



**DEPARTMENT OF THE ARMY**  
**U.S. ARMY ENGINEER DISTRICT, SACRAMENTO**  
**CORPS OF ENGINEERS**  
1325 J STREET  
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO  
ATTENTION OF

Environmental Resources Branch

**JAN 09 2008**

TO ALL INTERESTED PARTIES:

The draft Environmental Assessment (EA) and draft Finding of No Significant Impact for the Section 108 Lake Forest Erosion Control Project – Area B, Placer County, California, are available for review. In collaboration with Placer County and the Corps, the California Tahoe Conservancy is the local sponsor for the project.

The proposed project would consist of restoring aquatic habitat, as well as riparian meadow habitat and function, in and along Lake Forest Creek. This includes constructing approximately 1,500 linear feet of new sinuous channel and restoring the adjacent stream environment zone and riparian habitat for wildlife. Restoration of the stream environment zone in the developed areas would also reduce sedimentation into Lake Tahoe, and create 35 acres of wetland areas and meadowlands that expand the flood plain adjacent to the creek. The project is also consistent with, and was identified as a priority of, the Tahoe Regional Planning Agency's Environmental Improvement Program.

The public review period for the draft EA will end on February 9, 2009. An electronic copy of the EA is available for review at [www.nvwetlands.com/LakeForestEA](http://www.nvwetlands.com/LakeForestEA). The document is also available on CD at the Tahoe City Library, and a paper copy is available for review at the Lake Forest Glen Homeowners Association Office. Please send any comments to the U.S. Army Corps of Engineers, Sacramento District, Attn: Mr. Mario Parker (CESPK-PD-R), 1325 J Street, Sacramento, California 95814. All comments will be considered and incorporated into the final EA, as appropriate. If you have any questions, Mr. Parker can be reached at (916) 557-6701.

Sincerely,

Francis C. Piccola  
Chief, Planning Division



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Chief, Planning Division

Enclosure

**Draft  
Environmental Assessment**

**Section 108 Lake Forest Erosion Control Project – Area B  
Placer County, California**

**January 2009**



**US Army Corps  
of Engineers** ®  
Sacramento District

FINDING OF NO SIGNIFICANT IMPACT\*  
Lake Forest Erosion Control Project – Area B,  
Placer County, California

I have reviewed and evaluated the information presented in this Environmental Assessment (EA) for the Lake Forest Erosion Control Project – Area B, Placer County, California. This project would restore 44 acres of Stream Environment Zone (SEZ) that have been altered and degraded from their pre-1960's condition. In addition to restoring SEZ's, proposed improvements within the project area include the retrofitting of Placer County rights-of-way with appropriate best management practices and updated streamflow conveyance structures, and the creation of additional recreation amenities and facilities. These efforts would help preserve Lake Tahoe water quality, improve wildlife habitat, and enhance recreational opportunities.

During this review, the possible consequences of the work described in the EA have been studied with consideration given to environmental, economic, social, and engineering feasibility. In evaluating the effects of the proposed project, specific attention has been given to significant environmental conditions that could potentially be affected. I have also considered the views of other interested agencies, organizations, and individuals concerning the study. The effects and mitigation measures have been coordinated with, and agreed to, by the U.S. Fish and Wildlife Service. It has also been determined that the U.S. Forest Service is the lead agency for conducting compliance with Section 106 of the National Historic Preservation Act of 1966.

Based on my review of the EA and my knowledge of the project area, I am convinced that the proposed Lake Forest Erosion Control Project – Area B project is a logical and desirable alternative. Furthermore, I have determined that the work would have no significant, long-term effects on the environment. All construction will be implemented in strict compliance with applicable Federal, State, and local laws and regulations. Based on the results of the environmental evaluation and completion of interagency coordination, I have determined that the EA and Finding of No Significant Impact provide adequate documentation and that no further environmental document is required.

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Date

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Thomas C. Chapman, P.E.  
Colonel, U.S. Army  
District Engineer

\* To be signed by the District Engineer after the public review period, if appropriate

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## **1.0 PURPOSE AND NEED**

### **1.1 Proposed Action**

The State of California Tahoe Conservancy (CTC) and the U.S. Army Corps of Engineers (Corps) propose to implement the Lake Forest Erosion Control Project–Area B (LFECP) to restore 35 acres of Stream Environment Zone (SEZ), as well as 1500 linear feet of aquatic habitat which have been altered and degraded from their pre-1960s condition. In addition to restoring SEZs, proposed improvements within the project area include the retrofitting of Placer County right-of-ways (ROW) with appropriate best management practices (BMPs), updating stream-flow conveyance structures, and the creation of additional recreation amenities/facilities. The project will result in the restoration of 35 acres of wet meadow habitat and These efforts would help preserve Lake Tahoe water quality and provide wildlife habitat.

### **1.2 Location of the Project Area**

The LFECP is located in Placer County, California, on the northeastern shore of Lake Tahoe, 2 to 3 miles east of Tahoe City along State Route 28 (Plate 1). The project area includes portions of Polaris and Lake Forest Creek SEZ, and is situated within an area of mixed property ownership and land use including: residential, commercial, and publicly owned properties. Restoration work would be conducted within properties managed by Placer County, CTC, California State Parks Department of Recreation (DPR), and private property. While the greater LFECP includes 3 contiguous areas, (Areas A, B, and C) this Environmental Assessment (EA) only discusses work proposed for Area B, the central area.

### **1.3 Need for Proposed Action**

Work associated with the LFECP would be conducted within an area which historically sustained Lake Forest Creek, as well as a complex of several smaller tributaries and meadows supported hydrologically by the Polaris and Lake Forest Creek system. Due to residential and commercial/industrial land development beginning in the 1960s, this hydrologic system has been degraded and altered. The natural sediment transport and retention functions associated with these creeks under a stable hydrologic condition have been lost due to development, resulting in increased sediment discharge to Lake Tahoe (Placer County 2007a). The water quality treatment functions associated with historic wetland complexes have been greatly decreased. Additionally, ecologically valuable habitat which was previously supported by the area's streams and meadows has been degraded.

Under present conditions, within the project area, upstream reaches of Lake Forest Creek are incised and confined to a narrow, deep channel with manmade structures and artificial fill encroaching on the SEZ. Further downstream (just south of the SR 28 crossing), Lake Forest Creek is redirected and buried in an underground storm drain which continues until approximately 1,000 feet upstream of Lake Forest Creek's outlet to Lake Tahoe (Plate 2). Polaris Creek and its SEZ have also undergone similar channelization and alterations, which have left it hydrologically disconnected from its natural floodplain. As a result, approximately

25.3 tons of sediment are discharged from Area B into Lake Tahoe annually (Wood Rodgers 2006).

The previously mentioned stream alterations were likely conducted in order to quickly drain waters from the project area during storm events and convey them as directly as practicable to Lake Tahoe. The perceived benefit of this plan at the time of development, beginning in the 1960s, would have been creating a drainage system that minimized stream channel interferences with future land development plans. The unanticipated consequences of this plan have led to a situation where the developed lands surrounding Polaris and Lake Forest Creeks contain a large amount of compacted and otherwise impervious surfaces which quickly shed large quantities of runoff (generated from rainfall and snowmelt) and eroded soils directly to the creek systems with little opportunity for natural soil infiltration or runoff treatment by vegetation. In addition to the problem of conveying undesirable amounts of sediment and nutrient laden runoff to Lake Tahoe, the stream system alterations also failed to provide adequately sized culverts and roadside ditches for transporting peak stormwater flows, thereby leading to localized flooding during peak flows.

The proposed project is consistent with the objectives detailed in Tahoe Regional Planning Agency's (TRPA) Water Quality Management Plan (created under requirements of Section 208 of the Clean Water Act) as well as the requirements of Placer County's Municipal National Pollutant Discharge Elimination System (NPDES) Storm Water Permit. The LFECF seeks to implement project improvements which would provide benefits in the form of: erosion control, storm-water runoff treatment, and updating of Placer County right-of-way (ROW) BMPs. Through restoring stream channels and wet-meadows to their historic locations and functions (to the extent discerned feasible), revegetating stream banks and channel slopes, and improving culverts and roadside ditches, the LFECF would contribute to improved water quality, restoration of wildlife habitat, and increased public recreation opportunities. The restored riparian and meadow habitats would also contribute towards TRPA's goal of increasing SEZ acreage within the Lake Tahoe Basin.

#### **1.4 Project Authorization**

This project is authorized by Section 108 of the Energy and Water Resources Development Appropriations Act of 2005 (Public Law 108-447). This act authorizes the Corps to participate in a broad range of water-related environmental infrastructure and resource protection projects within the Lake Tahoe Basin. The Corps is acting as the lead Federal agency with respect to NEPA, the CTC is the local sponsor for the project, and Placer County is the contractor. The US Forest Service is also a Federal sponsor of the project discussed herein and is the lead agency for compliance with Section 106 of the National Historic Preservation Act.

#### **1.5 Purpose of Environmental Assessment**

The Environmental Assessment (EA) describes the construction methods for this project, describes the existing natural resources in the project area, evaluates the effects that the project would have on the natural and human environment in the project area, and identifies the avoidance and mitigation measures that would reduce the effects of the project on the natural

resources in the project area. The purpose of an EA is to provide sufficient information on potential environmental effects of the proposed action and, if appropriate, its alternatives, for determining whether to prepare an EIS or a FONSI (40 CFR 1508.9).

This Draft EA is in partial compliance with NEPA. If there are substantial changes in the proposed action or significant new circumstances or information relevant to environmental concerns, supplemental environmental documentation would be prepared in compliance with NEPA and its implementing regulations.

## **2.0 ALTERNATIVES**

### **2.1 Alternatives Considered But Eliminated From Detailed Consideration**

Three project alternatives were developed and reviewed by the LFECP Technical Advisory Committee (TAC) as part of the Stormwater Quality Improvement Committee (SWQIC) process for planning and design of the LFECP. The TAC membership included representatives from the TCPUD, TRPA, Corps, CTC, DPR, Lahontan Regional Water Quality Control Board (LRWQCB), California Department of Fish and Game (CDFG), California Department of Transportation (Caltrans), University of California Regents, California Wildlife Conservation Board (WCB), and the USFS Lake Tahoe Basin Management Unit (LTBMU). The SWQIC Alternative Evaluation and Selection Process is the planning process used for erosion control projects within the Lake Tahoe Basin.

The SWQIC process formulates and evaluates project alternatives in a series of four sequential steps: 1) Documentation of existing conditions; 2) Formulation of conceptual alternatives; 3) Evaluation of alternatives; and 4) Selection of the recommended alternative. The criteria and ranking used for the LFECP are summarized in Table 1, below. Three different action alternatives were developed based on recommendations by the TAC. The alternatives were ranked relative to existing conditions for each criterion on a quantitative scale of 1 to 3 (1=High Benefit/Low Constraint, 2=Medium Benefit/Medium Constraint, and 3=Low Benefit/High Constraint) based on six criteria. The six criteria included: source control for water quality pollutants; water quality treatment; conflicts with utilities; easement acquisitions; cost; and natural resource constraints/potential effects. Other criteria were assessed on the basis of soil types in proposed infiltration areas, natural resources identified in the areas of the proposed improvements, and the potential for flood reduction.

Source control for water quality pollutants was evaluated through a qualitative assessment of the total surface area of erosive surfaces that were proposed for restoration in each alternative. Water quality treatment was evaluated as a quantitative estimate of the effectiveness of proposed BMPs at reducing flow volumes and reducing nutrient and sediment loads. Potential conflicts with utilities was determined from an evaluation of the number of existing utility structures within proposed grading locations for each alternative. Easement acquisition was determined by the utilization of existing easements and public right-of-ways as opposed to creating easements across private and/or public property. After evaluation of the three alternatives, along with the No Action Alternative, the TAC recommended Alternative 1,

referred to as the Preferred Alternative. The Preferred Alternative and the No Action Alternative are analyzed for environmental effects within this Environmental Assessment (EA).

**Table 1. Summary of Alternatives Evaluation**

Alternative	Estimated Source Control Rank	Treatment Rank	Utility Conflict Rank	Easement Rank for Ease of Acquisition	Cost (millions of \$)	Cost Rank	Other	Sum of Ranks
#1	1	1	1	3	8.1	3	1	10
#2	2	2	3	2	7.7	2	3	14
#3	3	3	2	1	5.2	1	2	12

(Source: Wood Rodgers 2006)

Notes:

High Benefit/Low Constraint = 1

Medium Benefit/Medium Constraint = 2

Low Benefit/High Constraint = 3

Alternatives 2 and 3 are not considered in detail in this EA. Under Alternative 2, high flows would be conveyed through the existing storm drain that lies under the condominiums and a treatment vault would be added at the storm drains discharge point into the lower SEZ. Traditional pretreatment requirements would be utilized at all discharge points. No recreation/resource protection or transportation improvements were proposed as part of Alternative 2. Alternative 2 would fail to maximize water quality or habitat improvements. This alternative does not route flows into the meadow, except for low flows from Lake Forest Creek. Enhancement of water quality and wildlife habitat through restoration of the SEZ area in the meadow is a major component of the proposed project which was not included in Alternative 2.

Alternative 3 assumes that the existing flow paths of Lake Forest and Polaris Creeks must be maintained due to difficulties in diverting flow into the meadow. Alternative 3 also assumes that other local and state entity improvement plans would be implemented and that no easements for drainage or construction would be granted by private entities. Alternative 3 thus represents a very constrained restoration alternative with limited water quality or habitat benefit.

