

# EXECUTIVE SUMMARY

## ES.1 BACKGROUND

The Tahoe Regional Planning Agency (TRPA) adopted its first Regional Plan and Code of Ordinances in 1987 to guide resource management and development, and protect the Tahoe Region's natural ecology and unique values. 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 about 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 further study to evaluate the effects of shoreline structures on fish habitat and spawning. By the early 1990s, the studies had been completed, and they concluded that the placement of piers and buoys in spawning and feed/cover habitat has limited effect on fish populations and that those effects can be mitigated (Byron et al. 1989; Beauchamp et al. 1991, 1994).

In response to the conclusions of the fish habitat studies, TRPA led multiple shorezone planning initiatives to replace the prohibition of structures in prime fish habitat with a comprehensive shoreline plan that would allow for lake access structures while protecting the environment. Any plan that would govern development along Lake Tahoe's shoreline proved to be highly controversial. TRPA prepared multiple plans and environmental analyses, which were released in 1995, 1999, 2004, 2006, and 2008. Each time, controversy centered around fisheries, scenic quality, air quality, water quality, recreation, and other topics that prevented adoption and implementation of a shoreline plan.

To find common ground between stakeholders, TRPA launched a collaborative process to develop a new Shoreline Plan in 2016. 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 approaches 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 Environmental Impact Statement (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 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 three other alternatives, described in this EIS.

This EIS evaluates the environmental effects of four alternatives, consistent with the Tahoe Regional Planning Compact, Code of Ordinances, and Rules of Procedure. The four alternatives include different strategies to meet the following objectives of the Shoreline Plan:

- ▲ 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.

## ES.2 SUMMARY OF THE ALTERNATIVES

Four alternatives are being considered as part of the shoreline planning process, including the existing shorezone policies and ordinances, and three sets of potential modifications. All four alternatives have been developed to meet the objectives of the Shoreline Plan, described above. Each of the alternatives represents a different approach to regulating the number, amount, type, location, and design of shoreline structures and associated resource management provisions, as follows:

- ▲ **Alternative 1 – Proposed Shoreline Plan.** The goal of this alternative is to enhance the recreational experience at Lake Tahoe while protecting the environment and responsibly planning for the future. This alternative, developed through a consensus-based approach, incorporates the policies developed by the Steering Committee and was endorsed by the Regional Plan Implementation Committee of the TRPA Governing Board. The Shoreline Plan would mete out new private and public development over time. At buildout, it would allow for up to 2,116 new moorings (buoys, lifts or public slips), 128 new private piers, 10 new public piers, and two new public boat ramps. Some new and existing buoys could be converted to slips, and vice versa, at facilities open to the public (e.g., marinas).
- ▲ **Alternative 2 – Maintain Existing TRPA Shorezone Regulations (No Project).** This alternative would retain the existing Regional Plan Shorezone Subelement Goals and Policies and TRPA Shorezone Code (Code of Ordinances Chapters 80–86). The goal of this alternative is to balance access and environmental protection by applying the approach that was developed under the 1987 Regional Plan. This alternative would not include a numeric cap on shoreline structures but would prohibit new structures within TRPA-designated prime fish habitat. This alternative would allow more shorezone structures than any other alternative and is the only alternative that would allow new marinas. At buildout, it would potentially allow for up to 6,936 new moorings, 476 new piers, six new boat ramps, and two new marinas.
- ▲ **Alternative 3 – Limit New Development.** The goal of this alternative is to reduce the risk of environmental impacts by limiting new shoreline development. Motorized watercraft access would be more concentrated at marinas and public facilities, and fewer structures would be authorized under this alternative than under Alternative 1 or 2. At buildout, it would allow for a total of 365 new public buoys or slips, five new public piers, and one new public boat ramp. Eighty-six new private piers would be authorized under this alternative, but they would be restricted to multiple-use piers.
- ▲ **Alternative 4 – Expand Public Access and Reduce Existing Development.** The goal of this alternative is to expand public access, reduce existing shoreline development, and increase restoration to minimize the risk of environmental harm. This alternative would include transfer ratios that would allow some private shoreline structures to be removed and rebuilt in different locations if a project would result in a 2:1 reduction in the number of structures. At buildout, this alternative would allow 15 new public piers and no other new shoreline structures.

## ES.3 AREAS OF CONTROVERSY

The consensus-based planning process incorporated broad public input and led to a plan and alternatives that were agreed upon by the Steering Committee. However, no plan that governs development along the shore of Lake Tahoe will be without controversy. While there are currently no known issues to be resolved, many public comments received during the EIS scoping period (see Appendix B) identified topics of concern. Based on public comments and areas of controversy during previous shoreline planning initiatives, it is anticipated that the following topics may be areas of controversy:

- ▲ the number and location of new shoreline structures,
- ▲ processes for allocating new shorezone structures,
- ▲ effects of structures and boating on non-motorized water recreation,

- ▲ visual effects of shoreline structures,
- ▲ water and air pollution from boating, and
- ▲ effects on public access along the shoreline.

## **ES.4 SUMMARY OF IMPACTS AND MITIGATIONS**

Table ES-1, below, provides a summary of each impact analyzed in Chapters 4 through 17 of this EIS. Where one or more alternatives could result in a significant impact, proposed mitigation measures are described.

**Table ES-1 Summary of Impacts and Mitigation Measures**

Impacts		Significance without Mitigation	Mitigation Measures	Significance with Mitigation	
B = Beneficial	NI = No impact	LTS = Less than significant	PS = Potentially significant	S = Significant	SU = Significant and unavoidable
<b>4 Land Use</b>					
<p><u>Impact 4-1: Induce substantial new growth</u> Regional growth is capped by the Regional Plan. The Shoreline Plan alternatives would permit development of structures within the shorezone but would not increase the capacity of the region to accommodate an increase in residents or tourists. The addition of new public access facilities (e.g., boat ramps, public slips) under Alternatives 1, 2, and 3 would accommodate an increase in the number of day visitors to the region; however, these additional day visitors would not lead to residential, tourist, or commercial growth because growth is capped by the Regional Plan development rights system.</p>		Alt 1, 2, 3 - LTS Alt 4 - NI	No mitigation required	No mitigation required	
<p><u>Impact 4-2: Consistency with applicable plans, policies, regulations, and the existing pattern of land use</u> Shoreline Plan Alternatives 1, 3, and 4 would result in changes to provisions in the TRPA Code that govern development within the shorezone. The provisions of these alternatives have been developed to implement the Regional Plan Goals and Policies and achieve thresholds, each striking a different balance of environmental protection and recreational access. The shorezone code provisions under all alternatives are intended to augment local TRPA plans by providing a framework for development within the shorezone that is consistent with the land use designations within each of those plans. The pattern of development allowed under each of the Shoreline Plan alternatives would be restricted not only by land use designations identified in local plans, but also by other existing provisions of the code that would remain unchanged, as well as by the requirement for compliance with environmental thresholds. All four Shoreline Plan alternatives would provide for the same types and pattern of land uses that already exist within the shorezone.</p>		Alt 1, 2, 3, 4 - LTS	No mitigation required	No mitigation required	
<b>5 Fisheries and Aquatic Biological Resources</b>					
<p><u>Impact 5-1: Increased risk of AIS introduction or spread</u> The increase in boat launches under Alternatives 1, 2, and 3 could increase the risk of AIS introductions, but this risk would not be substantial because the rigorous and effective prevention programs (including boat inspection, decontamination, outreach, and education) would continue. However, the increases in recreational boating under Alternatives 1, 2, and 3 would increase the risk that invasive macrophytes and Asian clams already in Lake Tahoe would</p>		Alt 1, 2, 3 - S Alt 4 - B	<p><u>Mitigation Measure 5-1a: Require marina aquatic invasive species management plans</u> (applies to Alts 1, 2, and 3) TRPA will require that all marinas prepare and implement an AIS management plan within 3 years of adoption of the Shoreline Plan. The AIS management plans shall, at a minimum, (1) identify strategies to prevent the establishment of invasive macrophytes and Asian clams within the marina (e.g., improved water circulation), (2) include an AIS monitoring, early</p>	Alt 1, 2, 3 -LTS Alt 4 - B	

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<p>be spread within the lake, creating new populations and increasing the abundance and distribution of AIS.</p> <p>Alternative 4 would result in no increase in boating activity and would not increase the risk of AIS introduction and spread. Alternative 4 would also require that all marinas develop and implement an AIS management plan. This would reduce the risk of AIS introductions at, or spread from, marinas.</p>				<p>detection, and response program within the marina, which could be in partnership with resource management agencies and/or organizations, and (3) include a public education component. For marinas that already contain AIS, the AIS management plan shall identify measures to control or eradicate existing AIS and reduce the potential for spread.</p> <p><u>Mitigation Measure 5-1b: Promote the development of AIS-resistant boats (applies to Alts 1, 2, and 3)</u>                      TRPA will continue to regularly communicate with representatives of the watercraft industry, including trade associations and manufactures of watercraft or watercraft components, to promote the development and widespread commercial utilization of technologies that lower the potential for the spread of AIS. Innovations such as ballast tank filters, heated ballast water intakes in engines, and better draining ballast tanks are currently being developed by various manufacturers, but they are not yet commercially available on a widespread basis. Although many of these innovations are not yet commercially viable, they may be by the full buildout of the Shoreline Plan Alternatives. TRPA will regularly coordinate with representatives of the watercraft industry to advocate for and demonstrate a commercial interest in the continued development and adoption of such technologies. TRPA will enact policies to encourage or require the use of such technologies when they become feasible.</p> <p><u>Mitigation 5-1c: Establish a mitigation fee program to increase AIS control. (applies to Alt 2 only)</u>                      TRPA will establish an AIS mitigation fee program that will fund increased levels of AIS control. The fee will be used to implement projects that reduce the abundance and distribution of Asian clam, Eurasian watermilfoil, curly-leaf pondweed, coontail and/or other AIS that may be introduced in the future and can be spread by recreational boating. The fee will be assessed on recreational boaters either during AIS inspections or at launch points. The fee per launch or boat will be the same as that proposed under Alternative 1, which will be sufficient to increase existing control efforts commensurate with the projected increase in annual boat trips under Alternative 2.</p>		

