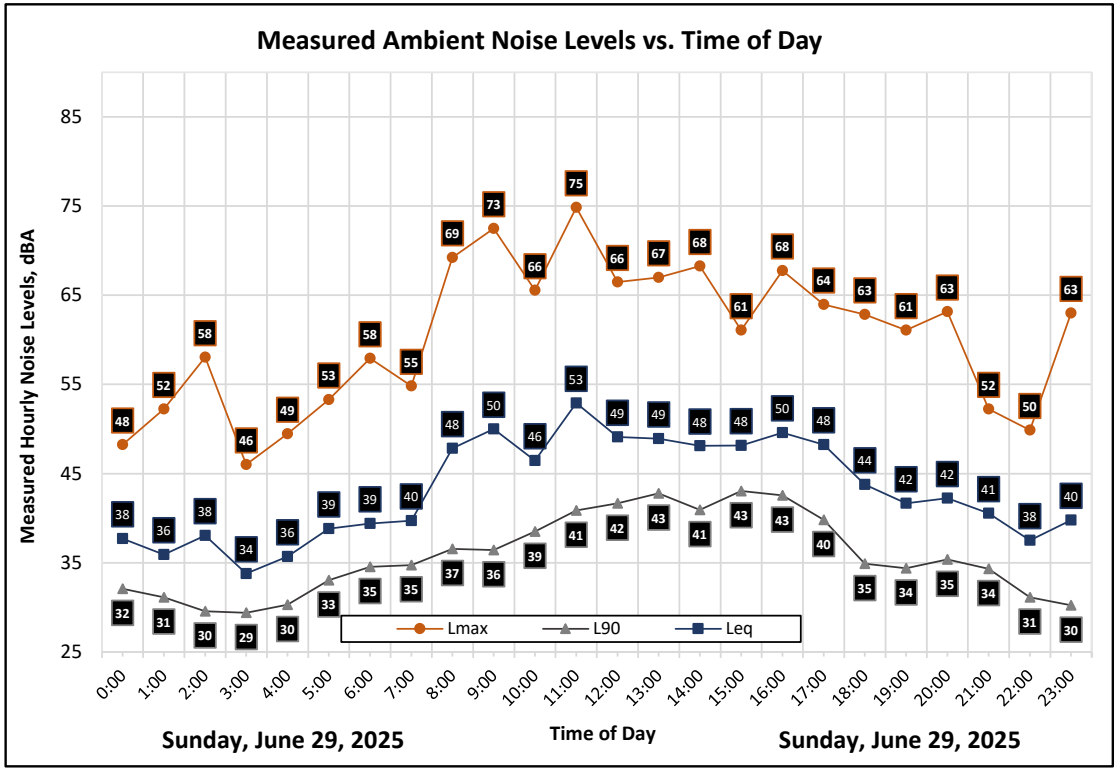


Appendix B1c: Continuous Noise Monitoring Results

Site: LT-1
Project: Tahoe Keys Marina TRPA CEQA
Location: Northern Project Boundary
Coordinates: (38.936256, -120.0025)
Meter: LDL 820-6
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Sunday, June 29, 2025	0:00	38	48	36	32
Sunday, June 29, 2025	1:00	36	52	34	31
Sunday, June 29, 2025	2:00	38	58	33	30
Sunday, June 29, 2025	3:00	34	46	32	29
Sunday, June 29, 2025	4:00	36	49	34	30
Sunday, June 29, 2025	5:00	39	53	36	33
Sunday, June 29, 2025	6:00	39	58	37	35
Sunday, June 29, 2025	7:00	40	55	38	35
Sunday, June 29, 2025	8:00	48	69	40	37
Sunday, June 29, 2025	9:00	50	73	40	36
Sunday, June 29, 2025	10:00	46	66	42	39
Sunday, June 29, 2025	11:00	53	75	45	41
Sunday, June 29, 2025	12:00	49	66	44	42
Sunday, June 29, 2025	13:00	49	67	45	43
Sunday, June 29, 2025	14:00	48	68	44	41
Sunday, June 29, 2025	15:00	48	61	45	43
Sunday, June 29, 2025	16:00	50	68	46	43
Sunday, June 29, 2025	17:00	48	64	44	40
Sunday, June 29, 2025	18:00	44	63	41	35
Sunday, June 29, 2025	19:00	42	61	39	34
Sunday, June 29, 2025	20:00	42	63	39	35
Sunday, June 29, 2025	21:00	41	52	39	34
Sunday, June 29, 2025	22:00	38	50	35	31
Sunday, June 29, 2025	23:00	40	63	34	30

Statistics	Leq	Lmax	L50	L90
Day Average	48	65	42	38
Night Average	38	53	35	31
Day Low	40	52	38	34
Day High	53	75	46	43
Night Low	34	46	32	29
Night High	40	63	37	35
Ldn	48	Day %		94
CNEL	48	Night %		6



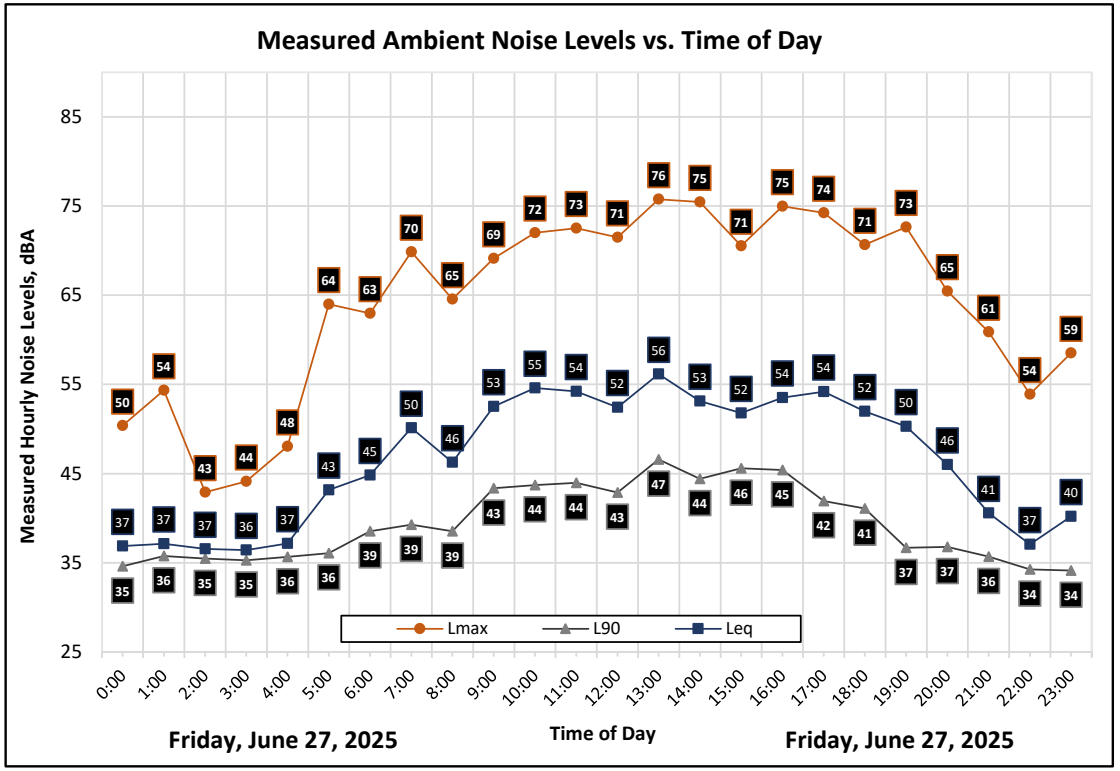


Appendix B2a: Continuous Noise Monitoring Results

Site: LT-2
Project: Tahoe Keys Marina TRPA CEQA
Location: Western Project Boundary
Coordinates: (38.935036, -120.003236)
Meter: LDL 820-8
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, June 27, 2025	0:00	37	50	36	35
Friday, June 27, 2025	1:00	37	54	37	36
Friday, June 27, 2025	2:00	37	43	36	35
Friday, June 27, 2025	3:00	36	44	36	35
Friday, June 27, 2025	4:00	37	48	37	36
Friday, June 27, 2025	5:00	43	64	39	36
Friday, June 27, 2025	6:00	45	63	41	39
Friday, June 27, 2025	7:00	50	70	44	39
Friday, June 27, 2025	8:00	46	65	42	39
Friday, June 27, 2025	9:00	53	69	49	43
Friday, June 27, 2025	10:00	55	72	48	44
Friday, June 27, 2025	11:00	54	73	50	44
Friday, June 27, 2025	12:00	52	71	48	43
Friday, June 27, 2025	13:00	56	76	54	47
Friday, June 27, 2025	14:00	53	75	50	44
Friday, June 27, 2025	15:00	52	71	49	46
Friday, June 27, 2025	16:00	54	75	50	45
Friday, June 27, 2025	17:00	54	74	47	42
Friday, June 27, 2025	18:00	52	71	47	41
Friday, June 27, 2025	19:00	50	73	40	37
Friday, June 27, 2025	20:00	46	65	42	37
Friday, June 27, 2025	21:00	41	61	37	36
Friday, June 27, 2025	22:00	37	54	36	34
Friday, June 27, 2025	23:00	40	59	36	34

Statistics	Leq	Lmax	L50	L90
Day Average	52	71	47	42
Night Average	40	53	37	36
Day Low	41	61	37	36
Day High	56	76	54	47
Night Low	36	43	36	34
Night High	45	64	41	39
Ldn	52	Day %		97
CNEL	52	Night %		3



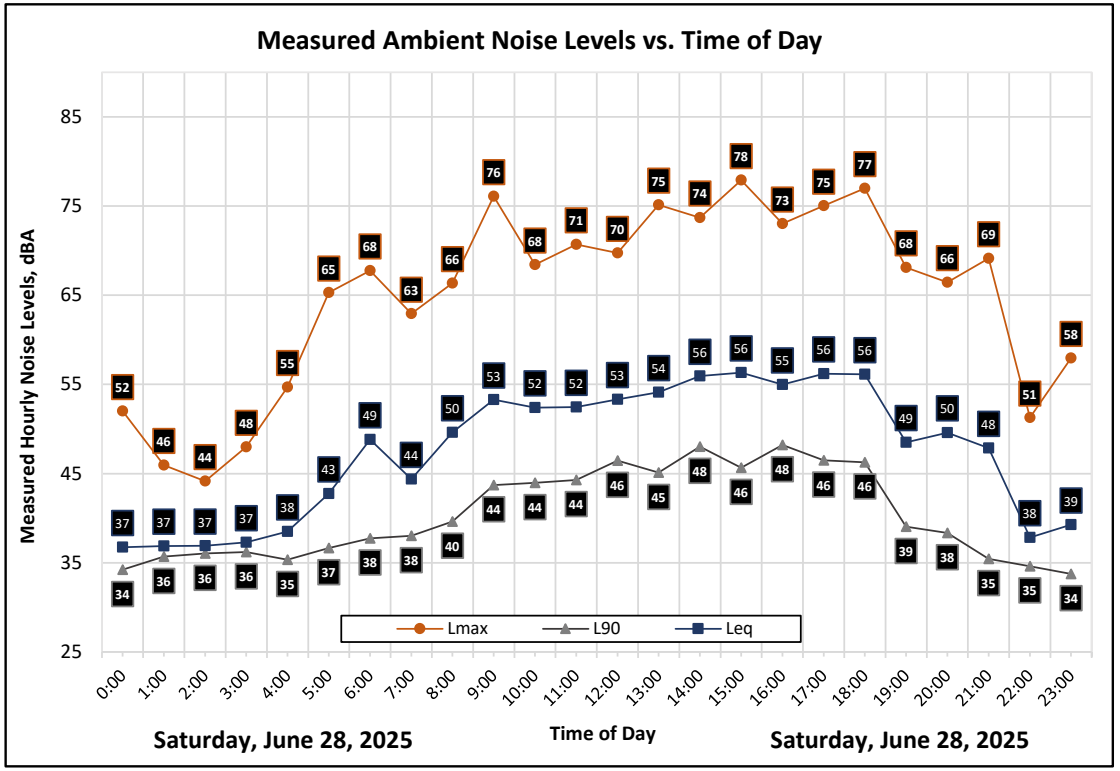


Appendix B2b: Continuous Noise Monitoring Results

Site: LT-2
Project: Tahoe Keys Marina TRPA CEQA
Location: Western Project Boundary
Coordinates: (38.935036, -120.003236)
Meter: LDL 820-8
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, June 28, 2025	0:00	37	52	36	34
Saturday, June 28, 2025	1:00	37	46	37	36
Saturday, June 28, 2025	2:00	37	44	37	36
Saturday, June 28, 2025	3:00	37	48	37	36
Saturday, June 28, 2025	4:00	38	55	36	35
Saturday, June 28, 2025	5:00	43	65	39	37
Saturday, June 28, 2025	6:00	49	68	41	38
Saturday, June 28, 2025	7:00	44	63	40	38
Saturday, June 28, 2025	8:00	50	66	44	40
Saturday, June 28, 2025	9:00	53	76	50	44
Saturday, June 28, 2025	10:00	52	68	49	44
Saturday, June 28, 2025	11:00	52	71	49	44
Saturday, June 28, 2025	12:00	53	70	51	46
Saturday, June 28, 2025	13:00	54	75	50	45
Saturday, June 28, 2025	14:00	56	74	53	48
Saturday, June 28, 2025	15:00	56	78	50	46
Saturday, June 28, 2025	16:00	55	73	51	48
Saturday, June 28, 2025	17:00	56	75	50	46
Saturday, June 28, 2025	18:00	56	77	52	46
Saturday, June 28, 2025	19:00	49	68	42	39
Saturday, June 28, 2025	20:00	50	66	42	38
Saturday, June 28, 2025	21:00	48	69	38	35
Saturday, June 28, 2025	22:00	38	51	36	35
Saturday, June 28, 2025	23:00	39	58	36	34

Statistics	Leq	Lmax	L50	L90
Day Average	53	71	47	43
Night Average	42	54	37	36
Day Low	44	63	38	35
Day High	56	78	53	48
Night Low	37	44	36	34
Night High	49	68	41	38
Ldn	53	Day %		96
CNEL	53	Night %		4