Alternatives 1, 2, and 3 rated 10, 14, and 12, respectively, for all six criteria where a low score represented the highest benefit/lowest constraint. Alternative 1 was selected as the Preferred Alternative in the Final Evaluation of Alternatives (FEA) because it was found to have the greatest benefit and lowest constraints of the three alternatives. The Preferred Alternative, which is described in further detail in Section 2.2, represents the greatest feasibility of implementation as well as benefit to both water quality and wildlife habitat. The project design has been further developed and modified since the adoption of the FEA, specifically to eliminate proposed restoration efforts for Polaris Creek. Therefore, some items discussed within earlier LFCEP project descriptions and plans are no longer a part of the project.

## 2.2 No Action

Under the no action alternative, there would be no restorations or improvements made within the proposed LFECP area. In this case, the degraded portions of the project area would continue to contribute to the sedimentation and erosion control issues which have plagued the project area since the onset of land development which began in the 1960's. Without effective stabilization and restoration of the project area's stream channels and corresponding SEZs, there would continue to be a potential for significant contribution of sediment and nutrients to runoff generated within the project site, and discharged into tributaries which drain to Lake Tahoe. In addition, it is expected that wildlife use of the area would remain minimal and would continue to attract very few species under the No Action Alternative since the restoration of the wet meadow and riparian habitats, which would attract additional species, would not occur.

Additionally, under the no action alternative, the restoration of wet meadow and riparian habitats (both of which would be classified as SEZ) would not occur. No action would represent a missed opportunity to return portions of the Lake Forest Creek watershed to a level of ecological functionality comparable to pre-1960's conditions. Moreover, the no action alternative would fail to contribute towards the TRPA's goal of increasing SEZ acreage throughout the Lake Tahoe Basin. The no action alternative establishes the baseline conditions that determine the action alternatives effects on environmental conditions.

## 2.3 Preferred Alternative

The following section describes construction activities associated with the LFECP Area B Preferred Alternative. The Preferred Alternative consists of the installation of erosion control measures throughout the project site as well as the restoration of Lake Forest Creek including the construction of additional SEZ/wetland areas to improve both water quality and wildlife habitat.

Design. The Preferred Alternative was designed to improve water quality functions as well as to improve and create wetland and riparian habitats within LFECP Area B. Three methods were used for hydrologic calculations. For evaluating drainage capacity needs of existing and proposed structures, the Placer County Storm Water Management Manual (SWMM) Small Watershed Hydrology Method was used to calculate flows for the 10-, 25-, and 100-year events both with snow cover (SWMM-1) and without snow cover (SWMM-2). The SWMM methodology is used as required by Placer County to identify flow paths and overland release points and to ensure that the proposed project will not create hazards beyond the existing conditions. The Natural Resource Conservation Service (NRCS) rainfall runoff methodology is used as the basis of the restoration design and to determine appropriate BMPs. The NRCS method is used rather than the SWMM method because the estimated flows derived from the SWMM method are overly conservative when compared with observed values, and using the SWMM method as the basis of design would result in an inappropriate design for the actual flows. The NRCS method, used as the basis of the restoration design, is more conservative than the Storm Water Quality Improvement Committee (SWQIC) hydrologic design criteria, and matches well with the observed conditions. When compared to the existing conditions, the Preferred Alternative represents the greatest improvement to water quality and reduction in constituent loads, as shown in Table 2 below.

**Table 2. Percent Reduction in Annual Constituent Load**

<b>Alternative</b>	<b>NO3</b>	<b>TKN</b>	<b>SRP</b>	<b>TP</b>	<b>TSS</b>
Alternative 1	16%	24%	18%	31%	30%
Alternative 2	5%	6%	5%	10%	9%
Alternative 3	1%	3%	1%	8%	5%

(Source: Wood Rodgers 2006)

### 2.3.1 Pre-Construction Activities

Prior to initiation of construction, Placer County would be required to obtain all permits necessary to perform the work including, local, state and federal permits. For further information on permits required by the project, see Sections 5.1 and 5.2. The County would also be required to verify the depths and locations of all existing utilities in the work area, as well as notify and coordinate with the TCPUD directly concerning the timing and degree of the work. All studies and plans including BMPs for mitigating effects such as dust and traffic would have to be approved by the appropriate resource agencies prior to construction.

Clearing and Grubbing: Clearing and grubbing in the meadow areas would be required for construction of the restored stream channels and meadow/floodplain. Tree removal would also be required for erosion control and restoration improvements and parking lot construction at Skylandia Park. Approximately 50 trees over 14 inches in diameter when measured at breast height (dbh) would be removed for the project and Placer County is responsible for obtaining a TRPA tree removal permit. All of the trees removed as a part of the project would be reused onsite. The cut trees would either be chipped for mulch or used to construct habitat improvements and a raised boardwalk through the restored SEZ.

Dewatering: The Stormwater Pollution Prevention Plan (SWPPP) shall contain a dewatering plan to detail proper handling, treatment, and disposal of groundwater and surface water, should it be encountered during construction activities. A preliminary dewatering plan is indicated in Appendix B on Sheets DW-1, DW-2 and DW-3 (Sheets 67 - 69 of 74). Due to the ephemeral nature of Lake Forest Creek, it is anticipated that construction timing would allow for the avoidance of work in stream channels with actively flowing water to the greatest extent feasible. Where needed, dewatering structures and diversions would be installed prior to any channel construction in accordance with the dewatering plan.

It is expected that groundwater would be encountered during construction within the meadow areas. Groundwater would be pumped out of the excavation area. Depending on the location, groundwater may either be treated, tested and discharged downstream, or used to irrigate upland areas. Treatment would be used as needed to reduce constituent concentrations to meet water quality standards and requirement set by LRWQCB and TRPA.

### 2.3.2 Restoration Details

Neighborhood Erosion Control/Water Quality Improvements. LFECP improvements would include the resizing of existing roadside ditches and culverts to improve the conveyance of storm flows. Drainage ditches would be stabilized through re-grading, and would be lined with rock and vegetation for water quality improvement. Intermediate sediment cans/drop inlets would be installed at the corners of road intersections. At each location of a sediment can/drop inlet, water would flow through pre-treatment and treatment vaults as it enters the storm drain system; the sediment cans and drop inlets would also include sumps and weep-holes to maximize opportunities for infiltration prior to entering the storm drain/vault system. Culverts would be enlarged to improve channel conveyance at road crossings. Concrete curbs and gutters would also be installed on some roadside stretches, directing water into the drop-inlets (Plate 3b).

The roadside ditches and storm drains would direct flow, as much as possible, to SEZs on publicly owned lands. The roadside ditches, storm drains, and stream channels within the project area would convey flows to either Lake Forest Glen Meadow or Skylandia Park SEZ, depending on their location within the project area. Infiltration basins and sediment traps would be utilized along the drainage course to first collect water from the roadside ditches and storm drains before discharging the water to Lake Forest Glen Meadow or Skylandia Park SEZ.

Erosion and sediment control BMPs would be applied to bare soils along roadside shoulders and to areas disturbed during grading of the roadside ditches, storm drains, and stream channels. These BMPs would include but are not limited to soil stabilization fabrics, mulch, or rock to stabilize the soils until revegetation is successful. Barriers to impede parking would be installed along roadside stretches where unauthorized parking currently takes place, which has caused shoulder widening and soil erosion concerns. Soil stabilization would also be achieved through paving an existing portion of unpaved road using porous pavement to reduce erosion and the release of airborne particulates, while also allowing for storm water infiltration.

Within the Lake Forest area, the main improvement would be along Lake Forest Road where flows would be directed through a rocklined ditch to a sediment trap and outlet to Lake Forest Meadow. Parking barriers would be added along Lake Forest Road to eliminate shoulder widening from cars. Culverts under Aspen Street would be replaced with new culverts to improve hydrologic function. Bristlecone Street north of Lake Forest Road would be improved with shoulder treatment/revegetation and parking barriers. Flows from Bristlecone Street would enter the storm drain system with interceptors at Sierra View Avenue and Lake Terrace Avenue, discharging into the Aspen Drainage system.

Drainage patterns south of SR28 within the Panorama area would be modified to direct flow as much as possible to the SEZ areas. Flow redirection for the Panorama area would consist of the addition of a rock lined channel traversing an existing public utility easement on private property and upgraded roadside channels at Panorama Drive and Lake Forest Road which would discharge to Skylandia SEZ. This work would require extensive work within private property including approximately 12 drainage easements.

Within the Highlands subdivision, upgrades to the existing drainage system would include both cross-country and roadside drainages (Figure 3a). Drainage from the east side of Village Road would be directed towards SR28 requiring two private property drainage easements. The cross-country channel between Watson and Fabian Way would travel through existing drainage easements to the infiltration basin on CTC property. In addition, along Old Mill Road, a shoulder treatment would be applied to revegetate bare areas of soil. To improve drainage on Old Mill Road, a storm drain would be added at Bigler Place draining to the proposed infiltration basin on CTC property.

SEZ Habitat Restoration. A major component of the LFECF includes the restoration of 35 acres of Lake Forest Creek SEZ, and approximately 1500 linear feet of aquatic habitat along Lake Forest and Polaris Creeks within the project area. This restoration would be conducted consistent with the project's erosion control and water quality goals, while also providing increased wildlife habitat typical of riparian areas (Plate 2). Plate 2 indicates the restoration reaches within the project area, which are further discussed below.

Many reaches of Lake Forest Creek and Aspen Drainage within the project area would be improved by the creation of a new floodplain to convey flows during storm events and reduce the potential for flooding to neighboring landowners (reaches: 4W, 1W, 4X, 4Z, and 2Z). Floodplain creation activities involve lowering the immediate floodplain and widening the upper banks of the floodplain in areas where the floodplain is incised. The streambed would be lined with large rocks in these reaches for stabilization and grade control. Within certain reaches, (reaches: 6W, 4W, 3W, and 3X) the stream is aggraded and the floodplain is not well defined. In these locations, low berms with gentle slopes would be installed at the floodplain margins. Stream bank stabilization would be conducted in areas of disturbance. Bank stabilization measures would range from rock lining and revegetation to bioengineering techniques, such as geocells incorporating herbaceous and woody vegetation (reach 2X).

The creation of meadow complexes within Lake Forest Creek and Aspen Drainage reaches 4W, 3W, 1W, 4X, and 1X is a key component of this project for water quality improvement, habitat restoration, and flood retention. The wet meadows would provide water quality treatment for nutrients and sediment. The stream channels would naturally meander within the wet meadow complexes. Low earthen berms would be installed at the edge of Lake Forest Glen Meadow at specific locations to allow for added flood protection for downstream structures (Appendix B).

Within the newly constructed Lake Forest Glen Meadow areas, a temporary irrigation system would be installed and provide irrigation for at least two years, to obtain successful revegetation. After revegetation success, flows would be introduced into the meadow and the existing, long segment of underground storm drain which currently causes Lake Forest Creek's flows to bypass the meadow area would be abandoned. Revegetation would utilize native plant species typical of wet meadow and upland environments. Once revegetation within the meadow is deemed successful (greater than 70 percent vegetative cover), the meadow would receive water from Polaris and Lake Forest Creeks, as well as project area runoff.

Approximately 35 acres of floodplain including riparian and wet meadow habitats would be restored by the proposed project. For the purpose of this document, restoration areas will be discussed on a reach by reach basis as designated on Plate 2 for Lake Forest Creek, Polaris Creek, and Aspen Drainage. These improvements are discussed in the following sections.

Reach 6W. North of SR 28, the stream channel would be realigned to the location of a historic meandering channel with an adjacent floodplain. Flows would be diverted from the work area to the existing channel during construction. Following construction, of the restored channel alignment, once the new channel has been adequately stabilized, flows would be directed to the new channel alignment, concrete would be removed from the existing incised channel, and the existing channel would be filled. The restored section of Lake Forest Creek would reconnect with the existing channel just north of the culvert at SR28.

Reach 4W and 5W. Within reach 5W just south of SR28, Lake Forest Creek currently makes a sharp right and flows are directed through an underground storm drain. The proposed restoration would excavate a new stream channel in Reaches 4W and 5W allowing flows to daylight. The restoration design would not increase flooding to downstream structures, rather flood protection berms would be added and the likelihood of flooding may decrease under post-project conditions. The constructed stream channel would consist of deformable margins and would meander within the flood conveyance corridor at a rate comparable to natural streams located on alluvial fan surfaces. Within the flood conveyance corridor, step pools will be created to accommodate the steepness of the reach. Multi-thread channels may develop within the floodplain overtime. Because this segment of Lake Forest Creek is located in a channel gradient transition zone, this reach will be subject to sediment deposition. Therefore, this reach will have conditions that allow for the deposition of fine and coarse sediment in the channel and on the floodplain surface. Soil excavated to construct the new channel and adjacent floodplain would be used to fill the historic channel in Reach 6W and to construct two berms ranging from 0-4 feet on the east side of the channel to protect downstream structures from flooding within Lake Forest Glen Meadow. During construction, flows would remain in the underground stormdrain. Once the channel and meadow has been stabilized and vegetation has been established, the underground stormdrain would be capped and flows would be released through Reach 5W and 4W to Lake Forest Meadow.

Reach 3W. Within reach 3W, the topography becomes more gradual as flows enter Lake Forest Meadow. The upper portion of the reach would include construction of a flood conveyance corridor with a wet meadow complex that contains stream flows of at least the 25-year, 24-hour flows, up to the 100-year recurrent flow. Restoration would involve the realignment and further definition of a stream channel within the existing wet meadow complex. The existing wet meadow would serve as a floodplain, with the addition of a multipurpose berm adjacent to Lupin Lane. The berm would serve to direct flood flows and would be used as an informal walking path. Restoration would involve a limited amount of wetland disturbance and require revegetation along the stream channel to achieve stabilization prior to releasing flows. Stormwater run-off from SR28 would be directed through reach 3W to Lake Forest Meadow. The project would minimize disturbance to Lake Forest Meadow to the maximum extent possible while implementing the improvements to Reach 3W. The majority of the work would be focused on upper segments of the reach.

