



NEPA/CEQA/TRPA

Bijou Park Creek Watershed Restoration Project

Prepared for City of South Lake Tahoe
30 September 2020

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Acronyms

AADT	Annual Average Daily Traffic
AB	Assembly Bill
AFY	Acre-feet per year
APN	Assessor's Parcel Number
BMP	Best Management Practice
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalTrans	California Department of Transportation
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CE	Categorical Exclusion
CEQ	Council of Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
cf	Cubic feet
CH ₄	Methane
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CTC	California Tahoe Conservancy
CWA	Clean Water Act
CNEL	Community Noise Equivalent Level
dB	Decibel
dba	A-weighted decibel scale
EA	Environmental Assessment
ECP	Erosion Control Project
EDCAQMD	El Dorado County Air Quality Management District
EIR	Environmental Impact Report
EIP	Environmental Improvement Program
EIS	Environmental Impact Statement
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Act
FHWA	Federal Highway Administration
FP	Fully Protected
FSH	Forest Service Handbook
FSS	Forest Service Sensitive Species
FTA	Federal Transit Administration
GHG	Greenhouse gas

H ₂ S	Hydrogen sulfide
Hz	Hertz
IEC	Initial Environmental Checklist
IS	Initial Study
kV	Kilovolt
Ldn	Day-Night Average Level
LEP	Linear extensibility
Leq	Equivalent Level
Lmax	Maximum Level
LOS	Level of Service
LTAB	Lake Tahoe Air Basin
MBTA	Migratory Bird Treaty Act
MSL	Mean sea level
MT	metric tons
N ₂ O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO ₂	Nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NO _x	Nitrogen oxides
NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
NWI	National Wetlands Inventory
NWP	Nationwide Permit
O ₃	Ozone
OPR	Governor's Office of Planning and Research
PAC	Project Advisory Committee
Pb	Lead
PLRM	Pollutant Load Reduction Model
PM _{2.5}	Fine particulate matter
PM ₁₀	Respirable particulate matter
ppm	Parts per million
RCP	Reinforced concrete pipe
rms	Root mean square
ROG	Reactive organic gases
ROW	Right of way
RPU	Regional Plan Update
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SEZ	Stream Environment Zone

sf	Square feet
SF ₆	Sulfur hexafluoride
SMAQMD	Sacramento Metropolitan Air Quality Management District
SO ₂	Sulfur dioxide
SO ₄	Sulfates
SO _x	Sulfur oxides
SOC	Species of Special Concern
SOI	Species of Interest
STPUD	South Tahoe Public Utility District
SQIP	Scenic Quality Improvement Program
SWPPP	Stormwater pollution prevention
SWRCB	State Water Resources Control Board
TACs	Toxic air contaminants
TCP	Traffic Control Plan
TINS	Tahoe Institute for Natural Science
TMDL	Total Maximum Daily Load
TRCD	Tahoe Resource Conservation District
TRPA	Tahoe Regional Planning Agency
TVS Basin	Tahoe Valley South Subbasin
USACE	U.S. Army Corps of Engineers
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
US 50	US Highway 50
VOC	Volatile organic compound
VMT	vehicle miles traveled
WL	Watch list
WoS	Waters of the state
WoUS	Waters of the US

DOCUMENT INFORMATION

PROJECT TITLE

Bijou Park Creek Watershed Restoration Project

DOCUMENT TYPE

Environmental Review and Compliance Document for California Environmental Quality Act, National Environmental Policy Act, and Tahoe Regional Planning Agency Rules

LEAD AGENCY(S) AND ADDRESS

City of South Lake Tahoe
1740 D Street
South Lake Tahoe, CA 96150

CONTACT PERSON AND INFORMATION

Mr. Jason Burke
Stormwater Program Coordinator
City of South Lake Tahoe
1740 D Street
South Lake Tahoe, CA 96150
(530) 542-6038
jburke@cityofslt.us

PROJECT LOCATION

Eastern portion of the City of South Lake Tahoe, El Dorado County, CA

PROJECT SPONSOR(S)

City of South Lake Tahoe, California Tahoe Conservancy, and State Water Resources Control Board – Storm Water Grant Program

Funding for this project has been provided in full or in part through an agreement with the State Water Resources Control Board using funds from Proposition 1. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation for use.

GENERAL PLAN DESIGNATION

Low Density Residential; High Density Residential; Recreation; Tourist Center

PROJECT DESCRIPTION

The Bijou Park Creek watershed represents a highly altered watershed due to the diversion of the headwaters of Keller Canyon at Heavenly California Lodge parking lot into Bijou Park Creek. The purpose/objective of the proposed Project is to address declining water quality, nuisance flooding, and

degradation of the Bijou Park Creek Stream Environmental Zone (SEZ) that has occurred due to artificial expansion of the watershed and urban development with inadequate drainage infrastructure. This will be achieved through a series of water quality and flood control improvements located throughout the eastern portion of the City of South Lake Tahoe, near the California-Nevada border.

SURROUNDING LAND USES AND SETTING

Surrounding land uses near the proposed improvements are primarily residential.

OTHER PUBLIC AGENCIES WHOSE APPROVAL MAY BE REQUIRED

- California Tahoe Conservancy
- California Department of Fish and Wildlife
- U.S. Army Corps of Engineers
- United States Forest Service
- Tahoe Regional Planning Agency
- Lahontan Regional Water Quality Control Board
- California State Water Resources Control Board

SECTION 1

INTRODUCTION

The Bijou Park Creek watershed represents a highly altered watershed due to the diversion of the headwaters of Keller Canyon from the Heavenly Ski Resort California Base Lodge parking lot, which effectively truncated a portion of the Keller Canyon drainage at Saddle Road, transferring approximately 260 acres of drainage from the Keller Canyon watershed to the Bijou Park Creek watershed, specifically Bijou Park Creek. Early development of the low-lying properties in or adjacent to creek, such as along Blackwood Avenue, Spruce Avenue, and in the vicinity of Woodbine Road, has intensified the flooding problems by further altering the natural drainage patterns. The purpose of the proposed Project is to address declining water quality, nuisance flooding, and degradation of the Bijou Park Creek Stream Environment Zone (SEZ¹) that has occurred over the years by installing stormwater infrastructure improvements and enhancing the SEZ.

The Project includes a series of multi-benefit stormwater quality and SEZ improvements that would occur throughout the eastern portion of the City of South Lake Tahoe. The non-contiguous nature of the improvements is due to upgrading infrastructure where necessary to improve the overall runoff capture/conveyance system and to installing water quality improvements that reduce sediment in the runoff. Most of the proposed improvements would occur in areas that have already been developed, including streets, curbs, and low asphalt road shoulder berms. Appendix A (30 percent design plan set) and Appendix B (Preliminary Design Report) provide the basis for the project improvements described below. After construction, the sites would generally be returned to previous condition.

Some improvements are standalone actions that address a specific problem in a specific area, while others are interrelated and dependent upon one another to achieve the Project's objectives. It is likely that not all improvements will be carried forward for development, as the City assesses each improvement's feasibility, public input, and environmental/social impact. This Environmental Compliance Document (ECD) analyzes all the proposed improvements as a single overall project, providing decision-makers with flexibility to select the final design after the environmental review process is complete. Therefore, this document takes a conservative approach to assessing environmental and social impacts by analyzing the maximum disturbance footprint of the full suite of potential stormwater improvements.

This ECD has been prepared pursuant to CEQA Public Resources Code (Section 21000, *et seq.*); it has also been developed to address specific requirements of the TRPA Rules (Article VII of the Compact and Code

¹ An SEZ is a designation unique to the Lake Tahoe Region and defines an area that provides a variety of highly valued services, including water quality maintenance through nutrient cycling and sediment retention, flood attenuation, infiltration and groundwater recharge, open space, scenic and recreational enjoyment, wildlife habitat, and wildfire abatement, among other functions and values. SEZs include perennial, intermittent, and ephemeral streams; wet meadows, marshes, and other wetlands; riparian areas, beaches, and other areas expressing the presence or influence of surface or ground water.

of Ordinance Chapter 3) and the National Environmental Policy Act (NEPA; 40 CFR 1500-1508). This document will support decision-making on the Project by the City of South Lake Tahoe (City). The City served as the CEQA lead in preparing this ECD and the ECD is written to support TRPA's role in implementing their Rules and the USFS's role in implementing NEPA. In order to streamline the overall compliance processes, this ECD will also serve as the primary environmental document for additional discretionary permits from State and local/regional agencies.

1.1 Project Background

The Project Area and vicinity have been the focus of revitalization, scenic improvement of the US Highway 50 (US 50) corridor, and water quality and SEZ improvement since the adoption of the South Tahoe Redevelopment Demonstration Plan and the associated establishment of the Stateline/Ski Run Community Plan. Efforts have been made previously to address some of the erosion and flood control issues of the Bijou Park Creek SEZ. The 1987 Bijou/Wildwood Erosion Control Project (ECP) was designed in coordination with a Project Advisory Committee (PAC), which included representatives from the City of South Lake Tahoe Engineering Department, Lahontan Regional Water Quality Control Board, U.S. Forest Service (USFS), TRPA, U.S. Soil Conservation Service, and the California Department of Transportation (Caltrans) (Brown and Caldwell and William D. Pillsbury, Inc. 1984). The 1987 ECP was not covered under a USFS Special Use Permit, which made authorization of maintenance activities on the USFS property difficult. In addition, the in-channel nature of the improvements made to the SEZ in 1987 would require heavy equipment operation within the live stream. Although drainage controls were installed to alleviate flooding pressure on the Heavenly Valley Mobile Home Park with the 1987 ECP, the current system has inadequate runoff conveyance and treatment capacity.

In 2005, the E. Pioneer Trail Watershed Hydrology Study (Lumos 2005) focused on the SEZ condition and identified opportunities and constraints. The study presented priority projects and recommendations for improvements to the Bijou Park Creek Watershed. These recommendations formed the basis for the menu of proposed Project improvements that form this Project and that are analyzed in this ECD.

1.2 Project Location

The Project is located in the eastern portion of the City of South Lake Tahoe, near the California-Nevada border (Figure 1.2-1). The area surrounding the proposed improvements is primarily residential with commercial use along Highway 50 and the Heavenly Resort to the southeast.

The Project would occur primarily on public lands owned by the California Tahoe Conservancy (CTC), City of South Lake Tahoe, and USFS. Table 1.2-1 provides a summary of land ownership by proposed improvement and Assessor's Parcel Numbers (APNs), and a map set of the proposed improvements and APNs is included in Appendix C.

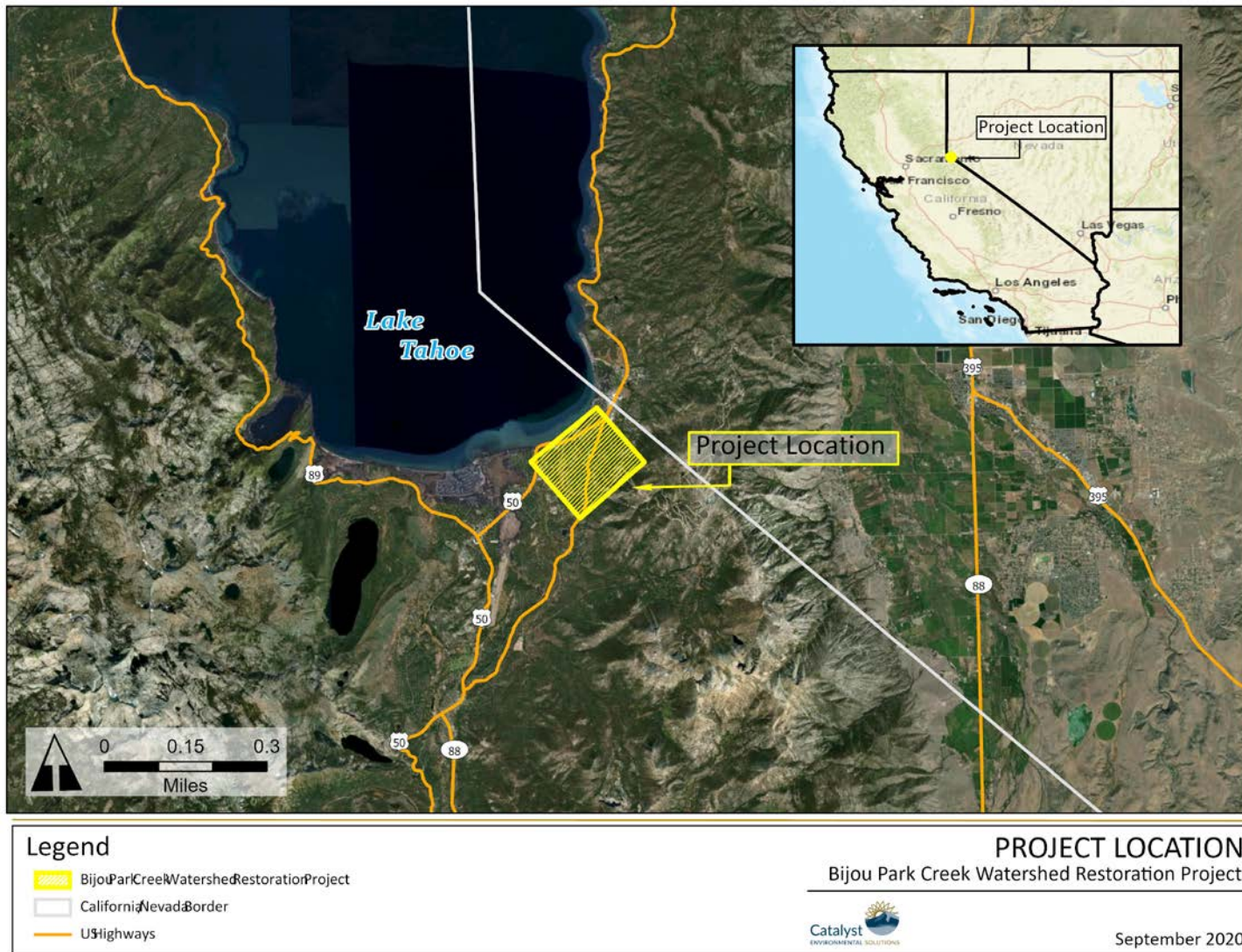


Figure 1.2-1 Project Location

Table 1.2-1 Land Ownership by Proposed Facility and Assessor's Parcel Number

Landowner	Proposed Facility	Assessor's Parcel Number
Private	Aloha Basin	025-021-081, 025-510-002
	Bijou Creek Park SEZ Enhancement	027-203-003, 027-203-006, 027-290-004, 027-290-010, 027-323-019, 027-331-011, 027-331-014, 027-331-015, 027-331-019, 027-331-020
	Bijou School Frontage Drainage Improvement	025-251-001, 025-252-008, 025-261-016, 025-261-017, 025-262-001, 025-262-014, 025-263-003, 025-263-004, 025-264-001, 027-331-020
	Keller Canyon Bypass	027-071-031, 027-075-011, 027-122-019, 027-122-020, 027-122-021, 027-123-001, 027-123-023, 027-124-001, 027-124-002, 027-124-008, 027-125-016, 027-125-025, 027-125-026, 027-131-011, 027-133-025, 027-135-006, 027-151-035, 027-153-003, 027-153-012, 027-153-016, 027-153-017, 027-153-018, 027-153-023, 027-153-027, 027-153-028, 027-153-031, 027-153-032, 027-154-009, 027-154-012, 027-154-015, 027-154-016, 027-154-017, 027-154-018, 027-154-021, 027-154-022, 027-154-034, 027-155-023, 027-156-006, 027-311-009, 027-311-024, 027-311-025, 027-312-029, 027-312-030, 027-313-009, 027-690-010, 028-011-064, 028-041-003, 028-041-004, 028-041-005, 028-041-006, 028-042-018, 029-404-003, 029-404-004, 029-404-005, 029-415-008
	Needle Peak Localized Treatment	028-190-021, 030-352-001
	Osgood Expansion	027-071-029, 027-071-030, 027-071-031, 027-072-010, 027-072-023, 027-072-033, 027-074-026
	Pioneer Crossing Culvert	027-323-019, 028-141-042
	Rockwood to Blackwood Drainage Improvement	025-021-036, 025-021-077, 025-261-003, 025-261-004, 025-261-005, 025-261-007, 025-261-009, 025-261-017, 025-262-009, 025-263-010, 025-282-007, 025-282-008, 025-282-009, 025-282-011, 025-282-013, 025-282-014, 025-282-015, 025-282-016, 025-282-017, 027-331-014, 027-331-015, 027-331-019, 027-331-020, 910-000-631, 910-000-632, 910-000-633, 910-000-634, 910-000-635, 910-000-636, 910-000-637, 910-000-638, 910-000-639, 910-000-641, 910-000-642, 910-000-643, 910-000-644, 910-000-646, 910-000-651, 910-000-652
	Shirley to Whole Foods	027-112-005, 027-112-026, 027-112-027, 027-113-024, 027-113-033, 027-113-034, 027-113-035, 027-113-038, 027-114-015, 027-114-023, 027-203-010, 027-203-011
	Ski Run Diversion	025-580-006, 025-580-007, 028-081-006, 028-081-008, 028-082-001
California Tahoe Conservancy	Aloha Basin	025-191-009, 025-191-010, 025-192-007, 025-192-008, 025-510-085, 025-510-087
	Bijou Park Creek SEZ Enhancement	027-203-007, 027-203-015
	Bijou School Frontage Drainage Improvement	025-262-002
	Keller Canyon Bypass	027-154-023, 027-154-024, 027-154-025, 028-011-066
	Osgood Expansion	027-073-005, 027-074-006

	Pioneer Crossing Culvert	028-141-025, 028-141-033, 028-141-040, 028-141-046
	Rockwood to Blackwood Drainage Improvement	025-261-008, 025-282-010
	Shirley to Whole Foods	027-112-017, 027-203-007, 027-203-014
	Ski Run Diversion	028-083-010, 028-100-004, 028-100-005, 028-100-008, 028-100-011, 028-100-012, 028-100-056, 028-141-047, 028-100-048
	Upper Bijou Park Creek	028-141-047, 028-141-048, 028-100-048
City of South Lake Tahoe	Bijou Park Creek SEZ Enhancement	027-331-004
	Keller Canyon Bypass	027-073-004
	Osgood Expansion	027-072-018, 027-072-034, 027-073-001, 027-073-004, 027-073-006, 027-073-009, 027-073-011, 027-073-012, 027-073-013, 027-073-014, 027-073-015, 027-073-016, 027-073-017, 027-073-019, 027-073-022, 027-073-023, 027-073-025, 027-073-026, 027-073-027, 027-073-028, 027-073-029, 027-074-005, 027-074-007, 027-074-008, 027-074-009
	Shirley to Whole Foods	027-112-029
Lake Tahoe Unified School District	Bijou School Frontage Drainage Improvement	025-250-003, 025-250-004
U.S. Forest Service	Bijou Park Creek SEZ Enhancement	027-290-006, 027-331-003, 027-331-017, 027-331-018
	Bijou School Frontage Drainage Improvements	025-262-015, 025-262-016, 025-263-002, 027-331-018
	Needle Peak Localized Treatment	028-100-027, 030-380-072, 030-380-076, 030-580-003
	Pioneer Crossing Culvert	027-331-003
	Rockwood to Blackwood Drainage Improvements	027-331-003, 027-331-017, 027-331-018
	Ski Run Diversion	028-100-049, 030-380-001
	Upper Bijou Park Creek	028-100-049, 028-100-051, 028-100-052
State of California (CalTrans)	Keller Canyon Bypass	028-011-066

1.3 Project Purpose, Need, and Objective(s)

The purpose of the Project is to address frequent flooding and stormwater management challenges in the Bijou Park Creek watershed by installing stormwater infrastructure improvements and enhancing the SEZ.

The Project is needed because past development in both the upper watershed and low-lying areas of the SEZ have created altered drainage patterns that have led to frequent flooding, declining water quality, and degradation of the SEZ in Bijou Park Creek. The upper watershed was permanently altered by construction of the Heavenly Ski Resort California Base Lodge parking lot several decades ago (Figure 1.3-1). Early development of the low-lying properties in or adjacent to creek, such as along Blackwood Avenue, Spruce Avenue, and in the vicinity of Woodbine Road, has intensified the flooding problems by further altering the natural drainage patterns. The parking lot effectively truncated a portion of the Keller Canyon drainage at Saddle Road, shifting approximately 260 acres of drainage from the Keller Canyon watershed westward to the Bijou Park Creek watershed. Bijou Park Creek now receives more water and at higher flow rates than the creek can adequately convey, resulting in flooding of adjacent roads and residential properties in low lying areas of the SEZ; particularly at Charlesworth Court, Pioneer Trail, Blackwood Road (Heavenly Mobile Home Park), and the vicinity of Bill and Shirley Avenues. In addition to the high peak flow volumes, water entering Bijou Park Creek from surface runoff tends to be laden with sediment, sands, and salts from winter road traction applications as well as sediments associated with erosion and scour of the creek channel, all of which may be mobilized to Lake Tahoe.

Fine sediments and nutrients in urban stormwater runoff contribute significantly to the declining clarity of Lake Tahoe. In accordance with the objectives of the Lake Tahoe Total Maximum Daily Load (TMDL), the proposed project would be designed to reduce fine sediment particles and nutrients from urban stormwater runoff. In addition to improving water quality, the proposed Project would restore natural channel conditions of Bijou Park Creek to address ongoing degradation of the Bijou Park Creek SEZ between Ski Run Boulevard and Tamarack Avenue. Furthermore, the proposed Project would reduce nuisance flooding in the neighborhoods adjacent to the SEZ by improving stormwater conveyance and treatment infrastructure in these areas.

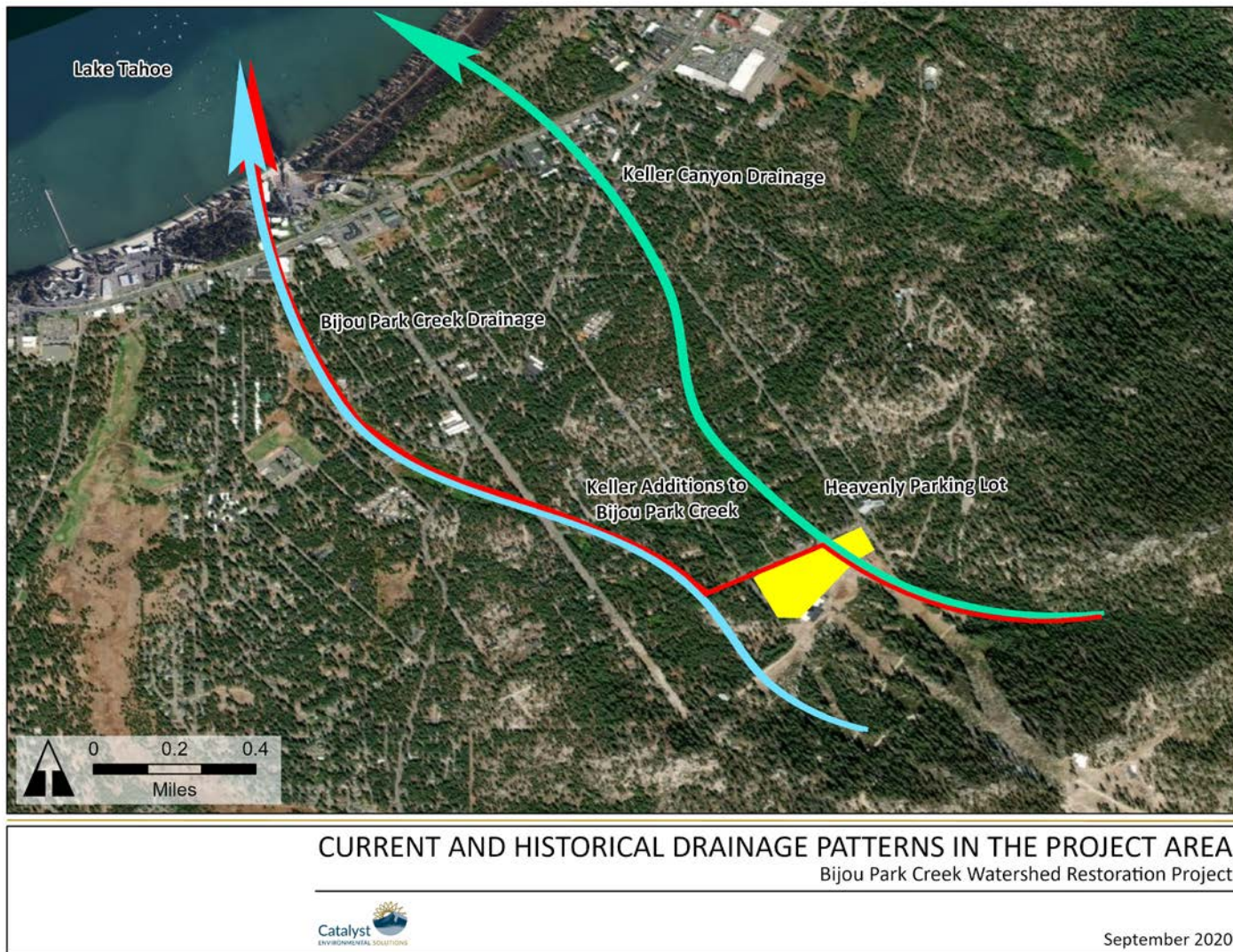


Figure 1.3-1 Historic Versus Current Runoff Flow Patterns of the Keller Canyon Drainage and Bijou Park Creek Watershed

1.4 Standards of Preparation for this Document

This document serves as a joint document that will meet the environmental review requirements of NEPA, CEQA, and TRPA guidelines. Each agency will use this document to make decisions based on the respective agency's planning policies and statutory requirements. As described below, there are no significant impacts that could not be mitigated to less than significant levels. As such, this document is at the NEPA Categorical Exclusion (CE), CEQA Initial Study (IS), and TRPA Initial Environmental Checklist (IEC) level.

1.4.1 NEPA Regulations

Portions of the Project Area are located on USFS land, and the USFS must comply with NEPA in their approval process. The Council of Environmental Quality (CEQ) regulations for implementing NEPA (40 CFR 1500-1508) and the USFS NEPA Handbook (FSH 1909.15, USFS 2020) provide for CEs for categories of actions that do not individually or cumulatively have a significant effect on the human environment. A proposed action may be categorically excluded from further analysis and documentation in an EIS or EA only if there are no extraordinary circumstances² related to the proposed action and if: (1) the proposed action is within one of the categories established by the Secretary at 7 CFR part 1b.3; or (2) the proposed action is within a category listed in 36 CFR § 220.6(d) and (e). Proposed actions listed in 220.6(d) are categories of actions for which a project or case file and decision memo are not required while those actions listed in 220.6(e) do require a case file and decision memo. The proposed Project qualifies as the following identified excluded category listed in 36 CFR § 220.6(e)(18):

“Restoring wetlands, streams, riparian areas or other water bodies by removing, replacing, or modifying water control structures such as, but not limited to, dams, levees, dikes, ditches, culverts, pipes, drainage tiles, valves, gates, and fencing, to allow waters to flow into natural channels and floodplains and restore natural flow regimes to the extent practicable where valid existing rights or special use authorizations are not unilaterally altered or canceled” (36 CFR 220.6(e)(17)).

Per FSH 1909.15 Chapter 31.2 – Extraordinary Circumstances, the resource conditions to be considered to determine whether extraordinary circumstances related to a proposed action warrant further NEPA analysis and preclude the use of a CE are:

1. *Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species;*
2. *Flood plains, wetlands, or municipal watersheds;*

² If a proposed action is within a categorical exclusion identified in USFS procedures, the responsible official must determine that there are no extraordinary circumstances in which a normally excluded action may have a significant environmental effect. The responsible official relies on many sources of information to make a determination concerning extraordinary circumstances, including public comment, specialist reports, and consultation with other agencies.

3. *Congressionally designated areas, such as wilderness, wilderness study areas, or national recreation areas;*
4. *Inventoried roadless areas or potential wilderness areas;*
5. *Research natural areas;*
6. *American Indians and Alaska Native religious or cultural sites, and*
7. *Archaeological sites, or historic properties or areas.*

In considering extraordinary circumstances, the responsible official shall determine whether or not any of the above listed resources are present, and if so, the degree of the potential effects on the listed resources. If the degree of potential effect is significant or if there is uncertainty over its significance, then an extraordinary circumstance exists, precluding the use of a CE and requiring preparation of an EA or EIS.

1.4.2 CEQA Guidelines

An IS is a preliminary environmental analysis that is used by the lead agency as the basis for determining whether a Negative Declaration, Mitigated Negative Declaration (MND), or EIR is required for a project under CEQA. An EIR must be prepared if an IS indicates that the project under review may have a potentially significant impact on the environment which cannot be initially avoided or mitigated to a level that is less than significant (CEQA Guidelines Section 15063). A negative declaration or MND may be prepared if the lead agency prepares a written statement describing the reasons why the project would not have a significant effect on the environment and therefore why it does not require the preparation of an EIR (CEQA Guidelines Section 15371).

1.4.3 TRPA Guidance and Standards

An IEC is a preliminary environmental analysis that is used for determining whether an EIS, a Mitigated Finding of No Significant Effect, or a Finding of No Significant Effect is required for a project under the TRPA guidelines. The need for the IEC is described in Chapter 3 of the Code. The Code also contains chapters that provide guidance on design standards for a variety of project types and resource-specific chapters (e.g., Land Use, Water Quality, Vegetation and Forest Health, Scenic Quality) that are helpful for responding to the IEC questions. The Code also contains a description of the Lake Tahoe Environmental Improvement Program (EIP). This ECD will be submitted to TRPA along with the IEC and City's application for development.

1.5 Relationship to Environmental Plans, Programs, and Regulations

Considering the proposed Project would occur on lands owned by The Project will trigger several environmental regulations and permitting requirements. This section summarizes the regulatory framework governing the Project, including the laws, ordinances, regulations, and standards potentially required to implement the proposed Project. Table 1.5-1 provides a breakdown of the permits and approvals potentially required for the Project, followed by brief summaries of the regulatory frameworks.

Table 1.5-1 Potential Environmental Permits, Approvals, and Consultations

Level of Govt.	Permitting Agency/Authority	Permit/Approval/Consultation
Federal	US Forest Service	Special Use Permit
	US Army Corps of Engineers	Clean Water Act, Section 404 (Dredge and Fill) Permit
	US Fish & Wildlife Service	ESA Section 7 Consultation
State	State Water Resources Control Board	Clean Water Act, Section 401 (Water Quality Certification) Permit
	Department of Fish & Wildlife	California Fish and Game Code, Section 1602 Permit (Streambed Alteration Agreement)
		California ESA Section 2080 Consultation
Regional/Local	El Dorado County Air Quality Management District	Fugitive Dust Plan Application
	Tahoe Regional Planning Authority	Environmental Improvement Project (EIP) Permit
	Lahontan Regional Water Quality Control Board	Clean Water Act Section 402 (NPDES Construction Stormwater Permit)
	City of South Lake Tahoe	Minor Design Review

1.5.1 Federal

1.5.1.1 Clean Water Act Section 404 Permit

Under section 404 of the federal Clean Water Act, the U.S. Army Corps of Engineers (USACE) is responsible for issuing permits associated with working/dredging in waters of the United States (including certain wetlands). Section 404 permits focus on minimizing impacts to the environment and the nation's waters. In issuing section 404 permits, USACE may impose "practicable alternatives" to certain project features if doing so would be less damaging to the aquatic environment than the proposed Project or certain elements thereof.

1.5.1.2 Endangered Species Act Section 7 Consultation

Enacted in 1973, the federal Endangered Species Act (ESA) prohibits take, possession, sale, or transport of proposed, candidate, or listed species. "Take" is broadly defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 CFR Section 17.3). For endangered plants, the ESA prohibits 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 (16 USC 1538). The ESA also designates critical habitat for federally listed species and protects these species from interference with vital breeding and behavioral activities and from critical habitat degradation.

Under Section 7(a)(2) of the ESA, federal agencies with discretionary authority (USFS for this Project) must consult with the U.S. Fish and Wildlife Service (USFWS) if a federal action may affect federally listed species.

1.5.2 State

1.5.2.1 Clean Water Act Section 401 Water Quality Certification

Section 401 of the Clean Water Act requires that any applicant pursuing a Federal permit to conduct any activity that may result in a discharge of a pollutant must obtain a water quality certification (or waiver). The Lahontan Regional Water Quality Control Board (RWQCB) issues water quality certifications in California. The City of South Lake Tahoe would obtain a 401 water quality certification once a 404 permit is issued by the USACE.

1.5.2.2 Clean Water Act Section 402 NPDES Permit

Section 402 of the Clean Water Act establishes the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point sources. In California, the NPDES program is administered and enforced by the RWQCB. The City would be required to submit a Notice of Intent to the Lahontan RWQCB to comply with the Lake Tahoe Basin General Construction NPDES permit and to prepare a Storm Water Pollution Prevention Plan (SWPPP).

1.5.2.3 California Endangered Species Act Section 2080 Permit/Consultation

Section 2080 of the California ESA (CESA) requires state agencies to consult with the California Department of Fish and Wildlife (CDFW) on potential effects to state-listed endangered, threatened, or candidate species. The CESA prohibits the “take” of State-listed species unless an incidental take permit is granted. Exceptions are California Fully Protected Species for which no take is authorized.

Section 2081 of the California Fish & Game Code gives the CDFW the authority to issue an incidental take permit for projects that have the potential for take of special-status species, including state-listed species, as long as the impacts are minimized and fully mitigated and will not jeopardize the continued existence of a state-listed species. The measures required to minimize and fully mitigate impacts must be roughly proportional to the extent of the proposed impact on the species and must be capable of successful implementation while maintaining the applicant’s objectives to the greatest extent feasible.

Section 2080.1 provides an alternative to the Section 2081 permit process by allowing for “take” once an applicant obtains a Federal Incidental Take Permit, which can be approved (via Consistency Determination letter) within 30 days by the CDFW Director. If the Federal Incidental Take Statement is determined not to be consistent with CESA, then application for a State Incidental Take Permit (pursuant to Section 2081) is required.

1.5.2.4 Streambed Alteration Agreement, Section 1602 Permit

California Fish & Game Code Section 1602 requires a permit from CDFW where a project will “substantially divert or obstruct the natural flow of, or substantially change or use any material from the

bed, channel, or bank of, any river, stream, or lake, or 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...". Some portions of the Project would occur within the channel of Bijou Park Creek. As such, the City would obtain a Section 1602 Permit for the in-stream Project improvements.

1.5.2.5 [California Tahoe Conservancy](#)

The CTC is a state agency, established in 1985, with a mission to lead California's efforts to restore and enhance the extraordinary and natural resources of the Lake Tahoe Basin. Pursuant to Government Code section 66907.8 and its duly adopted resolution of June 19, 1987, the CTC may give licenses for stormwater and erosion control projects. The licenses constitute agreements to allow the City access rights to construct and maintain water quality improvements, including detention basins, berms, conveyance infrastructure, and pre-treatment sediment traps on designated CTC parcels. The City would seek license agreements with the CTC for any improvements on CTC lands.

1.5.3 Regional

1.5.3.1 [Tahoe Regional Planning Agency](#)

TRPA is a bi-state planning agency with the authority to regulate growth and development in the Lake Tahoe region under the Tahoe Regional Planning Compact (Bi-State Compact). TRPA implements that authority through the following:

- The Environmental Threshold Carrying Capacities
- The TRPA Regional Plan Goals and Policies
- Other Regional-Scale Plans and Reference Documents
- Plans for Specific Geographic Areas in the Region
- TRPA Codes of Ordinances
- TRPA Programs
- TRPA Administrative Manuals

The documents and policies germane to this Project are described below.

[Threshold Standards](#)

Threshold standards set forth standards for water quality, air quality, soils, wildlife, noise, fisheries, vegetation, scenic quality, and recreation. One of the main purposes of the Regional Plan is to establish regulations and programs to achieve and maintain these thresholds. The nine threshold goals are as follows:

Water Quality: Return the lake to 1960s water clarity and algal levels by reducing nutrient and sediment in surface runoff and groundwater.

Air Quality: Achieve strictest of federal, state, or regional standards for carbon monoxide, ozone, and particulates; increase visibility, reduce U.S. 50 traffic; and reduce vehicle miles traveled.

Scenic Resources: Maintain or improve 1982 roadway and shoreline scenic travel route ratings, maintain or improve views of individual scenic resources, and maintain or improve quality of views from public outdoor recreation areas.

Soil Conservation: Preserve natural stream environment zones, restore 25 percent of disturbed urban SEZ areas (1,100 acres), and reduce total land coverage.

Fisheries: Maintain 180 miles of good to excellent stream habitat, achieve nearly 6,000 acres of excellent lake habitat, and attempt to reintroduce Lahontan cutthroat trout.

Vegetation: Increase plant diversity in forests, preserve uncommon plant communities including deepwater plants, enhance late seral forests and reduce forest fuels, and maintain minimum sustainable populations of sensitive plants including Tahoe yellow cress.

Wildlife: Provide habitat for special interest species, prevent degradation of habitats of special significance.

Noise: Minimize noise disturbance from single events, and minimize background noise disturbances in accordance with land use patterns.

Recreation: Preserve and enhance high quality recreational experience. Preserve undeveloped shoreline and other natural areas, and maintain a fair share of recreational capacity for the general public.

Regional Plan Goals and Policies

The Regional Plan identifies goals that reflect the desired ends of values to be achieved and policies that establish the strategies needed to achieve these goals. The plan integrates the requirements of the Bi-State Compact, the threshold requirements, other plans and legal documents, and the public's input. Therefore, the Regional Plan provides coordinated and integrated direction for the Agency's regulatory Code of Ordinances and implementation programs.

TRPA Regulatory Code of Ordinances

The Code of Ordinances compiles all the laws and ordinances needed to implement the Regional Goals and Policies. The Code is what applicants use to plan their project. TRPA regularly amends the Code of Ordinances to improve its effectiveness and clarity. The Code was last amended February 26, 2020. The need for Initial Environmental Checklist is described in Chapter 3 of the Code. The Code also contains chapters that provide guidance on design standards for a variety of project types and resource-specific chapters (e.g., Land Use, Water Quality, Vegetation and Forest Health, Scenic Quality, etc.) that are helpful for responding to the IEC questions. The Code also contains a description of the Lake Tahoe Environmental Improvement Program (EIP).

1.5.3.2 Lake Tahoe Restoration Act of 2016

The Lake Tahoe Restoration Act of 2016 (Act) authorized monies for the Lake Tahoe Environmental Improvement Program. The EIP is a partnership of federal, state, and local agencies, private interests, and the Washoe Tribe, created to protect and improve the extraordinary natural and recreational resources of the Lake Tahoe Basin. EIP partners implement projects that range from recreational facilities to creek restoration and invasive species management. The Act requires that the EIP maintain a priority list of projects for the program areas of Forest Health, Aquatic Invasive Species, Watershed Restoration, Lahontan Cutthroat Trout, and Accountability. The EIP is also a process for identifying and implementing threshold improvements. The project is included in the EIP 5-year list of projects under EIP #01.01.01.0118 as a watershed and water quality project under the Stormwater Management EIP program area and therefore eligible for future EIP funding. No EIP funds are currently allocated for the project at this time.

1.5.3.3 [Tahoe Sierra Integrated Regional Water Management Plan](#)

The Integrated Regional Water Management Plan (IRWM Plan) defines a clear vision for the management of water and associated resources in the Tahoe-Sierra Region and highlights important actions needed to accomplish that vision through the year 2035 planning horizon. The partnership consists of signatories to a Memorandum of Understanding (MOU) that commits members to adopt and implement the Plan, and to revise and update it as needed. The City is a signatory to an MOU. The Bijou Park Creek Watershed Restoration Project was included in the 2019 IRWM Plan Update (South Tahoe PUD 2019).

1.5.3.4 [Tahoe Sierra Stormwater Resource Plan](#)

Water Code §10563(c)(1), requires a Stormwater Resource Plan (SWRP) as a condition of receiving funds for stormwater and dry weather runoff capture projects from any bond approved by voters after January 2014. The SWRP Guidelines state that traditional approaches to stormwater management have focused on implementation of management practices and limited treatment prior to conveyance off-site and ultimately into surface waters. Traditional approaches do not fully address the water quality impacts from stormwater discharges while providing multiple benefits such as water supply augmentation and ecological enhancement of the local watershed. The Tahoe-Sierra SWRP was developed according to the SWRP Guidelines which provide baseline requirements for SWRPs. More recent watershed-based approaches to stormwater management seek to replicate natural hydrology and watershed processes by managing stormwater and dry weather runoff onsite or within the watershed where rainfall occurs. These watershed-based approaches yield multiple water quality benefits by reducing the volume of runoff delivered to receiving waters, thus reducing the pollutants discharged. The Bijou Park Creek Watershed Restoration Project is ranked #2 in the Ranked Project Lists for Tahoe Projects in the Tahoe-Sierra SWRP based on its benefit to the community, flood management, water quality, and the environment (Tahoe Resource Conservation District 2018).

1.5.4 Local

1.5.4.1 [City of South Lake Tahoe General Plan](#)

California State law requires that each city adopt a general plan. Planning and zoning in the City of South Lake Tahoe is guided by the City's General Plan, which is implemented through Plan Area Statements and Community Plans. The City Council adopted an updated General Plan on May 17, 2011. The General Plan acts as the "constitution" for making decisions regarding the City's long-term physical development. It expresses the community's development goals and incorporates public policies relative to the distribution of future public and private land uses. Sections of the General Plan are helpful in addressing IEC questions. The General Plan contains chapters specifically addressing economic development, transportation, recreation, public/quasi-public facilities, etc.

1.5.4.2 [City of South Lake Tahoe City Code](#)

The City Code is a codification of the General Ordinances of the City. The Code is current through Ordinance 1138, passed January 14, 2020.

1.6 Public Outreach, Agency Engagement, and Tribal Consultation

1.6.1 Scoping

The CEQA Guidelines do not require scoping for an IS. However, the City chose to conduct scoping because of anticipated public interest in the Project, and to develop a dialogue regarding the different potential components of the Project. A public scoping period was held from June 24 to July 3, 2020, to allow stakeholders and interested parties the opportunity to comment on the proposed Project and alternatives, issues of concern, and issues for analysis in the ECD. Stakeholders were notified of the proposed Project and scoping period by direct mail (postcards), newspaper announcements, flyers posted in the Project area, and online postings on social media. Nearly 1,400 postcard notices were distributed to residents, businesses, and organizations within a half-mile of the proposed Project, as well as throughout the Tahoe Basin to pertinent parties.