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<p><u>Impact 5-2: Loss of prime fish habitat</u>                      The implementation of the Shoreline Plan has the potential to result in a net reduction in the amount of prime fish habitat, as defined by TRPA, due to placement of shorezone structures within this habitat. Alternatives 1 and 3 would require habitat replacement at a 1.5:1 ratio, resulting in no net loss in prime fish habitat. Alternative 2 would prohibit construction of structures within prime fish habitat. Alternative 4 would require habitat replacement at a ratio of 2:1, which would not cause a decrease in the amount of prime fish habitat</p>			<p>Alt 1, 3, 4 - LTS                      Alt 2 - NI</p>	<p>No mitigation required</p>	<p>No mitigation required</p>
<p><u>Impact 5-3: Construction-related impacts</u>                      Construction of new shorezone structures and dredging under all four Shoreline Plan alternatives could affect all species considered, except lake trout because they do not utilize nearshore habitats. Effects on species that could use nearshore habitats would be greatest on native minnow species that spawn in nearshore areas, including Lahontan Lake tui chub. Effects on special-status salmonids, including LCT and mountain whitefish, as well as other coldwater game fish species, would generally be limited to adults migrating to spawning tributaries and juveniles using nearshore areas for rearing.                       All of the alternatives would produce a small amount of temporary disturbance relative to both prime fish habitat and marginal fish habitat. Additionally, based on the life history characteristics and habitat use for the species evaluated, construction-related effects would not be adverse for any fish species under any of the alternatives.</p>			<p>Alt 1, 2, 3, 4 - LTS</p>	<p>No mitigation required</p>	<p>No mitigation required</p>
<p><u>Impact 5-4: Permanent habitat modification</u>                      Permanent habitat modification could affect all species evaluated except lake trout because they do not utilize nearshore habitats. Impacts on species that could use nearshore habitats would be greatest on native nongame fish, including Lahontan Lake tui chub. Impacts on special-status salmonids, including LCT and mountain whitefish, as well as other coldwater game fish species, would generally be limited to YOY juveniles using nearshore areas for rearing. Under all Shoreline Plan alternatives, impacts resulting from permanent habitat modification would be small relative to TRPA-designated fish habitat, including prime fish habitat. Additionally, based on the life history characteristics and habitat use for the species evaluated, impacts would be minimal for any fish species.</p>			<p>Alt 1, 2, 3, 4 - LTS</p>	<p>No mitigation required</p>	<p>No mitigation required</p>

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<p><u>Impact 5-5: Recreation-related impacts</u>                      Recreational activities could affect all species evaluated. Effects on species that could use nearshore habitats would be greatest on native minnow species that spawn in nearshore areas, including Lahontan Lake tui chub. Effects on special-status salmonids, including LCT and mountain whitefish, as well as other coldwater game fish species, could occur to adults that utilize open waters of the lake and to YOY juveniles using nearshore areas for rearing. Spawning and egg incubation of special-status salmonids and other coldwater game fish species would not be affected since these species spawn in tributary streams or deep in the lake where they would not be affected by increased boating or recreational angling. Effects under Alternative 2 would be greatest because it would allow the largest number of structures and two new marinas. Thus, under Alternative 2 the capacity for recreational activities such as boating and angling would be highest. Effects under Alternative 4 would be the least because it contains the least number of structures and no increases in boating, relative to baseline. Recreation-related effects under Alternative 1 and Alternative 3 would be intermediate between Alternatives 2 and 4. However, under all the alternatives, recreation-related effects resulting from increased recreational angling and/or boating would be small.</p>			Alt 1, 2, 3, 4 - LTS	No mitigation required	No mitigation required
<b>6 Hydrology and Water Quality</b>					
<p><u>Impact 6-1: Soil erosion and/or release of pollutants to Lake Tahoe from shorezone facility construction or maintenance activities, including dredging</u>                      All four Shoreline Plan alternatives would allow new construction and dredging within the shorezone. Construction activities could affect water quality by accelerating soil erosion and sedimentation while also releasing pollutants. Dredging for new construction or maintenance dredging for existing facilities could affect water quality by increasing turbidity and releasing nutrients into the surrounding water. Existing state, federal, and TRPA regulations mitigate potential short-term impacts from construction activities in the shorezone. TRPA policies require the implementation and maintenance of temporary BMPs to protect water quality during maintenance dredging within the shorezone. Under Alternatives 1 and 3, TRPA would revise code standards (Section 84.15.3) to be consistent with federal standards for new dredging (nondegradation) under Section 404 of the CWA as regulated by USACE. However, the federal standards under Section 404 are mandatory for dredging in Lake Tahoe regardless of the</p>			Alt 1, 2, 3, 4- LTS	No mitigation required	No mitigation required

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<p>TRPA Code provisions and are therefore applicable to all four alternatives. Dredging activities would also need to comply with each state's Section 401 water quality certification requirements.</p>					
<p><u>Impact 6-2: Sediment resuspension and turbidity associated with the hydrodynamic effects of motorized boating</u></p> <p>The hydrodynamic effects from motorized boating can disturb and resuspend lakebed sediment through propeller wash and boat wake, potentially leading to increased turbidity and reductions in nearshore clarity. Hydrodynamic effects from propeller wash and boat wake are generally limited to shallower areas, with little or no effects for water depths less than 7 feet and no effects for water depths greater than 10 feet (Beachler and Hill 2003; USACE 1993). TRPA Code Section 84.17.1 requires a no-wake zone within 600 feet of the shore with a 5-mile-per-hour (mph) speed limit. Most of Lake Tahoe's shallower depths are within the existing no-wake zone, with notable exceptions being the nearshore areas adjacent to the City of South Lake Tahoe and Tahoe City.</p> <p>Lake Tahoe's nearshore presents complex environment conditions and factors that may influence nearshore clarity in an interrelated manner that varies by location and with time (Taylor 2002). In addition to natural wind effects generating water movement, wave motion, and natural littoral processes, factors influencing the observed variability in nearshore clarity may include: adjacent land-uses and urban stormwater inputs, other nonpoint pollutant inputs, boating activity, proximity to stream inputs, water depth, substrate type, and localized features of the lake bottom. Among these interrelated factors the potential contribution of boating activities to degrade nearshore clarity is difficult to isolate or quantify.</p> <p>Alternatives 1, 2, and 3 are projected to generate a peak-day increase in boating activity. On peak days, increased boat use could increase wave action and turbulence generated by boat wake. The shallower portions of the nearshore outside existing no-wake zone regulations are likely more susceptible to short-term and temporary declines in clarity because of increased wave action. During summertime periods with low winds and low inputs of streamflow and stormwater runoff, Lake Tahoe waters would typically be quiescent with low wave action in the nearshore. Because Alternatives 1, 2, and 3 would increase boating activity on peak days, the increased potential for boat wake to induce additional wave action in shallow nearshore areas most susceptible to elevated</p>	<p>Alt 1, 3 – LTS Alt 2 – PS Alt 4 - NI</p>	<p><u>Mitigation Measure 6-2: Study and adaptively manage the effects of boats on nearshore conditions</u> (applies to Alt 2) TRPA will coordinate with partner agencies and research organizations to complete monitoring and studies that evaluate the effects of boat activity on nearshore clarity and water quality. TRPA will then implement management actions, if needed, based on the results of the studies.</p> <p>To ensure the completion of nearshore studies, TRPA will enact a nearshore water quality mitigation fee on recreational watercraft. The fee will be assessed on all recreation watercraft, either during aquatic invasive species boat inspections or at launch points. The fee will remain in place for a period of up to ten years to fund scientific research and nearshore monitoring through a program such as the Nearshore Water Quality Network. Revenue generated from the fee will be directed towards research components of nearshore studies tasked with evaluating potential impacts of boat activity on nearshore clarity and water quality. TRPA will set the fee at an amount that is adequate to fund an assessment of recreational boating effects on nearshore water quality and clarity.</p> <p>If research concludes that the increase in boating activities anticipated under Alternative 2 would contribute to an exceedance of TRPA's nearshore numerical standard of 1 NTU, TRPA will implement management actions to avoid or offset this impairment. Such management actions could include, but are not limited to:</p> <ul style="list-style-type: none"> <li>▲ expand the no-wake zone based on the scientific findings and recommendations for nearshore areas identified to be susceptible to reduced clarity from boating activities; or</li> <li>▲ enact a permanent nearshore water quality mitigation fee on recreational watercraft and use the revenue to fund compensatory mitigation projects that reduce other sources of nearshore water quality impairment.</li> </ul>	<p>Alt 1, 3, 4 – No mitigation required Alt 2 – LTS</p>		