Reach 2W. Restoration of Reach 2W would involve installing a series of culverts under Lake Forest Road, which would provide conveyance of flows up to the 25-year recurrent interval, per County standards, as well as the 100-year peak flows, per FEMA requirements. The multiple culverts would be oriented to spread flow from the upstream wet meadow to the downstream wet meadow.

Reach 1W. Restoration of Reach 1W, south of the southwestern end of Lake Forest Road, would provide a restored stream that includes a flood conveyance corridor with a wet meadow complex that contains stream flows of at least the 25-year, 24-hour flows, up to the 100-year recurrent flow. The project would not increase existing 100-year flood elevations. Restoration would involve the creation of a defined floodplain with a stabilized creek. During low flows, the Creek would discharge directly into Star Harbor on DPR property. During flood conditions a secondary outlet would direct flows to Lake Tahoe adjacent to the boat launch. The secondary channel/outlet would support upland vegetation due to the infrequency of flooding.

Aspen Drainage (Reaches 1X, 2X, 3X, and 4X). Reach 1X is located just upstream of Lake Tahoe west of Bristlecone Street. Restoration of Reach 1X would involve the creation of a 0.5- to 1-acre wetland and associated wet meadow complex, through which a 700-foot long segment of stream channel would flow improving water quality in the Aspen Drive area drainage. Under post-project conditions, Lake Forest Creek would be redirected and the flows within Aspen Drainage would thus be reduced from existing conditions. The wetland and wet meadow would provide nutrients and fine sediment removal from stormwater runoff. The stream channel within the wet meadow complex would be loosely defined and would be allowed to meander at a rate comparable to natural streams.

Reach 2X is located on the north side of Lake Terrace Avenue east of Bristlecone Street. Restoration of Reach 2X would separate a segment of stream (consisting of stormwater flows and minor spring flows) from Lake Terrace Avenue and provide vertical and lateral stability to the stream channel. Since available space is limited, separation would include a combination of a near-vertical transition from Lake Terrace Avenue and biotechnical slope stabilization measures such as geocells on both banks. Establishment of riparian vegetation (both herbaceous and woody plant species) along the stream banks would provide three functions: 1) filtering of nutrients and sands from the road surface; 2) stabilization of the stream banks; and 3) improvement of the aesthetic value of the stream corridor.

Reach 3X is located between Sierra View Avenue and Lake Terrace Avenue east of Bristlecone Street. Restoration of Reach 3X would involve restoring the stream channel within the existing location. The riparian corridor would serve as a floodplain, which would be confined by berms on one or both sides. The berms would be low, with gentle side slopes and curvilinear configurations and could be constructed of material generated from Reach 4W floodplain excavation. The berms would be designed to be indistinguishable from the surrounding ground. It would involve limited disturbance of the existing riparian vegetation, but does require revegetation of all berms and all disturbed areas.

Reach 4X travels through the northwestern end of Skylandia Park just south of Lake Forest Road to Aspen Drive. The restoration of reach 4X would involve re-contouring the ground topography to redirect drainage patterns from upgradient and adjacent areas. The restoration would also create floodplain, wet meadow and stream channel, where conditions allow. Existing 100-year flood elevations would not be increased by the proposed restoration. The floodplain would serve to confine flow that enters the area from Lake Forest Road, preventing flooding of the parking area and the adjacent street. The wet meadow would serve to filter nutrients and sediment. Natural spring flows would be supplemented by the addition of storm water runoff from Lake Forest Road and the Panorama area. All additional flows would be pretreated by the sediment trap located at the north parking lot of Skylandia Park.

Polaris Creek. During preliminary project development, restoration of historic conditions to Polaris Creek was proposed within private property easements. However, during recent site investigations, Reach 2Y and 1Y exhibited high quality habitat, and while the hydrology has been altered from historic conditions, the benefit from restoration could not be substantiated due to the potential affect to the existing habitat. As a result, this portion of the project has been dropped from the preferred alternative.

Reach 3Y is located north of SR 28 and travels through the meadow to Lake Forest Creek northeast of the western side of the Lake Forest Road loop. Restoration of Reach 3Y would involve reclaiming the existing channel. This segment presently carries the majority of the Polaris Creek discharge. Reclamation would preserve and protect the well-developed riparian corridor that has become established along the stream margins. The restoration involves the creation of a defined floodplain by excavating into the existing meadow surface. A wet meadow would be re-established on the floodplain surface, at a level lower than currently exists. The stream channel would be realigned to meander within the defined floodplain.

Recreation. The LFECP would also include improvements to recreation facilities such as trails, campsites, picnic spots, and their associated parking areas. Informal parking areas which currently contribute to erosion within the project area, along roadsides which are encroaching on SEZ areas would be restricted from public access using barriers to impede unauthorized parking. In addition, the existing parking lot serving the ball field in Pomin Park may be removed and replaced with storage/infiltration within the parking lot footprint. The existing bridge that accesses the parking lot would also be replaced. To accommodate for the loss of these parking areas, additional parking would be created in appropriate areas through the expansion of existing parking lots and formalized roadside parking areas. These additional areas would be paved with porous pavement.

Approximately 5,000 linear feet of bicycle paths, lanes and routes would be constructed south of SR28 in the Lake Forest area. The shoulder along Lake Forest Road would be widened to accommodate a Class I bike path from the west end of Lake Forest Road to the entrance to Pomin Park, and a Class III bike path from the entrance of Pomin Park to the north parking lot for Skylandia Park. A pedestrian crossing on Lake Forest Road from the eastern bike path would connect Lake Forest Meadow to the Skylandia Park trail system. Another pedestrian crossing is proposed where the berm footpath meets Lake Forest Road at the southwestern end of the meadow. This would connect to the relocated bike trail near the US Coast Guard entrance.

Designated trails/footpaths would also be constructed through the meadow area to keep traffic out of restored/revegetated areas. A footpath would be constructed at the top of the berm and a raised boardwalk would be created crossing Lake Forest Meadow to maintain connectivity between the residential subdivision and the existing bike path on SR28. Previous footpaths within the meadow area would be revegetated.

Camp sites and picnic areas within the LFECP would also receive improvements. An existing restroom located within the floodplain at Pomin Park, would be replaced with a new one located outside of the floodplain, which would meet ADA guidelines. The camp site entrance to Lake Forest Campground would be relocated to allow entrance from Lake Forest Road which would reduce the campground footprint by approximately 900 square feet. A new kiosk would be added at the campground loop and the campground loop would be signed one-way to avoid further widening of existing roads. Picnic areas within Lake Forest Campground would be treated for invasive weeds. At Skylandia Park, foot traffic in the lakefront park area would be confined to the existing footbridge and designated pathways. Parking would be expanded and formalized in the southernmost parking lot area of Skylandia Park. Approximately 19 spaces would be added here. Paving for recreational improvements would utilize porous concrete.

### 2.3.3 Staging, Stockpiling, and Disposal

Staging. Staging areas for the meadow restoration and resource protection measures would be located at the east end of the meadow that is accessed through a CTC parcel on Lake Forest Road, just south from the eastern intersection with SR28. Several smaller staging areas are also proposed (Plate 5). One at the existing entrance to Lake Forest Campground from the road accessing Pomin Park and the boat launch facility. Another is proposed north of Lake Forest Road between Bristlecone Street and Aspen Street. Another is proposed on the west side of Bristlecone Street south of Lake Forest Road. Two staging areas are proposed north of SR 28, one near the Placer County offices near Burton Creek and one on the east side of Old Mill Road.

Access through Area B would primarily use existing roadways and paved areas. Heavy equipment access during construction through Lake Forest Meadow would be along the proposed berm alignment. Vehicles, heavy equipment, and materials would be securely staged at the proposed staging locations, while temporary roadside staging of materials would be conducted within the public ROW to keep materials efficiently located near work areas for neighborhood erosion control improvements. Staging areas would be stabilized with appropriate BMPs and would be enclosed by BMPs such as coir logs and silt fencing secured in place to minimize erosion. After construction, staging areas would be returned to pre-project conditions.

Stockpiling and Disposal. Project components such as new channel creation and meadow complex creation would require grading and excavation. It is estimated that approximately 15,000 cubic yards of soil would be excavated. The majority of this material would be used within the project area to construct the previously discussed earthen berms. Soil to be reused onsite would be stockpiled for short periods of time at the staging area at the east end of Lake Forest Meadow. It is estimated that 3,000 cubic yards of excess soil would have to be exported from the site to an appropriate site in accordance with local, state and federal laws. Coordination with California State Parks is underway to utilize the remaining material as fill for an off-site

road repair project near Burton Creek State Park (about 0.7 miles from the LFECP area). Prior to material export, California State Parks would be responsible for acquiring the necessary permits, including CEQA approval, related to the use of these materials.

#### 2.3.4 Construction Schedule

Construction work in the LFECP area is divided into three phases/years (Plate 4). Year one would include the bulk of construction. All of the grading and earthwork for the restoration would take place during year one. The meadow would be excavated, the berm constructed, excess materials would be removed from the project area, and the area would be revegetated. Trails and resource protection improvements as well as the Highland neighborhood erosion control work would also proceed during year one. This first phase would begin as soon as July 2009.

In year two, the restoration areas would be monitored for vegetation establishment and additional vegetation would be planted as needed. Irrigation would continue for the vegetated areas. BMPs would be monitored and repaired as needed. Some of the Lake Forest and Panorama erosion control improvements would be constructed in year two. If vegetation is well enough established, flows would be introduced to Lake Forest Meadow.

In year three, vegetation monitoring would continue. If vegetation is well enough established, flows would be introduced to Lake Forest Meadow (if not achieved in year two). If vegetation establishment has not been achieved in year three, additional planting and vegetation monitoring would continue in subsequent years until satisfactory establishment has been achieved and flows can be introduced to the meadow. Work would be completed on the Lake Forest and Panorama erosion control improvements in year three.

### **3.0 AFFECTED RESOURCES AND ENVIRONMENTAL EFFECTS**

This section describes the resources in the LFECP area and provides a discussion of effects to these resources caused by the proposed alternatives. When appropriate, description is provided of proposed mitigation measures for avoidance, reduction, minimization, or compensation of any significant, adverse project effects. All avoidance, reduction, and minimization measures would conform to the requirements in the TRPA's Handbook of Best Management Practices (TRPA, 1988) for construction within the Tahoe Basin. A summary of mitigation measures that would be implemented for each resource is included in Appendix C.

#### **3.1 Resources Not Considered in Detail**

An initial evaluation of the effects of the LFECP indicated that there would be little to no affect on several resources. Discussion of these resources is included below in order to provide for a better overall understanding of the project area, and the proposed work to be conducted.

### 3.1.1 Climate

The climate in the Tahoe Basin is characterized by sunny days about 87 percent of the time in summer and about 57 percent of the time in winter. The project area is located on the western shore of Lake Tahoe, and is predominantly situated between the shoreline and approximately 2 miles inland. Average temperatures range from winter lows around 20°F to summer highs around 75°F. Low humidity characterizes the area, with an average mid-afternoon relative humidity of about 42 percent. The Tahoe Basin experiences moderate to heavy precipitation with the majority being contributed as snowfall. Average annual total precipitation is just below 33 inches; of this only about 2.5 inches (about 8 percent) usually falls between June and September. Nights are typically cool, and the median number of frost free days ranges between 21 and 100 (USDA 2007).

### 3.1.2 Geology and Seismicity

Much of the Sierra Nevada has been affected by glaciations during the past 1.5 million years. The rocks of the Sierra Nevada can be divided into granitic, metamorphic, and volcanic (Hyne, et al. 1972). Cretaceous granodiorite of the Sierra Nevada batholith is the predominant basement bedrock in the Tahoe Basin. Granodiorite is an intrusive igneous rock similar to granite, but has more plagioclase than potassium feldspar. Granodiorite has a darker color than granite and may also contain biotite mica and hornblende.

The Lake Tahoe Basin is located in an area of low to moderate seismicity (USGS, 2003). Active faults in the area include the North Tahoe and East Tahoe faults beneath Lake Tahoe and the Genoa-Carson Range Fault System in the east.

### 3.1.3 Fisheries

Lake Forest Creek and Aspen Drainage are both ephemeral channels. Because of the ephemeral nature of these channels, in addition to the channels' degraded habitat, there are not fish present in the project area (Fox 2007b). The proposed LFEC stream channel restoration would create ecologically favorable aquatic habitat within the project area. While the ephemeral nature of the creeks within the project area is likely to limit future fish presence, it is possible that lower reaches of Lake Forest Creek may support some form of fish activity in the future. Fish species inhabiting Lake Tahoe would not be significantly affected either directly or indirectly by project activities because appropriate BMPs would be utilized throughout the period of construction to prevent the discharge of sediment, and overall project restoration goals focus on achieving long-term decreases in sediment discharge from Lake Forest Creek.

### 3.1.4 Land Use

The Lake Forest Project-Area B is situated on a 625 acre plot of land which is owned by a diverse mix of public, private residential, and private commercial/industrial parties. The project area is bordered to the north by USFS lands and to the south by Lake Tahoe. Areas to the east and west of the project area include mixed ownership schemes similar to that of the project area itself.

While the majority of the restoration activities included in the preferred alternative would be conducted on CTC owned land and within public ROW, some of the restoration work is proposed within private property. Several improvements are proposed within existing drainage easements allowing construction, maintenance, and permanent access. However approximately fifteen new easements are proposed. The extent of the access to private properties for construction, 20-year maintenance, and permanent access periods will be defined through easements for each private property. Should these easements not be granted, the project will still proceed without the improvement(s) requiring the easement(s).