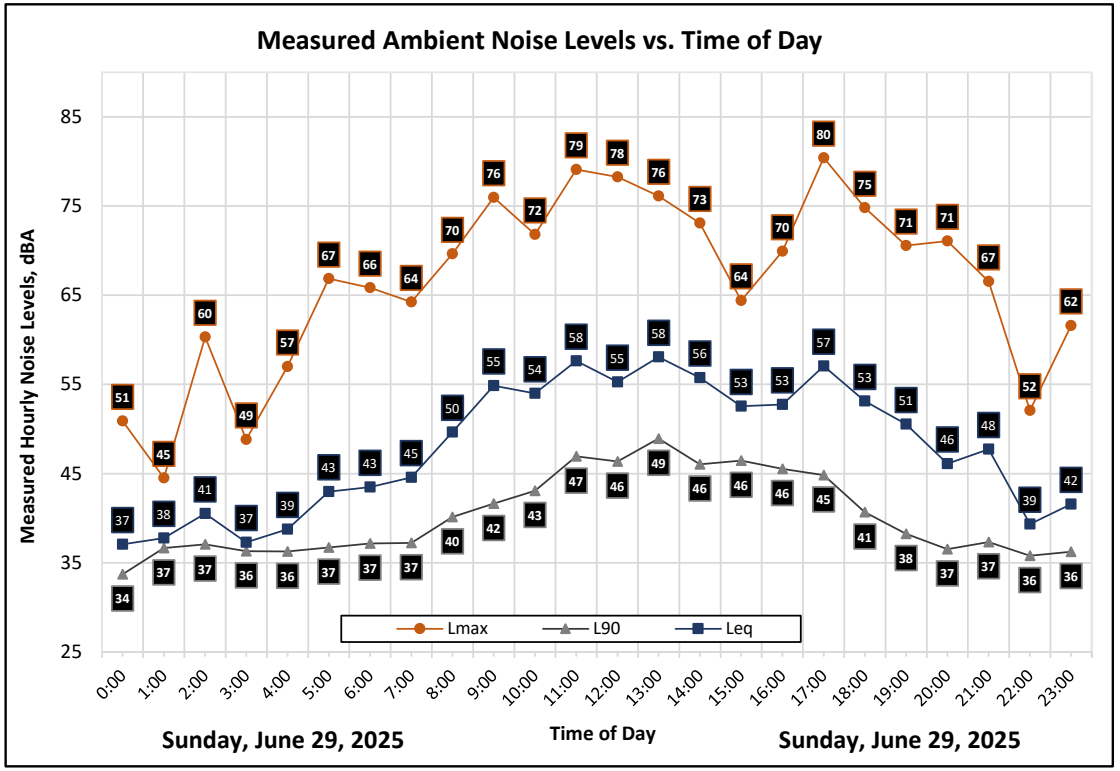


Appendix B2c: Continuous Noise Monitoring Results

Site: LT-2
Project: Tahoe Keys Marina TRPA CEQA
Meter: LDL 820-8
Location: Western Project Boundary
Calibrator: CAL200
Coordinates: (38.935036, -120.003236)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Sunday, June 29, 2025	0:00	37	51	35	34
Sunday, June 29, 2025	1:00	38	45	38	37
Sunday, June 29, 2025	2:00	41	60	38	37
Sunday, June 29, 2025	3:00	37	49	37	36
Sunday, June 29, 2025	4:00	39	57	37	36
Sunday, June 29, 2025	5:00	43	67	38	37
Sunday, June 29, 2025	6:00	43	66	39	37
Sunday, June 29, 2025	7:00	45	64	39	37
Sunday, June 29, 2025	8:00	50	70	44	40
Sunday, June 29, 2025	9:00	55	76	48	42
Sunday, June 29, 2025	10:00	54	72	49	43
Sunday, June 29, 2025	11:00	58	79	51	47
Sunday, June 29, 2025	12:00	55	78	52	46
Sunday, June 29, 2025	13:00	58	76	54	49
Sunday, June 29, 2025	14:00	56	73	54	46
Sunday, June 29, 2025	15:00	53	64	50	46
Sunday, June 29, 2025	16:00	53	70	50	46
Sunday, June 29, 2025	17:00	57	80	51	45
Sunday, June 29, 2025	18:00	53	75	48	41
Sunday, June 29, 2025	19:00	51	71	44	38
Sunday, June 29, 2025	20:00	46	71	40	37
Sunday, June 29, 2025	21:00	48	67	41	37
Sunday, June 29, 2025	22:00	39	52	37	36
Sunday, June 29, 2025	23:00	42	62	37	36

Statistics	Leq	Lmax	L50	L90
Day Average	54	72	48	43
Night Average	40	56	37	36
Day Low	45	64	39	37
Day High	58	80	54	49
Night Low	37	45	35	34
Night High	43	67	39	37
Ldn	53	Day %		97
CNEL	53	Night %		3



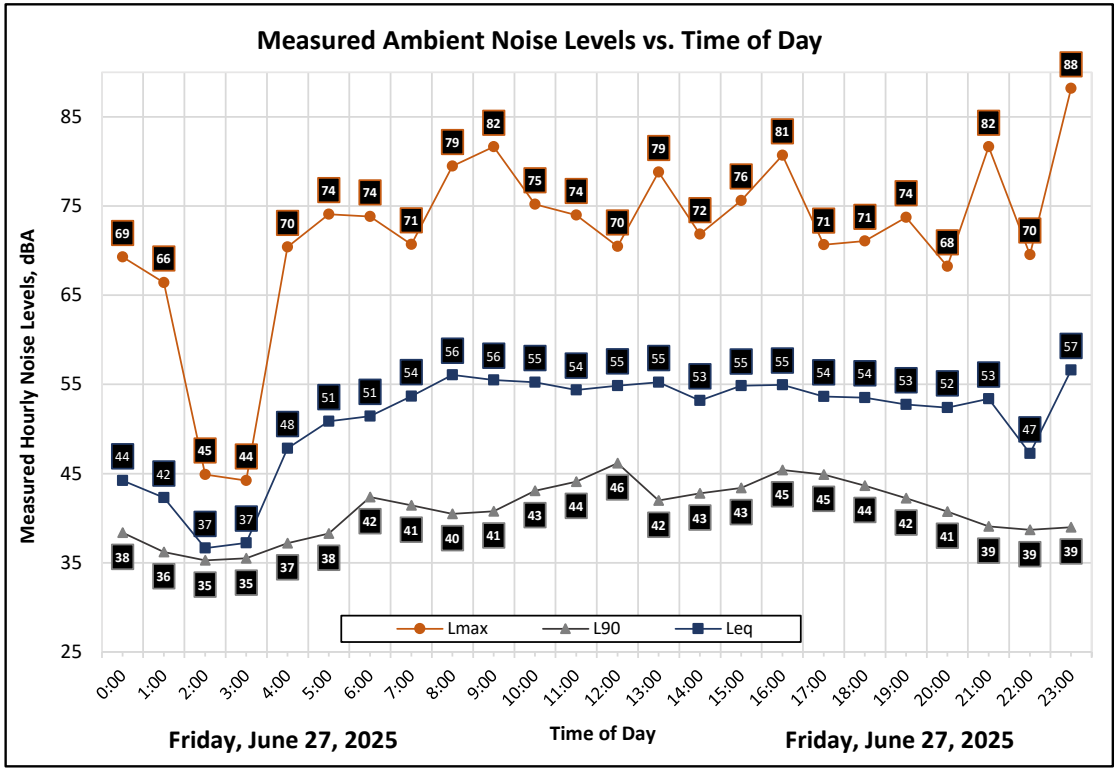


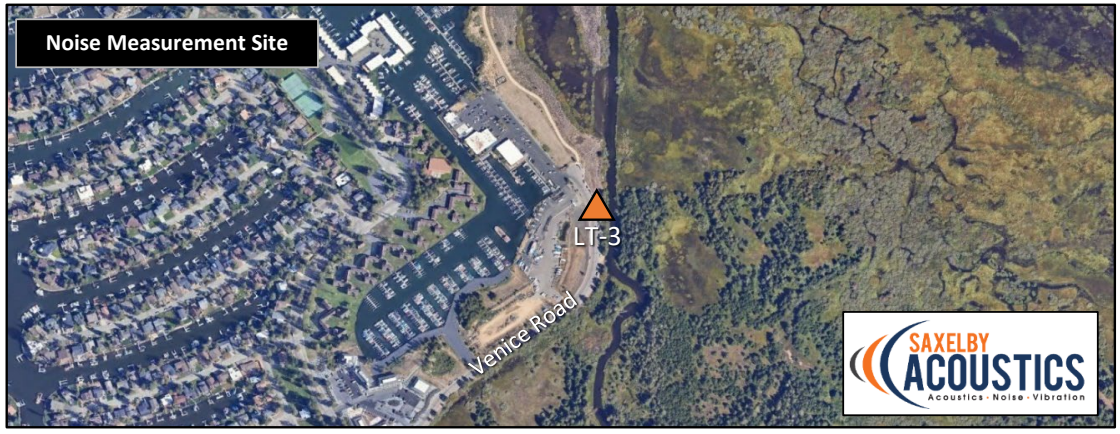
Appendix B3a: Continuous Noise Monitoring Results

Site: LT-3
Project: Tahoe Keys Marina TRPA CEQA
Location: Eastern Project Boundary
Coordinates: (38.933275, -120.000428)
Meter: LDL 820-5
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, June 27, 2025	0:00	44	69	40	38
Friday, June 27, 2025	1:00	42	66	37	36
Friday, June 27, 2025	2:00	37	45	36	35
Friday, June 27, 2025	3:00	37	44	37	35
Friday, June 27, 2025	4:00	48	70	38	37
Friday, June 27, 2025	5:00	51	74	40	38
Friday, June 27, 2025	6:00	51	74	45	42
Friday, June 27, 2025	7:00	54	71	45	41
Friday, June 27, 2025	8:00	56	79	46	40
Friday, June 27, 2025	9:00	56	82	46	41
Friday, June 27, 2025	10:00	55	75	49	43
Friday, June 27, 2025	11:00	54	74	47	44
Friday, June 27, 2025	12:00	55	70	50	46
Friday, June 27, 2025	13:00	55	79	47	42
Friday, June 27, 2025	14:00	53	72	47	43
Friday, June 27, 2025	15:00	55	76	47	43
Friday, June 27, 2025	16:00	55	81	49	45
Friday, June 27, 2025	17:00	54	71	49	45
Friday, June 27, 2025	18:00	54	71	47	44
Friday, June 27, 2025	19:00	53	74	45	42
Friday, June 27, 2025	20:00	52	68	45	41
Friday, June 27, 2025	21:00	53	82	41	39
Friday, June 27, 2025	22:00	47	70	41	39
Friday, June 27, 2025	23:00	57	88	41	39

Statistics	Leq	Lmax	L50	L90
Day Average	54	75	47	43
Night Average	50	67	40	38
Day Low	52	68	41	39
Day High	56	82	50	46
Night Low	37	44	36	35
Night High	57	88	45	42
Ldn	57	Day %		82
CNEL	58	Night %		18



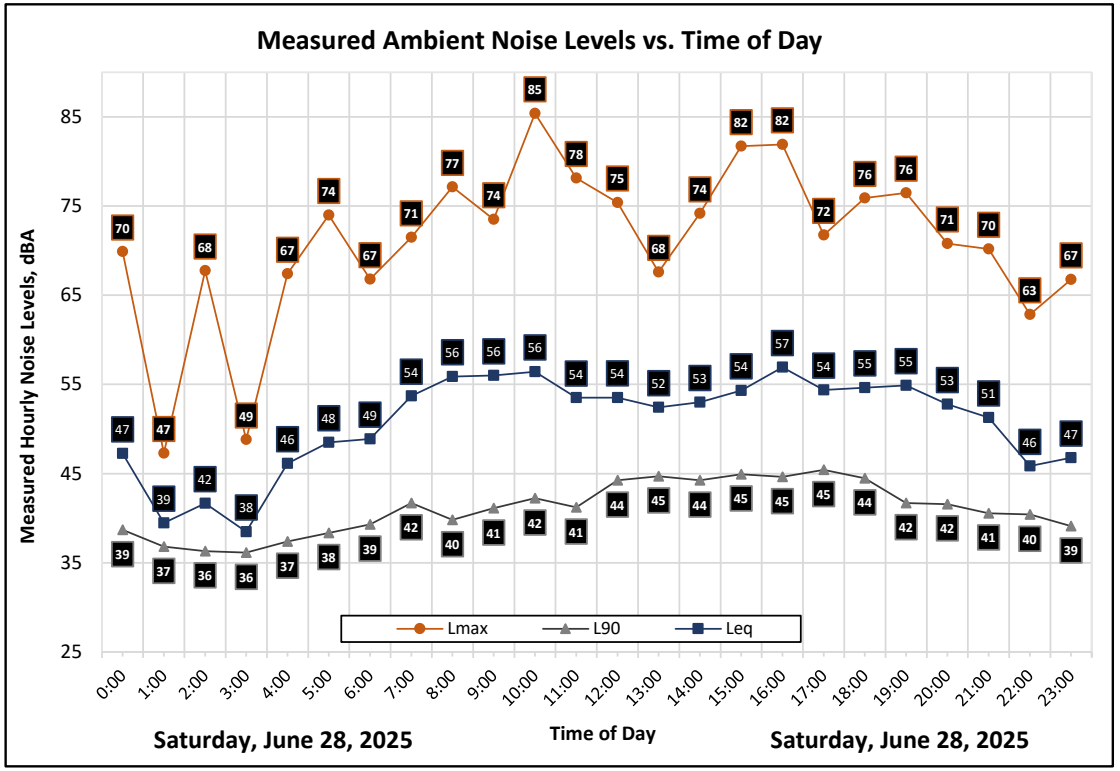


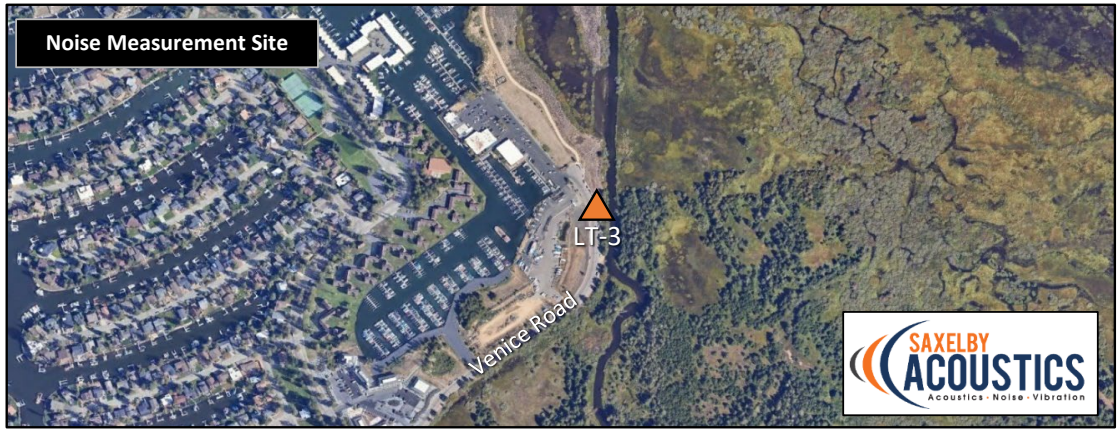
Appendix B3b: Continuous Noise Monitoring Results

Site: LT-3
Project: Tahoe Keys Marina TRPA CEQA
Location: Eastern Project Boundary
Coordinates: (38.933275, -120.000428)
Meter: LDL 820-5
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, June 28, 2025	0:00	47	70	41	39
Saturday, June 28, 2025	1:00	39	47	38	37
Saturday, June 28, 2025	2:00	42	68	38	36
Saturday, June 28, 2025	3:00	38	49	37	36
Saturday, June 28, 2025	4:00	46	67	39	37
Saturday, June 28, 2025	5:00	48	74	40	38
Saturday, June 28, 2025	6:00	49	67	42	39
Saturday, June 28, 2025	7:00	54	71	47	42
Saturday, June 28, 2025	8:00	56	77	45	40
Saturday, June 28, 2025	9:00	56	74	47	41
Saturday, June 28, 2025	10:00	56	85	49	42
Saturday, June 28, 2025	11:00	54	78	46	41
Saturday, June 28, 2025	12:00	54	75	49	44
Saturday, June 28, 2025	13:00	52	68	48	45
Saturday, June 28, 2025	14:00	53	74	48	44
Saturday, June 28, 2025	15:00	54	82	48	45
Saturday, June 28, 2025	16:00	57	82	48	45
Saturday, June 28, 2025	17:00	54	72	50	45
Saturday, June 28, 2025	18:00	55	76	48	44
Saturday, June 28, 2025	19:00	55	76	46	42
Saturday, June 28, 2025	20:00	53	71	45	42
Saturday, June 28, 2025	21:00	51	70	43	41
Saturday, June 28, 2025	22:00	46	63	43	40
Saturday, June 28, 2025	23:00	47	67	41	39

