FINAL
Environmental Impact Report/
Environmental Impact Statement/
Environmental Impact Statement
Volume IV

Upper Truckee River and Marsh Restoration Project

SCH# 2007032099

Lead Agencies:

California Department of General Services

California Tahoe Conservancy

Tahoe Regional Planning Agency
Lake Tahoe Environmental Improvement Program

U.S. Department of Interior
Bureau of Reclamation

December 2015

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1 INTRODUCTION AND STATEMENT OF PURPOSE AND NEED

This document is a joint final environmental impact report/environmental impact statement/environmental impact statement (Final EIR/EIS/EIS) prepared for the Upper Truckee River and Marsh Restoration Project (hereinafter referred to as "the project"). This Final EIR/EIS/EIS has been prepared in compliance with the California Environmental Quality Act (CEQA), the National Environmental Policy Act of 1969 (NEPA), and the Tahoe Regional Planning Agency (TRPA) Compact and Code of Ordinances. The project also serves as the "proposed action" under NEPA and the "proposed project" under CEQA and the TRPA Code of Ordinances.

This Final EIR/EIS/EIS has been prepared by the California Tahoe Conservancy (Conservancy) as lead agency under CEQA, with assistance from the California Department of General Services, Real Estate Services Division; the U.S. Department of the Interior Bureau of Reclamation (Reclamation), as federal lead agency under NEPA; and TRPA as lead agency in accordance with the TRPA Compact and Code of Ordinances.

The relevant statutes, regulations, and ordinances guiding the preparation of this Final EIR/EIS/EIS are:

- CEQA (California Public Resources Code [PRC] Section 21000 et seq.);
- the State CEQA Guidelines (California Code of Regulations [CCR] Title 14, Division 6, Chapter 3), including Section 15222, "Preparation of Joint Documents");
- NEPA, as amended (Public Law [PL] 91-190, 42 United States Code 4321–4347, January 1, 1970, as amended by PL 94-52 [July 3, 1975], PL 94-83 [August 9, 1975], and PL 97-258, Section 4[b] [September 13, 1982]);
- Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA—Code of Federal Regulations (CFR) Title 40, Section 1500 et seq., including Sections 1502.25, 1506.2, and 1506.4 (authority for combining federal and state environmental documents);
- the Bureau of Reclamation NEPA Handbook. Available: http://www.usbr.gov/nepa;(Reclamation 2012);
- Article VII of the TRPA Compact (Public Law 96-551, as revised in 1980);
- Chapters 3 and 4 of the TRPA Code of Ordinances; and
- Article 6 of the TRPA Rules of Procedure.

CEQA, NEPA, and the TRPA Compact require a lead agency that has completed a respective draft environmental impact report/environmental impact statement/environmental impact statement (Draft EIR/EIS/EIS) to consult with and obtain comments from public agencies (cooperating, responsible, and trustee agencies) that have legal jurisdiction over the project. The lead agency also must give the general public opportunities to comment on the Draft EIR/EIS/EIS.

In February 2013, the Conservancy, Reclamation, and TRPA released the Draft EIR/EIS/EIS for a 60-day public review and comment period. Public hearings were held at the TRPA Advisory Planning Commission meeting on March 13, 2013, and at the Governing Board meeting on March 27, 2013, to present the project alternatives and to receive public comments. The public hearings were recorded and public comments transcribed. Written comments were received from federal, state, regional, and local agencies and from businesses, organizations, and individuals. This Final EIR/EIS/EIS has been prepared to respond to comments received on the 2013 Draft EIR/EIS/EIS for the project and to present the Preffered Alterntive.

1.1 AGENCY ROLES AND RESPONSIBILITIES

1.1.1 LEAD AGENCIES

CALIFORNIA TAHOE CONSERVANCY

The Conservancy is the lead agency under CEQA and the proponent of the project. An independent agency within the State of California's Natural Resources Agency, the Conservancy was established in its present form by state law in 1984 (Chapter 1239, Statutes of 1984). This agency was established to develop and implement programs through acquisitions, grants, and site improvements. The Conservancy's mission is to preserve, protect, restore, enhance, and sustain the unique and significant natural resources and recreational opportunities of the Tahoe Basin. Its primary objectives are to:

(1) protect the natural environment of the basin, with priority placed on preserving the exceptional clarity and quality of the waters of Lake Tahoe;

(2) preserve and enhance the broad diversity of wildlife habitat in the Tahoe Basin; and

(3) increase public access and recreation opportunities for visitors to the lake and other natural areas.

TAHOE REGIONAL PLANNING AGENCY

TRPA is the primary permitting agency and the lead agency under the TRPA Compact.. TRPA is a bistate regional planning agency created in 1969 by federal law to oversee development on both the California and Nevada sides of Lake Tahoe. TRPA's mission is to lead the cooperative effort to preserve, restore, and enhance the unique natural and human environment of the Lake Tahoe Region now and in the future. To receive construction permits, the project would be required to comply with TRPA's Regional Plan and Code of Ordinances. Permitting requirements include the Environmental Improvement Program (EIP) Permit, Land Capability and Coverage Verifications, and Historic Determination.

In addition, in accordance with the TRPA Code of Ordinances, if implementing a project would result in an exceedance of an identified threshold, mitigation must be imposed to reduce the impact and maintain the threshold. Under Chapter 4 of the Code of Ordinances, written findings must be made regarding all significant environmental impacts and their associated mitigation measures, with substantial evidence provided in the record of review before final project approval. To approve a project, TRPA must make all of the following specific findings:

(A) The project is consistent with and will not adversely affect implementation of the Regional Plan, including all applicable Goals and Policies, plan area statements and maps, the Code, and other TRPA plans and programs.

(B) The project will not cause the environmental threshold carrying capacities to be exceeded.

(C) Wherever federal, state, or local air and water quality standards apply for the region, the strictest standards shall be attained, maintained, or exceeded pursuant to Article V(d) of the Tahoe Regional Planning Compact.

The project meets or exceeds all of the standards referred to above in finding (C).

U.S. DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION

Reclamation is the lead agency under NEPA. The federal agency was created in 1902 to provide water for 17 western states. Reclamation's mission is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

The project has received federal funding for planning purposes and may receive funding from Reclamation for construction; the project therefore requires the preparation of an EIS. It also requires the preparation of an EIS because its development would require federal permits or concurrence for one or more of the following activities: discharges of fill material into waters of the United States, which is an activity regulated under Section 404 of the Clean Water Act, activities affecting plant or animal species protected by the Federal Endangered Species Act (ESA) (16 USC 1531 et seq.), and for impacts on cultural resources pursuant to Section 106 of the National Historic Preservation Act.

1.1.2 TRUSTEE, RESPONSIBLE, AND COOPERATING AGENCIES

Other federal, state, and local agencies are involved in the review and approval of the project, including trustee and responsible agencies under CEQA and cooperating agencies under NEPA. Under CEQA, a trustee agency is a state agency that has jurisdiction by law over natural resources that are held in trust for the people of the State of California. A responsible agency is an agency other than the lead agency that has legal responsibility for carrying out or approving a project or elements of a project (PRC Section 21069). The CEQA lead agency consults with trustee and responsible agencies to gain their input and enable the agencies to review and comment on the draft document. Responsible agencies use the CEQA document in their decision making.

Under NEPA, a cooperating agency can be any federal agency other than the federal lead agency that has legal jurisdiction or special expertise with respect to any environmental impact involved in an action. Cooperating agencies are designated by agreement between the NEPA lead agency and the cooperating agency. They are encouraged to actively participate in the lead agency's NEPA process, review and comment on the NEPA document, and use the document when making decisions on the project.

Several agencies other than the Conservancy, Reclamation, and TRPA have jurisdiction over the implementation of the elements of the project, as identified below.

FEDERAL COOPERATING AGENCIES

- None

STATE RESPONSIBLE AGENCIES

- California Air Resources Board
- California Department of Fish and Wildlife
- California Department of Transportation
- Lahontan Regional Water Quality Control Board
- State Historic Preservation Officer
- California State Lands Commission

STATE TRUSTEE AGENCIES

- California Department of Fish and Wildlife
- California State Lands Commission

OTHER INTERESTED AGENCIES

- U.S. Army Corps of Engineers
- U.S. Environmental Protection Agency
- U.S. Fish and Wildlife Service
- U.S. Department of Transportation, Federal Aviation Administration

1.1.3 REGULATORY REQUIREMENTS, PERMITS, AND APPROVALS

The following list identifies permits and other approval actions for which this EIR/EIS/EIS may be used during agency decision-making processes or represent permits or approvals or both that will be needed for the proposed project. The following actions may be under the purview of regulatory agencies other than the lead agencies.

FEDERAL ACTIONS/PERMITS

- **Reclamation:** The Record of Decision (ROD) will state the federal action to be implemented and will discuss all factors leading to the decision to potentially approve funding for construction.
- **State Historic Preservation Office:** Consultation for impacts on cultural resources pursuant to Section 106 of the National Historic Preservation Act (NHPA).
- **U.S. Army Corps of Engineers:** Department of the Army permit under Section 404 of the Clean Water Act (CWA) for discharges of dredged or fill material into waters of the United States.
- **U.S. Environmental Protection Agency:** Review of the EIS, and filing and noticing; concurrence with the Section 401 CWA permit.
- **U.S. Fish and Wildlife Service:** Consultation under the federal Endangered Species Act and issuance of incidental-take authorization for the take of federally listed endangered and threatened species, if take of a species is anticipated.

STATE ACTIONS/PERMITS

- **California Department of Fish and Wildlife:** Potential consultation under the California Endangered Species Act and issuance of take authorization, streambed alteration agreement, and protection of raptors (California Fish and Game Code Sections 2081, 1602, and 3503.5, respectively).
- **California Department of Transportation:** Possible encroachment permits for work involving the U.S. Highway 50 right-of-way.
- **Lahontan Regional Water Quality Control Board (Region 6):** National Pollutant Discharge Elimination System construction stormwater permit (notice of intent to proceed under general construction permit) for disturbance of more than 1 acre, discharge permit for stormwater, general order for dewatering, and Section 401 CWA certification or waste discharge requirements.

REGIONAL ACTIONS/PERMITS

- **TRPA:** Construction permits, including the Environmental Improvement Program (EIP) Permit, Land Capability and Coverage Verifications, and Historic Determination.

LOCAL ACTIONS/PERMITS

- **El Dorado County Air Pollution Control District:** Oversees Rule 223 for fugitive dust to reduce the amount of particulate matter entrained in the ambient air by anthropogenic (human-made) fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions.
- **City of South Lake Tahoe:** Regulates grading on both public and private property within the South Lake Tahoe city limits to safeguard life, limb, health, property, and public welfare and avoid pollution of watercourses caused by surface runoff, or by aerial deposition of pollutants generated from the permit area on or across the permit area.

1.2 PROJECT ANALYZED IN THE DRAFT EIR/EIS/EIS

The Conservancy, Reclamation, and TRPA are pursuing a restoration project along the most downstream reach of the Upper Truckee River, next to Lake Tahoe (Exhibit 1-1). The study area for the project is generally bounded by U.S. Highway 50 and the Highland Woods neighborhood on the south, the Al Tahoe neighborhood on the east, the Tahoe Island/Sky Meadows and Tahoe Keys neighborhoods and the TKPOA Corporation Area on the west, and Lake Tahoe to the north (Exhibit 1-2).

The study area for the project is approximately 592 acres and includes parcels owned by the Conservancy, other public agencies, and private landowners (Exhibit 1-2). It includes the downstream reaches of Trout Creek and the Upper Truckee River; adjacent wetland (Upper Truckee Marsh) and upland habitats; and the project site for the Lower West Side Wetlands Restoration Project (LWS Project), which is located in the northwest portion of the study area, just east of the Tahoe Keys Marina. The primary purpose of the Upper Truckee River and Marsh Restoration Project is to restore natural geomorphic processes and ecological functions along this reach of river.

The Upper Truckee River and Marsh Restoration Project is identified in TRPA's EIP as a project that is necessary to restore and maintain environmental thresholds for the Tahoe Basin. EIP projects are designed to achieve and maintain environmental threshold carrying capacities that protect the Tahoe Basin's unique and valued resources. As described in Chapter 2, "Project Description," an extensive evaluation and restoration planning process has been conducted to identify potentially feasible approaches for recreation access and restoration of the river and marsh.

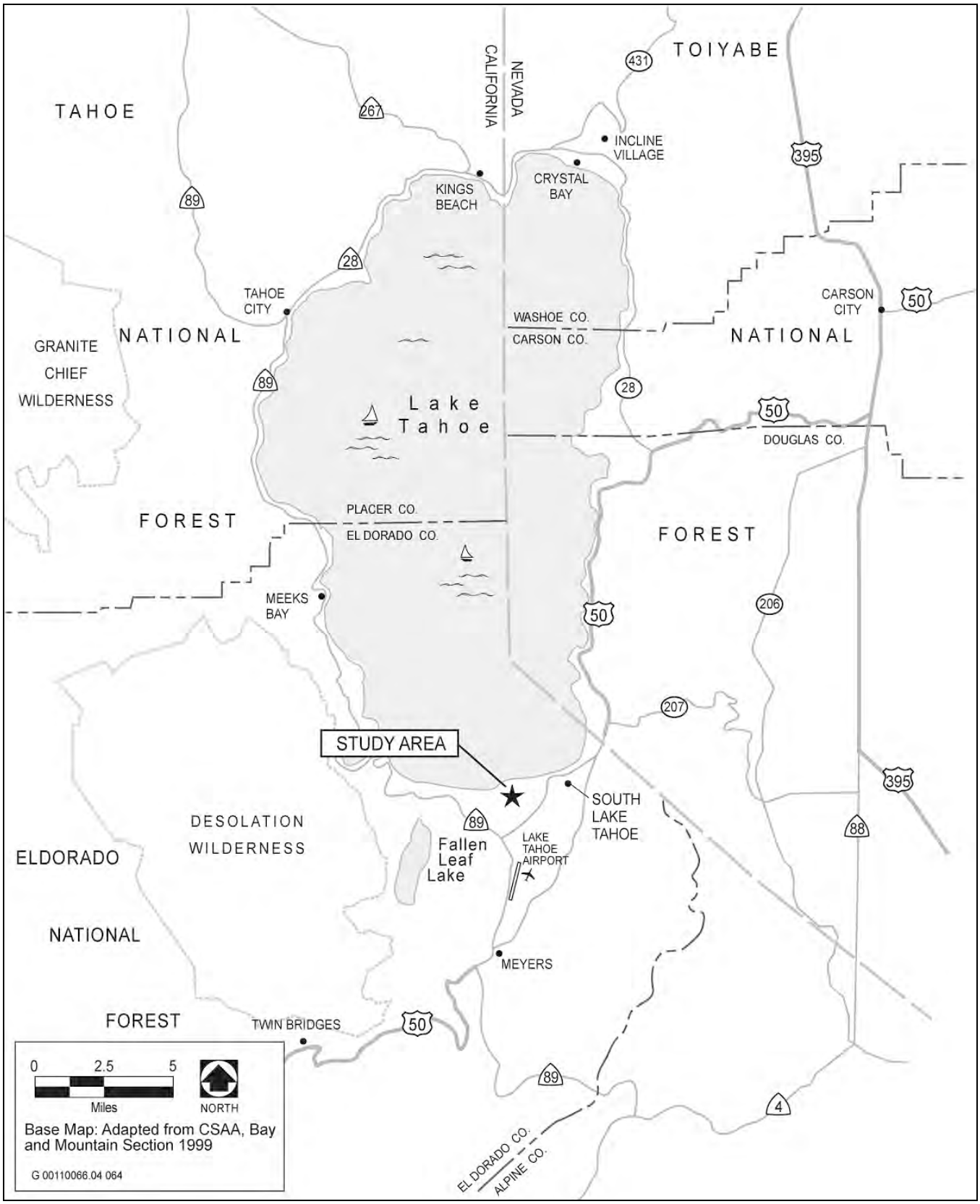
1.3 PROJECT HISTORY AND PLANNING CONTEXT

Restoration planning for the Upper Truckee Marsh and Restoration Project began in the early 1990s with studies conducted by the University of California, Davis. In 1995, after input from State responsible and other interested agencies, the Conservancy commissioned a restoration planning and design study, which identified a tentatively preferred river restoration concept two years later. The study determined that river restoration would require using the entire Upper Truckee Marsh east of the Tahoe Keys Marina and subdivision. At that time the Marsh's center and east side were privately owned, so the tentatively selected concept could not be pursued.

In 1998, the Conservancy began planning and designing an initial phase of wetland restoration, the LWS Project. The LWS Project was located on a 23-acre portion of a study area on the west side of the Upper Truckee River near Lake Tahoe. In this area, the Marsh had been filled during the construction of the adjacent Tahoe Keys development in the 1960's (Exhibit 1-2). After careful investigations, planning, and design, followed by extensive environmental review and community outreach, the Conservancy approved restoration of 12 acres of wetland on the 23-acre site through fill removal as the LWS Project in 2001. The removed fill was used to restore a former quarry at Washoe Meadows State Park in Meyers, California. Construction began in summer 2001 and was completed in summer 2003.

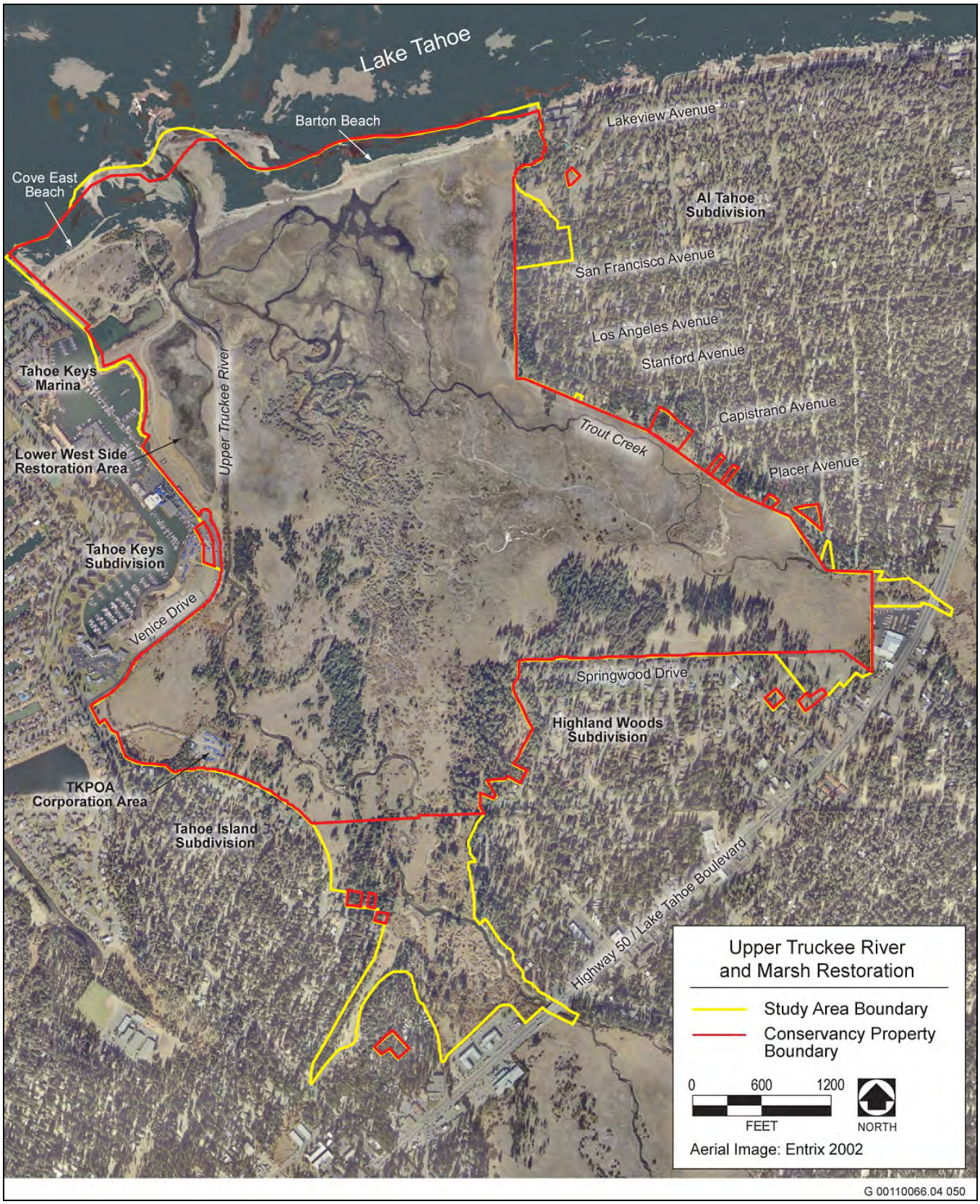
In 2000, the Conservancy purchased 311 acres of land in the center and east side of the Upper Truckee Marsh from a private party, bringing nearly the entire Marsh into public ownership. Currently, the Conservancy owns most of the study area, including the marsh and meadows surrounding the lower reach of Trout Creek. Restoration concepts encompassing the Marsh and the lower reach of the Upper Truckee River have been developed since the acquisition. As part of this process, the Conservancy has planned for public access facilities and recreation use management for the river, marsh, and beach.

Development of the Upper Truckee River and Marsh Restoration Project has proceeded through several planning stages. Initially, the Conservancy defined project objectives and desired outcomes to direct the restoration planning process. The Conservancy evaluated and documented the study area's existing natural processes and functions to begin the formulation and evaluation of alternative plans. This evaluation made it possible to identify potential restoration opportunities and constraints.



Source: Data compiled by AECOM in 2013

Exhibit 1-1 **Regional Location**



Source: Data compiled by AECOM in 2013

Exhibit 1-2 **Study Area Map**

With detailed information about the river and Marsh processes and ecological functions, the Conservancy hosted a design charrette (i.e., interactive workshop) for agencies and other stakeholders to identify the spectrum of potentially feasible restoration ideas to be considered during the development of concept plan alternatives. Four alternative concept plans, all developed to be potentially feasible, were created to represent a reasonable range of restoration approaches and levels of public access and recreation facilities. These concepts were refined through hydrologic modeling, review by regulatory agencies, development of schematic designs, and monitoring. The four concepts generated by this extensive planning process became the four action alternatives evaluated with the No-Project/No-Action Alternative in the Draft EIR/EIS/EIS. After input from state responsible and other interested agencies and public comments provided on the Draft EIR/EIS/EIS and through additional outreach efforts, the Conservancy recommended alternative components to be brought forward into the Preferred Alternative. The development process for the selection of the alternatives to be studied in detail is further described in Section 2.12, "Screening Methodology".

To date, key stages of the Upper Truckee River and Marsh Restoration Project have consisted of:

- evaluating existing natural processes and functions of the Upper Truckee River and Marsh in 2000 and 2001;
- establishing project objectives and desired outcomes in 2002 and updating them in 2005;
- defining restoration opportunities and constraints in 2002 and 2003;
- conducting a restoration design charrette in 2003 to receive input from stakeholders on project priorities, concerns, and constraints, and design ideas;
- conducting updated hydraulic modeling studies to support the development and evaluation of alternatives, and the initial development and comparative evaluation of four conceptual restoration alternatives in 2004 and 2005;
- completing regulatory agency review of alternative concepts for key issues and regulatory requirements in 2005;
- further refining and evaluating the alternatives and preparing a concept plan report in 2006;
- developing detailed schematic design drawings in 2007;
- preparing a comprehensive monitoring plan in 2008 that described a 10-year monitoring period for the project to characterize baseline conditions, track project performance relative to objectives, establish tentative approaches to monitoring for regulatory requirements and construction impacts, and provide information for adaptive management;
- analyzing environmental impacts of the five alternatives and preparing the Draft EIR/EIS/EIS in 2013;
- conducting project outreach to receive input from stakeholders on project priorities, concerns, and constraints, and design ideas;
- developing selection criteria, which was peer reviewed by a Science Review Panel and Technical Advisory Group to assist the Conservancy in recommending the Preferred Alternative presented in this Final EIR/EIS/EIS; and
- conducting updated hydraulic modeling of the Preferred Alternative in response to comments on the Draft EIR/EIS/EIS.

1.4 PROJECT PURPOSE, NEED, AND OBJECTIVES

NEPA regulations require that an EIS contain a statement of the purpose and need that "briefly specif[ies] the underlying purpose and need to which the agency is responding in proposing the alternatives, including the proposed action" (40 CFR 1502.13). The State CEQA Guidelines require that the project description contain a clear statement of the project objectives, including the underlying purpose of the project (14 CCR Section 15124[b]). In the TRPA Compact and Code of Ordinances, there are no requirements specifically addressing the description of a project's purpose and need, or a project's objectives.

1.4.1 PURPOSE AND NEED

Past actions have created a need to restore river and floodplain ecosystems in the Tahoe Basin to improve the clarity of Lake Tahoe and the ecological functions of riparian, wetland, and floodplain ecosystems, including the provision of wildlife habitat. Lake Tahoe is designated as an Outstanding National Resource Water, renowned worldwide for its clarity and purity (Lahontan RWQCB 1995). However, Lake Tahoe's clarity has declined by nearly 20 percent since 1968. Studies over the last three decades suggest that the reduction in water clarity of Lake Tahoe is correlated with the delivery of fine sediments from various watersheds in the basin and increased phytoplankton productivity, which in turn has been attributed to an increase in nutrients, especially nitrogen and phosphorus (Goldman 1974; Reuter and Miller 2000; Coats and Goldman 2001; Rowe et al. 2002; Simon et al. 2003; Lahontan RWQCB and Simon 2006; California Water Boards and NDEP 2007). Stringent water quality goals and watershed regulations have been followed and mitigation and restoration measures implemented, particularly since the 1980s. From the late 1960s through 1998, Lake Tahoe lost its water clarity at a rate of nearly 9 inches per year and has failed to meet transparency and clarity standards (Lahontan RWQCB and NDEP 2007:25). Since 2003, annual-average and winter-average lake clarity levels have been improving gradually on a yearly basis. However, 2013 readings represent a 5-foot decrease over the previous year because of weather variability (UCD 2014).

The Upper Truckee River, which drains the largest watershed in the Tahoe Basin, has been substantially altered by land practices during the past 150 years. Throughout its watershed, the river has experienced ecological degradation typical of what has occurred elsewhere in the Tahoe Basin. It has been modified from its original conditions by human activities, such as logging, livestock grazing, roads, gravel mining, fire suppression, golf courses, an airport, and residential, commercial, and industrial developments. In many locations the channel was straightened and enlarged, native vegetation was replaced by turf, and untreated stormwater was directed into the river and its tributaries. The channel has incised and is experiencing accelerated rates of bed and bank erosion. These human influences have reduced the quality of habitats for plant, wildlife, and fish species in the watershed and have increased sediment and nutrient loads discharging into Lake Tahoe from the river, contributing to the lake's declining clarity.

Past physical changes to the lower reach of the Upper Truckee River have affected the river's stability, the condition of the wetlands within its floodplain, and the quality of the water that the river carries into Lake Tahoe. Evidence of historical grazing, dredging, log running, and other actions indicate that the first alterations occurred in the 1800s. With the construction of the Tahoe Keys development beginning in 1959, the river was channelized and relocated west of its original course to its current location, and fill was placed in much of the wetland up to 6 feet above the natural grade. Over time, the river became deeply incised, effectively eliminating a large portion of the Upper Truckee River's floodplain.

These alterations have likely affected water quality by disconnecting the river from its wetlands and floodplains, where sediment and nutrients can be removed from streamflows and runoff. A 2003 study by the National Sedimentation Lab states "The Upper Truckee River is the greatest contributor of suspended and fine-grained sediment in the Lake Tahoe Basin" (Simon et al 2003). Under certain (anaerobic) conditions found in wetlands, nutrients such as nitrogen and phosphorus can be removed by plant uptake and volatilized by denitrification—converted to gaseous or organic forms, fixed into the soil, or simply stored in the soil solution. In addition,

densely vegetated wetlands and floodplains remove sediment and other suspended particles as they allow sediment-laden water to pass through. Thus, the water quality of Lake Tahoe can be protected and improved by restoring the natural functions of wetlands and floodplains in watersheds that drain to the lake.

The preservation and restoration of riparian areas and wetlands of the Upper Truckee Marsh is important for wildlife. In semiarid regions like the Tahoe Basin, the availability of moisture and cool, shaded microclimates gives wetlands and riparian areas an importance for wildlife that is disproportionate to their areal extent. Unfortunately, most wetlands in the Tahoe Basin have been filled and developed, which has adversely affected native vegetation, wildlife, and water quality.

The Upper Truckee Marsh is the largest remaining wetland area in the Tahoe Basin. It is one of five marshes in the basin designated as an Ecologically Sensitive Area; the Marsh's size, uniqueness, and potential for supporting high levels of biodiversity are the factors underlying this designation (Murphy and Knopp 2000). Although still ecologically important, wetland habitats in the study area have been degraded by the channelization and subsequent incision of the Upper Truckee River.

In the study area, there is also the need to provide public access for recreation purposes. The Conservancy acquired the parcels that make up the Upper Truckee Marsh study area to protect the site's existing ecological values and restore the natural processes and functions of the Upper Truckee River, Trout Creek, and associated wetlands while providing public access for recreation purposes. In addition, certain parcels that make up the study area were acquired in a litigation settlement (*People of the State of California vs. Dillingham Development Company and TRPA*, CIV-S-85-0873-EJG [February 25, 1988]). The settlement requires that the Conservancy provide public access to the beach area west of the existing Upper Truckee River mouth.

Thus, the purpose of this project is to restore natural geomorphic processes and ecological functions in this lowest reach of the Upper Truckee River and the surrounding marsh to improve the study area's ecological values and help reduce the river's discharge of nutrients and sediment that diminish Lake Tahoe's clarity, while continuing to provide public access, access to vistas, and environmental education to the public where appropriate. This purpose includes improving habitat values in the study area. Its implementation is an important component of the integrated objectives of the Conservancy, Reclamation, and TRPA to improve environmental quality in the Lake Tahoe region.

1.4.2 PROJECT OBJECTIVES

As discussed in the Notice of Preparation (NOP) developed by the Conservancy to initiate the CEQA process, the project has 10 basic objectives:

- **Objective 1:** Restore natural and self-sustaining river and floodplain processes and functions.
- **Objective 2:** Protect, enhance, and restore naturally functioning habitats.
- **Objective 3:** Restore and enhance fish and wildlife habitat quality.
- **Objective 4:** Improve water quality through enhancement of natural physical and biological processes.
- **Objective 5:** Protect and, where feasible, expand Tahoe yellow cress populations.
- **Objective 6:** Provide public access, access to vistas, and environmental education at the Lower West Side and Cove East Beach consistent with other objectives.
- **Objective 7:** Avoid increasing flood hazards on adjacent private property.
- **Objective 8:** Design with sensitivity to the site's historical and cultural heritage.

- **Objective 9:** Design the wetland/urban interface to help provide habitat value and water quality benefits.
- **Objective 10:** Implement a public health and safety program, including mosquito monitoring and control.

1.5 CEQA, NEPA, AND TRPA CODE REQUIREMENTS FOR RESPONDING TO COMMENTS

The CEQA Guidelines state that written responses to comments received on the Draft EIR must describe the disposition of significant environmental issues. The responses should contain good-faith, reasoned analyses of the environmental issues raised in the comments. In particular, the responses must address the major environmental issues raised when the lead agency's position is at variance with recommendations and objections raised in the comments.

NEPA requires that the Final EIS include and respond to all substantive comments received on the Draft EIS (40 CFR 1503.4). The lead agency's responses may include the need to:

- modify the proposed action or alternatives;
- develop and evaluate new alternatives;
- supplement, improve, or modify the substantive environmental analyses;
- make factual corrections to the text, tables, or figures contained in the Draft EIS; or
- explain why no further response is necessary.

Additionally, the Final EIS must discuss any responsible opposing view that was not adequately discussed in the Draft EIS and must indicate the lead agency's response to the issues raised.

Chapter 5, Section 5.8A of the TRPA Code of Ordinances states that a lead agency of an EIS must consult with and obtain comments from the public and any federal, state, or local agency that has legal jurisdiction or special expertise with respect to any environmental impact involved. Copies of comments of the federal, state, and local agencies that are authorized to develop and enforce environmental standards must be made available to the public and must accompany the project through the review processes.

This Final EIR/EIS/EIS has been prepared to respond to comments received from agencies, organizations, and members of the public on the 2013 Draft EIR/EIS/EIS and to present corrections, revisions, and other clarifications and amplifications to that document.

1.6 REQUIREMENTS FOR DOCUMENT CERTIFICATION AND FUTURE STEPS IN PROJECT APPROVAL

The 2013 Draft EIR/EIS/EIS and this Final EIR/EIS/EIS will be used to support the Conservancy's and TRPA's decisions on whether to approve the project and Reclamation's decision to issue a ROD.

This Final EIR/EIS/EIS will also be used by CEQA responsible agencies, such as the Lahontan Regional Water Quality Control Board and California Department of Fish and Wildlife, to ensure that they have met the requirements of CEQA before deciding whether to issue discretionary permits and approvals for portions of the project over which they have authority. This document also may be used by other state, regional, and local agencies that have an interest in resources that could be affected by the project or would issue permits and/or other regulatory approvals. This Final EIR/EIS/EIS will be used by the U.S. Army Corps of Engineers to make decisions on whether to issue permits pursuant to Section 404 of the CWA.

This document is available for review by the public during normal business hours at the following locations:

State of California
California Tahoe Conservancy
1061 Third Street
South Lake Tahoe, CA 96150

TRPA front desk
128 Market Street
Stateline, NV 89449

Reclamation
Mid-Pacific Regional Library
2800 Cottage Way
Sacramento, CA 95825

South Lake Tahoe Library front desk
1000 Rufus Allen Boulevard
South Lake Tahoe, CA 96150

This document is posted electronically at:

http://tahoe.ca.gov/upper-truckee-marsh-69.aspx
www.trpa.org
http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=2937

CDs are also available upon request from the Conservancy. Please submit requests via electronic mail to Scott.Carroll@tahoe.ca.gov.

Please refer to notices of the release of this Final EIR/EIS/EIS for the specific dates of public meetings. Notices will be posted electronically at:

http://tahoe.ca.gov/upper-truckee-marsh-69.aspx
www.trpa.org
http://www.usbr.gov/mp/nepa/nepa_projdetails.cfm?Project_ID=2937

The Conservancy Board will decide whether to certify the EIR/EIS/EIS under CEQA and then whether to approve the Preferred Alternative as recommended by staff, or a variation of it within the range of alternatives addressed in the environmental document, as the project action. The Conservancy Board is tentatively scheduled for December 18, 2015 to vote on certification of the EIR and project approval.