As part of the scoping process, a public meeting was convened on June 24, 2020, from 2:00 p.m. to 5:00 p.m. Due to public health concerns associated with the Covid-19 pandemic limiting public gatherings, the meeting was formatted as a virtual workshop with participants viewing the live or recorded version at their convenience. Both written and oral comment methods were available during the scoping meeting. Participants in the virtual public meeting could call in to submit comments via a phone number provided during the meeting and written comments from stakeholders could be mailed to the City of South Lake Tahoe or emailed to jburke@cityofslt.us through July 3, 2020. The virtual public meeting was conducted as a workshop-style meeting with subject matter experts available to discuss issues and answer questions following the presentation. Approximately 10-15 people attended the live online meeting.

A total of 19 scoping letters were received during the scoping comment period. All comments were submitted via e-mail, except for one comment called in to the public meeting. The majority of comments addressed the proposed action, as well as issues pertaining to water quality, water quantity/flooding, land use/planning, housing, and transportation/access (Figure 1.6-1). The comments directly informed the scope of this Draft ECD and will assist subject matter experts in developing analyses that addresses the public's concern.

Sixty-two issues were identified, for an average of about three issues per comment. The Proposed Action & Alternatives was the most commented on topic, representing 23% of the total issues identified, followed by Hydrology & Water Quality (19%), Land Use & Planning, (10%), Population & Housing (8%), and Traffic & Transportation (8%). Collectively, these topics represent almost 3/4ths (68%) of the issues identified at the meetings. In addition to comments focused on activities and impacts associated with the Project, other comments received related to the following topics:

- Construction of active transportation/recreation pathways such as Greenways and Bike Paths
- Water Quality Permits and Monitoring
- Recommendations for infrastructure design
- Sediment transport
- Support for the Project

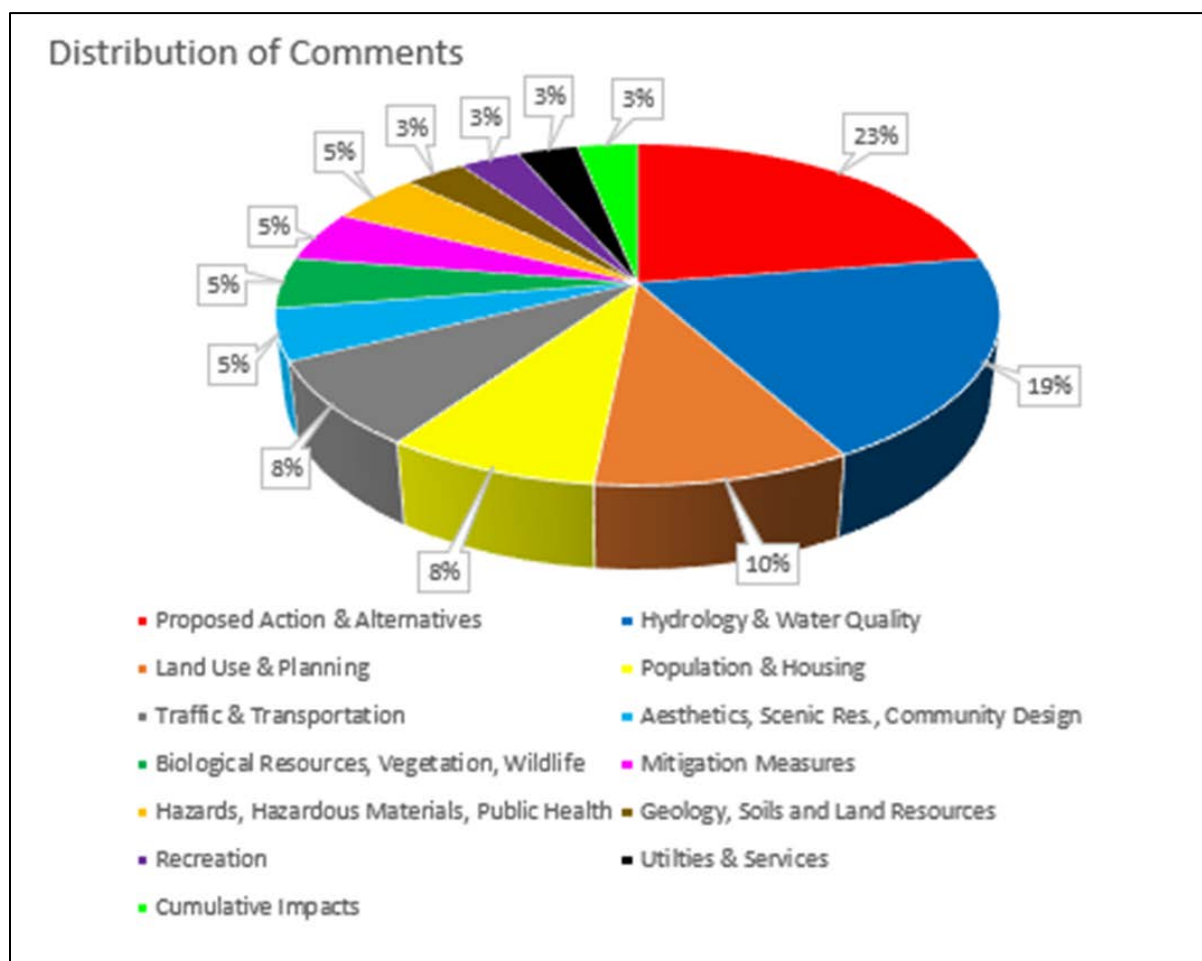


Figure 1.6-1 Breakdown of Scoping Comments by Topic

1.6.2 Agency Outreach and Consultation

In addition to performing scoping with the public and interested parties/organizations, the City also engaged federal and state agencies that may have a permitting role or direct interest in the Project. The City sent letters to the USFS, USFWS, USACE, CDFW, Tahoe Resource Conservation District (TRCD), Lahontan Regional Water Quality Control Board, TRPA, CTC, El Dorado County, Tahoe Transportation District, Heavenly Ski Resort, League to Save Lake Tahoe, and the Sierra Club.

1.6.3 Tribal Outreach and Government-to-Government Consultation

Pursuant to California State Assembly Bill 52 (AB-52), Tribes were notified of the proposed Project, scoping period, and opportunity to enter into a government-to-government consultation with the City or USFS. Three Tribes with potential aboriginal claim to the Project Area is the Washoe Tribe of Nevada and California (Washoe Tribe), United Auburn Indian Community, and the Lone Band of Miwok Indians. These Tribes were sent a tribal consultation invitation letter that included information about the proposed project, including specific locations for proposed improvements, and the process for initiating a consultation. The Tribes have the opportunity to consult at any time during the environmental review process but has not requested consultation to date.

1.7 Organization of the Environmental Compliance Document

Although fundamentally a CEQA Initial Study, this ECD also contains the required additional issues in the NEPA regulations and TRPA rules to facilitate decision-making for each lead agency as well as permitting authorities. This ECD meets the requirements of NEPA by addressing the direct, indirect, and cumulative impacts of the proposed action (40 CFR §1500-1508) and evaluating the existence of extraordinary circumstances per the USFS NEPA Handbook (USFS 2020).

There is significant overlap in the content of the CEQA IS and the TRPA IEC checklists; however, in order to fully address all CEQA and TRPA impact questions, these checklists are presented in their entirety within a single table for each of the resource areas. The tables are organized such that the TRPA checklist questions follow the CEQA checklist questions. A reference to the precise CEQA or TRPA question is provided for each line in the table (e.g., “CEQA IV(a)” or “TRPA17(b)”). The impact determinations use language specific to the CEQA or TRPA issues as appropriate.

The ECD is organized as follows:

Section 1: Introduction – This section introduces the environmental document, provides the Project objectives/purpose and need, presents the Project’s regulatory framework, and describes the Project’s environmental review process.

Section 2: Project Description – This section provides a description of the Project and Alternatives.

Section 3: Environmental Setting and Impact Analysis – For each resource area, this section provides a description of the Bijou Park Creek watershed, the Project’s area of influence, and an analysis of the potential environmental impacts associated with the Project and Alternatives.

Section 4: Mitigation – This section analyzes the proposed mitigation measures to reduce potential impacts to a less than significant level.

Section 5: References – This section provides a complete list of all references used to prepare the document.

Section 6: List of Preparers – This section identifies agency and consultant personnel involved in preparing the document.

Appendix A – 30 Percent Design Plan Set

Appendix B – Bijou Park Creek Restoration Project Preliminary Design Report

Appendix C – Assessor's Parcel Number (APN) Map Set

Appendix D – Air Quality Model Results

Appendix E – Special Status Species Table

SECTION 2

PROJECT DESCRIPTION

The 850-acre Bijou Park Creek watershed is highly altered due to construction of the Heavenly Ski Resort California Base Lodge parking lot, which truncated a portion of the Keller Canyon drainage at Saddle Road, rerouting approximately 260 acres of drainage area from the Keller Canyon watershed to the Bijou Park Creek watershed (Figure 1.3-1 above provides an illustration of historic versus current runoff flow patterns). Bijou Park Creek now receives more water and at higher flow rates than the creek can convey, resulting in flooding of adjacent roads and residential properties (Figure 2-1). Early development of the low-lying properties in or adjacent to creek, such as along Blackwood Avenue, Spruce Avenue, and in the vicinity of Woodbine Road, has intensified the flooding problems by further altering the natural drainage patterns. Additionally, the waters entering Bijou Park Creek tend to be sediment-laden, impacting water quality in the SEZ and mobilizing fine sediments to Lake Tahoe.



Figure 2-1 Flooding on Bill Avenue (left) and Rockwood Drive Behind the Heavenly Valley Mobile Home Park (right) in the Project Area

2.1 Proposed Project

The Project includes a series of multi-benefit stormwater quality and SEZ improvements that would occur throughout the eastern portion of the City of South Lake Tahoe. The non-contiguous nature of the improvements is due to upgrading runoff conveyance infrastructure to improve the overall runoff capture/conveyance system and to installing water quality improvements that reduce sediment in the runoff. Collectively, the improvements will achieve the Project objectives by improving water quality, reducing nuisance flooding, and restoring function of the Bijou Park Creek SEZ. Figure 2.1-1 provides a site plan for all the improvements, representing the Project's overall footprint. Table 2.1-1 provides a breakdown of the construction disturbance areas for each proposed facility, totaling a maximum

temporary construction disturbance area of 41.1 acres. The 30 percent design plan set (Appendix A) provides a detailed view of the improvements as well as surrounding land uses. Most of the proposed improvements would occur in areas that have already been developed, including streets, curbs, and low asphalt berms along road shoulders. After construction, the sites would generally be returned to previous condition.

Some improvements are standalone actions that address a specific problem in a specific area, while others are interrelated and dependent upon one another to achieve the Project's objectives (Appendix B). It is likely that not all improvements will be carried forward for development, as the City assesses each improvement's feasibility, public input, and environmental/social impact. This ECD analyzes all the proposed improvements as a single overall project, providing decision-makers with flexibility to select the final design after the environmental review process is complete. Therefore, this document takes a conservative approach to assessing environmental and social impacts by analyzing the maximum disturbance footprint of the full suite of potential stormwater improvements. Each improvement is described below, followed by a description of the development process (Section 2.2) and applicant-proposed Best Management Practices (BMPs; Section 2.3). Summaries of each improvement's construction activities and temporary disturbance area are provided in blue boxes at the beginning of each improvement description in the following sections.

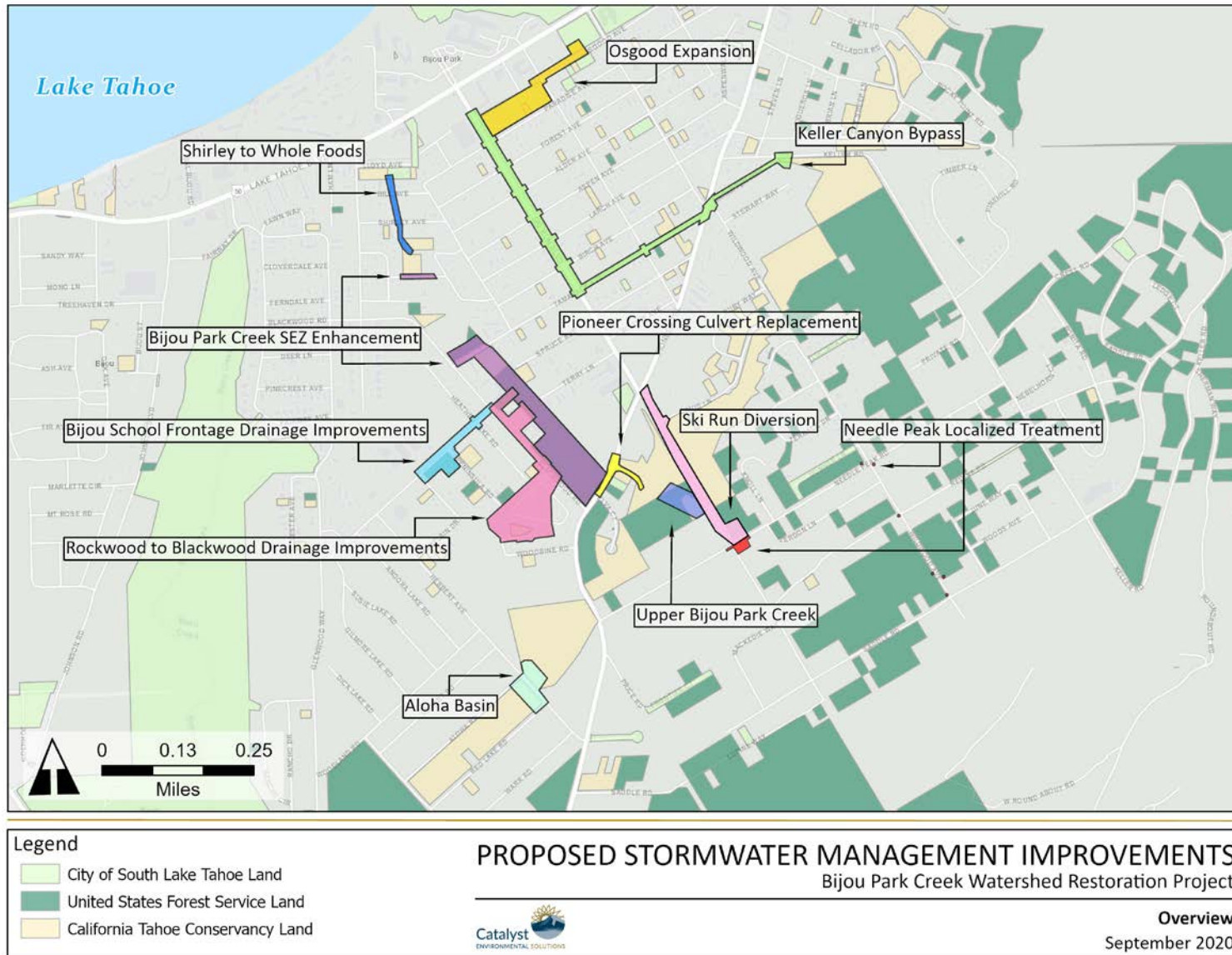


Figure 2.1-1 Bijou Park Creek Restoration Project General Overview

Table 2.1-1 Temporary Project Construction Disturbance Area by Proposed Facility

Proposed Facility	Temporary Construction Disturbance Area (Acres)
Needle Peak Localized Treatment	0.4
Ski Run Diversion	3.8
Upper Bijou Park Creek	1.4
Pioneer Crossing Culvert	0.9
Bijou Park Creek SEZ Enhancement	9.8
Rockwood to Blackwood Drainage Improvements	8.1
Aloha Basin	1.9
Bijou School Frontage Drainage Improvement	2.4
Shirley to Whole Foods	0.9
Keller Canyon Bypass	7.5
Osgood Expansion	4.0
Maximum Temporary Project Disturbance	41.1 Acres

2.1.2 Needle Peak Localized Treatment

Project Benefit: Water Quality Improvement

Construction Summary: Construction activities for the Needle Peak Localized Treatment improvement would include localized excavation and sediment trap installation.

Construction Disturbance Area: 0.4 acres

The Needle Peak Localized Treatment improvement would address water quality by capturing and preventing large sediments from entering the stormwater system in the upper portion of the watershed. Large sediments originate along sanding routes where road abrasives are applied for traction on the routes up to Heavenly Ski Resort.

This improvement would include installation of a single pre-treatment vault and a series of sediment traps that would collect and pre-treat runoff from existing surface water channels and the rolled curb

and gutter on Ski Run Boulevard above that location (i.e., along Needle Peak and Ski Run uphill of the facility). This improvement would be configured to avoid utilities. An additional option for this improvement would include incorporating curb cut and a rock-lined swale to capture and treat flows conveyed from the east curb above the vault/sediment traps. This would further address runoff along the east side of Ski Run Boulevard by re-routing the water into the proposed vault at the corner of the intersection with Needle Peak Road. Potential new sediment trap locations include:

1. Just below Saddle Road and Wildwood Avenue where Heavenly Ski Resort California Base parking lot stormwater vaults discharge into Bijou Park Creek.
2. At Wildwood Avenue and Regina Road at the inlets and outlets of stormwater pipes that convey water down Wildwood Avenue.
3. At the southeast corner of the intersection of Needle Peak Road and Wildwood Avenue where there is an inlet of a stormwater pipe. The pipe crosses diagonally to the northwest corner of the intersection.
4. Just before Ski Run Blvd and Needle Peak intersection on the north side of Needle Peak Road. This location would require cutting the existing curb to install two sediment traps and route water flow through a vegetated swale.

2.1.3 Ski Run Diversion

Bijou Park Creek currently receives significant inflow from the intersection of Ski Run Boulevard and Needle Peak Road, which contributes to flooding downstream especially at Pioneer Trail, near Blackwood Avenue, and in the vicinity of Bill, Shirley, and Lloyd avenues. The culvert where Bijou Park Creek crosses under Ski Run Boulevard is restricted, limiting the flows it can transport.

The purpose of the Ski Run Diversion is to divert a portion of the water coming from the northeast corner of the Ski Run/Needle Peak intersection during high flow events away from Bijou Park Creek and into stormwater drains that would route the water toward Osgood Basin for treatment, thereby taking pressure off the SEZ and reducing flow to the area during flood events.. A new vault inlet would be configured to split flows. The pipe at David Lane would be

Project Benefit: Flood Reduction

Construction Summary: Activities for the Ski Run Diversion would require pavement saws, dump trucks, excavators, or similar heavy equipment to install the swale or new storm drain pipe. Lane closures with detours may be necessary during construction.

Construction Disturbance Area: 3.8 acres

upgraded or a new culvert would be installed at that crossing. The flows would tie into an existing 30-inch storm drain pipe at Pioneer Trail.

Two options for routing diverted water north along Ski Run Boulevard are as follows:

- 1) via an expanded 6-foot-wide roadside asphalt or vegetated swale approximately 1,500 feet long along the shoulder of Ski Run Boulevard (i.e., from Needle Peak Road to Pioneer Trail); or
- 2) in a new 24-inch maximum diameter storm drain pipe running along the east side of Ski Run Boulevard within the City right-of-way and/or the USFS/CTC property up to the David Lane culvert crossing.

The swale option would require a Special Use Permit from USFS because it would overlap with USFS property while the underground pipe would not.

2.1.4 Upper Bijou Park Creek

This improvement is fully on public land owned by CTC and USFS. A portion of Bijou Park Creek upstream of Pioneer Trail is incised and degraded and an approximate four-foot headcut has formed. This improvement would aim to restore and prevent further incision along a steep, degraded reach of the creek and improve water quality. Remnants of gabion structures would be removed, and cascade boulder step pools would be installed along approximately 400 feet of Bijou Park Creek where incision is severe. The existing 4-foot headcut would be eliminated, and the stream gradient would be restored to a more natural function, reducing erosion in the creek. Biotechnical bank stabilization treatments would be applied.

Project Benefit: SEZ Enhancement and Water Quality Improvement

Construction Summary: Construction activities for the Upper Bijou Park Creek SEZ Enhancement would include using a small excavator or backhoe, dump truck, and possibly a front loader to install the cascade boulder step pools.

Construction Disturbance Area: 1.4 acres

2.1.5 Pioneer Crossing Culvert

Project Benefit: Flood Reduction and Water Quality Improvement

Construction Summary: Construction activities for the Pioneer Crossing Culvert Replacement would include trenching, pipe placement, backfilling, possibly raising Pioneer Trail road surface to accommodate the new culvert, and repaving the road. Pioneer Trail would be temporarily closed for 1-2 days during construction and a detour route would be provided.

Construction Disturbance Area: 0.9 acres

Flooding occurs at Pioneer Trail and Bijou Park Creek due to aggradation of sediment and the growth of aspen trees in the SEZ downstream of Pioneer Trail. The pipe under Pioneer Trail at Charlesworth Court was built in 1987 and was undersized and choked with sediment. The resultant flooding of Pioneer Trail causes ongoing degradation of the roadway as well as the SEZ. An emergency repair to the road and culvert was made in September 2020. The proposed Pioneer Crossing Culvert Replacement as shown in Appendix A would fully address ongoing flooding by installing a hydrologically appropriately sized new culvert. The Pioneer Trail roadway would be raised to eliminate ponding and road surface degradation. One complicating factor is that the proposed South Tahoe Greenway Shared Use Trail alignment runs along the

north side of Pioneer Trail. The land in that area is privately owned, but the CTC has an easement for the bike path on the parcel. The South Tahoe Greenway Shared Use Trail design does not currently accommodate Bijou Park Creek flows and would need to be redesigned to incorporate a bridge or a low water crossing. Collaboration with the CTC is ongoing to appropriately design the outlet in conjunction with the creek crossing and culvert replacement.

2.1.6 Bijou Park Creek SEZ Enhancement

The Bijou Park Creek SEZ Enhancement would reduce flooding near the Heavenly Mobile Home Park outfall along Blackwood Ave, eliminate the artificially created right angle bends in Bijou Park Creek to reduce scour and resulting erosion, and enhance the existing wetland habitat and deposition opportunities within the SEZ.

Bijou Park Creek in the vicinity of Blackwood Avenue has been the focus of previous efforts to address erosion and drainage problems in the Project Area. Funding through grants from the state erosion control program and the U.S. Environmental Protection Agency (USEPA) Clean Lakes Program, TRPA mitigation fees, and a California and TRPA settlement were used to finance the Bijou/Wildwood Erosion Control Project in 1987. The 1987 project was designed in coordination with a Project Advisory Committee (PAC), which included representatives from the City of South Lake Tahoe Engineering Department, Lahontan Regional Water Quality Control Board, USFS, TRPA, U.S. Soil Conservation Service, and Caltrans (Brown and Caldwell and William D. Pillsbury, Inc. 1984).

Subsequently, a scenic and healthy quaking aspen grove has become established in the area. Despite these previous efforts, the Bijou Park Creek channel in this location has continued to degrade, and nuisance flooding, scour, and erosion remain problematic.

The stream function downstream (northwest) of Pioneer Trail would be improved by eliminating the highly modified reach and replacing it with 200 to 300 linear feet of a geomorphically stable main channel positioned towards the center of the SEZ. The approximate 800 feet of the current creek channel that has been modified into two unnatural right-angle paths would be decommissioned. The creek reach to be replaced currently bends 90 degrees west towards Blackwood Avenue, runs parallel to Blackwood Avenue, and then turns 90 degrees northeast back towards the center of the SEZ at an apartment complex located at 3715 Blackwood Avenue. The maximum potential permanent impact area of this improvement is less than one acre. This improvement requires incorporation of several interrelated actions, including the following:

- 1) The newly constructed channel section would be sized to overbank at the approximate 2-year recurrence interval flow (i.e., flow would overflow the channels to enter the surrounding floodplain every two years on average) and remaining remnant channels would be preserved so

Project Benefit: SEZ Enhancement and Water Quality Improvement

Construction Summary: Construction activities for the Bijou Park Creek SEZ Enhancement would require heavy equipment including an excavator(s), loader, backhoe, and dump truck to construct the new channel section, backfill the 90-degree bend channel sections, and perform localized grading and decompaction to prepare for revegetation efforts. Some clearing and grubbing of vegetation would be required prior to earthwork activities. Any topsoil, willow, sod, and conifer material in the limits of disturbance would be salvaged and re-incorporated into the floodplain. The design would aim to balance all spoils onsite, but any remaining excess would be off-hauled for proper disposal.

Construction Disturbance Area: 9.8 acres

that adjacent floodplain and secondary channels would continue to provide opportunities for natural sediment deposition.

- 2) Existing asphalt berms, which conflict with natural channel flow and deposition processes in the SEZ, would be replaced with buried rock grade control features as needed to prevent future incision and incorporate more natural floodplain features to slow overbank flows and encourage floodplain deposition such as large downed wood and willow fences.
- 3) In order to prevent the creek from following the unnatural flow path in a 90-degree bend around the apartment building and causing subsequent flooding, the area immediately southeast of the apartment where the bend exists would be regraded or a new low feature berm would be installed in the former channel footprint to prevent flooding of the structure.
- 4) All flows would be redirected into the central creek channel near where Spruce Avenue intersects.
- 5) Improvements would be made by excavation and grading to the existing channel where necessary to convey and allow overbank at the 2-year recurrence interval event.
- 6) The west channel section would be decommissioned by filling where it enters the existing storm drain pipe running under the apartment parking lot and outlets at Tamarack Avenue.
- 7) Undersized road crossing culverts would be replaced as necessary.
- 8) The valley width is sufficient in some stretches of the SEZ to accommodate providing large woody (log) floodplain roughness features. These features would be incorporated to further encourage sediment deposition.

2.1.7 Rockwood to Blackwood Drainage Improvements

Project Benefit: Flood Reduction

Construction Summary: Activities for Rockwood to Blackwood would include saw-cutting of pavement, trench and basin excavation, pipe placement, backfill, and paving.

Construction Disturbance Area: 8.1 acres

Although drainage controls were installed along with the 1987 ECP, the current system has inadequate flow conveyance and treatment capacity. The Heavenly Valley Mobile Home Park, single family homes, apartments, and a church along Blackwood Road are subjected to frequent flooding that poses safety risks to the community. Flooding of the mobile home park originates along its southern border where an existing channel conveys runoff from Rockwood Drive, Woodbine Road, and adjacent streets. The channel is inadequate to convey the periodic high volumes of water that it receives. The shallow and flat slopes in this area

require an increase in conveyance capacity to address flooding. The conveyance capacity of the system would be increased by widening ditches, up-sizing pipes, increasing slopes, and avoiding an outfall with backwater issues from Bijou Park Creek.

The Rockwood to Blackwood improvement would alleviate flooding in and around the mobile home park by decommissioning and removing 1,920 square feet of the dead end of Rockwood Drive which would be re-graded as part of the proposed new drainage channel. The new conveyance channel would have a 100-year flow capacity. As well, 2,496 square feet of Rockwood Road would be included as part of a designated fire turnaround area and would be striped and signed indicating “No Parking”. An 18-24-inch diameter RCP would be installed along the road within the mobile home park and a more effective outfall in the Bijou Park Creek Meadow (that is not governed by backwater from Bijou Park Creek) would be selected. This improvement is interrelated with the Bijou Park Creek SEZ Enhancement immediately

north on the other side of Blackwood Road. Some of the actions associated with this improvement are dependent on the final design of the Bijou Park Creek SEZ Enhancement.

A wide infiltration basin or swale would be constructed on a parcel owned by CTC immediately south of the property line of the mobile home property line and north of Rockwood Drive. The new basin or swale would allow water flows to spread into a concrete vault/drop structure and flow into a new 18-24-inch RCP that would follow the paved road through the mobile home park below the surface. Construction of the basin/swale would result in up to 5,000 square feet (sf) of disturbance and the removal of existing trees and stumps. The existing channel would be decommissioned by filling, and unused pipes would be capped with concrete if necessary. The basin/swale would be planted with native vegetation and a slight slope (1-2%) would be maintained to discourage any long-term ponding that could create mosquito habitat. Approximately 800 feet of 18-inch RCP would be installed from the southern parcel boundary of the mobile home park across Blackwood Avenue to the north side of Blackwood Avenue. The existing pipe within the mobile home park would be capped and abandoned.

Three 48-inch minimum diameter stormwater manholes would be necessary for turns in the line. Two new drop inlets are proposed on Blackwood Road to the northwest of the mobile home park. One of the new drop inlets replaces an existing drop inlet and allows the old pipe under the mobile home park to be capped. The second drop inlet would connect into the proposed new outfall to the meadow adjacent to Bijou Park Creek. The outfall into Bijou Park Creek's riparian area would be armored with rock as needed, depending on water velocity. Depending on the final design of the Bijou Park Creek SEZ Enhancement immediately north of Blackwood Road, a shallow basin (maximum 1-foot-deep and 800 sf in size) with meadow vegetation may be created at the outfall to treat the water before it enters Bijou Park Creek. This outfall may require an easement with the owner as it would be on private property.

Alternatively, a new pipe could be routed along the northeast side of Blackwood Road to Spruce Avenue where the pipe would outfall into USFS land. Flow onto the USFS parcel would help to decrease or eliminate the backwater effects presently occurring at the existing outfall (i.e., flooding). Conveyance along Blackwood could also be achieved with conveyance ditches, in lieu of pipes, with the exception of where driveways need to access private properties. The conveyance ditches would be approximately 3-foot wide and 18-inch deep and be paved or concrete to maximize flow. Pipe would be used to route the flow under driveways back into the next ditch.

2.1.8 Aloha Basin

The Aloha Basin is a standalone improvement that would aim to achieve water quality improvement for Lake Tahoe by capturing fine sediment particles in support of the Lake Tahoe TMDL for sediment. If the topography allows, the basin would be designed to function as an off-line infiltration basin to maximize its effectiveness in treating fine sediment and achieving Lake Clarity Credits for the TMDL. Off-line basins are designed to stop receiving flow once they are full so that water can only exit by infiltrating into the soil. If an off-line basin is not possible, the basin would be a flow-through infiltration basin with its outlet differing from its inlet.

Project Benefit: Water Quality Improvement

Construction Summary: Construction activities for the Aloha Basin improvement include basin excavation, pipe placement, backfill, and paving. Single lane closures may be necessary during construction.

Construction Disturbance Area: 1.9 acres

The Aloha Basin would be located uphill of the proposed South Tahoe Greenway Shared Use Trail and would result in approximately 3,000 sf of disturbance, including utilization of the existing channel from

the back of an existing drainage inlet. The minimum pipe size per City standards is 18 inches, and up to two 18-inch pipes would be installed.

Aloha Basin would be shallow with a volume of 800 cubic feet (cf). The wide but shallow basin design would be compatible with the class 1B land capability ratings of the site. TRPA uses the Bailey System to categorize land capability based on soil type (TRPA 2020). Land capability ratings of 1A or 1B indicate fragile soils and limited development options.

Aloha Basin would be planted to match the surrounding vegetation. If the basin design cannot be off-line and flow back to the existing drainage inlet, the basin would outlet to the existing channel, which is a tributary to Bijou Park Creek. This tributary is the same drainage discussed in the Rockwood to Blackwood (Heavenly Mobile Park) improvement above. The existing channel would be used as an emergency overflow if the basin is off-line. Approximately 50 sf of 6- to 12-inch rip-rap (rocks, boulders) would be needed in the existing channel for energy dissipation.

2.1.9 Bijou School Frontage Drainage Improvement

The Bijou School Frontage Drainage Improvement is a source control facility that would address localized flooding in the neighborhood in front of Bijou Community School and downstream in the watershed. The shoulder of Spruce Avenue in front of the Bijou Community School frequently floods during storm events, creating unsafe conditions in the neighborhood and around the school. The proposed improvement would reduce flooding and improve drainage by converting an existing SEZ meadow across the street from the school on CTC property at the southwest corner of the intersection of Spruce Avenue and Peninsula Road into an infiltration basin. The meadow currently receives water from the south side of Spruce Avenue between just west of Champlain and east of Heather Lane. The proposed facility would collect water runoff from all of Spruce Avenue.

Project Benefit: Flood Reduction and Water Quality Improvement

Construction Summary: Construction activities for the Bijou School Frontage Drainage Improvements would include saw-cutting of pavement, installation of drainage inlets, ditch and basin excavation, pipe placement, pouring of concrete curb and gutters, backfill, and paving.

Construction Disturbance Area: 2.4 acres

The new infiltration basin would include a shallow ponding area with up to 2-foot water depth and a maximum footprint of 3,000 sf. An existing swale would be regraded and resurfaced using rock, vegetation, or open cell pavers. The basin would overflow via a new sediment trap (i.e., sediment trap/riser) to an existing storm drainpipe that flows north under the soccer field and ultimately to Bijou Park Creek via a small drainage tributary. Between six and eight drain inlets would be added within the Spruce Avenue road prism to send runoff into the gutter pans and associated drop inlets, and pipes would be added between the drain inlets and along the south side of Spruce Avenue to send water to the basin. Spruce Avenue would be re-paved and crowned to be compliant with City standards following installation of the drainage inlets and new pipes. The pipe and outfall to the tributary to Bijou Park Creek north of the school would not be altered.

After stormwater is treated in the larger basin, it would flow to an existing stormwater outfall. The rolled curb and gutter along the south side of Spruce Avenue would be extended by approximately 1,200 feet northeast to the intersection with Blackwood Avenue. The new curb and gutter could have curb cuts with rock armoring to access the proposed basin. The shoulders of Spruce Avenue are currently a source of sediment to the drainage. The majority of the north side of Spruce Avenue

(excluding areas with existing driveways or pavement) would receive shoulder stabilization treatments made of rock and/or vegetation for a maximum length of 700 feet.

The surface of the proposed rehabilitated basin would be planted to match the existing native vegetation that currently covers the parcel.

Future multiuse paths are desired by the community along Spruce, connecting to various adjacent neighborhoods. As such, stormwater improvements are designed to be compatible with 10- to 12-foot wide paved paths. There are many utilities in the soft shoulder on the northwest side of Spruce where these paths will likely be placed. This facility would require close coordination with the school and planners to maintain a street width and stabilize shoulders where overflow parking frequently occurs. Open cell pavers may be used for shoulder stabilization in these areas to withstand the overflow parking.

2.1.10 Shirley to Whole Foods

Project Benefit: Flood Reduction

Construction Summary: Construction activities for the Shirley to Whole Foods facility would include saw cutting of pavement, trench excavation, possible utility relocation, culvert placement, backfill, and paving. Grading and concrete formwork and placement would be required for the concrete channel.

Construction Disturbance Area: 0.9 acres

Bijou Park Creek in the vicinity of Bill, Shirley, and Lloyd avenues flows among private property parcels in an exposed channel and a 24-inch diameter pipe. The current pipe is undersized.

This improvement would expand storm drain capacity from just south of Shirley Ave to Bill Avenue and ultimately to where the storm drain outfalls in the SEZ behind Whole Foods in the Bijou Marketplace commercial center. Taking a phased approach, the first phase would upsize the culverts that cross Bill and Shirley Avenues

and either extend the larger pipe from Bill Avenue northward to the outlet at the SEZ similar to the current pipe alignment or daylight the creek at the north side of Bill and convey via an open channel to connect to the SEZ. Once Phase 1 is complete the area will be monitored to see if additional capacity is still needed within the piped section from the backyard of the parcel north of Shirley to where it meets the Bill Ave culvert crossing. If flood alleviation isn't met by Phase 1, this piped section will be upsized as Phase 2.

2.1.11 Keller Canyon Bypass

Water originating from the largely undeveloped upper Keller Canyon drainage is clear of pollutants and does not need to be treated; however, at present, upper Keller Canyon water is combined with untreated stormwater from residential and multifamily neighborhoods downstream and routed to Osgood Basin. Osgood Basin is a detention basin that treats the water by sedimentation (via forebay) and filtration (via basin/wetland feature). The purpose of the proposed Keller Canyon Bypass Improvement is to physically separate the clear upper drainage runoff from the turbid residential stormwater and route the clear water past the Osgood Basin treatment basin and directly to the outfall, reducing the

Project Benefit: Water Quality Improvement

Construction Summary: Construction activities for the Keller Canyon Bypass include saw cutting of pavement, trench excavation, pipe placement, backfill, and paving.

Construction Disturbance Area: 7.5 acres

volume of water passing through Osgood Basin in need of treatment and thereby improving the basin's efficiency.

Water from the upper Keller Canyon drainage would be routed through a new, 36-inch diameter reinforced concrete stormwater pipe (RCP) beginning at a new vault at the outlet of an existing rock-lined channel on the corner of Keller and Markoffer roads. The proposed pipe would be installed adjacent to the existing pipe, which varies in size from 36 to 48 inches in diameter, in an alignment that minimizes potential utility main and lateral conflicts. The proposed pipe would be approximately 4,000 linear feet and need approximately 16 manholes at bends to meet the City standard of 400-foot minimum placement. The proposed pipe would terminate in a vault proposed at the existing southernmost outlet pipe of the existing Osgood Basin. The clean water would then be comingled with treated stormwater from the Osgood Basin and this water would be routed via the original 48-inch pipe to Ski Run Marina and Lake Tahoe.

Once the improvement is completed, the only remaining visible features would be the entrance and outlet, which would be approximately 20 sf.

2.1.12 Osgood Expansion

Osgood Basin is located at the northern margin of the Project Area and currently receives and treats water from the Project Area and elsewhere. This improvement would expand the size of Osgood Basin as well as connect it to the neighboring Wildwood Basin to the east. The purpose of the Osgood Expansion is to increase the treatment capacity of the basin. This improvement is related to the Ski Run Diversion improvement because the expansion would allow Osgood Basin to accommodate increased flows that would be routed there by the Ski Run Diversion.

The expansion would require construction of an additional shallow wetland treatment area east of the existing Osgood Basin in an area currently separated from Osgood Basin by an earthen berm. Once two basins are formed, they would be referred to as Osgood West and Osgood East and would need to be connected. Two options are proposed to connect Osgood West and Osgood East through the berm:

- 1) Construct a piped overflow at the end of the existing Osgood Basin West forebay through the existing berm with an armored outfall swale; or
- 2) Pipe the low flow at the end of the reconfigured Osgood West forebay via pipe arch culverts through the base of the existing berm.

Overflow from the new basin would need to be conveyed to Wildwood Basin rather than the existing Osgood outlet pipes because the current Osgood outlet pipes are situated at a higher elevation than the new Osgood East wetlands would be. An 18-inch or smaller pipe would be installed from the south side of Osgood Avenue and carry water 100 feet to Wildwood Basin.

Project Benefit: Water Quality Improvement

Construction Summary: Use of heavy equipment, such as an excavator, loader, and dump truck would be needed to construct the new basin and haul any spoils to an appropriate location for re-use or proper disposal. The excavator would be used to salvage topsoil, excavate and shape the shallow basin/wetland areas, and to decompact (i.e., rip) the surface prior to seeding and planting. Pipe placement, backfill, and paving would be required to connect the new basin discharge to Wildwood Basin and would require backhoes, rollers, and paving equipment.

Construction Disturbance Area: 4.0 acres

The wetland habitat within Osgood Basin would be increased and enhanced overall. The work would involve excavation depths of up to two feet and grading to enhance the new wetland area as well as temporary disturbance within the roadway between the Osgood East wetland and Wildwood Basin where the new overflow 18-inch pipe would be installed. Construction of a new stormwater treatment basin to the east of the existing Osgood Basin will benefit stormwater quality, especially in conjunction with construction of the Keller Canyon bypass.

2.2 Development Process

This section describes specific parts of the Project development process that would apply in whole or in part to each of the improvements described in the previous sections.

Project Site(s) Access

The Project sites would be primarily accessed via existing paved roads.

Lane Closures & Traffic Management

Work areas may require a lane closure while heavy equipment is in use. With the exception of Ski Run Boulevard and Pioneer Trail, most roads in the Project Area are residential. A traffic management crew would be present to safely direct traffic around an active construction site in/near the road. If necessary, the road would be temporarily closed, and traffic would be briefly detoured around the site. Traffic management would be performed pursuant to Chapter 7.05.180 (Safety Precautions) of the South Lake Tahoe City Code.

Workforce

Site preparation and construction are anticipated to require a workforce of up to 10 workers depending on the footprint of the improvement Project. It is assumed that the project workforce would be comprised of local companies/residents and workers would not require lodging during construction.

Construction Equipment

Construction equipment would include pavement saws, dump trucks, excavators, backhoes, front loaders, rollers, concrete trucks, and similar equipment. Specialized equipment with low pressure tracks would be used off pavement to limit soil and vegetation disturbance in sensitive areas, such as within the Bijou Park Creek SEZ.

Staging

A primary staging area in the right of way on the southern end of Ski Run Boulevard (south of Saddle Road) would be used as a centralized location for heavy equipment storage and project preparations. This area is owned and managed by the City of South Lake Tahoe.

For smaller equipment, staging and equipment storage would occur in the right of ways near active construction sites, potentially including Pioneer Trail, Lake Tahoe Boulevard, Charlesworth Court, Rockwood Drive, Blackwood Road, Paradise Avenue, Needle Peak Road, Herbert Avenue, Aloha Road, and Becka Drive.

Waste Disposal

All construction waste would be properly disposed of at the Carson City Landfill and Asphalt Concrete Recycling Center, which is authorized to receive construction waste. Construction activities are not expected to generate large amounts of waste. The majority of dirt and material removed during excavation would be piled and used as backfill after the new improvements are installed. All waste not suitable for backfill would be placed in dump truck(s) and disposed of at the Carson City Landfill. Removed asphalt and concrete would be disposed of for recycling where feasible, pursuant to Chapter 6.15 of the South Lake Tahoe City Code. One to two truck trips per day is expected for waste disposal during construction of each improvement.

A temporary sanitary facility would be located at each construction site, pursuant to Chapter 6.15.090 of the South Lake Tahoe City Code.