The Lake Forest Project-Area B would not have direct or indirect effects on land use. Construction activities involved in the project would be consistent with the TRPA's Plan Area Statements, permitted land uses, and management strategies, as well as Placer County ordinances. Project work would be consistent with the conservation plans of agencies which own public lands associated with the project. For any proposed project related improvements on private property, the necessary easement would be obtained by Placer County prior to construction.

### 3.1.5 Recreation

Recreation opportunities are among the leading qualities which draw both visitors and residents to the Lake Tahoe area. The long list of recreational activities which appeal to visitors and residents alike include, but are not limited to: camping, hiking, skiing and snowboarding, boating, golfing, swimming, fishing, sightseeing, biking, horseback riding, etc. According to a 1997 survey conducted by the Tahoe Center for a Sustainable Future, 42 percent of visitors come to Lake Tahoe for recreation. Additionally, the same survey suggested that 80 percent of visitors come to the lake to enjoy its aesthetic qualities, including its famously clear waters and pleasing alpine scenery.

The project would increase recreational opportunities. The project would modify and augment existing regional recreational features, linkages, and hiking and bike trails while protecting/enhancing wildlife habitat. This would be achieved in several locations throughout the project area through the addition of footpaths with educational signage, approximately 5,000 feet of bicycle routes, refuse collection facilities, and expanded parking facilities. The restrooms within Pomin Park would be improved for ADA accessibility. The boat ramp from the campground would be along the existing paved trail that parallels Lake Forest Road and a proposed trail that parallels the existing road to the US Coast Guard Station and boat ramp. All features are expected to enhance local and regional recreational opportunities and provide a safer environment for users. On a regional scale, the existing parks and recreational features would be linked to the existing bicycle path, the proposed Burton Creek trail system, and the regional Lake Tahoe Basin trail network. Features that could generate negative effects, such as litter and road crossings, would be mitigated within the project through the addition of collection facilities and formalized crossings. There may be potential minor, temporary effects to the use of recreational facilities in the project area during construction. These effects would be temporary and minor inconveniences. Overall, the project would have a net beneficial increase in recreational

opportunities and there would be no significant direct or indirect effects resulting from the proposed project.

### 3.1.6 Aesthetics

Affects to visual aesthetics related to project activities would be minimal, localized to the project area, and temporary. While some soil and vegetation disturbances would occur during construction, the effects would diminish over time, as vegetation is reestablished. Furthermore, the LFECF aims to restore degraded stream channels, desiccated meadows, and areas of bare ground. After completion of restoration, the aesthetic qualities within the project area would be improved from pre-project conditions.

### 3.1.7 Socioeconomics/Environmental Justice

Except for areas along the western and northern shores of Lake Tahoe, most of Placer County lies in the Sierra Nevada Mountain Range and its western slopes which lead down towards the Sacramento Valley. The county currently has an estimated population of 326,242. Within the immediate vicinity of the project area, residences are dispersed and there are two small population centers located nearby. To the northeast lies the Dollar Point community, with an approximate population of 1,539, and southwest of the project area lies Tahoe City, with an approximate population of 1,761 (U.S. Census Bureau 2008).

As directed by Executive Order 12898, all Federal agencies must identify and address adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. There are no minority or low-income populations in or around the project area. However, implementation of the LFECF would provide tangible benefits (such as water quality, aesthetics, recreation) for current and future residents of the Lake Forest Community, as well as the visitors to the area.

### 3.1.8 Noise

Noise can be defined as unwanted sound and noise levels, and effects are interpreted in relationship to noise level objectives for counties and local agencies. TRPA has adopted threshold standards for noise, and Placer County also has ordinances limiting sound exposure to sensitive receptors. Both TRPA and Placer County provide exceptions to noise standards for construction activities (TRPA 2006, Placer County 2008).

The existing sources of noise in the project area are from typical residential and commercial land use, motor vehicles on both minor and major roads as well as SR 28, and ambient natural sounds such as wind and wildlife. There are no noise-sensitive land uses in the project area; sensitive receptors include nearby residents, occasional visitors, and wildlife.

Construction activities would temporarily increase noise levels in the LFECF area. During construction, Placer County would be required to be in compliance with all TRPA and Placer County noise ordinances. Construction activities would only be permitted between 8:00 am to 6:30 pm on a Monday through Friday basis, and heavy construction equipment would be

operated with appropriate muffling technologies. These measures would limit the temporary noise effects generated by LFCEP activities to a less-than-significant level. There would be no indirect effects to noise as a result of the proposed project.

### 3.1.9 Topography and Soils

The Natural Resources Conservation Service 2007 Soil Survey for the Lake Tahoe Basin area lists 2 general soil types within the LFCEP area: Tahoe-Watah, and Jorge-Tahoma. Each soil type is discussed below (USDA 2007):

Tahoe-Watah. This soil type is present in a relatively small portion of the LFCEP area. Tahoe-Watah soils are very deep, nearly level or gently sloping, very poorly drained, frigid soils. These soils are formed in alluvial conditions, are characteristically found in floodplains, and are generally limited to 0-5 percent slopes. The soils are known to occur in conjunction with high water tables and can often be subject to subsidence concerns. Specific soil units from the Tahoe-Watah category which are found within the LFCEP area are: Tahoe complex, 0-5 percent slopes, gravelly; and Watah peat, 0-2 percent slopes.

Jorge-Tahoma. This soil type is present in the majority of the project area. Jorge-Tahoma soils are deep or very deep, strongly sloping to very steep, well drained, stony, frigid soils. They are formed in colluvium over residuum derived from andesitic lahar, are often found near the bases or mountain slopes, and can exist with 5-70 percent slopes. Specific soil units from the Jorge-Tahoma category which are found within the LFCEP area are: Jorge very cobbly fine sandy loam, 5-15 percent slopes, rubbly; Jorge very cobbly fine sandy loam, 15-30 percent slopes, rubbly; Jorge-Tahoma complex, 15-30 percent slopes; Kingsbeach stony sandy loam, 2-15 percent slopes; Tahoma very cobbly sandy loam, 2-15 percent slopes, very stony; and Tahoma-Jorge complex, 2-15 percent slopes.

No soils would be imported to the site and there would be no significant changes to topography under post-project conditions. The proposed project would have no direct or indirect effects to topography or soils. Soil stabilization and mitigation measures are discussed under water resources, Section 3.5.4 and 3.5.4.1.

## **3.2 Vegetation and Wildlife**

### 3.2.1 Existing Conditions

Undeveloped areas within the project area are comprised primarily of a mixed-conifer vegetation community with a montane understory. In addition, wet meadow and montane riparian vegetation communities occur within the project area. The mixed-conifer vegetation community is dominated by Jeffrey pine (*Pinus jeffreyi*) and white fir (*Abies concolor*). The montane under-story is comprised of greenleaf manzanita (*Arctostaphylos patula*), creeping snowberry (*Symphoricarpos mollis*), snowberry (*S. rotundifolius*), serviceberry (*Amelanchier alnifolia*), and antelope bitterbrush (*Purshia tridentate*). The montane riparian vegetation community is dominated by, quaking aspen, mountain alder, black cottonwood, willow, wood rose, and currant. Representative photographs of the project area are included in Appendix D.

A large portion of the project area has been designated as SEZ by the TRPA (Plate 6). Both upland and seasonally wet meadow habitats are present in the project area. Generally, seasonally wet meadows are present directly adjacent to the riparian corridors (like Lake Forest Creek), except where the creek is channelized. The meadow areas are dominated by herbaceous plants including sedges (*Carex spp.*), rushes (*Juncus spp.*), spikerushes (*Eleocharis spp.*), and numerous forb species. The riparian habitat consists primarily of willows. Most of the willow clumps are mature and little regeneration was observed. Approximately 28 percent of the overall project area is comprised of urban and commercial development (Fox, 2007 a).

The pine trees and understory provide food and shelter for mammals such as squirrels, voles, mule deer, skunks, raccoons, etc. and food and nesting habitat for a residential and migratory birds. However, previous disturbance in the LFCEP area due to development and human activity has limited the habitat quality. As a result of this previous disturbance to the natural habitat, only a small amount of riparian habitat remains within the project area. Riparian habitat provides forage and shelter to a large percentage of the mammals, birds, reptiles, and amphibians in the Lake Tahoe Basin.

### 3.2.2 Effects

Basis of Significance. An alternative would be considered to have a significant affect on vegetation and wildlife if it would result in the loss or degradation of unique native vegetation, or loss of resident or migratory wildlife species and/or their habitat.

No Action. This alternative would have no affect on existing vegetation and wildlife in the LFCEP area. Plant communities and associated wildlife would be expected to remain the same. The project area's landscape would continue be marked by degraded stream channels, soil erosion problems, and sparse riparian habitat.

Preferred Alternative. Construction related to the project's erosion control and habitat restoration goals would have the potential for minimal temporary affects on the wildlife and vegetation within the LFCEP area. Much of the project work would be conducted on road-sides, in already degraded stream channels, and in meadows which have been desiccated and are of low habitat value due to the presence of non-native grasses resulting from previous disturbance and addition of fill. Given that project outcomes would include revegetating these areas and restoring their associated habitats, the long term outcome of the project would have a benefit to the wildlife and vegetation within the LFCEP area by restoring approximately 35 acres of wet meadow habitat which would be seeded/planted with appropriate native vegetation, creating additional wildlife habitat which had been previously disturbed by development activities in the area. Every effort would be made to not remove native riparian trees or shrubs such as willows in the montane riparian vegetation or meadow communities. A total of approximately 50 acres within the overall project area could be disturbed by the proposed restoration activities. Approximately 15,000 cubic yards of dirt would be excavated and approximately 12,000 cubic yards would be utilized on-site to construct berms for flood control. The remaining soil materials would be exported from the site.

Some surface vegetation would be cleared in preparation for construction and during earthwork/grading. Vegetation not slated for clearing and any vegetation of particular concern would be avoided and protected with construction fencing (special status species are discussed in section 3.3). All areas which are subjected to vegetation clearing would be revegetated subsequent to completion of construction activities. Revegetation would be conducted with suitable native vegetation for the hydrologic conditions in which they are being planted. Planting lists for the different revegetation zones (wetland, upland, transition, etc.) are being developed and would be made available prior to construction to concerned resource agencies. Every effort would be made to avoid the removal of native riparian trees and shrubs during construction within the existing riparian and meadow areas. If there are instances where effects to riparian vegetation are unavoidable, the vegetation would be transplanted and used as cuttings to revegetate the affected areas where practicable.

The surface clearing of vegetation would include the removal of an estimated 9 trees that would be considered “heritage trees” as they would have trunk diameters greater than 30 inches dbh. An estimated 57 smaller, less mature trees would also be removed. Prior to proposed removal of trees, a tree removal permit would be obtained from TRPA. Placer County would be responsible for obtaining TRPA approval for the tree removal. Removed trees would be utilized as building materials within the project area or chipped and used as mulch. To minimize the affects associated with tree loss, consultation with TRPA and a qualified arborist would take place prior to construction (Placer County 2007a). Table 3 summarizes the estimated removal of trees within the LFECP area:

**Table 3. Number of Trees to be Removed from LFECP Area**

<b>Area</b>	<b>Non-Heritage Tree Removals</b>	<b>Heritage Tree Removals</b>	<b>Total Tree Removals</b>
Highlands sub-area	15	4	19
Panorama sub-area	18	0	18
Lake Forest sub-area	21	5	26
Skylandia Park	3	0	3
<b>Total LFECP area</b>	<b>57</b>	<b>9</b>	<b>66</b>

Any wildlife including both residential and migratory species could be temporarily disturbed and/or displaced due to noise and activity during construction. However, displaced species would be expected to return to the area once construction is completed (special status species discussed in later section). Through the employment of mitigation measures, neither the temporary loss of habitat during construction, nor temporary disturbance and/or displacement would be considered to have a significant direct or indirect affect on wildlife due to the abundance of suitable habitat in the surrounding area. Upon project completion and successful vegetation establishment, 35 acres of SEZ will have been restored (Plate 2). An ecologically significant addition of valuable habitats for small mammals, waterfowl, butterflies, reptiles, and amphibians would be achieved through implementation of the LFECP.

### 3.2.3 Mitigation

Prior to construction, a qualified arborist would conduct a tree removal survey and advise a mitigation strategy. TRPA would review the strategy to ensure compliance with its tree removal guidelines. Disturbance to any trees not scheduled for removal would be avoided; these existing trees would be protected with fencing in the work areas. In addition, best management practices required by TRPA would be implemented to minimize any affects of construction related traffic or equipment on soil or vegetation. Riparian trees and shrubs which require removal would be either transplanted or used as cuttings to aid in the revegetation effort. After construction, barren or disturbed areas would be restored. Upon completion, the LFECF would restore and/or create 35 acres of SEZ/meadow habitat.

Revegetated areas would be maintained during a 2 year reestablishment period to ensure vegetative success. An extensive monitoring program would be developed and implemented by Placer County to inspect revegetation progress including monitoring for invasive weeds as well as hydrologic and geomorphic functioning both during construction and for at least 2 years after construction. Full details of these monitoring efforts would be made available to concerned resource agencies once fully developed, and prior to construction. Plantings within the SEZ/meadow area would include willow species (*Salix spp.*) and other native vegetation. A planting plan would be developed and provided to the appropriate reviewing agencies for comment prior to project construction.

To comply with the Migratory Bird Treaty Act, construction would be timed to avoid destruction of active bird nests or young of birds that breed in the area to the greatest extent possible while also considering that the construction work season in the Lake Tahoe region is already limited. When such avoidance is not feasible, a qualified biologist would survey the area prior to initiation of construction. If an active nest is located during a survey or during construction, a qualified biologist would delineate a protective buffer area, and that area would be avoided to prevent disturbance of a nest until it is no longer active.