Reclamation will complete a ROD on the alternatives at least 30 days after the U.S. Environmental Protection Agency publishes its weekly list of EISs, and following certification by the Conservancy. The ROD will state the federal action to be implemented and will discuss all factors leading to the decision.

The TRPA Governing Board is tentatively scheduled for February 24, 2015 to consider certification of the EIR/EIS/EIS and whether to approve the Preferred Alternative, or a variation of it within the range of alternatives addressed in the environmental document, as the project action.

The dates, times, and locations of all public meetings will be posted at the websites listed above.

Permits and approvals issued by responsible agencies will be considered after further design development of the selected alternative. They will be scheduled according to the procedures of the approving agencies.

1.7 ORGANIZATION AND FORMAT OF THE FINAL EIR/EIS/EIS

This Final EIR/EIS/EIS is organized into the following chapters so that the reader can easily obtain information about the project and its specific environmental issues:

- **Chapter 1, "Introduction and Statement of Purpose and Need,"** explains the CEQA, NEPA, and TRPA processes; lists the lead, trustee, responsible, and cooperating agencies that may have discretionary authority or other jurisdiction related to the project; specifies the underlying project purpose, need, and objectives to which the lead agencies are responding in considering the alternatives; outlines the organization of the document; provides information on public distribution and agency approval processes; and identifies standard terminology and abbreviations used in the Final EIR/EIS/EIS.

- **Chapter 2, "Project Description,"** presents a summary of the five alternatives considered in the Final EIR/EIS/EIS, the selection process for recommending the Preferred Alternative, and a detailed description of the Preferred Alternative.

- **Chapter 3, "Master Responses,"** presents responses to significant environmental issues raised in multiple comments on the Draft EIR/EIS/EIS. These have been termed "master responses." They are organized by topic to provide a more comprehensive response than may be possible in responding to individual comments so that reviewers can readily locate all relevant information pertaining to an issue of concern.

- **Chapter 4, "Comments and Individual Responses,"** contains a list of all agencies and persons who submitted comments on the 2013 Draft EIR/EIS/EIS during the respective public review periods, copies of the comment letters submitted, cross references to relevant master responses, and individual responses to the comments that are not addressed in master responses or need additional detail.

- **Chapter 5, "Revisions to the Draft EIR/EIS/EIS**," presents corrections and other revisions to the text of the 2013 Draft EIR/EIS/EIS based on issues raised by comments or ongoing planning refinements. Changes in the text are signified by ~~strikeouts~~ where text is removed and by <u>underline</u> where text is added.

- **Chapter 6, "List of Preparers**," lists the individuals who assisted in the preparation of this Final EIR/EIS/EIS.

- **Chapter 7, "References,**" identifies the documents used to support the comment responses.

- **Chapter 8, "Final EIR/EIS/EIS Distribution List,"** provides a list of the various elected officials, government departments and agencies, organizations, and individuals who have been sent the Final EIR/EIS/EIS or notification of its availability.

The 2013 Draft EIR/EIS/EIS consisted of three volumes. Volume I contained the EIR/EIS/EIS introduction, statement of purpose and need, alternatives descriptions, and Sections 3.1 through 3.9 of the affected environment and environmental consequences. Volume II contained Sections 3.10 through 3.18 of the affected environment and environmental consequences, as well as the other required sections; the compliance, consultation, and coordination section; the list of preparers and references cited; and index. Finally, Volume III contained the technical appendices. This document is Volume IV of the EIR/EIS/EIS. Together, the four volumes constitute the Final EIR/EIS/EIS.

1.8 ACRONYMS AND OTHER ABBREVIATIONS

Table 1-1 defines the abbreviations used in this Final EIR/EIS/EIS.

Table 1-1
Acronyms and Other Abbreviations

1D	One-dimensional
2D	two-dimensional
ADA	Americans with Disabilities Act
Basin Plan	Water Quality Control Plan for the Lahontan Region
BMP	best management practice
Caltrans	California Department of Transportation
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQ	Council on Environmental Quality
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
cfs	cubic feet per second
Concept Plan Report	Upper Truckee River and Wetland Restoration Project Final Concept Plan Report
Conservancy	California Tahoe Conservancy
CRHR	California Register of Historical Resources
CSLC	California State Lands Commission
CSLT	City of South Lake Tahoe
CWA	Clean Water Act
DEM	digital elevation model
DPR	Department of Parks and Recreation
Draft EIR/EIS/EIS	draft environmental impact report/environmental impact statement/environmental impact statement
EDCAQMD	El Dorado County Air Quality Management District
EDCVCD	El Dorado County Vector Control District
EIP	Environmental Improvement Program
EIR	environmental impact report
EIR/EIS/EIS	environmental impact report/environmental impact statement/environmental impact statement
EIS	environmental impact statement
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
Final EIR/EIS/EIS	Final environmental impact report/environmental impact statement/environmental impact statement
GIS	geographic information system
HASP	health and safety plan
LiDAR	Light Detection and Ranging
LO	Lack of Objections
LSAA	Lake and Streambed Alteration Agreement
LWS	Lower West Side
LWS Project	Lower West Side Wetland Restoration Project

Table 1-1 Acronyms and Other Abbreviations	
MLD	Most Likely Descendant
NAHC	Native American Heritage Commission
NAVD	North American Vertical Datum
NEPA	National Environmental Policy Act of 1969
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NOP	Notice of Preparation
NO_X	oxides of nitrogen
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historical Places
PL	Public Law
PM_{10}	particulate matter of 2.5 to 10 micrometers (e.g. coarse dust particles)
POP	Public Outreach Plan
PRC	California Public Resources Code
Reclamation	U.S. Department of the Interior Bureau of Reclamation
ROD	record of decision
ROG	reactive organic gas
RS	River Station
RWQCB	Regional Water Quality Control Board
SEZ	Stream Environment Zone
SMAQMD	Sacramento Metropolitan Air Quality Management District
SPP	Spill Prevention Plan
SRA	State Recreation Area
SWPPPs	Storm Water Pollution Prevention Plans
TKPOA	Tahoe Keys Property Owners Association
TRPA	Tahoe Regional Planning Agency
TYC	Tahoe yellow cress
U.S. 50	U.S. Highway 50
USACE	U.S. Army Corps of Engineers
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WSEL	water surface elevation

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2 PROJECT DESCRIPTION

This chapter describes the approach to selection of a Preferred Alternative, including a summary of the alternatives development process. A refined project description for the Preferred Alternative is also presented. The Preferred Alternative was selected based on screening each alternative's ratings related to meeting the goals and objectives of the project, purpose and need, project feasibility, and comments from the public and agencies on the draft environmental impact report/environmental impact statement/environmental impact statement (Draft EIR/EIS/EIS).

2.1 SELECTING A PREFERRED ALTERNATIVE

2.1.1 CEQA, NEPA, AND TRPA REQUIREMENTS

Alternatives evaluated in the Draft EIR/EIS/EIS were based on a combination of requirements from California Environmental Quality Act (CEQA), National Environmental Policy Act (NEPA), and Tahoe Regional Planning Agency (TRPA) provisions. In accordance with Section 15126.6 of the CEQA Guidelines, the Draft EIR/EIS/EIS included an analysis of alternatives that could feasibly attain most of the basic project objectives, a review of a no-project alternative, and a discussion of alternatives considered but determined to be infeasible. Section 15126.6 states that the alternatives analysis must:

- describe a range of reasonable alternatives for the project that could feasibly attain most of the basic objectives of the project but would substantially lessen or avoid any of the significant effects of the project;
- focus on alternatives capable of avoiding or substantially lessening any of the significant environmental impacts of the project, even if they may be more costly or could otherwise impede some of the project's objectives; and
- evaluate the comparative merits of the alternatives.

NEPA requires comparable treatment of the alternatives so that their comparative merits may be evaluated (40 Code of Federal Regulations [CFR] 1502.14[b]).

The NEPA regulations (40 CFR 15012.14) require that an environmental analysis include:

- an objective evaluation of reasonable alternatives;
- identification of the alternatives considered but eliminated from detailed study, along with a brief discussion of the reasons why these alternatives were eliminated;
- information that would allow reviewers to evaluate the comparative merits of the proposed action and alternatives;
- consideration of the no-action alternative;
- identification of the agency's preferred alternative, if any; and
- identification of appropriate mitigation measures not already included in the proposed action or alternatives.

Unlike CEQA, which permits the evaluation of alternatives to occur in less detail than is provided for a proposed project, NEPA requires the analysis of all alternatives considered in the analysis to occur at a comparable level of

detail. NEPA regulations (40 CFR 1502.14) require agencies to rigorously explore and objectively evaluate all reasonable alternatives and to devote substantial treatment to each alternative considered.

Section 3.7 of the TRPA Code of Ordinances describes EIS requirements, and specifically the need to study, develop, and describe appropriate alternatives to address unresolved conflicts in uses of available resources. Similar to NEPA, TRPA typically evaluates alternatives analyzed at a comparable level of detail; however, this is not a requirement.

The Draft EIR/EIS/EIS provided comparable detail in the analysis of a reasonable range of alternatives, including a no-action alternative. These alternatives were identified after other alternatives were considered but eliminated from detailed study in the manner directed by NEPA andTRPA. After input from responsible and interested agencies and public comments provided on the Draft EIR/EIS/EIS the Conservancy implemented a two-step process for recommending alternative components to be brought forward into the Preferred Alternative. Step one involved developing criteria and a process for selecting a Preferred Alternative, while step two implemented the process to establish the Preferred Alternative.

ALTERNATIVES DEVELOPMENT PROCESS FOR THE DRAFT EIR/EIS/EIS

The primary purpose of the project is to restore natural geomorphic processes and ecological functions to improve the area's ecological values and help reduce the river's discharge of nutrients and sediment that diminish Lake Tahoe's clarity, while still providing safe access to vistas and environmental education to the public.

The project purpose and need and project goals and objectives, as described in Chapter 1, "Introduction and Statement of Purpose and Need," were used to develop the alternatives evaluated in the Draft EIR/EIS/EIS. None of the alternatives evaluated in the Draft EIR/EIS/EIS were designated as preferred. Rather, guiding principles were developed requiring that each alternative be designed as a "full-spectrum" alternative that addressed, to varying degrees, all project objectives and design directives; be modular in nature, such that recreation access and infrastructure components could be interchangeable with habitat restoration and protection measures proposed; and embody a diverse range of feasible and implementable concepts, consistent with constraints identified and mapped early in the planning process (Conservancy and DGS 2003).

Each of the alternatives also needed to be developed within the context of existing land use regulations and stated California Tahoe Conservancy (Conservancy) purposes for acquiring properties. Long-term maintenance costs were also considered in the development process.

Four preliminary conceptual alternatives and a "No Project/No Action" alternative were developed and refined by the Conservancy, the U.S. Bureau of Reclamation, TRPA, and a team of technical consultants after review of scoping comments received on the Notice of Preparation and Notice of Intent, as well as comments provided at public information meetings conducted to obtain additional public input. Alternatives passing the screening review were carried forward into the Draft EIR/EIS/EIS for detailed evaluation of potential environmental impacts. The overall plan of each alternative evaluated in the Draft EIR/EIS/EIS was conceptual for analysis purposes, and final design of the Preferred Alternative may reflect modifications to project features made as a result of the normal design refinement process or to satisfy permitting agencies or other parties involved in the final decision-making process. These modifications may not substantially increase the intensity or severity of an impact or create a new significant impact without further environmental review.

The full range of reasonable alternatives presented for public review during circulation of the Draft EIR/EIS/EIS were as follows:

- **Alternative 1—**Channel Aggradation and Narrowing (Maximum Recreation Infrastructure)
- **Alternative 2—**New Channel–West Meadow (Minimum Recreation Infrastructure)
- **Alternative 3—**Middle Marsh Corridor (Moderate Recreation Infrastructure)
- **Alternative 4—**Inset Floodplain (Moderate Recreation Infrastructure)
- **Alternative 5—**No Project/No Action

During refinement, several facilities were removed from the alternatives, in particular a full-service visitor center and restrooms. This preliminary assessment is presented in Section 2.2.2, "Alternatives Considered but Eliminated from Detailed Evaluation," of the Draft EIR/EIS/EIS. Alternative locations were also considered; however, they would not fulfill the purpose and primary objectives of the project. Off-site actions upstream along the Upper Truckee River or elsewhere in the watershed could reduce the river's discharge of nutrients and sediment, but would not substantially improve ecological values of the study area.

The Draft EIR/EIS/EIS presented overview maps and describes in detail the river restoration, terrestrial habitat restoration and enhancement, and public access and recreation features of each alternative. Additional information regarding the alternatives is provided in the Draft EIR/EIS/EIS appendices: Appendix C, "Schematic Plans," provides additional detail about the elements of each project alternative; Appendix D, "Construction Workers and Equipment for Action Alternatives," lists the construction workers and equipment associated with specific construction activities; and Appendix E, "Alternative Cost Estimates," provides cost estimates of the elements and the total cost of Alternatives 1–4 (which were prepared in 2006 for the *Upper Truckee River and Wetland Restoration Project Final Concept Plan Report* [Concept Plan Report]).

Alternative 1. Channel Aggradation and Narrowing (Maximum Recreation Infrastructure)

To restore the river channel and its connection to the floodplain, Alternative 1 would increase channel length and decrease channel capacity. A key element of this restoration would be the use of engineering elements (primarily structures in the channel) to cause sediment deposition that would raise the channel bed and decrease channel capacity and would slightly reduce the capacity of the channel mouth at Lake Tahoe.

Alternative 1 also would restore a naturally functioning lagoon in the vicinity of the existing Sailing Lagoon, lagoon and wet-meadow conditions behind the east end of Barton Beach, floodplain functions at the Tahoe Keys Property Owners Association (TKPOA) Corporation Yard (contingent on TKPOA consent), and sand ridges ("dunes") at Cove East Beach. Alternative 1 would enhance forest habitat and an area of "core habitat" in the center of the study area that contains sensitive marsh by removing or relocating volunteer (i.e., user-created) trails. In addition, at the existing location where boaters enter and exit the Upper Truckee River, adjacent to East Venice Drive, the river bank would be stabilized with best management practices (BMPs) to avoid erosion and other resource damage.

Alternative 1 would provide a potential "maximum" level of recreation infrastructure that would include parking on the west side of the study area adjacent to the Tahoe Keys Marina, a connected system of bicycle paths, boardwalks, observation areas, two kiosks, and signage. Bicycle paths would be Class I/Shared-Use Paths (as described in TRPA and TMPO 2010). Bridges over Trout Creek and the Upper Truckee River (and a boardwalk) would connect the proposed bicycle paths. Bicycle paths would connect to existing regional trails near the study area.

Alternative 2. New Channel–West Meadow (Minimum Recreation Infrastructure)

To restore the river channel and its connection to the floodplain, Alternative 2 would directly raise the streambed elevation, increase the channel length, and decrease channel capacity. A key element of this restoration would be the excavation of a new river channel that would have less capacity than the existing channel. The existing river mouth would be replaced with a new smaller river mouth, similar in size to the historical river mouth before dredging.

The river channel and floodplain restoration elements of Alternative 2 would require modification and/or relocation of two existing stormwater discharge locations. Alternative 2 also includes all of the other restoration and enhancement elements of Alternative 1. In addition, at the existing location where boaters enter and exit the Upper Truckee River, adjacent to East Venice Drive, the river bank would be stabilized with BMPs to avoid erosion and other resource damage. To protect natural resources, a boardwalk connecting the river to East Venice Drive would be constructed.

Alternative 2 would provide a "minimum" level of recreation infrastructure that would include a modified Americans with Disabilities Act (ADA)–accessible pedestrian trail to Cove East Beach, five viewpoints, a fishing platform, and signage. Except for four viewpoints along the eastern perimeter of the study area (adjacent to the Al Tahoe neighborhood), this infrastructure is located from East Venice Drive to Cove East Beach.

Alternative 3: Middle Marsh Corridor (Moderate Recreation Infrastructure)

To restore the river channel and its connection to the floodplain, Alternative 3 would promote the development through natural processes of a new main channel and/or distributary channels in the central portion of the study area. A "pilot" channel, similar to the channel segments constructed under Alternatives 1 and 2, would be constructed from the existing river channel to historical channels in the center of the study area, but a channel would not be constructed in the central or northern portions of the study area. Rather, natural processes would be allowed to dictate the flow path(s), bed and bank elevations, and capacities of the channel(s) through the Marsh. The existing river mouth would be retained, but its capacity would be reduced and minimum elevation controlled. In addition, by boring two culverts under U.S. Highway 50 (U.S. 50), an area of isolated floodplain would be reactivated. Alternative 3 has no stabilizations or infrastructure proposed in the vicinity of East Venice Drive. Bank stabilization is not proposed at East Venice Drive because the concept of Alternative 3 does not dictate the location of the channel(s), and it is therefore unclear where the primary channel will be located and whether and to what extent it will require stabilization. Alternative 3 would allow natural processes to determine flow paths through the Marsh. The river channel and floodplain restoration elements of Alternative 3 would require modification and/or relocation of two existing stormwater discharge locations. Also, like Alternatives 1 and 2, Alternative 3 would restore a naturally functioning lagoon in the vicinity of the Sailing Lagoon and floodplain functions at the TKPOA Corporation Yard, and would enhance areas of "core habitat" and forest. However, Alternative 3 would not restore lagoon and wet-meadow conditions behind the east end of Barton Beach (by removal of existing fill) or dunes at Cove East Beach.

Alternative 3 would provide a "moderate" level of recreation infrastructure that would include three pedestrian trails, a bicycle path, a kiosk, one observation area, six viewpoints, a fishing platform, and signage at multiple locations. As under Alternative 2, the modified pedestrian trail to Cove East Beach would be ADA-accessible, as would the fishing platform at the restored lagoon. Alternative 3 also would include a bicycle path and a pedestrian trail near the Highland Woods neighborhood, connected to Mackinaw Road, as well as a pedestrian trail adjacent to the Al Tahoe neighborhood from Capistrano Avenue to East Barton Beach, two segments of which would be boardwalks.

Alternative 4. Inset Floodplain (Moderate Recreation Infrastructure)

To restore the river channel and its connection to the floodplain, Alternative 4 would lower bank heights. This alternative would involve excavation of an inset floodplain along much of the river channel and localized cutting and filling to create meanders in the existing straightened reach. The existing river mouth would be retained and its capacity would not be reduced. Although Alternative 4 would include the enhancement of core and forest habitats, it would not include the restoration of floodplain functions at the TKPOA Corporation Yard, a naturally functioning lagoon in the vicinity of the existing Sailing Lagoon, or dunes at Cove East Beach. In addition, at the existing location where boaters enter and exit the Upper Truckee River, adjacent to East Venice Drive, the river bank would be stabilized with BMPs to avoid erosion and other resource damage.

Like Alternative 3, Alternative 4 would provide a "moderate" level of recreation infrastructure that would include two pedestrian trails, a bicycle path, a kiosk, two observation areas, five viewpoints, and signage at multiple locations. The bicycle path would be adjacent to the Highland Woods neighborhood and connected to Mackinaw Road. The pedestrian trails would be near the Tahoe Keys from East Venice Drive to Cove East Beach, in part replacing the existing pedestrian trail, and adjacent to the Al Tahoe neighborhood from Capistrano Avenue to San Francisco Avenue, one segment of which would be a boardwalk.

Alternative 5. No Project/No Action

Alternative 5 would not provide any actions to restore the river channel and its connection to the floodplain in the study area. This alternative would allow but not facilitate the long-term, passive recovery of the river system via natural processes. The existing river mouth location, size, and bed elevation would continue to adjust to lake levels, streamflows, and sediment loads. The Upper Truckee River–lagoon connection would not be restored, leaving the direct open-water connection between the Tahoe Keys Marina channel, the Sailing Lagoon, and Lake Tahoe unchanged. The previously leveled area between Cove East Beach and the Sailing Lagoon would not be modified. Alternative 5 would not protect an extensive area of core habitat. However, the Conservancy has been implementing localized decommissioning of some trails, and similar actions would likely continue to be implemented.

Alternative 5 would not include any direct steps to construct recreation infrastructure elements that would alter public access. However, this alternative would likely involve maintaining existing infrastructure and might result in the construction of some additional, smaller elements (e.g., signage).

PREFERRED ALTERNATIVE DEVELOPMENT PROCESS

The Conservancy implemented a two-step process for recommending alternative elements to be brought forward into the Preferred Alternative. Step one involved developing criteria and a process for selecting a Preferred Alternative, while step two implemented the process to establish the Preferred Alternative. Each step was peer reviewed by a Science Review Panel and Technical Advisory Group. The Science Review Panel's members possess expertise in a range of disciplines germane to the project. The Technical Advisory Group comprises representatives of partner agencies, funding entities, and regulators that have specific Tahoe Basin experience and responsibilities.

The following three criteria were used to select the Preferred Alternative:

- **C1: Benefits**—this criterion addresses the overall performance of the restoration and recreational elements relative to the project objectives and purpose and need. The evaluation relies on the Concept Plan Report (Conservancy and DGS 2006) and the Recreation Opportunity Spectrum. The Concept Plan Report includes an analysis of the four action alternatives and the no-action alternative based on their ability to fulfill the project objectives. The Conservancy based its restoration element rating on the findings of the Concept Plan Report, and on the ability of the restoration element to replicate geomorphically appropriate conditions and functions. The Conservancy uses the Recreation Opportunity Spectrum to characterize recreation opportunities in terms of a location's setting, activities, and resulting experience. Distinguishing these opportunities helps recreation managers to create and maintain appropriate recreation experiences.

- **C2: Responsiveness to Public Comments—**this criterion analyzes public preferences and concerns received during the Draft EIR/EIS/EIS public review period regarding specific alternative elements.

- **C3: Overall Feasibility**—this criterion consists of four subcriteria: potential impacts, permits/agreements/acquisitions, funding, and sustainability. The Draft EIR/EIS/EIS analyzed the impacts of the alternatives and, along with the Concept Plan Report, provided the foundation for several subcriteria under C3.

  The permits/agreements/acquisitions subcriterion considers the two primary acquisitions associated with the study area. The Conservancy acquired the western portion from the Tahoe Keys Subdivision developer via a litigation settlement agreement in 1988, which stipulates that public access be maintained to the beach along Lake Tahoe, consistent with natural resource values. The Conservancy Board approved the Barton Meadow acquisition (the eastern portion of the study area) in 2000 for the protection of habitat and water quality, and to restore the property's natural resource values.

The Conservancy rated the alternatives under the funding subcriterion based on their cost/benefit and phasing potential. Because the alternatives do not differ from a phasing perspective, the cost/benefit was the driving consideration for the rating under this subcriterion.

The Conservancy used a qualitative system to weigh the pros and cons of the alternatives to develop a Preferred Alternative. Numeric ratings were not applied because consistent data are not available to quantify benefits and feasibility. The five alternatives were rated using the rating scale shown in Table 2-1.

Table 2-1
Scale Used to Rate the Alternatives Evaluated in the Draft EIR/EIS/EIS

Rating	Color Code	Description
Preferred	**P**	Several or very essential pros; few or no cons.
Acceptable	**A**	Some substantial pros; may have some or minor cons.
Neutral	**N**	No obvious cons or pros, or they balance each other out.
Undesirable	**U**	Few to several cons; may have some substantial pros.
Objectionable	**O**	Very serious or unacceptable cons; few or very limited pros.

Source: Conservancy 2014

Consistent with the analysis approach presented in the Draft EIR/EIS/EIS, the restoration and recreation elements were evaluated independently. Furthermore, the recreation elements were separated geographically because of the unique physical characteristics and legal constraints that differentiate the east and west sides of the study area (Exhibit 2-1). The west side of the study area is defined as the area west of the centerline of the Upper Truckee River, located between the end of East Venice Drive and Lake Tahoe and adjacent to the Lower West Side Project. The east side of the study area includes the area east of the centerline of the Upper Truckee River near Lake Tahoe, areas adjacent to the Al Tahoe and Highland Woods subdivisions, and areas adjacent to the TKPOA Corporation Yard. The results of the evaluation of each element ranked are summarized below in Table 2-2.

PREFERRED ALTERNATIVE: MIDDLE MARSH CORRIDOR (EXISTING EASTSIDE RECREATION INFRASTRUCTURE AND MODERATE WESTSIDE RECREATION)

The Preferred Alternative includes the most beneficial and cost-effective elements of the five alternatives evaluated in the Draft EIR/EIS/EIS and Concept Plan Report. This alternative is also the most feasible, the most highly responsive to public comments, and the most resilient to the potential impacts of climate change. It includes the following components:

- *Alternative 3 for the Restoration Element:* Alternative 3 would involve construction of a small pilot channel that would reconnect the Upper Truckee River to the middle of the Marsh to attain ecosystem and water quality improvements. This concept proposes the most geomorphically appropriate channel configuration allowing the pilot channel to strategically connect the current river alignment to historic channels and lagoons. The river would form its own pattern and spread over the expanse of the Marsh, resulting in substantial benefits to habitats, wildlife, and water quality. The abandoned sections of existing river channel would be largely filled to create restored meadow and expanded wetlands.

- *Alternative 5 for the Recreation Element, East Side of the Upper Truckee Marsh:* Alternative 5 would maintain the current dispersed recreation experience on the east side of the study area. No new recreation infrastructure would be installed and public access would be afforded through the current informal user-created trail system. The Conservancy would continue to manage and reduce the impacts of recreational use and new trails while maintaining and expanding on-site signage.

- *Alternative 3 for the Recreation Element,* West Side of the Upper Truckee Marsh: Alternative 3 would upgrade the recreation infrastructure on the west side of the study area through construction of accessible

trails to Lake Tahoe and formalized viewpoints that provide interpretive and site-information signage. The developed recreation experience would be maintained consistent with natural resource values.

- *Previously proposed only under Alternatives 1 and 2*, the Preferred Alternative would also include restoration of wet-meadow conditions behind the east end of Barton Beach, and the restoration of sand ridges ("dunes") at Cove East Beach that were graded and leveled as part of the Tahoe Keys development. The sand ridge restoration would occur in conjunction with removal of fill in the southern portion of Cove East Beach and the modification and reconnection of the Sailing Lagoon to the Upper Truckee River.

A more detailed description of both the restoration and recreation elements of the Preferred Alternative is presented below. A summary of the restoration and recreation characteristics of each alternative is presented in Table 2-3. For purposes of comparison, Table 2-3 also presents the Preferred Alternative described below.

2.1.2 RIVER RESTORATION ELEMENTS OF THE PREFERRED ALTERNATIVE

The primary objective of the project is to restore natural processes and functions by decreasing channel capacity and reestablishing the channel's connection to an active floodplain with more frequent overbanking of river flow into the adjacent Marsh and wet meadow. The active floodplain is defined as the area inundated by streamflow events that occur at least once every couple of years (i.e., 2- to 5-year storm events). For the Upper Truckee River in the study area, 2- to 5-year storm events correspond to a river flow of 760–1,660 cubic feet per second (cfs).

The Upper Truckee River downstream of the U.S. 50 bridge is incised and overly wide as a result of direct and indirect human disturbances. Consequently, the channel can convey, on average, at least 800–1,000 cfs without streamflows overbanking into the meadow. This channel capacity is more than double the geomorphic channel-forming flow, approximately 450 cfs, and most of the former (i.e., predisturbance) floodplain has become an infrequently inundated terrace. In some portions of the study area, existing channel capacity is more than 1,200 cfs, and it exceeds 2,000 cfs in the reach located the farthest upstream. Reestablishing an active floodplain and reducing channel capacity would increase the frequency and duration of overbank flows, and thus, the retention of suspended sediment on the meadow. These restored river processes would in turn enhance plant communities, aquatic and terrestrial habitat, groundwater recharge, water quality, and the ecological and aesthetic values of the study area. The geomorphic function of the river channel and its connection to the surrounding topography would be improved by both active and passive restoration means. Passive restoration downstream of a constructed pilot channel in the main marsh would replace the existing single-thread and straightened channel with a network of small channels of varied capacity. No construction would occur within the main-meadow channel sections. Therefore, the flow paths, bed and bank elevations, and channel capacities would be dictated by natural processes.

The Preferred Alternative would include the following restoration features:

- stabilization of the banks downstream of the U.S. 50 bridge to reduce sediment inputs;
- active channel restoration to raise the streambed elevation, increase the channel length, and decrease channel capacity by constructing a geomorphically sized pilot channel (about 38 feet wide and 4 feet deep) extending about 1,100 feet downstream of River Station (RS) 32+00 to reconnect with remnant channels in the Marsh;
- modification of the previously dredged river mouth to limit low-lake-level effects on surface flows;
- lowering of portions of the terrace to reestablish an active floodplain connection with the river;
- removal of existing (and reserved) fill from the floodplain to increase the area providing lagoon and meadow functions;

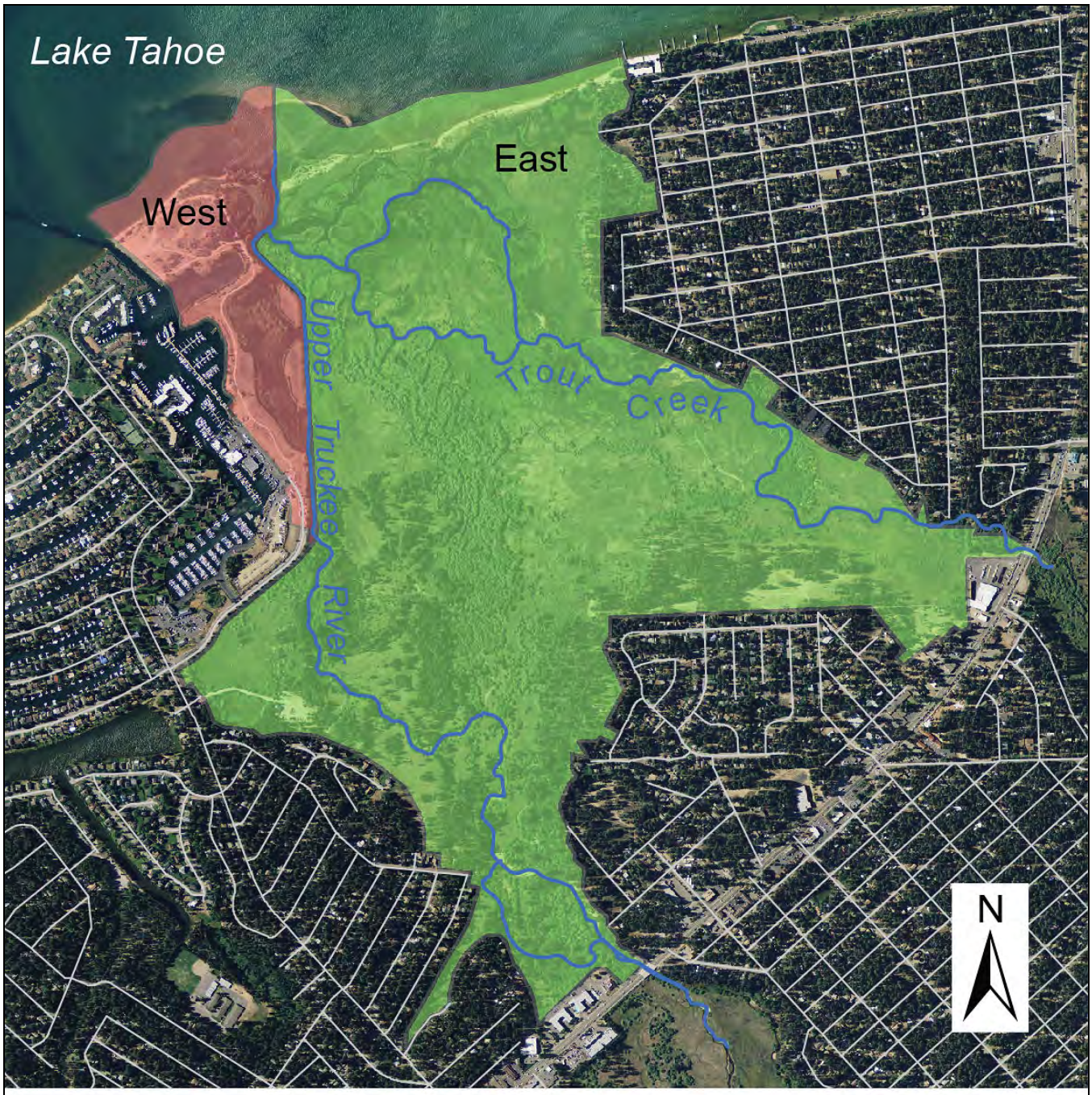

Exhibit 2-1 **Eastern and Western Recreation Access Areas**

Table 2-2
Summary of Benefits, Public Comment, and Feasibility Ratings for Each Alternative

Criteria	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5 (No Project/No Action)	Preferred Alternative
Restoration Element Rest						
C1—Benefits						
C2—Public Comment						
C3—Feasibility						
Eastside Access Element						
Benefits						
Public Comment						
Feasibility						
Westside Access Element						
Benefits						
Public Comment						
Feasibility						

Note: Color coded according to ratings shown in Table 2-1 above.
Source: Conservancy 2014, adapted by AECOM in 2015

Table 2-3
Elements Included in the Action Alternatives[1]

Element	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Preferred Alternative
Restoration and Enhancement Elements					
Stabilization of Eroding Banks Downstream of U.S. 50 Bridge	✓	✓	✓	✓	✓
River and Floodplain Restoration[2]	✓	✓	✓	✓	✓
River Mouth Size Reduction	✓	✓	✓		✓
Removal of Existing Fill from Floodplain	✓	✓	✓		✓
Reactivation of Floodplain Terrace			✓		✓
Modification of Existing Stormwater Discharge Locations		✓	✓		✓
Reestablishment of River Overflow Lagoon	✓	✓	✓		✓
Removal of Existing Fill from Behind the East End of Barton Beach	✓	✓			✓
Beach-Dune Restoration	✓	✓			✓
Forest Enhancement	✓	✓	✓	✓	✓
Core Habitat Enhancement	✓	✓	✓	✓	✓
East Venice Drive Bank Stabilization	✓	✓		✓	

Element	Alt. 1	Alt. 2	Alt. 3	Alt. 4	Preferred Alternative
Recreation and Public Access Elements					
Bicycle Path(s)	✓		✓	✓	
Pedestrian Trail(s)		✓	✓	✓	✓
Observation Areas	✓		✓	✓	✓
Bridges	✓				
Kiosk(s)	✓		✓	✓	✓
Parking Lot	✓				
Fishing Platform	✓	✓	✓		✓
Boardwalk(s)	✓		✓	✓	
Viewpoints and Signage	✓	✓	✓	✓	✓

Notes:

U.S. 50 = U.S. Highway 50

[1] No-Project/No-Action Alternative does not include any of these elements.