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<p>turbidity would also increase; therefore, the potential frequency of exceeding the nearshore threshold turbidity standard may also increase for limited portions of the nearshore.</p>					
<p><u>Impact 6-3: Direct entrainment or atmospheric deposition of pollutants from boat exhaust</u>                      Increased boating activity is projected under Alternatives 1, 2, and 3, which could lead to increased boat emissions. Alternative 4 would not increase boating activity, and therefore would not increase boat emissions. Boat engines emit oxides of nitrogen (NO<sub>x</sub>) and particulate matter (PM) during operation, which may be delivered to the lake through direct entrainment in the water column or atmospheric deposition. Total nitrogen and fine sediment particles are pollutants of concern for lake transparency and clarity, and the Lake Tahoe TMDL sets load reduction targets for these pollutants. Therefore, emissions that lead to an increase in loading for these pollutants of concern might extend the timeline needed to achieve the Lake Tahoe TMDL load reduction targets.                      The approval of additional boating facilities under Alternatives 1, 2, and 3 leading to the increase in boating activity would be phased through a projected buildout date of 2040. Impact 10-1 in Chapter 10, "Air Quality," assesses potential changes in emissions from increased boating activity under Alternatives 1, 2, and 3. Impact 10-1 concludes that a net reduction in boating emissions, including emissions of NO<sub>x</sub> and PM, would result under Alternatives 1 and 3 as the increased boating hours are offset by fleet turnover, with older boat engines replaced with cleaner and more fuel-efficient boat engines.                      Impact 10-1 in Chapter 10, "Air Quality," concludes that under Alternative 2 changes in emissions from increased boat activity will have mixed results, with a net increase in NO<sub>x</sub> and a net decrease in PM. Because Alternative 2 would create a net increase in NO<sub>x</sub> loading, and potential impacts on lake transparency and clarity from boat exhaust would be proportional to changes in atmospheric emissions of NO<sub>x</sub>, this could extend the timelines needed to achieve the Lake Tahoe TMDL load reduction targets.</p>			Alt 1, 3 – LTS Alt 2 – PS Alt 4 – NI	<p><u>Mitigation Measure 6-3: Limit the number of moorings and boat ramps to limit emissions from increased motorized watercraft activity</u> (applies to Alt 2 only)                      TRPA shall implement Mitigation Measure 10-1 as described in Chapter 10, "Air Quality," which limits the number of new moorings and boat ramps (and thus boat emissions) to the maximum number allowed under Alternative 1.</p>	Alts 1, 3, 4 – No mitigation required Alt 2 – LTS
<p><u>Impact 6-4: Discharge of hydrocarbons or other contaminants into Lake Tahoe from boating activities and boating facilities</u>                      Elevated levels of hydrocarbons or other contaminants in the lake could result from increased boating activity under Alternatives 1, 2, and 3. Gasoline and</p>			Alt 1, 2, 3, 4 – LTS	No mitigation required	No mitigation required

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<p>diesel fuels contain hydrocarbon contaminants, including the group of volatile organic compounds collectively known as BTEX (benzene, toluene, ethylbenzene, and xylene). While also occurring in raw fuel, polyaromatic hydrocarbons (PAHs) are primarily produced during the combustion process in an engine. Hydrocarbons can enter the water from boating activities via exhaust emissions, fueling spills, and other accidental spills. Most outboard engines exhaust beneath the surface of the water, and consequently, all exhaust must pass through the water column, where some hydrocarbons will remain in solution or sorb to particulates and sediments.</p>						
<p><u>Impact 6-5: Interference with littoral processes from new or redeveloped shoreline structures</u>                      All Shoreline Plan alternatives would allow for the addition or expansion of piers that could disrupt existing wave and current circulation patterns near the shoreline. Waves and current motion are the primary agents of littoral drift, the process by which sediment is transported and deposited in the nearshore area. Alternatives 1, 3, and 4 propose revisions to existing pier design standards in the TRPA Code (Section 84), but do not define design standards for public piers. Alternatives 2 and 3 would both allow multiple-use piers to deviate from design standards. Other structures, such as jetties, groins, breakwaters, and fences that could affect littoral processes, are generally not allowed under any of the Shoreline Plan alternatives. Alternative 1 may allow for other structures as part of a habitat restoration project or as part of a marina environmental improvement project. Alternative 2 would allow for these structures along the shoreline outside of prime fish habitat if the applicant demonstrated that the structure would not interfere with littoral processes.                       Previous analysis (TRPA 2004) demonstrated that significant impacts on littoral drift processes can occur from floating piers. Because Alternatives 1, 2, and 3 do not specify design standards for floating piers such that impacts on littoral drift would be completely avoided, and because none of the Shoreline Plan alternatives define the environmental analysis procedures for assessing littoral drift processes associated with public pier applications or allowable deviations for multiple-use pier applications that include floating pier sections, design standards in their current form could allow for piers that interfere with existing littoral drift processes.</p>			Alt 1, 2, 3, 4 - S	<p><u>Mitigation Measure 6-5a: Specify floating pier design standards</u> (applies to Alts 1 and 3)                      TRPA will augment the design standards summarized in Table 2-5 in Chapter 2, "Project Description," to include the following standard for floating piers:                      ▲ Floating pier sections rigidly moored to the lake bottom shall be prohibited.</p> <p><u>Mitigation Measure 6-5b: Require littoral drift analyses and incorporate design recommendations for floating piers longer than 25 feet</u> (applies to Alts 1, 2, 3 and 4)                      TRPA will require all new pier and pier extension applications that include floating pier sections longer than 25 feet submit a site-specific littoral drift and wave analysis. The analysis will assess the dimensions of the proposed floating pier section and the ability of waves to initiate and sustain the movement of sediment along the lake bottom under conditions of low lake level (6,223 feet), mid-lake level (6,226 feet), and high lake level (6,229 feet) Lake Tahoe Datum. The lake level condition with the greatest effect on littoral transport and backshore stability shall be used to design the floating pier section. Floating piers may only be approved if they are designed so that wave heights are not reduced by more than 50 percent and the floating pier section is no greater than 50 percent of the length of the site-specific design wavelength.</p>	Alt 1, 2, 3, 4 - LTS	

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<b>7 Soil Conservation</b>			
<p><u>Impact 7-1: Increase land coverage beyond the limits allows by the Bailey land capability system</u>                      All Shoreline Plan alternatives would permit the construction or expansion of structures that would create coverage in the backshore. However, all projects would be required to demonstrate their compliance with existing TRPA land coverage regulations including restoration of 1.5 times the amount of LCD 1b (i.e., backshore) coverage created by the project.</p>	Alt 1, 2, 3, 4 - LTS	No mitigation required	No mitigation required
<p><u>Impact 7-2: Increase erosion or degrade soil conditions during construction activities</u>                      Implementation of all Shoreline Plan alternatives would permit construction activities in the shorezone that would create ground disturbance and loss of vegetation and would increase the potential for erosion. However, the potential for increased erosion resulting from future projects implemented under the Shoreline Plan alternatives would be reduced through compliance with county, TRPA, and LRWQCB or NDEP code requirements, permit conditions, and regulations.</p>	Alt 1, 2, 3, 4 - LTS	No mitigation required	No mitigation required
<p><u>Impact 7-3: Long-term increases in shoreline erosion</u>                      All Shoreline Plan alternatives would allow development of new facilities in the shorezone; however, the potential for the operation of these facilities to increase shoreline erosion would be controlled through existing TRPA regulations and permit conditions. Implementation of Alternatives 1, 2, and 3 would result in increased watercraft use on Lake Tahoe and would expand access to portions of the shoreline that are undeveloped or difficult to access without watercraft. Alternative 4 would not result in an increase in boating activity. Depending on the location of the 15 public piers allowed by Alternative 4, there could be an increase in public access to areas that are currently difficult to access (e.g., if a public pier and associated upland facilities were constructed in undeveloped parkland). Notwithstanding this potential, there is no evidence to suggest that such increased use of remote areas would occur as a result of future shorezone projects, nor that use of such areas, if more accessible, would result in long-term increases in erosion of the shoreline.</p>	Alt 1, 2, 3, 4 - LTS	No mitigation required	No mitigation required

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<p><u>Impact 7-4: Potential for damage from liquefaction, settlement, tsunami, and seiche</u>                      The Shoreline Plan alternatives would permit structures in the shorezone that could be damaged during an earthquake from liquefaction in saturated sand deposits, settlement, tsunami, and seiche. The risk from seismic shaking would be controlled through compliance with the current seismic design requirements of the California Building Standards Code and the International Building Code. Alternatives 1, 2, and 3 would increase the number of boats that could be exposed to inundation by tsunami or seiche; however, while such an event could be catastrophic, the probability of occurrence in any given year, or over the coming decades is very low.</p>			Alt 1, 2, 3, 4 - LTS	No mitigation required	No mitigation required
<b>8 Recreation</b>					
<p><u>Impact 8-1: Alter the quality of recreational experiences or create user conflicts</u>                      Alternatives 1, 3, and 4 would result in construction of new shorezone structures, with Alternative 4 structures limited to public piers. These alternatives include density and location standards for moorings and piers that would help preserve scenic areas around the lake and maintain the quality of recreation experience. Alternatives 1, 3, and 4 would not result in a substantial change to quality of recreation experience. Implementation of Alternatives 1, 3, and 4 could result in public piers extending beyond the 600-foot no-wake zone, which could create potential conflicts between nonmotorized recreation (i.e., nonmotorized watercraft and swimmers) and motorized watercraft.                      Because of the substantial increase in boat launch capacity and overnight mooring provided by the number of new shorezone structures associated with Alternative 2, the increase in the number of motorized watercraft on the lake would be great enough that there would be a substantial adverse change in quality of recreation experience for people using motorized and nonmotorized, swimmers, and other beachgoers and increased potential for conflicts between motorized and nonmotorized recreationists outside the no-wake zone. Alternative 2 could also result in new multiple-use and public piers that extend beyond the no-wake zone, creating the potential for conflicts between nonmotorized recreationists and motorized watercraft.</p>			Alt 1, 2, 3, 4 - PS	<p><u>Mitigation Measure 8-1a: Maintain nonmotorized navigation within the no-wake zone</u> (applies to Alts 1, 2, 3, and 4)                      TRPA will revise the pier design standards for piers that extend 600 feet or more from the high-water elevation to provide lateral nonmotorized recreation access within the 600-foot no-wake zone. Lateral nonmotorized recreation access within the 600-foot no-wake zone could be provided by either of the following:</p> <ul style="list-style-type: none"> <li>▲ The pier design standards would require public piers (for Alternatives 1, 3, and 4) and multiple-use piers (for Alternative 2) to accommodate lateral nonmotorized access by limiting the pier length to within the 600-foot no-wake zone and providing at least 10 feet between the end of the pier and the no-wake zone boundary to allow nonmotorized recreationists to stay within the no-wake zone. The applicant for a new multiple-use pier that extends to within 30 feet of the no-wake zone would also be required to install one or more navigational buoys to identify the location of the no-wake zone relative to the pier; or</li> <li>▲ The pier design standards could allow exceptions for public piers (for Alternatives 1, 3, and 4) and multiple-use and public piers (for Alternative 2) that extend beyond the no-wake zone if the pier is designed to allow nonmotorized recreationists to have lateral access underneath the pier during high lake level conditions.</li> </ul>	Alt 1, 2, 3, 4 - LTS