## **3.3 Special Status Species**

### 3.3.1 Existing Conditions

In order to assure proper protection of species which are designated with a heightened level of concern, efforts have been made to discover and evaluate the presence of special status species within the LFECF area. Special status species are herein defined as: those listed as threatened, endangered, or as candidates for listing by the US Fish and Wildlife Service (USFWS). Studies such as Biological Evaluation/Biological Assessments, a Species Impact Analysis Report, and a Management Indicator Species Report have been conducted to identify and assess project affects on special status species which could potentially occur within the LFECF area (Fox 2007a, 2007b, 2007c, and Wildlife Resource Consultants & Wood Rodgers 2007).

In April 2008, both the California Natural Diversity Database and the USFWS (Sacramento District) Endangered Species Listing resources were consulted to obtain a current

listing of threatened, endangered, and candidate species within or near the LFECP area (CDFG 2008, and USFWS 2008). The list of threatened, endangered, and candidate species potentially affected by activities in or adjacent to the LFECP area (King Beach and Tahoe City 7.5-minute quadrangles) includes: the mountain yellow-legged frog (*Rana muscosa*), the fisher (*Martes pennanti*), the Lahontan cutthroat trout (*Oncorhynchus clarki henshawi*), and the Tahoe yellow-cress (*Rorippa subumbellata*). The Lahontan cutthroat trout is listed as a threatened species, while the mountain yellow-legged frog, fisher, and Tahoe yellow-cress are all listed as candidate for possible future listing. No critical habitat for special status species is designated in or near the LFECP area (USFWS letter and list are enclosed in Appendix A).

### 3.3.2 Effects

Basis of Significance. An alternative would be considered to have a significant affect on special status species if it would result in the take of a Federally listed threatened or endangered species, adversely affect designated critical habitat, or substantially affect any other special status species, including degradation of its habitat to the degree of jeopardizing the continued existence of the species or critical habitat.

No Action. This alternative would have no affects on any special status species in the LFECP area. Any species and/or their habitat would be expected to remain the same. Under the no action alternative, the project area's degraded stream channels and associated habitats would provide limited habitat compared to pre-1960s conditions.

Preferred Alternative. Construction activities associated with the project's stream channel realignment, erosion control, and habitat restoration components are deemed to have either no affect or a less than significant affect to the project area's potential special status species. Species such as the Lahontan cutthroat trout and mountain yellow-legged frog are not known to occur within the project site, do not have suitable habitat within the project site, and would not experience adverse affects due to LFECP activities. For a species such as the fisher, suitable habitat may exist within portions of the project area away from development, although the fisher is not known to occupy the project area. Potential effects to the fisher would be minimal and temporary, and the fisher's mobility would allow it to temporarily avoid effects and continue to utilize nearby suitable habitat in surrounding areas. For a species such as Tahoe yellow-cress, mitigation measures would be taken during construction to reduce the risk of effects to a level of less than significance. Overall, there would be no significant adverse affect to special status through construction of the LFECP project, and the habitat restoration implemented under the LFECP could achieve long-term benefits to special status species. Based on field surveys conducted in 2004 and 2005, biological evaluations/biological assessments prepared for the USFS, consultation with local agency (TRPA and LTBMU) wildlife occurrence records and current management documents, there are no known special status species occupying the LFECP area (Wildlife Resource Consultants & Wood Rodgers 2007, Fox 2007a, and USDA 2001, 2003, 2005). Based on the assessment of the special status species provided below, the federal agencies are not required to initiate formal Section 7 consultation with the USFWS and submit a Biological Assessment nor request a Biological Opinion on federally listed species. There would be no direct, indirect, and cumulative affects to Federally listed threatened or endangered species.

Lahontan cutthroat trout. Lahontan cutthroat trout, currently listed by USFWS as a threatened species, are not known to occur in Lake Tahoe. They do not occupy the LFECP's Lake Forest Creek or Aspen Drainage as these channels are ephemeral and there is no suitable habitat for the Lahontan cutthroat trout within the project area. The nearest known population is located in the upper portions of the Truckee River where they are regularly introduced.

Mountain yellow-legged frog. Suitable aquatic habitat for candidate status mountain yellow-legged frog is not present in the project area. Both Lake Forest Creek and Aspen Drainage are ephemeral. No historic occurrence for the mountain yellow-legged frog exists within or near the proposed project area. The only currently known population of mountain yellow-legged frogs exists at Hell Hole, which is located more than 20 miles southeast of the project area in the southern portion of the Lake Tahoe Basin.

Fisher. Potentially suitable habitat for the candidate status fisher, is present in the undeveloped, upper elevations in the northern portions of the project area. However, considering that the potential habitat is near urban areas, it is considered unlikely that fishers consistently occupy the habitat. Fishers could potentially forage in the project area. However, considering that the LFECP area is bisected by SR 28 and is bounded by urban and commercial development, it is unlikely that the project area provides suitable foraging habitat. The lack of riparian shrubs along Lake Forest Creek reduce the value of these areas as dispersal corridors. Fishers would be unlikely to disperse into the project area along these corridors due to surrounding development (there is nowhere to disperse to). Moreover, low quality fisher habitat is characterized by 30 to 40 percent canopy closure, which comprises much of the project area. *Martes* species have been documented approximately one mile north of the project area on USFS land and approximately 1.5 miles west in Burton Creek State Park. While it is considered unlikely that the fisher occupies the project area, additional wildlife field surveys would be conducted by a qualified biologist, as necessary, prior to project initiation. If disturbance to the fisher did occur, it would be limited to temporary auditory or visual perturbation during construction, and would occur on the individual animal scale. As the fisher is quite mobile, it would be able to avoid disturbance and temporarily adjust its foraging patterns to utilize the abundant nearby habitat. The fisher's prey species are also mobile and would similarly be able to avoid disturbance.

Tahoe yellow-cress. Tahoe yellow-cress is listed as a species of concern and is the only special status plant species which has been identified as having habitat within the project area. Tahoe yellow-cress is a small low growing perennial plant typically found where beaches are wide enough to offer a back beach area, out of wave action and behind the highest debris deposit line. This species grows in the sandy substrate with little to no soil formation and good drainage (USFS 2003). The candidate plant species was identified in 2006 at two locations within the project area. During recent surveys, Tahoe yellow-cress was not observed at either site, however, both sites have suitable habitat for Tahoe yellow-cress (CDM 2008). The two areas in which Tahoe yellow-cress was identified would not be disturbed during construction. Through the mitigation measures described below there would be no significant direct or indirect affect to Tahoe yellow-cress. In addition, LFECP would potentially improve habitat for Tahoe yellow-cress.

### 3.3.3 Mitigation

Future consultation with local agency biologists would continue, and additional field surveys would be conducted prior to construction to further assure that no special status species would be affected by LFECP activities. Prior to construction each year, between June 30 and September 30, a Tahoe yellow-cress survey would be conducted by a qualified biologist. The survey results will be mapped on the working engineering plan set for proposed project improvements. In all years during which construction will take place along the lake shore (prior to commencement of construction), Tahoe yellow cress populations within 200 feet of the proposed disturbance areas will be identified and delineated with orange construction fencing to ensure that populations are not affected by equipment. Equipment access routes will be identified and any Tahoe yellow cress populations along the access route will be delineated. The contractor will be instructed regarding current policy regarding Tahoe yellow-cress. If any project activities are conducted during a low lake level period when plants may be present, all work activities will remain above 6,228 feet mean sea level(msl) to avoid the low lying populations. If any special status species are discovered in future field surveys or sighted during project construction, an appropriate local biologist would be notified and mitigation and/or avoidance measures would be planned. Construction activities related to stream channels would be conducted during the dry season to minimize any affects to species utilizing aquatic and riparian habitats. Through implementation of these mitigation measures, the project would have no direct or indirect affect to special status species.

## **3.4 Traffic**

### 3.4.1 Existing Conditions

The roadways in and near the project area include SR 28, Lake Forest Road, and multiple smaller roads associated with the area's residential developments. SR 89 is also considered at the junction with SR 28 south of the project area, near Tahoe City. Types of traffic on the highways and residential roads in the LFECP area include cars, sport utility vehicles, trucks, and motorcycles.

The California Department of Transportation records traffic counts on roadways in Placer County. The table below shows various average traffic volume figures for potentially affected roadways near the LFECP area (Table 4).

**Table 4. Traffic Volumes on Roadway Segments Near the Project Area**

<b>Roadway</b>	<b>Avg. Peak Hour Traffic Vol.</b>	<b>Avg. Daily Traffic Vol. During Peak Month</b>	<b>Annual Avg. Daily Vol.</b>
SR 28 near Lake Forest Rd.	1,650	18,600	14,300
SR 28 at Junction with SR 89	1,950	22,700	16,200

(California Department of Transportation 2006)

### 3.4.2 Effects

Basis of Significance. An alternative would be considered to have a significant affect on traffic if it would cause an increase in traffic that is substantial in relation to the existing load and capacity of a roadway, an increase in safety hazards on area roadways, or a substantial deterioration of the physical condition of area roadways.

No Action Alternative. This alternative would have no affects on existing traffic in the region. The types and volume of traffic would be expected to remain the same.

Preferred Alternative. Several aspects of the project would be implemented on LFECP area roadways requiring some lane closures and possibly detours. From the western intersection with SR 28 to the access to Pomin Park, concrete curbs and gutters would be added to Lake Forest Road. Bike paths or lanes would also be added along Lake Forest Road. In addition, the entrance to the Lake Forest Campground would be relocated from the existing shared entrance with Pomin Park and the boat launch to a separate entrance from Lake Forest Road, 350 feet west of the current access road. The effects of this action on traffic were analyzed in a Placer County Study which found that there would be no significant affect to traffic as a result of the improvement (Placer County, 2008b).

The project would include paving of the currently unpaved portion of Sierra View Avenue. While the purpose is to reduce erosion, this improvement would also be beneficial to traffic on Sierra View Avenue. On Panorama Drive, upgrades to drainage channels and culverts would also be implemented. Concrete curbs and gutters would be installed along Old Mill Road to direct storm water to the proposed drop inlets.

LFECP construction activities would cause a minor, temporary increase in traffic along Lake Forest Road and State Route 28 from construction workers. A larger short-term increase in truck traffic would occur during the hauling and export of spoils to an approved off-site location. An estimated 3,000 cubic yards of soils would need to be hauled from the site. This would require approximately 150 dump truck loads. However, the total vehicle trips per day (including hauling, construction workers, and equipment) would not exceed 100 trips per day, and these additional truck trips would not surpass the TRPA Level of Service Thresholds specified for SR28. Efforts are currently being undertaken to coordinate a scenario where the excess LFECP soils would be used in an unrelated road improvement project at nearby Burton Creek State Park. Project construction would have a short-term, localized affect to traffic due to the number of truck trips. There would be no significant direct or indirect affect to traffic as a result of the project.

### 3.4.3 Mitigation

Temporary lane closures would be necessary to facilitate construction. Where roads must be temporarily closed, the contractor will try to keep one lane open at all times. On roads with the heaviest traffic, SR 28 and Lake Forest Road, there will be no lane closures on weekends, holidays, or Fridays that precede holiday weekends. Appropriate signage and flaggers would be used to direct traffic, as needed. Temporary detours may also be employed, however at no time

would access for local residents, emergency vehicles, or school buses be prohibited. Traffic controls would be implemented during work hours and only when it is necessary to perform work.

Prior to construction a traffic management/control plan would be developed by Placer County for approval by TRPA and Placer County. Elements of the plan would include appropriate use of signage, flaggers, traffic calming, and alternative routes to accommodate local and through traffic. In addition, Placer County would advise local residents regarding schedules for construction traffic detours through distribution of flyers in the area neighborhoods well in advance of construction initiation. With adherence to the approved traffic plan and these mitigation measures, LFECP activities would not have a significant direct or indirect affect on traffic or traffic patterns and circulation.

### **3.5 Water Resources and Quality**

#### 3.5.1 Existing Conditions

Water Resources. The LFECP is largely focused around the restoration of Lake Forest Creek, Polaris Creek, and Aspen Drainage. These ephemeral channels receive the majority of their surface water in the form of runoff from rainfall and snowmelt. Development and the subsequent increase of impervious surfaces within the project area since the 1960s, an increasing proportion of water is conveyed to Lake Forest Creek in the form of storm-water runoff from residential developments, commercial/industrial developments, and roadways. Urban stormwater is conveyed to both Lake Forest Creek via storm drains, roadside ditches/gutters, and overland flow.

Due to historic development within the project area, Lake Forest and Polaris Creeks has been altered and relocated from its historic location with natural meandering streams and adjacent meadows into narrow and incised channels. Under existing conditions, these channels direct flows directly through the project area, and sometimes flows are contained within underground storm drains which run below large spans of developed areas (Plate 2). Due to the increase in impervious surfaces within the project area, peak storm-water runoff volumes have increased, leading to a situation which perpetuates channel erosion and small scale flooding. Additionally, the Lake Forest Glen Meadow, which was previously sustained hydrologically by waters within the project area, has since been subjected to filling to accommodate development. The flows which previously entered the meadow through Lake Forest Creek, have since been redirected to an underground storm drain which bypasses the meadow. Lake Forest Glen Meadow is now a dry-meadow which is disconnected from its historic hydrologic source.

Water Quality. The water quality of Lake Forest Creek is a concern due to the increased potential for sediment, nutrients, and road oil contributions to Lake Tahoe, compared to pre-development conditions. These constituents are targeted for control by the TRPA and LRWQCB. In order to comply with Lake Tahoe's Water Quality Management Plan, established under requirements of the Clean Water Act, TRPA has identified erosion control projects such as LFECP, as projects which should be implemented in order to halt the decline of Lake Tahoe's clarity and water quality (Placer County 2007b). Placer County would be responsible for

obtaining 401 water quality certification or a waiver of waste discharge, and an exemption to the 100-year floodplain prohibition from LRWQCB as well a 404 Permit from the Corps prior to project construction.