Construction Schedule

As shown in Table 2.2-2, construction activities are anticipated to last 18-20 months. This timeframe accounts for improvements that may not come to fruition, so 18-20 months represents a conservative estimate for the overall project timeframe and does not consider improvements being developed simultaneously.

Construction activities would be performed from 8:00 AM to 6:30 PM, as allowed by TRPA Code.

Table 2.2-2 Approximate Construction Timeline (Overall and by Facility)

Proposed Facility	Construction Timeframe
Keller Canyon Bypass	8 weeks
Bijou School Frontage Drainage Improvement	2-3 weeks
Bijou Park Creek SEZ Enhancement	6-10 weeks
Upper Bijou Park Creek	2-3 weeks
Rockwood to Blackwood Drainage Improvements	6 weeks
Ski Run Diversion	6 weeks
Osgood Expansion	8 weeks
Shirley to Whole Foods	4-5 weeks
Aloha Basin	2 weeks
Needle Peak Localized Treatment	2-3 weeks
Pioneer Crossing Culvert	2-3 weeks
Expected Total Construction Timeframe	18-20 months

2.3 Compliance Measures (Construction Controls, Best Management Practices, and Resource Protection Measures)

The Project would ultimately improve water quality and stormwater management in the Project Area; however, achieving the Project goals would require ground disturbance, use of heavy machinery, and temporary road closures. Construction and grading activities are common sources of fine sediment, dust, and other pollutants to Lake Tahoe, streams and the atmosphere, and can damage vegetation and compact soils. TRPA and other regulatory agencies require temporary construction BMPs to protect the lake and its biota. The 2014 TRPA BMPs Handbook provides technical and planning guidance for water quality improvement projects. The BMPs recommended in the Handbook help meet the standards set forth in the TRPA Code of Ordinances and for reducing pollutants of concern identified in the Lake Tahoe TMDLs as set forth by the Nevada Division of Environmental Protection and the Lahontan Regional Water Quality Control Board.

Temporary BMPs include physical structures and construction management practices that minimize water and air pollution, including protecting vegetation, salvaging topsoil, controlling dust, setting and adhering to a construction plan and schedule, and educating workers on inspecting and maintaining temporary BMPs. BMPs that would be implemented during construction are listed below.

2.3.1 General Construction Management

- Install disturbance boundary fencing to mark the limits of clearing and grading and define areas which would be protected, such as trees and vegetation, SEZ, or other sensitive areas.
- Utilize a common physical location for storage of construction-related equipment and materials such as vehicles and stockpiles.
- If utility relocation is necessary, the City will coordinate with STPUD to ensure that affected customers are notified in advance of the shutoff, utilities are shutoff for the shortest amount of time necessary, and replacement services are provided.

2.3.2 Fugitive Dust Control

- Prevent airborne dust from being carried off-site and causing sedimentation or pollution of water bodies. Methods include limiting soil disturbance on windy days, establishing a limit of soil disturbance using fences, stabilizing portions of completed construction areas before disturbing additional land, limiting traffic on unpaved roads, using wet-suppression techniques, and maintaining existing vegetation as wind-breaks.
- Prevent vehicles traveling in and out of the construction site from transmitting fugitive sediments into stormwater systems and SEZs. This can be achieved by limiting construction entrances to as few as possible and providing barriers to maintain the path of travel.

2.3.3 Wildlife Protection Measures

The Project would implement wildlife protection measures to comply with Section 7 of the Endangered Species Act; Migratory Bird Treaty Act (MBTA); and TRPA Code Chapter 62, Wildlife for protection of special status or sensitive species and their habitats. Construction measures incorporated into the Project for the protection of wildlife will, at minimum, include the following:

- For construction activities during the nesting season (March 15 to August 15), and outside of paved areas, the City and City's contractor will conduct pre-construction nest surveys, including a 100-foot

buffer, to identify any willow flycatcher and MBTA protected migratory bird nests. Nest surveys will occur no more than 14 days prior to Project mobilization. If a nest is found in the vicinity, a qualified biological monitor will be contacted to evaluate impacts to migratory birds. The biological monitor will have the authority to stop construction near occupied sites if construction activities will have a negative or adverse effect on nesting migratory birds or their young. If the biological monitor recommends a stop-work order, they will consult with USGWS and CDFW staff within 24 hours to determine appropriate actions to restart construction while reducing impacts to migratory birds and nests.

- If special-status species are observed by surveys in the Project Area before or during construction, the City's contractor or other project personnel will report the observation immediately to the appropriate team leader. The City or approved contractor will contact a qualified biological monitor to immediately (within 24 hours) implement adequate protections of special status species.
- Tree, shrub, and snag removal will be minimized to only those necessary to achieve Project goals. Construction access routes will be positioned around existing trees, shrubs, and snags to avoid removal wherever possible. Logs and downed woody debris will likewise be left in place whenever practical to provide habitat for wildlife. When not a hazard to people or property, large logs and snags will be purposely retained in the Project Area to provide habitat for wildlife that depend on them for perching, nesting, or cover, consistent with the TRPA Tree Removal Standards (TRPA Code Chapter 61.1 Tree Removal and Chapter 62 Wildlife Resources subsection 62.3.4).

2.3.4 Vegetation Protection Measures

At minimum, the Project would implement BMPs, design features, and construction measures to reduce impacts to vegetation, including:

- Minimize the amount of vegetation disturbance in construction areas as well as outside of the boundary using temporary fencing per Subsections 33.6.9 and 33.6.10 of the TRPA Code of Ordinances.
- When disturbance cannot be avoided, prune or cut riparian vegetation at the ground to protect and preserve the root structure and soil integrity. The City's contractor will use clean pruning equipment to ensure that no disease or pests are introduced into the stems. TRPA Code Chapter 61.4.5 Revegetation provides specifications for the stockpiling and replanting of good quality native riparian vegetation in construction areas.
- Disturbed areas (e.g., stormwater pipeline alignments, treatment basins, and staging areas) will be revegetated or stabilized as needed post-construction consistent with TRPA Code Chapter 61.4 Revegetation and City Landscaping Standards for use of species on the TRPA recommended native and adapted plant list (City Code Chapter 6.19.150.2 Landscaping).
- Tree removal within the SEZ will follow guidelines of TRPA Code Chapter 61.1.6c (Tree Cutting within Stream Environment Zones). Actions include limiting work within the SEZ to the driest times of year and vehicle restrictions.
- Irrigate vegetation and add soil amendments during stockpiling and use them during replanting per the City Landscaping Standards for efficient irrigation (City Code Chapter 6.10.150d). Conform to water conservation standards contained within the landscaping standards (City Code Chapter 6.10.170).
- The City or contractor will conduct inspections for and removal of invasive plants and noxious weeds from within the Project Area, along travel routes near Project Area ingress and egress points, and in

off-site areas used for storage and staging. Equipment will be staged in weed-free areas to prevent vehicles from introducing or spreading invasive species.

- Construction vehicles, including off-road vehicles, will be inspected and must be clean when they enter the Tahoe Basin or comes from an area known to be infested with invasive plants.
- Earth-moving equipment, gravel, fills, logs, rocks, or other materials are required to be weed-free. Whenever possible, materials from on-site should be used, including sand, gravel, rocks, logs, or organic matter.
- Weed-free mulches and seed sources will be used. Topsoil will be salvaged from within the Project Area whenever possible unless contaminated with noxious weeds. Activities that require seeding or planting will use locally collected native seeds and plants whenever possible.

2.3.5 Water Quality and Soil Protection Measures

At a minimum, the Project would implement BMPs, design features, and construction measures to reduce impacts to surface and groundwater quality and quantity, including the following:

- Implement Clean Water Diversion to minimize water quality degradation by keeping clean water away from active construction sites. The diversion temporarily intercepts and reroutes water to 1) isolate surface waters from a construction areas that is in or adjacent to water, or 2) divert upslope runoff around an active construction site or one that is newly constructed, unstable, unprotected, or recently seeded, and discharge downstream or down gradient to a protected outlet. Stream isolation could be achieved using a turbidity curtain, water-filled geotextiles, gravel berms or bags or other solid barriers, or coffer dams.
- Prepare a SWPPP as required by the NPDES General Construction Permit. The SWPPP will describe BMPs and other measures to minimize impacts on water quality during Project construction and maintenance. Measures to control water quality may include, but not be limited to, proper material storage, secondary containment systems, vehicle fluid drip pans, temporary berms or dikes to isolate construction activities, use of vacuum trucks, silt fences, straw wattles, water-filled berms, mulching, dewatering pumps, gravel/sand bags, stormwater drainage systems, construction fencing, revegetation, and winterization procedures as necessary.
- Prepare and implement a Diversion and Dewatering Plan in the event that groundwater is encountered during construction. The plan will be approved by the Lahontan RWCQB prior to project initiation. Methods for dewatering may include pumping groundwater to a sedimentation tank; allowing an appropriate detention time to allow for settling; spray or flood irrigate water to a more upland vegetated location where it can infiltrate or to a water truck to use as dust control. Methods for creek diversions may include use of a gravel bag/visquene coffer dam to isolate the work area with a clean water gravity or pumped diversion that is screened at the intake and has outlet protection to prevent erosion at the outlet. Include emergency response, mitigation measures to protect site, structures, and adjacent public and private infrastructure, inspection schedule and maintenance protocols, staff training and communications.
- If unstable or expansive soils are encountered, stop work and conduct additional soil borings and geotechnical reporting.
- Install a portable toilet to prevent discharge of sanitary wastes from the construction site to storm drains, gutters, waterways, and drainages.
- Clean concrete and hauling vehicles regularly at off-site locations away from storm drains, open ditches, streets, or streams. Conduct concrete operations during dry weather and monitor weather forecasts throughout the workday. Sweep and vacuum as necessary to collect and control concrete

dust. Avoid mixing excess amounts of fresh concrete or cement on-site. Do not allow excess concrete to be poured, preventing generation of waste material.

- Use silt fencing, erosion control blankets, hydro-mulch, fiber rolls, gravel bag barriers, or geotextile drain inlet protection devices to prevent particulates from leaving the construction site and polluting sensitive areas and drainages.
- Protect all stock/spoil piles from stormwater runoff using temporary perimeter sediment barriers, such as berms, dikes, fiber rolls, silt fences, and/or gravel bags.
- Cover all stock/spoil piles with tarp, plastic, or other waterproof material overnight and when precipitation is forecasted. Tie down or weight covers to prevent movement.
- Salvage and store topsoil or excess construction materials for later use in revegetation or to fill other needs. Store topsoil and spoils where it will not be easily disturbed, erode, or block drainage structures and properly cover or secure. Remove topsoil as late as possible in the construction sequence and, when feasible, replace topsoil immediately after grading operations end.
- Sweep site daily when grading activities are taking place to remove sediment accumulated on paved surface and to prevent transport into receiving waters. Dispose of sediment swept from the site at a TRPA-approved location or remove from the Lake Tahoe Region.
- Winterize disturbed areas on or before October 15 of each year of construction.

2.3.6 Hazardous Materials Management and Safety

- Store hazardous materials, including reactive, corrosive, or flammable materials, in conformance with all applicable regulatory codes and requirements. Store hazardous materials in secure, fire-resistance, leak-proof containers.
- Reporting any hazardous spill to the Office of Spill Prevention and Response.
- Inspect all pumps, hoses, and other equipment that has been used in conjunction with hazardous materials.
- Develop and implement a Spill Prevention Plan to ensure the proper handling, storage, and clean-up of hazardous materials during construction. The Plan will outline pollution prevention BMPs, proper storage procedures and locations, spill containment actions, cleanup equipment and practices, and hazardous waste disposal procedures through a licensed company, and spill reporting requirements.
- In accordance with the City of South Lake Tahoe General Plan Policy HS-6.2, if any contaminated soils or sediments are discovered during construction, stop work; secure and mark contaminated area; coordinate with the appropriate responsible agency; develop a sampling and analysis plan; implement cleanup procedures; and properly dispose of contaminated materials in accordance with applicable laws and regulations.
- Conduct training to ensure workers are aware of all procedures contained in the Plan.
- All underground utilities will be located and marked prior to any groundbreaking activities.
- Two fire extinguishers would be present at construction sites to minimize the potential for an inadvertent ignition. Additionally, water is likely to be applied during any concrete/pavement cutting to minimize dust release and serve as a coolant to the saw blades. This water would also be available to suppress any inadvertent fires.

2.3.7 Noise Reduction Measures

- Construction activities will be performed between 8:00 AM and 6:30 PM pursuant to TRPA Code Chapter 68.9, Noise Limitations.

- All internal combustion-driven equipment will be equipped with mufflers that are in good conditions and appropriated for the equipment.
- Heavy equipment activity adjacent to residences or other sensitive receptors will be limited to the shortest possible period required to complete the work activity.

2.3.8 Traffic Management

The BMPs for traffic control during construction would include preparation of a Traffic Control Plan by the City's contractor. The Traffic Control Plan would outline the temporary traffic control measures that would be implemented where Project improvements are proposed in city streets or right of ways (ROWs). It would also include measures to provide safe emergency, business, residential, bicycle, and pedestrian access through the Project Area during construction. Establishment and/or maintenance of adequate emergency access for police, fire, ambulance, and other emergency service vehicles would be determined through direct consultation with those service providers. Controls within the ROWs would include varying lane and shoulder closures using standard signage, delineators, barricades, and flagger personnel.

2.3.9 Air Quality and Energy Consumption

- All construction vehicles and equipment will not be left idling when not in use.
- All equipment will be maintained in accordance with manufacturer's specifications.
- During periods of high winds (i.e., wind speed sufficient to cause fugitive dust to impact adjacent properties, all clearing, grading, earth moving, and excavation operations will be curtailed to the degree necessary to prevent fugitive dust created by onsite activities and operations from being a nuisance or hazard, either offsite or onsite.

2.4 No Action Alternative

Under the No Action alternative, water runoff to Bijou Park Creek SEZ would continue to exceed flow capacity and the creek and adjacent areas would further degrade under annual flooding and flow pressure. Flooding of the Heavenly Valley Mobile Home Park and nearby houses would continue to present a nuisance and safety hazard to residents. The No Action Alternative would have no impacts on many of the resource areas and therefore is not discussed further for those resources. Impacts from the No Action Alternative are described for the following resources:

- Biological Resources
- Geology and Soils and Land
- Hydrology and Water Quality
- Population and Housing
- Socioeconomics and Environmental Justice

SECTION 3

ENVIRONMENTAL SETTING AND IMPACT ANALYSIS

This document provides a comprehensive analysis of the potential impacts of the proposed Project and No Action Alternative. The environmental analyses provided in this document relies on CEQA guidance issued by the California Governor’s Office of Planning and Research (OPR; CEQA Statutes and Guidelines), the TRPA Code of Ordinances, and the CEQ’s regulations for implementing NEPA (40 CFR 1500-1508), and the USFS NEPA Handbook (USFS 2020) to evaluate the potential environmental impacts of the proposed Project and No Action Alternative.

The following resources are analyzed in this document:

- Aesthetics and Scenic Resources/Community Design
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources and Vegetation/Wildlife
- Cultural Resources, Tribal Cultural Resources & Archaeology/Historical Resources
- Energy
- Geology and Soils and Land Resources
- Greenhouse Gas Emissions
- Hazards/Hazardous Materials, Risk of Upset & Human Health
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources and Natural Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Socioeconomics/Environmental Justice
- Traffic/Transportation/Circulation
- Utilities/Service Systems
- Wildfire
- Cumulative Impacts

3.1 Significance Criteria

3.1.1 California Environmental Quality Act

An impact rating is assigned to each question in the CEQA Appendix G Environmental Checklist. Impact ratings are defined in Table 3.1-1. CEQA requires a brief explanation for answers to the Appendix G Environmental Checklist questions except for “No Impact” responses that are adequately supported by noted information sources. This supporting information can be found in the Environmental Setting section for each resource area. Responses to the checklist questions consider all direct and indirect on-site and off-site effects from construction and operation for the entire Project action (i.e., all Project improvements described in Section 2.1). Cumulative effects are discussed in Section 3.22. CEQA Guidelines Section 15002(g) state, “a significant effect on the environment is defined as a substantial adverse change in the physical conditions which exist in the area affected by the proposed project.”

Table 3.1-1 CEQA Defined Levels of Impact Significance

Impact Rating	Definition
No Impact	The Project will not have any measurable environmental impact on the environment. Must be supported in the referenced information sources to show that the impact does not apply to the project (e.g., the project falls outside a fault rupture zone). A “No Impact” response should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).
Less than Significant Impact	The Project may have the potential for affecting the environment, although these impacts will be below levels or thresholds that the City or other responsible agencies consider to be significant. No mitigation will be required to avoid or reduce impacts.
Less than Significant Impact with Mitigation	The Project may have the potential to generate impacts that will have a significant impact on the environment; however, incorporation of mitigation measures will reduce the effect to “less than significant”. The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level.
Significant Impact	The Project may result in environmental impacts that are significant and cannot be reduced to levels that are less than significant even with the implementation of mitigation measures.

Source: 2018 CEQA Appendix G Environmental Checklist

3.1.2 Tahoe Regional Planning Agency Rules

TRPA has nine adopted environmental threshold carrying capacities (thresholds of significance) that set environmental standards for the Lake Tahoe basin and indirectly define the capacity of the region to accommodate additional land development (See also Section 1.5). The TRPA Code of Ordinances and Threshold Evaluation Report also include standards of significance.

Article VI of the TRPA Rules of Procedure includes the rules governing the preparation and processing of environmental documents pursuant to Article VII of the Bi-State Compact and Chapter 3 of the TRPA Code of Ordinances. TRPA uses the IEC as the basis for determining whether an Environmental Assessment of EIS will be prepared for a project. The IEC includes a series of questions categorized and pertaining to TRPA regulations. Each checklist item requires a checked response of “Yes”, “No”, “No, with Mitigation”, or “Data Insufficient” defined as follows:

- **Yes.** The impact occurs and is considered potentially significant.
- **No, with Mitigation:** The impact occurs but is not significant once mitigation measures are incorporated.
- **No.** The impact does not occur, or the impact may occur but is not significant and requires no mitigation.
- **Data Insufficient.** The available data is insufficient to make a significance determination.

A response of “Data Insufficient” or a determination that a project may have a significant environmental effect indicates that additional environmental review in the form of an EA or EIS would be required. Written explanations are required for all responses of “Yes” or “No, with Mitigation” per the IEC form. Written explanations for “No” answers are not required; therefore, explanations for “No” answers that represent an impact that would not occur are not included in the ECD. However, to provide a comprehensive environmental analysis and disclosure for both the public and agencies, impacts that may occur but are not significant are identified as “No, Not Significant” and are described herein. These impacts are denoted with an asterisk (*) in the Evaluation Criteria and Summary tables for each resource area.

3.1.3 National Environmental Policy Act

The magnitude of impacts is classified as major, moderate, minor, or “no impact.” Significant impacts that are identified as “major” would result in substantial adverse changes to the environment and would exceed established relevant regulatory standards (such as water quality objectives, National Ambient Air Quality Standards (NAAQS), noise ordinances, etc.). Impacts not identified as “major” are considered less than significant and described as either “moderate” or “minor.” The determination of whether an impact is moderate or minor is specific to each resource category but follows a consistent approach. A moderate impact is one that would result in an adverse change to the environment outside the range of natural fluctuation but would not exceed regulatory standards. A minor impact is one in which an impact would occur but would be within the natural fluctuation of the baseline. In cases where no impact would occur, this conclusion is noted. Quantitative thresholds are applied, where appropriate, to determine the level of significance (for example, quantitative thresholds are commonly used to determine impact levels in the areas of noise and air quality). Other issues are assessed qualitatively based on context and intensity.

3.2 Aesthetics (CEQA) and Scenic Resources/Community Design/Light and Glare (TRPA)

This section analyzes the Project impacts on aesthetics, scenic resources, and light and glare during construction and operations. Potential impacts were evaluated based on information developed through public scoping, site visits, review of the TRPA scenic travel route roadway unit ratings, and consideration of permanent Project design features. Table 3.2-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project and alternatives on aesthetics, scenic resources, community design, and light and glare.

Table 3.2-1 Evaluation Criteria and Summary of Impacts on Aesthetics

Except as provided on Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
<i>CEQA Environmental Checklist Item</i>				
CEQA I(a) Have a substantial adverse effect on a scenic vista?				X
CEQA I(b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a State scenic highway?				X
CEQA I(c) Substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?			X	
CEQA I(d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				X
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
<i>TRPA Initial Environmental Checklist Item – Light and Glare</i>				
TRPA 7(a) Include new or modified sources of exterior lighting?				X
TRPA 7(b) Create new illumination, which is more substantial than other lighting, if any, within the surrounding area?				X
TRPA 7(c) Cause light from exterior sources to be cast off-site or onto public lands?				X
TRPA 7(d)				X

Create new sources of glare through the siting of the improvements or through the use of reflective materials?				
TRPA Initial Environmental Checklist Item – Scenic Resources/Community Design	Yes	No, with Mitigation	Data Insufficient	No
TRPA 18(a) * Be visible from any state or federal highway, Pioneer Trail or from Lake Tahoe?				X
TRPA 18(b) * Be visible from any public recreation area or TRPA designated bicycle trail?				X
TRPA 18(c) Block or modify an existing view of Lake Tahoe or other scenic vista seen from a public road or other public area?				X
TRPA 18(d) Be inconsistent with the height and design standards required by the applicable ordinance or Community Plan?				X
TRPA 18(e) Be inconsistent with the TRPA Scenic Quality Improvement Program (SQIP) or Design Review Guidelines?				X

3.2.1 Environmental Setting

Lake Tahoe is a designated Outstanding National Resource Water that is renowned for its extraordinary clarity, purity, and deep blue color. Since the 1960s, Lake Tahoe has been affected by declining transparency and increasing phytoplankton productivity caused by increased fine sediment particulates and nutrient loading (RWQCB 2015).

The aesthetics of the Project Area consist mainly of forested land. Jeffrey Pine stands, willow-dominated wet meadows, and quaking aspen stands account for most of the land cover. Private residences occur adjacent to but not within most of the Project Area. Lake Tahoe is visible from some vantage points along paved roads in the Project Area, such as from the intersection of Ski Run Boulevard and Needle Peak Road.

No portions of the Project Area are designated as a scenic vista. No state scenic highways fall within the Project Area. Pioneer Trail in the Project Area is a designated Scenic Corridor (TRPA 2015). Pioneer Trail and other travel routes are rated using a numeric composite score that represents the relative scenic quality throughout a travel unit. Man-made features, physical distractions, roadway characteristics, lake views, and landscaping all contribute to the score. Pioneer Trail in the Project Area currently has a Scenic Quality Rating Composite Score of 1 (low) (TRPA 2015).

The Project Area is not subjected to artificial light beyond that associated with streetlamps and adjacent residential homes. The forested nature of the Project Area contributes to the scenic, park-like beauty and forested mountainous ambiance of South Lake Tahoe. The TRPA has established a set of policies relating to scenic quality to ensure that property owners blend man-made structures with the natural environment, although these rules only apply to properties identified as scenic resource areas.

The Project Area overlaps an 8-mile, continuous bicycle lane located along Pioneer Trail (dedicated on-street bikeway, marked by striping on pavement). Bicycle paths (paved, separated [off the street])

bikeway) runs along Ski Run Boulevard in the Project Area and bicycle routes (on-street routes signed for bicycles) are also present along Blackwood Road and Tamarack Avenue

3.2.2 Impact Assessment

3.2.2.1 [CEQA Checklist Analysis](#)

CEQA I(c). Would the project substantially degrade the existing visual character or quality 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?

Environmental Analysis: **Less than Significant Impact**

The Project would result in temporary degradation of the visual character and quality of the Project Area during construction due to the presence of heavy machinery and personnel. Construction would last up to 20 months throughout the Project Area; however, the longest disturbance to a single Project location would occur during the Bijou Park Creek SEZ Enhancement (Table 2.2-2), which could take up to three months to complete. Construction would require temporary or permanent removal of trees in the SEZ. When possible, the trees would be stored and replanted. Trees that cannot be replanted would be replaced with new trees of a similar visual character as set forth in TRPA Code 61.4. The net impact of the Project would be a beneficial improvement to scenic quality in areas where SEZ enhancement goals are achieved.

Mitigation Measures: **None**

3.2.2.2 [TRPA Checklist Analysis](#)

TRPA 18(a). Will the proposal be visible from any state or federal highway, Pioneer Trail, or from Lake Tahoe?

Environmental Analysis: **No, Not Significant**

Bijou Park Creek crosses directly under Pioneer Trail via an undersized culvert. The Upper Bijou Park Creek and Bijou Park Creek SEZ Enhancement improvements occur just east and west of Pioneer Trail, respectively. The scenic quality of this area would be temporarily degraded during construction; however, the completed Project would have a long-term benefit to the aesthetics of the area due to enhanced function and beauty of the SEZ from the Upper Bijou Park Creek and Bijou Park Creek SEZ Enhancement improvements. Replacing the undersized culvert under Pioneer Trail would significantly reduce the vulnerability of the road during annual high flows and flood events. Ultimately, the Pioneer Trail Culvert Replacement improvement would enhance the scenic quality of Pioneer Trail by improving the condition of the roadway at Bijou Park Creek and preventing future damage and degradation of the road prism.

The Project would result in temporary construction impacts visible from Pioneer Trail. Bijou Park Creek and construction activities for portions of the Project, including would be visible from Pioneer Trail.

Mitigation Measures: **None**

3.2.2.3 TRPA Checklist Analysis – Scenic Resources/Community Design

TRPA 18(b). Will the proposal be visible from any public recreation area or TRPA designated bicycle trail?

Environmental Analysis: **No, Not Significant**

Construction would be visible from numerous bicycle lanes, routes, and paths within the Project Area; however, bicycle infrastructure would not be permanently altered by the Project. Temporary lane closures could affect use of bicycle routes for up to six weeks at each of the Project improvement locations that intersect the routes (e.g., Pioneer Trail Culvert Replacement, Rockwood to Blackwood, and Ski Run Diversion).

Ultimately, the Project improvements would improve the safety and aesthetic of existing bicycle routes by reducing or eliminating nuisance flooding and degradation of roads, multi-use paths, and bicycle routes or trails within the Project Area.

Mitigation Measures: **None**

3.3 Agriculture and Forestry Resources (CEQA)

This section evaluates the Project's agriculture and forest resource impacts during construction and operations. Table 3.3-1 presents the level of significance of the impacts based on the CEQA Guidelines. The TRPA IEC does not directly address agricultural resources and farmland, but does address potential effects to wildlife habitat, trees, and vegetation (See Section 3.5).

In determining whether impacts to agricultural resources are significant environmental effects under CEQA, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.

Table 3.3-1 Evaluation Criteria and Summary of Impacts on Agriculture and Forestry Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
<i>CEQA Environmental Checklist Item</i>				
CEQA II(a) Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
CEQA II(b) Conflict with existing zoning for agricultural use, or a Williamson Act Contract?				X

CEQA II(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])?				X
CEQA II(d) Result in the loss of forest land or the conversion of forest land to non-forest use?				X
CEQA II(e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?				X

3.3.1 Environmental Setting

Agriculture and forestry lands are fundamental components of El Dorado County's character. None of the land in the Project Area is actively managed for agriculture. Two soils in the Project Area are classified as farmland of statewide importance, although these areas are not currently used for agriculture. These loamy soils are found at the south edge of Osgood Basin between the basin and the existing road and the in open dry meadow across the street from Bijou Community School (Bijou School Frontage Drainage Improvement).

The majority of the Project Area is within paved areas and roadway ROWs or within the Bijou Park Creek SEZ which is characterized by wet meadow and riparian vegetation (e.g., willows, sedges). The Upper Bijou Park Creek improvement footprint overlaps with approximately one acre of Jeffrey Pine Forest (*Pinus jeffreyi*) on land owned by USFS and CTC.

The USFS defines forested area as "forest land" if it is at least one acre in size and at least 10 percent occupied by forest trees of any size or formerly having had such tree cover and is not currently developed for non-forest use. Non-forest uses may include cropland, pastureland, residential areas, and other land uses. Under the USFS definition, the Project Area would not be classified as forest land because it is currently developed for non-forest use (e.g., residential) and is not managed for timber.

California Public Resources Code 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. The Jeffrey pine stand within the Project Area would be classified as forest land under this definition because it contributes to the nature aesthetic of the neighborhoods, provides fish and wildlife habitat, and represents a general public benefit. The majority of the Project Area is zoned residential with a small area at the intersection of Ski Run Boulevard and Pioneer Trail designated as Tourist Core Area.

3.3.2 Impact Assessment

The Project would not result in the loss of farmland or forest land or the conversion of farmland to non-agricultural use or forest land to non-forest use. The Project would not conflict with or result in rezoning of forest land areas. Therefore, the Project would have no impact related to agriculture and forest resources.

3.4 Air Quality (CEQA/TRPA)

This section evaluates the Project's air quality impacts during construction and operations. Table 3.4-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project and alternatives on air quality. Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make determinations.

Table 3.4-1 Evaluation Criteria and Summary of Impacts on Air Quality

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
CEQA Environmental Checklist Item				
CEQA III(a) Conflict with or obstruct implementation of the applicable air quality plan?			X	
CEQA III(b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under an applicable federal or state ambient air quality standard?			X	
CEQA III(c) Expose sensitive receptors to substantial pollutant concentrations?			X	
CEQA III(d) Result in other emissions (such as those leading to odors) affecting a substantial number of people?			X	
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item				
TRPA 2(a) Result in substantial air pollutant emissions?				X
TRPA 2(b) Result in deterioration of ambient (existing) air quality?				X
TRPA 2(c) Result in the creation of objectionable odors?				X
TRPA 2(d) Result in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally?				X
TRPA 2(e) * Result in increased use of diesel fuel?				X

3.4.1 Environmental Setting

The proposed project is located in the City of South Lake Tahoe, within the El Dorado County Air Quality Management District (EDCAQMD). The EDCAQMD is responsible for ensuring that national and state air quality standards are not exceeded. Many factors contribute to air pollution in the Lake Tahoe Air Basin (LTAB), including automobile exhaust and road dust, smoke from wood stoves, and pollution blowing in from the west.

3.4.1.1 Criteria Pollutants

The criteria air pollutants that are most relevant to current air quality planning and regulation in the LTAB include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), respirable particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), sulfur dioxide (SO_2), and lead (Pb). In addition, concentrations of toxic air contaminants (TACs) are also used to indicate the quality of ambient air. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. The characteristics of each of these pollutants are briefly described below.

- O_3 - Ozone is a highly reactive and unstable gas that is formed when reactive organic gases (ROGs), sometimes referred to as volatile organic compounds (VOC), and nitrogen oxides (NO_x), byproducts of internal combustion engine exhaust, undergo slow photochemical reactions in the presence of sunlight. O_3 concentrations are generally highest during the summer months when direct sunlight, light wind, and warm temperature conditions are favorable to the formation of this pollutant.
- CO - Carbon monoxide is a colorless, odorless gas produced by the incomplete combustion of carbon-containing fuels, such as gasoline or wood. CO concentrations tend to be the highest during the winter morning, when little to no wind and surface-based inversions trap the pollutant at ground levels. The highest ambient CO concentrations are generally found near congested transportation corridors and intersections.
- NO_2 - Nitrogen dioxide is a nitrogen oxide compound that is produced by the combustion of fossil fuels, such as in internal combustion engines (both gasoline and diesel powered), as well as point sources, especially power plants. Of the seven types of NO_x compounds, NO_2 is the most abundant in the atmosphere. As ambient concentrations of NO_2 are related to traffic density, commuters in heavy traffic may be exposed to higher concentrations of NO_2 than those indicated by regional monitors.
- PM_{10} and $PM_{2.5}$ - Respirable and fine particulate matter PM_{10} and $PM_{2.5}$ consist of extremely small, suspended particles or droplets 10 microns and 2.5 microns or smaller in diameter, respectively. Some sources of particulate matter, like pollen and windstorms, are naturally occurring. However, in populated areas, most particulate matter is caused by road dust, diesel soot, combustion products, abrasion of tires and brakes, and construction activities.
- SO_2 - Sulfur dioxide is a colorless, extremely irritating gas or liquid. It enters the atmosphere as a pollutant mainly because of burning high sulfur-content fuel oils and coal and from chemical processes occurring at chemical plants and refineries. When SO_2 oxidizes in the atmosphere, it forms sulfates (SO_4). Collectively, these pollutants are referred to as sulfur oxides (SO_x).
- Pb - Lead occurs in the atmosphere as particulate matter. The combustion of leaded gasoline is the primary source of airborne Pb in the LTAB. The use of leaded gasoline is no longer permitted for on road motor vehicles. However, because leaded gasoline was emitted in large amounts from vehicles when leaded gasoline was used for on-road motor vehicles, Pb is present in many urban soils and

can be re-suspended in the air. Other sources of Pb include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, and the use of secondary lead smelters.

- TACs - Toxic Air Contaminants refer to a diverse group of air pollutants that can cause chronic (i.e., of long duration) and acute (i.e., severe but of short duration) adverse effects on human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. TACs are different than “criteria” pollutants in that ambient air quality standards have not been established for them, largely because there are hundreds of air toxics and their effects on health tend to be felt on a local scale rather than on a regional basis.

3.4.1.2 Existing Local Air Quality

The LTAB is in the attainment or designated unclassified for all National Ambient Air Quality Standards (NAAQS), although it is designated a nonattainment area for the PM₁₀ California Ambient Air Quality Standards (CAAQS) (CARB 2019). Table 3.4-2 shows the attainment status of the LTAB for the state and federal standards. The TRPA air quality threshold standards are also presented in Table 3.4-2.

3.4.1.3 Sensitive Receptors

Certain population groups are considered more sensitive to air pollutants than others; in particular, children, elderly, and acutely ill and chronically ill persons, especially those with cardiorespiratory diseases such as asthma and bronchitis. Sensitive receptors (land uses) indicate locations where such individuals are typically found, namely schools, day care centers, hospitals, convalescent homes, residences of sensitive persons, and parks with active recreational uses, such as youth sports.

Persons engaged in strenuous work or physical exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions than commercial and industrial areas, because people generally spend longer periods of time at their residences, resulting in greater exposure to ambient air quality conditions. Recreational uses such as parks are also considered sensitive due to the greater exposure to ambient air quality conditions, and because the presence of pollution detracts from the recreational experience. Sensitive receptors near the project sites include the single-family homes around each of the project sites, Bijou Community School, and the nearby tourist accommodation units such as the Heavenly Valley Lodge.

Table 3.4-2 California and National Ambient Air Quality Standards

Pollutant	Averaging Period	California Standard	Federal Standard	TRPA	Attainment Status	
					California Standard	Federal Standard
Ozone (O ₃)	1 hour	0.09 ppm (180 µg/m ³)	---	0.08 ppm	Attainment	---
	8 hour	0.07 ppm (137 µg/m ³)	0.07 ppm (147 µg/m ³)	---	Attainment	Attainment
Respirable Particulate Matter (PM ₁₀)	24 hour	50 µg/m ³	150 µg/m ³	Shall not exceed CAAQS/ NAAQS	Non-Attainment	Attainment
	Annual	20 µg/m ³	Revoked		Attainment	---
Fine Particulate Matter (PM _{2.5})	24 hour	---	35 µg/m ³	---	---	Attainment
	Annual	12 µg/m ³	12 µg/m ³		Attainment	Attainment
Carbon Monoxide (CO)	1 hour	20 ppm (23 mg/m ³)	35 ppm (40 mg/m ³)	---	Attainment	Attainment (Maintenance)
	8 hour	9.0 ppm (10 mg/m ³)	9 ppm (10 mg/m ³)	---	Attainment	Attainment (Maintenance)
	8 hour (Lake Tahoe) ^[1]	6.0 ppm	---	---	Attainment	---
Nitrogen Dioxide (NO ₂)	1 hour	0.18 ppm (339 µg/m ³)	0.100 ppm (188 µg/m ³)	---	Attainment	Attainment
	Annual	0.030 ppm (57 µg/m ³)	0.053 ppm (100 µg/m ³)		Attainment	Attainment
Lead (Pb)	30 day average	1.5 µg/m ³	--	---	Attainment	---
	Rolling 3-month average	--	0.15 µg/m ³		---	Attainment

Pollutant	Averaging Period	California Standard	Federal Standard	TRPA	Attainment Status	
					California Standard	Federal Standard
Sulfur Dioxide (SO ₂)	1 hour	0.25 ppm (655 µg/m ³)	0.075 ppm (197 µg/m ³)	---	Attainment	Attainment
	3 hour ^[2]	---	0.5 ppm (1300 µg/m ³)		---	Attainment
	24 hour	0.04 ppm (105 µg/m ³)	0.14 ppm		Attainment	Attainment
Hydrogen Sulfide (H ₂ S)	1 hour	0.03 ppm (42 µg/m ³)	0.15 µg/m ³	---	Attainment	Attainment
Vinyl Chloride	24 hour	0.01 ppm (26 µg/m ³)	---	---	Attainment	---
Sulfates	24 hour	25 µg/m ³	---	---	Attainment	---
Visibility-Reducing Particles	8 hour	Extinction coefficient of 0.23 per kilometer (visibility of ten miles or more due to particles when relative humidity is less than 70 percent)	---	[3]	Attainment	---
	8 hour (Lake Tahoe) ^[4]	Extinction coefficient of 0.07 per kilometer	---		Attainment	---

Source: CARB 2020; USEPA 2020; TRPA 2016

[1] State 8-hour CO standard of 6 ppm is specific to the Lake Tahoe Air Basin.

[2] This is a secondary standard.

[3] Regional Visibility - Achieve an extinction coefficient of 25 Mm⁻¹ at least 50 percent of the time as calculated from aerosol species concentrations measured at the Bliss State Park monitoring site (visual range of 156 km, 97 miles). Achieve an extinction coefficient of 34 Mm⁻¹ at least 90 percent of time as calculated from aerosol species concentrations measured at the Bliss State Park monitoring site (visual range of 115 km, 71 miles). Calculations will be made on three year running periods using the existing 1991-1993 monitoring data as the performance standards to be met or exceeded.

Sub-Regional Visibility - Achieve an extinction coefficient of 50 Mm⁻¹ at least 50 percent of the time as calculated from aerosol species concentrations measured at the South Lake Tahoe monitoring site (visual range of 78 km, 97 miles). Achieve an extinction coefficient of 125 Mm⁻¹ at least 90 percent of time as calculated from aerosol species concentrations measured at the Bliss State Park monitoring site (visual range of 31 km, 19 miles). Calculations will be made on three year running periods using the existing 1991-1993 monitoring data as the performance standards to be met or exceeded.

[1] State 8-hour Visibility Reducing Particles standard of extinction coefficient of 0.07 per kilometer is specific to the Lake Tahoe Air Basin.

3.4.2 Impact Assessment

Short-term construction-related emissions were calculated using the statewide land use emissions computer model California Emissions Estimator Model (CalEEMod) Version 2016.3.1, designed to provide a uniform platform to quantify potential criteria pollutant and GHG emissions associated with both construction and operations from a variety of project types. Modeling was based on project-specific information (e.g., size, amounts of demolition, area to be graded, area to be paved), where available; reasonable assumptions based on typical construction activities; and default values in CalEEMod that are based on the project's location, climate, and land use types. For a detailed description of model input and output parameters and assumptions, refer to Appendix D.

3.4.2.1 CEQA Checklist Analysis

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

Environmental Analysis: **Less than Significant**

TRPA takes air quality into consideration in its planning and permitting activities to ensure compliance with State and AQMD air quality standards for projects in the Lake Tahoe Air Basin. TRPA has established a number of thresholds and policies regarding local air quality through its Regional Plan Update (RPU) (TRPA 2012), 2015 Thresholds Evaluation (TRPA, 2016), and 2017 RTP (TRPA, 2017). The RPU's goals and policies are designed to achieve and maintain adopted environmental threshold standards and are implemented through the TRPA Code. The RPU includes Policy AQ-1.7, "Promote the reduction of air quality impacts from construction and property maintenance activities in the region," but the TRPA's regulations and thresholds are oriented more toward long-term development rather than short-term construction activities. Specifically, the TRPA has established thresholds that address CO, ozone, regional and sub-regional visibility, and nitrate deposition. Numerical standards have been established for each of these parameters (see Table 3.4-2), and management standards have been developed that are intended to assist in attaining the thresholds. The management standards include reducing particulate matter, maintaining levels of NO_x, reducing traffic volumes on U.S. 50, and reducing vehicle miles traveled.

The proposed Project will not change existing land uses, densities, the roadway network, population, or cause an increase in employment, and will not generate sufficient construction or operation emissions to exceed applicable significance thresholds (see Tables 3.4-2 above and 3.4-3 below). The proposed Project will therefore not conflict with or obstruct applicable air quality plans and impacts would be less than significant.

Mitigation Measures: **None**

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

Environmental Analysis: **Less than Significant**

The proposed Project does not involve the installation of any new permanent or temporary equipment that would require permitting under EDCAQMD permitting rules and regulations. Accordingly, emissions generated during operations and maintenance would be *de minimus* over the life of the improvements.

The net increase in Project site emissions generated by these activities over existing conditions have been quantitatively estimated and compared to the thresholds of significance recommended by the EDCAQMD (see Table 3.4-3 below).

Construction activities would generate combustive emissions and fugitive dust. Pollutants such as ROG, NO_x, CO, SO₂, and PM₁₀ would be emitted from the use of diesel and gasoline powered equipment and vehicles during activities such as vegetation removal, excavation and grading, material hauling, paving, and concrete work as well as from worker vehicles. Fugitive dust (PM₁₀) would result from soil disturbance and demolition. In addition, emissions during construction activities also include export truck trips off-site to remove debris during the demolition/site prep phase to the Carson City Landfill or local asphalt/concrete recycling facility where feasible. The Carson City Landfill is located approximately 33 miles to the northeast of the Project site.

As identified by CARB, EDCAQMD, and TRPA, a significant short-term (e.g., construction-related) air quality impact results if construction-generated emissions of ROG or NO_x exceed mass emissions of 82 lbs/day. CO, PM₁₀, and other pollutants are evaluated for significance by comparison against the applicable CAAQS and NAAQS. The Lake Tahoe Air Basin is in attainment or unclassified for NAAQS, although it is designated a nonattainment area for PM₁₀ under the CAAQS.