**Table ES-1 Summary of Impacts and Mitigation Measures**

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				<p><u>Mitigation Measure 8-1b: Implement Mitigation Measure 10-1 to limit the number of moorings and boat ramps</u> (applies to Alt 2 only) TRPA will implement Mitigation Measure 10-1, as described in Chapter 10, "Air Quality," which would revise the Code of Ordinances to limit the total number of new moorings (i.e., buoys, slips, and lifts) and boat ramps to the number authorized under Alternative 1. This would allow a total of 2,116 new moorings and two new boat ramps.</p> <p><u>Mitigation Measure 8-1c: Establish buffer area around nonmotorized recreationists outside of the no-wake zone</u> (applies to Alt 2 only) TRPA will amend the no-wake zone section of the Code of Ordinances to include a 200-foot buffer between motorized watercraft in motion and nonmotorized recreationists in areas outside of no-wake zones, which is already in practice by Nevada State Parks.</p>		
<p><u>Impact 8-2: Affect access or opportunities for motorized watercraft</u> Alternatives 1, 2, and 3 would increase capacity for boat launching and mooring by allowing for additional boat ramps and overnight mooring structures. The design and location standards for all three of these alternatives and expansion of the no-wake zone to include all of Emerald Bay with Alternatives 1 and 3 would not substantially change opportunities for recreation activities on the lake that rely on motorized watercraft, including activities such as fishing and water skiing. Alternatives 1 and 3 also provide standards for shorezone structures to allow for boating access under a range of lake levels.</p> <p>Alternative 4 would allow for additional piers but would not provide additional launch capacity or moorings to increase access or opportunities for recreational users of the lake.</p>			Alt 1, 2, 3 - B Alt 4 - LTS	No mitigation required		No mitigation required
<p><u>Impact 8-3: Change access to or along the shoreline</u> Each of the proposed alternatives would result in the construction of piers that would extend into the public trust areas in the shorezone and impede, to some degree, lateral access along the shoreline in California. New public piers would be constructed for the benefit of public use; thus, pedestrians would have unrestricted access over or around the pier as they walk laterally along the shoreline. Alternative 4 would only allow new public piers to be constructed. Alternatives 1, 2, and 3 would also allow private piers. None of the alternatives include any design standards for private or public piers that prohibit access for the public along the</p>			Alt 1, 2, 3, 4 - LTS	No mitigation required		No mitigation required

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<p>shore. TRPA and California State Lands Commission would develop a memorandum of understanding (MOU) that would provide a review process that protects public lateral access within the public trust easement in California. In Nevada, no existing public trust easement on private land is recognized; thus, this impact only assesses impacts to lateral access along the shoreline in the California portion of Lake Tahoe. Under the MOU and for all alternatives, TRPA would not be able to approve any shorezone structure that unreasonably interferes with lateral public access where it is otherwise lawfully allowed.</p>						
<p><u>Impact 8-4: Affect the fair-share distribution of recreation capacity</u>                      The 2015 Threshold Evaluation found the recreation threshold for fair-share distribution of recreation capacity to be in attainment (TRPA 2016a). The existing distribution of land ownership in the shorezone is approximately half public and half private ownership, with slightly less land in private. Each alternative would change the percent of shorezone structures that are accessible to the public to various degrees, but the distribution between public and private owners around the lake would not change substantially over baseline conditions. All of the new shorezone structures under each alternative in combination with existing shorezone structures would either maintain the same proportion of public and private structures as under baseline conditions or would result in a small increase in the proportion of public structures compared to baseline conditions. At buildout of the alternatives, publicly-accessible shorezone structures would generate between 50 and 52.5 percent, depending on alternative, of all boat trips on the lake, which is similar to baseline conditions.</p>			Alt 1, 2, 3, 4 - LTS	No mitigation required		No mitigation required
<p><b>9 Scenic Resources</b></p>						
<p><u>Impact 9-1: Alter views of the shore from Lake Tahoe</u>                      The effects Alternatives 1, 2, and 3 on views from Lake Tahoe would vary based on the location, intensity, and other characteristics of future projects. In some scenarios under Alternatives 1 and 3, the scenic threshold ratings would increase due to required scenic improvements in the shoreland, visible mass reductions, and redevelopment of existing shorezone structures consistent with proposed design standards. In other scenarios under Alternatives 1, 2, and 3, scenic quality could be unchanged or degraded due to additional visible mass associated with new buoys, redeveloped piers that are a contrasting color, or in the case of Alternative 2, from additional visible structures in the shorezone that</p>			Alt 1, 2, 3 - S Alt 4 - LTS	<p><u>Mitigation 9-1a: Offset the visible mass of buoys</u> (applies to Alts 1, 2, and 3)                      TRPA will require that all new buoys offset the visible mass associated with the buoy and boat. The average visible mass of a buoy and boat is estimated at 83 square feet. Each new buoy will require removal or screening of a minimum of 83 square feet of existing mass visible from Lake Tahoe. The visible mass of a buoy can be offset through the direct reduction of visible mass or through the payment of an in-lieu fee used to reduce visible mass, as described below.</p> <p>If a buoy applicant chooses to directly remove or screen visible mass as part of the buoy project, then the applicant would comply with the same visible</p>		Alt 1, 2, 3, 4 - LTS

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<p>are not compensated for with reductions in the visual magnitude of development in the shoreland.</p> <p>Alternative 4 would have a limited number of new shorezone structures that could be developed under Alternative 4, the project-level scenic assessment and mitigation requirements for public piers, and the prohibition of other new or expanded shoreline structures.</p>				<p>mass offset requirements that apply to piers and other structures. The 83 square feet of visible mass associated with the buoy would be offset at the same ratios required for other shoreline structures. The offset would be required as close to the proposed buoy as possible, in the following order of priority: 1) on the same parcel in the shorezone, 2) on the same parcel in the upland area, 3) elsewhere in the shorezone within the same shoreline scenic travel unit, 4) within the same travel unit in the upland, and 5) in another nonattainment scenic travel unit.</p> <p>TRPA will also provide the option to pay an in-lieu fee to offset the additional visible mass of the buoy. TRPA will set a fee amount that is adequate to remove or visually screen 83 square feet of existing visible mass. TRPA will use the fee to acquire and remove or screen existing visible mass visible from shoreline scenic travel units that are not in attainment of threshold standards. The funds will be dedicated to projects that TRPA determines will have the greatest benefit to scenic threshold standards and will be prioritized for use in the following order: 1) in the shorezone, 2) in the shoreland, and 3) to improve background views visible from Lake Tahoe. Funds could be used to implement projects directly or through grants, contracts, or other agreements with partner organizations. TRPA could also authorize mitigation funds for projects that permanently reduce the visual magnitude of shoreland development when the project contributes to the attainment of scenic thresholds and is not otherwise required. Visible mass mitigation projects that could be funded by the in-lieu fee include, but are not limited to:</p> <ul style="list-style-type: none"> <li>▲ scenic improvement projects identified in the 2018 update to the SQIP;</li> <li>▲ lakefront recreation projects with scenic improvements such as replacing dilapidated structures or relocating structures (public gathering areas and waterfront public access scenic improvements);</li> <li>▲ scenic improvement of existing rip rap and retaining walls along visible roadway cuts (e.g., recoloring of light-colored rip rap);</li> <li>▲ permanent removal of existing shorezone and shoreland structures;</li> </ul>		

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				<ul style="list-style-type: none"> <li>▲ permanent screening of roadside parking areas, roadways, and infrastructure through the planting of native vegetation and creation of vegetated berms;</li> <li>▲ undergrounding of utility lines that are visible from the lake; and</li> <li>▲ improving existing shoreland structures and deed restricting those parcels such that visual magnitude of existing development is permanently reduced.</li> </ul> <p><u>Mitigation 9-1b: Establish color standards for piers</u> (applies to Alts 1, 2, and 3) TRPA will modify the proposed design standards to regulate the color of piers. These standards will be enforced for all new or expanded piers. The standards will require that piers be a matte medium to dark gray. The standards will also allow TRPA to require alternate colors that TRPA determines would better blend into the background view of the project site.</p> <p><u>Mitigation 9-1c: Require visual magnitude reductions in the shoreland</u> (applies to Alt 2) TRPA will revise the TRPA Code under Alternative 2 to incorporate the same visual magnitude requirements for new or expanded shoreline structures as included in Alternative 1. These Code revisions will require that shoreland properties achieve minimum contrast ratings as part of the approval process for new piers. For new private piers, TRPA would require an initial contrast rating of 21 as part of the pier application. Following permit application submittal, applicants would have 6 months to increase their contrast rating to 25 to offset the visual impact of new or redeveloped piers. TRPA would exempt property owners from the contrast rating of 25, if it is not feasible.</p>		
<p><u>Impact 9-2: Alter views of Lake Tahoe from the shore</u> The scenic effects on views from the shore would vary based on the location, intensity, and other characteristics of future projects. In some scenarios under Alternatives 1 and 3, the scenic threshold ratings would increase due to required scenic improvements in the shoreland, visible mass reductions, and redevelopment of existing shorezone structures consistent with design standards. In other scenarios under Alternatives 1, 2, and 3, scenic quality would not substantially change, or the scenic threshold ratings could be reduced. This potential reduction in scenic threshold ratings would be due to additional visible mass associated with new buoys, and in the case of Alternative</p>			<p>Alt 1, 2, 3 - S Alt 4 - LTS</p>	<p><u>Mitigation 9-2a: Implement Mitigation Measure 9-1a to offset the visible mass of buoys</u> (applies to Alt 1, 2, and 3). TRPA will implement Mitigation Measure 9-1a, "Offset the visible mass of buoys," as described above.</p> <p><u>Mitigation 9-2b: Implement Mitigation Measure 9-1a to require visual magnitude reductions in the shoreland</u> (applies to Alt 2 only). TRPA will implement Mitigation 9-1c: "Require visual magnitude reductions in the shoreland," as described above.</p>	<p>Alt 1, 2, 3 - LTS Alt 4 - No mitigation required</p>	