[2] River and floodplain restoration includes river channel restoration, secondary channel reactivation, floodplain lowering, and fill of abandoned channel segments.

Source: Data compiled by Cardno in 2015

- fill and partial fill of abandoned channel segments to increase the area providing floodplain overflow and meadow functions;
- modification of existing stormwater discharge locations and features to allow for river and floodplain restoration elements; and
- reestablishment of a river-connected lagoon.
- restoration of sand ridges ("dunes") at Cove East Beach that were graded and leveled as part of the Tahoe Keys development.
- forest and core habitat enhancement to improve onsite resource conditions

STABILIZATION OF ERODING BANKS DOWNSTREAM OF THE U.S. 50 BRIDGE

Flow constriction and redirection under the U.S. 50 bridge create large hydraulic stresses on the steep and high streambanks downstream. This has accelerated the rates of bank erosion and fine-sediment delivery to the Upper Truckee River and ultimately to Lake Tahoe. With the willing cooperation of relevant private landowners, the Preferred Alternative would involve constructing permanent bank protection on the east bank downstream of the bridge, using geotechnical methods, bioengineering methods, or both.

Under the Preferred Alternative, the streambanks immediately downstream of U.S. 50 (from RS 0+00 to RS 13+00) would be modified. The modifications would include keyed-in boulders at the base (toe) of the bank and bioengineered revegetation above the boulders. Protection would be installed primarily on the high, actively eroding east bank, but it would also include active existing and proposed cut bank sites on the west bank. Additional protection against bank erosion would be achieved by reactivating the secondary channel from RS 5+25 to RS 11+00 and lowering the floodplain on the west bank from RS 0+00 to RS 11+00; both measures would decrease hydraulic stress on the main channel banks during high streamflows.

RIVER CHANNEL RESTORATION

The straightened Upper Truckee River channel not only has excess capacity resulting from historic dredging, but also has a uniform channel-bed morphology that is not diverse enough to support high-quality aquatic habitat. Under the Preferred Alternative, the existing straightened reach would be replaced by a constructed pilot channel to redirect most river flow into the center of the Marsh, allowing natural processes to determine low-flow paths along the meadow surface (which has appropriate, historical floodplain swales) and promote reactivation and/or formation of a new primary channel or multiple-thread channels.

The geomorphic function of the river channel and its connection to the surrounding topography would be improved by both active and passive restoration means. The active measures would raise the streambed's elevation, increase channel length, and decrease channel capacity through construction of a geomorphically sized pilot channel, approximately 1,100 feet long, 38 feet wide, and 4 feet deep, that would be connected to the existing main channel at RS 32+00. The passive restoration downstream of the pilot channel in the center of the Marsh would replace about 7,100 feet of existing single-thread channel with a network of numerous channels of varied capacity. No earthwork to reconstruct channels would occur within the main-meadow channel sections. Therefore, the flow paths, bed and bank elevations, and channel capacities would be dictated by natural processes.

The proposed main-channel alignment and profile for the Preferred Alternative would have a relatively short constructed reach. These features include two vertical grade controls to stabilize the bed elevation (at RS 32+00 and RS 99+00) and two lateral grade controls to maintain the proposed streambank position and channel confluences (at RS 32+00 and RS 95+50). In general, the control structures would be constructed of a combination of partially buried rock material and logs, with bioengineered revegetation above the future waterline. The grade control at RS 95+50 would set the bed elevation for the reconnection between the river and the lagoon, and the grade control at RS 99+00 would set the bed elevation for the river mouth. Both of these would be designed to have constructed elements that simulate the appearance and replace the function of naturally resistant subsurface geologic layers (e.g., consolidated lake sediments) that occurred in the study area, but were disturbed by historic dredging.

The Preferred Alternative includes channel stabilization on the lower section of Trout Creek. Redirected flows from the Upper Truckee River would pass through the remnant channel system in the middle of the Marsh and increase streamflow conveyed through the lowest reach of Trout Creek. This would create the potential for future channel adjustments such as bed or bank erosion within a section that historically experienced bed erosion as a response to dredging of the main channel. Therefore, the Preferred Alternative includes installation of vertical grade control(s) and streambank stabilization measures along up to 2,600 feet of lower Trout Creek (from RS 66+00 to RS 95+50). The vertical grade controls would be of an adequate number and design to maintain the existing average slope and bed elevation of the channel and remain stable under the 100-year peak flows, assuming the combined peaks of Trout Creek and the Upper Truckee River. The streambank stabilization measures would be designed to remain stable under the 10-year peak flows, assuming the combined peaks of Trout Creek and the Upper Truckee River. Their design would anticipate and address the potential effects of sheet and concentrated overflow returning to the channel off the reactivated floodplain. The proposed treatment types would prioritize the use of bioengineered, living vegetative treatments above the normal water line, but could require the use of buried rock under the channel bed for grade control features.

For floodplain areas with remnant channels having accumulated fine sediment and/or organic materials, final project design and revegetation specifications would include measures to minimize the risk that such materials would become mobilized if a large flood flow were to occur during the first few years after construction. As feasible, the measures would remove and/or stabilize the materials adequately to resist expected erosive forces if a large flood (i.e., 25-year and higher peak flow) were to occur within the first 5 years after implementation. The following measures would be implemented:

- Remove loose, unvegetated, or otherwise unstable fine sediment and/or organic material within the remnant channel sections to be reactivated (either directly connected to the restored channel or as part of reactivated floodplain) to eliminate the potential pollutant source. The excavated materials could be salvaged for soil amendment and revegetation use in off-channel areas if suitable or disposed of properly off-site.

- Revegetate loose, unvegetated, or otherwise unstable fine sediment and/or organic material along the remnant channel sections to be reactivated (either directly connected to the restored channel or as part of the reactivated floodplain) to increase roughness and reduce velocities. Revegetation of these areas would meet species, density, planting methods, irrigation, and success criteria similar to streambank plantings.

RIVER MOUTH SIZE REDUCTION

The incised and previously dredged river mouth is overly wide and deep, allowing lake water inflow even during relatively low water surface elevations in the lake (i.e., low lake stands). The mouth configuration and the incised bed of the straightened river reach allow lake backwater effects to extend more than 2,000 feet up the river during high lake stands and, to a somewhat lesser extent, during lower lake stands. The lake backwater reduces flow velocities, reduces hydraulic complexity, flattens the channel bed, and limits habitat diversity. Although the project is not intended to address the backwater conditions normally expected during high lake stands, the Preferred Alternative includes modifications to the river mouth that would decrease its width and limit inflow of lake water during low lake levels.

The Preferred Alternative would install resistant materials to reestablish the approximate elevation of consolidated sediment underlying the channel that existed before the river was channelized. The existing river mouth location downstream of RS 95+50 would be retained, but the minimum bed elevation would be supported by a vertical grade control feature and the capacity would be reduced at RS 99+00 by installing both an engineered grade control and bioengineered revegetation. The grade-control structure would be designed to simulate the function of naturally-occurring subsurface geologic layers (i.e., resistant, cohesive lake sediments) to hold the minimum stream bed elevation at approximately 6,222 feet. This would be lower than median lake level but would restore a higher bed than the historic dredged depth. Existing woody vegetation in the areas disturbed for grade control would be salvaged and transplanted as part of the bioengineered revegetation activities. Over time, vegetation growth along the channel margins between the reconstructed lagoon outlet and the beach ridge would increase roughness, encourage aggradation, and protect against erosion.

FLOODPLAIN LOWERING

With the willing cooperation of relevant private landowners, the Preferred Alternative would improve the hydrologic connectivity of the channel and floodplain by lowering portions of the terrace in the narrow upstream reach. During lowering of the terrace, existing woody vegetation along the margins would be preserved to the extent possible, to retain the erosion resistance provided by vegetation. The surface of restored floodplains would be revegetated with a mixture of salvaged/transplanted sod and willow, willow wattles, and new plantings.

Three lowered floodplain areas (covering 315,950 square feet) would be excavated into the existing terrace surfaces to improve floodplain function from RS 0+00 to RS 5+00, RS 5+25 to RS 11+00, and RS 21+00 to RS 29+00. From RS 0+00 to RS 5+00, the excavation would cover about 41,100 square feet between the main channel and the building pad of the adjacent commercial development, averaging about 3.0 feet deep. From RS 5+25 to RS 11+00, the excavation would cover about 82,400 square feet west of the main channel, averaging about 2.5 feet deep. From RS 21+00 to RS 29+00, the excavation would cover about 192,450 square feet east of the main channel, averaging about 1 foot deep.

REMOVAL OF EXISTING FILL FROM FLOODPLAIN

In addition to the floodplain restoration described in the preceding section, the Preferred Alternative would restore floodplain function by excavating up to approximately 29,940 cubic yards of reserved fill to meet native ground elevation on about 147,900 square feet of the Lower West Side (LWS) Restoration Area. The reserve fill areas include approximately 130,250 square feet stored as "islands" adjacent to the existing channel and another 17,650 square feet of high ground between the LWS floodplain and the existing trail.

With the willing cooperation of TKPOA, the Preferred Alternative would also restore floodplain function by excavating about 5,100 cubic yards of previously placed fill at the TKPOA Corporation Yard, creating topography similar to adjacent natural surfaces, over an area of about 91,700 square feet.

If chemically and physically suitable, the excavated fill from either location would be used to backfill channel segments; otherwise, the material would be hauled to an appropriate off-site disposal site. After removal of existing fill, the entire restored floodplain surface and all disturbed areas would be revegetated with a mixture of salvaged/transplanted sod and willow, willow wattles, and new plantings.

FILL OF ABANDONED CHANNEL SEGMENTS

Where new channel segments would replace existing segments, the abandoned channel segments would be partially or completely filled. The backfilled channels and all other disturbed areas would be revegetated with a mixture of salvaged/transplanted sod and willow, willow wattles, and new plantings. The construction specifications for the filling of abandoned channels would be prepared by a qualified engineer and include standards that minimize the potential for erosion or recapture of the backfilled channels. The specifications would include compaction standards to avoid significant density differences between the fill and surrounding floodplain sediments, improve groundwater connectivity, and provide near-surface soils suitable for revegetation success. The specifications would be developed on the basis of the range of physical attributes of the soils encountered, but would generally require that fill density be within 10 percent of the average density of natural soils. Additionally, the specifications would specify maximum slope angles for the slope formed at the edges of the fill (also dependent on soil properties) and vegetative cover.

Complete backfill of about 1,700 feet of existing channel (between RS 91+50 and RS 75+00) would bring the abandoned channel areas up to meet the elevation of adjacent floodplain surfaces and restore floodplain function to about 97,146 square feet along the LWS wetlands. Partial backfill of about 4,200 feet of old channel (from RS 75+00 to RS 342+00) would provide about 165,202 square feet of floodplain swale that would become active only during moderate to large flow events.

REACTIVATION OF FLOODPLAIN TERRACE

Floodplain function and connectivity would be improved across U.S. 50 and between the main channel and the building pad of the adjacent commercial development by boring two overflow culverts through the roadfill. Two corrugated metal pipes would be installed, with the upstream inlet at an elevation that would receive water when the channel upstream of the bridge was out of bank. The culverts would have a flow capacity of about 150 cfs. The culverts would begin taking flow when the river flow is around 2,000 cfs (between the 5-year and 10-year event). The downstream outlet would have a rock-lined, energy dissipation–flared section that would activate the isolated terrace west of the channel from RS 0+00 to RS 5+00 (that would become lowered floodplain). The overflow culverts would also provide a small reduction in high flows that would be conveyed under the U.S. 50 bridge, to reduce hydraulic stress on the main channel's banks during large streamflows. These measures would require easements and approvals from the California Department of Transportation (Caltrans) and relevant private landowners.

MODIFICATION OF EXISTING STORMWATER DISCHARGE LOCATIONS

River and floodplain modifications for the Preferred Alternative would require relocating and/or modifying existing stormwater discharge locations near RS 46+50 and RS 66+00. At locations near the existing discharge points, stormwater basins would be installed (either excavated within native meadow material or configured within a portion of the backfilled abandoned channel). The basins would replace the discharge function of existing outfalls directly to the river. Therefore, they would also increase the pretreatment of urban runoff before release into open surface water of the Upper Truckee River, by providing opportunities for settling, infiltration, and percolation. The size and volume of the features would be determined in consultation with the City of South Lake Tahoe (CSLT), the Lahontan Regional Water Quality Control Board (RWQCB), and TRPA, but the overall shape would simulate naturally occurring floodplain features and would be vegetated with native plant species.

REESTABLISHMENT OF A RIVER-OVERFLOW LAGOON

The lagoon area connected with the Upper Truckee River is a natural feature that was likely larger before human disturbance. The surface water of the dredged lagoon (the Sailing Lagoon) is hydrologically connected to Lake Tahoe through the Tahoe Keys Marina channel. The Sailing Lagoon is not connected to the river. It has been part of Tahoe Keys Marina since the 1950s, produced by dredging and fill activities to provide for various navigation routes.

The Preferred Alternative would reestablish a hydrologic connection between a restored, naturally functioning lagoon in the general location of the existing Sailing Lagoon and the Upper Truckee River near the river mouth by (1) constructing a bulkhead at the Sailing Lagoon to block its open connection with the marina and Lake Tahoe, and (2) topographically modifying the Sailing Lagoon, including creation of a reexcavated connection with the Upper Truckee River so that the river would become a surface-water source to the lagoon. (The bulkhead would be located approximately 30 feet east of the existing opening within the marina.) The restored lagoon would be analogous to what exists behind Barton Beach near Trout Creek, but on a larger scale (approximately 105,000 square feet). To restore the natural river/lagoon connection, an engineered 290-foot-long sheet pile bulkhead and earthen levee would be constructed across the dredged west end of the Sailing Lagoon approximately 30 feet east of the existing bulkhead along the marina, and the fill blocking the east end would be removed. Final design would include a flow control feature to prevent erosion when river overflows enter the lagoon (particularly if the lagoon water surface is low). The control feature (e.g., a rock-lined channel or boulder weir structure) would be designed to control the location of overflow into the lagoon and prevent the development of a permanent, uncontrolled erosive channel connecting the river to the lagoon.

Invasive species would be addressed through development and implementation of an invasive species management plan as described in Environmental Commitment 4 (see Table 2-7). Following control and removal of invasive animals and plants, local cut and fill would then be used to recontour the topography of the lagoon and connect levee areas with adjoining ground. The lagoon, levee, and all disturbed areas would be revegetated using a mixture of woody and herbaceous species, suited to the anticipated range of moisture conditions from lagoon bed to levee crest. The east end of the lagoon connection with the river would be constructed as a vertical grade-control structure to simulate the appearance and function of naturally occurring resistant geologic layers and would include bioengineered revegetation to increase erosion resistance along the shared bank between river and lagoon. A grade-control structure would set the minimum bed elevation to protect the west bank from erosion and establish a residual lagoon water surface elevation during low lake levels.

Salvaged soil and vegetation (after screening out of invasive species) would be used, along with plantings, to revegetate the proposed lagoon area, using a mixture of native plant species appropriate for planned water depths.

The Preferred Alternative would remove existing fill from behind the east end of Barton Beach to restore lagoon and wet-meadow conditions. Removal of this fill would restore lagoon and wet-meadow conditions on about 18,000 square feet. Fill would be excavated to native ground elevation, at a depth averaging about 2 feet.

Salvaged soil and vegetation would be used, along with plantings, to revegetate the restored lagoon and wet meadow, using a mixture of native plant species appropriate for planned elevations. Previously, this component was proposed only under Alternatives 1 and 2.

OVERBANK FLOW AND FLOODING CONSIDERATIONS

Under existing conditions, the incised and widened channel does not allow natural overbank flow onto the meadow during small or moderate streamflow events, an important factor for sustaining ecological values of the adjacent marsh and wet meadow. The channel is overtopped only during relatively large flows (approximately 1,000 cfs or greater). The Preferred Alternative would use a combination of modifications and reactivation of the existing channel(s) and/or construction of a new channel to decrease the elevation difference between the channel bed and the adjacent meadow, and to reduce channel capacity to a more geomorphically appropriate size. These changes would reestablish and enlarge an active floodplain that receives overbank flows during small events (e.g., the 2- to 5-year storm events).

The existing flood hazard affecting adjacent neighborhoods would not be increased by the Preferred Alternative. The alternatives would improve the active floodplain's storage volume and flow routing in the valley reach, but would not alter storage for the overall 100-year floodplain. During lower magnitude flow events, floodplain storage would be increased by lowering portions of the floodplain and partially backfilling of the abandoned channel. Hydraulic modeling using a two-dimensional, calibrated model of existing conditions and the Preferred Alternative configuration was used to verify that overbank flows could be increased for smaller flow events without an increase in flooding hazards. Additional information on flood hazards is presented in Chapter 3, "Master Responses".

2.1.3 TERRESTRIAL HABITAT RESTORATION AND ENHANCEMENT ELEMENTS OF THE PREFERRED ALTERNATIVE

In addition to the restoration and enhancement of aquatic habitats and floodplain hydrologic and geomorphic processes, the Preferred Alternative would also restore and enhance terrestrial habitats. This restoration and enhancement elements would include the restoration of riparian habitats in conjunction with river channel and floodplain restoration, and also beach dune restoration, forest enhancement, and enhancement of core habitat. These terrestrial habitat restoration and enhancement elements of the project are described below.

WILLOW SCRUB–WET MEADOW RESTORATION

The Preferred Alternative would create additional willow scrub–wet meadow along the pilot channel, on the lowered or restored floodplains, in some backfilled channel segments, and in other locations.

MONTANE MEADOW RESTORATION

Montane meadow would be restored at the TKPOA Corporation Yard under the Preferred Alternative. The restoration of the corporation yard would be contingent on the consent of TKPOA.

DUNE/BEACH RESTORATION

The Preferred Alternative includes the restoration of sand ridges ("dunes") at Cove East Beach that were graded and leveled as part of the Tahoe Keys development. The restoration would occur in conjunction with removal of fill in the southern portion of Cove East Beach and the modification and reconnection of the Sailing Lagoon to the Upper Truckee River. Approximately 8,524 cubic yards of soils from lagoon margin grading would be reused in configuring the restored dunes.

FOREST ENHANCEMENT

The Preferred Alternative includes enhancement of Jeffrey pine and Lodgepole pine forests near the Highland Woods subdivision that have been disturbed by past land uses. Enhancement measures would include the removal or relocation and restoration of user-created trails and some other disturbed areas and invasive-plant control. In particular, these enhancements would be intended to improve the quality of edge habitat between the Marsh and the forest and to provide important habitat for terrestrial wildlife species. The acreage of these enhancements is proposed is approximately 7.7 acres.

ENHANCEMENT OF CORE HABITAT

The Preferred Alternative would enhance an area of "core habitat" that contains sensitive marsh habitats in the center of the study area (251 acres). The enhancement of this area would be intended to provide greater quality habitat by being exposed to less human disturbance. The edges of the core habitat areas would be approximately 150 feet from potential sources of disturbance of wildlife by humans (i.e., study area boundaries, access trails, or the river). Recreational access within the core habitat area would be discouraged through removal of existing user created trails to native vegetation. Because the Preferred Alternative would move the river to the middle of the Marsh, this alternative could potentially allow recreational use to expand further into the Marsh from the west side of the study area than Alternatives 1, 2, 4, and 5. However, this alternative would create additional wet marsh conditions east of the existing channel, a condition that would limit human activities during spring and early summer.

2.1.4 PUBLIC ACCESS AND RECREATION INFRASTRUCTURE ELEMENTS OF THE PREFERRED ALTERNATIVE

Project objectives include balancing public access and recreation infrastructure construction and operation with habitat restoration and protection. Five main assumptions guided the design of the public access and recreation infrastructure:

1. Based on the study area's location (i.e., adjacent to neighborhoods and a high-use recreation area [Tahoe Keys Marina]) and existing use patterns, people would continue to use the Upper Truckee Marsh to some degree, even with some level of access restrictions.

2. To most effectively protect sensitive wildlife and plant habitat, public access would need to be allowed and managed to the extent that most visitors would be satisfied with their level of access and would not intrude into sensitive areas.

3. Excessive levels of recreation infrastructure and access would compromise the quality and function of sensitive habitats by promoting high levels of disturbance. However, too many overall restrictions would encourage uncontrolled access to sensitive areas.

4. Although public-access and recreation elements, such as pedestrian trails, would disturb vegetation and wildlife directly and indirectly, these features, if designed appropriately, could be valuable tools for directing most access away from sensitive habitats while maintaining existing recreation opportunities.

5. Some level of well-designed public access infrastructure in nonsensitive areas, combined with protective elements and environmental education, would be the most effective approach to protecting sensitive wildlife habitat in the study area.

Also, the 1988 litigation settlement leading to the acquisition of the Cove East Beach property in the northwest corner of the study area requires that recreational beach access west of the river mouth be maintained (*People of the State of California vs. Dillingham Development Company and TRPA*, CIV-S-85-0873-EJG [February 25,

1988]). Therefore, the focus of the elements west of the Upper Truckee River, near the LWS Restoration Area and Cove East Beach, are intended to provide public access and recreation, while the approach for the east and south sides of the study area is intended to protect habitat and allow continued existing public access away from sensitive areas of the Marsh and thus contribute to the protection of wildlife and sensitive habitat.

On the east side of the Upper Truckee Marsh no recreation improvements are currently proposed (e.g., viewpoints or additional trails); however, existing infrastructure would continue to be maintained and future nondiscretionary enhancements might result in the construction of some additional, smaller elements (e.g., signage). To the west and south of the river, proposed recreation improvements include relocation of the pedestrian trail to Cove East Beach, one viewpoint, observation area, kiosk, fishing platform, and signage.

The infrastructure proposed for recreation and public access elements of the Preferred Alternative is presented in Exhibit 2-2 and in further detail in Appendix A.

PEDESTRIAN TRAILS

Under the Preferred Alternative, the existing trail providing public access to Cove East Beach would be partially rerouted along the restored wetlands, lagoons, and dunes while still maintaining access to the shore of Lake Tahoe. The rerouted trail would be consistent with Americans with Disabilities Act (ADA) guidelines. No additional trails or bicycle paths would be constructed on the east side of the Upper Truckee River. Access along the eastern perimeter of the study area would continue through informal trails.

VIEWPOINTS AND OBSERVATION AREAS

Under the Preferred Alternative, no viewpoints would be constructed along the east edge of the study area. On the west side of the study area, one viewpoint would extend from the northeast corner of the loop trail near Cove East Beach. The existing shore zone and river mouth in this area experience high levels of recreational use and disturbances to vegetation, soils, and wildlife. The new viewpoint would provide views across the river mouth and out across the lake as well as views of the meadow and lagoon to the east. This viewpoint would direct some recreation use away from those areas, reducing disturbances to waterfowl and shorebirds. West of the Upper Truckee River, by Cove East Beach, an observation area would be connected to the pedestrian trail to Cove East Beach.

FISHING PLATFORM

The Preferred Alternative includes a fishing platform that would be constructed on the edge of the new river-connected lagoon; it would be connected to and accessed by the loop trail around the perimeter of Cove East Beach.

SIGNAGE AND KIOSK

The Preferred Alternative would include development of an interpretive program and installation of additional signage in appropriate locations (e.g., along trails, at viewpoints, and near sensitive habitats). This signage would include educational, directional, and safety information to provide public access and dispersed recreation opportunities. Signs would provide maps at trailheads to illustrate the location of open public trails and closed areas throughout the study area. Signs would also be placed near sensitive habitats to discourage disturbance of those areas by people and pets, and to stimulate a resource stewardship ethic in the public.

The Preferred Alternative would include an interpretive kiosk that would provide information to support public access, recreation infrastructure, and visitor education and interpretation of the ecological values of the Upper Truckee Marsh (e.g., maps and information regarding sensitive resources). The kiosk would be constructed on high-capability land near the end of East Venice Drive adjacent to the Tahoe Keys Marina.

2.2 RESOURCE MANAGEMENT

The Conservancy maintains existing infrastructure to support safe public access, recreation, and habitat protection measures in the study area. The agency's ongoing management actions include the following:

- **Maintenance of Facilities.** The Conservancy monitors the condition and use of existing facilities, removes litter and fire pits, and eliminates potentially hazardous conditions (e.g., user-created facilities such as makeshift bridges). Also, the Conservancy funds the Tahoe Resource Conservation District to contract with the Clean Tahoe Program for trash removal services, including weekly inspection and maintenance of 12 garbage cans located throughout the property.

- **Monitoring and Outreach.** Through a land steward, the Conservancy conducts outreach to educate visitors regarding the importance of resource protection and to discourage incompatible uses.

- **Enforcement of Policies.** The Conservancy contracts with the El Dorado County Sheriff's Office to provide security patrols in the study area and to enforce local ordinances. The Conservancy also monitors recreational use and compliance with Conservancy use policies and CSLT ordinances.

- **Mosquito Control.** The Conservancy regularly communicates with El Dorado County Vector Control District regarding mosquito production and control. In consultation with the El Dorado County Vector Control District, the Conservancy provides necessary measures for controlling mosquito production.

- **Invasive Species Control.** The Conservancy monitors for the presence of priority invasive species, and to the extent practicable, it implements appropriate measures to control and eradicate populations. The Conservancy also coordinates with the Lake Tahoe Basin Weed Coordinating Group and the Aquatic Invasive Species Working Group regarding the control of invasive species.

- **Management of Tahoe Yellow Cress (TYC) Habitat.** The Conservancy has prepared and implements a management plan for TYC in the study area. This management plan contains a number of management actions, including:

    - maintaining an enclosure to protect the Upper Truckee East TYC population and regularly evaluating the effectiveness of its design and placement;

    - participating in basinwide TYC monitoring activities; and

    - implementing the Imminent Extinction Contingency Plan, if necessary.

Under the Preferred Alternative, this management would continue. Additional management actions that would be implemented as part of the project are described in Section 2.5, "Environmental Commitments."

2.3 MONITORING

A monitoring framework was developed for this and other restoration projects on the Upper Truckee River to:

- characterize baseline conditions,
- track project performance related to desired outcomes,
- document effects on relevant TRPA environmental threshold carrying capacities,
- establish tentative approaches to monitoring for regulatory requirements, and
- provide information to direct adaptive management.

Legend

- Project Boundary
- Existing 1000 ft. River Station
- Existing 100 ft. River Station - Upper Truckee
- Existing 100 ft. River Station - Trout Creek
- Existing Regional Bike Trail

Proposed Habitat Features

- Restored Lagoon
- Restored Meadow
- Tahoe Yellow Cress Restricted Use Area
- Reveg and Streambank Enhancement
- Restored Dune

Proposed River and Floodplain Features

- Low and Bankful Flow Channel
- Potential Low Flow Path
- Active Floodplain
- Removal of Reserve Fill
- Partial Fill of Existing Channel
- Channel Backfill
- Floodplain Areas of Excavation

Proposed Engineered Features

- Lateral Grade Control
- Vertical Grade Control
- Bulkhead/Levee
- Bank Protection
- Storm Water Treatment Area
- Overbank Conveyance Bridge Modification
- Channel Grade Control and Bank Protection

Proposed Public Access Features

- Viewpoint
- Pedestrian Trail
- Fishing Platform
- ADA Accessible
- Observation Area
- Kiosk

0 500 1,000
Feet

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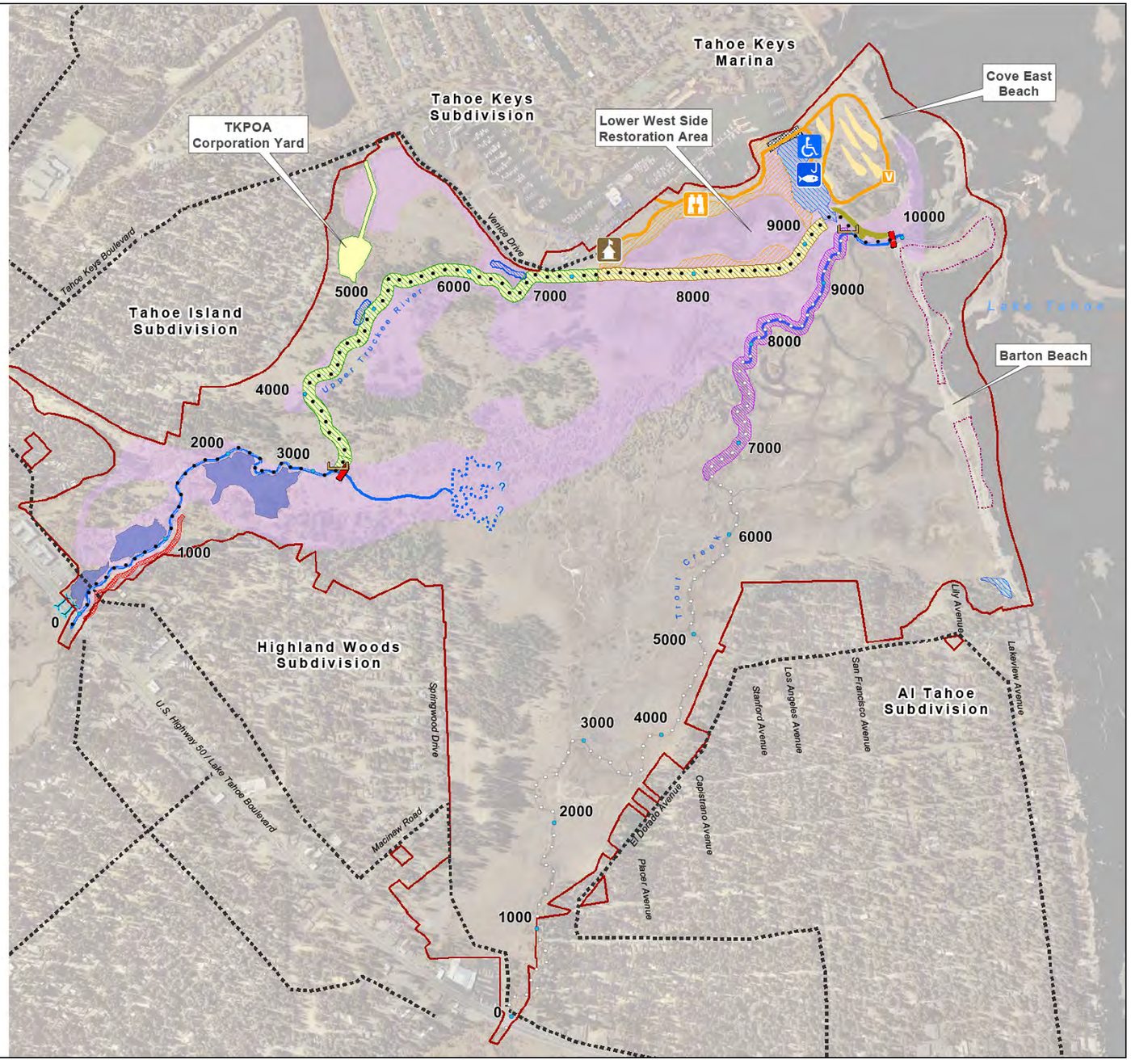


Source: Cardno

Exhibit 2-2

Proposed Infrastructure for Recreation and Public Access Elements of the Preferred Alternative

Project-specific monitoring would coordinate prior, existing, and anticipated monitoring to the extent practicable, and to be consistent with the guidance developed by the Upper Truckee River Watershed Advisory Group (Conservancy 2007).

Although the monitoring plan is intended to identify tentative approaches to anticipated regulatory requirements for monitoring of project impacts on the river, riparian, and marsh habitats, additional monitoring might be required. Permit conditions will not be known until a restoration plan has been approved by regulatory agencies.

The monitoring plan will describe the variables selected as indicators and will summarize each protocol, quality assurance mechanisms, and reporting procedures. The protocol summaries described in the framework include sampling design (i.e., location and timing of data collection), data collection methods, and guidance for data analysis. These protocol summaries are provided for:

- topographic surveys,
- groundwater elevation measurements,
- discharge measurements,
- overbank flow measurements,
- inundation mapping,
- vegetation mapping,
- quantitative vegetation sampling,
- stream bioassessment,
- avian counts,
- nest searching and monitoring,
- small-mammal trapping,
- electrofishing,
- water quality monitoring, and
- qualitative site assessment.

Monitoring of TYC conditions in the study area is described in a separate management plan prepared for that plant species (Conservancy and DGS 2007:24–31). The monitoring of TYC would continue to be part of the interagency monitoring of the species throughout the Tahoe Basin, which includes a census of all known populations and systematic searches of areas supporting unoccupied, potentially suitable habitat.

2.4 CONSTRUCTION

2.4.1 OVERVIEW

This section summarizes the likely proposed construction activities and overall schedule. Construction would generally occur between May 1 and October 15 each year for approximately 4 years. Construction is expected to begin in 2019. The actual construction schedule and phasing may vary from what is presented below depending on permit and easement requirements, final design, and the selected contractor. Construction activities would occur from 8:00 a.m. to 6:30 p.m. pursuant to Section 68.9 of the TRPA Code of Ordinances. Exceptions may be granted if it can be shown that construction beyond these times is necessary to alleviate traffic congestion and safety hazards.

Each year, construction activities would begin with mobilization, including construction and maintenance of haul roads and staging areas, installation or maintenance of BMPs, and installation of signage in the project vicinity. Similarly, each year, closing activities would include winterization (i.e., installing BMPs in disturbed areas, demobilizing equipment, stabilizing access roads, and shutting down the irrigation system) and, in Year 4, project shutdown.

2.4.2 CONSTRUCTION ACTIVITIES AND SCHEDULE

The construction activities that are anticipated to occur each year to implement the Preferred Alternative are described below. Exhibit 2-3 shows public-road access locations, prospective haul routes, and potential storage/staging areas (some or all of the areas may be required and used, pending authorization for those on private properties). Table 2-4 presents the staging area acreages. Table 2-5 lists a likely sequence of activities for the engineered elements associated with the Preferred Alternative and the estimated duration of each activity. This table includes all proposed activities on public lands as well as those that are contingent upon private landowner agreements. Therefore, the actual sequence and phasing, including temporary stockpiling needs, could vary.

YEAR 1

Year 1 construction activities would commence with mobilization activities that would take up to 1 month to complete. These mobilization activities would include constructing staging areas and haul roads, installing BMPs, and placing signage. Expected activities would include delivery and storage of construction equipment and materials and establishing worker parking. Public roads would be used to access the staging areas. All construction equipment and haul trucks would operate on internal haul roads.

