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ASCENT
ENVIRONMENTAL



Draft
Environmental Impact Statement

LAKE TAHOE SHORELINE PLAN

Prepared for:



TAHOE
REGIONAL
PLANNING
AGENCY

**Draft Environmental Impact Statement
for the**

Lake Tahoe Shoreline Plan

CA State Clearinghouse No. 2017072020

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LIST OF ABBREVIATIONS

°C	degrees Celsius
°F	degrees Fahrenheit
µg	micrograms
µg/m ³	micrograms per cubic meter
2012 RPU EIS	<i>2012 Regional Plan Update Environmental Impact Statement</i>
2012 RTP/SCS	<i>Lake Tahoe Regional Transportation Plan and Sustainable Communities Strategy: Mobility 2035</i>
2017 RTP/SCS	<i>Linking Tahoe: Regional Transportation Plan and Sustainable Communities Strategy</i>
AB	Assembly Bill
ADT	average daily traffic
AIS	aquatic invasive species
Alquist-Priolo Act	Alquist-Priolo Earthquake Fault Zoning Act
AMWG	adaptive management working group
APSA	Aboveground Petroleum Storage Act
ATP	Linking Tahoe: Active Transportation Plan
B.P.	before present
Basin Plan	Water Quality Control Plan for the Lahontan Region
BMP	best management practice
BTEX	benzene, toluene, ethylbenzene and xylene (fuel constituents)
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CAFE	corporate average fuel economy
Cal/OSHA	California Occupational Safety and Health Administration
CalEMA	California Emergency Management Agency
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CBC	California Building Code
CCAA	California Clean Air Act
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife

CEC	California Energy Commission
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	U.S. Code of Federal Regulations
CGS	California Geological Survey
CH ₄	methane
CO	carbon monoxide
CO ₂	carbon dioxide
Commission	California State Lands Commission
Compact	Tahoe Regional Planning Compact
Conservancy	California Tahoe Conservancy
CRHR	California Register of Historical Resources
CTLFC	Carson and Tahoe Lumber and Fluming Company
CWA	Clean Water Act
dBA	A-weighted decibels
diesel PM	diesel particulate matter
DTSC	California Department of Toxic Substances Control
EDCAQMD	El Dorado County Air Quality Management District
EIP	Environmental Improvement Program
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act of 1986
ESA	federal Endangered Species Act of 1973
FONSE	Finding of No Significant Effect
g/m ² /da	grams per square meter per day
gC/m ² /year	grams of carbon per square meter per year
GHG	greenhouse gas
GIS	Geographic Information System
Handbook	TRPA <i>Best Management Practices Handbook</i>
HAP	hazardous air pollutant
HOA	homeowner's association
hp	horsepower

IEC	Initial Environmental Checklist
IS/MND	Initial Study/Mitigated Negative Declaration
JFF	Joint Fact-Finding
kW	kilowatts
LCD	Land capability district
LCFS	Low Carbon Fuel Standard
LCT	Lahontan cutthroat trout (<i>Oncorhynchus clarki henshawi</i>)
LOS	level of service
LRWQCB	Lahontan Regional Water Quality Control Board
LSA	Lake and Streambed Alteration
LTAB	Lake Tahoe Air Basin
LTBMU	Lake Tahoe Basin Management Unit
LTD	Lake Tahoe datum
LTGRP	Lake Tahoe Geographic Response Plan
MBTA	Migratory Bird Treaty Act
Mm ⁻¹	inverse mega meters
MOA	memoranda of agreement
MOU	memorandum of understanding
mpg	miles per gallon
mph	miles per hour
MPO	metropolitan planning organization
MT	metric tons
MTBE	methyl tertiary-butyl ether (fuel additive)
N ₂ O	nitrous oxide
NAAQS	national ambient air quality standards
NCCAC	Nevada Climate Change Advisory Committee
NDEP	Nevada Division of Environmental Protection
NDOW	Nevada Department of Wildlife
NDSL	Nevada Division of State Lands
NEHRP	National Earthquake Hazards Reduction Program
NEHRPA	National Earthquake Hazards Reduction Program Act
Nevada SHPO	Nevada State Historic Preservation Office
NHPA	National Historic Preservation Act