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<p>2, because no reductions in the visual magnitude of the shoreland would be required to compensate for additional development in the shorezone.</p> <p>Alternative 4 would allow for a maximum of only 15 new public piers, which require project-level scenic assessment and mitigation. Alternative 4 would prohibit other new or expanded shoreline structures.</p>						
<b>10 Air Quality</b>						
<p><u>Impact 10-1: Long-term operational emissions of regional criteria air pollutants and precursors</u></p> <p>Based on estimates of increased boating activity and emissions modeling and analysis, implementation of the Shoreline Plan under Alternatives 1, 3, and 4 would not result in the long-term increase in emissions of ozone precursors, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> in the LTAB and therefore would not result in the deterioration of ambient air quality or the exceedance of an applicable air quality standards.</p> <p>Based on estimates of increased boating activity and emissions modeling and analysis, Shoreline Plan Alternative 2 would result in a long-term increase in emissions of NO<sub>x</sub> and CO. The long-term increase in NO<sub>x</sub>, which is an ozone precursor, would contribute to the nonattainment status of the LTAB with respect to the CAAQS for ozone and/or an exceedance of TRPA's 1-hour ozone threshold standard of 0.08 ppm. The long-term increase in CO would conflict with implementation of the CO maintenance plan and/or contribute to exceedances of TRPA's 8-hour threshold standard of 6 ppm.</p>			<p>Alt 1, 3, 4 - LTS Alt 2 - S</p>	<p><u>Mitigation Measure 10-1: Limit the number of moorings and boat ramps (Alt 2 only)</u></p> <p>TRPA will revise the Code of Ordinances to limit the total number of new moorings (i.e., buoys, slips, and lifts) and boat ramps to the number authorized under Alternative 1. This would allow a total of 2,116 new moorings and two new boat ramps.</p>		<p>Alt 1, 3, 4 - No mitigation required Alt 2 - LTS</p>
<p><u>Impact 10-2: Short-term construction emissions of ROG, NO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub></u></p> <p>Implementation of the Shoreline Plan under Alternatives 1, 2, 3, and 4 would result in the construction of new piers, boat ramps, marinas, and/or boat houses. Given the number of new facilities that could be developed and the limited construction season in the Tahoe Region (i.e., May 1 to October 15), it is possible that a substantial amount of construction activity could occur at one time. Thus, equipment exhaust and fugitive dust emissions could violate or contribute substantially to an existing or projected air quality violation, especially considering the nonattainment status of the LTAB with respect to the CAAQS and TRPA numeric threshold standards for ozone and PM<sub>10</sub>.</p>			<p>Alt 1, 2, 3, 4 - PS</p>	<p><u>Mitigation Measure 10-2: Add best construction practices for emissions to the standard conditions of approval for shoreline projects (applies to Alts 1, 2, 3, and 4)</u></p> <p>TRPA will revise the Standard Conditions of Approval for Shorezone Projects (TRPA Permit Attachment S) to require that minimum construction emission reduction best practices be implemented for all projects within the shorezone. The Standard Conditions of Approval for Shorezone Projects will be amended to add the following best construction practices:</p> <ul style="list-style-type: none"> <li>▲ Fugitive dust shall not exceed 40 percent opacity and not go beyond the property boundary at any time during project construction.</li> <li>▲ No open burning of removed vegetation shall occur during infrastructure improvements.</li> </ul>		<p>Alt 1, 2, 3, 4 - LTS</p>

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				<ul style="list-style-type: none"> <li>▲ Idling time for all diesel-powered equipment shall not exceed 5 minutes.</li> <li>▲ Water shall be applied as needed to prevent dust impacts from extending off-site. Operational water truck(s) shall be on-site, as required, to control fugitive dust. Construction vehicles leaving the site shall be cleaned to prevent dust, silt, mud, and dirt from being released or tracked off-site.</li> <li>▲ Existing power sources or clean-fuel generators rather than temporary diesel power generators shall be used wherever feasible.</li> </ul>		
<p><u>Impact 10-3: Exposure of sensitive receptors to toxic air contaminants (TACs)</u> Implementation of the Shoreline Plan under Alternatives 1, 2, 3, and 4 would not result in the siting of new stationary sources of TACs, new sensitive receptors, or an increase in TAC emissions generated by recreational watercraft. Construction of new facilities would involve the use of off-road heavy-duty diesel-powered equipment that emits diesel PM. However, because of the short duration of construction activity at any single location and the highly dispersive properties of diesel PM, construction-related TAC emissions would not expose sensitive receptors to substantial concentrations of TACs.</p>			Alt 1, 2, 3, 4 - LTS	No mitigation required		No mitigation required
<p><u>Impact 10-4: Exposure to excessive odorous emissions</u> Implementation of the Shoreline Plan under Alternatives 1, 2, 3, and 4 would not result in the siting of new major sources of odors or new sensitive receptors. Neither construction nor operation of facilities that may be developed because of the Shoreline Plan would create objectionable odors affecting a substantial number of people.</p>			Alt 1, 2, 3, 4 - LTS	No mitigation required		No mitigation required
<b>11 Greenhouse Gas Emissions and Climate Change</b>						
<p><u>Impact 11-1: Greenhouse gas emissions</u> Implementation of the Shoreline Plan would result in GHG emissions associated with the construction and demolition of boating facilities and on-road motor vehicle trips to and from new boating facilities. Under Alternatives 1, 2, and 3, implementation of the Shoreline Plan would also result in an increase in GHG-emitting boating activity. It is not feasible to know whether the fleet of motorized boats on Lake Tahoe will become more GHG efficient and, if it does, whether the improvement in GHG efficiency would be enough to offset the GHGs associated</p>			Alt 1, 2, 3, 4 - PS	<p><u>Mitigation Measure 11-1: Develop and implement a GHG reduction policy (applies to Alts 1, 2, 3, and 4)</u> Within 12 months of adoption of the Shoreline Plan, TRPA will coordinate the implementation of a GHG Emission Reduction Policy through TRPA-approved plans, project permitting, or projects/programs developed in coordination with local or other governments addressing Best Construction Practices and ongoing operational efficiencies. Until that time, TRPA will continue its existing practice to require measures developed on a project-by-project basis. The policy will require implementation of measures for the reduction</p>		Alt 1, 2, 3, 4 - SU

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<p>with construction activity, the increase in on-road motor vehicle travel, and the projected increase in boating activity.</p> <p>The development and implementation of a GHG Reduction Policy, as required by Mitigation Measure 11-1, would reduce GHG emissions, but the extent of this reduction depends on participation rates, available funding, and available technology.</p>				<p>of GHG emissions generated by demolition and construction activity in the shorezone and in associated upland areas, by on-road motor vehicles trips directly associated with the operation of boating facilities, and by ongoing operation of recreational watercraft. Where local ordinances already require GHG emission reductions consistent with the policy, no further action is necessary. Where local government ordinances do not adequately address GHG reduction practices, those practices will be implemented through local government and/or TRPA permitting activities or implementation program. Such measures may include, but are not limited to, the following:</p> <p><u>Minimize Construction-Related GHG Emissions</u></p> <ul style="list-style-type: none"> <li>▲ All diesel-powered construction equipment shall have engines that comply with Tier 4 emission standards or better.</li> <li>▲ Require all construction contractors to use renewable diesel (RD) fuel for all diesel-powered construction equipment (off-road land- and water-based). Any RD product that is considered for use by the construction contractors shall comply with California's Low Carbon Fuel Standards and be certified by the California Air Resources Board Executive Officer. RD fuel must also meet the following criteria:                             <ul style="list-style-type: none"> <li>▼ Be hydrogenation-derived (reaction with hydrogen at high temperatures) from 100 percent biomass material (i.e., nonpetroleum sources), such as animal fats and vegetables;</li> <li>▼ Contain no fatty acids or functionalized fatty acid esters; and</li> <li>▼ Have a chemical structure that is identical to petroleum-based diesel which ensures RD will be compatible with all existing diesel engines; it must comply with American Society for Testing and Materials (ASTM) D975 requirements for diesel fuels.</li> </ul> </li> <li>▲ Use electric powered equipment instead of fossil fuel-based generators.</li> <li>▲ Purchase mitigation credits from the Climate Action Reserve's GHG Mitigation Credit Program to offset construction-generated GHG emissions.</li> </ul> <p><u>Minimize GHG Emissions Associated with On-Road Vehicle to Watercraft Facilities</u></p> <ul style="list-style-type: none"> <li>▲ Provide charging stations for electric vehicles and bike lockers at parking lots that serve public piers and marinas.</li> </ul>		