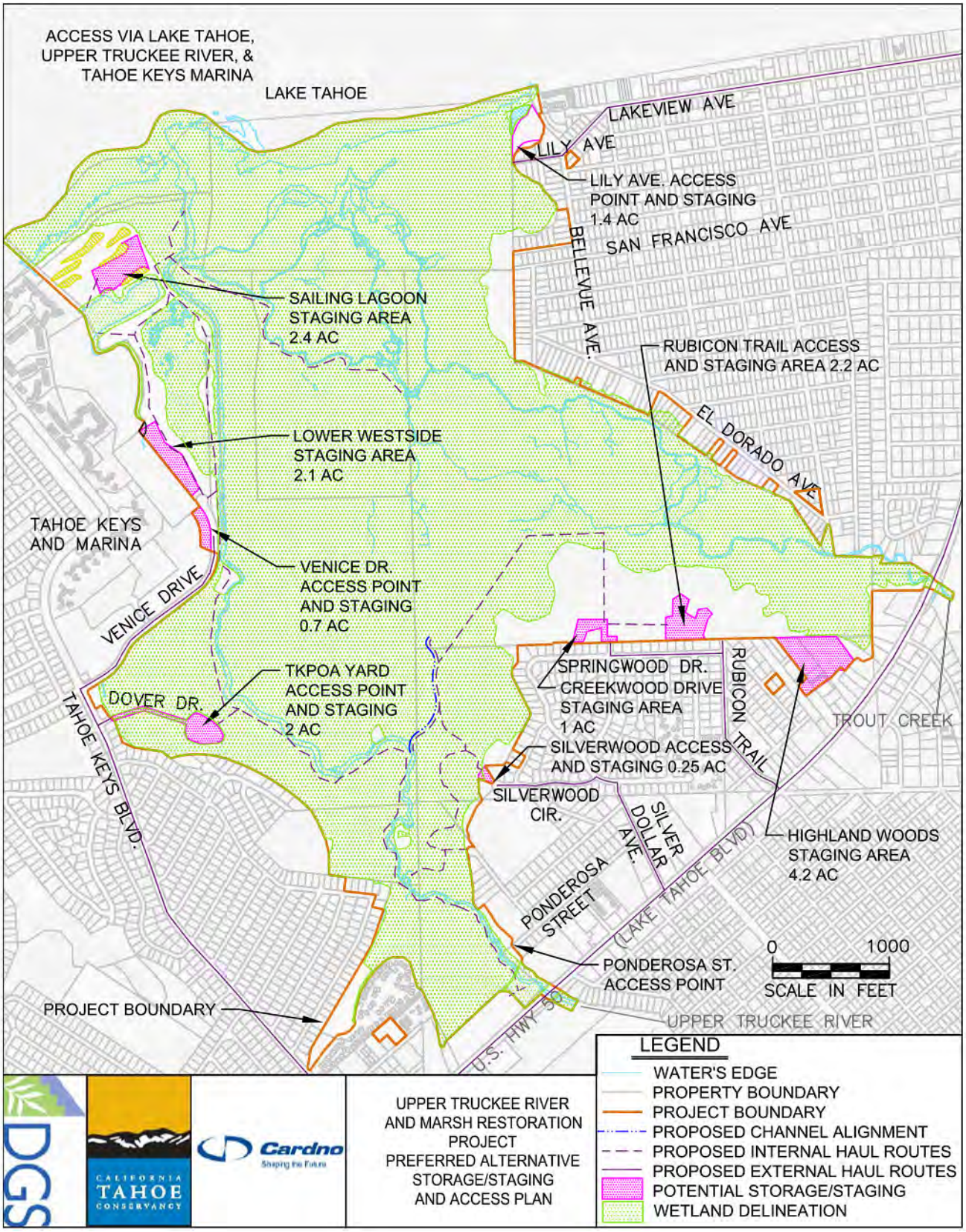
Subsequent activities would include much of the earthwork required for the river and floodplain grading: lowering the terrace sections and recontouring existing secondary channels (on private lands), and constructing the pilot channel, vertical grade control, and install bank protection measures. These activities would require 1–3 months to complete.

Significant excavation and soil movement activities would occur on-site in Year 1. The excavated material that is not required for reuse in the same year would be stockpiled temporarily on-site at one of the storage areas, prioritizing those outside of the 100-year floodplain. The excavated materials would be transported to the staging areas on haul roads. After excavation, permanent revegetation and temporary irrigation would be installed in work areas at final grade, as soon as possible. The general haul route for the off-site sediment transport would likely be from Venice Drive to Tahoe Keys Boulevard and then to U.S. 50.

During construction of channels, it is possible that dewatering of excavations (i.e., removal of collected water) may be required. To minimize the potential for dewatering, construction activities within the live channel would be avoided whenever possible. When construction within the live channel is required, barriers would be used to isolate the work areas from any flowing water. Seepage into the isolated work areas would be pumped and used for irrigation and dust control. If the quantities of water were to exceed the demands for dust control or could result in irrigation runoff, temporary and portable detention basins would be constructed. The basins would be created using portable containment berms and used to store and treat the groundwater effluent. The stored water would be used for irrigation or dust control or treated to meet surface-water discharge requirements and discharged back into the live channel.

YEAR 2

During Year 2, revegetation and irrigation work would continue on the pilot channel, secondary channels, and lowered floodplain modifications. The streambed and bank stabilization on lower Trout Creek would be completed. Vertical grade controls would be constructed at the downstream end of the site (by the Trout Creek confluence and at the river mouth). Overflow culverts would be installed under U.S. 50 through the embankment fill. Throughout the construction season, the revegetation treatments conducted during Year 1 would be irrigated and inspected.



Source: Cardno 2015

Exhibit 2-3 **Preferred Alternative—Storage/Staging and Access Plan**

Table 2-4
Staging Area Temporary Impacts

Staging Area	Square Feet	Acres
TKPOA Yard	86,504	1.99
Creekwood	41,983	0.96
Rubicon Trail	96,509	2.22
Highland Woods	183,563	4.21
Silverwood	10,970	0.25
Lily Avenue	60243	1.38
Sailing Lagoon	107,838	2.48
Lower Westside	92,377	2.12
Venice	32,270	0.74

Source: Data compiled by Cardno in 2015

Table 2-5
Sequence and Duration of Activities for Engineered Elements of the Preferred Alternative

Activities/Engineered Element	Duration (months)
YEAR 1 ACTIVITIES	
Mobilization. Build haul roads and staging areas. Install BMPs and place signage.	1
Lowered Floodplain. Excavate the existing terrace between RS 0+00 and RS 5+00, RS 5+25 and RS 11+00, and RS 18+00 and RS 29+00. Haul excavated material that is not reused to the on-site TKPOA Corporation Yard, LWS, or Sailing Lagoon staging areas (or alternatively to the Rubicon Trail or Highland Woods staging) for stockpiling until it is used for backfill in Year 3.	2
Existing Secondary Channel. Excavate the elevation of the inlet and outlet of the existing secondary channel (west high-flow channel) at RS 05+25 and RS 11+00 to an elevation that allows flow into the secondary channel when the total flow exceeds the design flow of the main channel. Recontour the existing secondary channel (east high-flow branch) between RS 18+00 and RS 29+00 to function as part of the lowered floodplain.	0.5
Pilot Channel and Vertical Grade Controls. Excavate the pilot channel off the main river channel near RS 32+00 with a top width of approximately 38 feet and average depth of 4 feet. Haul any of the excavated material that is not reused to the TKPOA Corporation Yard (or other staging areas) for stockpiling until it is used for backfill in Year 3. Construct vertical grade-control structure at RS 32+00 on the new low-flow alignment (pilot channel) to stabilize the elevation of the inlet of the new channel. Leave a protective plug of native material in place and/or install temporary protective measures within the pilot channel to retard flow velocities and depths until Year 3.	2.5
Bank Protection. Construct bank protection between RS 0+00 and RS 13+00.	2
Revegetation/Irrigation. Conduct permanent revegetation and install temporary irrigation as soon as feasible in all work areas at final grade.	1
Winterization. Install BMPs on all disturbed areas, “demobilize” all equipment from the site, remove or stabilize all access roads, and shut down the irrigation system.	0.5
YEAR 2 ACTIVITIES	
Mobilization. Inspect and/or rebuild haul road and staging areas. Reinstall BMPs as needed and restart the irrigation system.	1

Activities/Engineered Element	Duration (months)
Pilot Channel, Existing Secondary Channel, and Lowered Floodplain. Inspect to evaluate the condition of Year 1 grading and revegetation. Initiate irrigation as soon as possible and inspect revegetation monthly.	5
Overflow Culverts. Construct overflow culverts under U.S. 50 through the embankment fill. Culverts are to be plugged and remain so until lowered floodplain has sufficient revegetation.	1.5
Vertical Grade Controls and River Mouth Modification. Construct vertical grade-control structure(s) and streambank stabilization measures along about 2,600 feet of lower Trout Creek (from RS 66+00 to RS 95+50) to stabilize the existing bed elevation, and at RS 99+00 on the Upper Truckee River to raise existing bed elevation. Install bioengineered revegetation at and around structures.	2
Bulkhead and Levee. Install vertical sheet pile bulkhead extending from approximately 30 feet east of the existing sheet pile along the Tahoe Keys Marina channel. Isolate the Sailing Lagoon, pump/drain, and excavate sediment (including invasive plants and animals if present). Haul sediment unsuitable for reuse to a permitted off-site disposal area. Construct an earthen levee along the east side of the sheet pile bulkhead contoured to meet desired lagoon shape.	2
Restored Lagoon. Recontour the Sailing Lagoon, aside from the area near RS 93+00 where it will later be reconnected to the river (in Year 3).	1
Revegetation/Irrigation. Conduct permanent revegetation and install temporary irrigation at final grade as soon as feasible in all work areas.	1
Winterization. Install BMPs on all disturbed areas, "demobilize" all equipment from the site, remove or stabilize all access roads, and shut down the irrigation system.	0.5
YEAR 3 ACTIVITIES	
Mobilization. Inspect and/or rebuild haul road and staging areas. Reinstall BMPs as needed and restart the irrigation system.	1
Recontoured Existing Channel, Existing Secondary Channel, and Lowered Floodplain. Inspect to evaluate the condition of prior grading and revegetation. Initiate irrigation as soon as possible and inspect revegetation monthly.	5
Excavation of Reserve Fill at LWS Restoration Area and Fill at TKPOA Corporation Yard. Excavate reserve fill located at the LWS Restoration Area and fill at the TKPOA Corporation Yard for storage and then reuse in backfilling the existing channel.	1
Public Access and Recreation Infrastructure Elements. Construct all public-access facilities and recreation infrastructure elements.	1.5
Restored Lagoon. Excavate fill from behind East Barton Beach and revegetate/irrigate areas at grade.	0.5
Restored Dunes. Excavate new dune swales, place fill and salvaged vegetation, recontour new dune ridges, and revegetate/irrigate areas at grade.	0.5
Pilot Channel. Remove any protective soil plug or other temporary BMPs in the pilot channel. Pump water into pilot channel to pre-wet channel margins. Implement diversion to allow construction of the tie-in location between the pilot channel and the existing channel as well as the vertical and lateral grade controls at RS 32+00 on the existing channel.	2
Vertical and Lateral Grade Controls. Construct the lateral and vertical grade controls at RS 32+00 at the intersection of the new low-flow pilot channel with the backfilled existing channel to be abandoned, and the lateral grade control near RS 95+50 by the Sailing Lagoon overflow connection, Trout Creek confluence, and relocated Upper Truckee River low-flow alignment.	1
Partial Backfill and Complete Backfill of Old Channel. Place fill within the abandoned channel sections, contour to meet adjoining surfaces and simulate natural topography, revegetate, and irrigate.	2

Activities/Engineered Element	Duration (months)
Restored Lagoon. Recontour the east end of the Sailing Lagoon to reconnect the lagoon to the river, in association with construction of vertical and lateral grade controls and backfilling of the old channel.	1
Restored Floodplain. Recontour the former TKPOA Corporation Yard to match adjoining floodplain elevations and simulate natural topography, revegetate, and irrigate.	1
Stormwater Treatment Basins. Construct stormwater treatment facilities at RS 45+00 and RS 63+00.	1
Revegetation/Irrigation. Conduct permanent revegetation and install temporary irrigation at final grade as soon as feasible in all work areas.	1
Winterization. Install BMPs on all disturbed areas, "demobilize" all equipment from the site, remove or stabilize all access roads, and shut down the irrigation system.	0.5
YEAR 4 ACTIVITIES	
Mobilization. Inspect and/or rebuild haul road and staging areas as needed for the final year of work. Reinstall BMPs as needed and start up the irrigation system.	1
Revegetation/Irrigation. Inspect to evaluate the condition of all prior grading, revegetation, and BMPs. Initiate irrigation as soon as possible and inspect revegetation monthly. Reinstall BMPs as needed.	5
Winterization and Project Shutdown. Remove all construction-related BMPs and restore all disturbed areas, "demobilize" all construction equipment and related facilities from the site, remove and stabilize all access roads, and shut down the irrigation system. No additional work is planned by the contractor, except for maintenance during the warranty period.	0.5

Notes: BMP = best management practice; LWS = Lower West Side; RS = River Station; TKPOA = Tahoe Keys Property Owners Association;
Source: Data compiled by Cardno in 2015

Work related to the modification of the Sailing Lagoon and dune restoration would occur during Year 2. The lagoon would be isolated from the Tahoe Keys Marina by installing the bulkhead and levee along and east of the Tahoe Keys Marina channel and performing some of the water quality protections and invasive organism controls. The isolated lagoon would be drained, recontoured, and revegetated. Recontouring of the Sailing Lagoon would entail excavating sediment, some of which may be hauled off-site to an out-of-basin storage if not suitable for reuse in the dune reconstruction and/or channel backfill. The Sailing Lagoon modification activities could take as long as 4 months to complete.

YEAR 3

Construction of project features would be completed during Year 3, along with continued inspection and irrigation of revegetation treatments installed in Years 1 and 2. Lagoon and dune restoration would be completed in Year 3. The eastern end of the Sailing Lagoon would be recontoured, and the lagoon would be connected to the river. Fill would be removed behind East Barton Beach to restore and revegetate lagoon habitat.

Excavation and grading of the pilot channel connection and confluence and installation of the vertical and lateral grade controls in the main channel would be completed. Water would be pumped into finished channel segments and directed onto the existing vegetated Marsh surfaces. Fill would be placed in the abandoned channel sections and be recontoured; the modified stormwater treatment areas would be constructed. Permanent revegetation and temporary irrigation would be installed in all work areas at final grade.

Public-access and recreation infrastructure would be constructed during Year 3, including construction of trails, the observation area, viewpoint, kiosk, and the ADA-accessible fishing platform.

YEAR 4

Construction activities in Year 4 would be limited to revegetation and irrigation inspection and maintenance, and project shutdown.

2.5 ENVIRONMENTAL COMMITMENTS

Table 2-6 describes the proposed project's Environmental Commitments (ECs), which are standard project components necessary to comply with existing federal statutes, state statutes, executive orders, and regulations. These environmental protection features are typical elements of permits and agency approvals, and therefore they were considered and applied as essential components of the project in the Draft EIR/EIS/EIS. The ECs were incorporated into the proposed project and considered before the application of thresholds of significance and determination of environmental impacts. These ECs assisted the Conservancy, Reclamation, and TRPA in determining the scope of the Draft EIR/EIS/EIS, developing program components and objectives, identifying the range of alternatives, defining potential environmental impacts and the significance of those impacts, and identifying appropriate mitigation measures.

In some instances, these ECs are insufficient to fully avoid potential impacts; therefore, mitigation measures are proposed when feasible. Mitigation measures are tied to a specific alternative action that either required more detail than standard regulatory requirements to make a conclusion, or went beyond those standard practices. Additional details on the proposed project's compliance with applicable federal, state, and regional statutes and regulations and provisions can be found in Chapter 5, "Compliance, Consultation, and Coordination," of the Draft EIR/EIS/EIS and the regulatory setting section of each resource area evaluated in the Draft EIR/EIS/EIS.

Table 2-6
Environmental Commitments of the Upper Truckee River and Marsh Restoration Project

Environmental Commitment 1: Construction-Related Emissions of ROG, NO_X, and PM_{10}. TRPA and the El Dorado Air Quality Management District regulate construction-related emissions of ROG, NO_X, and PM_{10}. The project includes:

- TRPA permits and approvals, requiring compliance with TRPA codes and procedures with respect to BMPs (TRPA Code Section 60.4), project grading (TRPA Code Section 33.3), excavation, and construction-related emissions-generating activities (TRPA Code Section 65.1, "Air Quality Control").
- El Dorado County permits and approvals, requiring compliance with county laws and procedures with respect to BMPs, project grading excavation, and construction-related emissions-generating activities. The Conservancy and their construction contractor will comply with EDCAQMD Rule 202, Visible Emissions; Rule 205, Nuisance; Rule 223, Fugitive Dust–General Requirements; and Rule 223-1, Fugitive Dust–Construction, Bulk Material Handling, Blasting, Other Earthmoving Activities, and Carryout and Trackout Prevention. In addition, the contractor will implement the following fugitive dust control measures:
  - Apply dust suppression measures in a sufficient quantity and frequency to maintain a stabilized surface and prevent visible dust emissions from exceeding 100 feet in length in any direction. Apply water to at least 80 percent of the surface areas of all open storage piles on a daily basis when there is evidence of wind-driven fugitive dust.
  - Install control measures immediately adjacent to the paved surface to prevent track-out from exiting vehicles.
- Restriction on activities disturbing the soil to between October 15 and May 1 of each year, unless approval has been granted by TRPA and the Lahontan RWQCB. All construction sites must be winterized before October 15 of each construction year in accordance with the provisions of Section 33.3.1.D of the TRPA Code of Ordinances and the National Pollutant Discharge Elimination System (NPDES) permit.
- Requirements for dust control measures for any grading activity creating substantial quantities of dust. Dust control measures must be approved by TRPA before groundbreaking and will comply with the provisions of Section 33.3.3 of the TRPA Code of Ordinances.

Table 2-6
Environmental Commitments of the Upper Truckee River and Marsh Restoration Project

Environmental Commitment 2: Prepare and Implement a Cultural Resources Protection Plan. The U.S. Army Corps of Engineers and TRPA require protection of historic and cultural resources per Section 106 of the National Historic Preservation Act (NHPA) and TRPA ordinances (TRPA Code Section 29.2 and Section 64.8). The Project includes a cultural resource protection plan that will be prepared and implemented before and during construction. Measures will include, but are not limited to assuring final design placement and orientation of recreation infrastructure will incorporate visual screening or barriers as appropriate to minimize visibility and access which could otherwise lead to damage or destruction of prehistoric site CA-Eld-26; installing barriers or fencing during construction to protect identified sites, including CA-Eld-26; jobsite education on protocol to identify potential uncovered resources and response (stop work) protocol; and presence of a qualified cultural resource specialist to oversee grading activities that are in the vicinity of eligible resources, including initial grading activities within the vicinity of the bluff and CA-Eld-26. The Conservancy will ensure that the requirements of NHPA Section 106 are incorporated into the cultural resources protection plan. Before project-related ground disturbance begins, the Conservancy will train all construction personnel regarding the possibility of uncovering buried cultural resources. The Conservancy will retain a qualified cultural resources specialist to educate personnel as to how to identify prehistoric and historic-era archaeological remains. If unusual amounts of stone, bone, or shell or significant quantities of historic-era artifacts such as glass, ceramic, metal, or building remains are uncovered during construction activities, work in the vicinity of the specific construction site at which the suspected resources have been uncovered will be suspended, and the Conservancy will be contacted immediately. In addition, Reclamation or other federal lead agency for projects that require federal discretionary actions under NEPA will be contacted immediately so that the Section 106 Post-Review Discovery process, which includes consultation with the State Historic Preservation Officer (SHPO) and Indian tribes, proceeds as required by federal regulation (36 CFR 800.13). At that time, the Conservancy will retain a qualified professional archaeologist, who will conduct a field investigation of the specific site and recommend measures deemed necessary to protect or recover any cultural resources concluded by the archaeologist to represent significant or potentially significant resources as defined by CEQA, NEPA, and TRPA. These measures may include but will not necessarily be limited to avoidance, archival research, subsurface testing, and excavation of contiguous block units. The Conservancy will implement the measures deemed necessary by the archaeologist before construction resumes within the area of the find. The purpose of this oversight will be to ensure that cultural resources potentially uncovered during ground-disturbing activities are identified, evaluated for significance, and treated in accordance with their possible (NRHP) and California Register of Historical Resources (CRHR) status. Potential treatment methods for significant and potentially significant resources may include but will not be limited to taking no action (i.e., resources determined not to be significant), avoiding the resource by changing construction methods or project design, and implementing a program of testing and data recovery, in accordance with all applicable federal and state requirements.
Environmental Commitment 3: Stop Work Within an Appropriate Radius Around the Discovered Human Remains, Notify the El Dorado County Coroner and the Most Likely Descendants, and Treat Remains in Accordance With State and Federal Law. In accordance with Section 7050.5(b) of the California Health and Safety Code, if human remains are uncovered during ground-disturbing activities, the contractor and/or the Conservancy will immediately halt potentially damaging excavation in the area of the burial and notify the El Dorado County Coroner and a professional archaeologist to determine the nature of the remains. In addition, Reclamation or other federal lead agencies that require federal discretionary actions under NEPA will be contacted immediately so that the Section 106 Post-Review Discovery process proceeds as required by federal regulation (36 CFR 800.13). The coroner will examine all discoveries of human remains within 48 hours of receiving notice of the discovery. If the coroner determines that the remains are those of a Native American, he or she will contact the Native American Heritage Commission (NAHC) by phone within 24 hours of making that determination (California Health and Safety Code, Section 7050[c]). Following the coroner's findings, the Conservancy, an archaeologist, and the NAHC-designated Most Likely Descendant (MLD) will determine the ultimate treatment and disposition of the remains and take appropriate steps to ensure that additional human interments are not disturbed. The responsibilities for acting upon notification of a discovery of Native American human remains are identified in California Public Resources Code (PRC) Section 5097.9 Notification of and consultation with appropriate parties as identified through the Section 106 process would also be required if the project has federal funding or a federal permitting requirement. Upon the discovery of Native American remains, the Conservancy will ensure that the immediate vicinity (according to generally accepted cultural or archaeological standards and practices) is not damaged or disturbed by further development activity until consultation with the MLD has taken place. The MLD will have 48 hours after being granted access to the site to complete a site inspection and make recommendations. A range of possible treatments for the remains, including nondestructive removal and analysis, preservation in place, relinquishment of the remains and associated items to the descendants, or other culturally appropriate treatment may be discussed. PRC Section 5097.9 suggests that the concerned parties may extend discussions beyond the initial 48 hours to allow for the discovery of additional remains. The following are

Table 2-6
Environmental Commitments of the Upper Truckee River and Marsh Restoration Project

site protection measures that the Conservancy will employ:

- Record the site with the NAHC or the appropriate Information Center of the California Historical Resources Information System.
- Utilize an open-space or conservation zoning designation or easement.
- Record a document with El Dorado County.

The Conservancy or its authorized representative will rebury the Native American human remains and associated grave goods with appropriate dignity on the property in a location not subject to further subsurface disturbance if the NAHC is unable to identify a MLD or if the MLD fails to make a recommendation within 48 hours after being granted access to the site. The Conservancy or its authorized representative may also reinter the remains in a location not subject to further disturbance if it rejects the recommendation of the MLD and mediation by the NAHC fails to provide measures acceptable to the Conservancy.

Environmental Commitment 4: Prepare and Implement an Invasive Species Management Plan. TRPA and the California Department of Fish and Wildlife (CDFW) require invasive species management to address existing and potential terrestrial and aquatic invasive species. In addition, Reclamation or other federal lead agencies that require federal discretionary actions under NEPA will comply with Executive Order 13112, which directs all federal agencies to prevent the introduction and control the spread of invasive nonnative species in an environmentally sound manner to minimize ecological impacts. The project includes an Invasive Species Management Plan that will specifically address Eurasian watermilfoil as it is known to be present in the study area and is a species of particular concern. The plan will be divided into two sections: one addressing terrestrial species and the other addressing aquatic. The aquatic portion will be consistent with the State of California's Aquatic Species Management Plan (CDFW 2008), and will be completed, reviewed, and approved by CDFW prior to initiation of construction. The plan will address how the project will address invasive species currently in the project area in addition to how the project will prevent introducing new species.

The plan will include the following measures to address both invasive aquatic and terrestrial species:

- A qualified biologist with experience in the Tahoe Basin will conduct a preconstruction survey to assess current populations of invasive plants in the project area. Invasive species presence will be documented, and an action plan in the context of the project will be developed to remove them prior to construction and/or prevent their spread due to construction activities. Control measures may include hand removal or other mechanical control. Herbicides are not allowed within Stream Environment Zones (SEZs).
- All equipment entering the study area from areas infested by invasive plants or areas of unknown infestation status will be cleaned of all attached soil or plant parts before being allowed into the study area. All motorized and nonmotorized equipment used for in-channel work will be thoroughly cleaned prior to use on the project site and then be cleaned before leaving the site. This includes waders, nets, seines, water quality monitoring equipment, boats, kayaks, life jackets, and construction vehicles.
- To restrict the import of seed or other materials potentially containing invasive plants, the project will use on-site or native sources of seed and materials to the extent practicable. Seed, soil amendment, and erosion control materials that need to be imported to the study area will be certified weed-free or will be obtained from a site documented as uninfested by invasive plants.
- With regard to aquatic invasive species, habitat within construction sites with aquatic invasive species will be isolated prior to in-channel work. A qualified biologist(s) with expertise in Tahoe Basin aquatic plant and animal species will be present during construction and will supervise the removal and disposal of nonnative invasive species from the project area. All biologists working on this program will be qualified to conduct nonnative aquatic species removal/disposal in a manner that avoids and/or minimizes all potential risks to native aquatic species, particularly any special status species potentially encountered. Biologists will be on site when work sites are isolated and/or dewatered, if necessary, in order to capture, handle, and safely remove or dispose of any nonnative aquatic invasive species encountered. This program will be closely coordinated with the Aquatic Species Rescue and Relocation Program, described below as Environmental Commitment 7.

After project construction, the project site will be annually monitored for occurrence of invasive plants for four years. If invasive species are documented during monitoring, they will be treated and eradicated to prevent further spread.

Environmental Commitment 5: Prepare and Implement Effective Construction Site Management Plans. Several agencies (e.g., TRPA, the Lahontan RWQCB, the U.S. Army Corps of Engineers [USACE], CDFW, U.S. Fish and Wildlife Service [USFWS], and CSLT) regulate construction risks to water quality and vegetation degradation. The project includes several site management plans to comply with these existing regulations, including but not limited to a grading and erosion

Table 2-6
Environmental Commitments of the Upper Truckee River and Marsh Restoration Project

control plan, a dewatering and channel seasoning plan, a diversion plan, a winterization plan, and a monitoring and construction management plan. The plans require design features that:

- Restrict the area and duration of construction disturbance to the absolute minimum necessary to accomplish work. Protect existing vegetation outside construction area and salvage and reuse riparian vegetation where it needs to be disturbed.
- Design, install, and maintain temporary BMPs to protect disturbed areas and minimize soil erosion, prevent surface runoff interaction with disturbed surfaces, and limit the potential for release of sediment to surface water bodies for storm events up to the 20-year precipitation event.
- Design, install, and maintain internally draining construction area(s) within the study area to prevent discharge of untreated stormwater into surface water bodies. Anticipate runoff from adjacent lands and reroute it around the construction zone.
- Salvage topsoil to be reused on-site during project-related grading.
- Provide winterization that isolates and protects disturbed areas from high streamflow on the Upper Truckee River and Trout Creek (up to the 50-year event).
- Secure a source of transportation and a location for deposition and/or storage of all excavated and imported materials at the project site and minimize use of nonlocal materials and importation of materials from off-site.
- Protect stockpiled and transported materials or debris from wind or water erosion. Store soil and other loose material at least 100 feet from the active channel during the construction season. Designate staging areas and haul routes in existing developed or disturbed areas where feasible, and where not feasible, in the least sensitive natural areas feasible.
- Flag and/or fence boundaries of staging areas, haul routes, and construction sites.
- Restrict the placement of materials or equipment to designated staging areas or construction sites and prohibit the use of vehicles off of roads and haul routes.
- Minimize overwinter storage of materials, vehicles, equipment, or debris within the 100-year floodplain.
- Provide site-specific and reachwide dewatering/diversion plans that indicate the scheduling approach and/or maximum diverted flows to minimize risks from summer thunderstorms, specific diversion/bypass/ dewatering methods and equipment, defined work areas and diversion locations, the types and locations of temporary BMPs for the diversions and reintroduction points, measures and options for treating turbid water before release back to the channel, and stated water quality performance standards.
- Salvage and reuse plant materials to the extent practicable.
- Avoid fertilizer application to revegetated areas.
- Provide flushing flows before activation of new and reconnected river channel sections based on a "channel seasoning" plan that indicates the water source(s); volumes and duration required; phased placement of clean, washed gravels; and the measures and options for treating potentially turbid water.
- Require all contractors to develop Spill Prevention Plans (SPPs) and Storm Water Pollution Prevention Plans (SWPPPs). These plans will contain BMPs to be implemented to minimize the risk of sedimentation, turbidity, and hazardous material spills. Applicable BMPs may include permanent and temporary erosion control measures, including the use of straw bales, mulch or wattles, silt fences, filter fabric, spill remediation material such as absorbent booms, proper staging of fuel, out of channel equipment maintenance, and ultimately seeding and revegetating. Preventing contaminants from entering the river during construction and operation of the project will protect water quality and the aquatic habitat.
- Maintain the effectiveness of temporary erosion control, stormwater facilities, and flood flow protections throughout the construction area. Monitor the status and effectiveness of temporary erosion control, stormwater facilities, and flood flow protections throughout the construction area, including each of the internally draining zones that could separately discharge to various surface water bodies. Monitor turbidity upstream of the Upper Truckee River and Trout Creek, and where feasible, downstream of the construction zone. Monitoring will be conducted by qualified personnel on a regular basis during summer construction and on an event basis when runoff equals or exceeds the BMP design standards. Document failures and/or threats of BMP failures, and identify remedial measures implementation. Repair BMP failures within 24 hours of documentation.

Environmental Commitment 6: Obtain and Comply with Federal, State, Regional, and Local Permits. Federal, state, and local permits, as described in the other ECs in this table, require that the project include various environmental protection features. The project includes all necessary permits and the standard requirements to comply with the permits, as described

more specifically in the other ECs in this table. The anticipated compliance, consultation, and coordination are described further in Chapter 5 of the Draft EIR/EIS/EIS.

Environmental Commitment 7: Prepare and Implement an Aquatic Species Rescue and Relocation Plan. TRPA Code Section 79, "Fish Resources," and CDFW regulations protect aquatic organisms from construction-related effects. The project includes an Aquatic Species Rescue and Relocation Plan that will protect native fish or desired sport (trout) and native mussels from impacts associated with construction of the project. The objective of the rescue and relocation effort is to reduce harm and avoid potential mortality of important aquatic species, especially sensitive fish species and mussels, which may be present within the project area. The plan will be completed, reviewed, and approved by both CDFW and USFWS (for Lahontan cutthroat trout) prior to initiation of construction.

Aquatic habitat within work areas will be isolated (using block nets, silt curtains, or coffer dams) prior to in-channel work. A qualified biologist with expertise in Tahoe Basin aquatic species, including the collection, handling, and relocating of fish and freshwater mussels, habitat relationships, and biological monitoring of Tahoe Basin fish species will supervise the fish and mussel rescue and relocation program for the project. All biologists working on the fish rescue and recovery program will be qualified to conduct fish and mussel collections in a manner that minimizes all potential risks to collected animals, particularly any special status species potentially encountered.

Aquatic organisms isolated within the work area(s) will be removed by hand, seine netting, or, if necessary, electrofishing. Partial dewatering of the site will facilitate removal of aquatic species, but dewatering should not expose or strand individuals to be rescued, and water temperature and dissolved oxygen levels should be monitored to maintain levels supporting the most sensitive species. Should western pearlshell mussels be found in the site, the mussels shall be removed prior to fish rescues to minimize injury from foot traffic or electrofishing. Mussels can be located and removed by hand in wadeable streams; snorkeling and hand removal may be needed in deeper water. If electrofishing is necessary, it will be performed by qualified biologists and conducted according to established guidelines provided by CDFW and USFWS. Biologists will be on site when work sites are isolated and/or dewatered, in order to capture, handle, and safely relocate sensitive fish species (i.e., Lahontan cutthroat trout and western pearlshell mussels). Appropriate rescue methods should consider both general (low conductive water) and site-specific conditions (substrate, bed morphology).

All captured native fish and mussels will be relocated, as soon as possible, to another Upper Truckee River site that has been preapproved by CDFW and USFWS and/or USFS biologists, and in which suitable habitat conditions are present.

All captured invasive species encountered (e.g., bluegill, bass, and catfish) or aquatic invasive plants will be disposed of, consistent with the approved Environmental Commitment 4, "Prepare and Implement an Invasive Species Management Plan," described above.

Environmental Commitment 8: Prepare a Final Geotechnical Engineering Report. TRPA requires preparation of grading plans which are will be developed based on the geotechnical report information to support project designs and construction activities. Section 33.3, "Grading Standards," of the TRPA Code of Ordinances regulates excavation, filling, and clearing to avoid adverse effects related to exposed soils, unstable earthworks, or groundwater interference. Section 33.3 specifically addresses seasonal limitations, winterization techniques, discharge prohibitions, dust control, disposal of materials, standards for cuts and fills, and excavation limitations. Section 33.4, "Special Information Reports and Plans," regulates the need for special investigations, reports, and plans determined to be necessary by TRPA to protect against adverse effects from grading, including potential effects on slope stability, groundwater or antiquities. The project includes a final geotechnical engineering report for the project that will address and make recommendations on the following as necessary:

- site preparation;
- appropriate sources and types of fill;
- potential need for soil amendments;
- access roads, pavement, and asphalt areas;
- shallow groundwater table; and
- soil and slope stability.

In addition to the recommendations for the conditions listed above, the geotechnical investigation will include subsurface testing of soil and groundwater conditions for proposed project elements and will determine appropriate bulkhead and levee and bridge foundation designs that are consistent with CSLT code requirements. The shorezone is regulated by the TRPA Code, Chapters 54 and 55. As a result, all projects which fall within this area a referred to the TRPA for review. The CSLT review will be limited to providing input into the TRPA process and processing the project through the city permit process. (Ord. 903. Code 1997 § 5-29) As described in section 7.20.070 Exemptions of the CSLT Code unless in conflict with provisions of adopted general and/or specific plans, stream restoration or alteration projects conducted under valid regional,

Table 2-6
Environmental Commitments of the Upper Truckee River and Marsh Restoration Project

state or federal permits, e.g., stream alteration permits, water quality certifications, etc. may be done without obtaining a CSLT grading permit. Exemption from the requirement of a grading permit shall not be construed as permission to violate any provision of code requirements (Ord. 1000 § 1. Code 1997 § 36-7). All recommendations contained in the final geotechnical engineering report will be implemented by the Conservancy. Special recommendations contained in the geotechnical engineering report will be noted on the grading plans and implemented as appropriate before construction begins. Design and construction of all phases of the project will be in accordance with current CSLT code requirements at the time of construction.