### 3.5.2 Effects

Basis of Significance. An alternative would be considered to have a significant affect on water quality if it would substantially degrade water quality, contaminate a public water supply, substantially degrade or deplete groundwater resources or interfere with groundwater recharge, or expose sensitive species or humans to substantial pollutant concentrations.

No Action. This alternative would have no affect on water resources in the project area. Without implementation of erosion control or restoration activities, the project area would continue to affect Lake Tahoe's water quality due to an elevated potential to contribute undesirable levels of pollutants to the lake.

Preferred Alternative. Project activities would have substantial long-term benefits as well as temporary benefits to water quality, location of water resources, and area drainage patterns. One of the project's primary goals is to achieve compliance with Placer County's National Pollution Discharge Elimination System (NPDES) Permit, the erosion control and habitat restoration that would be achieved through the LFECP would have the long-term effect of improving water quality of surface waters draining from the LFECP area into Lake Tahoe.

Segments of Lake Forest Creek would be relocated so that the channel no longer runs through an underground storm drain. The flows would instead be directed through Lake Forest Glen Meadow, thus creating an area for groundwater recharge. The changes in surface water and groundwater distributions would be local, would have no affect on aquifer volume, and would not transfer any water resources outside of their current watersheds.

Construction activities associated with relocating and restoring channels within the project area to their historic locations and conditions would have the potential to result in temporary affects on water quality. Excavation and channel construction would disturb a significant amount of soil which could conceivably be transported downstream towards Lake Tahoe if not planned for or mitigated appropriately. However, construction work would only occur when there are no flows in the channels to minimize the possibility of discharging soils disturbed during construction. Through proper construction timing and the use of BMPs, potential affects to water quality would be less than significant.

The project has been designed to improve water quality by restoring SEZ areas within the project and provide additional areas of sediment deposition within Lake Forest Creek. The LFECP design objectives are to protect the quality of the water discharging from the project thereby improving existing water quality and restoring water quality functions within the project area and to waters discharging to Lake Tahoe. While there is the potential for temporary and indirect affects to downstream water quality due to a discharge of sediment during construction and during initial of the newly constructed Lake Forest Creek including its tributaries, appropriate BMPs and mitigation measures would be utilized as discussed below.

Off-site water quality could be indirectly affected in the scenario that there is a discharge of sediment off-site associated with the project. Through proper BMPs, soil erosion would be minimized to avoid adverse affects to water quality. Through the implementation of the mitigation measures in Section 3.5.3, there would be no significant direct or indirect affect to water resources as a result of the project.

### 3.5.3 Mitigation

Permitting Section 404 of the Federal CWA requires authorization from the Secretary of the Army for the discharge of dredged or fill material into waters of the United States (WOUS). Placer County is responsible for requesting Corps authorization for GP 16. GP 16 has been authorized for activities with minimal individual or cumulative effects to WOUS in the Lake Tahoe Basin, including restoration of stream channels and wetlands, which is the purpose of the LFECP. The County will be required to comply with the conditions of GP 16, including but not limited to, providing compliance documentation to the Corps upon completion of the project and obtaining 401 Water Quality Certification prior to project implementation.

Construction activities would be implemented in full compliance with LRWQCB regulations and Section 401 of the Clean Water Act. Moreover, the mitigation measures and BMPs would be utilized to address potential negative affects to water resources and quality discussed above. Placer County would be responsible for developing a Storm Water Pollution Prevention Plan (SWPPP) consistent with NPDES guidelines which would further detail the appropriate mitigation measures.

Dewatering. A Dewatering Plan will be developed as a part of the SWPPP to detail the procedures that will be followed for construction dewatering for both in-channel dewatering activities as well as dewatering associated with groundwater that is encountered during construction. For in-channel construction on Lake Forest Creek, an existing concrete channel with an approximate three foot high water filled berm and temporary HDPE diversion pipeline would be used in reach 6W. The existing storm drain would be kept in-tact during construction and until vegetation establishment is achieved within reach 4W, and a turbidity curtain would be installed in reach 1W in the harbor area. Additional BMPs would be specified in the detailed Dewatering Plan prior to project implementation.

Temporary Sediment and Erosion Control BMPs. BMPs, such as silt fencing on vulnerable slopes, gravel bags for drain inlet protection, and turbidity curtains installed at channel outlets would be implemented to minimize soil erosion in the case of storm events during construction. BMPs would be consistent with TRPA standards as well as Federal and state permit conditions including Corps, LRWQCB, and CDFG permits. Daily BMP inspections during construction would be conducted and remedial actions would be taken should deficiencies be noted.

The project site will be winterized according to TRPA and LRWQCB requirements at the end of each construction season. The following winterization measures would be adhered to: maintain all temporary erosion control including filter fencing and coir logs; stabilize all

disturbed areas with heavy mulch and tackifier; clean up and remove all construction site waste including trash, debris and spoil piles; and, cover all soil stockpiles/berms with a natural fiber blanket and secure stockpiles/berms with filter fencing.

Permanent Sediment and Erosion Control BMPs. The roadside ditches and storm drains would direct flow, as much as possible, to SEZs on publicly owned lands. The roadside ditches, storm drains, and stream channels within the project area would convey flows to either Lake Forest Glen Meadow or Skylandia Park SEZs, depending on their location within the project area. Infiltration basins and sediment traps would be utilized along the drainage course to first collect water from the roadside ditches and storm drains before discharging the water to Lake Forest Glen Meadow or Skylandia Park SEZs.

Drainage ditches and stream channels would be stabilized through re-grading, and would be lined with rock and vegetation for water quality improvement. Intermediate sediment cans/drop inlets would be installed at the corners of road intersections. At each location of a sediment can/drop inlet, pollutant capture and removal would be achieved; the sediment cans and drop inlets would include sumps and weep-holes to maximize opportunities for infiltration. Culverts would be enlarged to improve channel conveyance at road crossings. At locations where the roadway is particularly steep, an underground storm drain and treatment vault system would be added to allow for proper drainage. Concrete curbs and gutters would also be installed on some roadside stretches, directing water into either an underlying storm drain or a nearby channel.

Within a portion of Lake Forest Creek between Lake Forest Glen Meadow and SR28, a new channel would be constructed. Step pools will be created to accommodate the steepness of the reach. Because this segment of Lake Forest Creek is located in a channel gradient transition zone, this reach will be subject to sediment deposition. Therefore, this reach will have conditions that allow for the deposition of fine and coarse sediment in the channel and on the floodplain surface. This may include, but would not be limited to: grade control structures, biodegradable surface fabrics, rocks and salvaged branches, and engineered drop structures. The final design of this reach will be subject to further coordination with LRWQCB to achieve full compliance with local, state and Federal water quality requirements.

Revegetation. To prevent areas of disturbed soil from contributing sediment to waters within the project area, disturbed areas would be revegetated. Native vegetation and mulch would be applied. Where appropriate, native plants, rock, wood and soils salvaged from project excavation would be used in revegetation and restoration. Revegetation would be conducted as soon as practicable to stabilize the ground after construction is completed in an area. Irrigation systems would be installed and maintained to ensure success of the revegetation.

Within the newly constructed Lake Forest Glen Meadow areas and floodplain areas south of SR28, revegetation would be implemented immediately following construction. Flows from Lake Forest Creek would remain within the existing underground storm drain causing flows from Lake Forest Creek to bypass the meadow area during plant establishment. Once revegetation within the meadow is deemed successful (greater than 70 percent vegetative cover),

the meadow would receive water from Lake Forest Creeks, as well as project area runoff, and the existing stormdrain would be abandoned

Project Timing. In-channel construction activities would be limited to a period from July 1st to October 15<sup>th</sup> of each year. By observing this time restriction, in-channel work would be achieved during the dry season and the potential to encounter surface water or groundwater would be minimized. Heavy equipment operation in areas containing flowing or standing water would be avoided to the greatest extent possible. In the case that work is required within flowing or standing water, water would be diverted to bypass the work area using appropriate diversion structures. Avoidance of construction activities within flowing or standing water would minimize the potential for both sediment discharges and negative wildlife effects.

#### 3.5.4 Soils

Basis of Significance. An alternative would be considered to have a significant affect on soils if it would result in a change in soil types, cause substantial loss of soils through removal or natural erosion, or introduce contaminants into surface or subsurface soils.

No Action. The no action alternative would leave LFCEP area vulnerable to soil erosion. Existing areas of bare soil and degraded stream banks and channels would continue to contribute sediment to creeks within the project area, and sediment and nutrients would continue to be discharged to Lake Tahoe.

Preferred Alternative. The project would have no significant adverse affects on soils. Erosion control is a primary objective of the restoration project, and numerous measures would be designed to stabilize soils and minimize future erosion. Construction of stream channels and meadows would be conducted within the project area. During excavation and grading, soil disturbance would occur. Excessive soil compaction would be avoided, as over-compaction would threaten the ability of the created meadows and channels to promote infiltration or runoff. The majority of the LFCEP's excavated soil would be reused for constructing low berms within the project area, and the remaining soil is planned to be utilized at a nearby roadway repair project. Soil areas disturbed due to project activities would be temporarily stabilized until vegetation becomes established. Through avoidance and mitigation strategies, including the use of proper BMPs, there would be no significant affect to soils within the LFCEP area.

##### *3.5.4.1 Mitigation*

In order to assure that LFCEP activities meet their goal of accomplishing soil stabilization throughout the project area, Placer County would implement a variety of measures to avoid soil over-compaction and erosion. Equipment used for construction of the Lake Forest Glen Meadow shall be low impact/low ground pressure equipment to minimize compaction. Placer County would be required to loosen the top 12-18 inches of soil after grading activities and before revegetation efforts. Areas not receiving restoration would be fenced off to avoid construction traffic, and soil compaction would be tested throughout the site using a penetrometer (or equivalent device). A full scope of temporary BMPs would be used on the project area to minimize potential for erosion during a rain event. Silt fencing, sediment traps,

turbidity curtains, sand/gravel bags, and other appropriate BMPs would all be utilized to control erosion in accordance with the project's SWPPP.

### **3.6 Air Quality**

#### 3.6.1 Existing Conditions

Air Quality Management. The LFECP area is located in the eastern portion of the Placer County Air Pollution Control District. This agency was created by the State of California to enforce local, state, and Federal air pollution regulations. However, through a multi-agency cooperative agreement, it has been established that the California Air Resources Board would conduct the ambient air quality monitoring for both the California and Nevada sides of the Lake Tahoe Air Basin.

CARB's nearest air quality monitoring station to the LFECP area is located at South Lake Tahoe, California. From this station, CARB monitors air quality within the basin for a variety of criteria pollutants and designates whether or not the basin is in attainment with both state and Federal standards. According to designations reported as recently as July 2007, the area is either in attainment or unclassified for all state and Federal criterion except for the state standard for PM10 (particulate matter).

Sensitive Receptors. The primary sources of pollutants in the region are vehicle emissions, wood-burning, and construction activities. Sensitive receptors include sensitive land uses and particularly sensitive humans or wildlife that could be affected by changes in air quality due to emissions from the alternatives. While there are no sensitive land uses within the project area, sensitive receptors may include children, elderly, people with respiratory problems, and particularly sensitive wildlife.

#### 3.6.2 Effects

Methodology. Air quality effects were evaluated through identification of potential air emission sources associated with the project, evaluation of potential emissions, evaluation of existing requirements for their control, and determination of onsite measures to reduce emissions to less-than-significant levels.

Basis of Significance. An alternative would be considered to have a significant affect on air quality if it would violate an ambient air quality standard, contribute on a long-term basis to an existing or projected air quality violation, expose sensitive species or humans to substantial pollutant concentrations, or not conform to applicable Federal, state, and local standards.

No Action. This alternative would have no affects on existing air quality in the project area. Air quality would continue to be influenced by climatic conditions, and local and regional emissions from vehicles, large fires, and wood-burning stoves.

Preferred Alternative. Construction activities associated with the LFECP would have the potential for short-term affects on air quality. The operation of vehicles and heavy construction

equipment including excavators, trucks, loaders, and other equipment would produce emissions in the form of hydrocarbon exhaust, reactive organic gases, and potentially PM10. Without proper mitigation measures, these short-term emissions could exceed Federal, state, or local air quality standards. Placer County is responsible for appropriately mitigating and complying with all regulations regarding air pollution control. In coordination with Placer County Air Pollution Control District, Placer County would be responsible for preparing a Fugitive Dust Control Plan if required. There would be no long-term or indirect effects on air quality due to project activities. Through implementation of the following mitigation measures, temporary emissions would be reduced to less-than-significant levels with regards to both air quality standards and pollutant exposure to sensitive receptors. There would be no significant direct or indirect effect to air quality as a result of the proposed project.

### 3.6.3 Mitigation

During construction, contractors shall comply with all local, regional, state and Federal regulations regarding air pollution control. The contractor shall comply with Placer County APCD Rules and Regulations including but not limited to: Rule 202- Visible Emissions, Rule 207- Particulate Matter, Rule 213- Gasoline Transfer into Storage Containers, Rule 214- Gasoline Transfer into Vehicle Fuel Tanks, Rule 217- Cutback and Emulsified Asphalt Paving Materials, Rule 228- Fugitive Dust, Rule 240- Surface Preparation and Cleanup (Placer County, Undated).