NHSTA	National Highway Traffic Safety Administration
NMFS	National Oceanic and Atmospheric Administration National Marine Fisheries Service
NNHP	Nevada Natural Heritage Program
NO ₂	nitrogen dioxide
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resource Conservation Service
NRHP	National Register of Historic Places
NRS	Nevada Revised Statutes
NTRT	Nevada Tahoe Resource Team
NVCRIS	Nevada Cultural Resource Information System
ONRW	Outstanding National Resource Water
OSHA	Occupational Safety and Health Administration
PAH	polycyclic aromatic hydrocarbon
PAOT	persons at one time
PAS	plan area statements
PCAPCD	Placer County Air Pollution Control District
PCB	polychlorinated biphenyl
PM ₁₀	respirable particulate matter with an aerodynamic diameter of 10 micrometers or less
PM _{2.5}	fine particulate matter with an aerodynamic diameter of 2.5 micrometers or less
Porter-Cologne Act	Porter-Cologne Water Quality Control Act of 1970
PWC	personal watercraft
RCP	Representative Concentration Pathways
RPS	Renewable Portfolio Standard
RPU EIS	Regional Plan Update Environmental Impact Statement
RTP	Lake Tahoe 2035 Regional Transportation Plan
RTP/SCS EIR/EIS	Regional Plan Update Environmental Impact Statement and Lake Tahoe Regional Transportation Plan and Sustainable Communities Strategy Environmental Impact Report and Environmental Impact Statement
RWQCB	regional water quality control board
SANDAG	<i>San Diego Association of Governments</i>
SAP	Sustainability Action Plan
SARA	Superfund Amendments and Reauthorization Act
SB	Senate Bill
SCS	Sustainable Communities Strategy

SERC	Nevada State Emergency Response Commission
SEZ	stream environment zone
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SO ₂	sulfur dioxide
SPCC	Spill Prevention, Control, and Countermeasure
SRA	State Recreation Area
State Parks	California Department of Parks and Recreation
SWPPP	storm water pollution prevention plan
SWRCB	State Water Resources Control Board
TAC	toxic air contaminant
TAG	technical advisory group
TART	Tahoe Truckee Area Regional Transit
TMDL	total maximum daily load
TMPO	Tahoe Metropolitan Planning Organization
TNF	Tahoe National Forest
TRPA	Tahoe Regional Planning Agency
TRPA Code	TRPA Code of Ordinances
TTD	Tahoe Transportation District
TWW	treated wood waste
TYC	Tahoe yellow cress
USACE	U.S. Army Corps of Engineers
USDOT	U.S. Department of Transportation
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
UVR	ultraviolet radiation
VEC	vertical extinction of light
VMT	vehicle miles traveled
VOC	volatile organic compounds
YOY	young-of-the-year

1 INTRODUCTION

1.1 CONTEXT AND BACKGROUND

Lake Tahoe is world-renowned for its crystal-clear water and stunning scenic quality. The lake and its surrounding watershed exhibit irreplaceable environmental and recreational values. For these reasons, the Lake Tahoe Basin has been recognized as a unique and sensitive region that requires special protection to preserve the values that make it attractive to so many people. Bisected by the California-Nevada state line, Lake Tahoe has been protected by those states and the federal government for more than 40 years through a unique governance model. Rapid development and lax regulatory standards through the 1960s prompted the governors of California and Nevada to create the Joint California and Nevada Interstate Compact Commission in 1968 and to adopt the first Lake Tahoe Regional Planning Compact (Compact). The Compact, which was ratified by the U.S. Congress, created the Tahoe Regional Planning Agency (TRPA) and gave the agency broad powers, authorities, and responsibilities in the planning and regulation of the Lake Tahoe environment.