Environmental Commitment 9: Develop and Implement a Construction Management Program. The project includes a construction management program that will inform contractors and subcontractors of:

- work hours,
- modes and locations of transportation and parking for construction workers,
- location of overhead and underground utilities,
- worker health and safety,
- truck routes,
- stockpiling and staging procedures,
- public access routes,
- the terms and conditions of all project permits and approvals, and
- the health and safety plan (HASP) information described below.

The project includes a HASP, which will be complied with throughout project implementation because construction personnel shall be made familiar with the contents of the plan before the start of construction activities. A copy of the plan shall be posted in the trailer used by the on-site construction superintendent. The HASP:

- clearly notifies all workers of the potential to encounter hazardous materials during demolition and construction activities;
- identifies proper handling and disposal procedures for contaminants expected to be on-site as well as maps and phone numbers for local hospitals and other emergency contacts;
- requires that stored hazardous materials present in the study area be removed and disposed at appropriately permitted locations, as appropriate;
- describes fire prevention and response methods, including fire precaution, prevention, and suppression methods that are consistent with the policies and standards in South Lake Tahoe;
- includes a requirement that all construction equipment be equipped with spark arrestors; and
- includes construction notification procedures for CSLT police, public works, and fire department and schools within one-quarter mile before construction activities.

As required by California Public Resources Code Section 21151.4, the Conservancy shall provide written notification of the project to the Lake Tahoe Unified School District at least 30 days before certification of the EIR/EIS/EIS and shall consult with the school district regarding proper handling and disposal methods associated with substances subject to California Health and Safety Code Section 25532. Notices would also be distributed to neighboring property owners, local agencies, and public works, police, and fire departments, and the Lake Tahoe Unified School District.

Environmental Commitment 10: Establish and Implement a Management Agreement with the El Dorado County Vector Control District. The project includes a management agreement with the El Dorado County Vector Control District (EDCVCD) to adequately control mosquito populations in the study area. As a performance criterion for the management agreement, the terms and conditions of the agreement will be designed to ensure that EDCVCD can maintain mosquito abundance at or below preproject levels. The agreement will include, but not be limited to, the following:

- measures that ensure necessary access for monitoring and control measures;
- EDCVCD review of project plans and provision of recommendations for management of mosquito populations; and
- applicable best management practices from the California Department of Public Health's *Best Management Practices for Mosquito Control on California State Properties* (CDPH 2012), including
  - procedures for coordinating Conservancy and EDCVCD management activities, and
  - providing public information for visitors and the community regarding control measures being implemented, the risk

Table 2-6
Environmental Commitments of the Upper Truckee River and Marsh Restoration Project

of transmission of mosquito-borne disease, and personal protective measures.
Environmental Commitment 11: Incorporate Effective Permanent Stormwater Best Management Practices. TRPA (TRPA Code Section 25, "Best Management Practices Requirements") and Lahontan RWQCB regulations (Clean Water Act Section 402) require that the final design of all recreation features with impervious or partially pervious surfaces will incorporate effective permanent BMPs for the protection of water quality. The project includes design features that will conform to applicable ordinances and standard conditions established by TRPA and the Lahontan RWQCB. At a minimum, the stormwater design will: ► minimize the area of disturbance and coverage for all permanent features; ► maximize the use of porous media (e.g., porous pavement, decomposed granite fill) for trail surfaces; ► optimize trail slopes for proper drainage; ► provide for at-the-source infiltration of roof or other cover runoff; and ► provide for collection of runoff from impervious pavements and direct the runoff through oil/water separator(s) and advance treatment prior to discharge to Stream Environment Zones (SEZs).
Environmental Commitment 12: Prepare and Implement Traffic Control Plans. To ensure consistency with CSLT Code 26-16 and state safety orders, rules, and regulations of the Division of Industrial Safety including §1598. Traffic Control for Public Streets and Highways, the project includes traffic control plans for construction activities that may encroach on CSLT and California State road rights-of-way. The traffic control plans will follow California Department of Transportation's (Caltrans) Standard Plans, Standard Special Provisions, and Non-Standard Special Provisions for Temporary Traffic Control Systems and will be signed by a professional engineer. Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to existing land uses will be maintained at all times, with detours used as necessary during road closures. Traffic control plans will be submitted to the CSLT Public Works Department for review and approval before construction of project phases whose implementation may cause encroachment on CSLT or California State road rights-of-way. The Traffic Control Plan will address safety conflicts between construction traffic and of local traffic, pedestrians, and bicyclists. The plan will include advance public advisories, construction-period signage, flag personnel, and other special traffic-control actions as necessary. Specific measures contained in the plan include the following. ► Distribute or mail flyers to residents in the nearby Al Tahoe, Highlands Woods, and Tahoe Keys subdivisions advising about upcoming project traffic prior to the initiation of construction. ► Place advisory signs along construction routes in advance of construction to alert traffic, pedestrian, and bicyclists about the upcoming construction traffic activity. ► Install construction area signage on designated haul routes to inform the public of the presence of trucks. ► Provide flag personnel when truck activity is heavy (i.e., more than ten trucks per hour). ► Provide information to all truck drivers identifying haul routes, speed limits, location of flaggers, and any other pertinent public safety information. ► Monitor truck and traffic conditions to identify traffic congestion, safety concerns regarding truck, vehicle, and pedestrian and bicycle conflicts and adjust management approach as needed.
Environmental Commitment 13: Prepare and Implement a Public Outreach Plan. The project includes a Public Outreach Plan (POP) to inform the general public and partnering agencies, such as the CSLT, El Dorado County Vector Control, and El Dorado County Animal Control, of construction-related activities within the Project Area. Further, in consultation with the construction contractor, every effort will be made to maintain access to and within the Study Area, including trail access to Lake Tahoe, insofar as the public's health and safety can be assured. There may be periods of time when it is deemed unsafe for the public to be within the study area and/or on trails to the lake during certain construction activities. These periods of restricted access are alternative and construction season dependent. The POP will include strategies to inform the general public and partnering agencies of access restrictions and their anticipated timelines, alternate locations for passive recreation activities, and site access information. Communication of this information may be through signage at access points, messages posted to the Conservancy website, and Public Service Announcements and news articles in the local and regional newspapers, online and in print.

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Environmental Commitments of the Upper Truckee River and Marsh Restoration Project

Environmental Commitment 14: Prepare and Implement a Waterway Traffic Control Plan for Alternatives That Affect the Sailing Lagoon and/or all accessible reaches of the Upper Truckee River within the Upper Truckee River and Marsh Restoration Project Area. The project includes a waterway traffic control plan to ensure safe and efficient vessel navigation during construction at the junction of the Sailing Lagoon and the adjacent channel of the Tahoe Keys Marina and within all accessible reaches of the Upper Truckee River within the project area. The plan will include vessel (motorized and unmotorized) traffic control measures to minimize congestion and navigation hazards. Construction areas in the waterway will be barricaded or guarded by readily visible barriers, or other effective means to warn boaters of their presence and restrict access. Warning devices and signage will be consistent with the California Uniform State Marking System and effective during nondaylight hours and periods of dense fog. The Conservancy will maintain safe boat access to public launch and docking facilities, businesses, and residences of the Tahoe Keys Marina and will minimize the partial closure of the waterway. Where temporary channel closure is necessary, a temporary channel closure plan shall be developed. The waterway closure plan shall include procedures for notification of the temporary closure to the United States Coast Guard, boating organizations, Tahoe Keys Marina, boat/kayak rental businesses within the area, and all other effective means of notifying boaters.
Notes: BMP = best management practice; CEQA = California Environmental Quality Act; Conservancy = California Tahoe Conservancy; NEPA = National Environmental Policy Act; NOX = oxides of nitrogen; PM10 = particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ROG = reactive organic gases; RWQCB = Regional Water Quality Control Board; TRPA = Tahoe Regional Planning Agency Source: Data compiled by AECOM in 2013

3 MASTER RESPONSES

The responses presented in this chapter address common environmental issues raised in multiple comments on the August 2013 draft environmental impact report/environmental impact statement/environmental impact statement (Draft EIR/EIS/EIS) for the Upper Truckee River and Marsh Restoration Project. They are referred to as "master responses" and are identified by topic so that reviewers can readily locate all relevant information pertaining to an issue of concern. When issues are addressed in the broader context provided by master responses, the interrelationships among the individual issues raised can be better clarified. It is also possible to provide a single explanation of an issue that is more thorough and comprehensive than separate, narrowly focused responses presented without any context. Because it avoids unnecessary repetition of information, the use of master responses also streamlines this Final environmental impact report/environmental impact statement/environmental impact statement (final EIR/EIS/EIS). Chapter 4 of this document presents all of the comment letters received and responses to specific comments received on the Draft EIR/EIS/EIS.

3.1 MASTER RESPONSE CATEGORIES

The master responses are organized by environmental topic area where multiple comments were received and are presented in the following sections of this chapter:

- Section 3.1.1, "Flooding and Flood Hazards"
- Section 3.1.2, "Traffic, Access, and Staging"
- Section 3.1.3, "Construction Noise"
- Section 3.1.4, "Management"

3.1.1 FLOODING AND FLOOD HAZARDS

This master response addresses comments on the 2013 Draft EIR/EIS/EIS related to concerns about the adequacy of the impact analysis for flooding and flood hazards, particularly related to the residential neighborhoods west of the Upper Truckee River. Although commenters typically recognized that their properties are located in existing flood-prone areas, including Federal Emergency Management Agency (FEMA)–designated flood hazard zones, they were concerned that the proposed project could worsen conditions. Commenters questioned the certainty of the hydraulic modeling presented in the Draft EIR/EIS/EIS flooding analysis (Section 3.8, "Hydrology and Flooding"). This section of this master response addresses all or part of the following comments: AO5-8, AO5-9, AO9-1, AO9-2, I3-2, I8-5, I8-7, I12-1, I14-1, I16-1, I17-1, I19-1, I25-1, I26-1, I27-1, I29-1,I30-1, I32-1, I34-1, I35-1, I36-1, I37-1, I41-1, I42-2, I42-4, I45-8, I46-1, I50-7, I51-5, I50-6, I51-11, I51-12, I56-1, and I60-1. Additional responses to flooding comments, including model accuracy and confidence assessments, can be found in Appendix D (Additional responses to comments received after the comment period).

The proposed project is a restoration project and not a flood hazard project, as the primary purpose is to improve natural resources such as water quality and wildlife habitat. To respond to comments fully, the Conservancy and its consultants completed recent updates to the Preferred Alternative flood modeling, which is documented in a technical memorandum (Appendix B). Conservancy consultants first completed flood modeling in 2005 to assess the potential flood effects from Project Conceptual Alternatives, and the Conservancy used these 2005 modeling results in the Project Draft EIR/EIS/EIS. We have completed another, more detailed and extensive modeling effort to verify the information presented in the Draft EIR/EIS/EIS and ensure the recommended alternative will not result in adverse flood impacts. While the particular methods and models differed, both modeling efforts demonstrate that the Preferred Alternative will not increase flood hazards to adjacent developed areas. The following paragraphs provide additional background and context, along with a summary of the recent flood modeling study with references to specific sections of the technical memorandum.

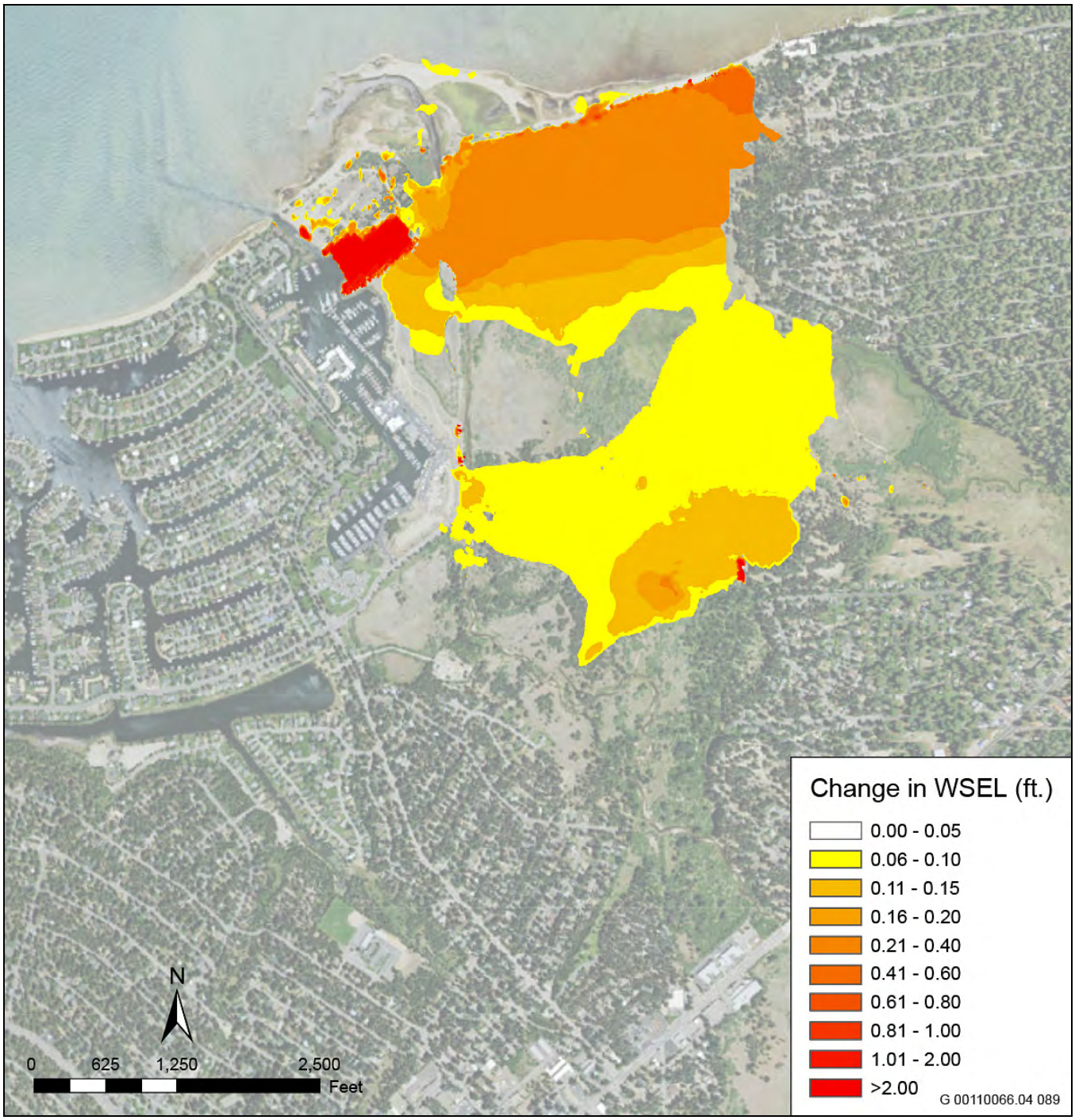
Flooding of areas adjacent to river channels is a natural process, and large winter precipitation flood events have historically inundated the Marsh and several adjacent developed areas. The Federal Emergency Management Agency (FEMA) and CSLT designated floodplain extends across the study area and into some areas of the adjacent residential neighborhoods. In January 1997 a multi-day rain-on-snow event resulted in very high flow rates on the Upper Truckee River. While flow estimates for that flood varied due to damage incurred at the United States Geological Survey gage, the estimated range of the 1997 peak flow is comparable to the statistical 100-year event analyzed by FEMA in their subsequent floodplain mapping studies. Conservancy staff visited the Tahoe Island and Sky Meadows neighborhoods during the 1997 flood and documented the conditions through various photos, some of which are included in the attached memo. Conservancy consultants visited several of these same areas in 2000 and surveyed the elevation of 1997 flood indicators at representative locations. These data points have been useful for later calibration of the flood models.

The Conservancy contracted for technical assistance from Cardno Inc. (Cardno) to perform the updated flood modeling. Cardno developed two-dimensional hydraulic models for the existing and proposed conditions, using the FEMA approved XP Solution's Stormwater &Wastewater Management Model (XPSWMM model). The Conservancy and Cardno selected this model because it uses detailed topographic and site information, and also because it successfully represents the complex flow patterns in the shared floodplain of the Upper Truckee River and Trout Creek, and surrounding urban areas. As detailed in the attached technical memorandum, the Cardno modeling effort includes numerous conservative approaches and assumptions to replicate the "worst case" flooding scenario. The Conservancy requested this approach to reduce uncertainties while providing the highest level of technical assurance that the Preferred Alternative will not adversely impact nearby private properties.

Cardno prepared the technical memorandum, which documents the details of the model, including the model inputs, outputs and processing, along with the model results for the existing and proposed conditions. Cardno modeled the 10 and 100-year events, based on parameters and guidance from a recent 2012 FEMA modeling effort. For additional information, specifics, and results of this updated modeling effort please refer to Appendix B.

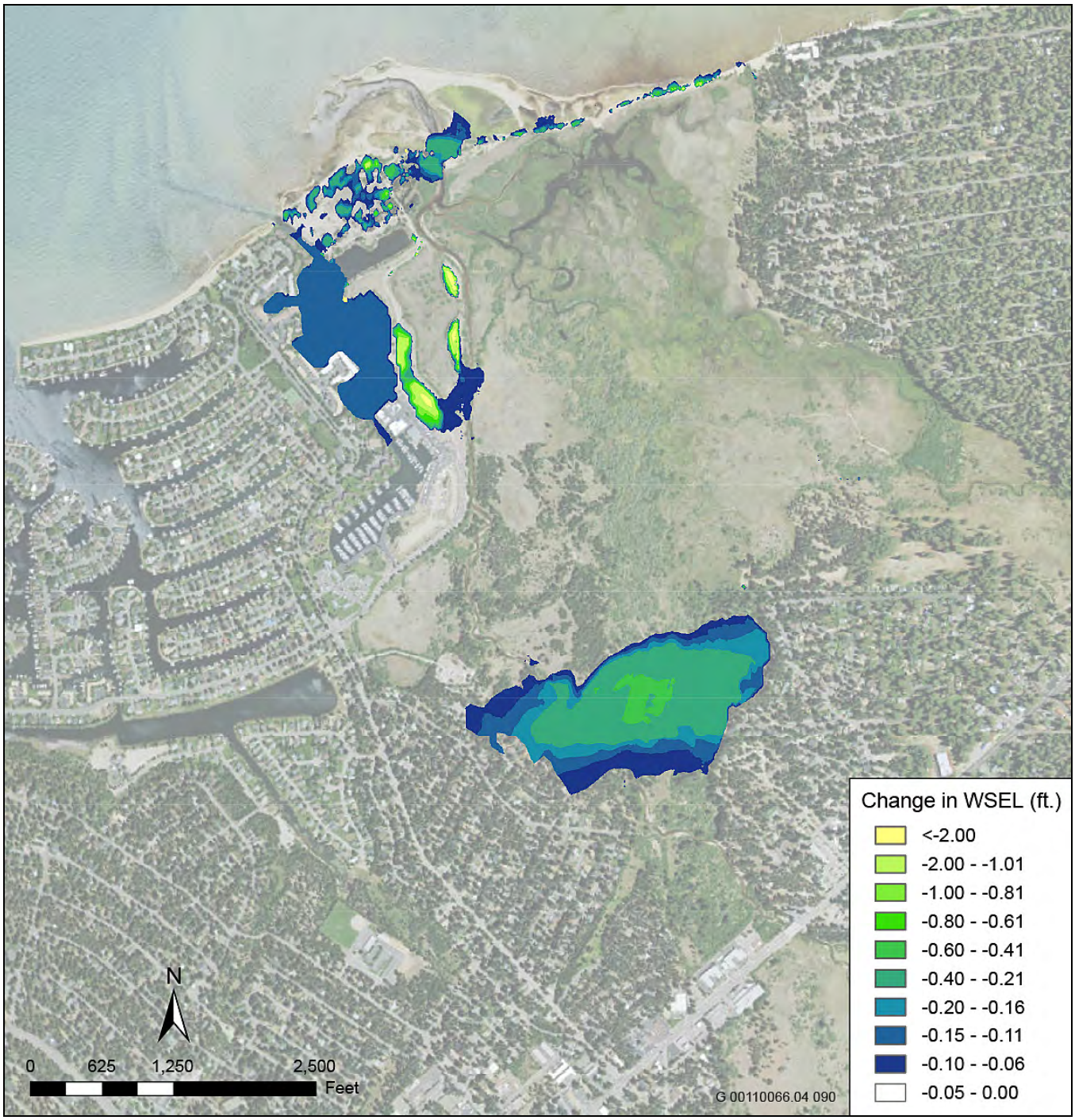
The modeled 100-year flood extent under the existing condition scenario aligns very closely to the mapped FEMA regulatory 100-year floodplain, and the surveyed flood indicators from the 1997 flood event. The Preferred Alternative does not impact the 100-year flood extent and elevations on the private properties surrounding the Marsh. Pages 4-7 and 6-6 of the technical document display the 100-year model results under the existing and proposed conditions (Exhibits 3.1-1 and 3.1-2) show the net change in flood depths in the proposed condition. Some areas in the center of the Marsh and near the barrier beach demonstrate increased flood depths, which is consistent with the project objectives to improve wetness and habitat in these areas. The model results on these figures show that the developed private and residential properties adjacent to the Marsh do not experience increased floodwaters as a result of the Preferred Alternative.

The hydraulic modeling of both the existing conditions (see Appendix B for more detail) and the proposed conditions under the Preferred Alternative presented in the technical memorandum are at the same level of detail; utilize the most detailed and up-to-date topographic and bathymetric data; calculate results using consistent grid scales; have the same hydrologic inputs, and make the same 2D model simulation assumptions. The modifications for the Preferred Alternative model runs considered the pilot-channel excavation; removal of the reserve fill along the river at the Lower West Side (LWS) Restoration area; partial backfilling of the existing channel; the reconnection of the Sailing Lagoon to the river; and the associated vegetation and roughness changes for these areas. To ensure that worst-case flooding impacts were simulated, some of the potentially beneficial changes to the floodplain were not simulated, because they involve actions that would require permissions or agreements that are not yet certain. These potential features of the Preferred Alternative include lowering of existing high-terrace sections to create active floodplain areas with more uniform meadow vegetation; removal of the TKPOA Corporation Yard fill; removal of all reserve fill at LWS; and removal of fill near the east end of Barton Beach. This facilitates a rigorous comparison of the proposed 'with Project' versus existing conditions as a reliable and quantitative basis for concluding that the Preferred Alternative is flood-neutral.



Source: Cardno 2015

Exhibit 3.1-1. 100-Year Flood WSEL Increases with Preferred Alternative



Source: Cardno 2015

Exhibit 3.1-2. 100-Year Flood WSEL Decreases with Preferred Alternative

The following two comparative figures (Exhibits 3.1-1 and 3.1-2) depict 2D model output that has been analyzed in GIS software to identify the 'difference' in 100 year water surface elevations for the Preferred Alternative versus existing condition. A 'positive' value represents a higher water surface elevations (WSEL) under the Preferred Alternative (Exhibit 3.1-1) and a 'negative' value indicates a lower WSEL for the Preferred Alternative (Exhibit 3.1-2).

The positive residuals for the 100-year event (Exhibit 3.1-1) assist with screening for adverse flood hazard impacts. There are WSEL increases in the reconnected Sailing Lagoon (2 to 5 feet), at and upstream of the reconfigured mouth (+0.1 to 0.4 feet), and throughout the back-beach lagoon across the Marsh (+0.1 to 0.8 feet). Another area of increase is in the middle of the Marsh where the pilot channel reconnects to remnant channels (+0.2 to 0.4 feet). All of these increased 100-year WSELs are desired and expected outcomes that occur without producing adverse flooding changes on surrounding developed lands.

The negative residuals for the 100-year event (Exhibit 3.1-2) assist with screening for possible improvements in hazardous flood levels. A broad area at the downstream end of the valley reach along the Upper Truckee River, including the area modified for the pilot channel, is simulated to have lowered 100-year WSELs (-0.1 to -0.4 feet). A zone of lowered WSELs (-0.06 to -0.2 feet) is simulated on the southwest margin of the 100-year floodplain, along residential areas. The largest decreases are along the LWS (-1 to -5 feet), where fill is being removed and water is allowed to spread across the restored floodplain. WSELs are also lowered downstream of the reconfigured mouth (-.05 to 2 feet).

The changes to the site associated with implementing the Preferred Alternative would; therefore, increase the 100-year WSEL relative to existing conditions at locations and in a manner that are desired and may benefit the ecosystem services of the Marsh, without expanding the floodplain or increasing flood hazards to adjacent developed lands. The results of the detailed 2D hydraulic modeling of the 100-year flood hazards, including rigorous and quantitative comparison of proposed and existing conditions, (described above and in Appendix B) indicate that the conclusion of Impact 3.8-3 (Alt. 3) "Modified 100-Year Flood Flow Directions or Floodplain Boundaries" in the Draft EIR/EIS/EIS remains applicable to the Preferred Alternative. Changes to the 100-year floodplain associated with the Preferred Alternative would not expand the extent of flooding, increase the depth of flooding, or cause inundation of any existing structures during the 100-year event. Therefore, this impact would be less than significant.

Section 15088.5 of the CEQA guidelines (State CEQA Guidelines) states that the lead agency is required to recirculate an environmental impact report (EIR) when significant new information is added after public notice is given of the availability of the Draft EIR for public review under Section 15087, but before the EIR is certified. Information can include changes in the project or environmental setting as well as additional data or other information. New information added to an EIR is not "significant" unless the EIR is changed in a way that deprives the public of a meaningful opportunity to comment on a substantial adverse environmental effect of the project or a feasible way to mitigate or avoid such an effect that the project's proponents have declined to implement. Recirculation is not required where the new information added to the EIR merely clarifies or amplifies or makes insignificant modifications in an adequate EIR.

NEPA regulations require agencies to recirculate an EIS if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. If the question turns on issues of fact that implicate an agency's expertise—i.e., whether new information undermines conclusions contained in a prior EIS—courts will defer to the "informed discretion" of the agency so long as the decision is not arbitrary or capricious. An agency need not prepare a new EIS to address a proposed action as long as it has already taken a "hard look" at the action's potential environmental consequences.

TRPA Compact and Code of Ordinances do not specifically state when recirculation is required; however, they rely on other State and federal regulations and when evaluating recirculation.

In the instance above, the more refined details and modeling results are provided to support the conclusion presented in the Draft EIR/EIS/EIS that the proposed project is flood-neutral. The project does not include any increase in the severity of the environmental impacts or any new impacts not previously analyzed, nor are the conclusions changed as presented for this analysis section in the Draft EIR/EIS/EIS. Rather, the refined details and updated modeling support the initial conclusion presented in the Draft EIR/EIS/EIS.

3.1.2 TRAFFIC, ACCESS, AND STAGING

This master response addresses general comments made on the adequacy, accuracy, and completeness of the traffic impact analysis, mitigation measures, and findings used for significance conclusions in the Draft EIR/EIS/EIS. In addition, the master response addresses comments associated with use of California Avenue, Michael Avenue, Washington Avenue, or Colorado Avenue for haul routes and for staging and access on Conservancy parcels and responds to all or part of the following comments: AO2-2, AO2-6, I3-6, I8-2, I8-4, I8-7, I12-1, I14-1, I16-1, I17-1, I19-1, I25-1, I26-1, I27-1, I29-1, I32-1, I34-1, I35-3, I36-1, I37-1, I40-4, I41-1, I42-1, I45-10, I46-1, I50-5, I51-2, I51-3, I51-6, I51-8, I51-9, I51-10, I52-3, I56-1, and I60-1.

The traffic analysis presented in the Draft EIR/EIS/EIS included existing and forecasted traffic volumes. A maximum-intensity approach was taken that assumed maximum probable concurrent employment in the study area, as well as maximum concurrent truck activity. Staging and access points were originally developed from a very broad perspective to allow flexibility for the contractor's use during construction. Given the level of design detail typically provided in an EIR/EIS/EIS, this broader perspective allowed for flexibility if there were other constraints that developed during the environmental analysis or through regulatory consultation and permitting requirements.

Several comments expressed concern about the use of neighborhood streets surrounding the study area; therefore, a more refined approach has been presented here. The Preferred Alternative would use main arterials to access the study area, such as U.S. Highway 50 (Lake Tahoe Boulevard), Venice Drive, and Tahoe Keys Boulevard. Some activities would require the use of Silver Dollar Avenue, Silverwood Circle, Rubicon Trail, and Springwood Drive, as well as Lakeview Avenue and Lily Avenue to access the eastern lakeshore area. Staging and the majority of hauling would occur within the study area as shown in Exhibit 2-2 in Chapter 2, "Project Description," of this Final EIR/EIS/EIS. The Preferred Alternative does not propose construction staging areas or access points on California Avenue, Michael Avenue, Washington Avenue, or Colorado Avenue, and staging on Conservancy parcels in the neighboring communities has been removed to avoid conflicts of use. Haul routes have been selected to occur immediately adjacent to construction areas and access points, and staging areas have been identified, in part, to minimize construction activities and hauling within sensitive habitats. Construction activities must occur within the floodplain, Stream Environment Zone (SEZ), and some areas of wetland and riparian vegetation to accomplish the restoration efforts and installation of recreation facilities, but disturbance would be limited to areas necessary in the footprint and essential for access.

The Preferred Alternative also limits the number of stream crossings in the study area. To minimize construction activity and hauling impacts on sensitive habitats and water quality, Environmental Commitment 5 has been included as part of the project. Environmental Commitment 5 would require permits and approvals from several entities (e.g., TRPA, the Lahontan Regional Water Quality Control Board, USACE, the California Department of Fish and Wildlife, the U.S. Fish and Wildlife Service, and the City of South Lake Tahoe [CSLT]) that would impose conditions and requirements to minimize construction risks of water quality and vegetation degradation. The Conservancy would develop and implement several site management plans before construction, including but not limited to a grading and erosion control plan, a dewatering and channel seasoning plan, a diversion plan, a winterization plan, and a monitoring and construction management plan. Furthermore, Environmental Commitment 8 requires the Conservancy to obtain the services of a licensed geotechnical engineer to prepare a final geotechnical engineering report for the project that would address and make recommendations on the following elements as necessary:

- Site preparation
- Appropriate sources and types of fill
- Potential need for soil amendments
- Access roads, pavement, and asphalt areas
- Shallow groundwater table
- Soil and slope stability

The Conservancy would implement all recommendations contained in the final geotechnical engineering report. Special recommendations contained in the geotechnical engineering report would be noted on the grading plans and implemented as appropriate before construction begins. Design and construction of all phases of the project would occur in accordance with current CSLT code requirements at the time of construction.

To assist with conflicts between construction workers, drivers, and the community, Environmental Commitments 9, 12, and 13 have been included as part of the project. These environmental commitments require developing and implementing a construction management program, a traffic control plan, and a public outreach plan. The construction management program would inform contractors and subcontractors of work hours; modes and locations of transportation and parking for construction workers; locations of overhead and underground utilities; worker health and safety plans; truck routes; stockpiling and staging procedures; public-access routes; and the terms and conditions of all project permits and approvals.

The Conservancy would prepare a public outreach plan to inform the general public and partnering agencies, such as the CSLT, the El Dorado County Vector Control District, and El Dorado County Animal Control, regarding construction-related activities in the study area. Further, in consultation with the construction contractor, every effort would be made to maintain access to and within the study area, including trail access to Lake Tahoe, insofar as the public's health and safety can be assured. There may be periods of time when it would be deemed unsafe for the public to be present in the study area and/or on trails to the lake during certain construction activities. These periods of restricted access would depend on the stage of construction.

The public outreach plan would include strategies to inform the general public and partnering agencies of access restrictions and their anticipated timelines, alternate locations for passive-recreation activities, and site access information. This information may be communicated through signage at access points, messages posted to the Conservancy Web site, and/or public service announcements and news articles in the local newspapers, online and in print.

The traffic control plan would include measures to ensure consistency with CSLT Code Section 26-16 and State safety orders, rules, and regulations of the Division of Industrial Safety. The traffic control plan would be developed before implementation and would follow the California Department of Transportation's Standard Plans, Standard Special Provisions, and Non-Standard Special Provisions for Temporary Traffic Control Systems. The traffic control plan would be signed by a professional engineer, overseen by the Conservancy, and implemented by the contractor.

Measures typically used in traffic control plans include advertising of planned lane closures, warning signage, a flag person to direct traffic flows when needed, and methods to ensure continued access by emergency vehicles. During project construction, access to existing land uses surrounding the study area would be maintained at all times, with detours used as necessary for road closures; however, any road closures required are expected to be minimal. The traffic control plan would be submitted to the CSLT Public Works Department for review and approval before construction of project phases whose implementation may cause encroachment on the rights-of-way of CSLT or California State roads. The traffic control plan would address safety conflicts between construction traffic and local traffic, pedestrians, and bicyclists and would include advance public advisories, construction-period signage, flag personnel, and other special traffic-control actions as necessary. Specific measures contained in the plan include the following:

- Distribute or mail flyers to residents in the nearby Al Tahoe, Sky Meadows, Highlands Woods, Tahoe Island, and Tahoe Keys subdivisions advising about upcoming project traffic before the start of construction.
- Place advisory signs along construction routes in advance of construction to alert traffic, pedestrians, and bicyclists about the upcoming construction traffic activity.
- Install construction-area signage on designated haul routes to inform the public of the presence of trucks.
- Provide flag personnel when truck activity is heavy (i.e., more than 10 trucks per hour).
- Provide information to all truck drivers identifying haul routes, speed limits, locations of flaggers, and any other pertinent public-safety information.
- Monitor truck and traffic conditions to identify traffic congestion as well as safety concerns regarding truck, vehicle, and pedestrian and bicycle conflicts, and adjust management approach as needed.

Concerns about construction traffic, access, and staging are expected to be resolved by the modified staging and access plan, best management practices (BMPs), construction management plan, traffic control plan, and public outreach plan. However, the Preferred Alternative also proposes no additional recreation-access construction on the east side of the marsh and minimal recreation infrastructure on the Marsh's west side, and the restoration approach requires the least amount of excavation and hauling of the proposed action alternatives Therefore, construction-traffic conflicts associated with the Preferred Alternative are expected to be less than those originally anticipated and therefore would have a less-than-significant impact. In addition, because the Preferred Alternative does not include new recreation infrastructure on the east side, it would not create increased parking pressures within the east side neighborhoods.