Mitigation measures that would be employed to minimize fugitive dust particle emissions would include:

- At a minimum of three times per week, and as needed, project site and adjacent roadways would be swept for dirt and mud which has been generated from or deposited by construction equipment going to and from the construction site;
- All disturbed areas shall be adequately restabilized to minimize exposure of soil to wind and water erosion;
- Unpaved roads and exposed dirt areas would be watered and/or stabilized with hydroseed or palliatives;
- Stockpiled and transported soil materials would be covered;
- Vehicle speeds would be limited on unpaved roads to 15 mph; and
- Work would be suspended when wind speeds exceed 25 mph or project activities threaten off-site dust.

In order to limit the temporary emissions of pollutants such as hydrocarbons and reactive organic gases due to vehicle and mechanized equipment operation, as well as paving/asphalt operations, the following mitigation measures would be implemented:

- Existing power sources or clean fuel generators would be used rather than diesel generators;
- Low emission stationary and mobile equipment would be used;
- Construction equipment exhaust emissions would not exceed Federal and/or State Health and Safety Code visible emission limitations;
- Diesel warm up and idle times would be limited to 5 minutes; and
- A regular equipment tuning and maintenance program would be employed.

## 3.7 Cultural Resources

### 3.7.1 Existing Conditions

Ethnographic Background. Native Americans are believed to have first occupied the Lake Tahoe area approximately 8,000 years ago. The LFECF falls within the Washoe cultural area, which extended throughout the eastern Sierra Nevada drainages of the Truckee and Carson Rivers including the entire Lake Tahoe Basin to a little below present Reno and Carson City and north to Honey Lake (Four Directions, 2002). The lake and its tributaries provided the Washoe with important fisheries and resources like native plants (Rucks 2002).

Washoe ethnography suggests a level of social complexity and technical specialization that is non-characteristic of other native groups from the Great Basin. According to Lindström, “Higher population densities, concepts of private property, and communal labor and ownership are reported and may have developed in conjunction with their residential and subsistence resource stability” (Lindström and Waechter, 1992).

The Washoe also differed from other Great Basin native groups in their non-Numic, Hokan language and their seasonal cycle of population movement from Pyramid Lake in the east to the lower American River in the west. These seasonal movements were likely in response to the availability of foods found at different elevations and locations throughout the year. These locations included fish runs, acorn and pine nut harvests, small game drives, and other communal and individual hunts.

Small groups collected edible and medicinal roots, seeds, and marsh plants from the high mountain valleys during the mild season. In addition, men also hunted large game such as mountain sheep and deer in the higher elevations. Lake Tahoe and its tributaries were important year-round fisheries, and the Washoe have a history of “making long treks across the Sierra passes for the purpose of hunting, trading and gathering acorns” (Lindström and Waechter, 1992).

Historic Context. The explorers John Fremont and Charles Pruess were the first EuroAmericans to view Lake Tahoe in 1844. Prior to the 1849 Gold Rush in California, however, exploration in the Tahoe Basin was fairly limited. The development of the Comstock Lode near Virginia City, Nevada, beginning in 1859, brought thousands of miners to Nevada, and they prospected throughout northwestern Nevada. The demands of the mining on the Comstock had a profound affect on development of transportation routes, logging, and water supply in the Lake Tahoe Basin (Northrup, 2004).

The first settlement specifically located in the Lake Forest area came around 1859, when Homer D. Burton laid claim to the lakeside meadowlands of the creek, which now bears his name (Van Etten 1987). Burton named his Island Farm after a small hill exposed during low-water periods on the terminal end of a marshy spit of land (Scott 1973). Here, Burton developed and cultivated vegetables, buckwheat, and hay. Burton's Island Farm could also accommodate upwards of 30 guests. Two of Tahoe's first sailing vessels were placed in service by Burton in

1859-60. In the 1880s, Burton sold his 300-acre farm to Antone Russi, a dairyman whose name graces the upstream meadows of the Burton Creek drainage, two miles to the northwest Russi died in the 1890s, and his widow married dairyman Frank X. Walker, who then took over the farm. Walker located his living quarters, corrals and milk house on the edge of the meadow where Tamarack Lodge was later built and managed the cattle business successfully for two decades (Scott 1957). In 1910, after having owned Russi's property for more than a decade, Walker sold a parcel, which included the Burton home, to George Briggs of Sacramento. Matt Green subdivided this acreage, calling it Tahoe Island Park, and later it was re-subdivided into Lake Forest.

### 3.7.2 Literature Search and Previous Surveys

Prior to commencing with a field survey and a cultural resources inventory report, a thorough search was conducted for previous archeological records. In 2004, Ms. Susan Lindström coordinated with personnel at the North Central Information Center of California State University, Sacramento, and the USFS Lake Tahoe Basin Management Unit to complete a search for previous cultural resource inventories and known archeological sites. The search, which included the LFECP area and a 1 mile radius, identified 12 previous archeological projects and 7 known archeological sites. The details of these projects and sites, respectively, are tabulated below.

**Table 5. Cultural Resource Projects within One Mile of the LFECP**

<b>Project No.</b>	<b>Author (Date)</b>	<b>Project/Report Name</b>	<b>Relation to LFECP Area</b>
USFS TB-95-4	Dexter (1995)	Urban Lots Management Project	Outside
348	Padon (1987)	A Cultural Resource Assessment for the Proposed Placer County Administration Center, County of Placer	Inside
1615	Miller (1996)	Fairview-Incline Erosion Control Project (ARR No. 05-19-149)	Inside
1616	Ferrier (1994a)	Archeological and Historical Resources Survey and Impact Assessment: A Supplemental Report for a Timber Harvesting Plan	Inside
1617	Ferrier (1994b)	Archeological and Historical Resources Survey and Impact Assessment: A Supplemental Report for a Timber Harvesting Plan	Inside
1919	Jensen & Associates (1996)	Archaeological Inventory Survey, Proposed Recreational Development Project, c.30-acres at Tahoe City, Placer County, California (AP# 093-010-019-000)	Inside
1920	Noble (1991)	Department of Transportation, Negative Archeological Survey Report (WP EF04)	Inside
4380	Lindström (1989)	A Cultural Resources Overview for the Tahoe City Community Plan, Placer County,	Inside

<b>Project No.</b>	<b>Author (Date)</b>	<b>Project/Report Name</b>	<b>Relation to LFECP Area</b>
		California	
4381	Lindström (1986)	A Cultural Resources Reconnaissance of the North Shore Transit Maintenance Facility Environmental Impact Report, Placer County, California	Outside
4388	Woodward (1991a)	Archaeological Inventory Surveys of Burton Creek State Park, Placer County, California	Outside
4389	Woodward (1991b)	Archaeological Inventory Surveys of Tahoe State Recreation Area, Placer County, California	Inside
	Caltrans (2004)	Historic Property Survey for the Proposed Roadway Rehabilitation and Drainage System Project on State Route 28 from Tahoe City to the Nevada State Line	Inside

**Table 6. Previously Recorded Cultural Resources within One Mile of the LFECP**

<b>Site Number</b>	<b>Description</b>	<b>Reference</b>	<b>Relation to Surveyed Areas</b>	<b>Relation to LFECP Area</b>
CA-PLA-288 (P-31-414)	Prehistoric seasonal camp	Woodward (1991b)	Inside	Outside
CA-PLA-289 (P-31-415)	Prehistoric basalt and obsidian scatter	Woodward (1991b)	Inside	Inside
CA-PLA-1005-H (P-31-1299)	Historic can dump	Gilbert (2001)	Outside	Inside
CA-PLA-1007/H (P-31-1302)	Prehistoric camp; Historic camp	Gilbert (2000)	Outside	Outside
CA-PLA-1518-H (P-31-12008)	Historic Brockway to McKinney Station Trail Segment	Memmott and Zeier (2003)	Inside	Inside
P-31-1300	Historic water pipeline remnants	Gilbert (2001)	Outside	Inside
C.T. Bliss – C.W. Merrill House	Historic residence	Caltrans (2004)	Outside	Outside

Field Survey. Upon completion and receipt of the archeological records, Chambers Group archaeologists conducted a pedestrian survey between September 20-24, 2004. The survey strategy was to inventory all public land parcels within LFECP area where erosion control efforts would be focused, in order to identify any cultural resources that may be present and may be affected by proposed project activities. A total of 173 acres were surveyed, 146.7 of which are in the LFECP area. Whenever possible, survey transects were generally spaced no more than

15 meters apart, allowing systematic coverage of each parcel. In areas of especially dense brush cover, a more cursory examination was employed due to the inaccessibility and low ground visibility (Chambers, 2007).

A total of six archaeological sites were identified during field surveys within the project's area of potential effect (APE). Two new cultural sites (LF1 and LF2) and two isolated finds (IF1 and IF2) were identified. All of the newly identified cultural resources are located inside the LFCEP area. The archaeologists also visited three previously recorded sites (CA-PLA-288, CA-PLA-289, and CA-PLA-1518-H). All of the previously recorded sites, with the exception of CA-PLA-288, are located within the project's APE. Site descriptions of the pre previously recorded sites were checked for accuracy. A brief description of the details of each of the sites is tabulated below.

**Table 7. Newly Recorded Cultural Resources Within the LFCEP**

Temporary Number	Site or Isolate	Type	Description	Relation to LFCEP Area
LF1	Site	Historic	Standing cabin, built in 1946	Inside
LF2	Site	Prehistoric	Small lithic scatter	Inside
IF1	Isolate	Prehistoric	Small tabular groundstone fragment and core	Inside
IF2	Isolate	Historic	Axe-cut fence post	Inside
CA-PLA-289	Site	Prehistoric	Small lithic scatter	Inside
CA-PLA-1518-H	Site	Historic	Small segment of road, Brockway to McKinney Station, built in 1874	Inside

### 3.7.3 Effects

Basis of Significance. An alternative would be considered to have a significant adverse affect on historic properties if it would diminish the integrity of the resource's location, design, setting, materials, workmanship, feeling, or association on historic properties eligible for listing on the National Register of Historic Places. Types of effects include physical destruction, damage, or alteration; isolation or alteration of the character of the setting; introduction of elements that are out of character; neglect; and transfer, lease, or sale.

No Action Alternative. This alternative would have no affects on existing cultural resources or historic properties in the project area. Resources would continue to be at risk from natural processes such as erosion. However, without erosion control, buried cultural resources could be at a slightly higher than normal risk of disturbance during rainfall events due to existing erosion forces.

Preferred Alternative. The restoration project would have no affects on any known cultural resource sites or finds. Ground-disturbing activities could potentially affect buried cultural resources. Through appropriate mitigation measures, all sites and finds would be avoided and/or protected.

Indirect effects to cultural resources could occur in association with the export of soil materials from LFECP. These effects could be avoided or minimized to a level of less than significance by conducting a cultural resources survey for the importing project area, and subsequently avoiding affects to cultural resources identified in the survey. Locating and avoiding cultural resources within the project area would be the responsibility of the importing project's sponsors, and would be conducted in accordance with their own environmental review process.

Due to partial funding of the project by the United States Forest Service (USFS), the USFS is the lead Federal agency for compliance with Section 106 of the National Historic Preservation Act. Through stipulations in the Regional Programmatic Agreement (PA) developed in consultation with the California State Historic Preservation Officer (SHPO) and the Advisory Council on Historic Preservation (ACHP) (Appendix E), the USFS finds that this project will have no effect on historic properties since all known cultural resources will be avoided (Appendix F).

#### 3.7.4 Mitigation

All known sites and finds shall be identified and flagged by a cultural resources specialist prior to construction activities. These flagged areas would be appropriately avoided and/or protected to maintain their historical character. Any work conducted in the vicinity of the known sites will be monitored by a qualified archaeologist in accordance with the USFS memo dated May 14, 2008 (Appendix F). Should any cultural resource materials be uncovered during construction activities, work would be stopped in the immediate area and a qualified archeologist would be contacted. The archaeologist would inspect the new finds and determine appropriate measures to take before construction activities are allowed to restart in accordance with 36 CFR 800.13.

### **3.8 Hazardous, Toxic, and Radiological Waste**

#### 3.8.1 Existing Conditions.

No sources or evidence of hazardous, toxic, or radiological waste (HTRW) have been observed during field visits to the project area. A Phase I Environmental Site Assessment (ESA) was conducted in July 2008, and no Recognized Environmental Conditions (RECs) were identified (TerraCon 2008).

#### 3.8.2 Effects

Basis of Significance. An alternative would be considered to have a significant adverse effect from HTRW if it would result in the discharge or exposure of humans to HTRW, or would have an effect to an HTRW site.

No Action Alternative. This alternative would have no effects on HTRW sites and there would be no potential for an HTRW discharge. There are no known HTRW sites within the project area.

Preferred Alternative. LFECP construction activities do not explicitly involve the use, release, or transport of hazardous, toxic, or radiological materials. However, traditional use of heavy construction equipment often involves the use of substances which could be considered hazardous, such as various fuels and oils. While the use of heavy construction equipment may increase the risk of a fuel or oil spill, proper mitigation measures taken to minimize the risk of spills and limit the effects from such spills can ameliorate the situation to the point that potential risks of hazardous spills would be less than significant.

### 3.8.3 Mitigation

Placer County would be responsible for developing a Hazardous Material Spill Prevention and Containment Plan. Sites of particularly elevated spill risk such as staging locations within the project area shall be isolated and treated with appropriate BMPs such as: turbidity curtains, gravel bags, filter fabrics, silt fences, absorbent materials, etc. intended to prevent contamination to surface waters.

Staging areas for fueling and maintenance of heavy construction equipment shall be located away from stream channels and Lake Tahoe in order to limit potential spills to designated areas where observation and clean-up can be readily accomplished. Should an oil or fuel spill occur during construction or maintenance activities, all work would stop immediately, LRWQCB would be notified, and clean up procedures would commence immediately in accordance with the guidelines of the NPDES permit and the TRPA Basin Plan.