The EDCAQMD, which is the primary agency with air quality management authority over the Project, has produced a Guide to Air Quality Assessment (EDCAPCD 2002) to be used in assessing air quality impacts for projects that are subject to CEQA. The guide identifies two alternative methods for determining the significance of combustive emissions: the first involves quantifying fuel use and comparing it to an EDCAQMD threshold, and the second is based on the incorporation of mitigation measures into project design. This analysis uses the first method. If exhaust emissions are determined to be less than significant under either approach, then further calculations to determine construction equipment exhaust emissions is not required. For fugitive dust (PM₁₀) emissions, the screening approach is based on use of specific dust suppression measures that the EDCAQMD has determined would prevent visible emissions beyond the boundaries of a project. If those measures are incorporated into the project design, then further calculations to determine PM₁₀ emissions are not required.

Short-term, construction-related emissions were estimated using the CalEEMod Version 2016.3.2 computer program as recommended by EDCAQMD and other air districts in California. Detailed information regarding specific type, number, location, timing, or other details about the construction was not known. Therefore, construction-generated emissions were assessed using reasonable assumptions based on typical construction activities and default values in CalEEMod that are based on the project's location, climate, and land use types. Typical construction phases include demolition, site preparation, grading, and construction of improvement features over the entire 20-month construction period. The model assumes that improvements would not be developed simultaneously. It also does not schedule the construction phases for each site, but rather consolidates each of the construction phases over the length of the entire project duration (e.g., the total number of days for demolition at each of the 11 improvement sites are added together and modeled over a single time period rather than 11 separate shorter time periods). This provides a conservative estimate for the total emissions by assuming a continuous project schedule although actual construction for the individual sites may be intermittent over a longer period of time. The modeled results are included in Appendix D. As shown in Table 3.4-3, Project construction would result in maximum daily emissions of approximately 0.7 lbs/day of ROG, 6.8 lbs/day of NO_x, 7.5 lbs/day of CO, 0.9 lbs/day total (dust and emission) PM₁₀, and 0.5 lbs/day of total (dust and emission) PM_{2.5} (daily estimates derived from annual overall construction emissions assuming 251 working days per year).

Table 3.4-3 Estimated Daily Construction Emissions for the Project

	ROG (lbs/day)	NO _x (lbs/day)	CO (lbs/day)	PM ₁₀ (lbs/day)	PM _{2.5} (lbs/day)
Project (436 Construction Days [20 months])	0.7	6.8	7.5	0.9	0.5
EDCAQMD Threshold	82	82	None	None	None
Significant	No	No	No	No	No

The estimated emissions of ROG and NO_x are less than the EDCAQMD construction significance thresholds. The EDCAQMD has determined that if ROG and NO_x emissions are not deemed significant, then exhaust emissions of CO and PM₁₀ from construction equipment and exhaust emissions from worker commute vehicles also would not be significant.

As discussed in Section 2.3, the Project will incorporate the applicable fugitive dust control measures. A Fugitive Dust Control Plan will be prepared that will incorporate the relevant BMPs established in AQMD Rules 223 and 223-1, including the measures shown in Appendix C-1 of the AQMD's Tables 1-3 of Rule 223-1, as appropriate. Potential impacts from fugitive dust would be reduced to a level of less than significant. In addition, as detailed above, the Project would not violate the construction-generated emissions standards for ROG, NO_x, PM₁₀, or SO₂, or CO. The Project would not generate new vehicle trips and therefore would not result in increased air emissions during operations.

Mitigation Measures: **None**

CEQA III(c). Would the project expose sensitive receptors to substantial pollutant concentrations?

Environmental Analysis: **Less than Significant**

Sensitive receptors are facilities including schools, parks, playgrounds, nursing homes, hospitals, and residential dwellings where the public could be adversely affected by continued exposure to air emissions. The Project Area contains a number of sensitive receptors, including residential neighborhoods, open space (Greenbelt area), multi-use paths, Bijou Community School, and Child Development Center. The EDCAQMD has determined that keeping total construction-phase fuel use under the limits shown in Table 3.4-3 would result in no health risk from diesel particulate matter (EDCAPCD, 2002). Additionally, as discussed in Section 2.3, the required site-specific BMPs would be implemented to limit fugitive dust emissions. As such, sensitive receptors would not be exposed to substantial pollution concentrations. Once operational, the Project would not result in increased emissions.

Mitigation Measures: **None**

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

Environmental Analysis: **Less than Significant**

Nuisance odors resulting from the following Project construction sources may be noticeable to some individuals for short periods of time: (1) combustive emissions from the use of diesel fuel in construction equipment and (2) hydrocarbon emissions from the use of asphalt during paving activities. Individuals most susceptible to Project odor emissions would include nearby residents and public passing through

the Project sites. However, the transitory nature of these emissions would not produce substantial odor impacts on the public. Therefore, emissions from Project construction would not create objectionable odors that would affect a substantial number of people and would produce less-than-significant air quality impacts. The Project, once complete, would not create objectionable odors.

Mitigation Measures: **None**

3.4.2.2 TRPA Checklist Analysis

TRPA 2(e). Will the proposal result in increased use of diesel fuel?

Environmental Analysis: **No, Not Significant**

The Project would not result in a permanent increased use of diesel fuel. Temporary use of diesel would be required during construction for equipment and vehicle fuel use, but the use would be minimal, lasting 2 weeks to 3 months for construction at each site (18-20 months total). The increased use of diesel fuel would be intermittent and short-term during Project construction, and the level of impact would therefore be less than significant.

Mitigation Measures: **None**

3.5 Biological Resources (CEQA), Vegetation/Wildlife (TRPA), and Special Status Species/Wetlands (NEPA)

This section analyzes direct, indirect, and potential impacts to wildlife and fisheries resources, special status or sensitive species, vegetation, and wetlands as a result of implementation of the proposed Project. The proposed Project is partially within the Bijou Park Creek SEZ and overlaps a variety of vegetation communities and habitat types. Table 3.5-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project and alternatives on biological resources.

Table 3.5-1 Evaluation Criteria and Summary of Impacts on Biological Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
<i>CEQA Environmental Checklist Item</i>				
CEQA IV(a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
CEQA IV(b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X	
CEQA IV(c)		X		

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?				
CEQA IV(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 wildlife nursery sites?			X	
CEQA IV(e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?				X
CEQA IV(f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X
Will the Proposal result in:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item - Vegetation				
TRPA 4(a) Removal of native vegetation in excess of the area utilized for the actual development permitted by the land capability/IPES system?				X
TRPA 4(b) * Removal of riparian vegetation or other vegetation associated with critical wildlife habitat, either through direct removal or indirect lowering of the groundwater table?				X
TRPA 4(c) Introduction of new vegetation that will require excessive fertilizer or water, or will provide a barrier to the normal replenishment of existing species?				X
TRPA 4(d) Change in the diversity or distribution of species, or number of any species of plants (including trees, shrubs, grass, crops, micro flora and aquatic plants)?				X
TRPA 4(e) Reduction of the numbers of any unique, rare or endangered species of plants?		X		
TRPA 4(f) * Removal of stream bank and/or backshore vegetation, including woody vegetation such as willows?				X
TRPA 4(g)				X

Removal of any native live, dead or dying trees 30 inches or greater in diameter at breast height (dbh) within TRPA's Conservation or Recreation land use classifications?				
TRPA 4(h) A change in the natural functioning of an old growth ecosystem?				X
TRPA Initial Environmental Checklist - Wildlife	Yes	No, with Mitigation	Data Insufficient	No
TRPA 5(a) Change in the diversity or distribution of species, or numbers of any species of animals (birds, land animals including reptiles, fish and shellfish, benthic organisms, insects, mammals, amphibians or microfauna)?				X
TRPA 5(b) Reduction of the number of any unique, rare, or endangered species of animals?		X		
TRPA 5(c) Introduction of new species of animals into an area, or result in a barrier to the migration or movement of animals?				X
TRPA 5(d) Deterioration of existing fish or wildlife habitat quantity or quality?				X
Will the Proposal:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
NEPA Categorical Exclusion Checklist				
FSH 1909.15 NEPA Handbook Chapter 31.2 Extraordinary Circumstances (1): Adversely affect federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat or Forest Service sensitive species?		X		
FSH 1909.15 NEPA Handbook Chapter 31.2 Extraordinary Circumstances (2): Adversely affect flood plains, wetlands, or municipal watersheds		X		

3.5.1 Environmental Setting

A habitat-level biological field survey was conducted in October 2019. Potential work areas were surveyed on foot, and plant and animal species that were identifiable at the time of the site visit were documented. Residential homes and properties border the entire Project footprint.

3.5.1.1 Vegetation

The Project Area supports several distinct vegetation communities, including Jeffrey pine forest, quaking aspen groves, willow thickets, wet meadows, and one active stream (Figure 3.5-1). Vegetation alliances described below generally follow Sawyer *et al.* (2009). Estimated coverage of each community within the proposed Project Area are for reference purposes only and are based on a combination field observation and aerial imagery interpretation.

Jeffrey Pine Forest

Upland habitat within the Project Area is dominated by Jeffrey Pine Forest with variable understory mixes of basin big sagebrush (*Artemisia tridentata*), young lodgepole pine (*Pinus contorta* spp. *murrayana*), grasses, Wood's rose (*Rosa woodsii* var. *ultramontane*), and woodland strawberry (*Fragaria vesca*).

Aspen Groves

Quaking aspen (*Populus tremuloides*) are an important species in the Project Area because their golden yellow autumn foliage contributes to the scenic beauty of the City. Quaking aspen primarily reproduce by sprouting from root systems rather than by spreading seeds and groves generally consist of one or several clonal colonies rather than genetically unique individuals. Quaking aspen groves occur primarily within the Bijou Park Creek SEZ and are closely associated with the creek, particularly where the creek channel is incised, and an obvious wetland or riparian fringe is present. The understory of the aspen groves consists of Sierra currant (*Ribes nevadense*) and thick mats of *Carex* spp. immediately adjacent to the creek. Jeffrey pine saplings were present towards the upland transitional edge of the aspen groves. Sporadic mountain alder (*Alnus incana* ssp. *tenuifolia*) are present within the aspen groves as well.

Willow Thickets

Willow thickets dominate much of the Bijou Park Creek Enhancement footprint. Lemmon's willow (*Salix lemmonii*) and shining willow (*Salix lucida* spp. *lasiandra*) were identified during the field survey in the shrub and tree canopies with grasses and Wood's rose in the understory. Willows also grow in the channel between Bill and Shirley Avenues. Willow thickets are an important ecosystem in the Project Area because they provide riparian foraging and nesting habitat for migratory birds, potentially including willow flycatcher (*Empidonax traillii*), a state-listed endangered and USFS Sensitive species.

Wet Meadows

Wet meadows are interspersed with aspen groves and willow thickets and account for a small portion of the Bijou Park Creek SEZ Enhancement Project Area as well as the majority of Osgood Basin. Osgood and Wildwood basins receive runoff from the neighborhood and standing water was present during the October 2019 field survey. Willow, aspen, and lodgepole pine were present in the tree canopy of these basins and *Rosa* sp., grasses, and sedges were abundant in the shrub and herbaceous strata.

A grassy meadow is present where the Bijou School Frontage Drainage Improvement basin would be installed (See Section 2.1.9). That area was a dry meadow at the time of the field survey; therefore, it is denoted as a meadow rather than a wet meadow in Figure 3.5-1.

3.5.1.2 [Fisheries](#)

Bijou Park Creek is the only stream habitat located within the Project Area. The Bijou Park Creek drainage was assessed in the 2005 E. Pioneer Trail Watershed Hydrology Study (Lumos 2005). The headwaters of the creek are outside of the Project Area at the Heavenly Ski Resort California Lodge parking lot. The creek travels northwest and crosses Pioneer Trail at Charlesworth Court. Additional drainages are added to Bijou Park Creek from the southwest where they enter the City of South Lake Tahoe storm drain system and are then conveyed to Lake Tahoe via the outfall on the east side of the Ski Run Marina.

The Bijou Park Creek drainage has been defined as a SEZ by the TRPA. The overall condition of Bijou Park Creek fisheries is likely poor. Bijou Park Creek is fragmented from Lake Tahoe by over 1,250 linear feet of underground concrete culverts that create significant impediments to fish passage. In addition, the creek experiences conditions that substantially degrade potential fish habitat, including high peak flow volumes, sediment-laden flows, channel incising, and increased pollutant load from parking pressure on unprotected shoulders in residential areas.

3.5.1.3 [Wildlife Communities](#)

The Lake Tahoe Basin provides habitat for a wide range of terrestrial and aquatic species of vertebrate and wildlife species. Based on the 2019 field survey and desktop review for the region, the Project Area provides habitat for numerous small mammals, including Douglas squirrel (*Tamiasciurus douglasii*), several species of chipmunk (*Tamias spp.*), and a variety of other small rodents. Larger mammals known to occur or likely to occur in the vicinity of the Project Area include coyote (*Canis latrans*), raccoon (*Procyon lotor*), bobcat (*Lynx rufus*), black bear (*Ursus americanus*), and mule deer (*Odocoileus hemionus hemionus*). Black bear, mule deer, and raccoon scat was observed in the Bijou Park Creek SEZ during the habitat-level survey, indicating that the SEZ provides a travel and foraging corridor for these species.

Many species of migratory and resident birds are present in the project vicinity (TIN 2016). Seven species were observed during the biological resources survey: American robin (*Turdus migratorius*), dark-eyed junco (*Junco hyemalis*), hairy woodpecker (*Leuconotopicus villosus*), mountain chickadee (*Poecile gambeli*), red-tailed hawk (*Buteo jamaicensis*), Steller's jay (*Cyanocitta stelleri*), and yellow-rumped warbler (*Setophaga coronata*).

Common reptile species that occur in the area include western fence lizard (*Sceloporus occidentalis*), sagebrush lizard (*Sceloporus graciosus*), rubber boa (*Charina bottae*), and western terrestrial garter snake (*Thamnophis elegans*). Common amphibian species include western toad (*Anaxyrus boreas*) and Pacific treefrog (*Pseudacris regilla*).

Wildlife communities in the Project Area are subject to significant human disturbance. The land use of the area consists mostly of residential areas and paved roads; therefore, noise and light disturbance are consistently present. Traffic on residential roads may create barriers to wildlife movement and result in vehicle strikes.

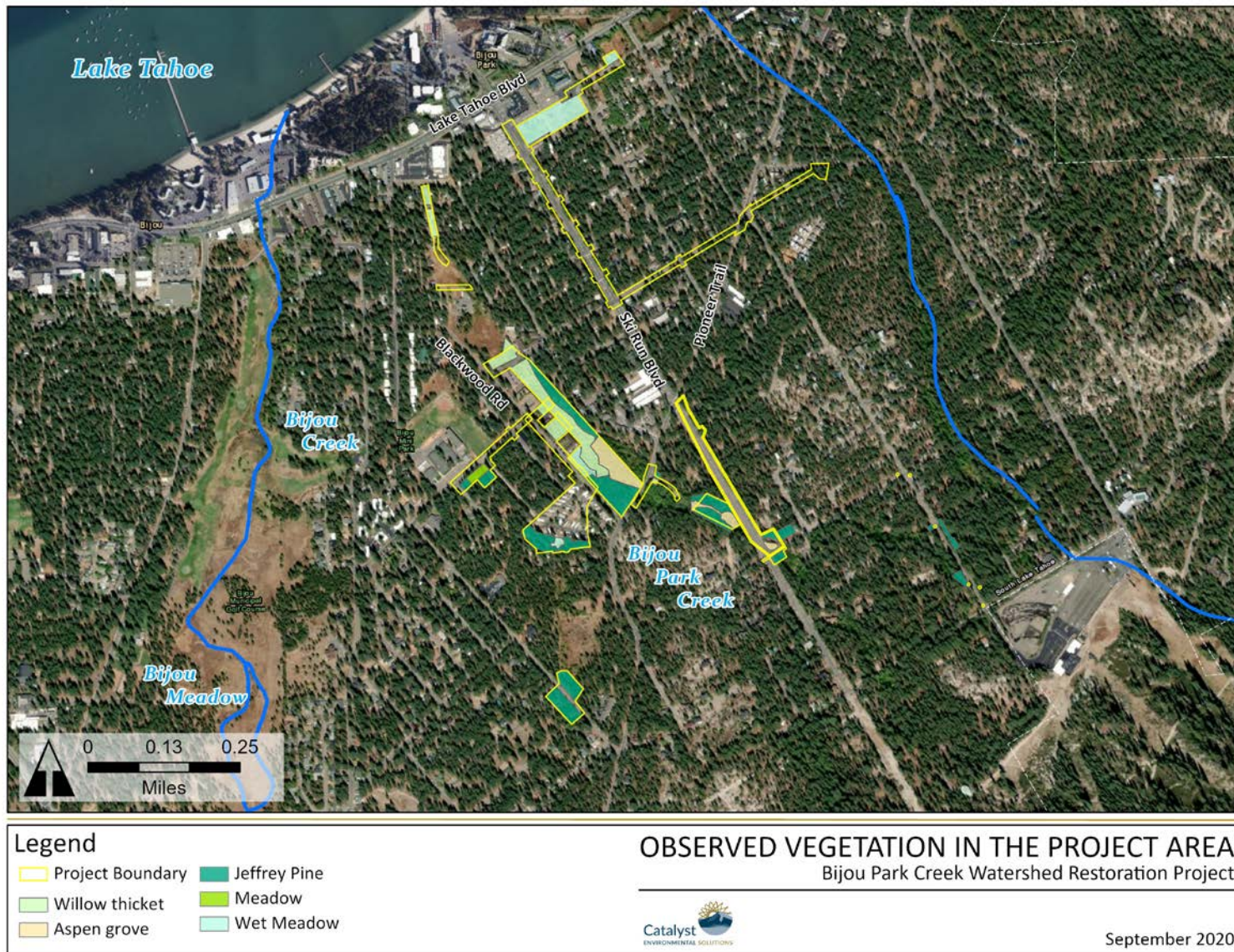


Figure 3.5-1 Vegetation Communities Observed in the Project Area

3.5.1.4 Special Status Fish, Wildlife, and Plant Species

Special status species discussed in this document include the following:

- Species listed or proposed for listing as threatened or endangered under the federal ESA.
- Species listed as Sensitive or Of Interest by USFS.
- Species designated as a Sensitive, Special-interest, or Threshold species by TRPA.
- Species listed or proposed for listing as threatened or endangered under the CESA.
- Species that are recognized as candidates for future listings by agencies with resource management responsibilities such as USFWS, National Oceanic and Atmospheric Administration's (NOAA) NMFS, and CDFW.
- Species defined by CDFW as Species of Special Concern.
- Species classified as Fully Protected by CDFW.
- Plant species, subspecies, and varieties defined as rare or threatened by the California Native Plant Protection Act (California Fish and Game Code § 1900 et seq.).
- Plant species listed by the California Native Plant Society (CNPS) as List 1 and 2 and some List 3 plants under CEQA (CEQA Guidelines §15380).
- Species that otherwise meet the definition of rare, threatened, or endangered pursuant to §15380 of the CEQA guidelines.

The California Natural Diversity Database (CNDDDB) was the primary tool used to identify a list of potential special status species that could occur in the Project Area. The CNDDDB is an inventory of the status and locations of rare plants and animals in California overseen by NatureServe (formerly The Nature Conservancy).

Species observations from iNaturalist (2020) were also reviewed to further capture a representative view of species present in the Project vicinity. iNaturalist is a joint initiative between the California Academy of Sciences and National Geographic Society that allows citizen scientists and naturalists to submit observations of plants, animals, insects, and fungi to a database for identification. Research-grade observations are those that have had their identity confirmed by consensus. iNaturalist data provides a detailed view of common local flora and fauna and is useful for comparing with rare species occurrence data from CNDDDB.

Thirty-eight of the 57 special status species identified using the above list have been mapped within ten miles of the project Area per the CNDDDB (Appendix E). Likelihood of occurrence for each species was evaluated based on species life history and the suitability of habitat observed during the field survey in addition to proximity and the age of existing records or observations.

In recognition of the importance of wildlife to the Lake Tahoe Basin, the TRPA established in Resolution 82-11 the adopted environmental threshold standards for wildlife. There are two indicator reporting categories in the wildlife threshold category: 1) special interest species and 2) habitats of special significance. Special interest species include bald eagle (*Haliaeetus leucocephalus*), osprey (*Pandion haliaetus*), golden eagle (*Aquila chrysaetos*), peregrine falcon (*Falco peregrinus*), northern goshawk (*Accipiter gentilis*), and mule deer, as well as the broad category of waterfowl. Habitats of Special Significance include habitats consisting of deciduous trees, wetlands, and meadows.

Federally listed species recorded within five miles of the Project Area include Lahontan cutthroat trout (*Oncorhynchus clarkia henshawi*; Threatened) and Sierra Nevada yellow-legged frog (*Rana sierrae*; Endangered). Lahontan cutthroat trout would not be expected to occur within the Project Area because

Bijou Park Creek currently contains multiple significant fish passage barriers upstream and downstream of the Project Area, including a 1,250 foot long section of creek conveyed via underground pipe. Sierra Nevada yellow-legged frog has moderate potential to occur within the Project Area. The most recent CNDDDB recording of the species is from 1935; however, a search of the iNaturalist database produced several research-grade observations within 5 miles of the Project Area that were made between 2018 and 2020.

Based on the background literature review and field survey, 13 special-status species were identified as having more than a low potential to occur in the Project Area: Bolander's candle moss, upswept moonwort, watershield, western bumblebee (*Bombus occidentalis*), Sierra Nevada yellow-legged frog, bald eagle (*Haliaeetus leucocephalus*), long-eared owl (*Asio otus*), sharp-shinned hawk (*Accipiter striatus*), osprey, willow flycatcher, fringed myotis (*Myotis thysanodes*), pallid bat (*Antrozous pallidus*), and Townsend's big-eared bat (*Corynorhinus townsenii*).

Of these species, willow flycatcher and Sierra Nevada yellow-legged frog are the only species listed as threatened or endangered by the CESA with moderate potential to occur in the Project Area. Sierra Nevada yellow-legged frog is also a federally endangered species. Western bumblebee is a candidate for listing under the CESA. Long-eared owl is a CDFW Species of Special Concern, and sharp-shinned hawk is on the CDFW Watch List.

No special status animal species were observed during the field survey, with the exception of mule deer droppings. Mule deer are considered a Special Interest Species by TRPA because they are a native wildlife species that is aesthetically pleasing to residents and visitors. Mule deer have no additional protections under federal or state regulations.

3.5.1.5 [Wetlands](#)

Bijou Park Creek is a probable jurisdictional water of the U.S. (WoUS) and water of the State (WoS) and much of the SEZ is likely jurisdictional wetland and CDFW riparian habitat. Much of the area is mapped as freshwater emergent or freshwater forested/shrub wetland by the USFWS National Wetlands Inventory (NWI; Figure 3.5-2.). As discussed above in Section 3.5.1.1, much of the Project Area is characterized as wet meadow, willow thickets, or aspen stands, all of which may be within jurisdictional wetlands.

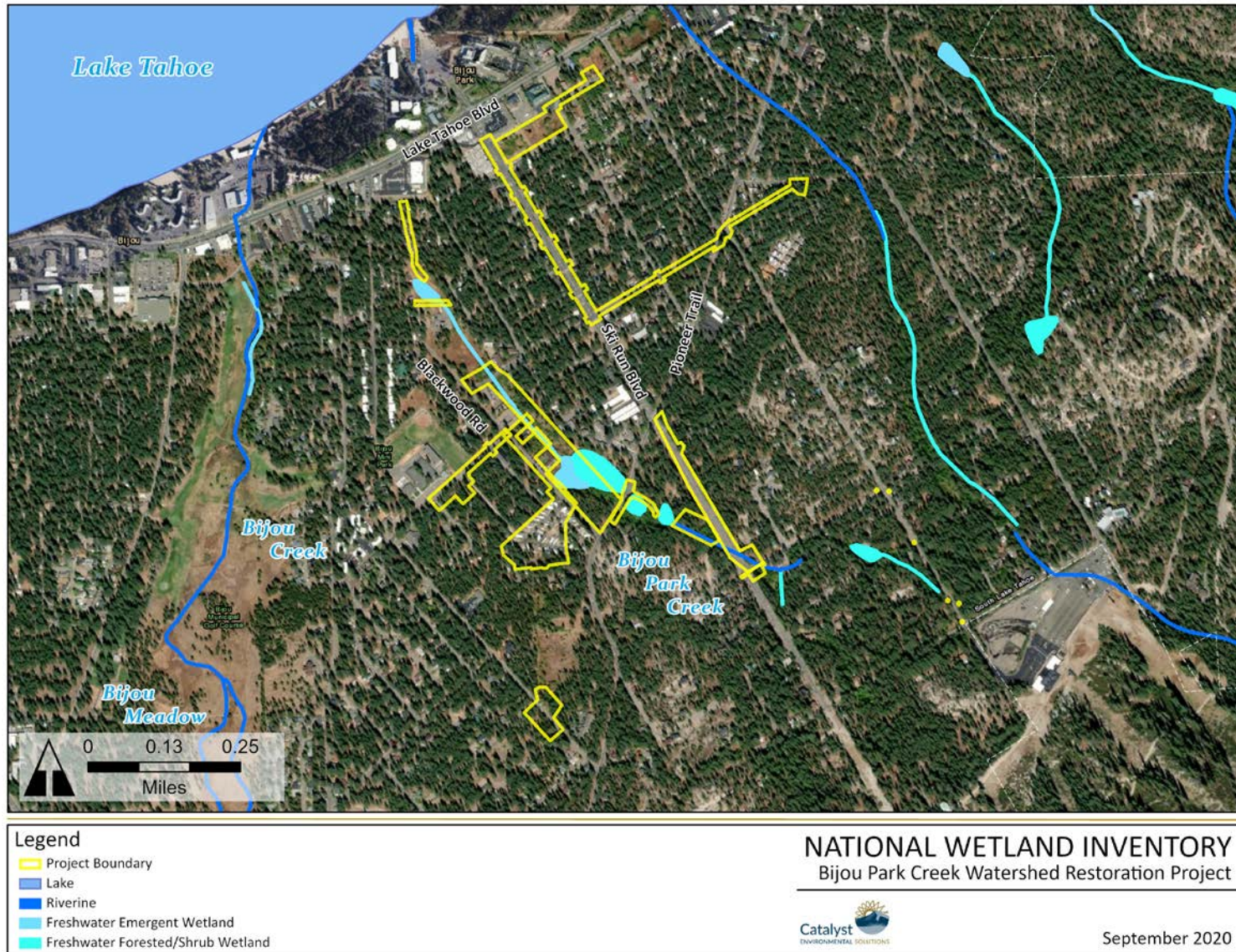


Figure 3.5-2 National Wetlands Inventory Data for the Project Area

3.5.2 Impact Assessment

3.5.2.1 CEQA Checklist Analysis

CEQA IV(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?

Environmental Analysis: **Less than Significant with Mitigation**

Thirteen special status species have potential to occur within the Project Area. Some Project improvements in the Bijou Park Creek SEZ (e.g., Bijou Park Creek SEZ Enhancement, Upper Bijou Park Creek, and Pioneer Crossing Culvert Replacement) would temporarily impact sensitive riparian areas that could provide habitat for Sierra Nevada yellow-legged frog, willow flycatcher, and migratory birds protected under the federal Migratory Bird Treaty Act (MBTA; U.S. Code, Title 16 §§ 703-712).

Sierra Nevada yellow-legged frog is federally endangered, state threatened, a USFS sensitive species, and on the CDFW watch list. Work within the riparian habitat of the SEZ would require use of heavy machinery and would result in ground disturbance that could impact the species.

Willow flycatcher is a USFS sensitive species and is listed as endangered under the CESA. Removal of trees, including willows, would be necessary during the Bijou Park Creek SEZ Enhancement improvement, which would include excavating a new, geomorphically stable channel in the SEZ and could significantly impact willow flycatcher. Construction would likely occur from May to October and thus would overlap with nesting season.

Construction activities for any of the proposed improvements could adversely affect special status species through increased noise, ground disturbance, vegetation removal, and the presence of continuous human activity; however, these impacts would be temporary. Furthermore, the proposed Project is within the City and therefore resident species are already acclimated to the elevated levels of noise, human activity, and disturbance associated with an active residential and commercial community.

The Project would implement the measures identified in Section 2.3 to avoid and minimize impacts to special status species. The Project would comply with local, state, and federal laws such that the Project would not result in loss of endangered, threatened, rare, or special status fish, wildlife, or plant individuals.

Once the Bijou Park Creek SEZ Enhancement improvement is constructed, enhancement of the SEZ would ultimately result in more robust habitat for willow flycatcher as all trees would be replanted and creek would be rerouted towards the center of the SEZ where it would be buffered by a thick riparian fringe of willows. The current path of the creek is altered to run near Blackwood Avenue where disturbance to willow flycatcher from noise and human activity is higher. Following completion of construction activities for all Project improvements, disturbed upland areas would be restored to their natural condition. Restored wetland and riparian areas would be improved by the Project and quality of riparian habitat would increase, a beneficial impact to riparian species.

The Project would implement the measures identified in Section 2.3.3 and 2.3.4 to avoid and minimize impacts to special status species. The Project would comply with local, state, and federal laws including implementation of Mitigation Measure BIO-1, conducting protocol-level surveys as-needed. With adherence these measures, the impacts of Project construction on special status species would be less than significant with Mitigation.

Mitigation Measures: Yes

Mitigation Measure BIO-1: If it is concluded that direct or indirect impacts are possible to sensitive or listed species and/or their habitat, the need for protocol-level surveys will be determined in consultation with state (CDFW) and federal (USFWS) agencies and other stakeholders. The type and intensity of surveys will depend on the listed species in question and the potential habitat present for that species. During the appropriate survey timeframe specific to the target species, qualified biologists would resurvey habitat areas utilizing state and federal protocol to detect presence and determine distribution of the species within the Project Area. Based on survey results, consultation will also be undertaken to determine whether further compensatory mitigation actions are required.

CEQA IV(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, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Environmental Analysis: Less than Significant

SEZs are specially designated sensitive natural areas specific to the Tahoe area. The entire Bijou Park Creek Restoration Enhancement and the Upper Bijou Park Creek improvement are fully within the Bijou Park Creek SEZ and all of the Project improvements either directly or indirectly benefit the SEZ.

The two in-creek improvements (Upper Bijou Park Creek and Bijou Park Creek Enhancement) would directly improve and enhance the function and stability of the SEZ. During construction, substantial ground disturbance and vegetation removal would impact the riparian habitat within these areas; however, all vegetation would be replaced, or re-planted following construction and no net loss of riparian vegetation would occur.

All of the stormwater management infrastructure improvements (i.e., Keller Canyon Bypass, Rockwood to Blackwood, Bijou School Frontage Drainage Improvement, Pioneer Trail Culvert Replacement, Ski Run Diversion, Aloha Basin, and Needle Peak Localized Treatment) would expand the capacity for stormwater treatment, flood control, and pollutant load reduction within the Project Area and SEZ.

The Project would adhere to all management practices, conditions, and measures identified during Clean Water Act (CWA) 401 certification and CDFW 1600 permit application (Lake and Streambed Alteration Notification) as well as the compliance measures and BMPs described in Section 2.3. Therefore, Project construction would have a less than significant impact on the SEZ.

Once, constructed, the Project would provide a beneficial impact on the SEZ as it would improve hydrogeomorphic deficiencies and water quality within the SEZ and adjacent areas.

Mitigation Measures: None

CEQA IV(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?

Environmental Analysis: Less than Significant with Mitigation

The entire Bijou Park Creek Restoration Enhancement and the Upper Bijou Park Creek improvement are fully within the Bijou Park Creek SEZ. In-water work would occur during construction of both of these improvements and beneficial alterations to the hydrology of the waterway, including the addition of step pools, construction of a new channel, and decommissioning of the old channel would be permanent. Temporary and permanent removal and fill would occur in these areas of the SEZ and the

creek would be diverted during construction. These beneficial improvements would result in restoration and enhancement of the SEZ and would lead to improved water quality and habitat around Lake Tahoe.

All of the stormwater management infrastructure improvements (i.e., Keller Canyon Bypass, Rockwood to Blackwood, Bijou School Frontage Drainage Improvement, Pioneer Trail Culvert Replacement, Ski Run Diversion, Aloha Basin, Osgood Basin, and Needle Peak Localized Treatment) would expand the capacity for stormwater treatment, flood control, and pollutant load reduction in the Project Area. Some of the construction area in the Osgood Basin improvement footprint is a potentially jurisdictional wetland and would also require removal and/or fill to create an additional basin.

The USACE reviews projects that may have impacts on WoUS under Section 404 of the CWA. Applicable Nationwide Permits (NWP) include NWP 27 – Aquatic Habitat Restoration, Enhancement, and Establishment Activities and NWP 43 – Stormwater Management Facilities. Concurrently or prior to obtaining a 404 permit from USACE, the Project must receive a Section 401 Water Quality Certification issued by the Water Board. The issuance of this certification demonstrates that the Project meets applicable statewide water quality standards.

Construction within waters and wetlands could adversely affect these waterbodies; therefore, implementation of Mitigation Measure BIO-2 is necessary to identify the extent of jurisdictional WoUS and WoS and is necessary to inform Project design when reducing the potential impacts to wetlands to a level of less than significant. In addition, the Project would adhere to all best management practices, conditions, and measures described in Section 2.3.

Once constructed, the Project would provide a beneficial impact on the SEZ, including Bijou Park Creek and surrounding potential wetlands, by improving hydrogeomorphic deficiencies and quality.

Mitigation Measures: **Yes**

Mitigation Measure BIO-2: Prior to completion of final design of the Project, a qualified biologist would perform a wetland delineation for the Project Area. The delineation would conform to the USACE Wetlands Delineation Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). Following delineation of wetlands and waters that would be impacted by the Project the Project design will be modified to avoid impacts to the delineated wetland or the City will comply with the permitting regulations of Section 404 of the CWA to minimize and mitigate for the loss of jurisdictional wetlands and waters.

CEQA IV(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 wildlife nursery sites?

Environmental Analysis: **Less than Significant**

Wildlife movement corridors facilitate movement of species between large patches of natural habitat. Much of the Project footprint lies between and near residential developments. Bijou Park Creek does not flow openly to Lake Tahoe as it is separated by over 1,250 linear feet of underground concrete culverts, and the creek is highly modified by the highway and downstream lakeside development; therefore, fish and wildlife are unlikely to have any viable habitat connecting the Project Area to the lake. Within the Project Area, Bijou Park Creek likely functions as a wildlife corridor by providing a path of travel for wildlife that allows them to avoid direct contact with yards and homes. Black bear, mule deer, and racoon scat was observed in the SEZ during the habitat-level survey. Much of the SEZ is heavily vegetated and may be used for nesting by migratory birds. All Project improvements are within the City

and resident fish and wildlife species are already acclimated to elevated levels of noise, human activity, and disturbance associated due to their proximity to residential and commercial areas.

Construction of the Bijou Park Creek SEZ Enhancement and the Upper Bijou Park Creek improvement could result in temporary adverse effects to fish and wildlife movement within Bijou Park Creek and the SEZ through increased noise, ground disturbance, vegetation removal, and the presence of continuous human activity. All of these impacts would be temporary, however, and the improvements within the SEZ would ultimately create more robust and stable corridor habitat for wildlife and fish. Following completion of construction activities, all areas would be restored to their natural condition. The wildlife and vegetation protection measures described in Section 2.3 would be implemented to ensure that impacts to the movement of fish and wildlife species or their use of the Project Area for nursery sites would be less than significant.

Mitigation Measures: **None**

3.5.2.2 TRPA Checklist Analysis

TRPA 4(b). Will the proposal result in removal of riparian vegetation or other vegetation associated with critical wildlife habitat, either through direct removal or indirect lowering of the groundwater table?

Environmental Analysis: **No, Not Significant**

The two in-creek improvements (Upper Bijou Park Creek and Bijou Park Creek Enhancement) would directly improve and enhance the function and stability of the SEZ. The riparian vegetation within these areas would be directly impacted by substantial ground disturbance and vegetation removal during construction of these improvements; however, all vegetation would be replaced or salvaged and re-planted and no net loss of riparian vegetation would occur. Refer to the analysis for CEQA IVb above, which concludes that the effects to riparian habitat would be less than significant.

Mitigation Measures: **None**

TRPA 4(e). Will the proposal result in reduction of the numbers of any unique, rare or endangered species of plants?

Environmental Analysis: **No, with Mitigation**

Refer to the analysis under CEQA IVa, which concludes that the level of impact to candidate, sensitive, or special status species from Project activities is less than significant with mitigation.

Mitigation Measures: **Yes, BIO-1** (See CEQA IVa)

TRPA 4(f). Will the proposal result in removal of stream bank and/or backshore vegetation, including woody vegetation such as willows?

Environmental Analysis: **No, Not Significant**

The two in-creek improvements (Upper Bijou Park Creek and Bijou Park Creek SEZ Enhancement) would directly improve and enhance the function and stability of Bijou Park Creek. The stream bank and associated vegetation, including willows, would be directly impacted by substantial ground disturbance and vegetation removal during construction; however, all vegetation would be replaced or salvaged and re-planted and no net loss of stream bank vegetation would occur. Refer to the analysis for CEQA IVb above, which concludes that the effects to riparian vegetation would be less than significant.

Mitigation Measures: **None**

TRPA 5(b). Will the proposal result in reduction of the numbers of any unique, rare or endangered species of animals?

Environmental Analysis: **No, with Mitigation**

Refer to the analysis under CEQA IVa, which concludes that the level of impact to candidate, sensitive, or special status species from Project activities is less than significant with mitigation.

Mitigation Measures: **Yes, BIO-1** (See CEQA IVa)

3.5.2.3 NEPA Analysis

The Forest Service Handbook (FSH) Chapter 30 (Categorical Exclusion from Documentation) provides a list of resource areas that may constitute extraordinary circumstances and thus result in the need for an EIS or EA under NEPA (USFS 2020). If extraordinary circumstances are present related to the proposed action, the use of a CE may be precluded for the Project. Two resource conditions related to Biological Resources are included in the list of potential extraordinary circumstances in FSH 1909.15.

FSH 1909.15 NEPA Handbook Chapter 31.2 Extraordinary Circumstances (1): Would the Project adversely affect federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat or Forest Service sensitive species?

Refer to the analysis under CEQA IVa, which concludes that the level of impact to candidate, sensitive, or special status species from Project activities is less than significant with mitigation. The Project will comply with all local, state, and federal laws such that the Project would not result in loss of individuals or populations of endangered, threatened, rare, or special status fish, wildlife, or plants. The Project would avoid potentially significant impacts to special status species through implementation of the protection measures described in Section 2.2 and Mitigation Measure BIO-1.

FSH 1909.15 NEPA Handbook Chapter 31.2 Extraordinary Circumstances (2): Would the Project adversely affect flood plains, wetlands, or municipal watersheds

Refer to the analysis under CEQA IVc, which concludes that the level of impact to protected waterways (including wetlands and the SEZ) would be overall beneficial and would adhere to all conditions and requirements of federal and state permits and certifications. Completion of a jurisdictional wetland and waters delineation has been identified as Mitigation Measure BIO-2.

3.5.2.4 No Action Alternative

Under the No Action Alternative, none of the proposed improvements would be constructed and therefore, there would be no improvement to stormwater drainage or treatment infrastructure that would restore and enhance the function of the Bijou Park Creek SEZ and adjacent wetlands. Stream and wetland function would continue to be adversely impacted by sediments and pollutants from surface runoff and erosion. The Bijou Park Creek stream channel and banks would continue to experience scour and incisement and the headcut west of Ski Run Boulevard would become more unstable. The creek would continue to overflow during high flow events, putting additional flooding pressure on the SEZ and adjacent neighborhoods. The No Action alternative would have a significant impact on wetlands and WoUS/WoS in the Project Area.

Under the No Action Alternative, habitat for wildlife communities, special status species, and migratory birds would be largely unaffected as the vegetation in the Project Area and the riparian habitat within the SEZ is well established and stable. Habitat for fish and aquatic species would also be largely unaffected by the No Action Alternative as the stream currently provides only marginal habitat and significant fish passage barriers would remain present under both the No Action Alternative and the Proposed Project.

3.6 Cultural Resources and Tribal Cultural Resources (NEPA/CEQA) and Archaeological/Historical (TRPA)

Table 3.6-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project and alternatives on cultural resources.

Table 3.6-1 Evaluation Criteria and Summary of Impacts on Cultural Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
<i>CEQA Environmental Checklist Item</i>				
CEQA V(a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?				X
CEQA V(b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?			X	
CEQA V(c) Disturb any human remains, including those interred outside of formal cemeteries?			X	
CEQA XVIII (a,b) 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: <ul style="list-style-type: none"> a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. 			X	

Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item				
TRPA 20(a) Result in an alteration of or adverse physical or aesthetic effect to a significant archaeological or historical site, structure, object or building?				X
TRPA 20(b) Is the proposed project located on a property with any known cultural, historical, and/or archaeological resources, including resources on TRPA or other regulatory official maps or records?				X
TRPA 20(c) Is the property associated with any historically significant events and/or sites or persons?				X
TRPA 20(d) Does the proposal have the potential to cause a physical change which would affect unique ethnic cultural values?				X
TRPA 20(e) Will the proposal restrict historic or pre-historic religious or sacred uses within the potential impact area?				X
Will the Proposal:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
NEPA Categorial Exclusion Checklist				
FSH 1909.15 NEPA Handbook Chapter 31.2 Extraordinary Circumstances (6) Would the Project adversely affect American Indians and Alaska Native religious or cultural sites?			X	
FSH 1909.15 NEPA Handbook Chapter 31.2 Extraordinary Circumstances (7) Would the Project adversely affect archaeological sites, or prehistoric properties or areas?			X	

3.6.1 Environmental Setting

A registered California archaeologist performed a records search at the North Central Information Center (NCIC) to identify potential cultural and historic resources occurring on and within 0.5 mile of the Project Area. The cultural, historic, and archaeological resources identified in the records review include resources that are both potentially eligible and ineligible to the National Register of Historic Places (National Register). To be eligible for the National Register, the site/resource must have considerable historical, social, engineering, military, economic, religious, or cultural significance.