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				<p><u>Minimize GHG Emissions Generated by Recreational Watercraft</u></p> <ul style="list-style-type: none"> <li>▲ Require or incentivize businesses that rent motorized watercraft to convert their rental fleet to watercraft with electric engines.</li> <li>▲ Require or incentivize charging stations at marinas and public piers for electric-motor watercraft.</li> <li>▲ Require or incentivize the installation of charging stations for electric-motor watercraft at private piers, boat houses, and boat lifts.</li> <li>▲ Require solar panels on all marina buildings.</li> </ul> <p>This measure will apply to new construction occurring under the Shoreline Plan. TRPA will also initiate a funding program to apply these measures to existing facilities within the Tahoe Basin.</p>	
<b>12 Noise</b>					
<p><u>Impact 12-1: Construction noise impacts</u></p> <p>Construction activities would occur under all alternatives, including the No Project Alternative. Activities associated with construction of shorezone structures, including new piers, pier modifications, marinas, or new boat ramps would generate varying levels of noise. However, all activities would be carried out in a manner consistent with TRPA's standard permit conditions such that exposure of nearby receptors to construction-related noise is minimized and construction is limited to daytime hours. In addition, the types of activities associated with constructing new boating structures would be relatively minor, localized, temporary, and intermittent, and would not result in a substantial increase in temporary noise levels.</p>			Alt 1, 2, 3, 4 - LTS	No mitigation required	No mitigation required
<p><u>Impact 12-2: Construction vibration impacts</u></p> <p>Construction activities would occur under all alternatives. Construction activities associated with new shorezone structures, including new piers, pier modifications, marinas, and new boat ramps would generate varying levels of vibration. Pile driving would be required for pier construction/modification and marina construction, resulting in vibration levels that could potentially damage existing structures if located within 55 feet. In accordance with TRPA standard construction practices, all construction activity would take place during the day, minimizing the potential for disturbance during noise-sensitive evening and nighttime hours. However, because specific locations of pile driving activity is</p>			Alt 1, 2, 3, 4 - S	<p><u>Mitigation Measure 12-2: Vibration reduction measures</u> (applies to Alts 1, 2, 3, and 4)</p> <p>To address potential vibration impacts associated with shorezone projects that involve pile driving activity, TRPA shall revise TRPA Permit Attachment S, "Standard Conditions of Approval for Shorezone Projects," to incorporate the following vibration reduction measures:</p> <ul style="list-style-type: none"> <li>▲ All construction equipment, including vibration-inducing impact equipment, on construction sites shall be operated as far away from vibration-sensitive uses as reasonably possible.</li> </ul>	Alt 1, 2, 3, 4 - LTS

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<p>unknown, there is a potential that existing structures could be exposed to excessive vibration levels that could result in structural damage.</p>		<ul style="list-style-type: none"> <li>▲ Earthmoving and ground-disturbing operations shall be phased so as not to occur simultaneously in areas close to sensitive uses, to the extent feasible. The total vibration level produced could be significantly less if each vibration source is operated at separate times.</li> <li>▲ To prevent structural damage, minimum setback requirements for different types of ground vibration-producing activities (e.g., pile driving) for the purpose of preventing damage to nearby structures shall be established based on the proposed pile driving activities and locations, once determined. Factors to be considered include the specific nature of the vibration producing activity (e.g., type and duration of pile driving), local soil conditions, and the fragility/resiliency of the nearby structures. Established setback requirements (i.e., 55 feet) can be breached if a project-specific, site specific analysis is conducted by a qualified geotechnical engineer or ground vibration specialist that indicates that no structural damage would occur at nearby buildings or structures or provides further recommendations (e.g., alternative pile driving methods, site monitoring requirements) to avoid damaging nearby structures.</li> </ul>			
<p><u>Impact 12-3: Increases in operation-related watercraft noise</u>                      Alternatives 1, 2, and 3 would result in additional boating structures (e.g., slips, buoys, lifts, boat ramps) that would contribute to an overall increase in boating activity over time. Because boating is generally a daytime activity and increases in boating activity would be distributed across the lake, it would have a negligible effect on CNEL, which considers noise levels in a given location over a 24-hour period. Single-event noise levels are affected by individual boater behaviors (e.g., exceeding speed limits in the no-wake zone) and boat/engine type. Under Alternatives 1, 2, and 3, TRPA would increase enforcement of the no-wake zone through additional boat crews, signage, and increased boater education, which would reduce such boater behaviors that contribute to exceedances of single-event noise standards. Further, none of the alternatives would result in a substantial increase (i.e., 3 dBA) in CNEL from increases in boating activity. With Alternative 4, no increases in boating activity would occur.</p>	<p>Alt 1, 2, 3 - LTS                      Alt 4 - NI</p>	<p>No mitigation required</p>	<p>No mitigation required</p>		

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<p><u>Impact 12-4: Increases in operational-related traffic noise</u>                      Alternatives 1, 2, and 3 would result in additional boating structures (e.g., slips, buoys, lifts, boat ramps) that would lead to an overall increase in boating activity, and commensurate increases in roadway traffic as compared to existing conditions. With Alternative 4, no increases in boating activity or additional vehicle trips would occur.</p>	<p>Alt 1, 2, 3 - LTS                      Alt 4 - NI</p>	<p>No mitigation required</p>	<p>No mitigation required</p>		
<p><b>13 Roadway Transportation and Circulation</b></p>					
<p><u>Impact 13-1: Roadway and intersection operations</u>                      Under Shoreline Plan Alternatives 1, 2, and 3 future development of shorezone structures would result in additional vehicular trips being added to the transportation network in the Region. It is not known at this time where any of these structures would be developed; and therefore, the addition of vehicle trips associated with the development of these alternatives (Alternatives 1, 2, and 3) could result in an increase in delay and degradation of LOS at intersections and along roadway segments in the project area if concentrated in such a way that a large portion of the trips affect a single roadway segment or intersection. However, Chapter 3 of the TRPA Code of Ordinances requires that TRPA review any proposed project, including projects that could result in new trips such as a marina expansion or public boat ramp, to determine if it would result in a significant environmental effect. This project-level environmental review would include an evaluation of the project-generated trips and effects on LOS. Alternative 4 would not generate any new vehicle trips.</p>	<p>Alt 1, 2, 3 - LTS                      Alt 4 - NI</p>	<p>No mitigation required</p>	<p>No mitigation required</p>		
<p><u>Impact 13-2: Vehicle miles traveled</u>                      Each Shoreline Plan alternative would include ordinances that would affect the location and intensity of future shorezone structure development, which would affect travel patterns, the number of new vehicle trips generated, and VMT. Alternatives 1, 2, and 3 would result in an increase in VMT but would maintain VMT levels below the adopted TRPA threshold standard. Alternatives 1, 2, and 3. Alternative 4 would not increase VMT and would maintain summer daily VMT levels below the adopted TRPA VMT threshold.</p>	<p>Alt 1, 2, 3 - LTS                      Alt 4 - NI</p>	<p>No mitigation required</p>	<p>No mitigation required</p>		

**Table ES-1 Summary of Impacts and Mitigation Measures**

Impacts			Significance without Mitigation	Mitigation Measures		Significance with Mitigation
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<b>14 Terrestrial Biological Resources (Wildlife and Vegetation)</b>						
<p><u>Impact 14-1: Disturbances to osprey, bald eagle, and waterfowl from construction and recreational uses</u></p> <p>Osprey, bald eagle, and waterfowl are designated by TRPA as special interest species and use the shorezone and adjacent locations for breeding and foraging. Potential effects of the Shoreline Plan alternatives on osprey and bald eagle could include construction-related disturbances to nesting activities from new piers and boat ramps, long-term increased disturbance to osprey and bald eagle and suitable habitat from boating and other recreational uses, and habitat degradation within TRPA-designated osprey and bald eagle disturbance zones. Although suitable nesting habitat for waterfowl is limited in the shorezone where new projects would be permitted (e.g., outside of TRPA-designated waterfowl population sites), construction-related activities that may occur within suitable habitat could disturb nesting attempts of waterfowl. The types of potential impacts to osprey, bald eagle, and waterfowl would be similar for Alternatives 1, 2, 3, and 4, with some differences in magnitude based on the locations, amounts, and quality of habitats potentially affected.</p>			Alt 1, 2, 3, 4 - S	<p><u>Mitigation Measure 14-1a: Avoid construction disturbances to nesting osprey and bald eagle, install interpretive signage, and prepare and implement habitat enhancement plans or other compensatory measures for unavoidable activities within TRPA-designated disturbance zones (applies to Alts 1, 2, 3, and 4)</u></p> <ul style="list-style-type: none"> <li>▲ Surveys for nesting osprey and bald eagle will be conducted prior to construction of new shorezone facilities, to identify active nests that could be disturbed during construction. No construction activities will occur within 0.25 mile of active osprey nests and 0.5 mile of bald eagle nests during the breeding season (approximately April to August), unless surveys confirm that the birds are not nesting. A qualified biologist can amend the start and end dates of this limited operating period (LOP) with concurrence from appropriate agencies if it can be determined that breeding has not started or that fledglings have left the nest. Additionally, with concurrence from appropriate agencies, the LOP could be waived in locations where construction disturbance is not expected to increase ambient levels or disturbance to an active nest through presence of visual screening or other factors.</li> <li>▲ During project-specific planning, design, and environmental review of new shorezone facilities, avoid siting projects within TRPA-designated disturbance zones for osprey and bald eagle, to the extent feasible.</li> <li>▲ For projects and uses that may result in unavoidable increased human intrusion into the terrestrial/upland portions of TRPA osprey or bald eagle disturbance zones, signage that describes the sensitivity of the area and discourages users to leave established trails or access routes or otherwise disturb nesting osprey or bald eagle will be designed and installed.</li> <li>▲ For projects that could cause unavoidable long-term degradation of habitat within TRPA osprey or bald eagle disturbance zones, coordination with TRPA will occur to identify and implement appropriate compensatory measures that are effective and feasible for achieving TRPA's nondegradation standard for disturbance zones.</li> </ul> <p>Potential approaches to mitigating adverse effects and enhancing habitat within disturbance zones include preparation and implementation of a</p>		Alt 1, 2, 3, 4 - LTS