Statistics	Leq	Lmax	L50	L90
Day Average	55	75	47	43
Night Average	46	64	40	38
Day Low	51	68	43	40
Day High	57	85	50	45
Night Low	38	47	37	36
Night High	49	74	43	40
Ldn	55	Day %		92
CNEL	56	Night %		8



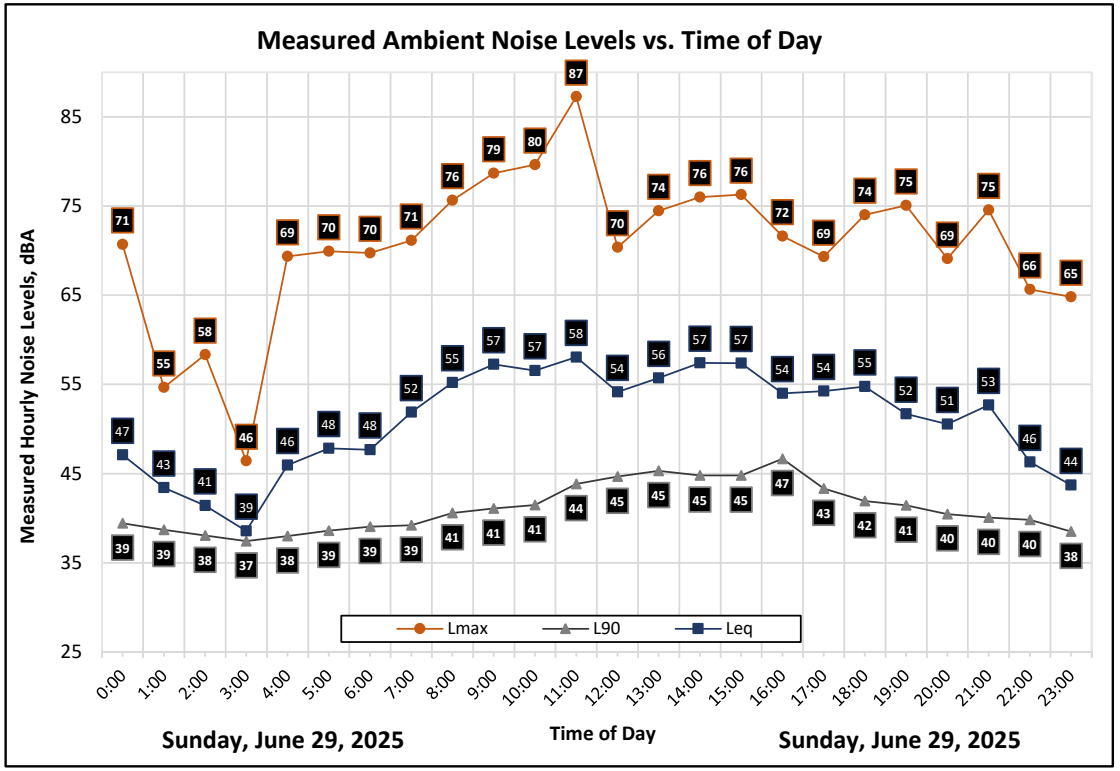


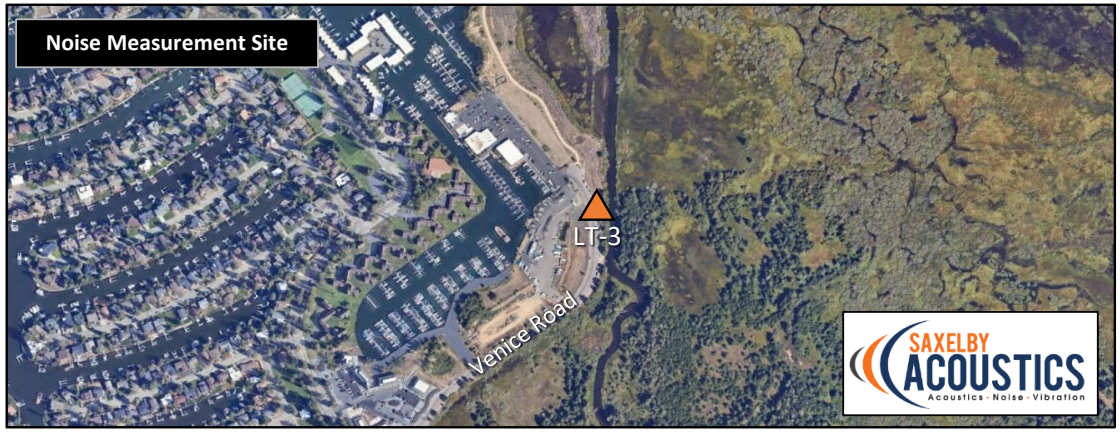
Appendix B3c: Continuous Noise Monitoring Results

Site: LT-3
Project: Tahoe Keys Marina TRPA CEQA
Location: Eastern Project Boundary
Coordinates: (38.933275, -120.000428)
Meter: LDL 820-5
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Sunday, June 29, 2025	0:00	47	71	43	39
Sunday, June 29, 2025	1:00	43	55	43	39
Sunday, June 29, 2025	2:00	41	58	39	38
Sunday, June 29, 2025	3:00	39	46	38	37
Sunday, June 29, 2025	4:00	46	69	39	38
Sunday, June 29, 2025	5:00	48	70	40	39
Sunday, June 29, 2025	6:00	48	70	41	39
Sunday, June 29, 2025	7:00	52	71	41	39
Sunday, June 29, 2025	8:00	55	76	45	41
Sunday, June 29, 2025	9:00	57	79	47	41
Sunday, June 29, 2025	10:00	57	80	46	41
Sunday, June 29, 2025	11:00	58	87	50	44
Sunday, June 29, 2025	12:00	54	70	49	45
Sunday, June 29, 2025	13:00	56	74	50	45
Sunday, June 29, 2025	14:00	57	76	49	45
Sunday, June 29, 2025	15:00	57	76	49	45
Sunday, June 29, 2025	16:00	54	72	49	47
Sunday, June 29, 2025	17:00	54	69	48	43
Sunday, June 29, 2025	18:00	55	74	47	42
Sunday, June 29, 2025	19:00	52	75	45	41
Sunday, June 29, 2025	20:00	51	69	44	40
Sunday, June 29, 2025	21:00	53	75	43	40
Sunday, June 29, 2025	22:00	46	66	43	40
Sunday, June 29, 2025	23:00	44	65	40	38

Statistics	Leq	Lmax	L50	L90
Day Average	55	75	47	43
Night Average	45	63	41	39
Day Low	51	69	41	39
Day High	58	87	50	47
Night Low	39	46	38	37
Night High	48	71	43	40
Ldn	55	Day %		94
CNEL	56	Night %		6



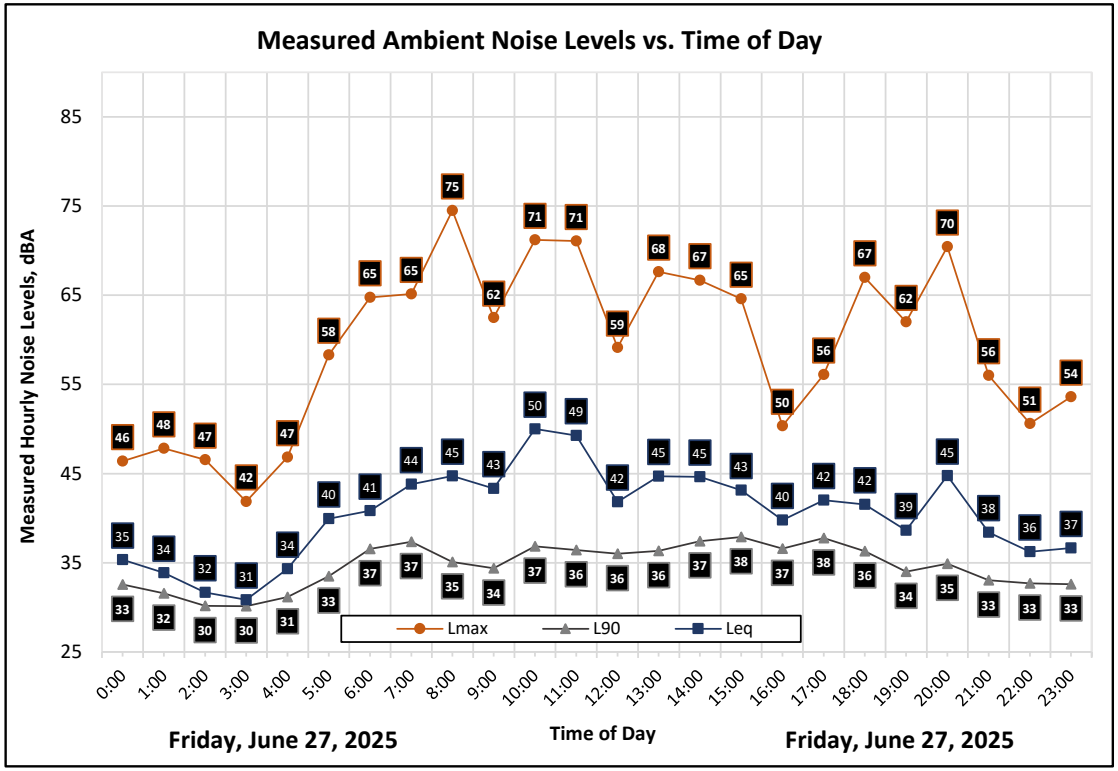


Appendix B4a: Continuous Noise Monitoring Results

Site: LT-4
Project: Tahoe Keys Marina TRPA CEQA
Meter: LDL 820-1
Location: Southern Project Boundary
Calibrator: CAL200
Coordinates: (38.932033, -120.002583)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Friday, June 27, 2025	0:00	35	46	35	33
Friday, June 27, 2025	1:00	34	48	33	32
Friday, June 27, 2025	2:00	32	47	31	30
Friday, June 27, 2025	3:00	31	42	31	30
Friday, June 27, 2025	4:00	34	47	33	31
Friday, June 27, 2025	5:00	40	58	36	33
Friday, June 27, 2025	6:00	41	65	39	37
Friday, June 27, 2025	7:00	44	65	40	37
Friday, June 27, 2025	8:00	45	75	39	35
Friday, June 27, 2025	9:00	43	62	38	34
Friday, June 27, 2025	10:00	50	71	40	37
Friday, June 27, 2025	11:00	49	71	41	36
Friday, June 27, 2025	12:00	42	59	38	36
Friday, June 27, 2025	13:00	45	68	39	36
Friday, June 27, 2025	14:00	45	67	40	37
Friday, June 27, 2025	15:00	43	65	40	38
Friday, June 27, 2025	16:00	40	50	39	37
Friday, June 27, 2025	17:00	42	56	40	38
Friday, June 27, 2025	18:00	42	67	39	36
Friday, June 27, 2025	19:00	39	62	36	34
Friday, June 27, 2025	20:00	45	70	38	35
Friday, June 27, 2025	21:00	38	56	35	33
Friday, June 27, 2025	22:00	36	51	34	33
Friday, June 27, 2025	23:00	37	54	35	33

Statistics	Leq	Lmax	L50	L90
Day Average	45	64	39	36
Night Average	37	51	34	32
Day Low	38	50	35	33
Day High	50	75	41	38
Night Low	31	42	31	30
Night High	41	65	39	37
Ldn	46	Day %		91
CNEL	46	Night %		9



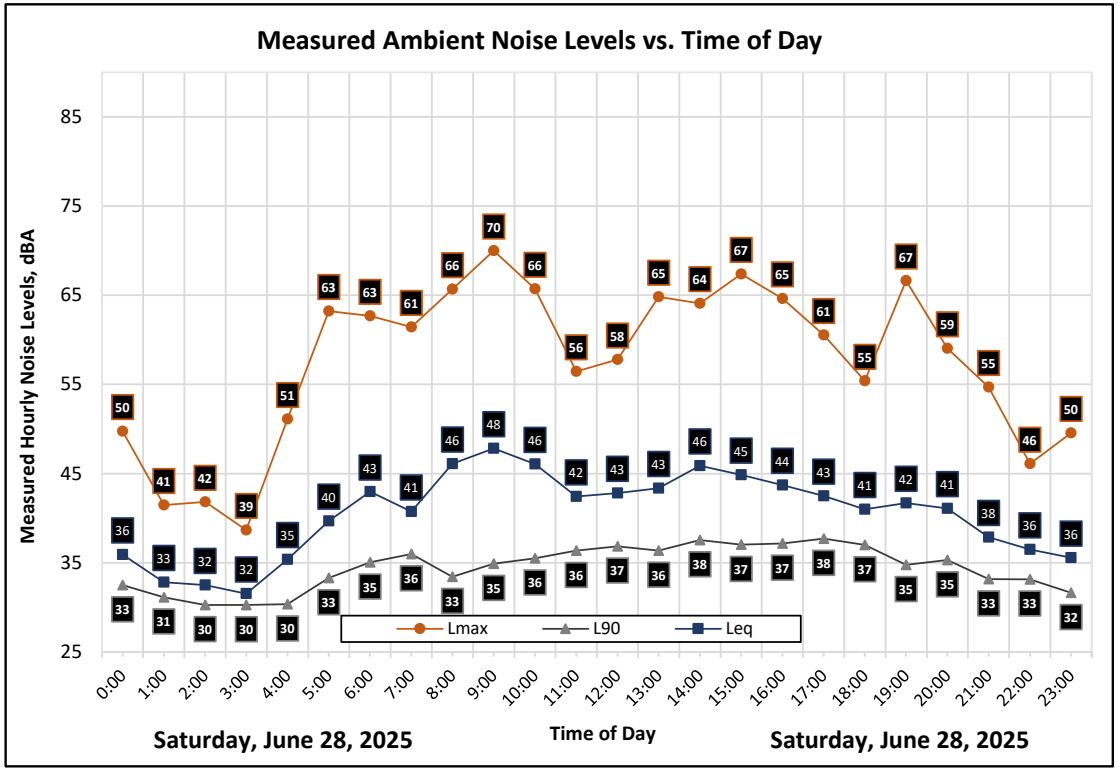


Appendix B4b: Continuous Noise Monitoring Results

Site: LT-4
Project: Tahoe Keys Marina TRPA CEQA
Location: Southern Project Boundary
Coordinates: (38.932033, -120.002583)
Meter: LDL 820-1
Calibrator: CAL200