The NCIC records identified two potential cultural resources within the Project Area, three potential cultural resources outside but adjacent to the Project Area, and an additional 79 potential cultural resources within the half mile radius of the Project Area. The NCIC search also revealed that there had been 16 previous cultural resources surveys that result in 100 percent coverage of the Project Area, as well as 36 additional surveys within the half mile radius of the Project.

The two potential cultural resources being depicted as located within the Project area, include a residence and location of the McComber's Station; and, the Knight's Inn at 3600 Lake Tahoe Boulevard. Based on aerial photograph's, neither of these resources are still present: the residence and McComber's Station is the current location of the City of South Lake Tahoe Fire Station No. 1, and the Knight's Inn was not deemed eligible for the National Register and was demolished in 2018 and the property now contains a shopping center and parking lot (Michael Baker International 2016). Therefore, there are no known cultural resources located in the Project Area.

The three potential cultural resources adjacent to the Project Area include an isolated artifact; a 200-foot section of the Pioneer Road; and a residential structure at 3600 Lloyd Avenue. The isolated artifact was likely removed and provided no historical information of value; the 200-foot section of the Pioneer Road spans the distance of the fire station parcel along Pioneer Road; and the structure at 3600 Lloyd Avenue was not deemed eligible for the National Register and demolished at the same time as the Knight's Inn in 2018 (Michael Baker International 2016). Therefore, there are no known cultural resources adjacent to the Project Area.

The remaining potential cultural resources within one half mile of the Project Area include three prehistoric sites, one multi-component site, the Lake Valley Railroad, the Tahoe Meadows Historic District, Camp Chonokis, and 72 buildings comprised of one church one pump house, one market, three apartment complexes, eleven inns/motels, and 55 residential structures. The eligibility of these potential resources/sites to the National Register is unknown, but these sites are beyond the proposed area of potential effect of the Project.

3.6.2 Impact Assessment

3.6.2.1 [CEQA Checklist Analysis](#)

[CEQA V\(b\). Would the Project cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5??](#)

Environmental Analysis: **Less than Significant**

No known archaeological resources are present in the Project Area, and therefore, no archaeological resources are likely to be disturbed. Considering that the majority of the Project Area has been developed previously, there is a low probability of encountering an archaeological resource during ground disturbing activities.

Mitigation Measures: **None**

[CEQA V\(a\). Would the Project disturb any human remains, including those interred outside of formal cemeteries?](#)

Environmental Analysis: **Less than Significant**

No known burial sites or human remains are present in the Project Area, and therefore, no human remains are likely to be disturbed. Considering that the majority of the Project Area has been developed

previously, there is a low probability of encountering a human remains during ground disturbing activities.

Mitigation Measures: **None**

CEQA XVIII(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:

- a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
- b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Environmental Analysis: **Less than Significant**

No known tribal cultural resources are present in the Project Area, and therefore, no tribal cultural resources are likely to be disturbed. As discussed in Section 1.6.3 above, three Tribes with potential aboriginal claim to the Project Area (Washoe Tribe, United Auburn Indian Community, and the Lone Band of Miwok Indians) were contacted regarding the presence of any known tribal cultural resources or religious uses, pursuant to AB52 and NHPA. None of the tribes requested consultation or provided any information regarding tribal cultural resources. Considering that the majority of the Project Area has been developed previously, there is a low probability of encountering tribal cultural resources during ground disturbing activities.

Mitigation Measures: **None**

3.6.2.2 TRPA Checklist Analysis

TRPA 20(a). Would the Project result in an alteration of or adverse physical or aesthetic effect to a significant archaeological or historical site, structure, object or building?

Environmental Analysis: **No**

No known archaeological or historic resources are present in the Project Area, and therefore, no archaeological or historical resources are likely to be disturbed. Additionally, known historic resources occurring in the vicinity of the Project Area would not be affected. Considering that the majority of the Project Area has been developed previously, there is a low probability of encountering an archaeological resource during ground disturbing activities.

Mitigation Measures: **None**

TRPA 20(b). Is the proposed Project located on a property with any known cultural, historical, and/or archaeological resources, including resources on TRPA or other regulatory official maps or records?

Environmental Analysis: **No**

No known cultural, archaeological, or historic resources are present in the Project Area, and therefore, no archaeological or historic resources are likely to be disturbed. Additionally, known cultural,

archaeological, and historic resources occurring in the vicinity of the Project Area would not be affected. Considering that the majority of the Project Area has been developed previously, there is a low probability of encountering an archaeological resource during ground disturbing activities.

Mitigation Measures: **None**

TRPA 20(c). Is the property associated with any historically significant events and/or sites or persons?

Environmental Analysis: **No**

No known historic resources are present in the Project Area, and therefore, no historical resources are likely to be disturbed.

Mitigation Measures: **None**

TRPA 20(d). Does the Project have the potential to cause a physical change which would affect unique ethnic cultural values?

Environmental Analysis: **No**

The primary ethnic cultural values to occur in the Project Area would be tribal cultural resources. No known tribal cultural resources are present in the Project Area, and therefore, no ethnic cultural values are likely to be disturbed. As discussed in Section 1.6.3 above, three Tribes with potential aboriginal claim to the Project Area (Washoe Tribe, United Auburn Indian Community, and the Lone Band of Miwok Indians) were contacted regarding the presence of any known tribal cultural resources or religious uses, pursuant to AB52 and NHPA. None of the tribes requested consultation or provided any information regarding tribal cultural resources or ethnic cultural values. Considering that the majority of the Project Area has been developed previously, there is a low probability of encountering tribal cultural resources during ground disturbing.

Mitigation Measures: **None**

TRPA 20(e). Will the proposal restrict historic or pre-historic religious or sacred uses within the potential impact area?

Environmental Analysis: **No**

No known historic or pre-historic religious or sacred uses are present in the Project Area, and therefore, no historic or pre-historic religious or sacred uses are likely to be restricted. As discussed in Section 1.6.3 above, three Tribes with potential aboriginal claim to the Project Area (Washoe Tribe, United Auburn Indian Community, and the Lone Band of Miwok Indians) were contacted regarding the presence of any known tribal cultural or religious resources, pursuant to AB52 and NHPA. None of the tribes requested consultation or provided any information regarding tribal cultural resources or religious uses in the Project Area. Considering that the majority of impacts would be construction related and temporary, no long-term restrictions would occur in the Project Area.

Mitigation Measures: **None**

3.6.2.3 NEPA Analysis

The Forest Service Handbook (FSH) Chapter 30 (Categorical Exclusion from Documentation) provides a list of resource areas that may constitute extraordinary circumstances and thus result in the need for an EIS or EA under NEPA. If extraordinary circumstances are present related to the proposed action, the use of a CE may be precluded for the Project. Two resource conditions related to Cultural, Tribal, and

Archaeological Resources are included in the list of potential extraordinary circumstances in FSH 1909.15.

FSH 1909.15 NEPA Handbook Chapter 31.2 Extraordinary Circumstances (6): Would the Project adversely affect American Indians and Alaska Native religious or cultural sites?

Environmental Analysis: **Less Than Significant**

No known tribal cultural resources are present in the Project Area, and therefore, no tribal cultural resources are likely to be disturbed. As discussed in Section 1.6.3 above, three Tribes with potential aboriginal claim to the Project Area (Washoe Tribe, United Auburn Indian Community, and the Lone Band of Miwok Indians) were contacted regarding the presence of any known tribal cultural resources or religious uses, pursuant to AB52 and NHPA. None of the tribes requested consultation or provided any information regarding tribal cultural resources. Considering that the majority of the Project Area has been developed previously, there is a low probability of encountering tribal cultural resources during ground disturbing activities.

Mitigation Measures: **None**

FSH 1909.15 NEPA Handbook Chapter 31.2 Extraordinary Circumstances (7): Would the Project adversely affect archaeological sites, or prehistoric properties or areas?

Environmental Analysis: **Less Than Significant**

No known archaeological, historic, or pre-historic properties, areas, or sites present in the Project Area, and therefore, no archaeological, historic, or pre-historic properties, areas, or sites are likely to be restricted. Considering that the majority of the Project Area has been developed previously, there is a low probability of encountering an archaeological or pre-historic resource during ground disturbing activities.

Mitigation Measures: **None**

3.7 Energy (CEQA/TRPA)

Table 3.7-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project and alternatives on energy resources.

Table 3.7-1 Evaluation Criteria and Summary of Impacts on Energy Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
<i>CEQA Environmental Checklist Item</i>				
CEQA VI(a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
CEQA VI(b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?				X

Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item				
TRPA 15(a) Use of substantial amounts of fuel or energy?				X
TRPA 15(b) Substantial increase in demand upon existing sources of energy, or require the development of new sources of energy?				X

3.7.1 Environmental Setting

The Project does not propose to install any permanent facilities that would require energy to operate; therefore, all potential impacts would be limited to energy consumption during construction and potential effects to existing overhead and underground utilities. Energy utilities present in the area primarily serve residences and small businesses. In 2018, El Dorado County consumed 1,218 GWh of electricity and 32.3 million therms of natural gas (CEC 2020). Energy facilities include 120 kV overhead electrical lines, mounted on wood monopoles and underground gas lines that are embedded within the roadways and along the side of primary roads. Potential impacts to these facilities are addressed in Section 3.20 below.

3.7.2 Impact Assessment

3.7.2.1 CEQA Checklist Analysis

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

Environmental Analysis: **Less than Significant**

Energy sources that would be consumed during construction include gasoline, diesel, and electricity, either from a generator or charged battery. All energy consumed during construction would be necessary to install the proposed improvements, and the Project would not create any new permanent energy consumption. As stated in Section 2.3.9 above, construction vehicles and equipment would not be left to idle needlessly to minimize the potential for unnecessary energy consumption, resulting in less than significant effects to energy consumption.

Mitigation Measures: **None**

3.8 Geology and Soils (CEQA) and Land (TRPA)

This section evaluates the Project's impact on geological, soil, and land resources during construction and operations. Table 3.8-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project and alternatives on geology, soils, and land resources.

Table 3.8-1 Evaluation Criteria and Summary of Impacts on Geology, Soils, and Land Resources

Would the Project:	Potentially Significant Impact	Less than Significant	Less than Significant Impact	No Impact
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		with Mitigation		
CEQA Environmental Checklist Item				
CEQA VII(a: i-iv) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map, issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
CEQA VII(b) Result in substantial soil erosion or the loss of topsoil?			X	
CEQA VII(c) Be located on a geologic unit or a soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?		X		
CEQA VII(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?		X		
CEQA VII(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?				X
CEQA VII(f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?				X
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item - Land				
TRPA 1(a) Result in a compaction or covering of the soil beyond the limits allowed in the land capability or Individual Parcel Evaluation System (IPES)?				X
TRPA 1(b)				X

Result in a change in the topography or ground surface relief features of site inconsistent with the natural surrounding conditions?				
TRPA 1(c) Result in unstable soil conditions during or after completion of the Project?		X		
TRPA 1(d) * Result in changes in the undisturbed soil or native geologic substructures or grading in excess of 5 feet?				X
TRPA 1(e) Result in the continuation of or increase in wind or water erosion of soils, either on or off the site?				X
TRPA 1(f) * Result in changes in deposition or erosion of beach sand, or changes in siltation, deposition or erosion, including natural littoral processes, which may modify the channel of a river or stream or the bed of a lake?				X
TRPA 1(g) Result in exposure of people or property to geologic hazards such as earthquakes, landslides, backshore erosion, avalanches, mud slides, ground failure, or similar hazards?				X

3.8.1 Environmental Setting

3.8.1.1 Topography, Geology, and Seismicity

Bijou Park Creek is within the Lake Tahoe Basin between the Carson Range to the east and the Sierra Nevada to the west. The creek outfalls to Lake Tahoe less than one mile from the Project Area. The Project Area lies to the east of the Sierra Nevada physiographic province. The Basin includes approximately 500 square miles of which nearly 40 percent is covered by Lake Tahoe. Elevations in the Basin range from 6,200 to 10,000 feet (ft) above mean sea level (MSL). The Project Area occurs at elevations of 6,200 to 6,400 ft MSL.

The Lake Tahoe Basin was formed by faulting, which occurs when fractures in the earth's crust allow blocks of land to rise and sink. As the Sierra Nevada mountains rose, a lake formed at the southern and lowest part of the basin. The vicinity of the Project Area consists of a flat plain of lakebed deposit, glacial outwash, and glacial moraines bounded by high granite/metamorphic rock peaks.

The Tahoe area is within Seismic Hazard Zone D and has historically experienced seismicity, meaning that earthquakes in the region have the potential to make standing difficult and to cause stucco and some masonry to fall. The Tahoe Valley Area Plan (2015) lists five known fault zones in the vicinity of the city of South Lake Tahoe. Four of these are considered active or potentially active. No active faults have been mapped within the Project Area. The Project Area is approximately six miles east of the Emerald Bay Fault Zone (CGS 2019).

3.8.1.2 Soils

TRPA uses the Bailey System to categorize land capability based on soil type. Much of the project area land is classified as fragile (1A, 1B) and associated with the Bijou Park Creek SEZ. Less fragile portions of the project area include the Bijou School Basin at Spruce Avenue (rated 7) and a zone around Pioneer Trail (rated 5). New development is prohibited on all land with low ratings of 1A and 1B.

Project Area soils are mapped in the Tahoe Basin Area soil survey area. Soil map units are shown in Figure 3.8-1. The soils of the area have been shaped by volcanic processes and consist of various degrees of alluvium or colluvium over granodiorite or granitic (e.g., quartz, feldspar, granite) parent material. Two soils within the Project Area are classified as farmland of statewide importance; however, the existing land use of the area is residential and Jeffrey Pine Forest with no agriculture present. Three mapped soils are classified as hydric and correspond to existing wetlands (Bijou Meadow; Osgood Basin) and waterways (Bijou Park Creek).

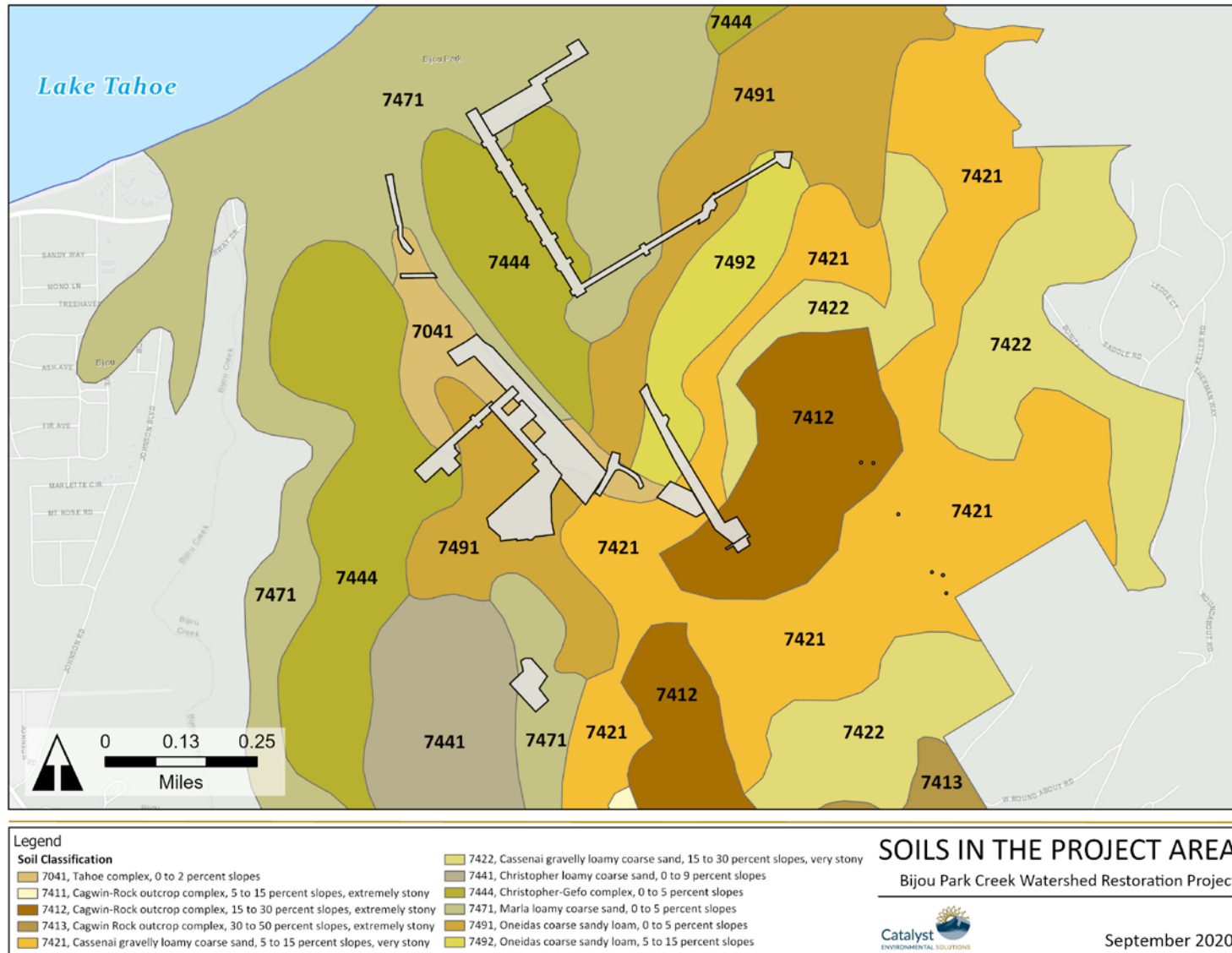


Figure 3.8-1 Soil map units in the Project Area

Expansive soils are typically associated with fine-grained clayey soils. According to the Swelling Clays Map of the Conterminous United States, the Tahoe Basin falls within an area that is underlain with little to no clays with swelling potential; however, some soil units mapped within the Basin contain soils with high shrink/swell potential (TRPA 2012; NRCS 2020). Shrink-swell classes are defined based on linear extensibility (LEP). LEP refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. The volume change is reported as percent change for the whole soil. The amount and type of clay minerals in the soil influence volume change. LEP Ratings of 0 to 3 percent are considered “low”. All soil units mapped within or near the Project Area are characterized as having low shrink/swell potential based on their LEP (Table 3.8-2).

A geotechnical investigation was conducted in October 2019. Soil borings were taken at Osgood Basin, Elva Court (vicinity of Rockwood to Blackwood and Pioneer Crossing Culvert Replacement improvements), and along Herbert Avenue (vicinity of Shirley to Whole Foods improvement). Soil borings logs are presented in Appendix B. These data do not indicate unstable or expansive soils.

Surfaces in the region were created by geologic uplift and have deep granitic bedrock and shallow surface soils. Because the Tahoe Region is not underlain with sedimentary rock formations (which are most likely to contain fossils), it is not likely to contain major paleontological resources (TRPA 2012). No paleontological resources were found during the desktop review for the Project Area (UCMP 2020). Given the extent of existing development and the disturbed condition of the Project Area, City General Plan Policy NCR-4.4 requires discovered paleontological resources to be evaluated and protected.

Table 3.8-2 **Soils of the Project Area**

Map Unit Symbol	Map Unit Name	Hydric soils	Parent Material	Occurrence in Project Area	LEP Rating (percent)	Notes
7041	Tahoe complex, 0 to 2 percent slopes	Yes	Alluvium derived from granitic and volcanic rock	Bijou Park Creek SEZ Enhancement Bijou School Frontage Drainage Improvement Pioneer Crossing Culvert Replacement Rockwood to Blackwood Drainage Improvements Ski Run Diversion Upper Bijou Park Creek	1.5	Low shrink/swell potential
7412	Cagwin-Rock outcrop complex, 15 to 30 percent slopes, extremely stony	No	Colluvium over grus derived from granodiorite	Needle Peak Localized Treatment Ski Run Diversion	1.2	Low shrink/swell potential
7421	Cassenai gravelly loamy coarse sand, 5 to 15 percent slopes, very stony	No	Colluvium derived from granodiorite	Bijou Park Creek SEZ Enhancement Needle Peak Localized Treatment Pioneer Crossing Culvert Replacement Ski Run Diversion Upper Bijou Park Creek	0.3	Low shrink/swell potential
7441	Christopher loamy coarse sand, 0 to 9 percent slopes	No	Outwash derived from granodiorite	Aloha Basin	1.0	Farmland of statewide importance Low shrink/swell potential.
7444	Christopher-Gefo complex, 0-5 percent slopes	No	Outwash derived from granodiorite	Bijou School Frontage Drainage Improvements Keller Canyon Bypass Osgood Expansion	1.0	Farmland of statewide importance Low shrink/swell potential
7471	Marla loamy coarse sand, 0-5 percent slopes	Yes	Alluvium derived from granodiorite	Aloha Basin Bijou Park Creek SEZ Enhancement	1.4	Low shrink/swell potential

				Keller Canyon Bypass Osgood Expansion Shirley to Whole Foods		
7491	Oneidas coarse sandy loam, 0 to 5 percent slopes	No	Outwash and/or till derived from granodiorite	Bijou Park Creek SEZ Enhancement Bijou School Frontage Drainage Improvements Keller Canyon Bypass Needle Peak Localized Treatment Pioneer Crossing Culvert Replacement Rockwood to Blackwood Drainage Improvements Ski Run Diversion	0.5	Low shrink/swell potential
7492	Oneidas coarse sandy loam, 5 to 15 percent slopes	No	Outwash and/or till derived from granodiorite	Keller Canyon Bypass Needle Peak Localized Treatment Ski Run Diversion Upper Bijou Park Creek	0.5	Low shrink/swell potential

Source: NRCS 2020

3.8.2 Impact Assessment

3.8.2.1 CEQA Checklist Analysis

CEQA VII(b). Would the project result in substantial soil erosion or the loss of topsoil?

Environmental Analysis: **Less than Significant**

Many of the Project improvements would occur in existing paved areas; however, some construction would occur within the SEZ or in unpaved areas (e.g., Aloha Basin, Osgood Expansion). Construction of the Project would involve clearing and grubbing activities, grading of road edges, excavation, trenching, and vegetation trimming and removal, which could cause temporary, short-term increases in runoff, soil erosion, wind erosion, and sedimentation within and down gradient of the Project Area. The Project would implement the compliance measures and BMPs described in Sections 2.3.2 and 2.3.5 to minimize dust and erosion impacts. In addition, the Project would comply with the provisions of TRPA Code Chapter 33 (Grading and Construction) and City Code Section 7.15 (Urban Runoff and Storm Water Quality Management). Therefore, the Project would have less than significant impacts on erosion and loss of topsoil.

Once the Project is constructed, The Project would have the beneficial impact of reducing runoff, erosion, and sedimentation within the Project Area.

Mitigation Measures: **None.**

CEQA VII(c). Would the project be located on a geologic unit or a 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?

Environmental Analysis: **Less than Significant**

The Project Area lies within areas subject to unstable soil conditions resulting from previous grading, excavation, or fill. The Project entails construction of surface improvements and subsurface stormwater collection and conveyance facilities. Most of the surface excavation and grading would be minor surface grading for the construction of the stormwater facilities, and roadway edge improvements. These excavations would be localized to the installation of the new stormwater facilities and pipelines. Excavations within the SEZ would occur as part of the Bijou Park Creek SEZ Enhancement and fill in the SEZ for the Upper Bijou Park Creek improvement.

Some Project improvements would occur adjacent to steep slopes (e.g., Ski Run Diversion and Needle Peak Localized Treatment) upon which private residences and infrastructure exist. Construction on unstable soils may cause significant impacts via increasing the risk of landslide, lateral spreading, subsidence, liquefaction or collapse. Soil borings were collected and presented in a geotechnical report which can be found attached to the Preliminary Design Report (Appendix B). The geotechnical report did not indicate the presence of unstable soils. Borings collected are likely representative of the soils throughout the Project Area; however, in the event that unstable soils are encountered during project activities, work would stop, and additional borings would be collected, as described in Section 2.3.5. Thus, impacts from unstable soils would be less than significant.

CEQA VII(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?

Environmental Analysis: **Less than Significant**

The South Lake Tahoe City Code (Chapter 7.20) defines expansive soils as any soils which exhibit significant expansive properties as determined by a geotechnical engineer, civil engineer, or engineering geologist. The LEP rating for all soils in the Project Area indicates low shrink/swell potential; however, the presence or absence of expansive soils in the Project Area would be accurately determined by evaluation during a geotechnical investigation. These conditions could cause significant impacts to both the integrity of improvements that are built on them without proper engineering and risks to life and property. Soil borings were collected and presented in a geotechnical report which can be found attached to the Preliminary Design Report (Appendix B). The geotechnical report did not indicate the presence of expansive soils. Borings collected are likely representative of the soils throughout the Project Area; however, in the event that expansive soils are encountered during project activities, work would stop, and additional borings would be collected, as described in Section 2.3.5. Thus, impacts from unstable soils would be less than significant.

3.8.2.2 TRPA Checklist Analysis

TRPA 1(c). Will the proposal result in unstable soil conditions during or after completion of the project?

Environmental Analysis: **No, Not Significant**

Refer to the analysis for CEQA VIIc, which concludes the level of impact to soils would be less than significant.

Mitigation Measures: **None**

TRPA 1(d). Will the proposal result in changes to the undisturbed soil or native geologic substructure or grading in excess of 5 feet?

Environmental Analysis: **No, Not Significant**

Some portions of the Project Area contain previously undisturbed soils (e.g., some areas of the Bijou Park Creek SEZ Enhancement and the entire Upper Bijou Park Creek improvement). These two improvements lie within the creek channel and/or adjacent SEZ. The soils at these sites would be altered in an effort to improve the hydrogeomorphic stability of the creek and address existing issues with creek degradation (e.g., the headcut that would be repaired by the Upper Bijou Park Creek improvement and excavation of a new channel to convey the creek while the old man-made channel would be decommissioned). None of the Project improvements would require excavation in excess of 5 feet. All Project improvements that would result in changes to the undisturbed soil in the SEZ are beneficial improvements to stabilize the creek and SEZ; therefore, the impacts would be beneficial.

Mitigation Measures: **None**

TRPA 1(f). Will the proposal result in changes in deposition or erosion of beach sand, or changes in siltation, deposition or erosion, including natural littoral processes, which may modify the channel of a river or stream or the bed of a lake?

Environmental Analysis: **No, Not Significant**

The Project improvements within the SEZ (Bijou Park Creek SEZ Enhancement and Upper Bijou Park Creek) would modify the channel of Bijou Park Creek to create a more hydrogeomorphically stable channel. One of the Project objectives is to improve water quality of waters entering Lake Tahoe. The Project would achieve these goals by installing and upgrading stormwater infrastructure, including infiltration basins and sediment traps, and by diverting sediment-laden waters to existing treatment basins to reduce sediment transport in the SEZ. All of these are beneficial improvements.

Mitigation Measures: **None.**

3.9 Greenhouse Gas Emissions (CEQA)

This section analyzes the impacts associated with greenhouse gas (GHG) emissions from the proposed Project. Table 3.9-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project and alternatives on greenhouse gas emissions. These impacts are based on the CEQA Guidelines Appendix G: Environmental Checklist Form and includes whether additional mitigation measures would be required to avoid, reduce, minimize, or otherwise mitigate potential impacts to a level of less than significant.

Table 3.9-1 Evaluation Criteria and Summary of Impacts on Greenhouse Gas Emissions

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
<i>CEQA Environmental Checklist Item</i>				
CEQA VIII(a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
CEQA VIII(b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases?			X	

3.9.1 Environmental Setting

GHGs include carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride (SF₆) (California Health and Safety Code, Section 38505[g]). The most common GHGs that result from human activity are CO₂, followed by CH₄ and N₂O (USEPA 2020).

Greenhouse gas emissions cumulatively contribute to global climate change. Assembly Bill 32 (AB 32), the California Global Warming Act of 2006, declared that global warming poses a serious threat to California's economic well-being, public health, natural resources, and environment. AB 32 also mandates a reduction California's greenhouse gas emissions to 1990 levels by 2020, which represents approximately a 15% reduction below the emissions expected under a "business as usual" scenario. California Senate Bill 32 expands upon AB 32 and went into effect January 1, 2017. The bill requires that there be a reduction in GHG emissions to 40 percent below the 1990 levels by 2030. In response, the City of South Lake Tahoe has adopted Resolution N. 2017-26 (Adopted April 18, 2017) which sets a GHG

reduction goal of 80% below the 2015 levels by 2040. The City of South Lake Tahoe has also issued a Draft Climate Action Plan (2020) that outlines strategies for achieving that goal.

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural emissions sectors (CARB 2017). In the United States, the main source of GHG emissions is electricity generation, followed by transportation. In California, the transportation sector is the largest emitter of GHGs, followed by industrial sources (CARB 2017). In El Dorado County, the primary source of GHG is fossil fuel combustion mainly in the transportation sector (estimated at 70% of countywide GHG emissions). A distant second are residential sources (approximately 20%), and commercial/industrial sources are third (approximately 7%). The remaining sources are waste/landfill (approximately 3%) and agricultural (<1%) (El Dorado County 2020).

The Project is located within the Lake Tahoe Air Basin, under the jurisdiction of the EDCAQMD.

3.9.2 Impact Assessment

3.9.2.1 CEQA Checklist Analysis

CEQA VIII(a). Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Environmental Analysis: **Less than Significant**

The Project involves construction of stormwater drainage and treatment infrastructure and restoring and enhancing the function of the SEZ in the eastern portion of the City of South Lake Tahoe. The Project would not result in operational emissions. Therefore, only construction emissions are evaluated when assessing the Project's potential environmental resource impact. Short-term construction of the project would generate GHG emissions. Construction-related GHG emissions would be generated by vehicle engine exhaust from construction equipment, haul trips, and construction worker trips. GHG emissions generated by the project would consist primarily of CO₂. Short-term, construction-related GHG emissions were estimated using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 computer program as recommended by EDCAQMD and other air districts in California. Detailed information regarding specific type, number, location, timing, or other details about the construction was not known.

Therefore, construction-generated emissions were assessed using reasonable assumptions based on typical construction activities and default values in CalEEMod that are based on the project's location, climate, and land use types. Typical construction phases include demolition, site preparation, grading, and construction of improvement features over the entire 20-month construction period. The model assumes that improvements would not be developed simultaneously. It also does not schedule the construction phases for each site, but rather consolidates each of the construction phases over the length of the entire project duration (e.g., the total number of days for demolition at each of the 11 improvement sites are added together and modeled over a single time period rather than 11 separate shorter time periods). This provides a conservative estimate for the total emissions by assuming a continuous project schedule although actual construction for the individual sites may be intermittent over a longer period of time. The modeled results are included in Appendix D. Construction of the Project would generate a maximum of approximately 136 Metric Tons (MT) CO₂e/year.

The EDCAQMD does not have adopted thresholds specific to GHGs, however EDCAQMD currently recommends that lead agencies use thresholds of significance for evaluating construction- and

operation-related GHG emissions developed by Sacramento Metropolitan Air Quality Management District (SMAQMD) and available in the SMAQMD CEQA Guide, last updated in April 2020. The SMAQMD uses a threshold of 1,100 MT CO₂e/year for the construction phase of all project types. The modeled GHG emissions for the Project are well below the threshold of 1,100 MT CO₂e/year threshold. As such Project impacts are less than significant.

Mitigation Measures: **None**

CEQA VIII(b). Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases?

Environmental Analysis: **Less than Significant**

Currently, neither the TRPA, Tahoe Metropolitan Planning Organization, nor the EDCAQMD maintains local or regional plans, policies, or regulations for the purpose of reducing the emissions of GHGs. Therefore, evaluation of this effect relies on general compliance with the 2008 CARB Scoping Plan strategies to achieve GHG emissions reduction goal as directed by AB 32 as well as those goals and policies adopted by the City of Lake Tahoe. As discussed under CEQA VIII(a), the threshold established by the SMAQMD is intended to evaluate a project for consistency with GHG targets established in AB 32, particularly for emissions occurring by 2020. Project emissions would be below the threshold; therefore, the Project would not conflict with AB 32, which is one of the primary regulations intended to reduce California's GHG emissions. The Project also would not conflict with the City's goals and policies specifically related to climate change (e.g., Goal NCR-6, Policies NCR 6.1 through 6.2), which are focused on new development. The Project directly addresses the strategy Action CS-2 outlined in the City's Draft Climate Action Plan to "protect municipal watersheds and Lake Tahoe water quality."

The TRPA Regional Plan Update (RPU) (TRPA 2012) also includes goals and policies intended to reduce GHG emissions,

including the following:

1. Goal 1, *Protect and enhance the environment, promote energy conservation, and reduce greenhouse gas emissions.*
2. Policy 1.3, *Mitigate the regional and cumulative traffic impacts of new, expanded, or revised developments or land uses by prioritizing projects and programs that enhance non-automobile travel modes.*
3. Policy AQ-1.3, *Encourage the reduction of emissions from motor vehicles and other motorized machinery in the region.*

TRPA's Transportation Plan (2017) includes similar provisions:

1. Goal 1, *Protect and enhance the environment, promote energy conservation, and reduce greenhouse gas emissions.*
2. Policy 1.3, *Mitigate the regional and cumulative traffic impacts of new, expanded, or revised developments or land uses by prioritizing projects and programs that enhance non-automobile travel modes.*

The Transportation Plan also indicates that the Tahoe region is required to meet GHG reduction targets of 7 percent by 2020 and 5 percent by 2035 based off 2005 emission levels. Future multiuse paths are desired by the community along Spruce Avenue, connecting to various neighborhoods so stormwater improvements for the Bijou School Frontage Drainage Improvement site are designed to be compatible with 10- to 12-inch wide paved paths. By facilitating improvements to the existing trail system that will

increase connectivity in the surrounding areas, the Project will indirectly enhance opportunities for alternative, non-motorized transportation. As such, the Project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing emissions of greenhouse gases and impacts would be less than significant.

Mitigation Measures: **None**

3.10 Hazards and Hazardous Materials (CEQA), Human Health (TRPA), and Risk of Upset (TRPA)

This section evaluates the Project's hazards and hazardous materials, human health, and risk of upset impacts during construction and operations. Table 3.10-1 presents the level of significance of the impacts based on the CEQA and TRPA Guidelines.

Table 3.10-1 Evaluation Criteria and Summary of Impacts on Hazards and Hazardous Materials, Human Health, and Risk of Upset

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
<i>CEQA Environmental Checklist Item</i>				
CEQA IX(a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			X	
CEQA IX(b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?			X	
CEQA IX(c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
CEQA IX(d) Be located on a site, which is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5, and as a result, would it create a significant hazard to the public or the environment?				X
CEQA IX(e) For a project located within an airport land use plan, or where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the Project Area?				X
CEQA IX(f)		X		

Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				
CEQA IX(g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?				X
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item – Risk of Upset				
TRPA 10(a) * Involve a risk of an explosion or the release of hazardous substances including, but not limited to, oil, pesticides, chemicals, or radiation in the event of an accident or upset conditions?				X
TRPA 10(b) Involve possible interference with an emergency evacuation plan?		X		
TRPA Initial Environmental Checklist Item – Human Health	Yes	No, with Mitigation	Data Insufficient	No
TRPA 17(a) * Creation of any health hazard or potential health hazard (excluding mental health)?				X
TRPA 17(b) * Exposure of people to potential health hazards?				X

3.10.1 Environmental Setting

South Tahoe Refuse and Recycling Services collects and processes residential and commercial solid and hazardous waste in South Lake Tahoe at its material recovery facility, separates recyclable materials from waste, and then transports waste out of the Lake Tahoe Basin in accordance with state law.

State of California Government Code Section 65962.5 (often referred to as the “Cortese List”) is composed of the SWRCB’s Geotracker database (including leaking underground storage tanks), solid waste disposal sites list, Cease and Desist Orders list, Cleanup and Abatement Orders list, and hazardous waste sites listed in the California Department of Toxic Substance Control’s EnviroStor database. There are no active Cortese List sites in the Project Area (DTSC 2020).

The El Dorado County Local Hazard Mitigation Plan (El Dorado County 2018a) identifies natural hazards to the County (e.g., wildfire, avalanche, flood) and outlines action items to reduce risks to the County from these hazards.

Ski Run Boulevard and Pioneer Trail are evacuation routes for the Heavenly Evacuation Area and Bijou Evacuation Area, respectively (City of South Lake Tahoe 2019).

The Project is not located within an airport land use plan or within two miles of a public airport or a public use airport.

3.10.2 Impact Assessment

3.10.2.1 CEQA Checklist Analysis

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

Environmental Analysis: **Less than Significant**

Construction activities associated with the proposed Project would involve transport, use, and disposal of hazardous materials, such as those typically used by construction vehicles and heavy equipment (e.g., gasoline, diesel fuel, transmission fluid, brake fluid, hydraulic fluid, solvents, motor oils, and lubricating grease). Construction of the Project would also require the demolition, removal, and disposal of concrete and asphalt berms, roadways, and culverts as well as pouring new asphalt for re-paving roads and new concrete for re-paving roads, conveyance ditches and channels, and curbs and gutters. All hazardous materials would be used, transported, and disposed of in accordance with applicable regulations. Concrete and asphalt waste would be disposed of at the Carson City Landfill and Asphalt Concrete Recycling Center. Accidental discharge of hazardous materials or inappropriate disposal of hazardous materials during construction could result in a hazard to the public or the environment.

Compliance with all NPDES Construction General Permit requirements including the preparation and implementation of a SWPPP and BMPs described in Sections 2.3.5 and 2.3.6 would minimize the potential for mishandling and/or the release of hazardous materials. Therefore, impacts of the Project from the transport, use, or disposal of hazardous materials would be less than significant.

Mitigation Measures: **None**

CEQA IX(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?

Environmental Analysis: **Less than Significant**

As described above, accidental discharge of hazardous materials or inappropriate disposal of hazardous materials during construction could result in a hazard to the public or the environment. Compliance with all NPDES Construction General Permit requirements and the BMPs outlined in Sections 2.3.5 and 2.3.6 would ensure that the potential for the release of and impacts from hazardous materials would be less than significant.

Mitigation Measures: **None**

CEQA IX(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?

Environmental Analysis: **Less than Significant**

The Bijou School Frontage Drainage Improvement would be constructed across the street from the Bijou Community School, and the Bijou Park Creek SEZ Enhancement and Rockwood to Blackwood improvement are located within one-quarter mile of the school. As described above, accidental discharge of hazardous materials or inappropriate disposal of hazardous materials during construction could result in a hazard to the public or the environment. Compliance with all NPDES Construction General Permit requirements, including the preparation and implementation of a SWPPP, and the BMPs

outlined in Sections 2.3.5 and 2.3.6 would ensure that the impacts from the use of hazardous materials within one-quarter mile of a school would be less than significant.

Mitigation Measures: **None**

CEQA IX(f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Environmental Analysis: **Less than Significant with Mitigation**

The Project would not conflict with the El Dorado Multi Hazard Plan. In fact, it would help to achieve some of the Plan's mitigation goals such as enhancing flood mitigation through local planning and stabilizing erosion hazard areas.

Temporary lane closures would occur on Ski Run Blvd during construction of the Ski Run Diversion improvement and on Pioneer Trail during the Pioneer Crossing Culvert Replacement improvement. Ski Run Blvd and Pioneer Trail are evacuation routes. These closures could cause a potentially significant impact should emergency response or evacuation be required during Project construction. Mitigation Measure TR-1 requires that the TCP, described in Section 2.3.8, includes measures to protect persons and access to the Project area during an emergency. With implementation of the TCP, construction impacts would be less than significant because safe access would be maintained during the construction period.

Mitigation Measures: **Yes, TR-1** (see section 3.19.2.1).

3.10.2.2 TRPA Checklist Analysis

TRPA 10(a) Will the proposal involve a risk of an explosion or the release of hazardous substances including, but not limited to, oil, pesticides, chemicals, or radiation in the event of an accident or upset conditions?

Environmental Analysis: **No, Not Significant**

Construction activities associated with the proposed Project would involve transport, use, and disposal of hazardous materials, such as those typically used by construction vehicles and heavy equipment (e.g., gasoline, diesel fuel, transmission fluid, brake fluid, hydraulic fluid, solvents, motor oils, and lubricating grease). Construction of the Project would also require the demolition, removal, and disposal of concrete and asphalt berms, roadways, and culverts as well as pouring new asphalt for re-paving roads and new concrete for re-paving roads, conveyance ditches and channels, and curbs and gutters. All hazardous materials would be used, transported, and disposed of in accordance with applicable regulations. Concrete and asphalt waste would be disposed of at the Carson City Landfill and Asphalt Concrete Recycling Center. Accidental discharge of hazardous materials or inappropriate disposal of hazardous materials during construction could result in a hazard to the public or the environment.

Compliance with all NPDES Construction General Permit requirements, including the preparation and implementation of a SWPPP, and BMPs described in Sections 2.3.5 and 2.3.6 would minimize the potential for release of hazardous materials. Therefore, risk of the release of hazardous substances in the event of an accident or upset conditions would not be significant.

Mitigation Measures: **None**

TRPA 10(b) Will the proposal involve possible interference with an emergency evacuation plan?

Environmental Analysis: **No, with Mitigation**

Temporary lane closures would occur on Ski Run Blvd during construction of the Ski Run Diversion improvement and on Pioneer Trail during the Pioneer Crossing Culvert Replacement improvement. Ski Run Blvd and Pioneer Trail are evacuation routes. These closures could cause a potentially significant impact should emergency evacuation be required during construction of the Project. Mitigation Measure TR-1 requires that the TCP, described in Section 2.3.8, includes measures to protect persons and access to the Project area during an emergency. Given implementation of the TCP, construction impacts would be less than significant because safe access would be maintained during the construction period.

Mitigation Measures: **Yes, TR-1** (see section 3.19.2.1).

TRPA 17(a) Will the proposal create any health hazard or potential health hazard (excluding mental health)?

Environmental Analysis: **No, Not Significant**

As described above, the Project would require the use of small amounts of hazardous materials, the accidental discharge or inappropriate disposal of which during construction could result in a hazard to the public or the environment. Compliance with all NPDES Construction General Permit requirements, including the preparation and implementation of a SWPPP, and BMPs described in Sections 2.3.5 and 2.3.6 would ensure that health hazards would not be significant.