The Lake Tahoe Region is home to almost 55,000 full-time residents and is a recreational destination with four to six million visitors each year, including many who live in nearby metropolitan centers within a few hours' travel time. Because of the special conditions and unique circumstances of the Tahoe Region's natural ecology, development patterns, population, and human needs, TRPA was formed to guide orderly growth and protection of the Region's resources. The Compact charged TRPA with identifying Environmental Threshold Carrying Capacities, which are standards necessary to achieve certain environmental and other values. Environmental Threshold Carrying Capacities were adopted in 1984 and include a series of standards to protect air quality, water quality, soils, vegetation, fisheries, wildlife, scenic resources, noise levels, and public recreation. The Compact also directed TRPA to prepare and implement a Regional Plan that guides resource management and development to attain and maintain those threshold standards.

TRPA adopted a Regional Plan and implementing Code of Ordinances in 1987. The Regional Plan included a Shorezone Subelement and implementing ordinances that regulated development along the shoreline of Lake Tahoe. The 1987 ordinances recognized that there was uncertainty regarding the effect of shoreline structures on fisheries. Because of this uncertainty, the ordinances prohibited new structures in areas identified as prime fish habitat and called for a study to evaluate the effects of shoreline structures on fish habitat and spawning.

By the early 1990s, the studies called for in the 1987 ordinance had been completed, and they indicated that the placement of piers and buoys in spawning or feed/cover habitat has limited effect on fish populations and those effects can be mitigated (Byron et al. 1989; Beauchamp et al. 1991, 1994). TRPA then initiated multiple shorezone planning efforts to replace the prohibition of structures in prime fish habitat with a comprehensive shoreline plan based on current science that attained the threshold standards while allowing for orderly development and lake access.

Multiple agencies with jurisdiction over Lake Tahoe, including TRPA, U.S. Army Corps of Engineers, Lahontan Regional Water Quality Control Board, California State Lands Commission, and Nevada Division of State Lands, have worked together through multiple iterations of shorezone ordinances, plans, and environmental studies. As a result of these past efforts, TRPA released environmental analyses to the public in 1995, 1999, 2004, 2006, and 2008 in an attempt to update the 1987 ordinances.

This work culminated in 2008 with the certification of the final Environmental Impact Statement (EIS) and adoption of a TRPA shorezone ordinance that incorporated contemporary science and addressed stakeholder concerns. However, the EIS supporting adoption of this ordinance was challenged, and in 2010

the U.S. Ninth Circuit Court of Appeals vacated the adoption of the ordinance and certification of the EIS and remanded the matter back to TRPA.

In 2016, TRPA launched a collaborative process to develop a Shoreline Plan to enhance recreation and protect the 72 miles of Lake Tahoe's shores. TRPA, along with partner agencies and organizations, engaged a third-party mediator to convene stakeholders and develop a consensus-based planning process. As part of this process, a Steering Committee was convened to frame key shoreline issues, identify the approach to address them, and develop policy recommendations. The Steering Committee consisted of senior-level representatives from the California State Lands Commission, Lahontan Regional Water Quality Control Board, Lake Tahoe Marina Association, League to Save Lake Tahoe, Nevada Division of State Lands, Tahoe Lakefront Owners' Association, and TRPA.

TRPA also convened a Joint Fact-Finding (JFF) Committee comprised of technical experts from public agencies, universities, and stakeholder organizations to provide scientific and technical recommendations. The JFF Committee identified the best available scientific studies to inform the Shoreline Plan and EIS, oversaw baseline data collection for the 2016 and 2017 boating seasons, developed analytical approaches to estimate boat usage, provided technical recommendations to the Steering Committee, and provided input on the analytical approaches in this EIS. The JFF Committee meetings were open to the public and interested members of the public were encouraged to participate and submit information.