The State CEQA Guidelines require that an EIR describe any feasible measures that could minimize significant adverse impacts, and that the measures be fully enforceable through permit conditions, agreements, or other legally binding instruments (State CEQA Guidelines, Section 15126.4[a]). Mitigation measures are not required for impacts that are found to be less than significant. NEPA requires that an EIS identify relevant, reasonable mitigation measures that are not already included in the project alternatives that could avoid, minimize, rectify, reduce, eliminate or compensate for the project's adverse environmental effects (40 Code of Federal Regulations [CFR] 1502.14, 1502.16, 1508.8). The analysis of the proposed project, which includes Environmental Commitments 5, 9, 12, and 13, is consistent with these requirements.

3.1.3 CONSTRUCTION NOISE

This master response addresses general comments made on the adequacy, accuracy, and completeness of noise conditions, mitigation measures, and findings used for significance conclusions in the Draft EIR/EIS/EIS. It also addresses specific concerns associated with traffic noise on California Avenue and Conservancy parcels in neighboring communities and responds to all or part of the following comments: AO2-3, AO2-8, I8-1, I12-1, I14-1, I16-1, I17-1, I19-1, I24-2, I25-1, I26-1, I27-1, I29-1, I32-1, I34-1, I35-3, I36-1, I37-1, I37-2, I41-1, I46-1, I50-5, I51-4, I52-3, I56-1, and I60-1.

Activities related to construction will generate noise discernable to residents in nearby neighborhoods. While this is a change, the role of the environmental impact analysis is to quantify that change and then assess its potential to create significant impacts. The Conservancy has elected to use TRPA and El Dorado County regulatory standards as the measure of significance for noise effects.. Construction noise may be unwelcome, yet the Conservancy's responsibility in the proposed project is to avoid or mitigate significant impacts related to noise generation.

To assess potential noise impacts from construction, stationary sources, and area sources, noise-sensitive receptors and their relative exposure levels were identified. Noise (and vibration) levels of specific equipment

anticipated to be used in project construction or operation were determined and resultant noise levels at sensitive receptors were modeled assuming documented noise (vibration) attenuation rates.

The Federal Highway Administration Traffic Noise Prediction Model was used to model traffic noise levels along affected roadways, based on daily volumes and the distribution thereof from the traffic analysis prepared for this project (which is described in Section 3.16, "Transportation, Parking, and Circulation," of the Draft EIR/EIS/EIS). The project's contribution to the existing traffic-source noise levels along area roadways was determined by comparing the modeled noise levels at 50 feet from the roadway edge under no-project and plus-project conditions. The project's land use compatibility with future (2030) traffic source noise levels was determined by comparing modeled noise levels at proposed noise-sensitive receptors under plus-project conditions.

The construction activities and typical equipment required for construction under all the action alternatives were used to develop maximum combined noise levels in the Draft EIR/EIS/EIS to evaluate the effects on the nearest noise-sensitive receptors. In addition, the analysis stated that project construction would result in a short-term increase in traffic on the local area's roadway network, but this increase would not be sufficient to substantially increase traffic noise levels under all action alternatives. Typically, traffic must double to create a perceptible increase in overall traffic noise (Caltrans 1998:N-96). Because traffic would not double with implementation of the Preferred Alternative, there would not be a perceptible increase in overall traffic noise, and noise from single events (e.g., a truck driving along a haul route) would not exceed TRPA noise standards for single events.

In addition, construction activities would be temporary and noise-generating construction activities would not occur during the more noise-sensitive hours (i.e., before 8:00 a.m. and after 6:30 p.m. on weekdays, or after 5:00 p.m. on weekends or holidays). Noise from construction activity that occurs between 8:00 a.m. and 6:30 p.m. each day is exempt from the provisions of the applicable TRPA regulations. Noise from construction activity that occurs between 7:00 a.m. and 7:00 p.m. on weekdays (or between 8:00 a.m. and 5:00 p.m. on weekends and federal holidays) is exempt from the provisions of the applicable El Dorado County regulations. Because noise from project construction sources would be exempt, would not exceed the applicable standards, and would not increase overall local traffic-noise levels, impacts associated with construction were considered less than significant under all alternatives.

Under the Preferred Alternative, the closest potential haul routes on the local area's roadway network relative to the residential neighborhood on California Avenue adjacent to the study area are U.S. Highway 50 and Tahoe Keys Boulevard. The closest staging area is located at the end of Dover Avenue, a little more than 2,000 feet to the north. As described above and in Section 3.11, "Noise," of the Draft EIR/EIS/EIS, traffic typically must double to create a perceptible increase in overall traffic noise. Project construction would not contribute to a doubling of traffic on U.S. Highway 50 or Tahoe Keys Boulevard, and therefore would not generate a perceptible increase in overall traffic noise levels. General construction activities would generate perceptible increases in noise levels above ambient conditions that would exceed applicable noise thresholds (50 and 55 A-weighted decibels) within 2,500 feet for the Preferred Alternative. However, as described in Section 3.11, noise from construction activity is exempt from the provisions of the applicable TRPA regulations and applicable El Dorado County regulations if conducted within the allowable hours. Therefore, consistent with the action alternatives presented in the Draft EIR/EIS/EIS, the impact under the Preferred Alternative would be less than significant.

3.1.4 LAND MANAGEMENT ISSUES

This master response addresses comments on the Draft EIR/EIS/EIS related to management of the study area and specifically addresses concerns associated with maintaining infrastructure and services provided in the study area. This master response responds to all or part of the following comments: AO9-4, I3-1, I4-4, I4-5, I4-7, I4-8, I5-2, I5-3, I5-7, I5-9, I6-1, I7-1, I9-1, I20-2, I20-6, I21-2, I35-1, I38-1, I40-5, I44-1, I45-3, I45-6, I48-5, I50-3, I52-2, I55-1, I55-3, I57-1, and I59-3.

As described in Chapter 2, "Project Description," of the Draft EIR/EIS/EIS, the Conservancy follows an adaptive management approach for the Upper Truckee Marsh because natural systems of the Marsh and patterns of use are dynamic in nature. This approach allows adjustments to management needs over time. Generally the management approach for the Upper Truckee Marsh study area follows overall management practices to balance public access and recreation infrastructure with sensitive resource protection measures. Also, the 1988 litigation settlement leading to the acquisition of the Cove East Beach property in the northwest corner of the study area requires that recreational beach access west of the river mouth be maintained (*People of the State of California vs. Dillingham Development Company and TRPA*, CIV-S-85-0873-EJG [February 25, 1988]).

Land management relates to elements of the physical environment important for consideration in the EIR/EIS/EIS in the following ways: human use patterns and their potential for impacts on natural systems, maintenance of facilities to protect or restore natural systems, potential for harm to humans from natural conditions influenced by management activities, and potential for conflicts between user groups. The EIR/EIS/EIS must assess how the alternatives will alter these conditions and the potential for significant impact. The following description provides more detail related to existing land management strategies and programs and how the recommended project will effect or be affected by land management.

The Conservancy's approach relies on continued management coordination with multiple regulatory and enforcement agencies to reduce hazards of fire, trash, illicit uses, bird-plane collisions, nuisance animals and people, mosquito production, and potentially hazardous conditions (e.g., user-created facilities such as makeshift bridges). Recreational use and compliance with Conservancy use policies and CSLT ordinances require long-term management and maintenance to assure that project features continue to provide recreation benefits and protect natural resources. Through a land steward, the Conservancy conducts outreach to educate visitors regarding the importance of resource protection and to discourage incompatible uses. The Conservancy retains responsibilities as property owner of the study area that extends beyond trail uses. For example, the land management and forest health programs address stewardship responsibilities related to protection of natural and cultural resources.

Trails on the west side of the marsh are managed to protect public investment in construction costs and to provide broad access to users such that facilities meet safety needs of all age groups and abilities. The trail design incorporates features to keep through travelers on the trail surfaces to provide protection of SEZs and other sensitive sites. The design also recognizes the high desire for access to good views, Lake Tahoe and the Upper Truckee River, and other recreational amenities and provides specific, protected ways to accommodate that desire.

Authorized personnel in motorized vehicles, such as maintenance crews, would occasionally require access on trails, including the South Tahoe Public Utility District easement along user-created trails on the east side of the marsh (described further below). In recognition of the safety concerns related to mixing nonmotorized and motorized users on the same trails, these vehicles would operate under heightened safety conditions. This could include temporary trail closures, flashing lights, or warning flags or signs. Emergency medical or police/fire personnel requiring vehicle access, and using emergency lights and/or sirens, would use the protected trail surface as the law allows. No routine or administrative access in vehicles would be allowed. Parking on neighborhood streets provide legal access to the Upper Truckee Marsh where parking is allowed during the nonwinter months on CSLT streets. Because there is no proposed recreation features on the east side of the marsh under the Preferred Alternative that could potentially increase use, and each street crossing represents an access point such that the high number of potential access points reduces the potential for any one access to attract high volumes of use street parking is expected to be sufficient for recreation access.

User-created trails would be managed to protect water quality and are expected to be a neighborhood asset. To preserve neighborhood connections and an existing user-created trail system where resources permit, the design would incorporate BMPs as needed to reduce their impacts. In addition, directional and interpretive signing would be provided, and physical barriers (i.e., fencing) would be placed in critical areas to more emphatically direct users. For example, the design would place short sections of fencing at the entrances from San Francisco and Bellevue Avenues to direct all users to the user-created trails. Should new volunteer trails develop through the

marsh, additional measures such as fence sections or areas of new planting could be used to direct travel. Targeted plantings may also be used to discourage access.

Other actions include (but may not be limited to) posting of signs educating users regarding trail etiquette and trespass issues; increased monitoring to reduce litter, trespass, or other problems associated with trail access parking; and increased use of fencing to better direct users to access points. Also, the Conservancy funds the Tahoe Resource Conservation District to contract with the Clean Tahoe Program for trash removal services, including weekly inspection and maintenance of 12 garbage cans located throughout the property. In addition, the Preferred Alternative would include installation of additional signage in appropriate locations throughout the site and near sensitive habitats to discourage disturbance of those areas by people and pets.

Section 3.12, "Public Services," of the Draft EIR/EIS/EIS analyzed the potential for the alternatives to increase the demand for public services, including police protection services. Impacts associated with increased demand for police protection services were found to be less than significant for all action alternatives. The analysis looked at service needs associated with minimum, moderate, and maximum recreation levels of use. Because the Preferred Alternative is proposing infrastructure similar to existing conditions (moderate) on the west side of the Marsh and no additional recreation access on the Marsh's east side (less than all action alternatives), police protection services would remain similar to services under existing conditions.

The Conservancy contracts with the El Dorado County Sheriff's Office to provide security patrols in the study area and to enforce local ordinances. This usually involves activities with threat of imminent harm such as illegal camping or campfires. This cooperation is critical because Conservancy staff members have no law enforcement authority. It is important to note that El Dorado County law enforcement officials only exercise their authority in relation to the laws of the respective jurisdictions. Law enforcement officials would not enforce Conservancy trail and land management policies described that are not also prohibited by local or State statute. It should also be noted that the El Dorado County Sheriff's Department has an informal mutual aid agreement with the South Lake Tahoe Police Department for response during critical incidents. Additionally, the study area is within the jurisdiction of El Dorado County Animal Control. The Conservancy closes the area east of the Upper Truckee River to dogs during the waterfowl breeding season (May 1 through July 31). In addition, the Preferred Alternative would include installation of additional signage in appropriate locations throughout the site and near sensitive habitats to discourage disturbance of those areas by people and pets.

To address vector control, Environmental Commitment 10 requires the Conservancy to establish and implement a management agreement with the El Dorado County Vector Control District. As a performance criterion for the management agreement, the terms and conditions of the agreement would be designed to ensure that El Dorado County Vector Control District can maintain mosquito populations at or below preproject levels. The agreement would include but would not be limited to measures that would ensure necessary access for monitoring and control measures, El Dorado County Vector Control District review of project plans to include recommendations for management of mosquito populations, and applicable BMPs from the California Department of Public Health's Best Management Practices for Mosquito Control on California State Properties.

The Conservancy monitors for the presence of priority invasive species, and to the extent practicable, implements appropriate measures to control and eradicate populations. The Conservancy also coordinates with the Lake Tahoe Basin Weed Coordinating Group and the Aquatic Invasive Species Working Group regarding the control of invasive species.

The Conservancy has prepared and implements a management plan for Tahoe yellow cress in the study area. This management plan includes maintaining an enclosure to protect the Upper Truckee East Tahoe yellow cress population and seasonally evaluating the effectiveness of its design and placement; participating in annual basinwide Tahoe yellow cress monitoring activities; and, implementing the Imminent Extinction Contingency Plan, if necessary.

Under the Preferred Alternative, this management would continue. Additional management actions that would be implemented as part of the project are described in Section 2.5, “Environmental Commitments.”

4 COMMENTS AND INDIVIDUAL RESPONSES

4.1 INTRODUCTION

This chapter contains the comment letters received on the February 2013 Draft environmental impact report/environmental impact statement/environmental impact statement (2013 Draft EIR/EIS/EIS) for the Upper Truckee River and Marsh Restoration Project, and the responses to those comments. As noted in Section 4.2, the comments and related responses have been organized to help track the nature and origin of the comments received and considered in the preparation of this Final environmental impact report/environmental impact statement/environmental impact statement (Final EIR/EIS/EIS). Section 4.3 lists each of the commenters on the 2013 Draft EIR/EIS/EIS, their associated agencies or affiliations, and specific assigned letter/comment identifications. Section 4.4 presents each of the comment letters received on the 2013 Draft EIR/EIS/EIS, including comments made during the project's public hearings held March 13 and 27, 2013, and the responses to those comments. An additional response to comments received after the public review period is provided in Appendix C.

4.2 FORMAT OF COMMENTS AND RESPONSES

Comment letters and responses to comments are arranged in the following order:

- Section A: Agencies and Organizations
- Section B: Individuals
- Section C: Public Meetings

Each letter and each comment within a letter have been given an identification number. Responses are numbered so that they correspond to the appropriate comment. Where appropriate, responses are cross-referenced between letters or with a master response.

4.3 LISTS OF COMMENTERS

4.3.1 COMMENTERS ON THE 2013 DRAFT EIR/EIS/EIS

Table 4-1 lists all agencies and persons who submitted comments on the 2013 Draft EIR/EIS/EIS or who commented on that document during the public hearing.

Table 4-1
List of Commenters on the 2013 Draft EIR/EIS/EIS

Letter ID	Commenter	Date
Section A. Agencies and Organizations		
AO1	California State Lands Commission Cy R. Oggins, Chief, Division of Environmental Planning and Management	April 8, 2013
AO2	City of South Lake Tahoe, Public Works Department, Engineering Division Sarah Hussong Johnson, Deputy Director of Public Works/City Engineering	April 29, 2013
AO3	California Department of Fish and Wildlife Tina Bartlett, Regional Manager	April 18, 2013
AO4	U.S. Environmental Protection Agency, Region 9 Kathleen M. Gogorth, Manager, Environmental Review Office, Communities and Ecosystems Division	April 29, 2013

Table 4-1 List of Commenters on the 2013 Draft EIR/EIS/EIS		
Letter ID	Commenter	Date
Section A. Agencies, Organizations, and Businesses (cont'd)		
AO5	California Regional Water Quality Control Board, Lahontan Region Alan Miller, P.E., Chief, North Basin Regulatory Unit	April 29, 2013
AO6	California Regional Water Quality Control Board, Lahontan Region Laurie Scribe, Environmental Scientist	April 26, 2013
AO7	U.S. Department of the Interior, National Park Service Christine S. Lehnertz, Regional Director, Pacific West Region	April 26, 2013
AO8	Sierra Club, Tahoe Area Sierra Club Group Laurel Ames	April 6, 2013
AO9	Sky Meadows Homeowners Association, Inc. John A. Hollstien, President	April 2, 2013
AO10	South Tahoe Public Utility District Ivo Bergsohn, P.G., C.Hg., Hydrogeologist Paul Sciuto, P.E., Assistant General Manager	April 8, 2013
AO11	Truckee-Carson Irrigation District Rusty Jardine, Esq., District Manager	March 4, 2013
AO12	Washoe Tribe of Nevada and California Darrel Cruz, CRD/THPO	April 24, 2013
Section B. Individuals		
I1	Mike Alexander	March 14, 2013
I2	Ryan D. Anderson	March 29, 2013
I3	John & Nancy Ball, Amy Tyler Busch, Royce Dunlap	April 5, 2013
I4	Gregory W. Bergner	April 1, 2013
I5	Jean Bergner	April 8, 2013
I6	Jim Carlson	April 8, 2013
I7	Leslynn Catlett	April 7, 2013
I8	Jesse Chamberlain	April 7, 2013
I9	Sarah Chisholm	April 7, 2013
I10	Richard Cromwell	March 27, 2013
I11	Richard DeVries	March 19, 2013
I12	Marilyn Donn	April 7, 2013
I13	Helen Ebert	October 4, 2011/March 12, 2013
I14	Rich Elder	April 8, 2013
I15	Jerome Evans	February 28, 2013
I16	John R. Galea	April 8, 2013
I17	Chris Gallup	April 26, 2013
I18	John Gonzales	March 6, 2013

Table 4-1
List of Commenters on the 2013 Draft EIR/EIS/EIS

Letter ID	Commenter	Date
I19	Ryan & Cataline Goralski	April 6, 2013
I20	Alice Grulich-Jones	March 13, 2013
I21	Lynn Harriman	March 10, 2013
I22	Judith Hildinger	April 8, 2013
I23	Anjanette Hoefer	April 7, 2013
I24	Harley & Tammy Hoy	April 8, 2013
I25	Harley Hoy	April 7, 2013
I26	Tamara Hoy	April 7, 2013
I27	? Hughes	April 6, 2013
I28	Mark Johnson	March 11, 2013
I29	Gary Jones	April 7, 2013
I30	Joanne Jones	March 5, 2013
I31	Jordans & Foudys	April 10, 2013
I32	Scott Karpinen	April 8, 2013
I33	Thomas & Martha Keating	April 21, 2013
I34	Rick Kniesec	April 7, 2013
I35	Linda Kosciolek	April 7, 2013
I36	Stan Kosciolek	April 6, 2013
I37	Michael & Carol Ledesma	April 6, 2013
I38	Kathy & Joe Link	April 8, 2013
I39	Barbara Marsden	April 7, 2013
I40	Lynne Mersereau	March 15, 2013
I41	Gantt & Jayme Miller	April 8, 2013
I42	Gantt & Jayme Miller	April 5, 2013
I43	Cindy Ochoa	April 1, 2013
I44	Peter O'Hara	April 7, 2013
I45	Gene & Ellen Palazzo	April 8, 2013
I46	Gene & Ellen Palazzo	April 7, 2013
I47	Mark A. Pevarnic	April 8, 2013
I48	Greg Poseley	April 26, 2013
I49	Jim & Barbara Randolph	April 8, 2013
I50	Catherine Rosenberg	April 6, 2013
I51	John T. & Catherine M. Rosenberg	April 8, 2013
I52	John T. & Catherine M. Rosenberg	April 24, 2013

Table 4-1 List of Commenters on the 2013 Draft EIR/EIS/EIS		
Letter ID	Commenter	Date
I53	Alia Selke	April 7, 2013
I54	Jack Sjolin	March 14, 2013
I55	Sue & Phil Stevenson	April 7, 2013
I56	Bart Sullivan	April 7, 2013
I57	Jeannine Tinsley	April 22, 2013
I58	David Triano	April 7, 2013
I59	Bonnie Turnbull	March 10, 2013
I60	Eduard Verhagen	April 7, 2013
I61	Charles Ward & Kathy Kohberger	April 3, 2013
I62	Russ Wigart	April 18, 2013
I63	Brenda Wyneken	April 8, 2013
I64	Donald & Victoria Archibald	May 11, 2013
Public Meetings		
PM1	Advisory Planning Commission Meeting	March 13, 2013
PM2	TRPA Governing Board Meeting	March 27, 2013

4.4 COMMENTS AND RESPONSES ON THE 2013 DRAFT EIR/EIS/EIS

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SECTION A

Agencies and Organizations

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Letter AO1

STATE OF CALIFORNIA — EDMUND G. BROWN JR., *Governor*

CALIFORNIA STATE LANDS COMMISSION
100 Howe Avenue, Suite 100-South
Sacramento, CA 95825-8202

JENNIFER LUCCHESI, *Executive Officer*
(916) 574-1800 FAX (916) 574-1810
Relay Service From TDD Phone **1-800-735-2929**
from Voice Phone **1-800-735-2922**

Contact Phone: **(916) 574-1890**
Contact FAX: **(916) 574-1885**

April 8, 2013

File Ref: SCH# 2007032099

Scott Carroll
California Tahoe Conservancy
1061 Third Street
South Lake Tahoe, CA 96150

Subject: Upper Truckee River and Marsh Restoration Project Draft Environmental Impact Report/ Environmental Impact Statement/ Environmental Impact Statement (EIR/EIS/EIS)

Dear Mr. Carroll:

The California State Lands Commission (CSLC) staff has reviewed the subject Draft EIR/EIS/EIS for the Upper Truckee River and Marsh Restoration Project (Project), which is being prepared by the California Tahoe Conservancy (CTC), Tahoe Regional Planning Agency (TRPA), and Bureau of Reclamation (Reclamation). CTC, as a California public agency proposing to carry out the project, is the lead agency under the California Environmental Quality Act (CEQA) (Pub. Resources Code, § 21000 et seq.). TRPA is an EIS lead agency pursuant to Article VII of the Tahoe Regional Planning Compact and Chapter 3 of the TRPA Code of Ordinances, and Reclamation is an EIS lead agency pursuant to the National Environmental Policy Act (NEPA). The CSLC is a trustee agency because of its trust responsibility for projects that could directly or indirectly affect sovereign lands, their accompanying Public Trust resources or uses, and the public easement in navigable waters. Because the Project involves work on sovereign lands, the CSLC will also act as a responsible agency. AO1-1

CSLC Jurisdiction and Public Trust Lands

The CSLC has jurisdiction and management authority over all ungranted tidelands, submerged lands, and the beds of navigable lakes and waterways. The CSLC also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions (Pub. Resources Code §§6301, 6306). All tidelands and submerged lands, granted or ungranted, as well as navigable lakes and waterways, are subject to the protections of the Common Law Public Trust.

As general background, the State of California acquired sovereign ownership of all tidelands and submerged lands and beds of navigable lakes and waterways upon its

admission to the United States in 1850. The State holds these lands for the benefit of all people of the State for statewide Public Trust purposes, which include but are not limited to waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space. On tidal waterways, the State's sovereign fee ownership extends landward to the mean high tide line, except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court. On navigable non-tidal waterways, including lakes, the State holds fee ownership of the bed of the waterway landward to the ordinary low water mark and a Public Trust easement landward to the ordinary high water mark, except where the boundary has been fixed by agreement or a court. Such boundaries may not be readily apparent from present day site inspections.

After review of the proposed Project, CSLC staff has determined that the portion of the Project located in Lake Tahoe extends waterward of the low water elevation of 6223 feet, Lake Tahoe Datum, onto State-owned sovereign land under the jurisdiction of the CSLC. The portion of the Project located in the Upper Truckee River may include State-owned sovereign land as described above; however, the extent of the State's sovereign interest at this location has not been determined. Therefore, at this time, a lease and formal authorization for the use of sovereign land will be required from the CSLC for the portion of the Project waterward of the low water mark, in Lake Tahoe. Formal authorization for the portion of the Project located in the Upper Truckee River may be required at such time in the future as the exact extent of the State's fee ownership is determined.

AO1-1 cont.

Project Description

The lead agencies referenced above are pursuing a restoration project along the most downstream reach of the Upper Truckee River, at the mouth of Lake Tahoe. The 592-acre study area is located in South Lake Tahoe, California, and bounded by U.S. Highway 50 (U.S. 50) and the Highland Woods neighborhood to the south, the Al Tahoe neighborhood to the east, Tahoe Islands/Sky Meadows and Tahoe Keys neighborhoods to the west, and Lake Tahoe to the north. The primary purpose of the Project is to restore natural geomorphic processes and ecological functions along this reach of river while providing recreation access.

Several alternative approaches to implementing the Project are being considered, along with the No Project/No Action Alternative. Depending on which alternative is selected, the proposed Project may include a minimum, moderate, or maximum recreation component. Alternatives 1 through 4 are all intended to meet the basic Project objectives, but differ in river restoration treatments and recreation infrastructure that would alter public access. A preferred or proposed alternative has not yet been defined.

1. Alternative 1. Channel Aggradation and Narrowing (Maximum Recreation Infrastructure). To restore the river channel and its connection to the floodplain, Alternative 1 would increase channel length and decrease channel capacity. A key element of this alternative would be the use of engineering elements (primarily structures in the channel) to cause sediment deposition that raises the channel bed and decreases channel capacity, and slightly reduces the capacity of the channel mouth at Lake Tahoe. Alternative 1 would also restore a

naturally-functioning lagoon in the vicinity of the existing Sailing Lagoon, lagoon and wet meadow conditions behind the east end of Barton Beach, floodplain functions at the Tahoe Keys Property Owners Association (TKPOA) Corporation Yard (contingent on TKPOA consent), and sand ridges ("dunes") at Cove East Beach. Alternative 1 provides a potential "maximum" level of recreation infrastructure that includes parking on the west side of the study area adjacent to the Tahoe Keys Marina, a connected system of bicycle paths, boardwalks, observation areas, two kiosks, and signage. Bicycle paths would be Class I/Shared-Use Paths (as described in TRPA and TMPO 2010). Bridges over Trout Creek and the Upper Truckee River (and a boardwalk) would connect the proposed bicycle paths. Bicycle paths would connect to existing regional trails near the study area.

2. Alternative 2. New Channel – West Meadow (Minimum Recreation Infrastructure). To restore the river channel and its connection to the floodplain, Alternative 2 would directly raise the streambed elevation, increase the channel length, and decrease channel capacity. A key element of this alternative would be the excavation of a new river channel that has less capacity than the existing channel. The existing river mouth would be replaced with a new smaller river mouth, similar in size to the historical river mouth prior to dredging. To protect natural resources, a boardwalk connecting the river to East Venice Drive would be constructed. Alternative 2 would provide a "minimum" level of recreation infrastructure that includes a modified Americans with Disabilities Act (ADA)-accessible pedestrian trail to Cove East Beach, five viewpoints, a fishing platform, and signage.

AO1-1 cont.

3. Alternative 3. Middle Marsh Corridor (Moderate Recreation Infrastructure). To restore the river channel and its connection to the floodplain, Alternative 3 would promote the development through natural processes of a new main channel and/or distributary channels in the central portion of the study area. A "pilot" channel, similar to the channel segments constructed under Alternatives 1 and 2, would be constructed from the existing river channel to historical channels in the center of the study area, but no construction would occur in the central or northern portions of the study area. The existing river mouth would be retained with reduced capacity. Like Alternatives 1 and 2, Alternative 3 would restore a natural-functioning lagoon in the vicinity of the Sailing Lagoon and floodplain functions at the TKPOA Corporation Yard and would enhance areas of "core habitat" and forest. Alternative 3 would provide a "moderate" level of recreation infrastructure that includes three pedestrian trails, a bicycle path, a kiosk, an observation area, six viewpoints, a fishing platform, and signs at multiple locations. Alternative 3 would also include a bicycle path and a pedestrian trail near the Highland Woods neighborhood, connected to Mackinaw Road. A pedestrian trail with two segments of boardwalks is also proposed adjacent to the Al Tahoe neighborhood, from Capistrano Avenue to East Barton Beach.

4. Alternative 4. Inset Floodplain (Moderate Recreation Infrastructure). To restore the river channel and its connection to the floodplain, Alternative 4 would lower bank heights by excavating an inset floodplain along much of the river channel,

and by localized cutting and filling to create meanders in the existing straightened reach. The existing river mouth would be retained, and its capacity would not be reduced. Similar to Alternative 3, Alternative 4 would provide a "moderate" level of recreation infrastructure that includes two pedestrian trails, a bicycle path, a kiosk, two observation areas, five viewpoints, and signs at multiple locations.

5. Alternative 5. No Project/No Action. Alternative 5 would not provide any actions to restore the river channel and its connection to the floodplain in the study area. Alternative 5 would not take any direct steps to construct recreation infrastructure elements that alter public access.

AO1-1 cont.

Environmental Review

As noted above, the CSLC has jurisdiction over submerged land in the bed of Lake Tahoe lakeward of elevation 6,223-feet, Lake Tahoe Datum, (low water mark) with public trust oversight of the Public Trust Easement located between elevations 6,228.75-feet, Lake Tahoe Datum (high water mark) and 6,223-feet. CSLC staff requests that the CTC consider the following comments on the Draft EIR/EIS/EIS.

General Comments and Project Activities Within CSLC Jurisdiction

1. Description of Alternatives. Section Two, *Description of Alternatives*, would be more informative to public agencies with jurisdictional and/or regulatory boundaries associated with the high and low water marks of Lake Tahoe (such as the CSLC), if it included more reference to lake bottom elevations at and below the high water mark for proposed Project activities along the shorezone of Lake Tahoe. Although this information is available in Appendix C, please incorporate this information in Section Two for description of action alternatives and proposed river mouth and shorezone activities.

AO1-2

Based on review of Section Two and Appendix C, CSLC staff understands that Alternatives 1 through 3 include modifications to the existing and proposed river mouth locations below the low water mark for Lake Tahoe. Collectively, this work appears to include dredging of a new river mouth and backfill of the existing river mouth (Alternative 2), and alteration of the existing river mouth channel and installation of gradient control structures to hold the minimum bed elevation at approximately 6,222-feet (Alternatives 1 through 3). Please be advised that proposed work below the low water mark will require application for and approval of a lease from the CSLC.

AO1-3

2. Project Activities Locations. Based on review of the description of alternatives, exhibits, and Appendix C, CSLC staff also understands that the following activities are proposed to occur at or below the high water mark of Lake Tahoe and within the Public Trust Easement:

   a. Installation of bridge footings for the proposed bridge under Alternative 1;
   b. Installation of a boardwalk path east of the river mouth under Alternative 1;
   c. Dune and beach restoration work;

d. Installation of a bike path under Alternative 1;
e. Construction staging areas and earth material haul routes (primarily Alternative 1); and
f. Enclosed protected areas for Tahoe yellow cress.

Please be advised that the CSLC has oversight authority over activities occurring in the Public Trust Easement to ensure that such activities and uses are consistent with the Public Trust. Prior to commencement of such activities, coordination and review by the CSLC is required. In addition, please note Project applications and plans submitted to the CSLC must clearly identify elevations associated with all proposed work below the high and low water marks of Lake Tahoe. AO1-3 cont.

3. To the extent possible, please provide more description in the *Construction Description* subsection and Table 2-5, for proposed channel diversion techniques for connecting surface flows from the existing channel to newly constructed channels. AO1-4

4. In Table 2-6, *Environmental Commitment 5*, for the Dewatering and Channel Seasoning Plan, Diversion Plan, and Grading and Erosion Control Plan, please include mitigation measures to minimize and avoid discharge of turbid waters into Lake Tahoe. AO1-5

5. As a global edit throughout the entire Draft EIR/EIS/EIS, please use CSLC as the acronym for the California State Lands Commission. AO1-6

Geomorphology and Water Quality

6. Reduced Sediment Supply and Potential Beach Erosion. With regard to Impact 3.9-7 (Alternatives 1 and 3), *Decreased Delivery of Coarse Sediment to Cove East and Barton Beaches*, more discussion is needed to describe the boundaries of the active littoral cell and along-shore drift processes surrounding the Project region of the Lake Tahoe shorezone. It is unclear why the analysis only considers beach and shoreline erosion impacts to shorelines within the Project area. More discussion is needed to address whether there is potential for down-shore and/or off-site shorelines to be affected by reduced sediment supply and resultant beach and shoreline erosion. AO1-7

7. For Alternatives 1 and 3, Mitigation Measure 3.9-7 states that supplemental coarse sediments would be supplied to project area beaches if beach erosion is observed through post Project monitoring. Please provide additional discussion clarifying the proposed sediment source locations.

Compliance, Consultation, and Coordination

8. Requested CSLC Jurisdiction Language. For Section 5, Subsection 5.6.2, please replace the last two paragraphs with the following language. AO1-8

"A project cannot use these state lands unless a lease or authorization is first obtained from the CSLC. Because the bed of Lake Tahoe in the study area is

within CSLC jurisdiction, use of the bed of Lake Tahoe below the low water mark for the Project would require a lease from the CSLC.

The Public Trust Easement in navigable waterways allows lateral access between the high water line and the low water line. At Lake Tahoe, this is the area between the adjudicated ordinary low water mark, at elevation 6,223-feet Lake Tahoe Datum, and the ordinary high water mark, at elevation 6,228.75-feet Lake Tahoe Datum. The CSLC has oversight authority over activities occurring in the Public Trust Easement to ensure that such activities and uses are consistent with the Public Trust. The Conservancy has been coordinating with CSLC as a responsible agency under CEQA during preparation of this DEIR/DEIS/DEIS."

AO1-8 cont.

Thank you for the opportunity to comment on the Draft EIR/EIS/EIS for the Project. As a responsible and trustee agency, the CSLC will need to rely on the Final document for the issuance of any amended/new lease as specified above and, therefore, we request that you consider our comments prior to certification of the EIR/EIS/EIS.

Please send additional information on the Project as plans become finalized, copies of future Project-related documents, including electronic copies of the Final EIR, Mitigation Monitoring and Reporting Program, CEQA Findings and Notice of Determination (NOD) when they become available, and refer questions concerning environmental review to Jason Ramos, Staff Environmental Scientist, at (916) 574-1814 or via e-mail at jason.ramos@slc.ca.gov. For questions concerning CSLC leasing jurisdiction, please contact Beverly Terry, Public Land Manager, at (916) 574-0343, or via e-mail at beverly.terry@slc.ca.gov.

AO1-9

Sincerely,

Cy R. Oggins, Chief
Division of Environmental Planning
and Management

cc: Office of Planning and Research
State Clearinghouse
P.O. Box 3044
Sacramento, CA 95812-3044

Jason Ramos, DEPM, CSLC
Beverly Terry, LMD, CSLC
Warren Crunk, Legal, CSLC

Letter
AO1
Response

California State Lands Commission
Cy R. Oggins, Chief Division of Environmental Planning and Management
April 8, 2013

AO1-1 The commenter describes the proposed project and states that the California State Lands Commission (CSLC) is a trustee agency responsible for sovereign lands and navigable waters of the project.