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				habitat enhancement and management plan that includes objectives, measures, techniques, performance standards, and adaptive management to enhance osprey habitat. Habitat enhancement would be implemented within the affected TRPA osprey or bald eagle disturbance zones and/or other osprey or bald eagle disturbance zones in the Tahoe Basin where enhancement opportunities and benefits to the regional osprey or eagle population could be maximized. Coordination with TRPA would occur to determine whether more focused measures to achieve habitat enhancement as part of the project could be implemented, or whether the current project design may benefit osprey or bald eagle habitat, in lieu of a formal habitat enhancement and management plan.  <u>Mitigation Measure 14-1b: Conduct preconstruction surveys for waterfowl and implement a limited operating period, if necessary (applies to Alts 1, 2, 3, and 4)</u>  For construction activities that would occur in suitable habitat during the nesting season (generally April 1–August 31, depending on snowpack and other seasonal conditions), a qualified wildlife biologist shall conduct focused surveys for waterfowl nests no more than 14 days before construction activities are initiated each construction season. If an active nest is located during the preconstruction surveys, the biologist shall notify TRPA. If necessary, modifications to the project design to avoid removal of occupied habitat while still achieving project objectives shall be evaluated and implemented to the extent feasible. If avoidance is not feasible or conflicts with project objectives, a limited operating period shall apply to avoid disturbances during the sensitive nesting season. Construction shall be prohibited within a minimum of 500 feet (or at a distance directed by the appropriate regulatory agency) of the nest to avoid disturbance until the nest is no longer active. These recommended buffer areas may be reduced through consultation with TRPA.		
<u>Impact 14-2: Disturbance or loss of Tahoe yellow cress</u> Tahoe yellow cress (TYC) is a sensitive plant species found only on the sandy beaches of Lake Tahoe. This species is designated as a sensitive plant and threshold indicator species by TRPA, and is state-listed as critically endangered and endangered by the states of Nevada and California, respectively. Alternatives 1, 2, 3, and 4 would result in construction and operation of new			Alt 1, 2, 3, 4 - S	<u>Mitigation Measure 14-2: Conduct preconstruction surveys, avoid potential construction impacts, and avoid potential recreation impacts to Tahoe yellow cress plants (applies to Alts 1, 2, 3, and 4)</u>		Alt 1, 2, 3, 4 - LTS



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<p>shorezone structures within beach habitats. Depending on the specific locations and size of individual projects in relation to TYC occurrences and suitable habitat, construction-related activities that may occur within or adjacent to beach habitat occupied by TYC could result in the direct removal of TYC plants, or other disturbances through inadvertent trampling, soil disturbance, and dust deposition. Over the long term, the additional recreation capacity for motorized watercraft, nonmotorized watercraft, anglers, swimmers, and beachgoers could increase the frequency of recreationists within occupied TYC habitat, which could result in additional trampling, degradation, or loss of existing TYC, and adversely affect current or future TYC habitat suitability. The types of potential impacts to TYC would be similar among Alternatives 1, 2, 3, and 4, with some differences in magnitude based on the amounts and locations of beach habitats potentially affected.</p> <p>Subsection 61.3.6 of the TRPA Code states that “all projects or activities that are likely to harm, destroy, or otherwise jeopardize sensitive plants or their habitat, shall fully mitigate their significant adverse effects. Those projects or activities that cannot fully mitigate their significant adverse effects are prohibited.”</p> <p>Additionally, in California, because TYC is listed as endangered under CESA, any take of TYC would require authorization by CDFW through a California Fish and Game Code Section 2081 incidental take permit.</p>				<p>To avoid potential adverse effects on TYC plants resulting from construction activities and potential increased use of beaches that support TYC, the following actions shall be implemented:</p> <p>(A) During project-specific planning, design, and environmental review of new shorezone facilities, avoid siting projects within areas known to support TYC occurrences, to the extent feasible.</p> <p>(B) For any projects that could affect TYC, a qualified biologist familiar with the vegetation of the Tahoe Basin and identification of TYC shall conduct a focused preconstruction survey for TYC in all beach habitat where construction-related disturbance could occur in the vicinity of TYC populations during that year. Surveys shall be conducted between June 15 and September 30, when TYC is clearly identifiable, and shall follow <i>Survey Protocols for Tahoe Yellow Cress Annual Surveys</i> (Stanton and Pavlik 2009). Surveys shall be completed for each year that construction activities could occur in beach habitat. If no TYC stems are found during the survey, the results of the survey shall be documented in a letter report to TRPA and the TYC AMWG that shall become part of the project environmental record, and no further actions shall be required.</p> <p>(C) If TYC stems are documented during the survey in areas potentially disturbed by construction activities, the stems shall be clearly identified in the field and protected from impacts associated with construction activities. Protective measures shall include installing high-visibility fencing around known stem locations during construction. No construction-related activities shall be allowed in areas fenced for avoidance, and construction personnel shall be briefed about the presence of the stems and the need to avoid effects on the stems.</p> <p>(D) To protect TYC plants from potential long-term increased beach use and disturbance as an indirect result of increased recreation activity in the shorezone, protective fencing and educational signage about the need to avoid these areas shall be installed around all TYC clusters. In addition to beaches occupied by TYC where new shorezone facilities would be constructed and operated, other beach areas that support TYC that are likely to receive increased recreation uses as a result of the projects shall be identified and subject to these measures.</p>		

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				(E) Long-term fencing and signage will be periodically monitored and maintained, as necessary, to ensure that they remain effective and in good working condition. Also, because locations and concentrations of TYC could shift over time, the locations and configurations of fencing relative to TYC distribution shall be evaluated periodically. If necessary, fencing shall be moved or added in response to changes in TYC distribution to ensure that TYC plants are protected over time. The locations of TYC plants and shifts in their locations relative to fencing can be determined by surveys as part of the ongoing AMWG TYC monitoring program. The installation and maintenance of long-term protective fencing and signage will be designed to not interfere with necessary operations and maintenance activities at facilities.		
<p><u>Impact 14-3: Disturbance or loss of common terrestrial vegetation communities and wildlife habitats</u>                      Common natural terrestrial habitats within the shorezone and adjacent areas consist primarily of beach and a mix of conifer forest, scattered conifer trees, and snags. Additionally, urban/developed and ruderal (disturbed) areas are distributed throughout the shorezone where existing facilities (e.g., boat ramps, marinas, buildings, trails) and lake access are present. These habitats support several common native wildlife species that use them for nesting, foraging, resting, or wintering. Alternatives 1, 2, 3, and 4 would result in construction and operation of new shorezone structures, and associated increases in recreation use, that could disturb common vegetation and wildlife. The types of potential impacts to common vegetation and wildlife communities would be similar among Alternatives 1, 2, 3, and 4, with some differences in magnitude based on the locations, amounts, and quality of habitats potentially affected.</p> <p>The potential disturbance or removal of terrestrial vegetation from future projects permitted under any of the Shoreline Plan alternatives would be relatively minor and not substantially reduce the quantity or quality of terrestrial vegetation communities and habitats in the region or cause a change in species distributions or diversity. Additionally, none of the alternatives are expected to increase construction-related or recreational disturbance levels in the shorezone above levels that would substantially affect most common species. Accordingly, the alternatives are not expected to substantially affect the distribution, breeding productivity, viability, or the regional population of any common wildlife species, or result in a change in species diversity.</p>			Alt 1, 2, 3, 4 - LTS	No mitigation required		No mitigation required

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<b>15 Public Health and Safety</b>						
<p><u>Impact 15-1: Increase in watercraft accidents due to increased boating and navigational hazards</u>                      Alternatives 1, 2, and 3 would increase the number of annual and peak day boat trips on the lake, whereas Alternative 4 would retain boating levels consistent with existing conditions. Increased levels of boating activity would add to the factors that contribute to boating accidents, such as more watercraft, higher boating density at popular shoreline areas and lake access points, and greater potential for conflicts between motorized and nonmotorized recreation. While the additional boating activity resulting from Alternatives 1, 2, and 3 would aggravate the factors that contribute to boating accidents, the 600-foot no-wake zone, improved public boating safety education programs, and compliance with California and Nevada boating safety laws would reduce the risks and associated impacts. Alternative 4 would not contribute to such factors.</p> <p>Implementation of any of the four alternatives could lead to public piers extending beyond the 600-foot no-wake zone, which could create navigational hazards and conflicts between motorized and nonmotorized watercraft and swimmers. Additionally, Alternative 2 does not include location standards limiting the length of private multiple-use piers to within the no-wake zone.</p>			Alt 1, 2, 3, 4 – PS	<p><u>Mitigation Measure 15-1a: Maintain nonmotorized navigation within the no-wake zone</u> (applies to Alts 1, 2, 3, and 4)                      TRPA will implement Mitigation Measures 8-1a and 8-1c as described in Chapter 8, “Recreation.” These mitigation measures require that TRPA revise the pier design standards for piers that extend 600 feet or more from the highwater elevation to provide lateral nonmotorized recreation access within the 600-foot no-wake zone and provide for a 200-foot buffer between motorized watercraft in motion and nonmotorized recreationists in areas outside of no-wake zones.</p> <p><u>Mitigation Measure 15-1b: Implement Mitigation Measure 10-1 to limit the number of moorings and boat ramps</u> (applies to Alt 2 only)                      TRPA will implement Mitigation Measure 10-1, as described in Chapter 10, “Air Quality,” which would revise the Code of Ordinances to limit the total number of new moorings (i.e., buoys, slips, and lifts) and boat ramps to the number authorized under Alternative 1. This would allow a total of 2,116 new moorings and two new boat ramps.</p>		Alt 1, 2, 3, 4 – LTS
<p><u>Impact 15-2: Accidental release of hazardous substances</u>                      Each of the Shoreline Plan alternatives would temporarily increase the regional transportation, use, storage and disposal of hazardous materials and petroleum products commonly used at construction sites (such as diesel fuel, lubricants, paints and solvents, and cement products containing strong basic or acidic chemicals), which could result in accidents or upset conditions that could create hazards to people and the environment. The replacement of older piers may require the disposal of wood treated with preservatives, which could contaminate surface water and groundwater if not properly handled and disposed. Temporary impacts could occur if construction were to affect sites of known contamination or inadvertently disturb hazardous materials or wastes in a manner that could release these materials into the environment, exposing construction workers or nearby sensitive receptors to hazardous conditions. Compliance with all local, state, and federal regulations is sufficient to ensure that any hazardous materials used during construction of future projects would</p>			Alt 1, 2, 3, 4 – LTS	No mitigation required		No mitigation required