The shoreline planning process provided opportunities for public involvement in a variety of forums. The intent of this outreach was to provide information, solicit input, and identify key issues to be included in the plan and addressed in the environmental analysis. TRPA staff facilitated public workshops in Kings Beach, California, and in Stateline, Nevada, and provided over 20 organizational briefings with interest groups such as homeowners associations, littoral property owners, realtor associations, chambers of commerce, and boating associations. A Shoreline Plan website (www.shorelineplan.org) was launched to provide the public with convenient access to Steering Committee and JFF Committee meeting materials and minutes, background information, policy memos, technical memos, public feedback, scientific studies, and an interactive Shoreline Plan Map.

The Steering Committee considered technical recommendations from the JFF Committee and input from the public to develop a recommended set of policies that constitute the proposed Shoreline Plan. The Regional Plan Implementation Committee of the TRPA Governing Board reviewed and endorsed the proposed Shoreline Plan as the preferred alternative, and the other alternatives described in Chapter 2 of this document, for consideration in this EIS.

1.2 PURPOSE AND OBJECTIVES OF THE SHORELINE PLAN

The overarching goal of the Shoreline Plan is to enhance the recreational experience along Lake Tahoe's shores while protecting the environment and responsibly planning for the future. As an element of the Regional Plan, the Shoreline Plan, in combination with other elements of the Regional Plan and implementation programs, is intended to attain and maintain the environmental thresholds while allowing for orderly access to the lake consistent with those thresholds. The Shoreline Plan is necessary to manage the use and development of the shoreline consistent with the best available science.

This EIS evaluates four alternatives that include different strategies to meet the objectives of the Shoreline Plan. The specific objectives of the Shoreline Plan are to:

- ▲ protect and where feasible enhance the environment,
- ▲ provide a fair and reasonable system of access,
- ▲ adapt to changing lake levels,
- ▲ preserve high-quality recreation and public safety, and
- ▲ implement predictable and consistent rules.

General principles of the Shoreline Plan also include respecting the authority of each of the responsible and interested agencies, ensuring safe navigation, and recognizing both public and private interests.

1.3 INTENDED USES OF THIS EIS

The intended use of this EIS is to identify and assess the anticipated environmental effects of implementing the Shoreline Plan alternatives, with a focus on significant and potentially significant impacts. The EIS aims to provide a level of detail and clarity in the environmental review that allows for meaningful comment and participation by public agencies, interest groups, and the public. The EIS must also present a level of environmental information that will allow the TRPA Advisory Planning Commission to recommend a preferred alternative to the TRPA Governing Board and, ultimately, for the Governing Board to render a fully informed decision regarding approval and adoption of a Shoreline Plan alternative.

The widespread geography to which the Shoreline Plan applies, the long horizon over which it will be implemented, and the policy-oriented nature of its guidance are such that the EIS analysis is prepared at a program level—that is, this document constitutes a general analysis commensurate with the level of detail in the plan. As such, the EIS focuses on the potential effects of policies and ordinances, which—because they are to be implemented through yet unknown projects—do not provide a high level of detail or degree of specificity. It is important to understand that assumptions about projects at a general level, such as their broad location, timing, and magnitude, are projected in this EIS, but that individual projects are not identified or assumed. Consequently, this EIS is not intended to replace the project-specific environmental review required to implement site-specific projects that may be proposed in the future consistent with the adopted alternative. All of TRPA’s existing procedures requiring environmental review of projects to determine their potential for significant impacts, feasible and effective mitigation to address those impacts, findings pertaining to project effects on threshold attainment, and other environmental safeguards are still in place and will continue to ensure that individual projects are fully evaluated prior to approval and implementation. This EIS, consistent with its program-level purpose, includes a thorough analysis of the environmental implications of the policy direction offered by the alternatives, and the information necessary to select the alternative that would best achieve the objectives identified by TRPA.