A lease and formal authorization from CSLC are required. A lease application would be completed as part of the permitting process before groundbreaking activities. This comment does not raise issues regarding the adequacy, accuracy, or completeness of the Draft EIR/EIS/EIS.

AO1-2 The commenter requests that information about jurisdictional and/or regulatory boundaries be added to the project description.

The wetland and SEZ boundaries have been added to the Preferred Alternative Exhibit 4-1 below. Ordinary high and low water marks are included in Appendix A.

AO1-3 The commenter discusses proposed modifications below the low-water mark and advises that an application and review and approval of a lease are required.

A lease application would be completed as part of the permitting process before groundbreaking activities. This comment does not raise issues regarding the adequacy, accuracy, or completeness of the Draft EIR/EIS/EIS.

AO1-4 The commenter requests additional construction information for channel diversion and connection activities.

The measures described in Environmental Commitment 5, "Prepare and Implement Effective Construction Site Management Plans to Minimize Risks of Water Quality Degradation and Impacts to Vegetation," also apply to planning for water isolation in local work areas, bypassing of flows during construction and pre-wetting, and activation of new channels or reconfigured lagoon areas. Environmental Commitment 7, "Prepare and Implement an Aquatic Species Rescue and Relocation Plan," also includes related plans and measures, because the diversions and connection activities must not only protect water quality, but also limit impacts on aquatic resources. Additional detail regarding appropriate measures and permit requirements would be incorporated into the project's water quality protection approach and design of best management practices (BMPs) during final design of the Preferred Alternative. At this point in the design process, the techniques and methods for flow management, diversions, and reconnections at the construction site remain flexible. This flexibility allows for future consideration and development by the contractors and permitting entities of the most effective measures for the field conditions (e.g., lake levels, river flows, weather) expected during the eventual construction year(s).

AO1-5 The commenter requests that additional measures to minimize and avoid discharge of turbid waters into Lake Tahoe be added to the environmental commitments.

Measures to minimize and avoid discharge of turbid waters into Lake Tahoe are included in Environmental Commitment 5, "Prepare and Implement Effective Construction Site Management Plans to Minimize Risks of Water Quality Degradation and Impacts to Vegetation," and in Environmental Commitment 11, "Incorporate Effective Permanent Stormwater Best Management Practices." Additional detail regarding appropriate measures and permit requirements will be incorporated in the project's water quality protection approach and BMP design during final design of the Preferred Alternative. At this point in the design process, the techniques and methods for managing water quality at the construction site remains somewhat flexible. This flexibility allows for future consideration by the contractors and permitting entities of the most effective measures for the field conditions (e.g., lake levels, river flows, weather) expected during the eventual construction year(s).

AO1-6 The commenter requests that the abbreviation "CSLC" be used for the California State Lands Commission. "CSLC" has been used throughout this Final EIR/EIS/EIS.

The abbreviation is also presented in Chapter 5, "Revisions to the Draft EIR/EIS/EIS."

AO1-7 The commenter requests additional information regarding littoral drift processes, boundaries surrounding the project area, and potential off-site impacts. The commenter also requests additional information regarding sources of coarse sediment if needed for mitigation.

Section 3.9, "Geomorphology and Water Quality," includes a discussion of littoral drift processes and cell boundaries in the project vicinity, including discussion of off-site areas that are within the same littoral cell (extending about 1–2 miles east). The discussion includes a description of the extent of the entire littoral cell, its relationship to other littoral cells of the lake, and the historic trends in shoreline condition (growth versus erosion) throughout the 1900s. In addition, the discussion provides information about the small volume of coarse sediment discharged by the river relative to average annual volumes dredged for the Tahoe Keys navigation channel. The discussion in Section 3.9 also clarifies that predicting the long-term shoreline condition and potential for beach erosion is speculative because of the complex interactions of climate change, lake level fluctuations, and the likely continuation of dredging without replacement that has been permitted by the Lahontan RWQCB. However, the possibility of short-term project impacts during the period of channel adjustments within the marsh is acknowledged. Mitigation Measure 3.9-7 (Alt. 3) would apply to the Preferred Alternative to address the short-term project-related impacts. This measure requires monitoring and adaptive management of the delivery of coarse sediment to Cove East and Barton Beaches. It expressly includes monitoring of coarse-sediment inputs and outputs through the study area, and not just assessment of beach erosion, to allow consideration of potential off-site impacts from retention of excessive coarse sediment in the study area. Adaptive management decisions and possible corrective actions or interventions cannot be determined at this time, but supplementing coarse sediment on beaches or at the nearshore within the Upper Truckee littoral drift cell could be necessary.

To address the commenter's concern about possible environmental impacts related to coarse-sediment sources for use in mitigation, the mitigation measure is modified as with the italicized text below:

> Mitigation Measure 3.9-7 (Alt. 3): Monitor and Adaptively Manage Delivery of Coarse Sediment to Cove East and Barton Beaches.
>
> During the period of channel adjustments following construction, and until the streambed profile attains a relatively continuous slope within the study area, the Conservancy will monitor the supply of coarse sediment entering the study area, deposition within the treated reaches, and beach-face erosion at least once a year. Specifically, the Conservancy will make observations of net deposition or scour

Legend

- Project Boundary
- Existing 1000 ft. River Station
- Existing 100 ft. River Station - Upper Truckee
- Existing 100 ft. River Station - Trout Creek
- Existing Regional Bike Trail

Proposed Habitat Features

- Restored Lagoon
- Restored Meadow
- Tahoe Yellow Cress Restricted Use Area
- Reveg and Streambank Enhancement
- Restored Dune

Proposed River and Floodplain Features

- Low and Bankful Flow Channel
- Potential Low Flow Path
- Active Floodplain
- Removal of Reserve Fill
- Partial Fill of Existing Channel
- Channel Backfill
- Floodplain Areas of Excavation

Proposed Engineered Features

- Lateral Grade Control
- Vertical Grade Control
- Bulkhead/Levee
- Bank Protection
- Storm Water Treatment Area
- Overbank Conveyance Bridge Modification
- Channel Grade Control and Bank Protection

Proposed Public Access Features

- Viewpoint
- Pedestrian Trail
- Fishing Platform
- ADA Accessible
- Observation Area
- Kiosk

Additional Information

- 100 Year Flood Zone
- 500 Year Flood Zone
- LCC 1B (SEZ)
- Wetland Area

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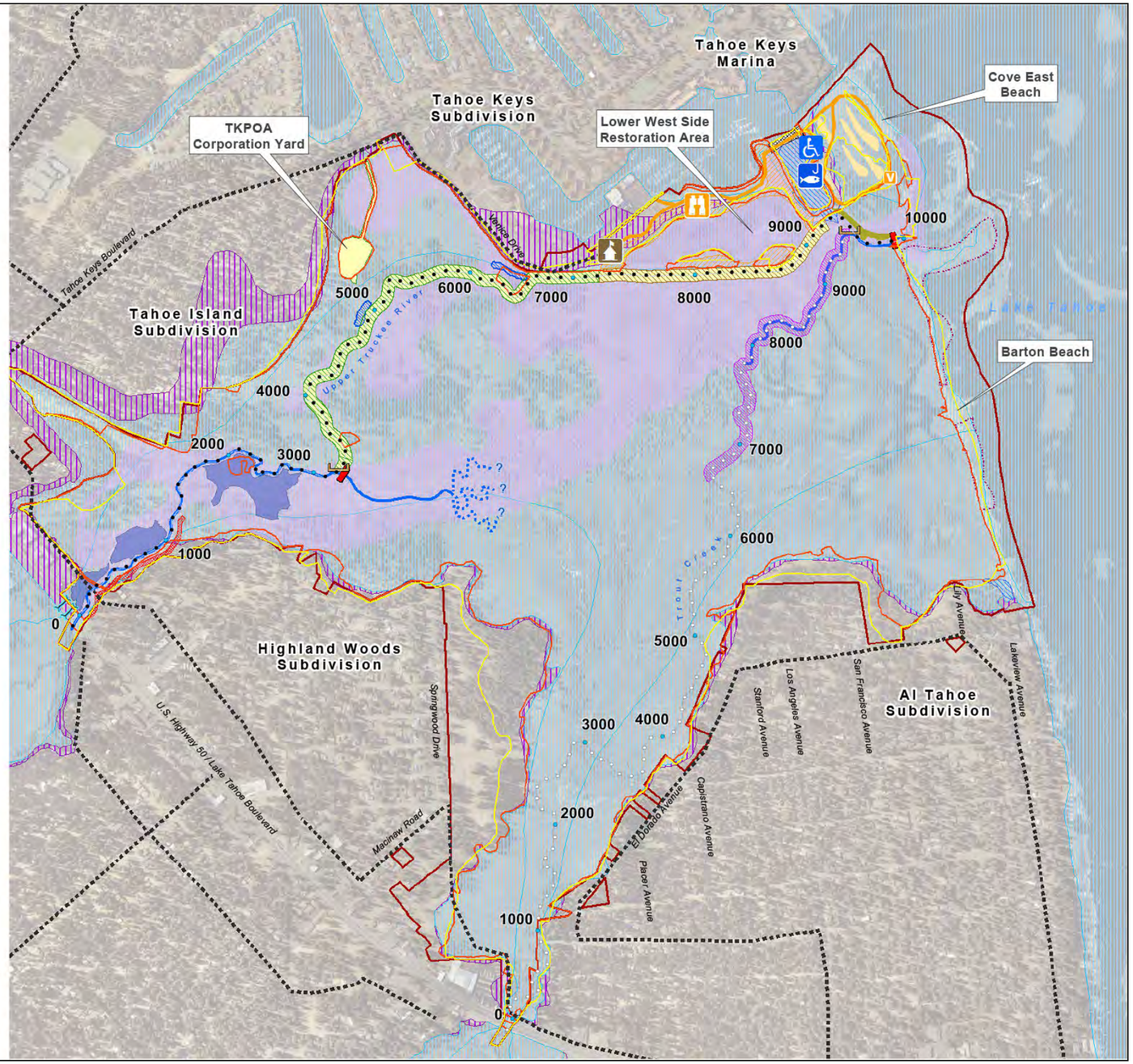
0 500 1,000
Feet



Source: Cardno, 2015

Exhibit 4-1 **Existing Regulatory Floodplain, SEZ, and Wetlands Boundaries in Relationship to the Preferred Alternative Features**

during low-water conditions. If substantial coarse-sediment deposition is occurring within large portions of the study area or beach-face erosion has worsened, and coarse-sediment input from upstream has not decreased, the Conservancy will respond with site-specific adaptive management. The Conservancy will develop and implement an adaptive management plan that will review and evaluate monitoring data and project conditions and recommend follow-up actions. Such actions could include continued or revised monitoring, corrective actions or interventions, and documentation. *If coarse-sediment supplementation to site beaches or the nearshore is recommended, the coarse sediment shall be similar in lithology, size, and shape to native sands; washed/free of fine sediments or contaminants; and obtained from a permitted borrow/quarry location.*

AO1-8 The commenter requests language replacement for Section 5, Subsection 5.6.2.

The last two paragraphs of Chapter 5, Section 5.2.6 are replaced with the following text:

> A project cannot use these State lands unless a lease or authorization is first obtained from CSLC. Because the bed of Lake Tahoe in the study area is within CSLC jurisdiction, use of the bed of Lake Tahoe below the low-water mark for the project would require a lease from the CSLC.
>
> The public-trust easement in navigable waterways allows lateral access between the high-water line and the low-water line. At Lake Tahoe, this is the area between the adjudicated ordinary low-water mark, at elevation 6,223 feet Lake Tahoe Datum, and the ordinary high-water mark, at elevation 6,228.75 feet Lake Tahoe Datum. The CSLC has oversight authority over activities occurring in the public-trust easement to ensure that such activities and uses are consistent with the public trust. The Conservancy has been coordinating with CSLC as a responsible agency under CEQA during preparation of this EIR/EIS/EIS.

AO1-9 The commenter requests that additional information on the project be sent to CSLC staff as the project proceeds, including electronic copies of the Final EIR/EIS/EIS, mitigation monitoring and reporting program, California Environmental Quality Act (CEQA) findings, and notice of determination.

The California Tahoe Conservancy (Conservancy) would provide copies of electronic copies of this Final EIR/EIS/EIS, the mitigation monitoring and reporting program, CEQA findings, and notice of determination and would continue to coordinate with CSLC throughout project review and permitting as needed. This comment does not raise issues regarding the adequacy, accuracy, or completeness of the Draft EIR/EIS/EIS.

Letter AO2

City of South Lake Tahoe

"making a positive difference now"

April 29, 2013

Mr. Scott Carroll
California Tahoe Conservancy
1061 Third Street
South Lake Tahoe, CA 96150

Subject: Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)/EIS for the Upper Truckee River and Marsh Restoration Project, South Lake Tahoe, California.

Dear Mr. Carroll:

The City of South Lake Tahoe (City) appreciates the opportunity to comment on the subject document. The City recognizes this as an important project for both the California Tahoe Conservancy (Conservancy) and the community. As such, we appreciate all of the hard work and effort put towards this project by the Conservancy.

The attached letter from October 30, 2006 reflects the City's comments on the Notice of Preparation (NOP) for the document. We ask that the Conservancy verify that the comments included in the letter have been incorporated and/or addressed in the final EIR/EIS/EIS document. Additionally, we understand that there are still some remaining concerns from the residents adjacent to the project area. Consistent with our October 30, 2006 NOP comment letter NOP, we ask that the Conservancy diligently work with the public to address the following: AO2-1

- Provide detailed analysis of the potential traffic impacts of the proposed alternatives, including construction traffic in and around staging areas (Tahoe Island Park subdivision). The analysis should include existing and forecast traffic volumes and levels of service for all public streets and intersections that may be affected and identify potential impacts to bicycle, pedestrian and transit circulation. The analysis should also include potential impacts to the public street infrastructure and maintenance requirements. AO2-2
- Provide detailed analysis of potential noise impacts on surrounding sensitive receptors, including residences. This analysis should apply to both construction related noise and long term affects of noise associated with traffic and recreation. AO2-3
- Provide additional public outreach and notification for residents surrounding and immediately adjacent to the project area that may experience either short term and/or long term impacts as a result of project implementation. Provide ample opportunity for public comment and work to address comments in good faith. Provide a single point of contact for public comment to ensure clear communication with the public. AO2-4

Public Works Department · Services Center · 1052 Tata Lane · South Lake Tahoe, CA 96150-6251 · (530) 542-6030 · (530) 541-3051 FAX

Again, the City appreciates the opportunity to comment on the document. If you have any questions or require further clarification, feel free to contact me at (530) 542-6033.

Regards,

Sarah Hussong Johnson
Deputy Director of Public Works/City Engineer

c: Nancy Kerry, City Manager

Enclosure: October 30, 2006 letter from City of South Lake Tahoe Planning Manager

City of South Lake Tahoe

"making a positive difference now"

October 30, 2006

Jacqui Grandfield, UC Consultant Wildlife Program
California Tahoe Conservancy
1061 Third Street
South Lake Tahoe, CA 96150

Subject: Notice of Preparation of a Draft Environmental Impact Report (EIR)/Environmental Impact Statement (EIS)/EIS for the Upper Truckee River and Marsh Restoration Project, South Lake Tahoe, California.

Dear Mrs. Grandfield:

Thank you for the opportunity for the City of South Lake Tahoe to comment on the NOP for this project. The City has the following comments:

- The proposed project lies within the boundaries of the City of South Lake Tahoe and as a public agency with discretionary approval power over the project the City is a Responsible Agency as defined by CEQA Guidelines §15381.
- As indicated in the NOP the project lies within Plan Areas 100 and 102. The Plan Area Statements (PAS) for these areas list "riding and hiking trails" as a special use that requires the approval of the Special Use Permit by the City. PAS 100 also lists "SEZ Restoration" as a special use.
- As required by City Code §5-17 the project will need Design Review approval from the City. AO2-5
- I have enclosed the application forms for both the Special Use Permit and Design Review as well as an indication of the application fees. Ideally these applications should be submitted along with the draft EIR. Note that the "City Council, upon written request, may waive planning fees for permits required by this chapter for charitable or governmental organizations." (City Code § 32-8.1). If you choose to request a fee waiver please submit a written request to the City Planning Division prior to submitting the applications and expect that it will take approximately one month to schedule the item on the Council Agenda for action.
- The EIR will need to provide detailed analysis of the potential traffic impacts of the proposed alternatives. The analysis should include existing and forecast traffic volumes and levels of service for all public streets and intersections that may be affected and identify potential impacts to bicycle, pedestrian and transit circulation. The analysis should also include potential impacts to the public street AO2-6

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infrastructure and maintenance requirements. This analysis should apply to both construction traffic and long term traffic generated by the project alternatives. AO2-6 cont.

- The EIR will need to provide detailed analysis of parking impacts associated with new recreation facilities and opportunities for each alternative. AO2-7
- The EIR will need to provide detailed analysis of potential noise impacts on surrounding sensitive receptors, including residences. This analysis should apply to both construction related noise and long term affects of noise associated with traffic and recreation. AO2-8
- The EIR will need to provide detailed analysis of existing flooding and drainage conditions and potential changes caused by the project alternatives. AO2-9
- The EIR will need to address potential fire hazards associated with changes to the vegetation and fire management. AO2-10

Thanks again for the opportunity to comment on the NOP and I look forward to working with you as this project progresses. If you have any questions feel free to contact me. With questions specific to traffic or flood analysis please contact the City Engineering Manager, Stan Hill at 530-542-6039 and with questions specific to fire hazard please contact City Fire Marshal, Ray Zachau at 530-542-6166.

Sincerely,

Hilary Hodges, Planning Manager
(530) 542-6024
hhodges@cityofslt.us

Letter
AO2
Response

City of South Lake Tahoe, Public Works Department, Engineering Division
Sarah Hussong Johnson, Deputy Director of Public Works/City Engineering
April 29, 2013

AO2-1 The commenter requests assurance that comments on the 2006 Notice of Preparation were incorporated into the environmental impact report/environmental impact statement/environmental impact statement (EIR/EIS/EIS) and notes public concerns.

The comments are addressed below in responses to Comments AO2-2 through AO2-4.

AO2-2 The commenter suggests a detailed analysis of potential traffic impacts. Traffic and parking impacts of the alternatives are discussed in Section 3.16, "Transportation, Parking, and Circulation," of the 2013 Draft EIR/EIS/EIS.

See Section 3.1.2, "Traffic, Access, and Staging," in Chapter 3, "Master Responses," of this Final EIR/EIS/EIS.

AO2-3 The commenter suggests a detailed noise analysis.

See Section 3.1.3, "Construction Noise," in Chapter 3, "Master Responses," of this Final EIR/EIS/EIS.

AO2-4 The commenter suggests additional public outreach and a single point of contact.

The Conservancy has held numerous outreach events since initial scoping, during development of the alternatives, and during public review. See Section 1.3, "Project History and Planning Context," in Chapter 1 of this Final EIR/EIS/EIS. The point of contact is the following:

State of California
California Tahoe Conservancy
Scott Carroll, Environmental Planner
1061 Third Street
South Lake Tahoe, CA 96150
scott.carroll@tahoe.ca.gov

AO2-5 The commenter states that the City of South Lake Tahoe (CSLT) is a Responsible Agency, that the study area's Plan Area Statements are subject to CSLT code requirements for a Special Use Permit, and that design review is required. The commenter suggests submitting the application with the Draft EIR/EIS/EIS.

An application was not completed along with the Draft EIR/EIS/EIS because a Preferred Alternative was not selected at that time. An application would be completed before construction as part of the permitting process. As described by Environmental Commitment 6, "Obtain and Comply with Federal, State, Regional, and Local Permits," the Conservancy and its contractor would obtain and comply with the terms and conditions of all permits required by applicable federal, State, regional, and local statutes and regulations. The anticipated compliance, consultation, and coordination are described in Chapter 5 of the 2013 Draft EIR/EIS/EIS. This

comment does not raise issues regarding the adequacy, accuracy, or completeness of the Draft EIR/EIS/EIS.

AO2-6 The commenter suggests a detailed analysis of potential traffic impacts.

Traffic impacts of the alternatives are discussed in Section 3.16, "Transportation, Parking, and Circulation," of the 2013 Draft EIR/EIS/EIS. See Section 3.1.2, "Traffic, Access, and Staging," in Chapter 3, "Master Responses," of this Final EIR/EIS/EIS.

AO2-7 The commenter suggests a detailed analysis of potential parking impacts associated with proposed recreation facilities.

Parking impacts of the alternatives are discussed in Section 3.16, "Transportation, Parking, and Circulation," of the 2013 Draft EIR/EIS/EIS. Recreation impacts are discussed in Section 3.13, "Recreation." Impacts associated with long-term parking needs were found to be less than significant for all action alternatives. The analysis looked at parking needs associated with minimum, moderate, and maximum recreation levels of use and the project included additional parking based on the expected use. Because the Preferred Alternative is proposing moderate infrastructure on the west side of the marsh and no additional recreation access on the east side of the marsh (No Project), parking needs would remain similar to existing conditions with informal parking access.

AO2-8 The commenter suggests a detailed noise analysis.

See Section 3.1.3, "Construction Noise," in Chapter 3, "Master Responses," of this Final EIR/EIS/EIS.

AO2-9 The commenter suggests a detailed flooding and drainage analysis.

Flooding and drainage impacts for each alternative are discussed in Section 3.8, "Hydrology and Flooding," of the 2013 Draft EIR/EIS/EIS. Additional, updated and detailed flood modeling is described in Section 3.1.1, "Flooding and Flooding Hazards," in Chapter 3, "Master Responses," of this Final EIR/EIS/EIS.

AO2-10 The commenter suggests an analysis of potential fire hazards associated with changes to vegetation and fire management.

As described in Section 3.7, "Human Health and Risk of Upset," of the 2013 Draft EIR/EIS/EIS, Jeffrey pine and lodgepole pine forests cover portions of the study area adjacent to the Tahoe Island, Highland Woods, and Al Tahoe subdivisions. Conditions in these forests affect the level of fire hazards in these adjacent neighborhoods. The Conservancy implements treatments to reduce the fire hazards posed by forest vegetation in the study area. Treatments include removing shrubs and trees to increase the spacing between tree crowns and the distance between understory vegetation (i.e., herbaceous plants, shrubs, and smaller tree saplings) and the tree canopy, and to reduce the total amount of vegetation and dead wood (USFS et al. 2014). Such treatments reduce the severity and rate of spread of a fire.

Forest vegetation on Conservancy property that poses fuel hazards is removed by the Conservancy. Since the Conservancy acquired majority ownership of the study area in 2000, fuel reduction efforts have focused primarily on removal of vegetation reported by citizens as dead or dying. Citizen requests for removal of vegetation in the study area perceived to be a potential fuel hazard increased after the Angora fire (June 2007), prompting the Conservancy to include the

study area on the agency's fuel hazard reduction list in Summer 2007. The Conservancy flags vegetation in the study area and on nearby Conservancy-owned parcels, such as those parcels scattered among the privately owned residential parcels in the Al Tahoe neighborhood. Once vegetation is marked, the Conservancy is responsible for removal of fuels and periodic maintenance. These practices would continue under the Preferred Alternative.

Furthermore, one of the primary benefits of the Preferred Alternative is surface-groundwater connectivity and a higher groundwater table, which would create a wetter environment over a larger portion of the marsh, further reducing fire risks.

As described in Environmental Commitment 9, the Conservancy would develop and implement a fire prevention and management plan to minimize the risk of accidental ignition of wildland fires during construction.

Letter AO3

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Region 2
1701 Nimbus Road, Suite A
Rancho Cordova, CA 95670
www.wildlife.ca.gov

EDMUND G. BROWN JR., Governor
CHARLTON H. BONHAM, Director

April 18, 2013

Scott Carroll
Associate Environmental Planner
California Tahoe Conservancy
1061 Third Street
South Lake Tahoe, CA 96150

Subject: Comments on the Upper Truckee River and Marsh Restoration Project Draft Environmental Impact Report, SCH# 2007032099, El Dorado County

Dear Mr. Carroll:

The California Department of Fish and Wildlife (Department), appreciates the opportunity to provide comments on the Upper Truckee River and Marsh Restoration Project (Project) draft Environmental Impact Report (DEIR) dated February 2013. Pursuant to §15082(b) of the California Environmental Quality Act (CEQA) Guidelines, the Department offers the following responses to the DEIR in our roles both as a trustee agency and a responsible agency. As the trustee for the State's fish and wildlife resources, the Department has jurisdiction over the conservation, protection, and management of fish, wildlife and native plants and the habitat necessary to sustain their populations. As a responsible agency, the Department administers the California Endangered Species Act (CESA), issues Lake and Streambed Alteration Agreements (LSAA), and other provisions of the Fish and Game Code that afford protection to the State's fish and wildlife public trust resources.

AO3-1

The 592-acre study area is located in South Lake Tahoe, bounded by U.S. Highway 50 and the Highland Woods neighborhood to the south, the Al Tahoe neighborhood to the east, Tahoe Islands/Sky Meadows and Tahoe Keys neighborhood to the west, and Lake Tahoe to the north. It consists of parcels owned by the California Tahoe Conservancy (CTC), the City of South Lake Tahoe, the California Department of Transportation, and private land owners. It includes the downstream reaches of Trout Creek and the Upper Truckee River (UTR), adjacent wetland and upland habitat (Upper Truckee Marsh), and the Lower West Side Wetlands Restoration Project site. The purpose of the Project is to restore natural geomorphic processes and ecological functions in the lowest reach of the UTR, improve ecological values, provide public access consistent with other objectives, and help reduce the UTR's discharge of nutrients and sediment into Lake Tahoe. Four alternative approaches to implementing the proposed Project are being considered, along with the No Project/No Action Alternative.

Conserving California's Wildlife Since 1870

Impacts to Fish Passage

The impact analysis in the DEIR identifies potentially significant and unavoidable long-term impacts to fish passage and migration at the mouth of the UTR associated with floodplain restoration actions proposed in Alternative 3. Under this Alternative, construction of a small pilot channel intended to convey flows from the UTR into multiple small channels that cross the marsh complex before re-entering the UTR upstream of Lake Tahoe has the potential to result in long-term disruption of fish passage until new channel(s) form connecting the river to the lake. Additionally, this Alternative could result in the generation of a natural barrier beach at the mouth of the UTR that during low flows could seasonally block passage from the river to the lake for prolonged periods of time. Fish species most at risk under these scenarios include Mountain whitefish that could be seasonally restricted from access to spawning habitat in the UTR by the presence of sediment barriers/insufficient flows, in addition to other native species such as Lahontan redside *(Richardsonius egregious)*, Tui chub (*Gila bicolor)*, Lahontan speckled dace *(Rhinichthys osculus)*, Tahoe sucker *(Catostomus tahoensis)*, mountain sucker *(Catostomus platyrhynchus)*, Lahontan cutthroat trout *(Oncorhynchus clarki henshawi)*, and Paiute sculpin *(Cottus beldingi)*, that would be at risk of stranding on the marsh surface during winter/spring flow events when flows are routed through the pilot channel. AO3-2

Fish and Game Code §5901 states that "it is unlawful to construct or maintain in any stream…any device or contrivance that prevents, impedes, or tends to prevent or impede, the passing of fish up and down stream". The Department believes that the design elements considered in Alternative 3 may constitute a violation of this Fish and Game Code Section should creation of the pilot channel result in disruption of fish passage between the UTR and Lake Tahoe. Therefore, the Department recommends that Alternative 3 not be considered for adoption by the CTC unless reasonable design changes can be incorporated to ensure viable fish passage remains under low flow conditions.

LSAA Notification

The DEIR identifies potential impacts to the UTR, the Upper Truckee Marsh, mouth of the UTR, and the Lake Tahoe shoreline associated with implementation of the four Alternatives. Pursuant to Fish and Game Code §1600 *et seq*, if a project will result in the substantial modification to a lake or streambed, bank, or channel, the Department must be notified, and in a majority of cases, a LSAA issued. Notification to the Department is required for proposed projects that may: 1) divert, obstruct, or change the natural flow or the bed, channel or bank of any river, stream, or lake; 2) use material from a streambed; or 3) result in the disposal or deposition of debris, waste, or other material where it may pass into any river stream, or lake. The notification requirement AO3-3

applies to any work undertaken in or near a river, stream, or lake that flows at least intermittently through a bed or channel. This includes ephemeral streams and water courses.

The Department is the "responsible agency" under CEQA for the issuance of LSAAs. When notified, the Department will determine whether or not a LSAA is required. This LSAA would include conditions to protect fish and wildlife resources, habitat, and water quality that are mutually agreed to by the Department and the project proponent. The Department is required by CEQA Guidelines Section 15096 to review the CEQA document certified by the lead agency approving the project and, from that review, make certain findings concerning the activity's potential to cause significant, adverse environmental effects. It is therefore important that the Final EIR document address all of the potential biological streambed alteration impacts including potential violation of Fish and Game Code §5901, and propose feasible mitigation. The Final EIR document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for completion of the agreement. To obtain information about the LSAA notification process, please access our website at http://www.dfg.ca.gov/habcon/1600/; or to request a notification package, contact the Lake and Streambed Alteration Program at R2LSA@wildlife.ca.gov or (916) 358-2885.

Early notification to the Department is recommended. Specific conditions in the LSAA may include site-specific conditions for construction activities and timing. Any work subject to the LSAA may not be initiated until certification of the CEQA document and payment of the appropriate fees. Obtaining a LSAA does not satisfy the requirements of either the State or federal Endangered Species Act.

AO3-3 cont.

<u>CESA Permit</u>

The DEIR identifies potential impacts to Tahoe yellow cress *(Rorippa subumbellata)*, bald eagle *(Haliaeetus leucocephalus)*, and willow flycatcher *(Empidonax traillii)*, species listed as Endangered under CESA. If it is not possible to avoid impacts to these species, any activities resulting in the unavoidable "take" of a State-listed plant or animal species may require the Project proponent to obtain a permit from the Department pursuant to Section 2081 of the Fish and Game Code.

CESA permits are issued to conserve, protect, enhance, and restore State-listed threatened or endangered species and their habitats. A CESA permit should be obtained, if the Project has the potential to result in "take" of plants or animals listed under CESA, either during construction or over the life of the Project. If the Project will impact CESA listed species, early consultation is encouraged, as significant modification to the Project and mitigation measures may be required in order to obtain a CESA permit. Candidate species are protected under CESA to the same extent as species listed as endangered or threatened (Fish and Game Code § 2085.)

A CESA permit may only be obtained if the impacts of the authorized take of the species is minimized and fully mitigated, and adequate funding has been ensured to implement the mitigation measures. The Department may only issue a CESA permit if the Department determines that issuance of the permit does not jeopardize the continued existence of the species. The Department will make this determination based on the best scientific information available, and shall include consideration of the species' capability to survive and reproduce, including the species known population trends and known threats to the species. Issuance of a CESA permit may take up to 180 days from receipt of an application from the applicant.

Issuance of a CESA permit is subject to CEQA documentation; therefore, the CEQA document must specify impacts, mitigation measures, and a mitigation monitoring and reporting program. Any work subject to a CESA permit may not be initiated until certification of the CEQA document and payment of the appropriate fees.

AO3-3 cont.

Pursuant to Public Resources Code Sections 21092 and 21092.2, the Department requests written notification of proposed actions and pending decisions regarding this project. Written notifications should be directed to this office.

We appreciate your consideration of our comments. Department personnel are available for consultation regarding biological resources, permitting processes, and strategies to minimize impacts. If you have questions please contact Patrick Moeszinger, Environmental Scientist, at 916-358-2850 or e-mail at Patrick.moeszinger@wildlife.ca.gov.

Sincerely,

Tina Bartlett
Regional Manager

ec: Jeff Drongesen
Jennifer Navicky
Patrick Moeszinger
Department of Fish and Wildlife

Tahoe Regional Planning Agency
trpa@trpa.org

State Clearinghouse

Letter
AO3
Response

California Department of Fish and Wildlife
Tina Bartlett, Regional Manager
April 18, 2013

AO3-1 The commenter states that "the impact analysis in the DEIR identifies potentially significant and unavoidable long-term impacts to fish passage and migration at the mouth of the Upper Truckee River associated with floodplain restoration actions proposed in Alternative 3 [and the Preferred Alternative]." The commenter states that these impacts on fish passage would be in violation of Fish and Wildlife Code Section 5901.

The Preferred Alternative would allow the connection between Lake Tahoe and the Upper Truckee River to form through natural geomorphic processes within the marsh and reconnect the lagoon to the river. It would restore a close approximation of pre-disturbance hydrologic and geomorphic processes and conditions within the marsh, to which the native species were adapted. The formation of multiple channels, back-beach lagoon arms, debris jams, and sandbars at the mouth of the river are all possible outcomes. Some features could be temporary, and others could persist for months or years, depending on river flow and lake level conditions. When present, such features have the potential to restrict or prevent fish passage into the river under low-water conditions. Autumn spawning species, such as mountain whitefish (*Prosopium williamsoni*), could be blocked from spawning if a sandbar or other barrier were to form at the mouth or within the marsh. CDFW staff members performed a field survey of the area extending from the proposed Alternative 3 pilot channel to Lake Tahoe on January 29, 2014. They concluded that seasonal impacts of Alternative 3 on fish passage would likely be minimal (Conservancy and CDFW 2014). The formation of a sandbar completely impeding access to the Upper Truckee River for migrating fish would be unlikely except during the driest years, and such a blockage would be brief. Debris jams could occur incidentally after high-flow events, but because of the unconfined and complex nature of the Upper Truckee River mouth, they would be unlikely to block fish passage for very long. The negative impacts of occasional brief river mouth blockages on fish populations would be mitigated and outweighed by the large-scale beneficial impacts of increased marsh and floodplain habitat. Brief temporary impediments to fish passage at the mouth of the Upper Truckee River could be eliminated or mitigated as they occur through adaptive management. After the field meeting, CDFW staff members did not see a significant problem with permitting restoration elements of Alternative 3, and the Conservancy and CDFW agreed to continue to communicate during final design and implementation to minimize risks to fish.

AO3-2 The commenter states that pursuant to Fish and Game Code Section 1600 et seq., the project requires a Lake and Streambed Alteration Agreement (LSAA) permit.

Issuance of the LSAA permit would depend on resolution of fish passage issues described in response to Comment AO3-1 and California Endangered Species Act (CESA) issues pertaining to Tahoe yellow cress (*Rorippa subumbellata*), bald eagle (*Haliaeetus leucocephalus*), and willow flycatcher (*Empidonax traillii*). Unavoidable "take" of a State-listed plant or animal species would require the project proponent to obtain a permit from the California Department of Fish and Wildlife pursuant to Section 2081 of the California Fish and Game Code.