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Saturday, June 28, 2025	0:00	36	50	34	33
Saturday, June 28, 2025	1:00	33	41	32	31
Saturday, June 28, 2025	2:00	32	42	31	30
Saturday, June 28, 2025	3:00	32	39	31	30
Saturday, June 28, 2025	4:00	35	51	33	30
Saturday, June 28, 2025	5:00	40	63	36	33
Saturday, June 28, 2025	6:00	43	63	38	35
Saturday, June 28, 2025	7:00	41	61	38	36
Saturday, June 28, 2025	8:00	46	66	37	33
Saturday, June 28, 2025	9:00	48	70	39	35
Saturday, June 28, 2025	10:00	46	66	40	36
Saturday, June 28, 2025	11:00	42	56	39	36
Saturday, June 28, 2025	12:00	43	58	39	37
Saturday, June 28, 2025	13:00	43	65	39	36
Saturday, June 28, 2025	14:00	46	64	40	38
Saturday, June 28, 2025	15:00	45	67	40	37
Saturday, June 28, 2025	16:00	44	65	39	37
Saturday, June 28, 2025	17:00	43	61	40	38
Saturday, June 28, 2025	18:00	41	55	39	37
Saturday, June 28, 2025	19:00	42	67	37	35
Saturday, June 28, 2025	20:00	41	59	38	35
Saturday, June 28, 2025	21:00	38	55	36	33
Saturday, June 28, 2025	22:00	36	46	35	33
Saturday, June 28, 2025	23:00	36	50	34	32

Statistics	Leq	Lmax	L50	L90
Day Average	44	62	39	36
Night Average	37	49	34	32
Day Low	38	55	36	33
Day High	48	70	40	38
Night Low	32	39	31	30
Night High	43	63	38	35
Ldn	46	Day %		88
CNEL	46	Night %		12



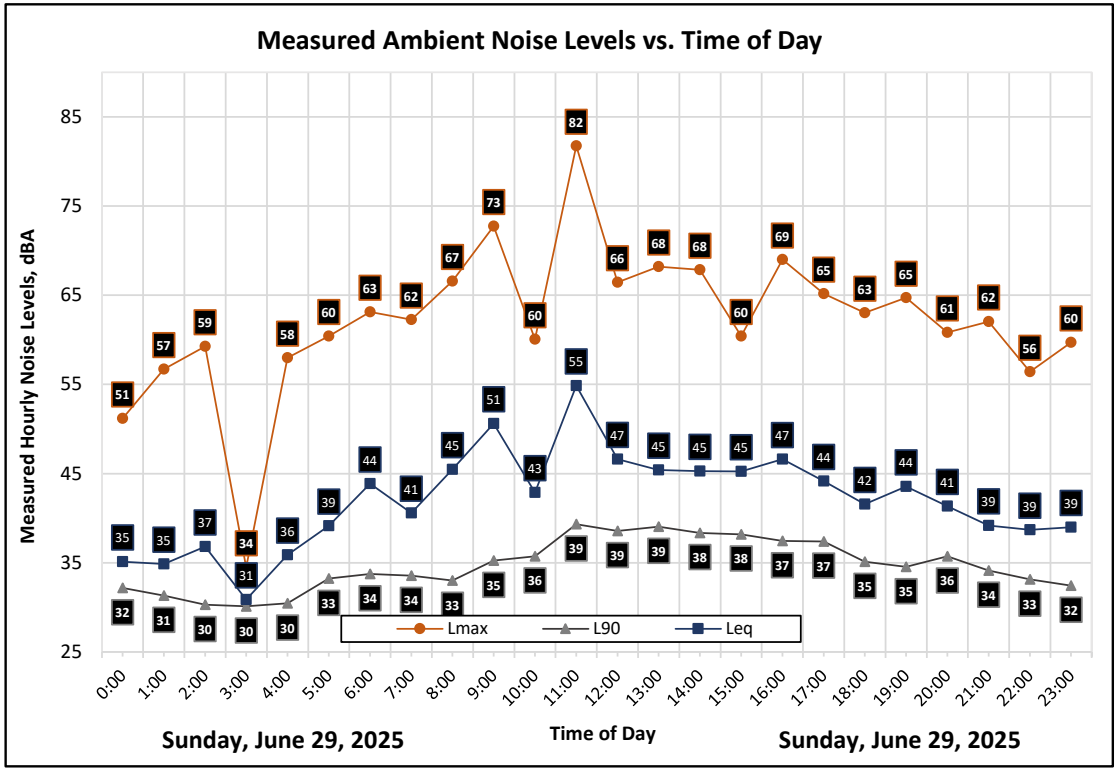


Appendix B4c: Continuous Noise Monitoring Results

Site: LT-4
Project: Tahoe Keys Marina TRPA CEQA
Meter: LDL 820-1
Location: Southern Project Boundary
Calibrator: CAL200
Coordinates: (38.932033, -120.002583)

Date	Time	Measured Level, dBA			
		L_{eq}	L_{max}	L_{50}	L_{90}
Sunday, June 29, 2025	0:00	35	51	34	32
Sunday, June 29, 2025	1:00	35	57	33	31
Sunday, June 29, 2025	2:00	37	59	31	30
Sunday, June 29, 2025	3:00	31	34	31	30
Sunday, June 29, 2025	4:00	36	58	32	30
Sunday, June 29, 2025	5:00	39	60	36	33
Sunday, June 29, 2025	6:00	44	63	37	34
Sunday, June 29, 2025	7:00	41	62	36	34
Sunday, June 29, 2025	8:00	45	67	37	33
Sunday, June 29, 2025	9:00	51	73	40	35
Sunday, June 29, 2025	10:00	43	60	38	36
Sunday, June 29, 2025	11:00	55	82	44	39
Sunday, June 29, 2025	12:00	47	66	41	39
Sunday, June 29, 2025	13:00	45	68	42	39
Sunday, June 29, 2025	14:00	45	68	41	38
Sunday, June 29, 2025	15:00	45	60	41	38
Sunday, June 29, 2025	16:00	47	69	40	37
Sunday, June 29, 2025	17:00	44	65	40	37
Sunday, June 29, 2025	18:00	42	63	38	35
Sunday, June 29, 2025	19:00	44	65	37	35
Sunday, June 29, 2025	20:00	41	61	39	36
Sunday, June 29, 2025	21:00	39	62	36	34
Sunday, June 29, 2025	22:00	39	56	35	33
Sunday, June 29, 2025	23:00	39	60	34	32

Statistics	Leq	Lmax	L50	L90
Day Average	47	66	39	36
Night Average	39	55	34	32
Day Low	39	60	36	33
Day High	55	82	44	39
Night Low	31	34	31	30
Night High	44	63	37	34
Ldn	48	Day %		92
CNEL	48	Night %		8





Appendix B: Short-Term Ambient Noise Measurement Results



Appendix B5 : Short Term Noise Monitoring Results

Site: ST-1
Project: Tahoe Keys Marina TRPA CEQA
Meter: LDL 831-2
Location: Northeastern Boundary of Project Site
Calibrator: CAL200
Coordinates: (38.935658, -120.002378)

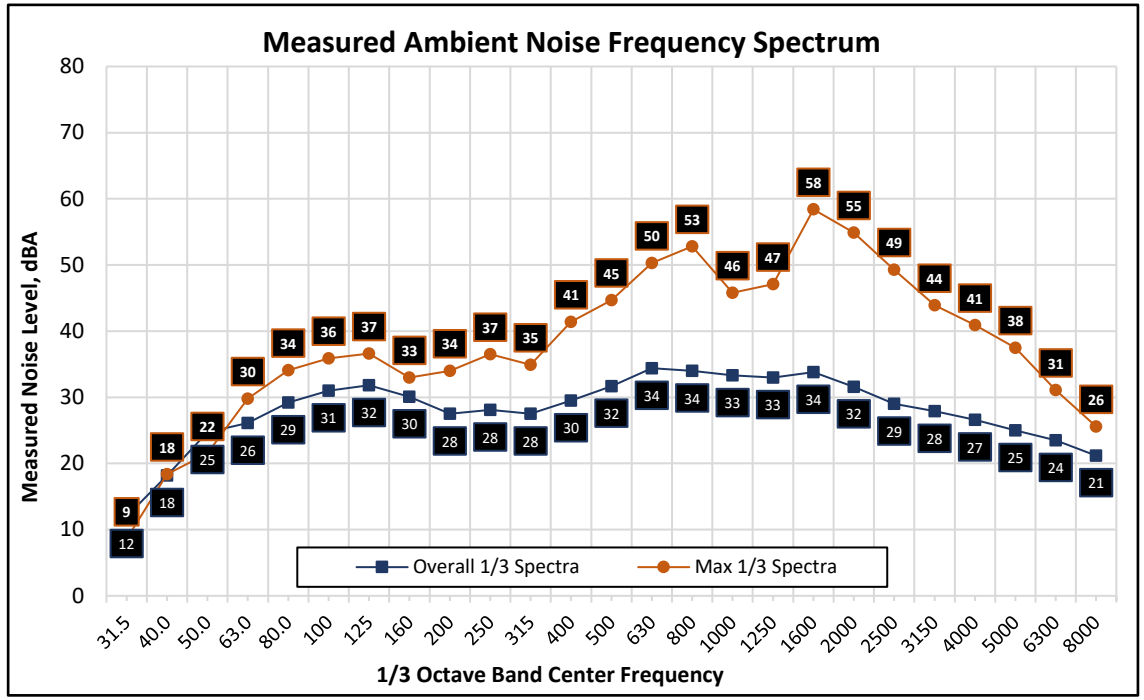
Start: 2025-06-26 13:25:11
Stop: 2025-06-26 13:35:11
SLM: Model 831
Serial: 3141

Measurement Results, dBA

Duration:	0:10
L_{eq}:	44
L_{max}:	62
L_{min}:	39
L_{50}:	43
L_{90}:	40

Notes

Primary noise source was an idling boat. Secondary noise sources include trucks circulating the project site, people walking on the nearby trail, and a leaf blower.





Appendix B6 : Short Term Noise Monitoring Results

Site: ST-2
Project: Tahoe Keys Marina TRPA CEQA
Location: Center of Project Site
Coordinates: (38.934119, -120.001442)
Meter: LDL 831-2
Calibrator: CAL200

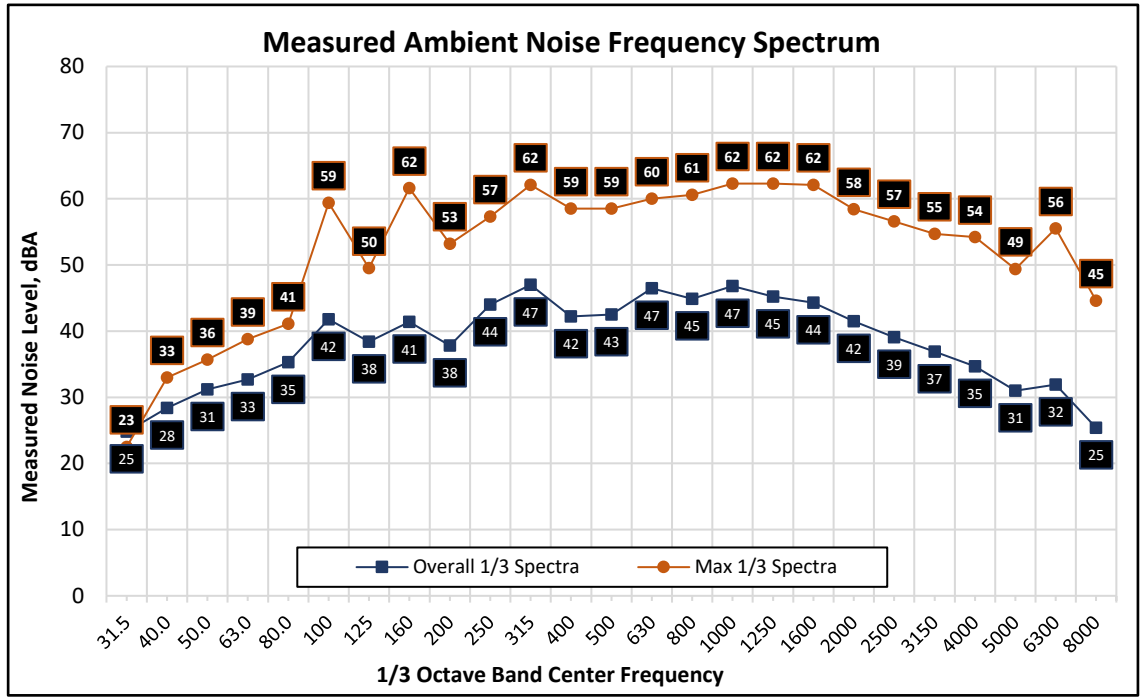
Start: 2025-06-26 14:02:17
Stop: 2025-06-26 14:12:17
SLM: Model 831
Serial: 3141

Measurement Results, dBA

Duration:	0:10
L_{eq}:	56
L_{max}:	71
L_{min}:	42
L_{50}:	55
L_{90}:	47

Notes

Primary noise source was an idling boat. Secondary noise sources include trucks/cars circulating the project site.





Appendix B7 : Short Term Noise Monitoring Results

Site: ST-3
Project: Tahoe Keys Marina TRPA CEQA
Location: Western Boundary of Project Site
Coordinates: (38.934869, -120.003092)
Meter: LDL 831-2
Calibrator: CAL200

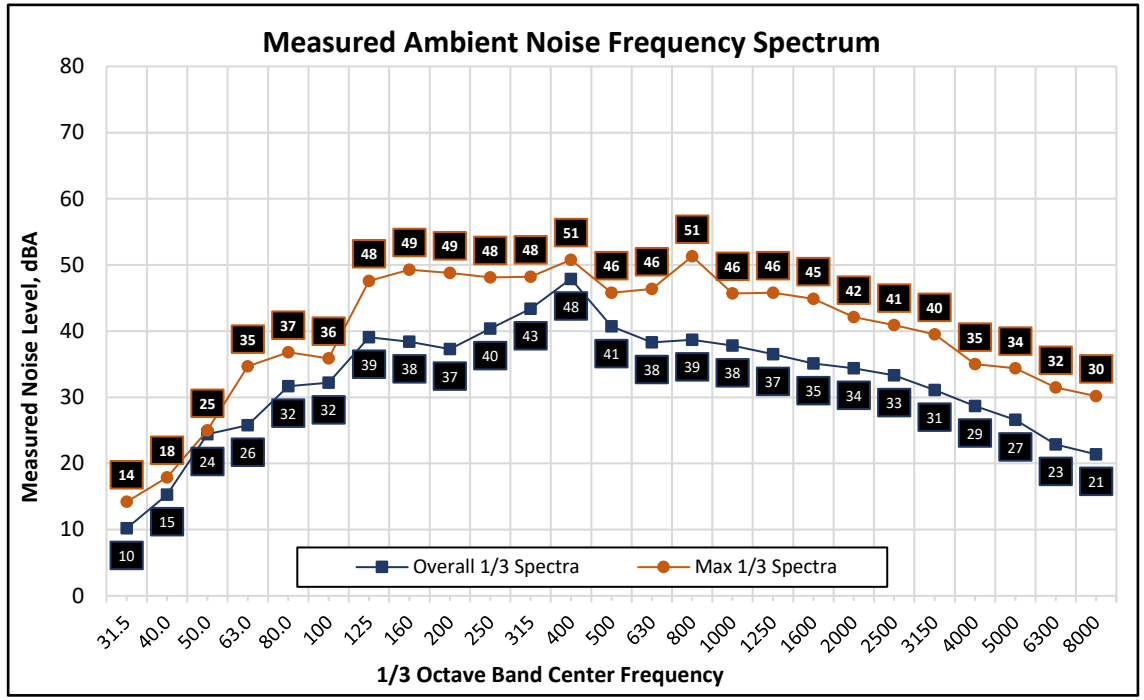
Start: 2025-06-30 11:01:32
Stop: 2025-06-30 11:11:32
SLM: Model 831
Serial: 3141

Measurement Results, dBA

Duration:	0:10
L_{eq}:	52
L_{max}:	59
L_{min}:	50
L_{50}:	51
L_{90}:	51

Notes

Primary noise source was an AC generator. Secondary noise sources include boats coming in and leaving the dock and natural sounds such as birds, wind, and waves.