## **4.0 CUMULATIVE EFFECTS**

Cumulative effects are effects of a proposed project when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person is responsible for those actions. A past project that has greatly affected the Lake Forest Meadow area is the development of the Lake Forest Glen Condominiums. The construction of the U.S. Coast Guard Station, Public Boat Ramp and Lakeside Recreation area, and the marina at Star Harbor contributed to the modification of drainage outfalls from the project area into Lake Tahoe. Lake Forest Campground and Pomin Park have also contributed to modifications to the SEZ and wetland areas which effect the water quality and hydrology of the area. State Route 28, residential development throughout the Highlands area, commercial and industrial development in Lake Forest and irrigation diversions in the lower Polaris Creek watershed all contribute to current water quality concerns.

Several projects are currently in various stages (from planning to implementation) within or near the project area. These projects are listed below and were considered when conducting the environmental analysis for cumulative effects.

The California DPR prepared a Master Plan for Burton Creek State Park entitled the Burton Creek Specific Plan. Possible future projects would include: day use facilities with up to four trailhead parking areas, administrative buildings and a new campground. This would also include construction of new trails/access roads in the upper watersheds of Polaris, Lake Forest

and Dollar Creeks. None of these projects are currently in the planning or design stages at this time. DPR will be conducting ongoing forest thinning and riparian hardwood enhancement work during the summer and fall months within the Burton Creek State Park for several years. Forest thinning for fire fuel breaks is taking place behind Rocky Ridge which is northwest of the project area. Wood piles are created during the summer months from thinning efforts and burned in the fall, winter and spring according to state protocol. The riparian hardwood enhancement work includes removal of conifer encroaching into aspen groves. Removed trees are chipped onsite.

The North Tahoe Public Utility District (NTPUD) owns the Firestone property to the east of the project area. In Summer 2008, North Tahoe Fire Protection District implemented a fuels reduction program to remove trees and other vegetation on the property. The project was completed in Summer 2008.

The UC Regents currently own several parcels within Area C, to the west of the project area including the Fish Hatchery located at the corner of SR 28 and Lake Forest Road at the western most intersection. The area is being managed by the UC Davis Tahoe Environmental Research Center (TERC). TERC recently completed a remodel of the existing Fish Hatchery building and parking lot. BMP test plots, walkways, a demonstration garden and stream restoration through the meadow area adjacent to the Fish Hatchery has been designed and is scheduled for construction in the fall of 2008 and 2009.

The Nahas development project is located on SR 28 at the intersection of Fabian Way and also includes property to the north. This property is located within the project area. The project is a private development and will include a 42 to 78 unit Senior Apartment complex, 50 town homes in a gated community and a new commercial building. The developer has an approved subdivision map including permits from Placer County and TRPA. However, it is unknown when construction would begin.

There is a potential for future additions to the LFECF within neighboring areas, Area A and Area C. Restoration in Area A and Area C have not yet been planned and it is uncertain when planning or restoration to these areas would be conducted. Restoration of these areas would be subject to environmental review and approval by Federal, state, and local regulatory agencies.

The proposed project improvements would act to restore degradation caused by previous development activities. The negative effects of previous anthropogenic activities include but are not limited to: stream course alteration, wet-meadow desiccation, soil and vegetation disturbance, and loss of runoff infiltration capacity. Cumulatively, these activities have contributed to decreased water quality, erosion problems, and loss of habitat for a wide variety of organisms. If restoration activities at Area B are implemented, positive cumulative effects would include improved water quality in Lake Tahoe (see section 3.5 above) and increased SEZ/riparian habitat for the Lake Tahoe Basin (see section 3.2 above). Similar and greater benefits would be expected if future restoration projects on adjacent areas (such as those proposed for Areas A and C) are implemented to reverse the degradation caused by previous activities. There would be no negative cumulative effects to Federally listed species or historic

cultural resources, as any subsequent project would first be evaluated to assure the protection of such resources.

The removal of pine trees is a topic of concern within the Lake Tahoe Basin, as land managers seek to maintain the historic populations of pines throughout the area. While the LFECP Area B would result in the loss of several pine trees in the project's meadow area, the cumulative effects are considered to be minimal due to the relatively small acreage of the project and the insignificant quantity of pine trees requiring removal compared to the plentiful expanses of pine forests within and adjacent to the LFECP area. Additionally, removal of pines would be conducted in order to restore the meadow to a hydrologic condition, which would not have historically supported pine forest.

## **5.0 COMPLIANCE WITH ENVIRONMENTAL LAWS AND REGULATIONS**

### **5.1 Federal**

**Clean Air Act, as amended and recodified (42 U.S.C. 7401 et seq.).** *Compliance.* The proposed project is not expected to violate any Federal or state air quality standards, or hinder the attainment of air quality objectives in the local air basin. The proposed project would have no significant adverse effects on the future air quality of the area and is in compliance with this act. Placer County would be responsible for preparing a Fugitive Dust Control Plan prior to project construction.

**Clean Water Act (33 U.S.C. 1251 et seq.).** The project would comply with guidelines for Sacramento District, General Permit 16. Best management practices would be used throughout the period of grading/earthwork to prevent sediment, erosion, and turbidity from being released into Lake Tahoe. Permanent BMPs for water quality improvement would be employed as a part of the Project.

Placer County would be required to obtain an NPDES permit since one or more acres of land involving potential storm water discharges to surface waters would be disturbed. Prior to construction, Placer County would prepare a Storm Water Pollution Prevention Plan (SWPPP) and then submit a Notice of Intent form to the State of California Water Resources Control Board requesting approval of the proposed work. The SWPPP would identify best management practices to be used to avoid or minimize any adverse effects of construction on surface waters. Once the work is completed, Placer County would submit a Notice of Termination in order to terminate coverage by the NPDES permit.

**Endangered Species Act (16 U.S.C. 1531 et seq.).** *Compliance.* In accordance with Section 7(c), the USFWS listings and California Natural Diversity Database (CNDDDB) were reviewed for potential Federally listed and proposed species likely to occur in the LFECP area (Appendix A). No listed species or their habitat would be affected by the proposed Project.

**Executive Order 11988, Floodplain Management.** *Compliance.* This order directs all Federal agencies approving or implementing a project to consider the effects that project may

have on flood plains and flood risks. This project would not raise flood elevations or increase the risk of flooding.

**Executive Order 11990, Wetlands Protection.** *Compliance.* This order directs all Federal agencies to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. The project would enhance wetland habitats and provide additional wetland areas through SEZ restoration.

**Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.** *Compliance.* The order directs all Federal agencies to identify and address adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The proposed project would benefit all residents by preserving Lake Tahoe water quality and providing increased recreational opportunities for all residents.

**Federal Emergency Management Agency (FEMA) Coordination.** *Partial Compliance.* Prior to project construction, Placer County would have to achieve FEMA compliance through the Letter of Map Revision (LOMR) and/or Conditional Letter of Map Revision (CLOMR) process due to the project's alteration of base flood elevations and floodway boundaries. Coordination with FEMA is in progress on this project.

**Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.).** *Compliance.* The Corps has conducted coordination with the US Fish and Wildlife Service, Sacramento Office. The Service has prepared a Planning Aid Letter for LFCEP dated June 12, 2008 in compliance with the Act. In the Planning Aid Letter, the Service provided comments and recommendations for LFCEP and expressed its support for the proposed project concept.

**Migratory Bird Treaty Act (15 U.S.C 701-18h).** *Compliance.* Construction would be timed, as much as feasible, to avoid destruction of active bird nests or young of birds that breed in the area. A pre-construction field survey would be conducted by a qualified biologist to detect any active nests. If active nests are located, a protective buffer would be delineated and the entire area avoided preventing disturbance of nests until they are no longer active.

**National Environmental Policy Act (42 U.S.C. 4321 et seq.).** *Partial Compliance.* This draft EA is in partial compliance with this act. The final EA and FONSI will include comments and responses resulting from public review.

**National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.).** *Compliance.* The information in this draft EA indicates that the project is in compliance with this Act. In accordance with 36 CFR 800.2, the US Forest Service has been designated the lead federal agency for fulfilling Section 106 responsibilities. The Forest Service has determined that this undertaking "falls within Stipulations II(B)(5) and III(D)(3) of the Programmatic Agreement (PA) for Compliance with Section 106 of the National Historic Preservation Act for Undertakings in the Pacific Southwest Region PA." Any work conducted in the vicinity of the known sites will be monitored by a qualified archaeologist per the USFS memo dated May 14,

2008 (Appendix F). The SHPO will be consulted in accordance with 36 CFR 800.13 if unknown cultural resources are found during construction.

## 5.2 State of California and Local Agencies

**California Environmental Quality Act (PRC Sections 21000 et seq., 14 CCR 3, Sections 25000 et seq.).** *Partial Compliance.* Placer County is the lead agency under CEQA. An Initial Study was prepared pursuant to CEQA in November 2007. A Draft Initial Study/Mitigated Negative Declaration is being reviewed concurrent with this Environmental Assessment. Placer County is responsible for filing a NOD prior to project construction.

**California Fish and Game.** Section 1600 of California Fish and Game Code requires that the Department of Fish and Game is notified before beginning an activity that will substantially modify a river, stream, or lake. Prior to construction modifications to Lake Forest Creek, Placer County would be required to enter into a Lake or Streambed Alteration Agreement with the California Department of Fish and Game.

**Tahoe Regional Planning Agency Compact, as amended (Public Law 96-551), December 19, 1980, and the Tahoe Regional Planning Agency Code of Ordinances.** *Partial Compliance.* The project is in compliance with the TRPA Compact, as amended, and the TRPA Code of Ordinances. Avoidance, reduction, and minimization measures would conform to the requirements in TRPA's Handbook of Best Management Practices (TRPA, 1988) for construction in the Tahoe Basin. Placer County would also be responsible for obtaining a Tree Removal permit. A TRPA Environmental Document has been prepared and is being reviewed concurrent with the review of this EA.

**Lahontan Regional Water Quality Control Board.** *Partial Compliance.* Prior to project construction, Placer County would obtain 401 Water Quality Certification subject to provisions of the Clean Water Act. LRWQCB storm water and dewatering permits will also be required as well as exemption to the 100-year floodplain prohibition. Coordination is in progress with the LRWQCB on this project.

## 6.0 PUBLIC INVOLVEMENT

Public involvement for this project has been coordinated by the CTC, Placer County, and other Federal agencies. The public is encouraged to review the draft EA and provide comments during the public review period. The draft EA will be available for public review for a period of 30 days.

Substantial public involvement for this project has been conducted by both the CTC and Placer County. During the design process, several public meetings were held to inform property owners and residents within the project area about the proposed improvements and to receive their input. Additional meetings with individual property owners have been held to discuss the general nature of the proposed ROW acquisitions within private property. Specific negotiations will not occur until after approval of the project environmental documents.

## **6.1 List of Agencies Consulted**

Agency consultation for LFECP has been conducted by the Corps as well as Placer County and the CTC. Placer County and the CTC have consulted with agencies, organizations and individuals and conducted meetings and site visits with the TAC and public on August 28, 2003, October 26, 2004, November 10, 2004, February 17, 2005, April 21, 2005, November 16, 2005, June 14, 2006, July 20, 2007, July 22, 2008 and October 17, 2008. Placer County and CTC have coordinated with property owners in the area since 2004. In addition, the Corps and USFWS conducted a site visit on April 24, 2008. The agencies and organizations consulted by Placer County, CTC, and the Corps for the LFECP Project include:

California Department of Fish and Game  
California Department of Parks and Recreation  
California Wildlife Conservancy Board  
Caltrans  
Federal Emergency Management Agency  
Lahontan Regional Water Quality Control Board  
Lake Forest Glen Homeowners Association  
Lake Forest Water Company  
Star Harbor Homeowners Association  
Tahoe City Public Utility District  
Tahoe Regional Planning Agency  
University of California Regents  
US Bureau of Reclamation  
US Coast Guard  
US Fish and Wildlife Service  
US Forest Service, Lake Tahoe Basin Management Unit

## **7.0 COORDINATION AND REVIEW OF THE DREFT EA**

The draft EA will be circulated for 30 days to agencies, organizations, and individuals known to have a special interest in the project. All comments received will be considered and incorporated into the final EA, as appropriate. The LFECP is being coordinated with relevant government agencies including the CTC, USFS, USFWS, LRWQCB, TRPA, and Placer County.

If there are significant changes in, or additions to, the existing conditions or design of the LFECP or modification of the project during future design refinements or construction, any required environmental documentation will be prepared and submitted to appropriate agencies to ensure compliance with Federal, state, and local laws and regulations.

## **8.0 CONCLUSIONS**

The proposed LFECP--Area B project includes components related to water quality improvement and habitat restoration. Project features include channel realignment and restoration of Lake Forest Creek within Area B, and SEZ restoration to create additional wetland and meadowland habitats and improve water quality functions. 35 acres of wet meadow habitat

and 1500 linear feet of aquatic habitat would be restored as a result of this project. To construct the new channel alignments and create additional SEZ habitat, approximately 15,000 cubic yards of soil would be excavated and 12,000 cubic yards of soil would be utilized on site to construct earthen berms for flood control. No affects on Federally listed Lahontan cutthroat trout or historic properties is expected to result from the proposed project as evidenced by habitat assessments, surveys, and/or literature review. Based on this draft EA, the restoration project would have no significant effects on the environment, and no mitigation beyond avoidance and best management practices would be required. The project would meet the requirements for actions permitted following completion of a FONSI as described in 40 CFR 1508.13. These actions would not have a significant effect on the human environment and do not require preparation of an environmental impact statement. After the 30-day public review period is closed and the comments can be adequately addressed with a conclusion of no significant effects, it is expected that the FONSI would be signed by the Colonel and accompany the final EA.

## **9.0 PREPARERS/REVIEWERS**

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