Further, as noted above in Section 3.4.1, lead may be present in urban soils and can be re-suspended in the air. Soil samples collected along US 50 during a site investigation for aerially deposited lead for the Caltrans South Lake Tahoe US 50 Improvement Project (PM 77.3/79.3) Trout Creek to Ski Run Boulevard indicated that levels of lead in the soil were below Department of Toxic Substance control thresholds for hazardous waste (Geocon Consultants 2008). It is expected that soils along the less traveled roads of the Project area are also below hazardous waste thresholds. In the unlikely event that soil or groundwater contamination is encountered, implementation of contaminated soil and groundwater procedures described in Section 2.3.6 would ensure that impacts are not significant.

Mitigation Measures: **None**

TRPA 17(b) Will the proposal expose people to potential health hazards?

Environmental Analysis: **No, Not Significant**

As described above, accidental discharge of hazardous materials or inappropriate disposal of hazardous materials during construction could result in a hazard to the public or the environment. Compliance with all NPDES Construction General Permit requirements, including the preparation and implementation of a SWPPP, and BMPs described in Sections 2.3.5 and 2.3.6 would ensure that the risk of exposure of people to potential health hazards would not be significant.

Mitigation Measures: **None**

3.11 Hydrology (CEQA) and Water Quality (CEQA/TRPA)

This section evaluates the potential impacts of the Project on hydrology and water quality. Table 3.11-1 presents the level of significance of the impacts based on the CEQA and TRPA Guidelines.

Table 3.11-1 Evaluation Criteria and Summary of Impacts on Hydrology and Water Quality

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
CEQA Environmental Checklist Item				
CEQA X(a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?		X		
CEQA X(b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			X	
CEQA X(c: i-iii) 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 offsite;			X	
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;				X
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or				X
iv) impede or redirect flood flows?				X
CEQA X(d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
CEQA X(e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item				
TRPA 3(a) * Result in changes in currents, or the course or direction of water movements?				X
TRPA 3(b)				X

Changes in absorption rates, drainage patterns, or the rate and amount of surface water runoff so that a 20 yr. 1 hr. storm runoff (approximately 1 inch per hour) cannot be contained on the site?				
TRPA 3(c) Alterations to the course or flow of 100-year flood waters?				X
TRPA 3(d) * Change in the amount of surface water in any water body?				X
TRPA 3(e) Discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?		X		
TRPA 3(f) Alteration of the direction or rate of flow of ground water?				X
TRPA 3(g) * Change in the quantity of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?				X
TRPA 3(h) Substantial reduction in the amount of water otherwise available for public water supplies?				X
TRPA 3(i) Exposure of people or property to water related hazards such as flooding and/or wave action from 100-year storm occurrence or seiches?				X
TRPA 3(j) * The potential discharge of contaminants to the groundwater or any alteration of groundwater quality?				X
TRPA 3(k) * Is the project located within 600 feet of a drinking water source?				X

3.11.1 Environmental Setting

3.11.1.1 Climate

The climate of City of South Lake Tahoe is characterized by warm, dry summers and the majority of annual precipitation falling during winter. Figure 3.11-1 shows the variation in annual monthly temperatures in South Lake Tahoe (Station No. 048762). Total annual precipitation averages 16.51 inches, with the majority falling in October through April as snow (Figure 3.11-2; Western Regional Climate Center 2020).

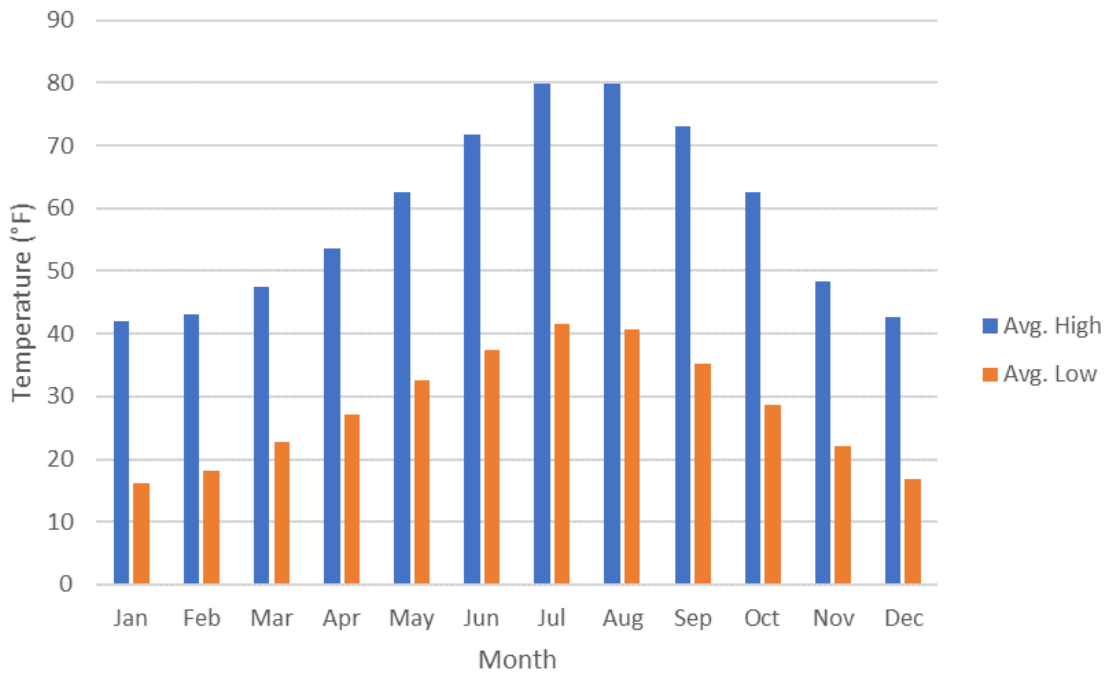


Figure 3.11-1. Monthly average high and low temperatures in South Lake Tahoe (1981-2010).

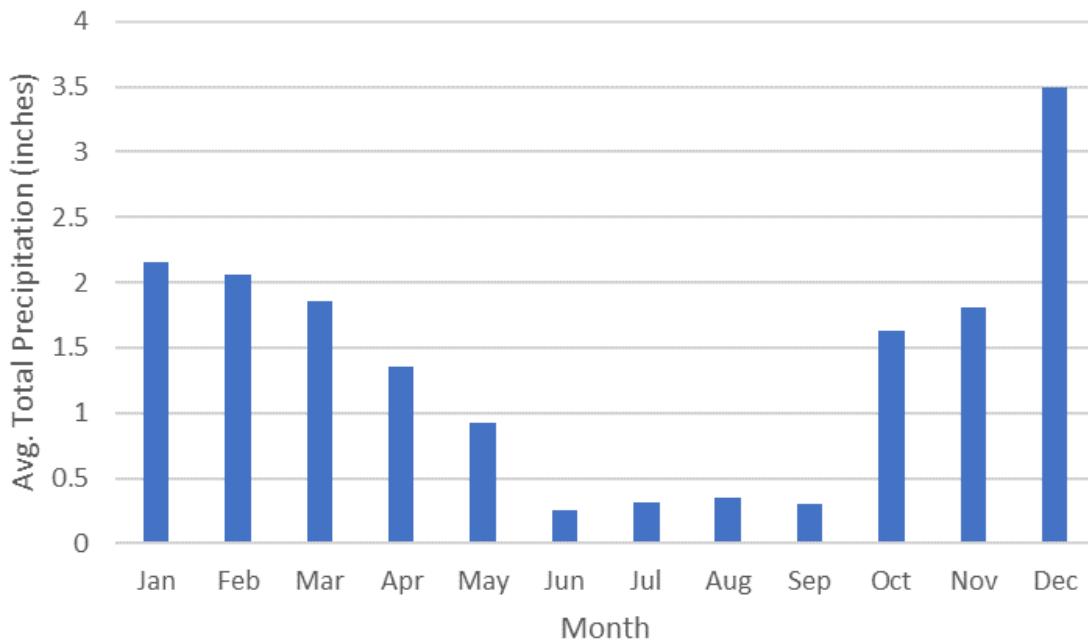


Figure 3.11-2. Monthly average precipitation in South Lake Tahoe (1981-2010)

3.11.1.2 Hydrology

Bijou Park Creek is a tributary to Lake Tahoe. The creek is located within the southern portion of the Lake Tahoe Hydrologic Unit. The Bijou Park Creek Watershed is an important watershed extending from Heavenly Mountain Resort and encompassing upper Ski Run Boulevard, neighborhoods along Glenwood and Blackwood Avenues and the Whole Foods area before connecting to Lake Tahoe via an outfall on the east side of the Ski Run Marina. Flows that enter the Bijou Park Creek drainage are conveyed through the Heavenly Valley Mobile Home Park outfall and just north of Werner Salas Drive, crossing Blackwood Road east of the existing trailer park, crossing Blackwood Road north of Tamarack Avenue and at various locations on the east side of the drainage. Bijou Park Creek is the only stream habitat located within the Project Area. The headwaters of the creek are outside of the Project Area at the Heavenly Ski Resort parking lot. Additional drainages are added from the southwest and conveyed into Bijou Park Creek where they enter the City of South Lake Tahoe storm drain system and are then conveyed to Lake Tahoe via the outfall on the east side of the Ski Run Marina. Due to historical alteration of the drainage at the Heavenly Valley Ski Result, the Keller Canyon Drainage now joins the Bijou Park Creek drainage at Ski Run Boulevard (Lumos 2005). The Bijou Park Creek drainage consists of erosion and sediment loss/transport from the upper disturbed slopes in the Heavenly Ski Resort through the Charlesworth Court area and into the Bijou Park Creek drainage during storm events.

3.11.1.3 Surface Water Quality

The Lake Tahoe TMDL was approved by the USEPA in 2011. Lake Tahoe is listed under Section 303(d) as impaired by input of nitrogen, phosphorus, and sediment because these three pollutants are responsible for the lake's deep water transparency loss (LRWQCB and NDEP 2010). Urban uplands runoff, atmospheric deposition, forested upland runoff, and stream channel erosion are the primary sources of fine sediment particle, nitrogen, and phosphorus loads discharging to Lake Tahoe. Traffic and residential runoff discharged into storm drains and Bijou Park Creek in the Project Area discharge to Lake Tahoe at the Ski Run Marina. Bijou Park Creek is listed as impaired under Section 303(d) of the CWA for iron, oil and grease, phosphorus, total nitrogen as N, and turbidity (USEPA 2016).

Bijou Park Creek has naturally high levels of iron; however, samples still exceeded the secondary Maximum Contaminant Level of 0.3 mg/L that is applied to evaluate compliance with the Municipal and Domestic Water Supply beneficial use. The primary source of phosphorus to Lake Tahoe and Bijou Park Creek is urban stormwater runoff and phosphorus associated with eroding sediment on disturbed undeveloped lands. The largest source of nitrogen in the Lake Tahoe watershed and Bijou Park Creek is transportation-related emissions that lead to atmospheric nitrogen deposition. The Lake Tahoe TMDL includes implementation measures to reduce atmospheric nitrogen sources. The TMDL relies on the TRPA to lead efforts to improve transportation infrastructure and reduce overall vehicle miles traveled in the Lake Tahoe region to reduce emissions that lead to atmospheric nutrient loading (SWRCB 2012).

Efforts required by the Lake Tahoe TMDL to achieve pollution load reductions in Lake Tahoe tributaries focus on (1) stabilizing disturbed areas within forested uplands; (2) restoring eroding stream channels; and (3) managing and treating urban uplands (e.g., street sweeping, installing and maintaining infiltration and stormwater treatment facilities).

3.11.1.4 Groundwater

The Project is located in the Bijou sub-area of the Tahoe Valley South Subbasin (TVS Basin) of the Tahoe Valley Groundwater Basin. The TVS Basin is a discrete, highly productive sedimentary geologic basin

located over an area of approximately 23 square miles in the City of South Lake Tahoe and portions of El Dorado County.

The TVS Groundwater Basin is comprised of an alluvial aquifer, which supplies approximately 95% of the drinking water for the area (DRI 2016). Groundwater in the Project Area is managed by the South Tahoe Public Utility District in accordance with the 2014 Tahoe Valley South Basin (6-5.01) Groundwater Management Plan. Groundwater levels in the TVS Basin are relatively stable (Kennedy-Jenks 2014). Average annual groundwater recharge to the TVS Basin is estimated at approximately 42,000 acre-feet per year (DRI 2016).

Groundwater in the TVS Basin is typically of excellent quality, suitable for the designated beneficial uses of municipal, industrial and agricultural water use. However, a tetrachloroethylene plume exists in the TVS Basin, two miles southwest of the Project Area and does not affect groundwater quality within the Project Area.

The Project Area overlaps with numerous source water protection zones (TRPA 2000). There are over 100 private wells per square mile in the Bijou area of the TVS Basin (STPUD 2018). No production wells exist in the Project area, and the Project would not occur with 600 feet of any wells.

3.11.1.5 Floodplain

The Project Area is not within the mapped 100-year flood zone, which is defined by the Federal Emergency Management Act (FEMA) Special Flood Hazard Area Zone A. The Project Area is classified as an Area of Minimal Flood Hazard (FEMA 2019).

3.11.1.6 Tsunami, Seiche, and Mudflow

The Lake Tahoe area has historically experienced mudflows and landslides as a result of tectonic activity. Large landslides approximately 12,000-21,000 years ago are thought to have triggered a series of huge seiches on the lake that resulted in strewn boulders along the shores of the entire lake and lowering of the lake level by approximately 10 meters (Moore et al. 2014). Bijou Park Creek lies within the Stateline sediment wave channel system visible on Lake Tahoe bathymetry presented by Moore et al. (2014). Mudslides and landslides are relatively common occurrences in the region.

3.11.2 Impact Assessment

3.11.2.1 CEQA Checklist Analysis

CEQA X(a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Environmental Analysis: **Less than Significant with Mitigation**

Construction activities including removal of existing infrastructure, use of heavy equipment, excavation and grading, use of hazardous materials, and repaving of roads could result in pollution or sediment inputs into surface or groundwater that could degrade water quality. The City would implement all best management practices, conditions, and measures described in Section 2.3.5 to minimize impacts to water quality.

Concurrently to obtaining a 404 permit from USACE, the Project must receive a Section 401 Water Quality Certification issued by the Lahontan RWQCB. The issuance of this certification demonstrates that the Project meets applicable statewide water quality standards.

Construction within waters and wetlands could adversely affect these waterbodies; therefore, implementation of Mitigation Measure BIO-2 is necessary to identify the extent of jurisdictional WoUS and WoS and is necessary to inform Project design and ensure minimization of impacts.

Once constructed, the Project would ultimately provide a beneficial impact to water quality and stormwater management in the Project Area and SEZ and assist the City in meeting the Lake Tahoe TMDL requirements. In particular, the proposed Aloha Basin improvement would earn Lake Clarity Credits under the TMDL. The Lake Clarity Crediting Program measures the total amount of key pollutants entering Lake Tahoe from urban stormwater and sets load reduction targets that each city, county, and highway maintenance must achieve. Lake Clarity Credits can be traded among jurisdictions to meet regulatory requirements. The proposed Aloha Basin is designed to maximize earning Lake Clarity Credits per the Pollutant Load Reduction Model (PLRM). The PLRM is an urban stormwater model designed to assist users in selection and justification of stormwater projects by comparing pollutant load reductions of different management practices and alternatives.

Mitigation Measures: **Yes, BIO-2** (see Section 3.5.2.1)

CEQA X(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?

Environmental Analysis: **Less than Significant**

The Project may encounter groundwater during construction of the Osgood Basin East, Shirley to Whole Foods, Rockwood to Blackwood, and the Bijou Park Creek SEZ Enhancement improvements. Construction would occur during the dry season (as late as possible in the summer) to reduce the chance of encountering groundwater. Dewatering would occur as necessary to allow for feasible and safe construction. However, the Project would not result in withdrawal of substantial amounts of groundwater and therefore would have less than significant impacts on groundwater supplies and recharge.

CEQA X(c: i-iii) 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 result in substantial erosion or siltation on- or off-site?

Environmental Analysis: **Less than Significant**

The Keller Canyon Bypass, Bijou Park Creek SEZ, Rockwood to Blackwood, and Ski Run Diversion improvements would alter inadequate existing drainage patterns that lead to flooding and water quality degradation. No new impervious surfaces would be created. During construction, the City would implement erosion and sediment control measures as described in Section 2.3.5. Therefore, impacts of the proposed Project during construct on drainage, erosion, or siltation would be less than significant.

Once constructed, the Project would ultimately provide a beneficial impact by increasing the stormwater drain capacity, conveyance, and drainage of the area, thereby decreasing flooding, erosion, and siltation within the Project Area and SEZ.

Mitigation Measures: **None**

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

Environmental Analysis: **Less than Significant**

Although very rare and unanticipated, a seiche in the Project Area could result in the release of pollutants due to project inundation. The City would comply with all NPDES Construction General Permit requirements including the preparation and implementation of a SWPPP and BMPs described in Section 2.3.5 and 2.3.6. Therefore, the Project's impacts on pollutant release in a seiche zone would be less than significant.

Mitigation Measures: **None**

CEQA X(e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Environmental Analysis: **Less than Significant**

The Project may encounter groundwater during construction of the Osgood Basin East, Shirley to Whole Foods, Rockwood to Blackwood, and the Bijou Park Creek SEZ Enhancement improvements. Construction would also occur during the dry season (as late as possible in the summer) to reduce the chance of encountering groundwater. Dewatering would occur as necessary; however, the Project would not result in withdrawal of substantial amounts of groundwater. Therefore, the Project would have a less than significant impacts on groundwater and would not conflict with the 2014 Tahoe Valley South Basin (6-5.01) Groundwater Management Plan.

Mitigation Measures: **None**

3.11.2.2 TRPA Checklist Analysis

TRPA 3(a) Will the proposal result in changes in currents, or the course or direction of water movements?

Environmental Analysis: **No, Not Significant**

The Bijou Park Creek SEZ Enhancement would replace the existing creek channel that has two unnatural right-angle paths with a geomorphically appropriate main channel as shown in Appendix A. This improvement would result in an alteration of the course of Bijou Park Creek at the location of the improvement that would not be significant. Once constructed, the improvement would provide a beneficial impact of reducing flooding, scour, and erosion in the Project Area.

No other proposed improvements would result in changes in currents, or the course or direction of water movements.

Mitigation Measures: **None**

TRPA 3(d) Will the proposal result in a change in the amount of surface water in any water body?

Environmental Analysis: **No, Not Significant**

The Bijou Park Creek SEZ Enhancement would replace the existing creek channel that has two unnatural right-angle paths with a geomorphically stable main channel as shown in Appendix A. The existing channel is approximately 800 feet long while the new channel would be 200-300 linear feet. This improvement would result in an insignificant change in the amount of surface water in the creek at this

location. However, the overall impact of the improvement would be beneficial as it would improve creek function downstream and reduce scour and erosion and enhance the surrounding wetland habitat.

No other proposed improvements would alter the amount of surface water in a water body.

Mitigation Measures: **None**

TRPA 3(e) Will the proposal result in discharge into surface waters, or in any alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?

Environmental Analysis: **No with Mitigation**

Construction activities including removal of existing infrastructure, use of heavy equipment, excavation and grading, use of hazardous materials, and repaving of roads could result in pollution or sediment inputs into surface water that could degrade water quality. The City would implement water quality protection and erosion control measures as described in Section 2.3.5 and fugitive dust control measures described in Section 2.3.2.

Concurrently or prior to obtaining a 404 permit from USACE, the Project must receive a Section 401 Water Quality Certification issued by the Water Board. The issuance of this certification demonstrates that the Project meets applicable statewide water quality standards.

Construction within waters and wetlands could adversely affect these waterbodies; therefore, implementation of Mitigation Measure BIO-2 is necessary to identify the extent of jurisdictional WoUS and WoS and is necessary to inform Project design to ensure minimization of impacts. In addition, the Project would adhere to all best management practices, conditions, and measures described in Section 2.3.

Once constructed, the Project would ultimately provide a beneficial impact to water quality and stormwater management in the Project Area and SEZ.

Mitigation Measures: **Yes, BIO-2** (see Section 3.5.2.1)

None.

3.12 Land Use (NEPA/CEQA/TRPA) and Planning (CEQA)

Table 3.12-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project and alternatives on land use and land planning.

Table 3.12-1 Evaluation Criteria and Summary of Impacts on Land Use and Land Planning

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
<i>CEQA Environmental Checklist Item</i>				
CEQA XI(a) Physically divide an established community?			X	
CEQA XI(b) Cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?			X	

Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item				
TRPA 8(a) Include uses which are not listed as permissible uses in the applicable Plan Area Statement, adopted Community Plan, or Master Plan?				X
TRPA 8(b) Expand or intensify an existing non-conforming use?				X

3.12.1 Environmental Setting

Most of the proposed improvements would be developed on public lands owned by the City of South Lake Tahoe, USFS, and CTC (Figure 1.1-1). The only improvement that would occur on private land is the Shirley to Whole Foods upgrades, which would require the cooperation of private landowners whose properties abut the existing channel (Figure 2.1-1). Although land ownership occurs at four distinct levels – private, city, state, federal – all improvements would occur within the City of South Lake Tahoe and be subject to the land use and community design element in the City of South Lake Tahoe’s General Plan.

3.12.1.1 Lake Tahoe Regional Plan

3.12.1.2 Plan Area Statements

All of the proposed improvements would be developed on public lands owned by the City of South Lake Tahoe, USFS, and CTC, save for the Shirley to Whole Foods upgrade which would occur on private lands (Figure 2.1-1). Considering that land ownership occurs at four distinct levels – private, city, state, federal – numerous land use plans are applicable to the Project area, as discussed in the following sections. However, the City of South Lake Tahoe General Plan (Land Use & Community element) and TRPA Code serve as the primary land use plans, both of which would require the issuance of a development/use permit for the Project.

3.12.1.3 Federal

USFS LTBMU owns some of the property proposed for development, and therefore, is subject to the USFS LTBMU Forest Plan (2016). The Forest Plan provides guidance to the LTBMU on the restoration or maintenance of the health of USFS land, to promote a sustainable flow of uses, benefits, products, services, and visitor opportunities. The Forest Plan also serves as a land use plan and establishes approved uses and conditions for performing projects on USFS lands. For this Project, the City of South Lake Tahoe would apply to the USFS LTBMU for a Special Use Permit to develop the proposed improvements.

3.12.1.4 State

None of the lands proposed for development are subject to a state-level land use plan. Some of the proposed improvements would be located on lands owned by the California Tahoe Conservancy (CTC). The CTC Strategic Plan provides guidance to CTC’s mandate and operations, but does not serve as land use plan where no applications would be submitted to or authorized by CTC.

3.12.1.5 Regional

TRPA's land use regulations are guided by the Lake Tahoe Regional Plan and the Code of Ordinances contained therein. The Regional Plan is intended to establish a balance, or equilibrium, between the natural environment and the built environment; and attain and maintain TRPA's environmental threshold carrying capacities. The goals and policies of the Regional Plan establish an overall framework for development and environmental conservation in the Lake Tahoe region. As discussed in Section 1.5.3 above, the goals and policies present the overall approach to meeting TRPA's environmental threshold carrying capacities and establish guiding policy for each resource element. The Conservation Element of the Tahoe Regional Plan includes Policies WQ-1.5 and WQ-1.6, which are applicable to the proposed project. These policies promote implementation of programs that support stormwater load reduction and water quality improvement in the region (TRPA 2012). For this Project, the City of South Lake Tahoe would submit a development permit application to TRPA to authorize development in the proposed areas.

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 (PASs), community plans, master plans, and area plans.

PASs provide a detailed guide for planning within discrete areas of the region. Each PAS is assigned a single land use classification and one of three management strategies: development with mitigation, redirection of development, or maximum regulation. Additionally, PASs provide planning considerations, special policies, maximum densities for residential and tourist accommodation uses, community noise equivalent levels, allowable and special uses, and the amount of additional recreation capacity that is permissible. The Project proposes to develop facilities in the Bijou (PAS 093), Lakeview Heights (PAS 085), and Pioneer/Ski Run (PAS 092) (TRPA 1987). The land use classification for these PASs is Residential.

Additionally, the Bijou Park Creek SEZ is present in the Project area. This SEZ is designated by TRPA to protect the environmental services provided by Bijou Park Creek, including water quality maintenance through nutrient cycling and sediment retention, flood attenuation, infiltration and groundwater recharge, open space, scenic and recreational enjoyment, wildlife habitat, and wildfire abatement, among many other functions and values. The Bijou Park Creek SEZ primarily consists of wetland vegetation transitioning to upland Jeffrey pine stands.

3.12.1.6 City

While owned at various levels of government (e.g., federal, state, local, private), all the subject properties are subject to the land use and community design element in the City of South Lake Tahoe's General Plan and City Code. The General Plan serves as a long-term vision to guide development, land use, and policies. As provided in Figure 3.12-1, the General Plan zones the Project area as Low-Density Residential, High-Density Residential, and Tourist. Some of the proposed facilities are zoned Tourist and subject to the Tourist Core Area Plan (2013). Further, the General Plan designates the Heavenly Valley Mobile Home Park (3740 Blackwood Road, South Lake Tahoe), Whispering Pine Apartments (1130 Keller Road, South Lake Tahoe), and the area near the intersection of Sonora Ave. and Tamarack Ave. as Affordable Housing. Additionally, the Project area is roughly 1,000 feet to the east of the boundary for the Bijou Park Master Plan.

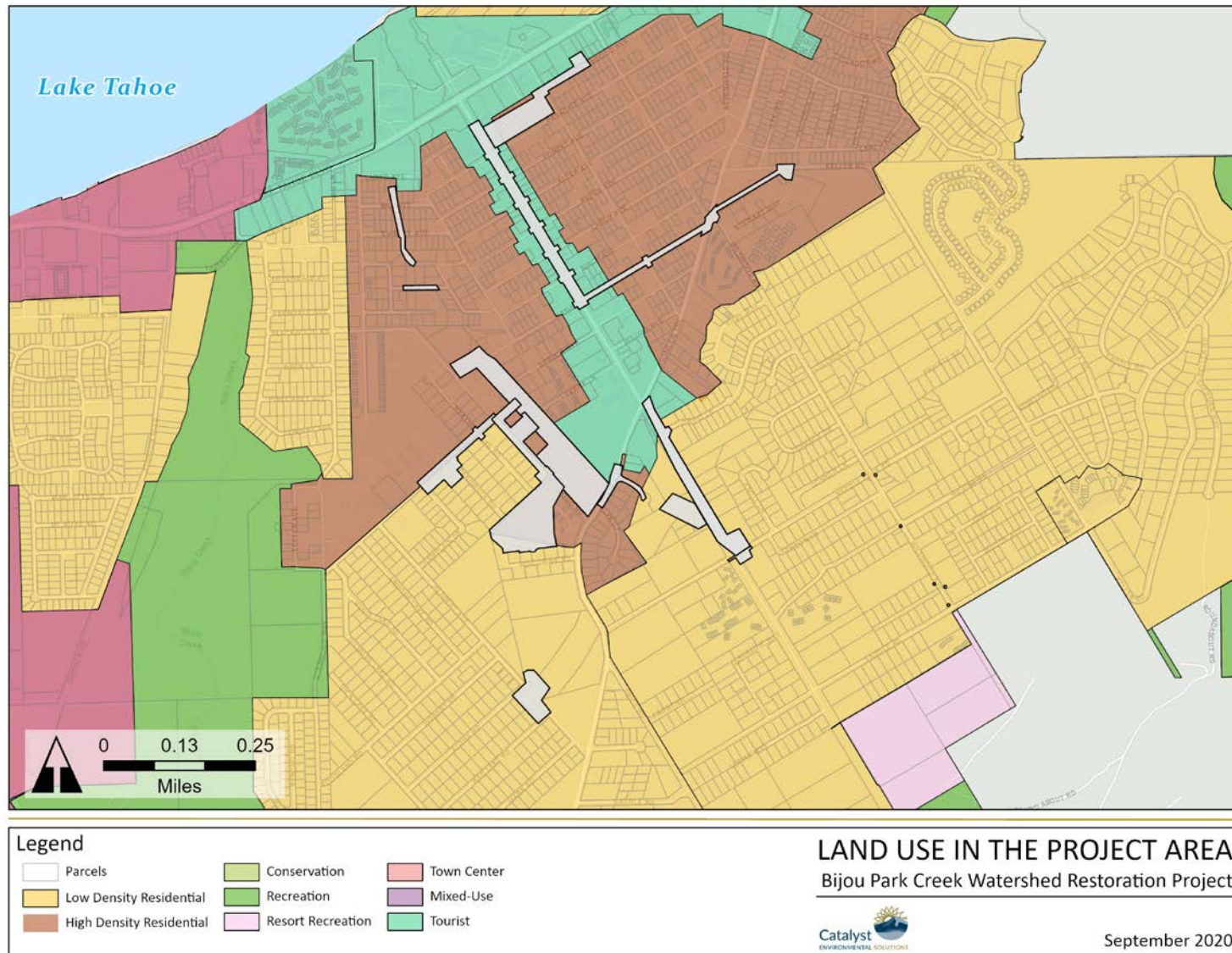


Figure 3.12-1. Land Use Designations in the Project Area

3.12.2 Impact Assessment

3.12.2.1 [CEQA Checklist Analysis](#)

[CEQA XI\(a\). Would the project physically divide an established community?](#)

Environmental Analysis: **Less Than Significant**

While the proposed improvements would be located throughout an established community, the stormwater management facilities and improvements would not create a physical divider or limit resident's ability to traverse the community. Construction equipment and vehicles may block off specific areas and portions of streets in the project area while the stormwater improvement is being developed. Vehicular, bike, and foot traffic would be redirected around the construction site while heavy machinery and/or equipment is in use for both worker and pedestrian safety. Any physical division created by the construction equipment and/or vehicles would be limited to the construction phase and temporary. Therefore, less than significant impacts to physically dividing an established community would occur.

Mitigation Measures: **None**

[CEQA XI\(b\). Would the project cause a significant environmental impact due to conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?](#)

Environmental Analysis: **Less Than Significant**

The proposed improvements would be developed as a Public Project, pursuant to the Public/Quasi-Public Facilities and Services Element included in the City of South Lake Tahoe General Plan (City of South Lake Tahoe 2011), and would seek to improve stormwater quality and flood control throughout the project area for the public benefit. The City has the authority to perform Public Projects within the public right-of-way, and all other areas that would experience development are publicly owned by the City, CTC, and USFS. Therefore, the Project would not result in any conflicts with the land use and community design element of the City of South Lake Tahoe General Plan.

As a public service project, the Project would not conflict with the permitted uses established in the PASs for the Project Area. As described in Section 2.1, the Project proposes to restore the Bijou Park Creek SEZ. The objective of this action is to improve the environmental function and services provided by the Bijou Park Creek SEZ. While temporary and less than significant disturbances may occur during the construction of the proposed SEZ improvements, the long-term impact of the Project would be beneficial on the function and quality of the Bijou Park Creek SEZ. Therefore, the proposed Project would not conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigation and environmental effect.

Mitigation Measures: **None**

3.12.2.2 [NEPA Analysis](#)

The FSH Chapter 30 (Categorical Exclusions) provides a list of resource areas that may constitute extraordinary circumstances and thus result in the need for an EIS or EA under NEPA. If extraordinary circumstances are present related to the proposed action, the use of a CE may be precluded for the Project. Three resource conditions related to Land Resources are included in the list of potential extraordinary circumstances in FSH 1909.15, as follows:

- Does the Project area include:

- Congressionally designated areas, such as wilderness, wilderness study areas, or national recreation areas;
- Inventoried roadless areas or potential wilderness areas; or,
- Research natural areas?

The Project area does not contain any of these areas; therefore, no impacts to these land use designations would occur.

3.13 Mineral (CEQA) and Natural Resources (TRPA)

Table 3.13-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project and alternatives on mineral and natural resources.

Table 3.13-1 Evaluation Criteria and Summary of Impacts on Mineral and Natural Resources

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
CEQA Environmental Checklist Item				
CEQA XII(a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
CEQA XII(b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item				
TRPA 9(a) A substantial increase in the rate of use of any natural resources?				X
TRPA 9(b) Substantial depletion of any non-renewable natural resource?				X

3.13.1 Environmental Setting

By California State Law “mineral” refers to any naturally-occurring chemical element or compound or groups of elements and compounds formed from inorganic processes and organic substances, including aggregate resources (sand and gravel). This definition includes coal, peat, and bituminous rock; however, geothermal resources, natural gas, and petroleum are not included (CDOC 2017). No active mining sites or areas that contain identified mineral resources are located in the Project Area (CDOC 2001; CDOC 2016). The Gansberg Sand and Gravel Mine is located 25 miles away and is the closest active mine to the Project Area.

The Lahontan Basin Plan, South Shore Area Plan, Meyers Area Plan, and TRPA Plan Area Statements do not identify the existence of a locally-important mineral resource recovery site.

3.13.2 Impact Assessment

The Project would not result in loss of local mineral or natural resources or an increase in use of these resources. No active mining sites or areas that contain identified mineral resources are located in the Project Area (CDOC 2001). The Lahontan Basin Plan, South Shore Area Plan, Meyers Area Plan, and TRPA Plan Area Statements do not identify the existence of a locally important mineral resource recovery site. The Project is expected to have no impact on mineral resources.

3.14 Noise (CEQA/TRPA)

Table 3.14-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project and alternatives on noise.

Table 3.14-1 Evaluation Criteria and Summary of Impacts on Noise

Would the Project result in:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
CEQA Environmental Checklist Item				
CEQA XIII(a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?			X	
CEQA XIII(b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
CEQA XIII(c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the Project Area to excessive noise levels?				X
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item				
TRPA 6(a) Increases in existing Community Noise Equivalency Levels (CNEL) beyond those permitted in the applicable Plan Area Statement, Community Plan or Master Plan?				X
TRPA 6(b) Exposure of people to severe noise levels?				X
TRPA 6(c) Single event noise levels greater than those set forth in the TRPA Noise Environmental Threshold?				X
TRPA 6(d)				X

The placement of residential or tourist accommodation uses in areas where the existing CNEL exceeds 60 dBA or is otherwise incompatible?				
TRPA 6(e) The placement of uses that would generate an incompatible noise level in close proximity to existing residential or tourist accommodation uses?				X
TRPA 6(f) Exposure of existing structures to levels of ground vibration that could result in structural damage?				X

3.14.1 Environmental Setting

3.14.1.1 Characteristics of Noise

Sound is mechanical energy transmitted by pressure waves in a compressible medium such as air. When sound becomes excessive or unwanted, it is referred to as noise. Although exposure to high noise levels has been demonstrated to cause hearing loss, the principal human response to environmental noise is annoyance. The response of individuals to similar noise events is diverse and influenced by the type of noise, the perceived importance of the noise and its appropriateness in the setting, the time of day and the type of activity during which the noise occurs, and the sensitivity of the individual.

Sound (noise) levels are measured and quantified with several metrics. All of them use the logarithmic decibel (dB) scale with 0 dB roughly equal to the threshold of human hearing. A property of the decibel scale is that the sound pressure levels of two separate sounds are not directly additive. For example, if a 50-dB sound is added to another 50-dB sound, the total is only a 3-dB increase (to 53 dB). Thus, every 3-dB change in sound levels represents a doubling or halving of sound energy. Related to this is the fact that a less-than-3-dB change in sound levels is imperceptible to the human ear.

The frequency of sound is a measure of the pressure fluctuations per second, measured in Hertz (Hz). Most sounds do not consist of a single frequency, but consist of a broad band of frequencies differing in level. The characterization of sound level magnitude with respect to frequency is the sound spectrum. Many rating methods exist to analyze sound of different spectra. One rating method is called A-weighting (there are also B- and C-weighting filters). The A-weighted scale (dBA) most closely approximates how the human ear responds to sound at various frequencies by progressively deemphasizing frequency components below 1,000 Hz and above 6,300 Hz and reflects the relative decreased sensitivity of humans to both low and extremely high frequencies (FHWA 2006). Table 3.14-2 lists typical sound levels from representative sources.

Table 3.14-2 Typical Noise Levels (measured at distance a person would typically be from the source)

Typical Noise Source	Sound Level (dBA)
Grand Canyon at Night (no roads, birds, wind)	10
Computer	37-45
Refrigerator	40-43
Typical Living Room	40

Typical Noise Source	Sound Level (dBA)
Forced Hot Air Heating System	42-52
Microwave	55-59
Normal Conversation	55-65
Clothes Dryer	56-58
Dishwasher	63-66
Clothes Washer	65-70
Phone	66-75
Push Reel Mower	68-72
Hairdryer	80-95
Vacuum Cleaner	84-89
Leaf Blower	95-105
Circular Saw	100-104
Maximum Output of a Stereo	100-110
Jet Fly-over at 1,000 Feet	110

Source: Noise Pollution Clearinghouse 2020.

The duration of noise and the time at which it occurs are important factors in determining the impact of noise on sensitive receptors. Several methods are used for describing variable sounds including the equivalent level (Leq), the maximum level (Lmax), and the percent-exceeded levels. These metrics are derived from many moment-to-moment A-weighted sound level measurements. Some common metrics reported in community noise monitoring studies are described below:

- Leq, the equivalent level, can describe any series of noise events of arbitrary duration, although the most common averaging period is hourly. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events and Leq is the common energy-equivalent sound/noise descriptor.
- Lmax is the maximum sound level during a given time. Lmax is typically due to discrete, identifiable events such as an airplane overflight, car or truck passing by, or a dog barking.
- L90 is the sound level in dBA exceeded 90 percent of the time during the measurement period. L90 is close to the lowest sound level observed. It is essentially the same as the residual sound level, which is the sound level observed when no obvious nearby intermittent noise sources occur.
- L50 is the median sound level in dBA exceeded 50 percent of the time during the measurement period.
- L10 is the sound level in dBA exceeded only 10 percent of the time. It is close to the maximum level observed during the measurement period. L10 is sometimes called the intrusive sound level because it is caused by occasional louder noises like those from passing motor vehicles.

In determining the daily measure of community noise, it is important to account for the difference in human response to daytime and nighttime noise. Noise is more disturbing at night than during the day, and noise indices have been developed to account for the varying duration of noise events over time as well as community response to them. The CNEL is such an index. CENL represents the 24-hour A-weighted equivalent sound level with a 5-dB penalty added to “evening” hourly noise levels between 6:00 p.m. and 10 p.m. and a 10-dB penalty added to the “nighttime” hourly noise levels between 10:00 pm and 7:00 am. Because of the time-of-day penalties associated with the CENL index, the Leq for a continuously operating sound source during a 24-hour period will be numerically less. The Day-Night Average Level (Ldn) is similar to CNEL in that it assigns a 10-dB penalty to “nighttime” hourly noise levels between the hours of 10:00 p.m. and 7:00 a.m. Noise is also more disturbing the closer a receptor is to the source; noise levels decrease by 6 dB as the distance from its source doubles (FHWA 2011).

3.14.1.2 Characteristics of Vibration

Ground-borne vibration consists of waves transmitted through solid material. Several types of wave motions exist in solids, unlike air, including compressional, shear, torsional, and bending. The solid medium can be excited by forces, moments, or pressure fields. Ground-borne vibration propagates from the source through the ground to adjacent buildings by surface waves. Vibration may be composed of a single pulse, a series of pulses, or a continuous oscillatory motion. The frequency of a vibrating object describes how rapidly it is oscillating, measured in Hz. Most environmental vibrations consist of a composite, or “spectrum” of many frequencies, and are generally classified as broadband or random vibrations. The normal frequency range of most ground-borne vibration that can be felt generally starts from a low frequency of less than 1 Hz to a high of about 200 Hz.

Vibration may be defined in terms of the displacement, velocity or acceleration of the particles in the medium material. In environmental assessments, where human response is the primary concern, velocity is commonly used as the descriptor of vibration level, expressed in millimeters per second (mm/s). The amplitude of vibration can be expressed in terms of the wave peaks or as an average, called the root mean square (rms). The rms level is generally used to assess the effect of vibration on humans. Vibration levels for typical sources of ground-borne vibration are shown in Table 3.14-3 below.

Vibration can produce several types of wave motion in solids including, compression, shear and torsion, so the direction in which vibration is measured is significant and should generally be stated as vertical or horizontal. Human perception also depends to some extent on the direction of the vibration energy relative to the axes of the body. In whole-body vibration analysis, the direction parallel to the spine is usually denoted as the z-axis, while the axes perpendicular and parallel to the shoulders are denoted as the x- and y-axes, respectively.

Human perception to vibration varies with the individual and is a function of physical setting and the type of vibration. Persons exposed to elevated ambient vibration levels, such as people in an urban environment, may tolerate a higher vibration level.

Table 3.14-3 Typical Levels of Ground-Borne Vibration

Source	Typical Velocity at 50-Feet (mm/s, rms)	Human or Building Response
Blasting from Construction Projects	2.54	Minor Cosmetic Damage to Fragile Buildings

Source	Typical Velocity at 50-Foot (mm/s, rms)	Human or Building Response
Bulldozers and Other Heavy Tracked Construction Equipment	1.42	Workplace Annoyance; Difficulty with Vibration Sensitive Tasks
Commuter Rail, Upper Range	0.56	
Rapid Transit Rail, Typical Range	0.25	Distinctly Perceptible. Residential Annoyance for Infrequent Events
Commuter Rail, Typical Range	0.20	
Bus or Truck Over Bump	0.10	Barely Perceptible. Residential Annoyance for Frequent Events.
Rapid Transit Rail, Typical Range	0.08	
Bus or Truck Typical	0.05	Threshold of Perception
Background Vibration	0.01	None

Source: Adapted from Transit Noise and Vibration Assessment (FTA 2006).

3.14.1.3 Existing Noise Environment in Project Area

The sound levels in most communities fluctuate, depending on the activity of nearby and distant noise sources, time of the day, or season of the year. Noise is produced from various sources throughout the study area, but vehicle traffic on US 50 and local roadways is generally considered the dominant noise source. Other noise sources include aircraft, motorized watercraft, music from summer concerts, and machinery associated with refuse collection and snow removal. Less pronounced noise sources in the study area include those typical of urban and suburban environments, such as landscaping activities (e.g., grass cutting, leaf blowing, snow blowing), heating and air conditioning units, and conversation.