Appendix B8 : Short Term Noise Monitoring Results

Site: ST-4
Project: Tahoe Keys Marina TRPA CEQA
Location: Center of Project Site
Coordinates: (38.93444, -120.00172)
Meter: LDL 831-2
Calibrator: CAL200

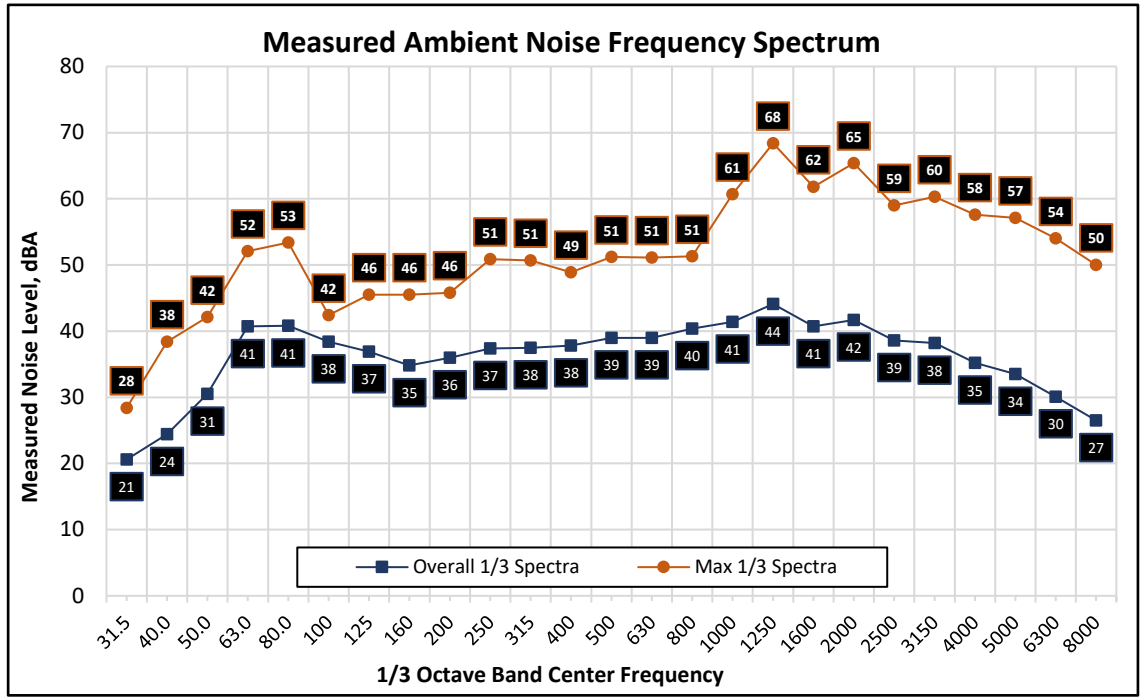
Start: 2025-06-30 11:18:14
Stop: 2025-06-30 11:28:14
SLM: Model 831
Serial: 3141

Measurement Results, dBA

Duration:	0:10
L_{eq}:	52
L_{max}:	72
L_{min}:	41
L_{50}:	47
L_{90}:	43

Notes

Primary noise source was an idling boat. Secondary noise sources include trucks/cars passing through the project site and forklift circulation.





Appendix B9 : Short Term Noise Monitoring Results

Site: ST-5
Project: Tahoe Keys Marina TRPA CEQA
Location: Southern Boundary of Project Site
Coordinates: (38.934053, -120.00105)
Meter: LDL 831-2
Calibrator: CAL200

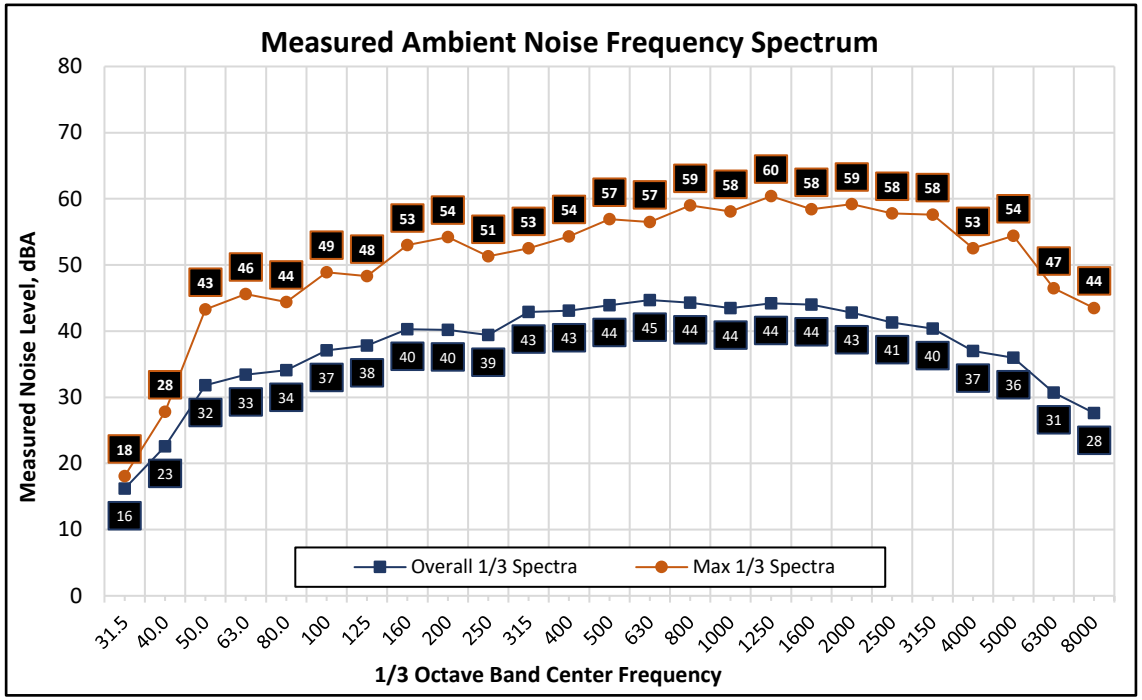
Start: 2025-06-30 11:36:45
Stop: 2025-06-30 11:46:45
SLM: Model 831
Serial: 3141

Measurement Results, dBA

Duration:	0:10
L_{eq}:	55
L_{max}:	69
L_{min}:	42
L_{50}:	50
L_{90}:	45

Notes

Primary noise source was cars/trucks passing through. Secondary noise sources include grinding, bobcat machinery, and people walking nearby.





Appendix C: Traffic Noise Calculation Inputs and Results



Appendix C-1
FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 250201 Tahoe Keys Marina
Description: Existing Traffic Counts
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Marina Access Driveway	North of Venice Dr	1,993	90	0	10	1.0%	1.0%	25	350	0	19	9	4	41.1
2	Venice Dr	East of Beach and Harbor Driveway	2,326	90	0	10	1.0%	1.0%	25	680	0	21	10	5	37.5
3	Venice Dr	West of Beach and Harbor Driveway	2,614	90	0	10	1.0%	1.0%	25	250	0	23	11	5	44.5

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Appendix C-2

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 250201 Tahoe Keys Marina
Description: Existing No Project (with Fresh Ketch Restaurant Operational)
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Marina Access Driveway	North of Venice Dr	2,657	90	0	10	1.0%	1.0%	25	350	0	23	11	5	42.4
2	Venice Dr	East of Beach and Harbor Driveway	2,990	90	0	10	1.0%	1.0%	25	680	0	25	12	5	38.5
3	Venice Dr	West of Beach and Harbor Driveway	3,278	90	0	10	1.0%	1.0%	25	250	0	27	12	6	45.5

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Appendix C-3

FHWA-RD-77-108 Highway Traffic Noise Prediction Model

Project #: 250201 Tahoe Keys Marina
Description: Existing Plus Project Traffic
Ldn/CNEL: Ldn
Hard/Soft: Soft

Segment	Roadway	Segment	ADT	Day %	Eve %	Night %	% Med. Trucks	% Hvy. Trucks	Speed	Distance	Offset (dB)	Contours (ft.) - No Offset 60 dBA	65 dBA	70 dBA	Level, dBA
1	Marina Access Driveway	North of Venice Dr	2,832	90	0	10	1.0%	1.0%	25	350	0	24	11	5	42.6
2	Venice Dr	East of Beach and Harbor Driveway	3,165	90	0	10	1.0%	1.0%	25	680	0	26	12	6	38.8
3	Venice Dr	West of Beach and Harbor Driveway	3,453	90	0	10	1.0%	1.0%	25	250	0	28	13	6	45.7

Appendix D

Transportation Study

LSC Transportation Consultants, Inc.

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TECHNICAL MEMORANDUM

DATE: March 12, 2026

TO: Eric Metz, Tahoe Keys SMI, LLC. Suntex Direct

FROM: Leslie Suen, LSC Transportation Consultants Inc.

SUBJECT: SLT Tahoe Keys Marina Redevelopment Transportation Analysis

LSC Transportation Consultants, Inc. has performed a transportation analysis for the proposed redevelopment of the Tahoe Keys Marina in the City of South Lake Tahoe, California. First, existing background traffic conditions are discussed. Next, the trip generation of the proposed project is estimated, and the following areas of impacts are addressed: Vehicle Miles Traveled Analysis for TRPA and a Parking Analysis for the City of South Lake Tahoe.

PROJECT DESCRIPTION

Tahoe Keys Marina is the largest marina (and the only inland marina) on Lake Tahoe. The marina has a full-service boat launch. In addition, the marina provides a Travel Lift and a Jib crane for sailboats. The 22-acre property has diesel and regular fuel, a number of charter vendors, and a water ski school. Within the past five years, the Fresh Ketch restaurant provided dining options for marina guests. The Cove East recreational trail is located just east of the property that leads out to a wildlife viewing area and a nice secret beach on the shores of Lake Tahoe.

Plans for a full redevelopment of the marina are underway. Upon redevelopment of the marina, there will be no change in the number of slips or the number of charter vendors. However, the existing buildings will be rebuilt to provide updated office space, retail buildings, and several restaurants. A concession management plan will be put in place upon redevelopment of the marina. As part of this plan, charter vessels with a passenger capacity of 40 and above will be required to shuttle their visitors on-site. A mixed-use building, the Boat Barn, will replace the dry storage lot. The Boat Barn will house the Tahoe Keys Property Owners Association (TKPOA) water tanks and will provide a valet boat launching service. The Boat Barn will provide additional boat storage for customers of the marina with a summer capacity of 250 vessels and a winter capacity of 430 vessels. Upon redevelopment of the marina, all proposed parking will be paid parking, including self-park and valet.

EXISTING CONDITIONS

Throughout the study area, Tahoe Keys Boulevard runs north and south as a two-lane road. Between US 50 and Venice Drive, the posted speed limit is 30 miles per hour (mph). North of Venice Drive the speed limit drops to 25 mph. Tahoe Keys Boulevard is intersected by Venice Drive at a two-way stop-controlled (TWSC) intersection. Venice Drive is a two-lane road with a posted speed limit of 25 mph. The eastern end of Venice Drive concludes at the entrances to the Tahoe Keys Marina and the Cove East recreational trail. Tahoe Keys Boulevard intersects US 50 to the south at a 3-legged signalized intersection. US 50 is a five-lane road with a posted speed limit of 40 mph.

The marina does not currently have any nearby transit options. The closest bus stop, which is serviced by Tahoe Transportation District (TTD), is located 275 ft east of the Tahoe Keys Blvd/US 50 signalized intersection or 1.5 miles south of the site. Microtransit options are also unavailable near the site. South Lake Tahoe's Lake Link microtransit service is available as far west as the Grocery Outlet located at 2358 Lake Tahoe Boulevard, South Lake Tahoe, California 96150, or 1.8 miles south of the site.

A Class II Bike Lane is found along Tahoe Keys Boulevard between Venice Drive and Eloise Avenue. This bike lane continues along Venice Drive from Tahoe Keys Boulevard east until it concludes at the Cove East recreational trail. Additional unmarked bicycle routes are located throughout the neighborhood south of the project site along Washington Avenue, Eloise Avenue, Tahoe Island Drive, and 12th Street. Both Class II bike lanes as well as sidewalks are located along US 50 near the intersection with Tahoe Keys Boulevard. A permanent bike map showing the nearby bicycle routes is posted at the intersection of Tahoe Keys Boulevard and Venice Drive just below the northbound stop sign.

This study has been updated to include counts and data collection from summer 2025. Detailed data is presented in the memo *SLT Tahoe Keys Marina Redevelopment – Summer Data Collection Summary* (LSC, August 13, 2025).

TRIP GENERATION

The first step in the analysis of traffic impacts is to prepare an estimate of the number of trips generated by the existing land uses and the proposed project. Trip generation is the evaluation of the number of vehicle-trips that will either have an origin or destination at the project site. Daily vehicle trips and peak-hour vehicle trips need to be determined to analyze the potential impacts of the proposed project.

Trip Generation of the Existing Uses

The Tahoe Keys Marina currently has a total of 305 slips. Standard daily trip-generation rates are provided in the Institute of Transportation Engineers (ITE) *Trip Generation, 12th Edition Manual* (ITE, 2025) and are applied to the marina as shown in Table 1. Accessory Uses

According to the *TRPA Code of Ordinances - Section 84.6.2.C*, accessory uses for a marina are defined as:

> Accessory Uses. Examples of accessory uses related to marinas include: marine sales and repairs, parking lots, maintenance facilities, employee facilities, secondary residence, water-oriented outdoor recreation concessions such as fishing guide services; parasailing; and recreation equipment rental; bars and restaurants, water-oriented services such as rowing clubs; boat rentals; storage and launching facilities; sport fishing activities; excursion boat and sightseeing facilities; and other marina-related activities, including but not limited to fuel sales and boat and engine repair.

Currently, all office and retail land uses are used exclusively as an accessory to the marina uses. As such, no visitors are visiting these land uses as an exclusive trip without using the marina. The existing office and retail land uses are therefore deemed accessory and are excluded from further analysis, as shown in Table 1.

The existing Fresh Ketch restaurant was a fine dining establishment. Per the client, a high level of trips were made with the sole purpose of attending the restaurant rather than as an internal trip from the marina. This restaurant is therefore considered to be a non-accessory use and is analyzed separately from the marina rate.

Though water-oriented outdoor recreation concessions are also defined as marina accessory, the Tahoe Keys Marina has a higher-than-average number of charters when compared to the size of the marina. A total of 50 charters of various sizes are available, which go out multiple times per day. Given the size of the marina, approximately 26 charters would be expected to run out of the marina and would be included in the marina trip generation. To remain conservative, the charters with a passenger capacity above 10 passengers (a total of 24 charters) are analyzed as non-accessory to the marina. The 10-passenger limit was determined to be similar to the capacity of a private boat and the average boat rental capacity. The 24 charters (with a capacity of above 10 passengers) are analyzed based on a person-trip analysis (which is further discussed below). In addition, the berths associated with these non-accessory charters are removed from the total number of berths analyzed in the marina trip generation.