AO3-3 The commenter summarizes the Lake and Streambed Alteration Program and CESA requirement for authorized take and mitigating impacts.

The comment is noted. See Chapter 5, "Revisions to the Draft EIR/EIS/EIS." Section 5.2.3 has been updated to reflect the information. Additionally, see responses to Comments AO3-1 and AO3-2 above.

Letter AO4

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105-3901

APR 29 2013

Myrnie Mayville
Bureau of Reclamation
P.O. Box 4310
Stateline, NV 98449
Attn: Upper Truckee River DEIS

Subject: Draft Environmental Impact Statement for the Upper Truckee River and Marsh Restoration Project, El Dorado County, California (CEQ#20130049)

Dear Ms. Mayville:

The Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (EIS) for the above project. Our review and comments are pursuant to the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500-1508), and Section 309 of the Clean Air Act.

The Draft EIS clearly demonstrates the need to restore the hydrologic functionality of the Upper Truckee River by reconnecting the floodplain, meadow, and riparian areas with surface and groundwater. Lake Tahoe water quality studies have identified the Upper Truckee River as the largest source of fine sediment from stream bank erosion (p. 3.9-13). The proposed restoration would substantially reduce the volume of fine sediment and nutrients entering Lake Tahoe, thereby supporting key water quality goals of the Tahoe Regional Planning Agency, Lahontan Regional Water Quality Control Board, and Lake Tahoe Environmental Improvement Program. EPA supports restoration of the Upper Truckee River. AO4-1

Alternatives 1, 2, 3 and 4 would decrease channel capacity and reestablish the channel's connection to an active floodplain. Reactivation of the floodplain and return of the river to more natural river processes would significantly reduce peak flows, increase the frequency of overbank flooding and floodplain storage, and enhance riparian and meadow ecosystems. We note that a preferred alternative has not been identified, but Alternative 2, New Channel West Meadow has been recognized as the environmentally superior alternative under CEQA.

We urge the action agencies to consider implementation of the alternative that maximizes ecosystem benefits. Based on our review of the Draft EIS, we have rated the project and document as *Lack of Objections* (LO). Please see the enclosed "Summary of EPA Rating Definitions." The enclosed detailed comments provide recommendations for additional documentation that should be included in the Final EIS regarding Section 404 Clean Water Act compliance, mitigation and monitoring, and cumulative impact analysis. AO4-2

We appreciate the opportunity to review this Draft EIS. Should you have any questions regarding our comments, please contact me at (415) 972-3521, or contact Stephanie Skophammer, the lead reviewer for the project. Stephanie can be reached at (415) 972-3098 or skophammer.stephanie@epa.gov.

AO4-2 cont.

Sincerely,

Cornell Dennis

FOR Kathleen Martyn Goforth, Manager
Environmental Review Office
Communities and Ecosystems Division

Enclosures: Summary of EPA Rating Definitions
EPA Detailed Comments

cc: Scott Carroll, California Tahoe Conservancy
Kristine Hansen, US Army Corps of Engineers
Adam Lewandowski, Tahoe Regional Planning Agency
Robert Larsen, Lahontan Regional Water Quality Control Board
Cyndie Walchk, California State Parks
Theresa Cody, Forest Service Lake Tahoe Basin Management Unit

SUMMARY OF EPA RATING DEFINITIONS*

This rating system was developed as a means to summarize the U.S. Environmental Protection Agency's (EPA) level of concern with a proposed action. The ratings are a combination of alphabetical categories for evaluation of the environmental impacts of the proposal and numerical categories for evaluation of the adequacy of the Environmental Impact Statement (EIS).

ENVIRONMENTAL IMPACT OF THE ACTION

"LO" (Lack of Objections)

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

"EC" (Environmental Concerns)

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

"EO" (Environmental Objections)

The EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

"EU" (Environmentally Unsatisfactory)

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potentially unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

AO4-2 cont.

ADEQUACY OF THE IMPACT STATEMENT

"Category 1" (Adequate)

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

"Category 2" (Insufficient Information)

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analysed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

"Category 3" (Inadequate)

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analysed in the draft EIS, which should be analysed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640, Policy and Procedures for the Review of Federal Actions Impacting the Environment.

Clean Water Act Section 404

The Draft EIS states that formal wetland delineations have not been completed for the study but that much of the study area falls in the floodplain and would likely be classified as wetlands (p. 3.4-38). The Conservancy is expected to coordinate with the US Army Corps of Engineers (Corps) to obtain appropriate permits before construction would begin (p. 5-3).

AO4-3

Recommendations:

We recommend the Final EIS include additional information regarding the 404 permitting process for this project. The current status of the wetlands delineation and the ongoing consultation should be described and documented. We urge California State Parks, TRPA, and Bureau of Reclamation to work with the Sacramento Office of the Corps, as soon as possible, to ensure Section 404 compliance for this project.

Mitigation and Monitoring

To address potential local construction erosion effects, the action alternatives include mitigation measures requiring bed and bank stabilization measures at and immediately upstream and downstream of bridge removal sites and downstream of treated reaches (p. 3.8- 2). Best Management Practices (BMPs) are included in Table 2-6 Environmental Commitments.

AO4-4

Recommendation:

The Final EIS should include additional information on the ability of proposed mitigation measures to provide long-term avoidance and reduction of local erosion effects of the proposed action. We recommend including a chart describing mitigation performance standards, monitoring and reporting requirements, responsible parties, implementation schedule, and maintenance requirements for these measures.

Alternative 3 will include design features where portions of the channel would be directly modified with the expectation that natural river processes would return and achieve channel equilibrium over time (p. 2-11). Mitigation measures and monitoring are proposed to minimize short-term effects of construction (p. 3.9-61). However, it is not clear whether monitoring is included to verify the design assumption that natural processes of erosion and deposition would establish appropriate channel dimensions over time in areas where the stream is not fully reconstructed.

AO4-5

Recommendation:

We recommend the proposed action include validation monitoring to verify whether the restored river channel is adapting as predicted to the actively reconfigured channel.

Cumulative Impact Analysis

EPA appreciates the cumulative impact discussion beginning on page 3.18-1 of the document. Given the dozens of projects underway and being proposed in the Upper Truckee and Trout Creek watershed, it is especially important that all agencies (Forest Service, the Conservancy, Reclamation, CA State Parks, and others) are coordinating their efforts as much as possible. EPA is aware of the Upper Truckee River Restoration Strategy Draft Report which summarizes these efforts and on-going studies.

AO4-6

Recommendation:
Table 2 of the Strategy document refers to a comprehensive list of Upper Truckee river projects with corresponding acreages of floodplain and river restoration. We recommend such a table, as well as a map, be included in the Final EIS to inform the cumulative impact analysis regarding specific acreages and approximate length of channel restored.

AO4-6 cont.

Letter
AO4
Response

U.S. Environmental Protection Agency, Region 9
Kathleen M. Gogorth, Manager, Environmental Review Office, Communities
April 29, 2013

AO4-1 The commenter summarizes the proposed restoration and notes the environmentally superior alternative.

This comment does not raise issues regarding the adequacy, accuracy, or completeness of the Draft EIR/EIS/EIS.

AO4-2 The commenter rates the project and document as *Lack of Objections* (LO), presents definitions, and refers the reader to recommendations discussed below.

This comment does not raise issues regarding the adequacy, accuracy, or completeness of the Draft EIR/EIS/EIS.

AO4-3 The commenter recommends including additional information regarding 404 permitting in the Final EIR/EIR/EIS.

The entire study area was surveyed in 2013/2014 for determining waters of the United States and waters of the State. Part of the study area has been delineated (SPK-2014-00321). The larger area delineation will be submitted to the U.S. Army Corps of Engineers for determination in 2016.

AO4-4 The commenter suggests a chart describing mitigation performance standards, monitoring and reporting requirements, responsible parties, implementation schedule, and maintenance requirements.

A monitoring, maintenance, and reporting program has been developed outlining the mitigation requirements which includes mitigation performance standards, monitoring and reporting requirements, responsible parties, an implementation schedule, and maintenance requirements. See Appendix D of this Final EIR/EIS/EIS.

AO4-5 The commenter suggests validation monitoring for Alternative 3 restoration efforts to verify that the restored river channel is adapting as predicted.

The Conservancy will conduct compliance monitoring to document that mitigation requirements and permit reporting requirements are satisfied. Additionally, the Conservancy will perform monitoring to inform adaptive management decisions, which will include consideration of how well the project design and implementation is functioning relative to design objectives. Although the Conservancy is supportive of the type of scientific validation monitoring suggested by the commenter and participates in such evaluations as part of grant-funded research programs, this comment does not raise issues regarding the adequacy, accuracy, or completeness of the Draft EIR/EIS/EIS.

AO4-6 The commenter recommends that an updated table and map of projects included in the cumulative impact analysis be provided in the final document, including acreages and lengths of channel restored.

An updated table of cumulative projects is presented in Chapter 5, "Revisions to the Draft EIR/EIS/EIS." Data available to present a map of acreages and lengths of channel of each project are beyond the scope of this EIR/EIS/EIS.

Letter AO5

CALIFORNIA Water Boards

MATTHEW RODRIQUEZ SECRETARY FOR ENVIRONMENTAL PROTECTION

Lahontan Regional Water Quality Control Board

April 29, 2013

California Tahoe Conservancy
Attn: Scott Carroll
1061 Third Street
South Lake Tahoe, CA 96150

COMMENTS ON THE SCH# 2007032099 DRAFT ENVIRONMENTAL IMPACT REPORT/ ENVIRONMENTAL IMPACT STATEMENT FOR THE UPPER TRUCKEE RIVER AND MARSH RESTORATION PROJECT, EL DORADO COUNTY

Thank you for the opportunity to provide comments on the Draft Environmental Impact Report/Environmental Impact Statement (Draft EIR/EIS) for the Upper Truckee River and Marsh Restoration Project (Project) adjacent to Lake Tahoe. Water Board staff in the Water Board Regulatory Compliance Division are augmenting comments of the Planning and Restoration Division with the following comments:

I. Regulatory requirements

a. Basin Plan Prohibition Exemptions

The Final EIR/EIS should describe how the specific exemption criteria are satisfied for each project element. **We here clarify that Water Board exemptions to the narrative water quality objective for turbidity are not available for recreation-access elements (e.g., bridge at mouth of the Upper Truckee River). The Final EIR/EIS should also fully delineate all wetlands, SEZs, and any non-SEZ 100-year floodplain areas to aid in use of the document to grant exemptions to applicable prohibitions.** AO5-1

b. Avoid, Minimize, and Mitigate Impacts

The Stream Environment Zone (SEZ) impacts and impacts to all wetlands within those SEZs must be minimized to the extent feasible given the restoration and other goals. The Project must avoid and minimize impacts to the wetlands, 100-year floodplain and SEZ, including from haul routes. Heavy equipment should not be used or transported in any wetlands, including montane meadows, willow scrub wet meadow, or open waters, unless there is no reasonable alternative (e.g., pursuant to Clean Water Act section 404(b)(1) requirements for least-damaging alternatives). AO5-2

PETER C. PUMPHREY, CHAIR | PATTY Z. KOUYOUMDJIAN, EXECUTIVE OFFICER

2501 Lake Tahoe Blvd., So. Lake Tahoe, CA 96150 | www.waterboards.ca.gov/lahontan

c. Monitoring Plan

Monitoring will be necessary under Water Board permits. California Rapid Assessment Method (CRAM) and stream invertebrate bioassessment should be two of the monitoring methods considered for the project. Pre- and post-project wetland delineations should also be incorporated into the proposed monitoring plans. A draft mitigation monitoring plan should be included for in the Final EIR/EIS, together with cost estimates for long-term monitoring that are absent in the Appendix E. AO5-3

II. General Comments

As noted in comment I.a., above, exceptions to turbidity objectives are not allowed for recreation projects. A detailed assessment of why the impacts at the river mouth are needed, and how they meet prohibition exception criteria (including recreation alternatives), should be included in the Final EIR/EIS. AO5-4

The relative benefits and impacts between alternatives should be analyzed in the Final EIR/EIS. As described in the Draft EIR/EIS Alternative 3 has the minimum number of grade control structures, and relies on natural geomorphic processes. This alternative also tends to avoid or minimize many of the potential impacts due to construction associated with Alternatives 1,2, and 4. In this less highly-engineered approach (Alternative 3), it would be helpful to compare sediment delivery estimates with those derived from the more extensive constructed riparian-system modifications of the other alternatives, both during and following construction. AO5-5

III. Comments on Individual Alternatives

a. Alternative 1 – Bridge at Upper Truckee River Mouth

The Draft EIR/EIS does not adequately analyze the necessity of a bridge for public recreation at this location, and feasible alternatives that would reduce SEZ and wetland encroachments. AO5-6

b. Alternative 3

i. Wetlands surrounding TKPOA Corporation Yard in Study Area:

Impacts to the western-most wetlands from reduced regular inundation (by relocating low-flow channel to the east) were not analyzed. Hydrologic modeling should be provided at various flow scenarios to analyze the effects and impacts to the wetlands and meadows in the western-most area surrounding the TKPOA Corporation Yard. AO5-7

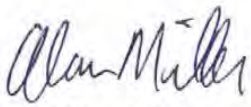
ii. Haul Routes:

Haul route placement, particularly in the marsh interior and in the lower Trout Creek area, was not adequately analyzed. The location of the haul routes must avoid and minimize impacts to wetlands and SEZ to the maximum extent practicable. AO5-8

iii. Trout Creek Bank Stabilization and Grade Control Features - Design

On the lower reaches of Trout Creek (near RS 92+00and RS 66+00 to 95+00) the specific types of materials that will be used are not disclosed and should be. Hardening of banks and grade controls with rock as cited on p. 2-32 is inappropriate in this system where sand and gravel dominates substrate. Access must be addressed for this area in the Final EIR/EIS and must comply with Basin Plan prohibitions and exemption criteria to minimize encroachments. Also, the need for bank protection and grade control in the lower sections of Trout Creek is not sufficiently supported. The Final EIR/EIS should provide results of modeling under various flows to support the need for extensive bank protection in the lower Trout Creek. AO5-9

Thank you for the opportunity to provide comments on this Project. If you have any questions regarding this letter please contact me at (530) 542-5430.



Alan Miller, P.E.,
Chief, North Basin Regulatory Unit

AEM/adwT: UTR Marsh CEQA comments NBR
File under: new pending Upper Truckee River Marsh Restoration, El Dorado Co.

Letter
AO5
Response

California Regional Water Quality Control Board, Lahontan Region
Alan Miller, P.E., Chief, North Basin Regulatory Unit
April 29, 2013

AO5-1 The commenter suggests describing how specific exemption criteria are satisfied for each project element and states that the exemptions to the narrative water quality objective for turbidity are not available for recreation-access elements.

The Lahontan Regional Water Quality Control Board (Lahontan RWQCB or Water Board) may grant exemptions to water quality prohibitions for restoration projects that are "intended to reduce or mitigate existing sources of soil erosion, water pollution, or impairment of beneficial uses" (Lahontan RWQCB 1995:5.2-1), provided that the project meets six criteria. Exemptions may be granted for certain types of projects in the Stream Environment Zone (SEZ). The circumstances applicable to this project are included in Table 4-2. Exemptions also may be granted for certain types of projects in the 100-year floodplain that meet certain criteria. The types of projects applicable and criteria are provided in Table 4-2. As discussed in Section 1.4.2, "Project Objectives," of this Final EIR/EIS/EIS, two of the primary objectives of the project are to improve water quality through the enhancement of natural physical and biological processes and to design the wetland/urban interface to help provide habitat value and water quality benefits.

The Preferred Alternative includes moderate recreation infrastructure on the west side of the Marsh, similar to existing conditions, and no new infrastructure on the Marsh's east side. Specifically, it includes a partial reroute of the existing public-access trail to Cove East Beach along the restored wetlands, lagoon, and dunes; one new viewpoint and one new observation area; one fishing platform; and development of an interpretive program and installation of additional signage, all on the west side of the Marsh. Recreation design features would focus recreation activities in certain areas, consistent with the purpose of land acquisitions by the State. As discussed in Section 3.9, "Geomorphology and Water Quality," of the 2013 Draft EIR/EIS/EIS, construction of recreation features could have the potential to increase transport of sediment and other pollutants to surface water bodies during construction, and increased hard surfaces could increase or concentrate runoff. The Conservancy would implement Environmental Commitments 5 and 6 to address short-term water quality impacts. In addition, the final project design would include permanent stormwater detention features or infiltration systems for runoff from any hard surfaces (Environmental Commitment 11, "Incorporate Effective Permanent Stormwater Best Management Practices"). Therefore, it is expected that with implementation of the construction BMPs and the Conservancy's commitments, exceedance of the water quality standard for turbidity established in the *Water Quality Control Plan for the Lahontan Region* (Basin Plan) is unlikely to result from the recreation features included in the Preferred Alternative.

The restoration elements of the Preferred Alternative, however, may not meet the discharge prohibitions during certain construction activities (i.e., activating the new channel), for which the Conservancy would request an exemption. These prohibitions include discharges that do not meet water quality objectives, specifically the turbidity standard, and development within the 100-year floodplain and SEZ. Nearly all of the study area is in the existing 100-year floodplain, except the uplands adjacent to the Highland Woods subdivision, between Cove East Beach and the Sailing Lagoon, and along the margins of the Tahoe Keys Marina (Exhibit 3.8-14 as shown in Chapter 5, "Revisions to the Draft EIR/EIS/EIS"). Construction activities for the restoration elements along

the Upper Truckee River, Trout Creek, Tahoe Keys Marina, and near the shoreline of Lake Tahoe pose short-term risks to water quality, including increased turbidity and accidental releases of hazardous materials or other pollutants. Stream segments with streambank work (locations with biotechnical treatments, revegetation, the pilot channel, and some backfilled channel sections) could be vulnerable to erosion if an unusually high river flow were to occur in the few first years after construction, and may result in a short-term exceedance of the turbidity standard.

AO5-2 The commenter requests that wetlands, SEZ, and other 100-year floodplain boundaries be indicated to assist in determining the suitability of Water Board exemptions. The commenter describes permitting requirements and restrictions required to avoid, minimize, and mitigate impacts on SEZs, wetlands, and the 100-year floodplain.

To assist the commenter with preliminary considerations regarding eventual permit requirements for the Preferred Alternative, the locations of the Federal Emergency Management Agency 100-year floodplain, TRPA SEZs, and potential jurisdictional wetlands are overlain on the conceptual drawings of the Preferred Alternative in Exhibit 4-1 of this Final EIR/EIS/EIS. Additionally, final design development would be completed in close coordination with the Lahontan RWQCB to integrate options or adjustments that reduce impacts and/or meet exemption criteria.

A05-3 The commenter suggests that California Rapid Assessment Monitoring and bioassessment monitoring be considered for the project and recommends that pre- and post-project wetland delineations be included in monitoring plans. The commenter requests that a draft mitigation monitoring plan be included in the Final EIR/EIS/EIS.

As described in Section 2.3, "Monitoring," of this Final EIR/EIS/EIS, a monitoring framework has been developed for this and other restoration projects in the Upper Truckee River, which includes project specific monitoring. Baseline and post-construction monitoring would include qualitative and quantitative surveys of numerous geomorphic, biological, and vegetation variables, as outlined in Section 2.3.

See response to Comment A04-3 for information on the wetland delineation.

A05-4 The commenter requests additional justification for impacts at the river mouth for recreational features, in light of the Water Board's prohibition exemption criteria.

As discussed above in response to Comment A01-1, the Preferred Alternative does not include impacts at the river mouth because recreation elements that could cause substantial impacts (construction-related or long-term) near the mouth have not been included. The Conservancy anticipates that it would request exemptions to the turbidity objectives related to the project's restoration design elements, not the recreation elements.

A05-5 The commenter requests that the relative benefits and impacts of alternatives be analyzed; notes that Alternative 3 relies on natural processes and has fewer engineered structures; and recommends that sediment delivery be compared.

The Conservancy conducted a two-step process for recommending alternative components to be brought forward into the Preferred Alternative in this Final EIR/EIS/EIS, based on three criteria: Benefits; Responsiveness to Public Comments; and Overall Feasibility. (See additional description of this process in Chapter 2 of this Final EIR/EIS/EIS.) The relative benefits, including natural geomorphic processes, and the relative impacts, including sediment delivery, were considered in selecting Alternative 3 as the basis for the restoration element of the Preferred Alternative.

Table 4-2
Summary of the Ability of the Preferred Alternative to Meet Lahontan Regional Water Quality Control Board Exemption Criteria

Potential Prohibition Exemption	Preferred Alternative
Waste Discharge	
Will eliminate, reduce, or mitigating sources of soil erosion, water pollution, and/or impairment of beneficial uses or water.	The proposed project is necessary for environmental protection because it is designed to, in part, reduce streambank and streambed erosion and enhance sediment retention in the floodplain, thereby reducing sediment from discharging directly into Lake Tahoe. The Preferred Alternative includes engineered restoration elements that would restore the river channel and its connection to the broader floodplain and distributary channels in the central portion of the study area.
There is no feasible alternative to the project that would comply with the provisions in the Basin Plan.	All the alternatives considered, including the No-Action/No-Project Alternative and those considered but not evaluated, have the potential to exceed Basin Plan water quality standards for turbidity during construction of the restoration elements and immediately after construction until vegetation growth increases. All alternatives considered would have reduced sediment inputs into Lake Tahoe compared to the No-Action/No-Project Alternative. The Preferred Alternative is expected to provide approximately the same level of streambank protection as other action alternatives, while providing the greatest floodplain area and connectivity for potential sediment and adsorbed particulate storage.
Land disturbance will be limited to the absolute minimum necessary to correct or mitigate existing sources of soil erosion, water pollution, and/or impairment of beneficial uses.	Extensive analyses and recent modeling (2D modeling included in the Final EIS/EIS/EIS) have been conducted to identify the most problematic sediment source areas, and to optimize location and extent of treatment actions versus passive measures to address these issues as well as meet the other project objectives.
All applicable BMPs and mitigation measures have been incorporated into the project to minimize soil erosion, surface runoff, and other potential adverse impacts to the environment.	Numerous avoidance, minimization, and mitigation measures have been incorporated into the Preferred Alternative that would reduce the potential for violations to the discharge prohibitions to the extent feasible. BMPs would be employed in the study area at all times and throughout construction. The Conservancy would make a number of commitments that would minimize risks to water quality, including Environmental Commitments 5, 6, and 11. In addition, Mitigation Measure 3.9-2 requires implementation of an adaptive management plan that commits to actions that would prevent short-term water quality problems from becoming chronic, long-term water quality issues. Exact erosion control measures (i.e., BMPs) and their performance standards have not yet been specified. However, general BMPs would include the use of construction fencing, silt fences, straw bales, temporary settling basins, vegetation protection, hydroseeding, and straw mulch to assure protection of water quality. To the extent feasible, these water quality protection measures would be designed to be redundant so that if one means of protection were to fail, a backup would be in place.
Project complies with all applicable laws, regulations, plans, and policies. Additional exception criteria apply to restoration projects proposed in the Lake Tahoe Basin. To the extent that they are more stringent, the Lake Tahoe Basin criteria supersede the regionwide criteria.	Environmental Commitment 6 would ensure that the Conservancy would obtain and comply with all applicable federal, State, regional, and local permits.
New Development and Disturbance in the SEZ[1]	
For erosion control projects, habitat restoration projects, wetland rehabilitation projects, SEZ restoration projects, and similar projects:	
Criteria (all must be met)	
The project, program, or facility is necessary for environmental protection.	Two of the primary objectives of the project are to improve water quality through the enhancement of natural physical and biological processes and to design the wetland/urban interface to help provide habitat value and water quality benefits. Restoration of channel and floodplain connectivity and function within this reach of the Upper Truckee River, and reconnection of the river lagoon system, are critical elements to protect and improve the water quality discharged to Lake Tahoe from its largest tributary basin.
There is no reasonable alternative, including relocation, which avoids or reduces the extent of encroachment in the Stream Environment Zone.	By its nature, the project must work within the channel and 100-year floodplain to rehabilitate areas that have been directly modified and compensate to restore more natural conditions and processes. Environmental Commitment 5 includes measures to limit construction activities in sensitive areas. Specifically, the measure specifies that soil and other loose material should be stored at least 100 feet from the active channel; that overwinter storage of construction materials within this area should be limited; and that staging and haul routes should be designated in existing developed or disturbed areas where feasible, or where not feasible, in the least sensitive natural areas feasible. In addition, construction area boundaries would be flagged.
Impacts are fully mitigated.	Numerous avoidance, minimization, and mitigation measures have been incorporated into the proposed Preferred Alternative that would reduce the potential for violations to the discharge prohibitions to the extent feasible. BMPs would be employed in the study area at all times and throughout construction. The Conservancy is committed to a number of commitments for minimizing risks to water quality, including Environmental Commitments 5, 6, and 11. In addition, Mitigation Measure 3.9-2 requires implementation of an adaptive management plan that commits to actions that would prevent short-term project-related water quality problems from becoming chronic, long-term water quality issues. Exact erosion control measures (i.e., BMPs) and their performance standards have not yet been specified. However, general BMPs would include the use of construction fencing, silt fences, straw bales, temporary settling basins, vegetation protection, hydroseeding, and straw mulch to assure protection of water quality. To the extent feasible, these water quality protection measures would be designed to be redundant so that if one means of protection were to fail, a backup would be in place.
Discharge in the 100-Year Floodplain in Cases Where Also Not a SEZ[1]	
For erosion control projects, habitat restoration projects, SEZ restoration projects, and similar projects, provided that the project is necessary for environmental protection and there is no reasonable alternative which avoids or reduces the extent of encroachment in the floodplain.	The engineered restoration elements in the Preferred Alternative, including the channel construction, streambank and streambed stabilization treatments, and lowering of the terrace surfaces, are designed specifically to address the degraded floodplain and SEZ conditions to improve water quality over the long term and to improve conditions compared to the existing conditions. Nearly all of the study area is in the 100-year floodplain, except the uplands adjacent to the Highland Woods subdivision between Cove East Beach and the Sailing Lagoon, and along the margins of the Tahoe Keys Marina (Exhibit 3.8-14 as shown in Chapter 5, “Revisions to the Draft EIR/EIS/EIS”). The Upper Truckee River and Trout Creek channels, adjacent areas, and the shared floodplain in the central meadow are the designated floodway. Therefore, the project would require work within the 100-year floodplain and SEZ.

Potential Prohibition Exemption	Preferred Alternative
Projects solely intended to reduce or mitigate existing sources or erosion or water pollution or to restore the functional value to previously disturbed floodplain areas.	The engineering restoration elements in the Preferred Alternative, including the channel construction, streambank stabilization treatments, and lowering of the channel, are designed specifically to address the degraded floodplain and SEZ conditions in the study area to improve water quality over the long term and to improve conditions compared to the existing conditions, and therefore require work within the 100-year floodplain and SEZ.
Projects necessary for public recreation.	The Preferred Alternative includes elements that would provide recreation benefits, with minimal adverse impacts, compared to existing conditions.
Projects that would provide outdoor public recreation within portions of the 100-year floodplain that have been substantially altered by grading and/or filling activities which occurred prior to June 26, 1975.	The Preferred Alternative would enhance the recreational experience and opportunities focused on the lower west side and Cove East portions of the site, which were degraded by fill and grading actions before June 26, 1975.
Criteria (all must be met)	
Project is included in one of the categories above.	Yes.
No reasonable alternative to locating the project or portions of the project within the 100-year floodplain. No reasonable alternative to locating the project or portions of the project within the 100-year floodplain. The project, by its nature, must be located within the 100-year floodplain.	The goal of the project is to restore the channel and 100-year floodplain to a more natural condition and by its nature must occur within the 100-year floodplain.
Project incorporates measures which will ensure that any erosion or surface runoff problems caused by the project are mitigated to levels of insignificance.	Numerous avoidance, minimization, and mitigation measures have been incorporated into the proposed Preferred Alternative that would reduce the potential for violations to the discharge prohibitions to the extent feasible. BMPs would be employed in the study area at all times and throughout construction. The Conservancy is committed to a number of commitments for minimizing risks to water quality, including Environmental Commitments 5, 6, and 11. In addition, Mitigation Measure 3.9-2 requires implementation of an adaptive management plan that commits to actions that would prevent short-term project-related water quality problems from becoming chronic, long-term water quality issues. Exact erosion control measures (i.e., BMPs) and their performance standards have not yet been specified. However, general BMPs would include the use of construction fencing, silt fences, straw bales, temporary settling basins, vegetation protection, hydroseeding, and straw mulch to assure protection of water quality. To the extent feasible, these water quality protection measures would be designed to be redundant so that if one means of protection were to fail, a backup would be in place.
The project will not, individually or cumulatively with other projects, directly or indirectly, degrade water quality or impair beneficial uses of water.	Two of the primary objectives of the project are to improve water quality through the enhancement of natural physical and biological processes and to design the wetland/urban interface to help provide habitat value and water quality benefits. The project would improve water quality and beneficial uses of waters associated with other projects.
The project will not reduce the flood flow attenuation capacity, the surface flow treatment capacity, or the ground water flow treatment capacity from existing conditions. This shall be ensured by restoration of previously disturbed areas within the 100-year floodplain within the project site, or by enlargement of the floodplain within or as close as practical to the project site. The restored, new or enlarged floodplains shall be of sufficient area, volume, and wetland value to more than offset the flood flow attenuation capacity, surface flow treatment capacity, and ground water flow treatment capacity lost by construction of the project.	The proposed Preferred Alternative would increase the area of the marsh that would be inundated during small (2-year) and moderate (5- and 10-year) flow events, increasing the potential for sediment and adsorbed particulate retention and long-term storage within the floodplain. However, it would not reduce the conveyance capacity for large (25-year) or major (100-year) floods. See Section 3.1.1, “Flooding and Flood Hazards,” in Chapter 3, “Master Responses,” of this Final EIR/EIS/EIS.

Notes:

2D = two-dimensional; Basin Plan = *Water Quality Control Plan for the Lahontan Region*; BMP = best management practice; Conservancy = California Tahoe Conservancy; Final EIR/EIS/EIS = Final environmental impact report/environmental impact statement/environmental impact statement; SEZ = Stream Environment Zone

[1] Applicable to this project.

Source: Data compiled by Cardno in 2015

A05-6 The commenter states that the Draft EIR/EIS/EIS does not adequately analyze the necessity of a bridge for public recreation in Alternative 1 and feasible alternatives that would reduce SEZ and wetland encroachment.

Alternative 1, "Maximum Recreation," included the proposed bridge for public recreation, while Alternatives 2–4 analyzed in the 2013 Draft EIR/EIS/EIS included recreation features with varied SEZ and wetlands footprints. The Preferred Alternative would limit encroachment on SEZ and wetlands because it does not include the bridge at the mouth or additional recreation infrastructure on the east side of the marsh. Recreation access on the west side of the marsh would be minimal and focus recreation in designated areas along trails on the upland edge. See additional information of the selection process in Chapter 2 of this Final EIR/EIS/EIS.

A05-7 The commenter requests hydrologic modeling of potential effects of low-flow channel relocation on wetlands near the western edge of the study area near the Tahoe Keys Property Owners Association (TKPOA) Corporation Yard under Alternative 3.

Wetlands near the western edge of the study area near the TKPOA Corporation Yard are isolated from regular surface water inundation via overbanking of the Upper Truckee River under existing conditions (because the river does not overtop its banks in this reach until flows exceed about the 5-year event). Existing wetlands in this vicinity likely receive their dominant hydrologic support from a combination of local surface runoff (and seasonal on-site snowpack melt) and groundwater support. Relocating the low-flow channel of the Upper Truckee River would not adversely modify the normal hydrologic support to these wetlands: the frequency of overbank flows reaching this area would not be decreased relative to existing conditions and groundwater support may be improved, because the partially backfilled channel would reduce groundwater losses to the existing incised streambed during low-flow periods.

AO5-8 The commenter requests additional consideration of haul route alignments relative to impacts on wetlands and SEZ under Alternative 3, in particular for the Trout Creek bed and bank protection features.

The haul routes and staging areas for the Preferred Alternative, which incorporates restoration elements of Alternative 3, are shown in Exhibit 2-2, "Preferred Alternative—Storage/Staging and Access Plan," of this Final EIR/EIS/EIS. As outlined in Environmental Commitment 5, the Conservancy is committed to designating staging areas and hauling areas to existing developed or disturbed areas, or where not feasible, in the least sensitive natural-habitat areas. Haul route alignments are determined based on consideration of potential impacts on sensitive resources, restricting the extent of internal access roads to the minimum likely required and fewest stream crossings. In response to comments on the 2013 Draft EIR/EIS/EIS, access points, storage/staging areas, and internal haul route options have been modified to specifically confirm that storage areas are not in wetlands and have limited physical flood hazards. (That is, these areas are outside the existing 100-year floodplain based on the updated, detailed two-dimensional [2D] hydraulic modeling discussed in Section 3.1.1, "Flooding and Flood Hazards," in Chapter 3, "Master Responses," of this Final EIR/EIS/EIS.) Additionally, some of the access points and possible routes along public roads were adjusted to respond to public comment about traffic and neighborhood concerns. (See Section 3.3.4, "Traffic, Access, and Staging," in Chapter 3, "Master Responses," of this Final EIR/EIS/EIS.) Therefore, the internal haul routes required adjustments to ensure that all potential work areas could be reached, including the lower Trout Creek stabilization locations. The storage, staging, and access locations for the Preferred Alternative as depicted in Exhibit 2-2 of this Final EIR/EIS/EIS represent the worst-case possibilities, because Final design adjustments and permitting could further modify them to avoid or minimize wetland or SEZ impacts.

A05-9 The commenter requests clarification about the types of potential bed and bank stabilization treatments for lower Trout Creek and requests additional modeling to support the protection locations and treatment types under Alternative 3.

The detailed topographic information used to build the 2D hydraulic model (bed and bank profiles) and 2D modeling results for the 10- and 100-year flood events (water depths and velocity vectors) provide information about the bed profile slopes (showing the existing bed knickpoints in this previously degraded channel) and water surface gradients under moderate to large flood events (showing worst-case stress). These data were used to create the worst-case envelope polygon for potential bank and bed treatments for lower Trout Creek in the project schematics (Appendix A). The exact mixture of bed and bank treatments required to prevent project-related destabilization of the Trout Creek channel will be determined during additional modeling and final design analyses to avoid over-design and to meet permit requirements for materials, and treatment measures. However, to provide better information about the likely types of bed and bank treatments, representative details for buried boulder grade controls and biotechnical bank stabilizations with plantings have been included in the Preferred Alternative's schematic plans (Appendix A).