As a part of continuing efforts to monitor and achieve established noise thresholds, TRPA conducts threshold evaluations every 4 years, and part of those evaluations includes taking noise measurements at various locations around the lake. Noise monitoring includes measuring noise associated with different land uses and single-noise events (e.g., boats, airplanes). For purposes of characterizing the existing ambient noise environment, cumulative/CNEL noise levels are presented here, as reported by TRPA (TRPA 2017). The status of all TRPA noise thresholds (i.e., land-use based, single event, transportation corridor) are discussed above and shown in Table 3.14-4.

Table 3.14-4 Existing Ambient Noise Levels (TRPA 2017)

Monitoring Location	Land Use	Plan Area Noise Limit	Average CNEL (dBA) Jan 1, 2017
Glenwood Way (South of Lewis Avenue)	High Density Residential	50	61
Wildwood Avenue (South of Forest Avenue)	High Density Residential	55	56.4
Private Road (Off Keller Road, North of Needle Peak Road)	High Density Residential	55	54.6
Pioneer Village (Fiant Drive, South of Murietta Drive)	N/A (Conservation Area)	N/A	51.5
Hwy 50 (Near Ski Run Blvd.)	Tourist Center/Mixed Use	65	58.8

3.14.1.4 Existing Vibration Environment in Project Area

As with airborne sound, the rms velocity is often expressed in decibel notation as VdB, which serves to compress the range of numbers required to describe vibration (FTA 2006), and based on a reference value of 1 $\mu\text{in/sec}$. The typical background vibration-velocity level in residential areas is approximately 50 VdB. Ground vibration is normally perceptible to humans at approximately 65 VdB. For most people, a vibration-velocity level of 75 VdB is the approximate dividing line between barely perceptible and distinctly perceptible levels (FTA 2006).

Typical outdoor sources of perceptible ground vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If a roadway is smooth, the ground vibration is rarely perceptible. The range of interest is from approximately 50 VdB, which is the typical background vibration-velocity level, to 100 VdB, which is the general threshold where minor damage can occur in fragile buildings.

3.14.1.5 Sensitive Receptors

Noise-sensitive land uses are generally considered to include those 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. These land use types are also considered vibration-sensitive land uses, as are commercial and industrial buildings where vibration would interfere with operations within the building, including levels that may be well below those associated with human annoyance. Older buildings are also more prone to vibration-induced damage.

Existing sensitive land uses exist throughout the project vicinity are identified in Figure 3.14-1. These sensitive receptors include nearby residences, hotels/lodges, Bijou Elementary School, Child Development Centers, Bijou Community Park, Kelly Ridge Senior Housing, and nearby churches.

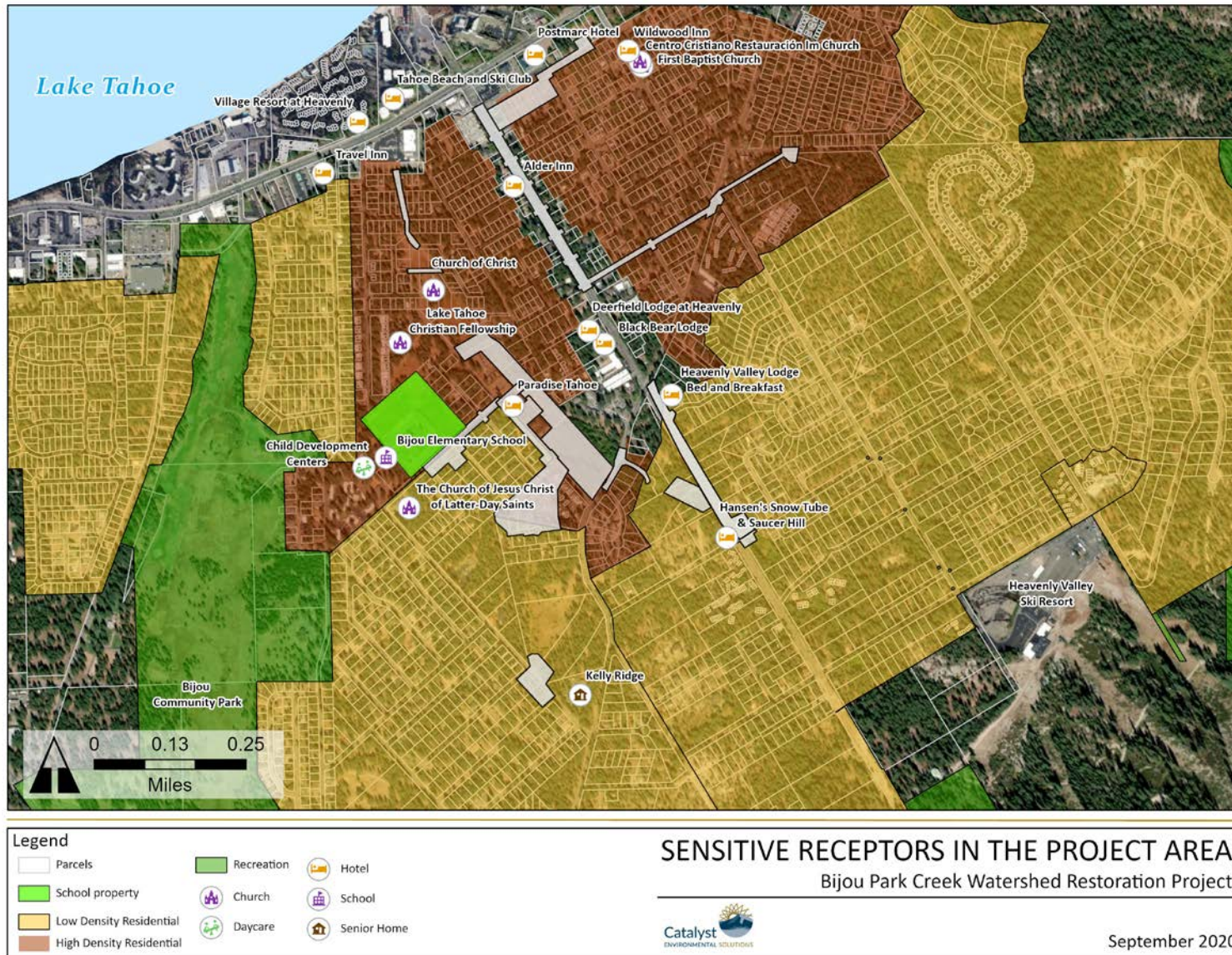


Figure 3.14-1. Sensitive Receptors in the Project Area

3.14.2 Impact Assessment

The methodology for evaluating potential noise impacts from construction and operation activities from the Project is based on the procedures of ISO 9613-2:1996, Acoustics – Attenuation of Sound during Propagation Outdoors – Part 2: General Method of Calculation. This international standard procedure is widely used for propagation and evaluation of environmental noise over distances and is the basis for calculation protocols in numerous computer models, including CadnaA and SoundPLAN. Such computer models require complex information on scheduling and daily duration of each noise-producing activity to be able to calculate and propagate noise levels. Since detailed information was not available, the methodology involved simple spreadsheet calculations based on the ISO 9613-2:1996 standard. The procedure involved determining the maximum noise levels from a point source, based on noise data from equipment manufacturers, the Federal Highway Administration’s database of construction equipment noise levels (FHWA, 2006), and existing noise levels around the existing Project areas, and then propagating the maximum noise level from the area of activity to various distances from the source. It is important to note that the propagation calculations do not consider any barriers to noise (e.g. buildings, vegetation, and topography between the noise source and receptor) and, therefore, the calculated noise at the nearest sensitive receptor is likely much greater than the actual noise that would be experienced at that location.

3.14.2.1 CEQA Checklist Analysis

CEQA XIII(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?

Environmental Analysis: **Less than Significant**

Equipment (e.g., excavators, tractors, rollers, trucks) used in construction of the stormwater improvements would produce localized noise during standard working hours during the 2-week to 3-month construction period for each site.

Noise levels for typical construction equipment listed in the project description at various distances from the equipment have been calculated previously and published in various reference documents. Typical expected equipment noise levels listed in the Federal Highway Administration (FHWA) Roadway Construction Noise Model User’s Guide (FHWA 2006) were used for this evaluation. The User’s Guide provides the most recent comprehensive assessment of noise levels from construction equipment. Table 3.14-5 summarizes typical usage factors, and maximum noise levels, for representative construction equipment expected to be used. Note that not all of the equipment will be used at every site. As shown in Table 3.14-5, the loudest typical construction equipment generally emits noise in the range of 80 to 90 dBA at 50 feet, with usage factors of up to 40 percent and 50 percent. Noise at any specific receptor is dominated by the closest and loudest equipment. The types and numbers of construction equipment near any specific receptor location will vary over time. Construction of the project will temporarily increase noise levels in the vicinity of the project area at each site. Because noise decreases with distance and varies according to the construction phase, noise levels at the nearest sensitive receptors (residences) will vary depending on the equipment being used and the distance between the construction activity and the residences.

Table 3.14-5 Typical Construction Activity Noise Levels

Equipment	Acoustical Usage Factor (%)	Specified Lmax at 50 feet from Source (dBA)
Concrete Saw	20	90
Backhoe	40	80
Excavator	40	85
Loader	40	80
Compactor	20	80
Dump Truck	40	84
Water Truck	40	76
Roller	20	85
Paver	50	85
Concrete Mixer Truck	40	85
Pickup Trucks	40	55
All Other Equipment > 5 horsepower	50	85

Notes:

dBA = A-weighted decibels; Leq = equivalent sound pressure level

Source: FHWA Roadway Construction Noise Model User's Guide (FHWA 2006)

Construction activities would occur within 50 feet of residences in some locations and adjacent to commercial buildings in some locations. However, considerable sound reduction occurs in buildings when windows are closed; buildings constructed in cold climates, like in the City, typically reduce exterior noise levels by 27 dB (USEPA 1978).

Noise generated by a point source, such as equipment at a construction site, drops off at a rate of 6 dBA per doubling of distance. Assuming the construction equipment listed in Table 3.14-5, noise attenuation from the loudest equipment of 90 dBA is anticipated to occur as shown in Table 3.14-6.

Table 3.14-6 Attenuation of 90 dBA Noise Source

Distance (feet)	Noise Level (dBA)
50	90
100	84
200	78
400	72
800	66
1,600	60
3,200	54

Distance (feet)	Noise Level (dBA)
6,400	48
12,800	32

Notes:

This attenuation is applicable to point sources, such as construction equipment, not mobile sources such as truck traffic

dBA = A-weighted decibels; Leq = equivalent sound pressure level

Source: FHWA Roadway Construction Noise Model User's Guide (FHWA 2006)

TRPA has established noise thresholds for CNELs for various land use categories and single-event standards for specific noise sources. CNELs are developed for permanent uses and activities, not construction projects. The City has adopted the maximum CNEL of 65 dBA for the Tahoe Valley Area, except for the Neighborhood Professional and Healthcare Campus Districts, where the standard is 55 dBA CNEL noise threshold (TVAP Policy HNS-2.1). The Project is not located within the Neighborhood Professional and Healthcare Districts.

TRPA Code Chapter 68 (Noise Limitations) establishes noise limitations for areas within TRPA's jurisdiction. Section 68.3 establishes noise level standards (expressed in CNEL) that shall not be exceeded. The CNEL noise level standards for each project location are summarized in Table 3.14-7. In addition, Section 68.3 stipulates that community noise levels shall not exceed levels existing on August 26, 1982, where such levels are known. Section 68.9 stipulates that TRPA-approved construction or maintenance projects, or the demolition of structures, are exempt from TRPA Code Noise Limitations (TRPA Code Chapter 68) if the activities occur between the hours 8:00 a.m. and 6:30 p.m.

Table 3.14-7 Maximum Cumulative Noise Equivalent Levels

Project Site	Land Use District	Plan Area Noise Limit
Keller Canyon Bypass	Tourist Center/High Density Residential	65/55
Bijou School Frontage Drainage Improvements	High Density Residential/ Low Density Residential	55/50
Bijou Park Creek SEZ Enhancement	High Density Residential	55
Upper Bijou Park Creek	Low Density Residential	50
Rockwood to Blackwood Drainage Improvements	High Density Residential/ Low Density Residential	55/50
Ski Run Diversion	Low Density Residential	50
Osgood Expansion	Tourist Center	65
Shirley to Whole Foods	High Density Residential	55
Aloha Basin	Low Density Residential	50
Needle Peak Localized Treatment	Tourist Center/Low Density Residential	65/50
Pioneer Crossing Culvert	High Density Residential	55

Given that the noise increase would be temporary, and with compliance with the TRPA Noise Ordinance for construction as detailed in Section 2.3.7, noise generated from construction would result in less than significant noise levels.

Operation of the project treatments would not result any noise with the exception of the infrequent noise disturbance during maintenance activities. However, the minor noise increase associated with maintenance activities would not be typical of project operation, and as such operation noise impacts would not violate local standards and noise impacts associated with operation of the Project would be less than significant.

Mitigation Measures: **None**

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

Environmental Analysis: **Less than Significant Impact**

Construction operations would result in varying degrees of temporary ground vibration, depending on the specific construction equipment used and operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance. The effects of ground vibration may be imperceptible at the lowest levels, with low rumbling sounds and detectable vibrations at moderate levels, and damage to nearby structures at the highest levels. Construction activities most likely to cause vibration include heavy construction and compaction equipment. Although all heavy, mobile construction equipment has the potential of causing at least some perceptible vibration when operating close to buildings, the vibration is usually short term and is not of sufficient magnitude to cause building damage. It is not expected that heavy equipment such as excavators, front-end loaders, or compaction equipment would operate close enough to any residences to cause vibration impact. Thus, although vibrations may be perceived for a short period, there would be virtually no risk of architectural or structural damage. Operation of the Project would not result in vibrations perceptible to nearby receptors and impacts would be less than significant.

Mitigation Measures: **None**

3.14.2.2 TRPA Checklist Analysis

TRPA 6(a). Will the proposal result in increases in existing Community Noise Equivalency Levels (CNEL) beyond those permitted in the applicable Plan Area Statement, Community Plan or Master Plan?

Environmental Analysis: **No, Not Significant**

Refer to the analysis for CEQA XIII(a), which concludes that the level of impact related to CNELs is less than significant when complying with the TRPA Noise Ordinance for construction as detailed in Section 2.3.7.

Mitigation Measures: **None**

TRPA 6(b). Will the proposal result in exposure of people to severe noise levels?

Environmental Analysis: **No, Not Significant**

As discussed in CEQA XIII(a), the Project will result in a temporary, localized increase in ambient noise levels due to construction activities. The Project would not result in a permanent increase in the permissible levels of ambient noise above established CNELs for the Tahoe Valley Area Plan, PAS, or local

noise ordinances. Additionally, compliance with the TRPA Noise Ordinance for construction as detailed in Section 2.3.7 will reduce impacts from temporary increases in noise during construction; therefore, the impact will be less than significant.

Mitigation Measures: **None**

TRPA 6(c). Will the proposal result in single event noise levels greater than those set forth in the TRPA Noise Environmental Threshold?

Environmental Analysis: **No, Not Significant**

Refer to the analysis for CEQA XIII(a), which concludes that the Project with compliance with the TRPA Noise Ordinance for construction as detailed in Section 2.3.7 would not result in temporary or permanent increase in ambient noise levels in the Project vicinity outside of the exempt daytime hours allowed for temporary construction activities.

Mitigation Measures: **None.**

3.15 Population and Housing (CEQA/TRPA)

Table 3.15-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project and alternatives on population and housing.

Table 3.15-1 Evaluation Criteria and Summary of Impacts on Population and Housing

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
CEQA Environmental Checklist Item				
CEQA XIV(a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
CEQA XIV(b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?			X	
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item - Population				
TRPA 11(a) Alter the location, distribution, density, or growth rate of the human population planned for the Region?				X
TRPA 11(b) Include or result in the temporary or permanent displacement of residents?				X
TRPA Initial Environmental Checklist Item - Housing	Yes	No, with Mitigation	Data Insufficient	No

TRPA 12(a)				
1. Decrease the amount of housing in the Tahoe Region?				X
2. Decrease the amount of housing in the Tahoe Region historically or currently being rented at rates affordable by lower and very-low-income households?				X
TRPA 12(b) Result in the loss of housing for lower-income and very-low-income households?				X

3.15.1 Environmental Setting

3.15.1.1 Population

As observed in Table 3.15-2, the City of South Lake Tahoe had an approximate population of 22,200 in 2019, which represents a 3.7% increase since 2010. This growth rate is significantly lower than El Dorado County's and the State of California's. This trend is likely due to the seasonal tourist economy present in the Basin that supports a seasonal workforce that does not establish long-term residence in the City.

Table 3.15-2 Population and Population Change (2010-2019)

Area of Analysis	Population	Year	Percent Change 2010-2019
State of California	39,512,223	2019	6.1%
	37,253,956	2010	
El Dorado County	192,843	2019	6.5%
	181,058	2010	
City of South Lake Tahoe	22,197	2019	3.7%
	21,403	2010	

Source: U.S. Census Bureau, 2020; American Census Survey, 2018

3.15.1.2 Housing

Table 3.15-3 below provides a breakdown of the housing metrics in the City of South Lake Tahoe compared against the State of Californian and El Dorado County. Since 1990, South Lake Tahoe's populations has grown at a much slower rate than that of El Dorado County and the housing stock grew little between 2014 and 2018. South Lake Tahoe has a high proportion of renter-occupied housing units (61.1 percent) and lower proportion of owner-occupied housing (44.1%). The City of Lake Tahoe has previously primarily catered towards seasonal visitors and tourists, which requires a seasonal workforce that primarily needs short term and affordable rentals. The tourist economy present in the Project area has resulted in housing shortages for low-income people because most of the vacant housing consists of vacation homes and vacation rentals. While the majority of proposed disturbance areas are located in

residential areas, the Project focuses on developing, repairing, or replacing stormwater infrastructure and restoring SEZ function and does not propose to increase or decrease available land for housing or create long-term jobs for the community.

At present, residences in the Heavenly Valley Mobile Home Park as well as several houses in the vicinity of the park are subjected to annual flooding. The mobile home park experiences flooding primarily due to undersized culverts and associated drainage pathways in the neighborhood, including directly beneath the park, to route water away from these residences.

Table 3.15-3 Housing Metrics in City of South Lake Tahoe

Housing Metrics	Year(s)	State of California	El Dorado County	City of South Lake Tahoe
Number of Housing Units	2019	14,366,336	91,660	17,285
Number of Households	2014-2018	12,965,435	69,172	8,706
Number of Persons per Households	2014-2018	2.96	2.67	2.47
Owner-Occupied Housing Unit Rate	2014-2018	54.6%	76.6%	44.1%
Median Value of Owner-Occupied Housing Unit	2014-2018	\$475,900	\$437,200	\$391,600
Households with a Computer	2014-2018	91.7%	93.1%	88.4%
Apartments with 20 or More Units	2018	1,686,945	N/A	1,158
Mobile Homes	2018	520,262	N/A	761

Source: U.S. Census Bureau, 2020; American Census Survey, 2018

3.15.2 Impact Assessment

While the Project is fundamentally an infrastructure project, the proposed improvements would not increase utility capacity or availability of service that would lead to future developments or unplanned population growth. The Project would not require the demolition or temporary closure of any existing residences, houses, or businesses in the Project area. Therefore, no temporary or permanent housing would be required elsewhere, and the Project would not displace a substantial number of existing people or housing. The Project is expected to have no impact on population and housing.

3.15.2.1 No Action Alternative

Under the No Action Alternative, no stormwater improvements would be installed, leading to continued seasonal flooding and degraded stormwater quality; therefore, not addressing these issues could result in a significant impact to local property owners, residences, a school, and a church. If flooding persists, residents might relocate, possibly reducing the population of the Project Area, but in a negligible amount. Therefore, if flooding is not addressed, population in the Project Area may experience a less than significant impact under the No Action Alternative.

3.16 Public Services (CEQA/TRPA)

This section evaluates the Project's impacts on public services during construction and operation. Table 3.16-1 presents the level of significance of the impacts based on the CEQA and TRPA Guidelines.

Table 3.16-1 Evaluation Criteria and Summary of Impacts on Public Services

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
CEQA Environmental Checklist Item				
CEQA XV(a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
— Fire Protection?		X		
— Police protection?		X		
— Schools?		X		
— Parks?				X
— Other public facilities?				X
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item				
Have an unplanned effect upon, or result in a need for new or altered governmental services in any of the following areas?				
TRPA 14(a) Fire Protection?		X		
TRPA (14b) Police Protection?		X		
TRPA (14c) Schools?		X		
TRPA (14d) Parks or other recreational facilities?				X
TRPA 14(e) Maintenance of public facilities, including roads?				X

3.16.1 Environmental Setting

South Lake Tahoe public services include the City of South Lake Tahoe Fire Department, Police Department, Lake Tahoe Community College, Lake Tahoe Unified School District, and various

recreational facilities including parks, beaches, a campground, and a golf course (City of South Lake Tahoe 2011).

The City of South Lake Tahoe Fire Department provides fire protection, rescue, emergency medical treatment, hazardous materials control, and response services. It has three firehouses, one of which is located within the Project Area (Fire Station One located at 1252 Ski Run Boulevard). The South Lake Tahoe Police Department building is located outside of the Project Area. The Department responds to 2,350 calls for service throughout the City in a typical month (City of South Lake Tahoe n.d.).

Only one public school is located within the Project Area: Bijou Community School is located adjacent to the Bijou School Frontage Drainage Improvement. The Bijou Municipal Golf Course and Bijou Community Park is just west of the Project Area. No beaches, parks, other recreational facilities are located in the Project Area.

3.16.2 Impact Assessment

3.16.2.1 CEQA Checklist Analysis

CEQA XV(a). Would the project result in an unplanned effect on or substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which would cause significant environmental impacts in order to maintain acceptable service ratios, response times or other performance objectives for any of the following areas: fire protection, police protection, schools, parks, other public facilities?

Environmental Analysis: **Less than Significant with Mitigation**

Fire and police service ratios could be impacted during Project construction due to temporary lane closures and/or traffic detours. Response times from Fire Station One could be directly delayed by construction of Ski Run Diversion, Needle Peak Localized Treatment and Pioneer Crossing Culvert Replacement. Similarly, access to Bijou Community School could be impacted during the 2-week construction period of the Bijou School Frontage Drainage Improvement. However, lane closures and detours would be temporary (lasting 2 weeks – 3 months in a particular area depending on project improvement). These closures could cause a potentially significant impact should emergency response be required during construction of the Project. Mitigation Measure TR-1 requires that the TCP, described in Section 2.3.8, includes measures to protect persons and access to the Project area during an emergency. With implementation of the TCP, impacts of the Project construction on fire protection, police protection, schools, parks, and other public facilities would be less than significant because safe access would be maintained during the construction period. Once constructed, the Project would have no impact on public services.

Mitigation Measures: **TR-1** (see section 3.19.2.1).

3.16.2.2 TRPA Checklist Analysis

TRPA 14(a-c) Will the proposal have an unplanned effect upon, or result in a need for new or altered governmental services in any of the following areas? Fire Protection? Police Protection? Schools?

Environmental Analysis: **No, with Mitigation**

Refer to the analysis for CEQA XV(a).

Mitigation Measures: **TR-1** (see section 3.19.2.1).

3.17 Recreation (CEQA/TRPA)

This section evaluates the Project's impacts on recreation during construction and operation. Table 3.17-1 presents the level of significance of the impacts based on the CEQA and TRPA Guidelines.

Table 3.17-1 Evaluation Criteria and Summary of Impacts on Recreation

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
<i>CEQA Environmental Checklist Item</i>				
CEQA XVI(a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
CEQA XVI(b) Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?				X
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
<i>TRPA Initial Environmental Checklist Item</i>				
TRPA 19(a) Create additional demand for recreation facilities?				X
TRPA 19(b) Create additional recreation capacity?				X
TRPA 19(c) Have the potential to create conflicts between recreation uses, either existing or proposed?				X
TRPA 19(d) Result in a decrease or loss of public access to any lake, waterway, or public lands?				X

3.17.1 Environmental Setting

Recreational activities are a key factor of the economy of the Lake Tahoe Basin, as well as being important to the culture of the area. The area provides visitors and residents with year-round recreational opportunities surrounding the lake. The City of South Lake Tahoe recognizes that outdoor recreation and tourism associated with Lake Tahoe is a primary economic driver for the City and its businesses. The City also maintains three primary parks (Bijou Community Park, Bonanza Park, and Regan Beach) and a bikeways system throughout South Lake Tahoe. The South Tahoe Greenway Shared Use Trail proposed alignment runs through the Project Area along the north side of Pioneer Trail where

the Pioneer Crossing Culvert Replacement would be constructed as well as passing nearby the proposed Aloha Basin (also see Sections 3.19 and 3.22.1).

Numerous recreation facilities are present adjacent to the project area. The Bijou Community Park is located just west of the Aloha Basin improvement and is crisscrossed by walking and biking trails popular with dog-walkers, birds, disc-golfers, and mountain bikers. Bijou Park is also adjacent to Bijou Dog Park, Bijou Skate Park, and Bijou Bike Park. Heavenly Valley Ski Resort is less than 1 mile from the nearest portion of the project area (Needle Peak Localized Treatment). Bijou Golf Course is less than half a mile from the Bijou School Basin portion of the project.

3.17.2 Impact Assessment

No construction activities are proposed in or adjacent to any public parks and therefore, would not result in any conflicts between recreational uses, restrict the use of any public facility/park, nor cause significant overuse or demand for recreational facilities. The Project does not propose to construct any recreational facilities or create additional recreation facilities/resources that would require public management, funding, or staff. The Project does not propose to alter or develop any public access to any lake, waterway, or public lands. Therefore, the Project would have no impact on recreational resources.

3.18 Socioeconomics and Environmental Justice (NEPA)

CEQ regulations for implementing NEPA state that when economic or social effects and natural/physical environmental effects are interrelated, the NEPA document (i.e. EA) will discuss these effects on the human environment (40 CFR 1508.14). CEQ regulations further state that the “human environment shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment.” This socioeconomic assessment evaluates how elements of the human environment, such as demographics, income, poverty, and unemployment, may be affected by the Project. A significant impact would occur if the Project is substantially detrimental to local economic or social values, either in the short-term or long-term.

Environmental Justice is defined by the U.S. Environmental Protection Agency (EPA) as “[t]he fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people including racial, ethnic, or socioeconomic groups should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies” (USEPA 1998).

Executive Order 12898, Federal Actions to Address Environmental Justice in Minority and Low-income Populations, was issued in 1994 to focus the attention of Federal government agencies on human health and environmental conditions in minority and low-income communities. In addition, Executive Order 12898 was established to ensure that, if there were disproportionately high and adverse human health or environmental effects from Federal actions on these populations, that those effects would be identified and addressed. The Executive Order specifically requires that Native American populations are included in discussions and analysis of potentially affected minority and low-income populations.

According to a presidential memorandum accompanying Executive Order 12898, environmental justice under NEPA should be considered in the following ways:

- 1) Environmental effects, including human health, economic, and social effects of Federal actions should be analyzed by each Federal agency.
- 2) When it is feasible, mitigation measures, as outlined in an environmental assessment, environmental impact statement, or record of decision, should address disproportionately high and adverse human health or environmental effects on environmental justice populations.
- 3) Effective community participation in the NEPA process should be provided by each Federal agency. This could include identifying potential effects and mitigation measures by working with the affected communities, in addition to improving accessibility of public meetings and applicable documents.
- 4) With regard to Federally-recognized tribes, the Executive Order also states that “the Department of the Interior, in coordination with the Working Group, and after consultation with tribal leaders shall coordinate steps to be taken pursuant to this order that address federally-recognized Indian tribes” (Clinton 1994).

This section identifies environmental justice populations occurring in the Project area and identifies the potential impacts to these sensitive populations as result of the proposed Project. A significant effect would occur if an environmental justice population experienced a disproportionately impact by the Project.

3.18.1 Environmental Setting

3.18.1.1 Socioeconomic and Demographic Environment

South Lake Tahoe is primarily a tourism-based economy. The City’s proximity to the Bay Area, Sacramento, and Reno make Lake Tahoe an attractive day-trip and vacation destination. As a consequence, a seasonal workforce is needed to provide services to tourists. Tourist seasons include both summer and winter, where between Labor Day and ski season and in the spring, hours of employment tend to be reduced or eliminated (City of South Lake Tahoe, 2014). This economic trend is exemplified in the Economic Values, Income and Poverty metrics provided in Table 3.18-1 and Table 3.18-2. Due to the seasonality and lower paying jobs required to support a tourist economy, median household income and per capita income are significantly lower when compared to the State of California and El Dorado County (Table 3.18-1).

Table 3.18-1 Income and Poverty

	State of California	El Dorado County	City of South Lake Tahoe
Median Household Income	\$71,228	\$80,582	\$48,653
Per Capita Income	\$35,021	\$40,382	\$29,521
Persons in Poverty (%)	12.8	8.1	13.6

Source: U.S. Census Bureau, 2020; American Census Survey, 2018

** Figures in 2018 dollars, 2014-2018.

Table 3.18-2 Economy

	State of California	El Dorado County	City of South Lake Tahoe
Number of Businesses/Firms	3,548,449	16,711	2,648
Civilian Labor Force	19,630,514		12,261
Percent of population age 16+ in labor force	63.1	57.7	66.1
Percent of population that is female age 16+ in labor force	57.2	53.2	63.3
Percent of population that is male age 16+ in labor force	42.8	46.8	36.7

Source: U.S. Census Bureau, 2020; American Census Survey, 2018

** Figures in 2018 dollars, 2014-2018.

The race and ethnicity makeup of the City of South Lake Tahoe is predominantly white (82.2%) with Hispanic/Latino representing 27.4% of the local population, as observed in Table 3.18-3. The age of the local population is primarily age 18-65 (62%) and is moderately higher than the State of California (56.8%) and El Dorado County (54.4%), as provided in Table 3.18-4. This is likely due to the higher proportion of retired people who have taken residence in the City. Residents (age 25+) have a higher high-school graduation rate than the State of California, but lower college graduate rates than the State of California and El Dorado County (Table 3.18-5). Population and housing factors are discussed in Section 3.15 above.

Table 3.18-3 Race and Ethnicity

	State of California	El Dorado County	City of South Lake Tahoe
White	72.1	88.9	82.2
Black or African American	6.5	1.0	1.3
American Indian	1.6	1.3	0.3
Hispanic or Latino	39.3	12.9	27.4
Asian	15.3	4.7	5.9
Native Hawaiian	0.5	0.2	0.2
Two or More Races	3.9	3.8	2.5

Source: U.S. Census Bureau, 2020; American Census Survey, 2018

Table 3.18-4 Age and Sex

	State of California	El Dorado County	City of South Lake Tahoe
Percent Female	50.3	50.1	48.4
Percent Male	49.7	49.9	51.6
Persons Under 5	6.2	4.6	5.8
Persons Under 18	22.7	19.8	16.9
Persons 18-65	56.8	54.4	62.0
Persons over 65	14.3	21.2	15.3

Source: U.S. Census Bureau, 2020; American Census Survey, 2018

Table 3.18-5 Education

	State of California	El Dorado County	City of South Lake Tahoe
High School Graduate or Higher (% of persons age 25+; 2014-2018)	82.9	93.1	87.4
Bachelor's degree or Higher (% of persons age 25+; 2014-2018)	33.3	33.7	25.8

Source: U.S. Census Bureau, 2020; American Census Survey, 2018

3.18.1.2 Environmental Justice Populations

Since it is critical to identify small pockets of minority and low-income populations, data on minority and low-income status is analyzed using the most detailed areas for which relevant statistical data is available – the census block group. The proportion of minority and low-income populations, within each census block group in the Project Area, is calculated using the following criteria:

- Minority is defined as the following racial and ethnic groups: Black or African American, Hispanic or Latino, Asian, American Indian or Alaska Native, and Native Hawaiian or other Pacific Islander.
- Low-income is defined as individuals that the Census identifies as living below the poverty line.

Once the proportions of minority and low-income residents in each census block group are calculated, the proportions are compared to reference areas. CEQ guidance (1997) is not specific as to the choice of reference population. For purposes of this analysis, El Dorado County is used as the reference population. Comparison of the census block group data to El Dorado County allows for the identification of environmental justice populations in the Project Area. If there is a higher proportion of minority or low-income residents in a census block group than the proportion in El Dorado County, then the census block group is identified as an environmental justice population.

As observed in Figure 3.18-6, the following census block groups are present in the Project Area: 60170302005; 60170302004; 60170316005; 60170316004; 60170316001; 60170316002; 60170302002; and 60170302001. Table 3.18-1 provides a comparison of minority and low-income metrics in the

census block groups and El Dorado County. As observed in the shaded boxes in Table 3.18-6, all census block groups contain a minority or low-income population when compared to El Dorado County, therefore, all census block groups present in the Project area are considered environmental justice populations.

Table 3.18-6 Census Block Groups in Project Area Compared to El Dorado County

	El Dorado County	302005	302004	316005	316004	316001	316002	302002	302001
Population	188,661	969	533	736	916	777	483	1,005	1,700
White	88.00%	38.2%	85.9%	72.4%	61.5%	59.8%	95.0%	79.4%	89.0%
Minority	12.00%	61.8%	14.1%	27.6%	38.5%	40.2%	5.0%	20.6%	11.0%
Black	0.8%	0.0%	0.0%	0.0%	12.6%	0.4%	0.2%	1.6%	0.6%
American Indian	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	5.0%	0.0%
Asian	4.4%	3.5%	0.0%	0.0%	17.6%	24.5%	0.0%	10.2%	1.6%
Hawaiian	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%
Hispanic & Latino	12.7%	58.3%	14.1%	24.9%	5.1%	5.8%	0.0%	0.0%	7.9%
Multiple Race	3.7%	0.0%	0.0%	0.0%	3.3%	9.5%	4.8%	3.8%	0.0%
Percentage of People Below Poverty Line	8.9%	13.3%	9.4%	5.0%	36.7%	20.5%	27.1%	4.0%	15.1%

Source: U.S. Census Bureau, 2020; American Census Survey, 2018

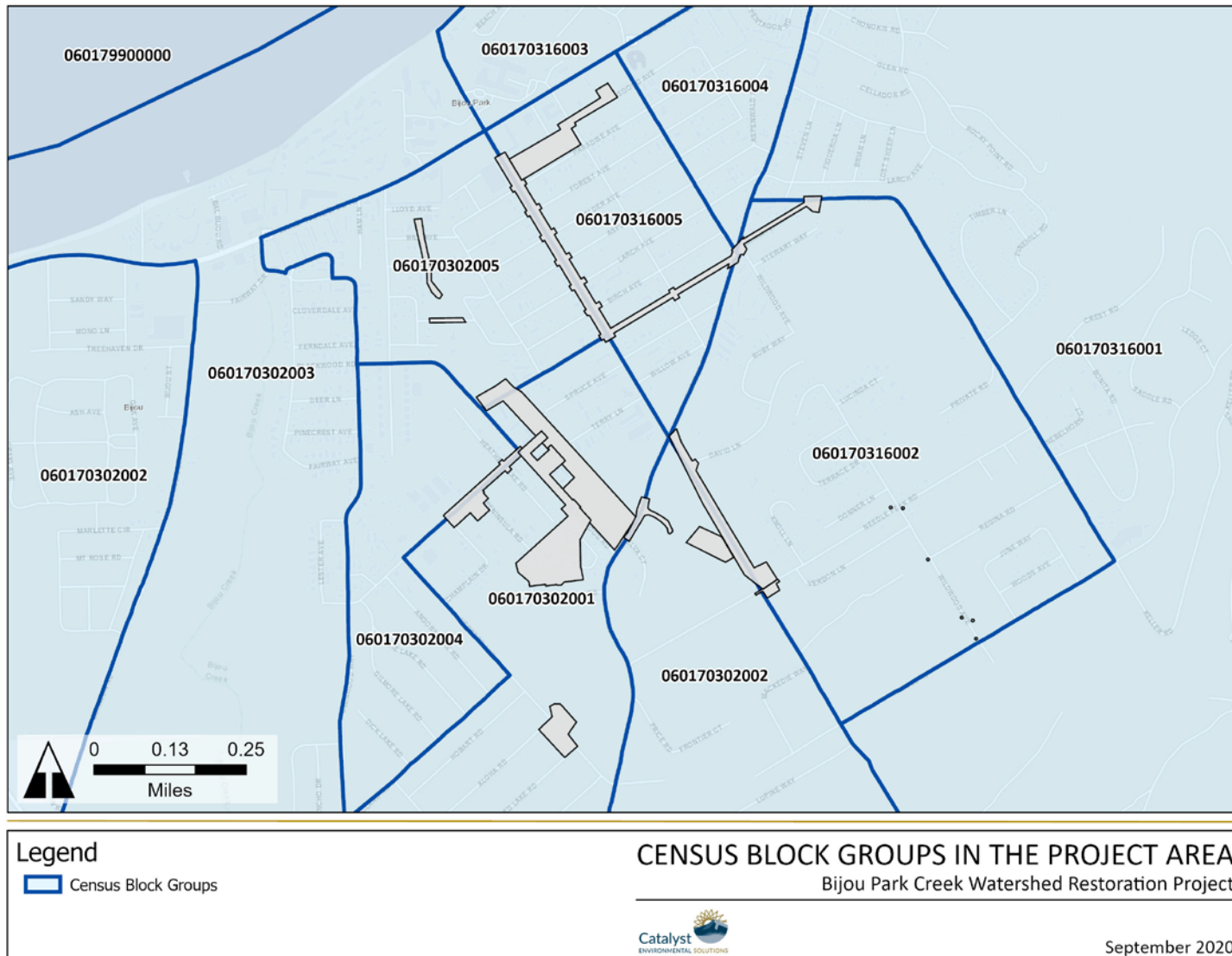


Figure 3.18-1. Census Block Group Designations in the Project Area

3.18.2 Impact Assessment

3.18.2.1 Socioeconomics

Environmental Analysis: **No Impact**

The Project would provide temporary economic benefits (i.e. jobs, expenditures, public revenue) during the construction phase, as contractor jobs, equipment, and materials would be needed to develop the stormwater improvements. The Project would not require the hiring of any full time positions after the construction phase and no population growth is expected to result from the Project (as discussed in Section 3.15). Therefore, no impacts to the socioeconomic or demographic resources in the Project area would occur.

Mitigation Measures: **None**

3.18.2.2 Environmental Justice

Environmental Analysis: **No Impact**

The majority of potential impacts would result from construction activities, which are temporary and less than significant, as discussed in the other resource analysis sections. Potential project effects would occur throughout the Project area and would not be centered in one location in the Project area; therefore, no particular area would experience the majority of impacts or a disproportionate amount of the potential impacts. While all census block groups present in the Project area are considered environmental justice populations for purposes of analysis, there would not be any disproportionate impacts to low-income or minority populations; therefore, no impacts to environmental justice populations would occur.

Mitigation Measures: **None**

3.18.2.3 No Action Alternative

Under the No Action Alternative, no stormwater improvements would be installed, leading to continued seasonal flooding and degraded stormwater quality; therefore, not addressing these issues could result in a significant impact to local property owners, residences, a school, a church, and identified affordable housing (low-income) in the Heavenly Valley Mobile Home Park. While nuisance flooding occurs throughout the Project Area, meaning that the adverse effects are realized by all populations in the Project Area, the entire area is considered an environmental justice population. Other parts of South Lake Tahoe and El Dorado County do not experience flooding like the population in the Project Area; therefore, a significant impact to the environmental justice population in the Project Area would occur under the No Action Alternative as these low-income and/or minority populations would experience a disproportionate impact to persistent flooding than the other residents in the City of South Lake Tahoe and El Dorado County.

3.19 Traffic/Transportation/Circulation (CEQA/TRPA)

Table 3.19-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project and alternatives on transportation.

Table 3.19-1 Evaluation Criteria and Summary of Impacts on Transportation

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
CEQA Environmental Checklist Item				
CEQA XVII(a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?			X	
CEQA XVII(b) Conflict or be inconsistent with CEQA Guidelines § 15064.3, subdivision (b)?			X	
CEQA XVII(c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?			X	
CEQA XVII(d) Result in inadequate emergency access?		X		
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item				
TRPA 13(a) Generate 100 or more new Daily Vehicle Trip Ends (DVTE)?				X
TRPA 13(b) Result in changes to existing parking facilities, or demand for new parking?				X
TRPA 13(c) Substantially impact existing transportation systems, including highway, transit, bicycle or pedestrian facilities?				X
TRPA 13(d) Alter present patterns of circulation or movement of people and/or goods?				X
TRPA 13(e) Alter waterborne, rail or air traffic?				X
TRPA 13(f) Increase traffic hazards to motor vehicles, bicyclists, or pedestrians?				X

3.19.1 Environmental Setting

3.19.1.1 Existing Street System

Pioneer Trail and Ski Run Boulevard are the most heavily traveled roads in the Project Area. The western extent of the Project Area is accessible from Glenwood Way. Pioneer Trail is a two-lane arterial that connects US 50 in the unincorporated community of Meyers to US 50 at a signalized intersection in South Lake Tahoe. Ski Run Boulevard is one of the main routes to the Lake Tahoe Heavenly Ski Resort. Ski Run Boulevard is a wide 2-lane paved road in the Project Area that begins at Highway 50 along the lake shore and terminates at Saddle Road and the base of the Ski Resort. Other roads in the Project Area are residential and experience low traffic pressure. Two areas, Blackwood Road and Rockwood Drive, experience yearly flooding due to undersized culverts and excessive stormwater runoff that exceeds the flow capacity of the drainage system.

3.19.1.2 Public Transit, Bicycle and Pedestrian Facilities

There are four main bike paths in the Lake Tahoe area. South Lake Tahoe Bike Path (aka Forest Bicycle Trail) is a blacktopped trail that does not follow the highway and meanders through forest for 10 miles. Few dedicated pedestrian facilities are present in the Project Area. Other roads in the Project Area are categorized as bike routes, including Blackwood Road and Tamarack Avenue. Pioneer Trail has dedicated bike lanes (Lake Tahoe Bicycle Coalition 2019). The proposed South Tahoe Greenway Shared Use Trail alignment runs through the Project Area along the north side of Pioneer Trail where the Pioneer Crossing Culvert Replacement would be constructed as well as passing nearby the proposed Aloha Basin. The South Tahoe Greenway is a project was approved in 2011 and will be built in phases starting in 2020 and continuing through 2031 (See also Section 3.22.1). One public bus route operates in the Project Area. Tahoe Transportation District Route 55 services Ski Run Boulevard, Pioneer Trail, and the Heavenly Valley Mobile Home Park (Blackwood Road) (Tahoe Transportation District 2019).