Non-Accessory Charter Visitors

Table 2 presents a summary of the various charters at the marina based on a 2024 internal census taken for the marina. Per the marina staff and management personnel, commercial uses run at 100 percent occupancy on a peak summer day. To determine the number of visitor vehicles associated with the charters, the number of boats is multiplied by the passenger limit, then multiplied by the average trips per day, to result in the total number of people per day. Surveys were conducted in the summer of 2025, and respondents were then asked about the total number of individuals in their group. Of the 50 respondents, the average group size was found to be approximately 5 people per group. Of these 50 groups, a total of 71 vehicles were reported to be used to arrive at the marina, resulting in an average vehicle occupancy of 3.2 persons per vehicle, as shown in Figure 1. This results in 406 total vehicles, as shown in Table 2. As the 6-person charters and 10-person charters are deemed accessory to the marina, the total vehicles associated with the remaining charters is 294 vehicles, as shown in Table 2.

Trip generation rates for the charter visitors are shown in Table 1. Visitors are assumed to generate 2 daily trips. As charters are running continuously over the course of a day, approximately 2 percent of trips are assumed to occur during the AM Peak Hour, and 4 percent are assumed to occur during the PM peak hour.

Non-Accessory Charter Employee Trips

The commercial charters have a total of 84 employees on the peak day. Approximately 40 of these employees are assumed to be associated with non-accessory charter uses and will also need a person-trip analysis to account for these additional trips. According to the United States Census Bureau's *2023 American Community Survey 5-Year Estimates* for the city of South Lake Tahoe, the vehicle occupancy rate for workers is approximately 1.1 persons per vehicle. Applying the vehicle occupancy rate to the employees results in 36 employee vehicles for the commercial charters, as shown in Table 2. Employees are assumed to stay on-site throughout their shift, resulting in a total of 2.0 daily trips. Per marina

management, on a typically busy summer day, employees would either work an early shift starting at 6:00AM or a late shift starting at 3:00 PM.

Other Existing Land Uses

The restaurant "Fresh Ketch" and the employee housing units can be estimated using standard ITE rates. The estimate of trip generation for the restaurant is best estimated based on the most applicable use of 'Fine Dining Restaurant'. Fine dining was chosen because it meets the ITE definition through the distinction of a visitor's typical stay which exceeds one hour as opposed to casual dining in which typical stays are less than 40 minutes. Standard rates are also applied to the employee housing units based on the land use 'Multifamily (Low-Rise) Housing'. These standard rates are applied to the existing land uses, as shown in Table 1.

Reduction for Internal Trips

As is typical of a mixed-land use development, some persons generating a trip at the site would visit more than one of the land uses at the site during the same "trip." Standard traffic engineering practice dictates that a reduction in total trip generation can be applied to the project, as some of the persons generating trips at one of the land uses can access another included land use without generating an additional vehicle trip at the common site access point(s). To provide an example, trips from marina users will also travel to the restaurant (Fresh Ketch) or restaurant guests will rent a jet ski after their meal.

The portion of the persons generating a trip at a mixed-use development that would visit two or more uses within the development is based on the types of uses within the development, the size of the individual uses, and the distances between them. The proportion of trips that remain internal to the site are based upon the guidance provided in the *ITE Trip Generation Handbook* regarding internal capture within a mixed-use development. For the existing land uses, the dynamic between the restaurant land use and the marina land use (plus its accessory uses) were utilized to generate an internal reduction. An average of 28 percent reduction for daily and 14 percent for PM peak hour is identified then applied specifically to each land use. The internal percentage reductions are shown in the middle column of Table 1.

Reduction for Non-Auto Trips

Non-auto trips, such as trips made to/from the site via bike, walking, or transit, reduce trip generation. The 2018 and 2014 *Summer TRPA Travel Mode Share Survey* data were analyzed to determine non-auto reductions for the summer season. Data from the surveys conducted at the South Y Commercial area and the Ski Run area were isolated. The South Y Commercial area is the closest survey location to the project site. Though the Ski Run area is farther away, a marina is located at the end of Ski Run Boulevard and is thus a comparable site. The surveys were filtered by those with a trip purpose of work or outdoor recreation. When looking at the outdoor recreation surveys, of the 111 survey trips, 35 percent were made via non-auto modes. When looking at the surveys with a trip purpose of work, of the 56 survey trips, 46 percent were made via non-auto modes. As only 25 surveys had a trip purpose of restaurant, the general non-auto of the area was used instead. In total, for all trip purposes, of the 329 survey trips, 29 percent were made via non-auto modes.

Taking all this data into consideration, the non-auto access rate for the marina and the charter visitors is assumed to be approximately 2 percent, as those visiting a marina will likely have many items and gear, and so it would be more inconvenient to travel by non-auto means. For the employees, the non-auto

rate is estimated to be approximately 25 percent. As the employee housing units are assumed to work on-site, a non-auto reduction of 25 percent was applied to the units for work trips to/from the marina.

For the existing restaurant Fresh Ketch, the non-auto rate is conservatively assumed to be around 10 percent. The restaurant does have another access pattern that would increase this non-auto rate, as some people visit the restaurant via boat (dock and dine). Based on interviews with former restaurant owners, this accounted for about 10 percent of restaurant visitors on a busy summer day. To account for these patrons, an additional 10 percent non-auto reduction is applied to the restaurant for a total of a 20 percent non-auto reduction.

Trip Generation of Existing Uses at Site Driveways

Multiplying the land-use quantities by the ITE trip rates and taking reductions for internal and non-auto trips yields the vehicle trips generated at the site driveway for existing conditions. As shown in Table 1, the existing land uses generate a total of approximately 1,664 daily vehicle trips at the site driveway on a busy summer day, including 58 AM peak-hour vehicle trips (43 inbound plus 15 outbound) and 154 PM peak-hour vehicle trips (90 inbound plus 64 outbound).

Trip Generation of the Proposed Project

Under the TRPA definition of Marinas, many uses can be considered accessory to the Marina. But to be conservative it is assumed that some of the proposed land uses are larger than the typical Marina accessories and therefore, are not assumed to be accessory to the Marina. The accessory vs non-accessory uses are detailed in Table 1, below. For example, the coffee shop would be a typical use and is considered an accessory use while the fine dining restaurants of about 22,000 square feet are likely larger than a typical Marina restaurant and are therefore considered non-accessory. Similarly charter trips are an accessory use but 50 daily charters are likely more than the typical Marina, so all charters over 12 people were considered non-accessory.

Since the non-accessory uses will still interact with the Marnia (including all accessory uses) there will be internal trip between them. For example, a 20-person charter may make a reservation to eat at the restaurant after their charter trip. Or people who work in the office may take their boat out after work.

Marina and Land Uses

Under the proposed project, the number of slips and charters associated with the marina is assumed to be unchanged. As such, the marina and charter employees are calculated based on the same methodology as existing conditions.

Under the proposed project, a concession management plan will go into effect. As part of this plan, the charters with a passenger limit of 40 and above will be required to shuttle their visitors on-site. As such, the trip generation for the charter passengers is reduced to the passengers associated with the charters that have a passenger capacity between 13 persons and 32 persons. A separate charter shuttle analysis is performed for the larger charters (over 40 passengers). To remain conservative, a shuttle occupancy of 20 persons was assumed as shown in Table 2. The charter shuttle vehicles then have the same trip generation rates applied as the charter visitors.

On land, the redeveloped marina will include the following land uses:

- Office in Buildings A and B (Office in Building A is accessory to the marina)
- Retail in Buildings A and B (accessory to the marina)
- Grab and Go Restaurant in Building B (accessory to the marina)
- Fine Dining Restaurants in Buildings C and D

- Coffee Shop in Building C (accessory to the marina)

Standard rates are applied to the proposed land uses, as shown in Table 1.

Boat Barn

The proposed Boat Barn will replace the existing dry boat storage area and is designed to accommodate up to 250 boats during the summer season. On peak days, it is assumed the Boat Barn will be 100 percent full.

The Boat Barn will feature a valet launch service, ensuring boats are placed in the water before their owners arrive. This process will occur outside of the boat ramp area, eliminating any impact on boat ramp usage. Given the convenience of the valet launch, a higher percentage of stored boats are expected to be used compared to the existing dry storage system. It is estimated that approximately 40 percent of boats in the Boat Barn will take their boats out on peak days.

While boat storage and launching facilities are considered accessory uses to a marina, the high utilization rate of the Boat Barn effectively functions as an increase in available berths. To account for this, the trip generation analysis estimates the percentage of boats expected to be launched on peak days by applying the 40 percent usage rate to the 250 boats, or an equivalent of 100 berths. The standard marina trip generation rate is then applied as shown in Table 1.

Reduction for Internal Trips

Consistent with the existing conditions, the proportion of trips that remain internal to the site are based upon the guidance provided in the *ITE Trip Generation Handbook* regarding internal capture within a mixed-use development. For the proposed land uses, the trips between the restaurant and retail land uses and the office and marina land uses (plus its accessory uses) were utilized to generate an internal reduction. An aggregated daily 32 percent reduction is identified and is applied to the trip generation for the proposed development. The internal percentage reductions based on land use and time of day are shown in the middle column of Table 1.

Reduction for Non-Auto Trips

Non-auto trips, such as trips made to/from the site via bike, walking, or transit, reduce trip generation. Before the proposed paid parking is considered and consistent with the existing conditions, the non-auto access rate for commercial water visitors and public slips is 2 percent. The employees are assumed to have approximately a 25 percent non-auto access rate. As the employee housing units are assumed to work on-site, a non-auto reduction of 25 percent was applied to the units. For the proposed restaurants, the non-auto access rate is conservatively assumed to be around 10 percent, with an additional 10 percent due to dock and dine.

Currently, all parking at the marina is free and unreserved; upon the redevelopment of the marina, all parking spaces will be subject to payment. The new parking plan will include both a self-paid, self-parking area and a paid valet parking area. While the marina currently has 325 parking spaces, the proposed redevelopment provides 251 spaces, including 69 valet parking spaces.

The effects of implementing paid parking can be seen in the Stateline, Nevada, casino core area. As shown in the *Tahoe Blue Event Center – Parking Gate Data Summary memo* (LSC, February 2025), upon the implementation of paid parking, peak-day trips were calculated to be approximately 44 percent lower. Although the study does not specify the cause of the reduction, including finding free parking nearby, increased non-auto trips, increase in drop-off activity, it highlights that paid parking can have a significant impact on trip volumes.

However, this large reduction is not necessarily applicable to the Tahoe Key marina, given the nature of a marina, visitors typically bring gear and supplies, making non-auto, drop-off, and longer distance to free parking much less convenient. Additionally, there are no nearby transit stops. These factors further reduce the likelihood of visitors opting for non-auto travel.

To account for the effects of paid parking while maintaining a conservative approach, an additional 11 percent non-auto reduction is applied. The non-auto travel is a shift from away for standard vehicle trips to carpooling, biking, walking, and scootering trips.Note that at the time of this memo Lake Link currently does not extend to the Tahoe Keys area but plans have been announced to expand and service the area. Therefore it is assumed that Lake Link microtransit will be available when the proposed project begins operation and therefore would be another viable non-auto access option. Additionally, about one third of slips are rented by Tahoe Keys residents, with the paid parking these people would have a significant reason and it would be easy to shift to a non-auto mode of travel to the marina area.

Trip Generation of Proposed Uses at Site Driveways

Multiplying the land-use quantities by the trip rates and taking reductions for internal and non-auto yields the vehicle trips generated at the site driveways for the proposed project conditions. As shown in Table 1, the proposed land uses are forecasted to generate a total of approximately 1,839 daily vehicle trips at the site driveways on a weekday, including 58 AM peak-hour vehicle trips (42 inbound plus 16 outbound) and 191 PM peak-hour vehicle trips (113 inbound plus 78 outbound).

Trip Generation Net Impact

Comparing the daily trip generation of the proposed land uses and that of the existing land uses indicates that the proposed redevelopment would result in a net increase of 175 daily vehicle-trips (or an 11-percent increase) at the site access driveways over the course of a peak summer day. Total AM peak hour trips would remain the same, and a slight increase of 37 trips would occur during the PM peak hour.

VEHICLE-MILES TRAVELED (VMT) ANALYSIS

Vehicle-miles traveled analysis is provided to meet TRPA requirements. VMT is evaluated in accordance with the latest TRPA *Project Impact Assessment (PIA) Guidelines* (August 26, 2024). VMT analysis is conducted on an annual average daily basis, reflecting the standard for overall greenhouse gas emissions. VMT for each existing and proposed land use is calculated by multiplying peak day trip generation by a peak day-to-average annual daily factor to get average annual daily trips. Next, the average annual daily trips are multiplied by the zone's average trip length to obtain daily VMT as shown in Table 3. Per TRPA standards, the annual daily trips are multiplied by the average trip length within PIA zone 14, as TRPA only regulates VMT within the Tahoe Basin.

Peak Day to Average Annual Day Factors

Peak day trips are converted to average annual daily trips to obtain TRPA's VMT standard design time period. The peak season of the marina is summertime, defined as June through September, when the boat ramp is open and the marina is regularly operating. The off-season is defined as October through May. This peak day to average annual factor was developed for each land use as follows:

- ***Marina Visitors/Boat Barn Visitors—***Per Marina staff, the majority of those with public slips launch their boats around April or May and then retrieve their boats in September. Approximately 100 percent of those with a public slip will go out on a peak day. However, during the peak season, on average, public slip owners will go out on average 2.5 times per week.

Based on this, the peak day-to-average annual day factor for marina visitor trip generation is estimated to be 0.30. This factor is also applied to the trips associated with the proposed Boat Barn.

- ***Charter Visitors—***During peak season, all 50 charters are operational. During the off-season, the majority of charters are pulled from the water and shut down for the season. However, a few charters operate year-round. Based upon a review of the seasonal variation for commercial water visitors, the peak day-to-average annual day factor for commercial water visitor trip generation is estimated to be 0.42.

- ***Marina Employees (excluding restaurant employees)—***The majority of employees associated with the marina are seasonal workers. However, some of the marina staff work full-time at the marina. Based upon a review of the seasonal variation for the employees, the peak day-to-average annual day factor for the employee trip generation is estimated to be 0.46.

- ***Restaurants—*** The existing restaurant is comprised of all indoor seating and thus no reductions to average annual day are warranted. The proposed restaurants have outdoor seating areas with table service that will be closed in the winter. Of the 22,744 square feet of dining 8,151 will be outdoor dinning. Therefore for 6 months of the year the restaurant square footage will be reduce to 64% of the total restaurant area. This equates to a peak day to average annual day factor of 0.82. This equate to a total of an 18 percent reduction in VMT for the outdoor seating being closed in the colder months. As directed by TRPA staff, land uses that are closed seasonally may be removed when calculating VMT on an average annual basis.

- ***Office—***Typical offices are open 5 out of 7 days per week. This calculates to a peak day to average annual factor of 0.71.