1.4 ORGANIZATION OF THE DRAFT EIS

This EIS is organized into the following chapters to help readers obtain information about the Shoreline Plan alternatives and the environmental effects associated with them:

- ▲ The **Executive Summary** presents a snapshot of the EIS, including a history and background of the Shoreline Plan, a summary of the alternatives and their comparative features, and an overview of environmental impacts and mitigation measures associated with each alternative.
- ▲ **Chapter 1, “Introduction,”** provides context and background related to the Shoreline Plan, identifies the objectives for the plan, and provides other material to help readers understand the concepts presented in the Shoreline Plan alternatives and the environmental analysis of them.
- ▲ **Chapter 2, “Description of Proposed Project and Alternatives,”** describes the features and characteristics of each of the four alternatives. It provides information on the essential concepts that are necessary to understand the Shoreline Plan, identifies related policies and Regional Plan elements that are not subject to change, summarizes key differences among the alternatives, and describes the features of each alternative.
- ▲ **Chapter 3, “Approach to the Environmental Analysis,”** explains the methodology employed to assess the environmental effects of implementing the Shoreline Plan alternatives, and, where applicable, the consensus-based approach to establishing that methodology.

- ▲ **Chapters 4 through 16 (resource analysis chapters)**, contain the technical analysis of the environmental resource areas, including the environmental setting, regulatory framework, environmental effects, mitigation measures, and significance of each environmental impact before and after mitigation.
- ▲ **Chapter 17, “Cumulative Impacts,”** identifies the cumulative effects of implementing each alternative in combination with past, present, and reasonably foreseeable future projects.
- ▲ **Chapter 18, “Other TRPA-Mandated Sections,”** lists the effects found not to be significant, the significant environmental effects that cannot be avoided, any irreversible and irretrievable commitment of resources, the relationship between the short-term uses of the environment and maintenance and enhancement of long-term productivity, and the regional growth-inducing impacts that may occur from adopting a Shoreline Plan alternative.
- ▲ **Chapter 19, “Report Preparers,”** lists the TRPA staff and consultants that prepared the EIS.
- ▲ **Chapter 20, “References and Persons Consulted,”** identifies sources of information used in the EIS analysis.
- ▲ **Appendix A, “Watercraft Use and Build Out Assumptions,”** contains a summary of the data sources, assumptions, and calculations regarding the number of new structures and changes in watercraft use under each alternative.
- ▲ **Appendix B, “Scoping Summary Report,”** includes the public, organization, and agency comments received during the environmental scoping period.
- ▲ **Appendix C, “Emission Calculations,”** provides calculations of operational air pollutant emissions under each alternative.
- ▲ **Appendix D, “Noise Calculations,”** provides calculations of construction noise and vibration levels.

1.5 STANDARD ENVIRONMENTAL REVIEW TERMINOLOGY

This EIS includes the following terminology to denote the standards by which environmental impacts are assessed, the significance of environmental impacts of the Shoreline Plan alternatives, and remedial activities that are proposed to reduce impacts:

- ▲ **Significance criteria:** Criteria established to define the level at which an impact would be considered significant (i.e., if an impact exceeds a specified level, it would be considered significant). Criteria are defined for this EIS based on TRPA environmental threshold standards, regulatory requirements, and other applicable information.
- ▲ **Beneficial impact:** An impact that would result in improved environmental conditions.
- ▲ **Less-than-significant impact:** An impact that would not result in a substantial and adverse change in the physical environment. This impact level does not require mitigation.
- ▲ **Significant impact:** An impact that would result in a substantial adverse change in any of the physical conditions within the Region. Potentially feasible mitigation measures or alternatives to the component(s) of the alternative resulting in the impact must be considered in an attempt to substantially reduce significant impacts.
- ▲ **Potentially significant impact:** An impact that would be considered a significant impact as described above if it were to occur; however, the occurrence of the impact cannot be immediately determined or there is some uncertainty about its occurrence.

- ▲ **Significant and unavoidable impact:** A substantial adverse effect on the environment that cannot be feasibly mitigated to a less-than-significant level or reduced to a less-than-significant level by modifying the component(s) of the alternative that result in the impact.
- ▲ **Mitigation measure:** An action that could feasibly minimize a significant impact. Mitigation measures must be fully enforceable through permit conditions, ordinances, agreements, or other legally binding instruments.