3.19.1.3 Existing Traffic Volumes and Level of Service

The Level of Service (LOS) is a general measure of traffic operating conditions on a roadway where a letter from A (best) to F (over capacity) is assigned. LOS may refer to the speed, convenience, and comfort and security of transportation facilities as experienced by drivers (El Dorado County 2019). South Lake Tahoe experiences significant traffic congestion, particularly during ski season and holidays. The City's 2030 General Plan established a minimum LOS standard "D" (stable flow, but higher density with maneuverability restricted by congestion and reduced travel speed) for all city streets and intersections with up to four hours per day of LOS "E" (operating conditions at or near the capacity level). The existing LOS for the intersection of US 50 and Ski Run Boulevard is D.

Pioneer Trail is the only east-west parallel alternative route to US 50 and carries approximately 10,772 vehicles per day according to 2014 traffic counts from El Dorado County's Hourly Traffic Count Reports (El Dorado County 2018b). The intersection of US 50 and Pioneer Trail was included in a study of LOS during Friday summer evening peak hours. The intersection experienced 1,710 PM peak hour vehicles, which exceeds the LOS D standard by 16 percent; however, the four-hour limit was not exceeded (TRPA 2012).

Annual Average Daily Traffic (AADT) is the total volume of traffic for the year divided by 365 days. US-50 at Pioneer Trail and at Ski Run Boulevard are the closest and most recent AADT measures to the Project Area. The AADT was 33,000 at Ski Run Boulevard and 28,500 at Pioneer Trail in 2017.

3.19.1.4 Emergency Access

Both Pioneer Trail and Ski Run Boulevard are significant travel routes during an emergency (City of South Lake Tahoe 2019). The portion of Pioneer Trail in the Project Area serves as the main evacuation route for both the Bijou and Heavenly evacuation zones. The Bijou Evacuation Zone includes all roads east of Bijou Community Park and west of Pioneer Trail as well as the Lake Tahoe Community College areas west of Al Tahoe Boulevard. Ski Run Boulevard in the Project Area serves and the main evacuation route for the Heavenly Evacuation area which includes all roads east of Ski Run Boulevard and south of Keller Road as well as some additional neighborhood side streets in subdivisions.

3.19.2 Impact Assessment

3.19.2.1 CEQA Checklist Analysis

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

Environmental Analysis: **Less than Significant**

The TRPA Goals and Policies relevant to the Project include those that establish LOS criteria for various roadway categories and signalized intersections. Specifically, the TRPA LOS criteria during peak periods shall be:

- LOS C on rural recreational/scenic roads;
- LOS D on rural developed area roads;
- LOS D on urban developed area roads;
- LOS D for signalized intersections;
- LOS E may be acceptable during peak periods in urban areas, not to exceed four hours/day.

The TRPA Goals and Policies also includes the following policy that is directly addressed with the improved stormwater conveyance capacity provided by the Project:

- Consider the increased vulnerability and risk to transportation infrastructure from climate stressors, such as increased precipitation, flooding, and drought when designing new infrastructure and repairing or maintaining existing infrastructure.

In addition, the Chapter 12 of the TRPA Code of Ordinances includes requirements for traffic considerations, including vehicle miles traveled (VMT) reduction policies and level of service goals for street and highway traffic, and Code Chapter 65 requirements for traffic analyses; the Code sections require reducing significant impacts to a less than significant level. While the TRPA Thresholds do not specifically include transportation criteria, the air quality criteria include the following two transportation-related standards:

- AQ-5 US Hwy 50 Traffic Volumes – 7% reduction in traffic volume on the US Hwy 50 corridor from 1981 base year values, winter, 4 p.m. to 12 a.m. (25,173 vehicles at the US Hwy 50/Park Ave intersection.)
- AQ-7 VMT – 10% reduction in VMT in the Lake Tahoe Basin from 1981 base year values. (1,648,466 VMT for a peak summer day.)

The Circulation Element of the City of South Lake Tahoe General Plan provides transportation objectives and policies for areas within the City. The objectives and policies are generally consistent with other applicable plans.

The Project would introduce only a small number of additional vehicles to the circulation system temporarily during the construction phase at each site. Daily trips would be generated by the approximately 10 employees to and from each site. In addition, up to truck trips would be expected for waste disposal as well as periodic truck trips to each site for the delivery of construction materials. Current estimates include up to four truck trips per day for waste disposal for some the Keller Canyon, Rockwood to Blackwood, Bijou School, and Aloha Basin improvements. The limited number of trips to/from each of the 11 sites would not constitute a substantial increase in vehicular traffic in the area or conflict with any transportation plans or policies summarized above. Following construction, the Project is mostly designed to not require long-term maintenance with the exception of the pretreatment sediment traps above and at Needle Peak intersection with Ski Run. Those will require cleaning once every year as part of the City's annual stormwater maintenance program and would not conflict with any applicable program, plan, ordinance or policy addressing the circulation system or generate a significant number of trips. Impacts associated with construction and long-term maintenance would be less than significant.

Mitigation Measures: **None**

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

Environmental Analysis: **Less than Significant**

CEQA Guidelines § 15064.3, subdivision (b) specifies that for land use projects, vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. The *Technical Advisory for Evaluating Transportation Impacts in CEQA* (California Governor's Office of Planning and Research, 2018) specifies that projects that generate or attract fewer than 110 trips per day generally may be assumed to cause a less-than-significant transportation impact. Construction activities at each site would last no longer than three months and associated trips would be much less than 110 trips per day during each phase of construction and would, therefore, not conflict or be inconsistent with CEQA Guidelines detailed in § 15064.3, subdivision (b).

Mitigation Measures: **None**

CEQA XVII(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)?

Environmental Analysis: **Less than Significant**

The Project would not introduce any design features related to traffic or transportation. Two areas, Blackwood Road and Rockwood Drive, experience yearly flooding due to undersized culverts and excessive stormwater runoff that exceeds the flow capacity of the drainage system. The Project would improve the flow capacity of the drainage system, which would reduce traffic hazards associated with flooding at these locations. As detailed in Section 2.3, *Compliance Measures*, the BMPs for traffic control during construction will include preparation of a Traffic Control Plan (TCP) by the City's contractor. The TCP will include measures to provide safe emergency, business, residential, bicycle, and pedestrian access through the Project area during construction. Implementation of the TCP during construction would ensure that impacts would be less than significant.

Mitigation Measures: **None**

CEQA XVII(d). Would the project result in inadequate emergency access?

Environmental Analysis: **Less than Significant with Mitigation**

Temporary partial road closures may be required during construction activities which would result in a temporary impact during construction. As detailed in Section 2.3, Compliance Measures, the BMPs for traffic control during construction will include preparation of a TCP by the City's contractor. The TCP will include measures to provide safe emergency, business, residential, bicycle, and pedestrian access through the Project area during construction. The Pioneer Crossing Culvert Replacement may require partial road closure with a single lane available during installation of the culvert. This could cause a potentially significant impact should emergency response or evacuation be required during construction of the Project. Mitigation Measure TR-1 requires that the TCP includes measures to protect persons and access to the Project area during an emergency. Given implementation of the TCP, construction impacts would be less than significant because safe access would be maintained during the construction period. In addition, the Project would not require revisions to the City's Emergency Operation Plan or Emergency Management Plan.

Mitigation Measures: **Yes**

Mitigation Measure TR-1: A Project-specific Traffic Control Plan shall include measures to ensure coordination with emergency services to address and mitigate project impacts to emergency services and evacuations. Such measures may include appropriate use of signage, flaggers, traffic calming, and alternative routes to accommodate local and through traffic. In addition, local residents shall be advised of schedules for construction traffic detours through signage, press releases, and distribution of flyers in area neighborhoods well in advance of construction initiation. Access will not be prohibited, at any time, for local residents, school busses or emergency vehicles, only delayed. In case of emergency, the contractor will be required to have traffic rated plates on site to allow access to be restored during trenching.

3.20 Utilities and Services Systems (CEQA/TRPA)

This section evaluates the Project's impacts on utilities and service systems during construction and operation. Table 3.20-1 presents the level of significance of the impacts based on the CEQA and TRPA Guidelines.

Table 3.20-1 Evaluation Criteria and Summary of Impacts on Utilities and Service Systems

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
<i>CEQA Environmental Checklist Item</i>				
CEQA XIX(a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
CEQA XIX(b)				X

Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?				
CEQA XIX(c) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
CEQA XIX(d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?				X
CEQA XIX(e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?				X
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item				
TRPA 16(a) Result in a need for new systems, or substantial alterations to power or natural gas?				X
TRPA 16(b) Result in a need for new systems, or substantial alterations to communication systems?				X
TRPA 16(c) Utilize additional water which amount will exceed the maximum permitted capacity of the service provider?				X
TRPA 16(d) Utilize additional sewage treatment capacity which amount will exceed the maximum permitted capacity of the sewage treatment provider?				X
TRPA 16(e) Result in a need for new systems, or substantial alterations to storm water drainage?				X
TRPA 16(f) Result in a need for new systems, or substantial alterations to solid waste and disposal?				X

3.20.1 Environmental Setting

The South Tahoe Public Utility District (STPUD) manages the Project Area's water supply, which is derived from groundwater, in accordance the 2014 Tahoe Valley South Basin (6-5.01) Groundwater Management Plan. The District also manages wastewater treatment in the Project Area. In 1969 all wastewater districts in Lake Tahoe were mandated to export treated wastewater and sewage effluent out of the Lake Tahoe watershed by the Porter-Cologne Act (§ 13950. – 13952.2). The STPUD exports all

of its treated wastewater to Diamond Valley in Alpine County, where it is used for irrigation for ranching and STPUD.

Electrical service in the Project Area is provided by Liberty Utilities, and natural gas is provided by Southwest Gas Corporation. The South Tahoe Refuse and Recycling Services collects commercial and residential solid waste and recycling in South Lake Tahoe; processes and separates the waste from the recyclable materials at its material recovery facility located in the city, and transports waste out of the Lake Tahoe Basin.

3.20.2 Impact Assessment

3.20.2.1 CEQA Checklist Analysis

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

Environmental Analysis: **Less than Significant**

The Project would involve construction and relocation of stormwater drainage improvements, as described in detail in Section 2. The Project would improve area-wide drainage, thereby decreasing the occurrence and intensity of flooding, and increase stormwater quality. As discussed throughout this document, the Project would have a temporary impact on the environment during construction. The Shirley to Whole Foods improvement may require utility relocation, which could result in a temporary but significant impact to utility customers.

The utilities would be relocated within the Project footprint so no new ground disturbance would be necessary. Implementation of the general construction management compliance measures described in Section 2.3.1 would ensure that the construction of new and expanded stormwater drainage improvements, including necessary relocation of utilities, would result in less than significant impacts on the environment.

The Project would not require or result in the relocation or construction of new or expanded wastewater treatment, electric power, natural gas, or telecommunications facilities.

Mitigation Measures: **No**

3.21 Wildfire (CEQA)

This section presents and analysis of the Project impacts to wildfire concerns and is based on the CEQA guidelines. Table 3.21-1 presents the evaluation and significance criteria used to analyze the potential impacts of the proposed Project on wildfire.

Table 3.21-1 Evaluation Criteria and Summary of Impacts on Wildfire

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

3.21.1 Environmental Setting

Communities in the Lake Tahoe Basin are susceptible to destruction by severe wildfires that threaten lives, burn homes, destroy infrastructure, and damage watersheds. Wildfires in the Lake Tahoe Basin were historically caused by lightning; however, human-caused fires have exceeded natural ignitions every year since fire causes have been recorded. Campfires, arson, and smoking are the leading causes of human-started fires. Fire season typically begins in May and ends in October with the highest percentage of ignitions occurring from July to September. The number of acres burned by wildfires in the Tahoe Basin has increased each decade since 1973, including a tenfold increase in the last decade. The largest fire ever recorded in the Basin was the 2007 Angora Fire which burned 3,100 acres and destroyed or damaged more than 254 homes.

The majority of the areas that would experience disturbance from the construction of the proposed improvements have experienced development in the past and do not contain vegetation that could catch fire. However, there is some construction that would occur in a natural area – the Bijou Park Creek SEZ.

Multiple access options are available within the project area. Both Pioneer Trail and Ski Run Boulevard are significant travel routes during an emergency (City of South Lake Tahoe 2019). The portion of Pioneer Trail in the project area serves as the main evacuation route for both the Bijou and Heavenly evacuation zones. The Bijou Evacuation Zone includes all roads east of Bijou Community Park and west of Pioneer Trail as well as the Lake Tahoe Community College areas west of Al Tahoe Boulevard. Ski Run Boulevard in the project area serves and the main evacuation route for the Heavenly Evacuation area which includes all roads east of Ski Run Boulevard and south of Keller Road as well as some additional neighborhood side streets in subdivisions.

3.21.2 Impact Assessment

3.21.2.1 CEQA Checklist Analysis

CEQA XX(a). Would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Environmental Analysis: **Less than Significant with Mitigation**

Proposed improvements would occur within the Heavenly, Bijou, and Stateline Emergency Evacuation Zones, as identified in the South Lake Tahoe Evacuation Plan. Ski Run Blvd and Pioneer Trail are evacuation routes. Temporary lane closures would occur on Ski Run Blvd during construction of the Ski Run Diversion improvement and on Pioneer Trail during the Pioneer Crossing Culvert Replacement improvement. These closures could cause a potentially significant impact should emergency response or evacuation be required during Project construction. Mitigation Measure TR-1 requires that the TCP, described in Section 2.3.8, includes measures to protect persons and access to the Project area during an emergency. With implementation of the TCP, construction impacts would be less than significant because safe access would be maintained during the construction period. In addition, the Project would not require revisions to the City's Emergency Operation Plan or Emergency Management Plan.

Mitigation Measures: **Yes, TR-1** (see section 3.19.2.1).

3.22 Mandatory Findings of Significance

Table 3.22-1 Mandatory Findings of Significance

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation	Less than Significant Impact	No Impact
<i>CEQA Environmental Checklist Item</i>				
CEQA XIX(a) Would the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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?		X		
CEQA XIX(b)			X	

Would the Project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?				
CEQA XIX(c) Would the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?			X	
Will the Proposal:	Yes	No, with Mitigation	Data Insufficient	No
TRPA Initial Environmental Checklist Item				
TRPA 21(a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California or Nevada history or prehistory?		X		
TRPA 21(b) Have the potential to achieve short-term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definitive period of time, while long-term impacts will endure well into the future.)				X
TRPA 21(c) * Have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environmental is significant?)				X
TRPA 21(d) Have environmental impacts which will cause substantial adverse effects on human being, either directly or indirectly?				X

3.22.1 Cumulative Impacts

Section 15355 of the State CEQA Guidelines defines cumulative impacts as “two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts.” A cumulative impact “consists of an impact which is created because of the combination of the project evaluated in the this ECD together with other projects causing related impacts (Section 15130[a][1]). The cumulative impacts analysis “would examine reasonable, feasible options for mitigating or avoiding the project’s contribution to any significant cumulative effects” (Section 15130[b][3]).

Cumulative impacts are assessed for related projects within a similar geographic area. This geographic area may vary, depending upon the issue area discussed and the geographic extent of the potential

impact. For example, the geographic area associated with construction noise impacts is limited to areas directly adjacent to construction sites, whereas the geographic area that is affected by construction-related air emissions may include the larger air basin. Construction impacts associated with increased noise, dust, erosion, and access limitations tend to be localized but could be exacerbated if other development or improvement projects are occurring within the same or adjacent locations as the proposed Project.

In addition to the geographic scope, cumulative impacts also take into consideration the timing of related projects relative to the proposed project. The implementation schedule is particularly important for construction-related impacts; for a group of projects to generate cumulative construction impacts, they must be temporally, as well as spatially proximate. This analysis assumes other local projects would be implemented concurrently if scheduled to begin between Spring 2021 and Fall 2022.

Cumulative effects could result when considering the effects of the proposed project in combination with the effects of other construction projects in the area. For this document, the analysis of cumulative construction impacts assumes that throughout the Project Area, planned future development projects will be on-going simultaneously with the proposed program, including other local major residential construction, small-scale construction project, and projects that have not yet been identified. Recently completed, current/ongoing, and future/in-planning phase projects in the vicinity of the Bijou Park Creek SEZ Enhancement Project are shown in Figure 3.22-1. Table 3.22-1 provides the details for each of the recent past, present, and reasonably foreseeable future projects considered in this cumulative impact analysis, including a description of the project objectives, timeframe for implementation, and agency or project proponent involved.

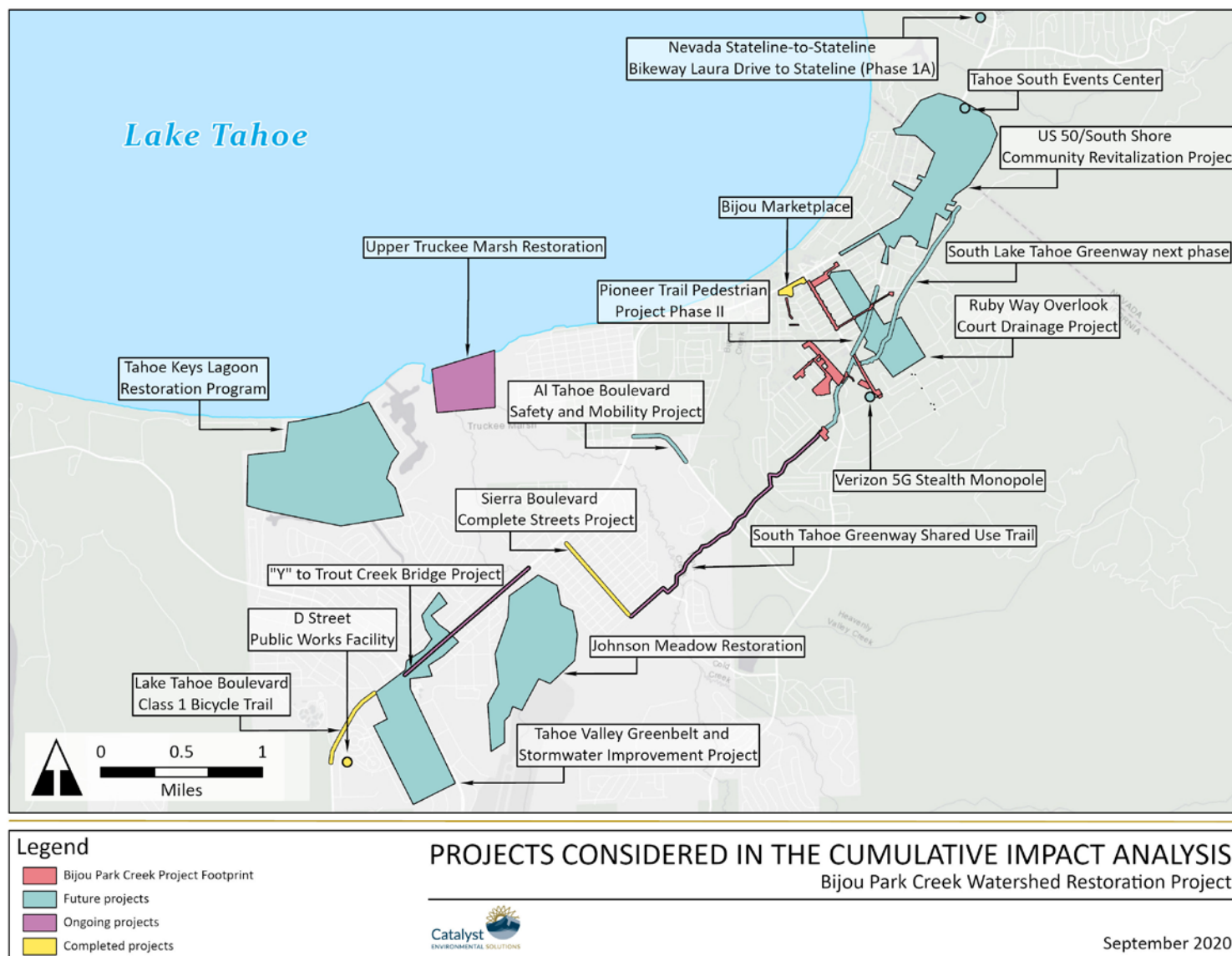


Figure 3.22-1. Recently Completed Projects and In-Progress/Incomplete Projects in the Cumulative Impacts Analysis Area

Table 3.22-2 Projects Considered in the Cumulative Impact Analysis

Agency/Owner	Project Name	Description	Status
City of South Lake Tahoe	Bijou Marketplace	The City performed flood mitigation, SEZ restoration, and water quality improvements in the Bijou Park Creek SEZ in conjunction with development of the Bijou Marketplace, now occupied by Whole Foods and other retail businesses.	Completed 2019
City of South Lake Tahoe	Sierra Boulevard Complete Streets Project	The project rehabilitated a 0.6-miles stretch of Sierra Blvd from Palmira Avenue to Barbara Avenue. The redesign included bike lanes, paths, pedestrian sidewalks, lighting, landscaping, and hardscaping.	Completed 2019
City of South Lake Tahoe	D Street Public Works Facility	The City created an office and industrial facility for the City's Public Works Department staff and equipment.	Completed 2019
City of South Lake Tahoe	Lake Tahoe Boulevard Class 1 Bicycle Trail	Designed and constructed a class 1 bike trail, ADA compliant ramps, and streetlights along the 0.6-mile section of Lake Tahoe Blvd from Viking Way (D-Street) to State Hwy 89 at US Hwy 50.	Completed 2020
Caltrans	"Y" to Trout Creek Bridge Project	Stormwater Improvements, grading, and widening of U.S. 50, between the "Y" at U.S. 50 and State Highway 89 and Trout Creek Bridge	Construction nearing completion 2020
California Tahoe Conservancy	Upper Truckee Marsh Restoration Project	Restoration of the Upper Truckee River and Marsh by rewetting meadow and removing sailing lagoon	Construction from 2020 to 2024
City of South Lake Tahoe	South Tahoe Greenway Shared-Use Trail	Establishes non-motorized transportation network in the South Shore from Sierra Tract to Van Sickle Bi-State Park. Project approval occurred in 2011 and the trail, including neighborhood connectors, will be constructed in phases as separate EIP projects.	Planning, design, and construction ongoing between 2020 and 2031
Verizon	Verizon 5G Stealth Monopole	This stealth monopole would be located on private property at 1360 Ski Run Boulevard.	Planning 2020
City of South Lake Tahoe	Ruby Way-Overlook Ct Drainage and Erosion Control Project	Water quality and erosion control project to address surface runoff conditions. Project work will include adding in additional storm drain inlets, adding subsurface storm drain pipes to replace an existing steep rock-lined conveyance channel, and constructing a series of linear storm drain detention basins that will also allow infiltration of stormwater. Project improvements will redirect urban stormwater runoff into a new subsurface conveyance systems; thereby, removing overland surface flow that is impacting private and public property.	Planning/Design 2015-2022
Tahoe Resource Conservation District	Johnson Meadow Restoration Project	Restoration of Johnson Meadow by rewetting meadow	Planning/design in progress until 2022. Estimated construction between 2022 and 2030.

City of South Lake Tahoe	Al Tahoe Boulevard Safety and Mobility Project	Constructs a Class I shared-use path and Class II bicycle lanes along Al Tahoe Boulevard in the vicinity of the South Tahoe Middle School. The limits of the project are Al Tahoe Boulevard between the U.S. 50 and Johnson Boulevard	Planning/design in 2020
City of South Lake Tahoe	Pioneer Trail Pedestrian Project Phase II	Continue pedestrian sidewalks, lighting, transit stops, and Class II bicycle lanes from the limits of the completed Phase 1 project (Larch Avenue) to the western limits of Ski Run Boulevard (+0.45 mile)	Planning/Design 2020-2022
Tahoe Transportation District	Nevada Stateline-to-Stateline Bikeway Laura Drive to Stateline (Phase 1A)	Construct a 1-mile segment of bicycle trail extending the Laura Drive/Kahle (Phase 1B/1D) segments to Stateline along U.S. 50 and then down Lake Parkway adjacent to Edgewood	Planning/design 2020-2022
City of South Lake Tahoe	Tahoe Valley Greenbelt and Stormwater Improvement Project	Includes multiple benefits to stormwater, stream environment zone areas, bicycle and pedestrian improvements, and recreational amenities	Implementation from 2021 to 2024
Tahoe Douglas Visitors Authority	Tahoe South Events Center Project	The Tahoe South Events Center would be a publicly owned assembly event and entertainment venue located in an entirely new approximately 88,400 square foot building positioned at the corner of U.S. Highway 50 and Lake Parkway in the MontBleu parking lot. Related project improvements include an adjacent outdoor gathering space, reconfigured surface parking lots and internal circulation, multimodal and pedestrian circulation enhancements along U.S. Highway 50 and improved stormwater treatment facilities designed to capture and treat runoff associated with the proposed improvements	Construction 2021, Completion 2022
Tahoe Keys Property Owners Association (TKPOA)	Tahoe Keys Lagoons Restoration Program - Aquatic Weed Control	Test methods to control the spread of non-native aquatic weeds that compromise water quality and degrade beneficial uses of the Tahoe Keys lagoon.	Planning 2020, Future
Tahoe Transportation District	US 50/South Shore Community Revitalization Project	Designed to improve the Tahoe Basin's transportation network while addressing affordable housing, community and mobility needs, and contributing to environmental gains	Final Design Phase 2020, Future

3.22.1.1 CEQA Checklist Analysis

CEQA XIX(a). Would the Project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, 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?

Environmental Analysis: **Less than Significant with Mitigation**

Impacts to the environment, including habitat for fish and wildlife species, populations or plants and animals, rare and endangered species, sensitive habitats, historical and cultural resources, hydrology, geology, and soils, have been evaluated as part of this ECD. As discussed above in Section 3.5.2, the Project has the potential to significantly impact special status species and wetlands and WoUS/WoS. With implementation of mitigation measures BIO-1, protocol-level surveys for special status species will be conducted in consultation with CDFW and USFWS as needed. Mitigation measure BIO-2 will be implemented to delineate all wetlands and WoUS/WoS and the Project will follow all proper protocol under Section 404 of the CWA to avoid, minimize, or mitigate where necessary impacts to jurisdictional waters.

Most impacts from the Project would be temporary and localized and would cease after construction. BMPs and compliance measures have been included in Section 2.3 that would minimize the potential for cumulative impacts by requiring appropriate measures to minimize stormwater runoff, minimize impacts to water quality and vegetation, protect against hazards and hazardous materials, prevent surface soil erosion or fugitive dust effects, and protect the safety of the public during construction activities.

Mitigation measures have been incorporated that would ensure the Project's contribution to significant cumulative impacts would not be cumulatively considerable. Potential impacts were found to be less than significant with mitigation. The purpose of the Project is to address nuisance flooding, water quality issues, and degradation of the Bijou Park Creek SEZ. Numerous improvements are proposed including new stormwater infrastructure facilities (e.g., treatment basins), facility upgrades, and restoration/enhancement actions within the SEZ. The anticipated effects from the Project are expected to be overall beneficial to the natural and human environment.

Mitigation Measure: **Yes**

Mitigation Measure BIO-1: Conduct protocol-level surveys for special status species in consultation with state (CDFW) and federal (USFWS) agencies and other stakeholders.

Mitigation Measure BIO-2: Complete Jurisdictional Wetland Delineation and Determination

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

Environmental Analysis: **Less than Significant**

All impacts that would result from the Project would be construction impacts, and therefore, temporary and limited to the specific area undergoing development. As discussed in Sections 3.2 through 3.21, the resource analyses did not identify any significant impacts that could not be reduced to less than significant with mitigation measures. Additionally, as provided in Section 2.3, compliance measures and BMPs would minimize the potential for cumulative impacts by requiring appropriate measures to minimize stormwater runoff, minimize impacts to water quality and vegetation, protect wildlife, reduce construction noise, manage traffic, protect against hazards and hazardous materials, prevent surface soil erosion or fugitive dust effects, and protect the safety of the public during construction activities.

As provided in Table 2.1-2, the maximum expected construction time for a single facility is three months. If any of the probable future projects (Table 3.22-1) occupy the same area of effect as the proposed Project, all cumulative effects would be temporary (3 months or less) and less than significant with the implementation of the compliance measures/BMPs (Section 2.3) and mitigation measures (Section 4).

The construction areas for each of the proposed improvements is relatively small and a probable future project is unlikely to occupy the same area of effect. Additionally, where impacts are not site specific, the project would not cause the exceedance of any regional plans or policies that are adopted for the purpose of environmental protection. There would be no long-term impacts from the proposed improvements, and the anticipated effects from the Project would be overall beneficial to the natural and human environment. Therefore, any potential cumulative impacts would be less than significant as result of the Project.

Mitigation Measure: **None**

CEQA XIX(c). Would the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Environmental Analysis: **Less than Significant**

All impacts that would result from the Project would be construction impacts, and therefore, temporary and limited to the specific area undergoing development. As discussed in Sections 3.2 through 3.21, the resource analyses did not identify any substantial adverse effects on human beings. Further, the Project would positively affect local residents and the general public through improvement of the stormwater management system resulting in a reduction of flooding that presents a nuisance and safety hazard to people living adjacent to the Bijou Park Creek SEZ. Any impact to the human environment would be temporary and less than significant.

Mitigation Measures: **None**

3.22.1.2 TRPA Checklist Analysis

TRPA 21(a). Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California or Nevada history or prehistory?

Environmental Analysis: **No, With Mitigation**

Refer to the analysis under CEQA XIX(a) which concludes that impacts to the environment, including habitat for fish and wildlife species, populations or plants and animals, rare and endangered species, sensitive habitats, historical and cultural resources, hydrology, geology, and soils would be less than significant with implementation of mitigation measures. The Project would be overall beneficial to the human and natural environment.

Mitigation Measures: **Yes, BIO-1 and BIO-2.**

TRPA 21(c). Have impacts which are individually limited, but cumulatively considerable? (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of those impacts on the environmental is significant?)

Environmental Analysis: **No, Not Significant**

Refer to the analysis for CEQA XIX(b), which concludes that the level of impact would be less than significant.

Mitigation Measures: **None**

SECTION 4

Mitigation Monitoring Plan

In accordance with CEQA, the City prepared an IS/MND that identifies adverse impacts related to construction activity for the Project. The MND also identifies mitigation measures that would reduce or eliminate these impacts. Adoption of the MMP would occur along with approval of the Project.

Section 21081.6 of the PRC and Sections 15091(d) and 15097 of the State CEQA Guidelines require public agencies “to adopt a reporting and monitoring program for changes to the project which it has adopted or made a condition of project approval in order to mitigate or avoid significant effects on the environment.” A Mitigation Monitoring Plan (MMP) is required because the MND for the Project identified potentially significant adverse impacts related to construction activity, and mitigation measures have been identified to mitigate those impacts.

This MMP has been prepared to ensure that required mitigation measures are implemented and completed according to schedule and maintained in a satisfactory manner during construction of the Project, as required. The MMP may be modified by the City during Project implementation, as necessary, in response to changing conditions. Table 4.4-1 has been prepared to assist the responsible parties in implementing the MMP. The table identifies the category of significant environmental impact, individual mitigation measures, monitoring/mitigation timing, responsible person/agency for implementing the measure, monitoring and reporting procedure, and space to confirm implementation of the mitigation measures. The numbering of mitigation measures follows the numbering sequence found in the MND. Revisions to mitigation measures that were necessary as a result of responding to public and agency comments have been incorporated into this MMP.

4.1 Mitigation Measures

Biological Resources Mitigation Measure No. 1 (BIO-1): If it is concluded that direct or indirect impacts are possible to sensitive or listed species and/or their habitat, the need for protocol-level surveys shall be determined in consultation with state (CDFW) and federal (USFWS) agencies and other stakeholders. The type and intensity of surveys shall depend on the listed species in question and the potential habitat present for that species. During the appropriate survey timeframe specific to the target species, qualified biologists shall resurvey habitat areas utilizing state and federal protocol to detect presence and determine distribution of the species within the Project Area. Based on survey results, consultation shall also be undertaken to determine whether further compensatory mitigation actions are required.

Biological Resources Mitigation Measure No. 2 (BIO-2): Prior to completion of final design of the Project, a qualified biologist shall perform a wetland delineation for the Project Area. The delineation shall conform to the USACE Wetlands Delineation Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). Following delineation of wetlands and waters that would be impacted by the Project the Project design shall be modified to avoid impacts to the delineated wetland or the City will comply with the permitting regulations of Section 404 of the CWA to minimize and mitigate for the loss of jurisdictional wetlands and waters.

Traffic/Transportation/Circulation Mitigation Measures No. 1 (TR-1): A Project-specific Traffic Control Plan shall include measures to ensure coordination with emergency services to address and mitigate project impacts to emergency services and evacuations. Such measures may include appropriate use of

signage, flaggers, traffic calming, and alternative routes to accommodate local and through traffic. In addition, local residents shall be advised of schedules for construction traffic detours through signage, press releases, and distribution of flyers in area neighborhoods well in advance of construction initiation. Access will not be prohibited, at any time, for local residents, school busses or emergency vehicles, only delayed. In case of emergency, the contractor will be required to have traffic rated plates on site to allow access to be restored during trenching.

4.2 Roles and Responsibilities

Unless otherwise specified herein, the construction contractor is responsible for taking the actions necessary to implement the mitigation measures according to the specifications provided for each measure and for demonstrating to the City that the action has been successfully completed.

The City would be responsible for overall administration of the MMP and for verifying that the construction contractor has completed the necessary actions for each measure. The City would designate a project manager to oversee the MMP during the construction period. Duties of the project manager include the following:

- Ensure that routine inspections of the construction site are conducted by appropriate City staff; check plans, reports, and other documents required by the MMP; and conduct reporting activities.
- Serve as a liaison between the City and the construction contractor regarding mitigation monitoring issues.
- Complete forms and maintain reports and other records and documents generated by the MMP.
- Coordinate and ensure that corrective actions or enforcement measures are taken, if necessary.

The construction contractor would identify the staff members responsible for coordinating with the City on the MMP.

4.3 Mitigation Monitoring Reporting

The City would prepare an annual monitoring report on compliance with the required mitigation measures for the year of construction (inclusive of the first rainy season following construction). The report would be designed to simply and clearly identify whether mitigation measures are being, or have been, adequately implemented. At a minimum, each report would identify the mitigation measures or conditions to be monitored for implementation, whether compliance with the mitigation measures or conditions has occurred, the procedures used to assess compliance, and whether further action is required.

4.4 Mitigation Monitoring Plan Table

The annual report submitted would verify the implementation of mitigation measures. The MMP, Table 4.4-1, that follows would be used to guide the City in their evaluation and be the basis for annual reporting.

The column categories identified in the MMP table are described below:

- Mitigation Number. This column lists the mitigation measures by number.
- Mitigation Measure. This column provides the text of the mitigation measures identified in the MND/IEC.
- Timing/Schedule. This column lists the time frame in which the mitigation would take place.

- Implementation Responsibility. This column identifies the entity responsible for complying with the requirements of the mitigation measure. In most cases, the construction contractor would be responsible for conforming to the mitigation measure.
- Implementation and Verification. These columns are for verifying compliance. The “Monitoring Action” column describes the type of action taken to verify implementation. The “Date Completed” column is to be dated and initialed by the City Engineer, or his/her designee, based on the documentation provided by the construction contractor, its agents (qualified individuals), or through personal verification by City staff.

Table 4.4-1 Summary of Impacts to Resource Areas and Proposed Mitigation Measures

Resource Area	Impacts and Mitigation Measures	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
				Monitoring/Action	Date Completed
Aesthetics and Scenic Resources/Community Design/Light and Glare	No potentially significant impacts identified.				
Agriculture and Forestry Resources	No potentially significant impacts identified.				
Air Quality	Potentially significant impacts related to air quality will be avoided, reduced, or minimized through implementation of the air quality resource protection measure detailed in Section 2.3.9.				
Biological Resources, Vegetation/Wildlife, and Special Status Species	Potentially significant impacts related to biological resources (including vegetation, wildlife, and wetlands) and special status species will be avoided, reduced, or minimized through implementation of the protection measure detailed in Sections 2.3.3, 2.3.4, 2.3.5, in addition to mitigation measures BIO-1 and BIO-2 . City will comply with the permitting regulations of Section 404 of the CWA to minimize and mitigate for the loss of jurisdictional wetlands and waters.				
	BIO-1: If direct or indirect impacts are possible to sensitive or listed species and/or their habitat, the need for protocol-level surveys will be determined in consultation with state (CDFW) and federal (USFWS) agencies and other stakeholders. The type and intensity of surveys will depend on the listed species in question and the potential habitat present for that species. During the appropriate survey timeframe specific to the target species, qualified biologists would resurvey habitat areas utilizing state and federal protocol to detect presence and determine distribution of the species within the Project Area. Based on survey results, consultation will also be undertaken to determine whether further	Prior to and/or during construction	Contractor and City of South Lake Tahoe		

Resource Area	Impacts and Mitigation Measures	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
				Monitoring/Action	Date Completed
	compensatory mitigation actions are required.				
	BIO-2: Prior to completion of final design of the Project, a qualified biologist would perform a wetland delineation for the Project Area. The delineation would conform to the USACE Wetlands Delineation Manual and Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Western Mountains, Valleys, and Coast Region (Version 2.0). Following delineation of wetlands and waters that would be impacted by the Project the Project design will be modified to avoid impacts to the delineated wetland or the	Prior to construction	City of South Lake Tahoe		
Cultural Resources and Tribal Cultural Resources and Archaeology	No potentially significant impacts identified.				
Energy	Potentially significant impacts to energy resources and consumption would be avoided, reduced, or minimized through implementation of the energy consumption measures detailed in Section 2.3.9				
Geology and Soils and Land	Potentially significant impacts to geological resources, soils and land would be avoided, reduced, or minimized through implementation of the energy consumption measures detailed in Section 2.3.5.				
Greenhouse Gas Emissions	Potentially significant impacts related to greenhouse gas emissions will be avoided, reduced, or minimized through implementation of the air quality resource protection measure detailed in Section 2.3.9.				
Hazards and Hazardous Materials, Human Health, and Risk of Upset	Compliance with all NPDES Construction General Permit requirements including the preparation and implementation of a SWPPP and BMPs described in Sections 2.3.5 and 2.3.6 would minimize the potential for mishandling and/or the release of hazardous materials.				

Resource Area	Impacts and Mitigation Measures	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
				Monitoring/Action	Date Completed
	Impacts to emergency response planning and/or emergency evacuation planning would be addressed by implementation mitigation measure TR-1 , preparation of a Traffic Control Plan.	Prior to construction	Contractor and City of South Lake Tahoe		
Hydrology and Water Quality	Potentially significant impacts to water resources would be avoided, reduced, or minimized through adherence to the measures detailed in Sections 2.3.2 and 2.3.5. In addition, the Project would receive Section 401 Water Quality Certification issued by the Water Board and would be subject to permitting under Section 404 from USACE.				
	Construction within waters and wetlands could adversely affect these waterbodies; therefore, implementation of Mitigation Measure BIO-2 is necessary to identify the extent of jurisdictional WoUS and WoS.	Prior to construction	City of South Lake Tahoe		
Land Use and Planning	No potentially significant impacts identified.				
Mineral and Natural Resources	No potentially significant impacts identified.				
Noise	Potentially significant impacts from noise would be avoided, reduced, or minimized through compliance with the TRPA Noise Ordinance for construction as detailed in Section 2.3.7.				
Population and Housing	No potentially significant impacts identified.				
Public Services	Temporary partial road closures could cause a potentially significant impact should emergency response be required during construction. With implantation of the Traffic Control Plan (TR-1), impacts of the Project on fire protection, police protection, schools, parks, and other public facilities would be less than	Prior to construction	Contractor and City of South Lake Tahoe		

Resource Area	Impacts and Mitigation Measures	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
				Monitoring/Action	Date Completed
	significant because safe access would be maintained during the construction period.				
Recreation	No potentially significant impacts identified.				
Socioeconomics and Environmental Justice	No potentially significant impacts identified.				
Traffic/Transportation/Circulation	Temporary partial road closures may be required during construction activities which would result in temporary impacts during construction. As detailed in Section 2.3.8, the BMPs for traffic control during construction will implemented, including preparation of a Traffic Control Plan by the City's contractor as mitigation measure TR-1 .				
	TR-1: A Project-specific Traffic Control Plan shall include measures to ensure coordination with emergency services to address and mitigate project impacts to emergency services and evacuations. Such measures may include appropriate use of signage, flaggers, traffic calming, and alternative routes to accommodate local and through traffic. In addition, local residents shall be advised of schedules for construction traffic detours through signage, press releases, and distribution of flyers in area neighborhoods well in advance of construction initiation. Access will not be prohibited, at any time, for local residents, school busses or emergency vehicles, only delayed. In case of emergency, the contractor will be required to have traffic rated plates on site to allow access to be restored during trenching.	Prior to construction	Contractor and City of South Lake Tahoe		

Resource Area	Impacts and Mitigation Measures	Timing/Schedule	Implementation Responsibility	Implementation and Verification	
				Monitoring/Action	Date Completed
Utilities and Service Systems	Potentially significant impacts to utilities and service systems would be avoided, reduced, or minimized through compliance with measures described in Section 2.3.1.				
Wildfire	Impacts to emergency response planning and/or emergency evacuation planning would be addressed by implementation mitigation measure TR-1 , preparation of a Traffic Control Plan.	Prior to construction	Contractor and City of South Lake Tahoe		

SECTION 5

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SECTION 6

Preparers

Bijou Park Creek Watershed
Restoration Project IS/IEC/EA

Appendices

Appendix A: Thirty Percent Design Plan

Appendix B: Bijou Park Creek Restoration Project Preliminary Design Report

Appendix C: Assessor's Parcel Number Map Set

Appendix D: Air Quality Model Results

Appendix E: Special Status Species Table