The peak day-to-average annual day factors for remaining uses are assumed to be 1.0, which indicates the use is operational consistently every day of the year.

Average Trip Length

The final data element needed to define VMT is the average vehicle-trip length (in miles). The proposed project is located in PIA zone 14. In this zone, the Tahoe Basin Average Trip Length is 5.31 miles. PIA zone 14 is composed of the marina and some residences located in the Tahoe Keys neighborhood north of Venice Drive. Therefore this trip length is determined to be appropriate for the proposed marina redevelopment trips as well. For VMT within the Tahoe Basin, this trip length is applied to all land uses for both the existing and the proposed project, as shown in the TRPA VMT Analysis portion of Table 3.

VMT Associated with Seasonal Launches

A total of 2,851 vessels are associated with the marina slips, TKPOA launches, the Tahoe Keys Beach and Harbor Association, and additional launches based on TRPA stickers. All seasonal launches are assumed to launch once per year in the spring and retrieve their boats in the fall. Assuming each vessel has an inbound and outbound trip associated with the launch and retrieval, results in a total of 11,398 trips for the year associated with seasonal launches. Dividing the total trips by 365 days in a year results in a total of 32 average annual daily trips.

Existing VMT

The VMT analysis for the marina is summarized in Table 3. For this multi-use project, each land use is analyzed independently and then summed. As shown in the upper portion of Table 3, the total daily vehicle trips on an average day are calculated to be 1,063 trips for the existing land uses. Multiplying this figure by the average trip length for each use category and summing over all categories yields a total annual average daily VMT generated by the marina of 5,644 VMT within the Tahoe Basin. Of this total, over half (62 percent) is generated by the restaurant.

Proposed VMT

The VMT analysis for the marina is summarized in Table 3. For this multi-use project, each land use is analyzed independently and then summed. As shown in the lower portion of Table 3, the total daily vehicle trips on an average annual day is calculated to be 1,104 trips for the proposed project. Multiplying this figure by the average trip length for each use category and summing over all categories yields a total annual average daily VMT generated by the marina of 5,862 VMT within the Tahoe Basin. Of this total, 32 percent is generated by the marina, Boat Barn, and charters, while 65 percent is generated by the multiple restaurants.

Project's Impact on VMT

As shown in Table 3, the marina redevelopment would result in a net increase in annual average Tahoe Basin daily VMT of 218 VMT (or a 4-percent increase) compared to the existing marina. Based on current TRPA standards, the low-VMT screening criteria based on the project location is 715 daily VMT. The project is therefore considered to have a less than significant impact on VMT and can be screened as a low-VMT generating project.

PARKING ANALYSIS

This parking analysis is provided to meet City of South Lake Tahoe requirements.

Parking Demand of the Proposed Project

The applicable parking code for this project is the City of South Lake Tahoe Code, which establishes parking requirements for marina uses based on the number of slips and employees. Consistent with the trip generation methodology, the non-accessory charters, fine dining restaurants, and office spaces are excluded from the standard marina rate and analyzed separately.

The number of peak-day employees associated with the marina under proposed conditions is as follows:

- Suntex (includes Boat Barn employees) – 23
- Accessory Charters – 44
- Non-Accessory Charters – 40
- Boat Rentals – 30
- Boat Showroom – 6
- Valet – 10

To ensure an accurate representation of marina parking demand, the marina rate was applied to the 281 slips (305 total slips minus the 24 non-accessory charter slips), the effective berths associated with the proposed Boat Barn, and the 113 marina employees. Additionally, to avoid double-counting of employees, the three employees residing in the on-site employee housing units are assumed to already

be parked on site and, therefore, removed from the marina employee line item, resulting in a calculation for 110 marina employees.

Non-Accessory Charter Parking Demand

As charter shuttles could be accommodated near the side of the boat barn out of the way of parking or travel back to their designated pickup area, the passengers associated with the charters with a passenger limit of 40 or more are excluded from analysis. The *Tahoe Keys Marina Master Plan* (May 2002) determined parking demand for tour boats based on passenger capacity, with a rate of one space per three passengers. Applying this rate to the 325 passengers associated with non-accessory charters results in the required charter-related parking demand.

For non-accessory charter employees, a person-trip analysis is conducted. The marina employee parking rate is applied, with a 1.1 vehicle occupancy factor used for charter employees.

Additional Parking Considerations

For the remaining uses, the City of South Lake Tahoe Code parking ratio was applied. The rate for the employee housing units is based on the multi-family rate and the number of bedrooms in each unit. Since all employee housing units contain more than one bedroom, additional guest parking is required, resulting in a total demand of 6 spaces for residents and 1 space for guests. Table 4 presents the evaluation of the parking demand associated with the proposed land uses.

Parking Demand

After applying the parking reductions, the resulting peak parking demand for the project is 369 spaces (before shared parking) as summarized in Table 4.

Shared Parking Analysis

Not all of the individual land uses generate peak parking needs at the same time of day. For example, a fine dining restaurant's peak parking demand occurs between 7:00 PM and 9:00 PM whereas an office building's parking demand will peak at 10:00 AM. A "shared parking" analysis of parking needs for each hour of the day is therefore conducted. Using the methodology presented in the Urban Land Institute's *Shared Parking Manual* (February 1, 2020*)*, this analysis applies a series of factors reflecting the proportion of parking demand in each hour to the parking demand during the peak hour. These proportions are shown in Table 5.

For the marina and boat barn, the percentages were based on a combination of "public park/open destination" and "active entertainment". For the charter visitors, a peak parking demand was based on the charter schedules. For the marina employees, the client has indicated that employees will work one of two shifts. The two shifts are assumed to be from 6:00 AM – 3:00 PM and 3:00 PM – 12:00 AM. Assuming half of the employees work one shift and the remaining work the other shift, a peak parking demand is based on these two shifts.

The peak parking demand for the site as a whole is expected to occur midday (from 2:00 PM to 3:00 PM, when almost all uses are at peak occupancy), with 291 spaces.

Proposed Parking Supply

A total of 251 parking spaces are proposed. The parking supply includes 69 triple-stacked valet spaces in the parking lot. Comparing this to the parking demand results in a deficit of 40 parking spaces.

Parking Mitigation

As the project results in a parking deficit in the peak hour, the client has agreed to implement an employee parking program. This program would involve encouraging an increase in non-auto access, providing carpool matching resources, and implementing a limit to each charter's employee parking allowance. Upon implementation of this program, the employee parking demand would be reduced by approximately 50 percent. Note to be conservative this reduction in parking is not assumed to reduce trips or VMT because while some employees will shift to carpools and non-auto modes, some employees will take rideshares or get dropped off. The increase in trips from rideshares and dropping off and pick up may negate the reduction from carpools and non-auto trips. Therefore, to be conservative no reduction to VMT or trips is assumed with implementation of the employee parking program.

The estimated impact of this mitigation measure is shown in Table 6. As shown, implementing this mitigation measure resolves the parking space shortfall down to a five parking space shortfall. The 5-space shortfall would only occur rarely for 1 hour on a peak summer Saturday or about 13 hours a year (on the 13 peak summer Saturdays). Therefore, this parking deficit is considered negligible, and the project is considered to have adequate parking with the employee parking program.

CONCLUSIONS

The following conclusions are made based on this analysis:

- The existing marina currently generates approximately 1,664 daily vehicle trips, with 58 in the AM peak hour and 154 trips in the PM peak hour.
- The proposed project is expected to generate approximately 1,839 daily vehicle trips, with 58 in the AM peak hour and 191 in the PM peak hour.
- The project's impact on trip generation is an increase of 175 daily trips, no increase in AM peak hour trips, and an increase of 37 PM peak hour trips.
- The existing project generates approximately 5,644 average annual daily VMT.
- The proposed project is estimated to generate 5,862 average annual daily VMT.
- The project's impact on VMT would be an increase of 218 average annual daily VMT and is therefore below the 715 low-VMT generating project screening criteria and is screened out of further analysis.
- The total peak parking demand, accounting for shared parking, is 291 parking spaces. As the proposed parking supply is 251 parking spaces, there is a parking deficit of 40 parking spaces.
- Implementing an employee parking program would reduce the employee parking demand by approximately 50 percent which would resolve the parking deficit.

Table 1: Tahoe Keys Marina Redevelopment - Trip Generation Analysis

Description	ITE Code	ITE Land Use	Quantity	Unit	Trip Generation Rates[1]							Percent Reduction for Internal Trips			Percent Reduction for Non-Auto Trips[2]	Project Generated Vehicle Trips at Site Access Points						
						AM Peak Hour			PM Peak Hour								AM Peak Hour			PM Peak Hour		
					Daily	In	Out	Total	In	Out	Total	Daily	AM Peak Hour	PM Peak Hour		Daily (DVTE)	In	Out	Total	In	Out	Total
Existing Uses																						
Marina[3]	420	Marina	281	Berths	2.61	0.02	0.05	0.07	0.13	0.08	0.21	28%	0%	20%	2%	517	6	13	19	28	18	46
Existing Office Space	712	Small Office Building	22.204	KSF	Accessory to the Marina																	
Existing Retail Space	822	Strip Retail Plaza	12.603	KSF	Accessory to the Marina																	
Charter Visitors[4]		*Person-Trip Analysis*	294	Visitor Vehicles	2.00	0.02	0.00	0.02	0.01	0.02	0.04	28%	0%	20%	2%	415	6	0	6	3	6	9
Charter Employees[4]		*Person-Trip Analysis*	36	Employee Vehicles	2.00	1.00	0.00	1.00	0.00	0.50	0.50	0%	0%	0%	25%	54	27	0	27	0	14	14
Employee Housing	220	Multifamily (Low-Rise)	3	DU	6.21	0.10	0.31	0.41	0.32	0.20	0.52	0%	0%	0%	25%	14	0	1	1	1	0	1
The Fresh Ketch Restaurant	931	Fine Dining Restaurant	15.002	KSF	79.03	0.33	0.08	0.41	5.59	2.51	8.10	30%	0%	14%	20%	664	4	1	5	58	26	84
TOTAL EXISTING USE												**28%**	**0%**	**14%**		**1,664**	**43**	**15**	**58**	**90**	**64**	**154**
Proposed Uses																						
Marina[3]	420	Marina	281	Berths	2.61	0.02	0.05	0.07	0.13	0.08	0.21	32%	13%	18%	13%	434	5	10	15	25	17	42
Additional Marina Uses (Buildings 1-4)[5]	420	Marina	14.931	KSF	Accessory to the Marina																	
Building A Office	712	Small Office Building	7.398	KSF	Accessory to the Marina																	
Building A and B Retail	822	Strip Retail Plaza	13.485	KSF	Accessory to the Marina																	
Building B Restaurant	933	Fast Food Restaurant no Drive-Through	4.777	KSF	Accessory to the Marina																	
Building C Coffee Shop	936	Coffee/Donut Shop no Drive-Through	1.850	KSF	Accessory to the Marina																	
Boat Barn[6]	420	Marina	100	Berths	2.61	0.02	0.05	0.07	0.13	0.08	0.21	32%	13%	18%	13%	154	2	3	5	9	6	15
Charter Visitors[4]		*Person-Trip Analysis*	206	Visitor Vehicles	2.00	0.02	0.00	0.02	0.01	0.02	0.04	32%	13%	18%	13%	244	3	0	3	2	4	6
Charter Employees[4]		*Person-Trip Analysis*	36	Employee Vehicles	2.00	1.00	0.00	1.00	0.00	0.50	0.50	0%	0%	0%	36%	46	23	0	23	0	12	12
Charter Shuttles[4,7]		*Person-Trip Analysis*	16	Shuttle Vehicles	2.00	0.02	0.00	0.02	0.01	0.02	0.04	0%	0%	0%	0%	32	0	0	0	0	1	1
Employee Housing	220	Multifamily (Low-Rise)	3	DU	6.21	0.10	0.31	0.41	0.32	0.20	0.52	0%	0%	0%	25%	14	0	1	1	1	0	1
Building B Office	712	Small Office Building	8.763	KSF	14.39	1.36	0.28	1.64	0.73	1.43	2.16	50%	25%	50%	27%	46	7	1	8	2	5	7
Building C Restaurant	931	Fine Dining Restaurant	9.551	KSF	79.03	0.33	0.08	0.41	5.59	2.51	8.10	30%	50%	16%	31%	365	1	0	1	31	14	45
Building D Restaurant	931	Fine Dining Restaurant	13.193	KSF	79.03	0.33	0.08	0.41	5.59	2.51	8.10	30%	50%	16%	31%	504	1	1	2	43	19	62
TOTAL PROPOSED USE												**30%**	**13%**	**18%**		**1,839**	**42**	**16**	**58**	**113**	**78**	**191**
PROJECT NET IMPACT																***175***	***-1***	***1***	***0***	***23***	***14***	***37***

NOTE: DVTE = Daily Vehicle Trip Ends; KSF = 1,000 square feet

Note 1: Standard daily trip and weekday PM rates are provided in the ITE Trip Generation, 12th Edition manual (2025).

Note 2: Non-Auto trips include travel made via boat for Dock and Dine. For the proposed uses, non-auto trips includes increased carpool, walk, bike, and TART connect usage due to paid parking.

Note 3: The marina rate includes uses associated with the slips, boat rentals, marina employees and day launches. The marina rate is based on ITE 11th edition.

Note 4: These are the 'Non-Accessory Charters' from Table 2 and are therefore not included in the marina land use.

Note 5: Additional marina uses includes common area, bathrooms and various support areas.

Note 6: As the Boat Barn will have regular activity out on the water due to the valet service, the Boat Barn is analyzed based on an effective number of berths.

Note 7: Under proposed conditions, the 40+ passenger charters will be required to shuttle their visitors on-site.

Source: LSC Transportation Consultants, Inc.

Table 2: Tahoe Keys Marina Redevelopment - Peak Day Charter Visitors

Description	Accessory to the Marina	# of Boats	Passenger Limit	Total Peak Passengers	Trips per Day	People per Day	Vehicle Occupancy	Daily Vehicles
Existing Commercial Charters								
6-Person Charter	Accessory	21	6	126	2	252	3.2	80
10-Person Charter	Accessory	5	10	50	2	100	3.2	32
13-Person Charter	Non-Accessory	15	13	195	2	390	3.2	122
16-Person Charter	Non-Accessory	1	16	16	2	32	3.2	10
18-Person Charter	Non-Accessory	1	18	18	2	36	3.2	12
20-Person Charter	Non-Accessory	2	20	40	2	80	3.2	26
24-Person Charter	Non-Accessory	1	24	24	2	48	3.2	16
32-Person Charter	Non-Accessory	1	32	32	2	64	3.2	20
40-Person Charter	Non-Accessory	1	40	40	2	80	3.2	26
48-Person Charter	Non-Accessory	1	48	48	2	96	3.2	30
49-Person Charter	Non-Accessory	1	49	49	2	98	3.2	32
Subtotal Accessory Charters		*26*		*176*		*352*		*112*
Subtotal Non-Accessory Charters		*24*		*462*		*924*		*294*
Subtotal All Existing Charters		***50***		***638***		***1,276***		***406***
Proposed Commercial Charters								
6-Person Charter	Accessory	21	6	126	2	252	3.2	80
10-Person Charter	Accessory	5	10	50	2	100	3.2	32
13-Person Charter	Non-Accessory	15	13	195	2	390	3.2	122
16-Person Charter	Non-Accessory	1	16	16	2	32	3.2	10
18-Person Charter	Non-Accessory	1	18	18	2	36	3.2	12
20-Person Charter	Non-Accessory	2	20	40	2	80	3.2	26
24-Person Charter	Non-Accessory	1	24	24	2	48	3.2	16
32-Person Charter	Non-Accessory	1	32	32	2	64	3.2	20
40-Person Charter[1,2]	Non-Accessory	1	40	40	2	80	20	4
48-Person Charter[1,2]	Non-Accessory	1	48	48	2	96	20	6
49-Person Charter[1,2]	Non-Accessory	1	49	49	2	98	20	6
Subtotal Accessory Charters		*26*		*176*		*352*		*112*
Subtotal Non-Accessory Charters (<40 passengers)		*21*		*325*		*650*		*206*
Subtotal Non-Accessory Charters (≥40 passengers)		*3*		*137*		*274*		*16*
Subtotal All Proposed Charters		***50***		***638***		***1,276***		***334***

Note 1: Under proposed conditions, passenger charter vessels with 40 or more passengers will be required to shuttle their visitors on-site.