1.6 ENVIRONMENTAL REVIEW PROCESS AND PUBLIC INVOLVEMENT

This EIS has been prepared in accordance with Article VII of the Tahoe Regional Planning Compact, Chapter 3 of the TRPA Code of Ordinances, and Article VI of the TRPA Rules of Procedure. The environmental review process for the Shoreline Plan EIS began with efforts to gather information to establish the breadth, or scope, of environmental review. A notice of preparation was issued to inform agencies and the public that an EIS would be prepared for the Shoreline Plan, and to solicit views of agencies and the public regarding the scope and content of the EIS. The notice of preparation was distributed on July 12, 2017, and comments were received through August 16, 2017. Scoping meetings were held at the TRPA Advisory Planning Commission and at the TRPA Governing Board to provide information on the environmental analysis and to obtain oral comments. Both written and oral comments received during EIS Scoping were summarized by TRPA and are included in the Scoping Summary Report (Appendix B). In addition to the public scoping process, public input on the scope of the Shoreline Plan was garnered through the JFF Committee and public engagement process described above.

As required by the Compact, this EIS has been prepared using a “systematic, interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and decision-making which may have an impact on man’s environment” (Compact Article VII(a)(1)). Throughout the process, TRPA has consulted with federal, state, and local agencies, as well as the scientific community and universities engaged in research and study of the Lake Tahoe Region, to ensure that the most current scientific data have been considered.

During the public and agency review period, this Draft EIS will be made available for further consultation with agencies and organizations, particularly those with “jurisdiction by law or special expertise with respect to any environmental impact involved” (Compact Article VII (b)). The public will also be consulted and their “views shall be solicited during a public comment period lasting not less than 60 days” (Compact Article VII (b)).

Following the public and agency review period, substantive comments relating to the environmental analysis will be reviewed and responses will be prepared. A proposed final EIS will be presented to the TRPA Advisory Planning Commission, which will make a recommendation to the Regional Plan Implementation Committee and TRPA Governing Board with respect to certification of the proposed final EIS. The Governing Board will provide an opportunity for comment on the proposed final EIS at a Governing Board hearing. The Board will then consider taking action to certify the final EIS prior to considering approval of the Shoreline Plan (Rules of Procedure 6.16).

The Shoreline Plan Draft EIS is available for public and agency review online at www.trpa.org and in hard copy at the TRPA offices:

Tahoe Regional Planning Agency
128 Market Street
Stateline, NV 89449

The public review period extends from **May 8** to **July 9, 2018**.

Normal operating hours for TRPA are Monday through Friday, 9 a.m. to 4 p.m. The front counter is closed every Tuesday and from 12 p.m. to 1 p.m. on other business days. TRPA will observe two holiday closures during the comment period, on May 28th and July 4th.

Written comments on the Draft EIS must be sent by July 9, 2018. They can be submitted online at <http://shorelineplan.org/shoreline-plan-eis-comment-form/>, by email to shorelineplan@trpa.org, or by mail to Rebecca Cremeen at: P.O. Box 5310, Stateline, NV 89449.

Oral comments may be provided at the following TRPA Governing Board and Advisory Planning Commission meetings:

- ▲ TRPA Governing Board Meeting, 9:30 a.m. on Wednesday, May 23, 2018 at the TRPA Office, Stateline, NV.
- ▲ TRPA Advisory Planning Commission, 9:30 a.m. on Wednesday, June 13, 2018 at the TRPA Office, Stateline, NV.

Written comments may be provided at the following public workshops:

- ▲ Public Workshop, 5:30 – 7:30 p.m. on Monday, June 4, 2018 at the TRPA Office, Stateline, NV.
- ▲ Public Workshop, 5:30 – 7:30 p.m. on Wednesday, June 6, 2018 at the North Tahoe Event Center, Kings Beach, CA.