Note 2: The average shuttle vehicle is assumed to be a minibus that can accommodate 20 visitors.

Source: LSC Transportation Consultants, Inc.

Table 3: Tahoe Keys Marina Redevelopment - Vehicle Miles Traveled (VMT)

Description	Peak Day Trips [1]	Peak Day - to - Average Annual Factor	Average Annual Daily Vehicle Trips	TRPA VMT Analysis: Tahoe Basin Average Trip Length (Miles)[2]	TRPA VMT Analysis: Annual Average Daily Tahoe Basin VMT	TRPA VMT Analysis: % of Total Avg Daily VMT
Existing Uses						
Marina	517	0.30	155	5.31	824	15%
Charter Visitors	415	0.42	173	5.31	918	16%
Charter Employees	54	0.46	25	5.31	132	2%
Employee Housing	14	1.00	14	5.31	74	1%
The Fresh Ketch Restaurant	664	1.00	664	5.31	3,526	62%
Seasonal Launches	-	-	32	5.31	170	3%
Total Exisitng Marina	**1,664**		**1,063**		**5,644**	
Proposed Uses						
Marina	434	0.30	130	5.31	691	12%
Charter Visitors	244	0.42	102	5.31	540	9%
Charter Employees	46	0.46	21	5.31	113	2%
Employee Housing	14	1.00	14	5.31	74	1%
Building D Restaurant	504	0.82	413	5.31	2,195	37%
Seasonal Launches	-	-	32	5.31	170	3%
Charter Shuttles	32	0.42	13	5.31	71	1%
Boat Barn Launches	154	0.30	46	5.31	245	5%
Building B Office	46	0.71	33	5.31	174	3%
Building C Restaurant	365	0.82	299	5.31	1,589	28%
Total Proposed Use	**1,839**		**1,104**		**5,862**	
PROJECT NET IMPACT	**175**		**41**		**218**	
Percent Change	*11%*		*4%*		*4%*	
Low VMT Screening Criteria for TRPA					**715**	
VMT Mitigation Needed					0	

DU= Dwelling Unit. KSF = 1,000 Square Feet

Shaded cells indicate new uses.

Note 1: Reference Table 2 for trip generation of existing and proposed land uses.

Note 2: The Tahoe Keys Marina is located in PIA Zone 14 which has a zone average trip length of 5.31 miles.

Source: LSC Transportation Consultants, Inc.

Table 4: Tahoe Keys Marina Redevelopment - Parking Analysis

Description	Quantity	Unit	Parking Ratio Category		Parking Rate[1]	Required Parking Spaces for Individual Use	Internal Reduction	Non-Auto Reduction	Peak Parking Spaces Required After Reductions
Proposed Uses									
Marina	281	Slips	Marina	0.33	spaces per slip	94	18%	13%	67
	110	Employees[2,3]	Marina	1.00	space per employee	110	0%	36%	70
Boat Barn	100	Slips	Marina	0.33	spaces per slip	33	18%	13%	24
Charter Peak Passengers[4]	325	Passengers	Person-Trip	0.33	spaces per passenger	108	18%	13%	77
Charter Employees	36	Employee Vehicles	Person-Trip	1.00	space per employee vehicle	36	0%	36%	23
Employee Housing	3	DU	Employee Housing	2	spaces per 2+ bedroom unit	6	0%	0%	6
				1	guest space per 4 units	1	0%	0%	1
Building 3 + 4 Restaurants - Fine Dining	22.7	KSF	Eating and Drinking Places	1	space per 150 square feet	152	16%	31%	88
Office	8.8	KSF	Professional Office	1	space per 250 square feet	35	50%	27%	13
TOTAL PROPOSED USE						**575**			**369**

NOTE: DU = Dwelling Units; KSF = 1,000 square feet

Note 1: Parking rates are found in the South Lake Tahoe City Code sections 6.10.410 and 6.85.030

Note 2: Marina employees include employees with Suntex, the Boat Barn, Boat Rentals, Boat Showroom, Accessory Charter and the valet.

Note 3: Employees from the employee housing were removed from this number to avoid double counting.

Note 4: Total passengers assumes each charter is at maximum capacity. Excludes the accessory charters and the large charters that are shuttled in.

Source: LSC Transportation Consultants, Inc. and South Lake Tahoe City Code

Table 5: Tahoe Keys Marina Redevelopment - Hourly Shared Parking Demand

Hour of Day	Marina/ Boat Barn	Non-Accessory Charter Visitors	Marina and Charter Employees	Fine Dining Restaurant	Office	Employee Housing	Total Peak Demand		
Individual Use Demand	91	77	93	88	13	7	369		
Hourly Variation in Parking Demand (Percent of Peak Demand)									
6 am	1%	4%	50%	0%	3%	89%			
7 am	5%	13%	50%	3%	14%	91%			
8 am	10%	26%	50%	7%	48%	92%			
9 am	25%	42%	50%	11%	88%	92%			
10 am	50%	51%	50%	26%	100%	92%			
11 am	65%	57%	50%	47%	96%	92%			
12 pm	85%	62%	50%	77%	79%	92%			
1 pm	95%	64%	50%	77%	82%	92%			
2 pm	100%	66%	75%	69%	95%	92%			
3 pm	95%	64%	100%	45%	91%	92%			
4 pm	90%	57%	75%	54%	79%	92%			
5 pm	95%	49%	50%	79%	56%	94%			
6 pm	100%	38%	50%	96%	23%	96%			
7 pm	95%	25%	50%	100%	14%	100%			
8 pm	90%	13%	50%	100%	5%	100%			
9 pm	65%	4%	50%	100%	3%	100%			
10 pm	10%	0%	50%	96%	1%	100%			
11 pm	0%	0%	50%	50%	0%	98%			
12 am	0%	0%	50%	15%	0%	95%			
Parking Demand							**Total Hourly Demand**	**Proposed Parking Spaces[1]**	**Parking Deficit/ Surplus**
6 am	1	3	47	0	0	6	57	251	194
7 am	5	10	47	3	2	6	73	251	178
8 am	9	20	47	6	6	6	94	251	157
9 am	23	32	47	10	11	6	129	251	122
10 am	46	39	47	23	13	6	174	251	77
11 am	59	44	47	41	12	6	209	251	42
12 pm	77	48	47	68	10	6	256	251	-5
1 pm	86	49	47	68	11	6	267	251	-16
2 pm	91	51	70	61	12	6	291	251	-40
3 pm	86	49	93	40	12	6	286	251	-35
4 pm	82	44	70	48	10	6	260	251	-9
5 pm	86	38	47	70	7	7	255	251	-4
6 pm	91	29	47	84	3	7	261	251	-10
7 pm	86	19	47	88	2	7	249	251	2
8 pm	82	10	47	88	1	7	235	251	16
9 pm	59	3	47	88	0	7	204	251	47
10 pm	9	0	47	84	0	7	147	251	104
11 pm	0	0	47	44	0	7	98	251	153
12 am	0	0	47	13	0	7	67	251	184

Source: Shared Parking (Urban Land Institute Shared Parking, 3rd Edition, 2020).

Note 1: A total of 251 parking spaces are proposed to be provided for the marina, 69 of which are triple stacked valet parking.

Source: LSC Transportation Consultants, Inc.

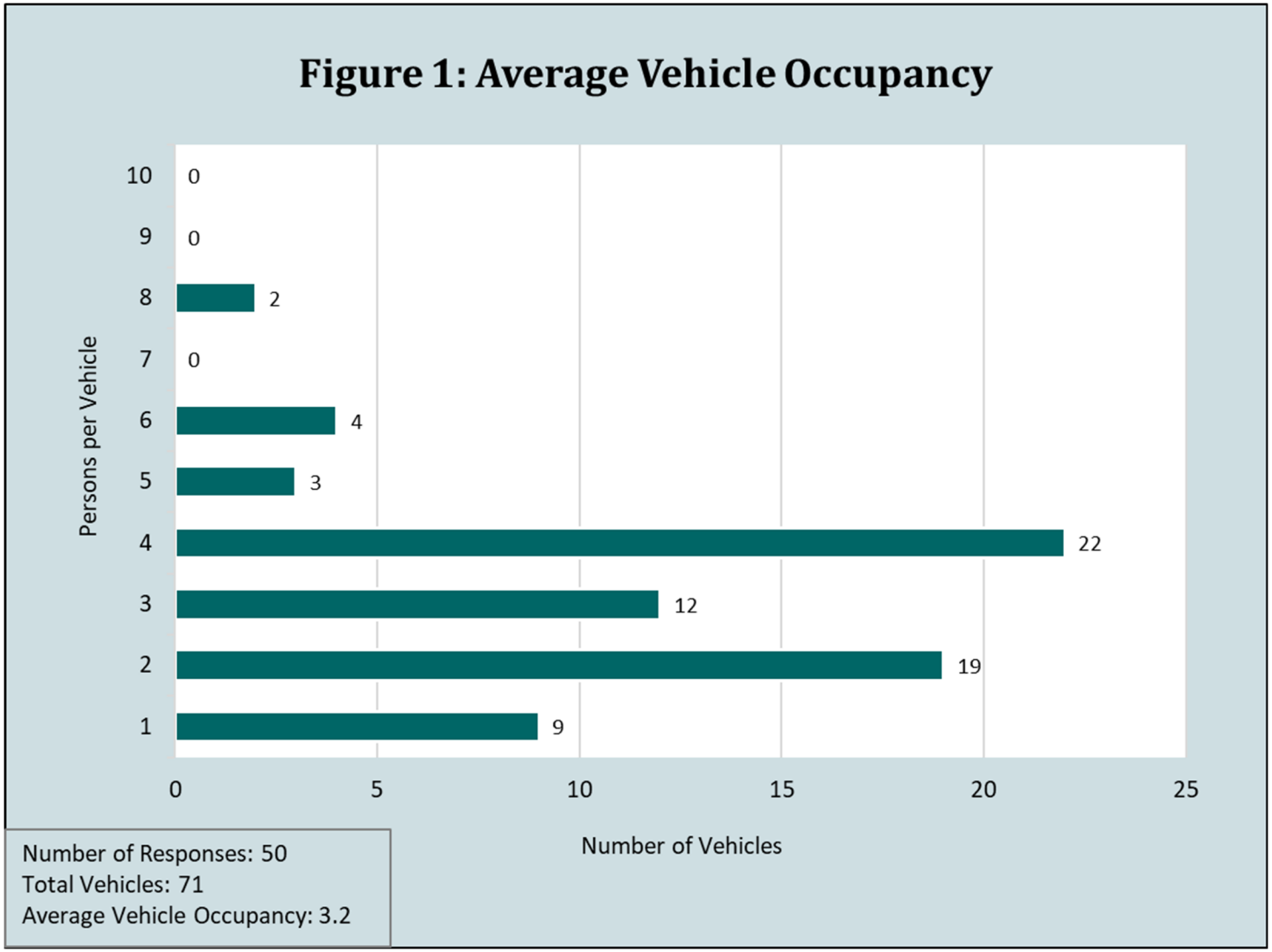
Table 6: Tahoe Keys Marina Redevelopment - Hourly Shared Parking Demand - With Mitigations

Hour of Day	Marina/ Boat Barn	Non-Accessory Charter Visitors	Marina and Charter Employees	Fine Dining Restaurant	Office	Employee Housing	Total Peak Demand		
Individual Use Demand	91	77	47	88	13	7	323		
Hourly Variation in Parking Demand (Percent of Peak Demand)									
6 am	1%	4%	50%	0%	3%	89%			
7 am	5%	13%	50%	3%	14%	91%			
8 am	10%	26%	50%	7%	48%	92%			
9 am	25%	42%	50%	11%	88%	92%			
10 am	50%	51%	50%	26%	100%	92%			
11 am	65%	57%	50%	47%	96%	92%			
12 pm	85%	62%	50%	77%	79%	92%			
1 pm	95%	64%	50%	77%	82%	92%			
2 pm	100%	66%	75%	69%	95%	92%			
3 pm	95%	64%	100%	45%	91%	92%			
4 pm	90%	57%	75%	54%	79%	92%			
5 pm	95%	49%	50%	79%	56%	94%			
6 pm	100%	38%	50%	96%	23%	96%			
7 pm	95%	25%	50%	100%	14%	100%			
8 pm	90%	13%	50%	100%	5%	100%			
9 pm	65%	4%	50%	100%	3%	100%			
10 pm	10%	0%	50%	96%	1%	100%			
11 pm	0%	0%	50%	50%	0%	98%			
12 am	0%	0%	50%	15%	0%	95%			
Parking Demand							**Total Hourly Demand**	**Proposed Parking Spaces[1]**	**Parking Deficit/ Surplus**
6 am	1	3	24	0	0	6	34	251	217
7 am	5	10	24	3	2	6	50	251	201
8 am	9	20	24	6	6	6	71	251	180
9 am	23	32	24	10	11	6	106	251	145
10 am	46	39	24	23	13	6	151	251	100
11 am	59	44	24	41	12	6	186	251	65
12 pm	77	48	24	68	10	6	233	251	18
1 pm	86	49	24	68	11	6	244	251	7
2 pm	91	51	35	61	12	6	256	251	-5
3 pm	86	49	47	40	12	6	240	251	11
4 pm	82	44	35	48	10	6	225	251	26
5 pm	86	38	24	70	7	7	232	251	19
6 pm	91	29	24	84	3	7	238	251	13
7 pm	86	19	24	88	2	7	226	251	25
8 pm	82	10	24	88	1	7	212	251	39
9 pm	59	3	24	88	0	7	181	251	70
10 pm	9	0	24	84	0	7	124	251	127
11 pm	0	0	24	44	0	7	75	251	176
12 am	0	0	24	13	0	7	44	251	207

Source: Shared Parking (Urban Land Institute Shared Parking, 3rd Edition, 2020).

Note 1: A total of 251 parking spaces are proposed to be provided for the marina, 69 of which are triple stacked valet parking.

Source: LSC Transportation Consultants, Inc.


Figure 1: Average Vehicle Occupancy
Persons per Vehicle
10
9
8
7
6
5
4
3
2
1
0
0
2
0
4
3
22
12
19
9
0
5
10
15
20
25
Number of Vehicles
Number of Responses: 50
Total Vehicles: 71
Average Vehicle Occupancy: 3.2