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<p>not result in adverse effects. Specific projects implemented in accordance to the adopted Shoreline Plan would be subject to permit processes and conditions pursuant to TRPA regulations and, depending upon location and whether or not there is federal discretion, CEQA and NEPA statutes and implementing regulations. Such review could include site-specific impact analysis and adoption of feasible mitigation measures that must be implemented to assure that standards of the region are met.</p> <p>With the addition of access points to the lake and the increase in navigational hazards in the form of longer piers and additional structures in the water, the Shoreline Plan alternatives could result in a long-term increase in the risk of accidental discharge of fuel and other hazardous materials into the lake. Alternative 1 would require that TRPA consult with water purveyors when evaluating applications and development of permit conditions for any proposed shoreline structure within one quarter mile of a drinking water intake, while Alternatives 2, 3 and 4 would require consultation within 600 feet. Furthermore, as described in Chapter 6, "Hydrology and Water Quality," Impact 6-4, given the rapid rate of biodegradation of hydrocarbon compounds, the non-toxic levels monitored on the lake, and current TRPA regulations pertaining to control of discharges of contaminants from boating facilities using best management practices (BMPs).</p>						
<p><u>Impact 15-3: Shoreline emergency access</u>                      Implementation of the Shoreline Plan Alternatives 1, 2, or 3 would increase boating activity. Increased boat use would aggravate many of the factors that contribute to boating accidents, leading to an increased need for emergency response services. Emergency responders' ability to access boaters and swimmers in the water could be hindered by the increase in activity in the nearshore, foreshore, and backshore. Furthermore, low water conditions during drought years and under future projected climate scenarios would present a challenge for emergency responders, as some existing lake access points are unavailable during low water conditions. Because most of the emergency responders' watercraft are located on the water, lake access is not an issue for a majority of first responders.</p> <p>Alternative 1 would incorporate low lake level adaptation strategies along with the provisions of TRPA Code Section 84.10.2, which establishes a framework to provide essential emergency access and egress to Lake Tahoe. Alternative 2</p>			<p>Alt 1 &amp; 2 - LTS                      Alt 3 &amp; 4 - PS</p>	<p><u>Mitigation 15-3: Implement low lake level adaptation strategies</u> (applies to Alts 3 and 4)                      TRPA will incorporate the following low lake level adaptation strategies to provide shoreline emergency access during low water conditions:</p> <ul style="list-style-type: none"> <li>▲ Marina buoy fields would be able to include additional rows of lakeward anchors to accommodate low lake levels. Buoy floats could be relocated to the lakeward anchors during low lake levels without increasing the total number of buoys.</li> <li>▲ Marinas would be allowed to use temporary floating pier extensions to provide access for boats when lake levels fall below 6,225 feet LTD.</li> <li>▲ Public boat ramps could be expanded to extend farther into the lake, subject to permit conditions.</li> </ul>	<p>Alt 1 &amp; 2 - No mitigation required                      Alt 3 &amp; 4 - LTS</p>	

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<p>would allow for substantially greater levels of boating activity than Alternative 1. Alternative 2 would maintain existing development standards, focusing development around the natural lake rim elevation of 6,223 feet Lake Tahoe Datum (LTD). Buoy floats and anchors within buoy fields would be allowed to move farther lakeward during periods of low lake levels. Furthermore, TRPA Code Section 84.15.4 allows for temporary structures that extend beyond lake bottom elevation 6,219 feet or the pier headline during low water conditions.</p> <p>Alternatives 3 and 4 would result in different levels of boating activity—a small increase with Alternative 3, and no projected increase from existing levels with Alternative 4. Alternatives 3 and 4 would maintain existing development standards, focusing development around the natural lake rim elevation of 6,223 feet LTD. Buoy floats and anchors within buoy fields would be allowed to move farther lakeward during periods of low lake levels, but the alternatives contain no other provisions to allow modifications to facilities or structures to be useable during such conditions.</p>				<p>▲ New dredging could be allowed at marinas and public boat ramps, subject to permit conditions.</p>	
<p><u>Impact 15-4: Increase demand for on-lake emergency response facilities</u> Implementation of each alternative would result in new shorezone structures, creating potential for an increase in boating accidents and the accidental release of hazardous materials. This would increase the demand for emergency response services. As discussed in Impact 15-1, the 600-foot no-wake zone, improved public boating safety education programs, expanded safety/enforcement patrols, and compliance with California and Nevada boating safety laws would reduce the risk of boating accidents due to increased boating. Impacts associated with increased navigational hazards would be reduced with implementation of Mitigation Measure 15-1a. As described in Impact 15-2, compliance with all local, state, and federal regulations is sufficient to ensure that any hazardous materials used throughout the project area during construction would not result in adverse effects. Thus, the increased demand for emergency services would likely be minor.</p> <p>Emergency response providers that act on lake-related emergencies indicate that they have adequate capacity to handle additional project-generated demand for emergency services. Furthermore, TRPA Code Section 84.10.2, which allows for the designation of up to one Essential Public Safety Facility within each county-jurisdiction plus the U.S. Coast Guard Lake Tahoe Station, would remain unchanged. In drought years, TRPA allows first responder</p>			Alt 1, 2, 3, 4 - LTS	No mitigation required	No mitigation required

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<p>organizations to designate locations for temporary moorings for regional public safety purposes. This would ensure that emergency providers have adequate access points to the lake and reduce the need for construction of new lake-access facilities, the construction of which could result in adverse effects to the environment.</p>					
<p><b>16 Cultural Resources</b></p>					
<p><u>Impact 16-1: Cause the alteration of, or adversely affect a historical site, structure, object, or building</u>                      Implementation of the four Shoreline Plan alternatives would result in development on properties that could contain known or unknown historic resources, are associated with historically-significant events or individuals, or result in adverse physical or aesthetic effects to a significant historical site, structure, object, or building. Because each alternative would result in some new construction, each has the potential to disturb, disrupt, or destroy historic resources through implementation.</p>	<p>Alt 1, 2, 3, 4 - PS</p>	<p><u>Mitigation 16-1: Avoid potential effects on historic resources</u> (applies to Alts 1, 2, 3, and 4)                      Once the exact location of the new piers, boat ramps, and any other land-based development has been determined and before commencement of earth-disturbing activities for construction, applicants shall identify and evaluate all historic-age (over 45-years in age) buildings and structures that are proposed to be removed and/or modified as part of a historic determination application with TRPA or applicable local jurisdiction. This may include preparation of an historic resource assessment and evaluation of resources to determine their eligibility for recognition under state, federal, or local criteria. If required, the assessment shall be prepared by an architectural historian, or historical architect meeting the Secretary of the Interior’s Standards and Guidelines for Archeology and Historic Preservation, Professional Qualification Standards. If resources are eligible for inclusion in the NRHP, CRHR, or a local register are identified, an assessment of impacts on these resources shall be included in the report, as well as detailed mitigation measures to avoid impacts.</p>	<p>Alt 1, 2, 3, 4 - LTS</p>		
<p><u>Impact 16-2: Cause the alteration of, or adversely affect an archaeological resource</u>                      Implementation of the Shoreline Plan alternatives would result in development that could take place on properties that contain, be associated with, or result in adverse effects to known or unknown archaeological resources. Because each alternative would result in some new construction over the planning period, each has the potential to disturb, disrupt, or destroy archaeological resources through implementation of specific projects.</p>	<p>Alt 1, 2, 3, 4 - PS</p>	<p><u>Mitigation 16-2: Avoid potential effects on archaeological resources</u> (applies to Alts 1, 2, 3, and 4)                      ▲ Once the exact location of the new piers, boat ramps, dredging, or any other ground-disturbing development (excluding buoys) has been determined and before commencement of earth-disturbing activities for construction, applicants shall retain a qualified archaeologist to conduct archaeological surveys of the site as part of a historic determination application with TRPA or applicable local jurisdiction. To ensure that new or expanded facilities and uses do not adversely affect potentially buried archaeological deposits, an underwater archaeological survey shall also be conducted to identify, evaluate,</p>	<p>Alt 1, 2, 3, 4 - LTS</p>		

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				<p>and protect significant submerged cultural resources prior to activities that would disturb the lakebed.</p> <ul style="list-style-type: none"> <li>▲ The applicant shall follow recommendations identified in the survey, which may include activities such as subsurface testing, designing, and implementing a Worker Environmental Awareness Program, construction monitoring by a qualified archaeologist, avoidance of sites, or preservation in place.</li> <li>▲ All projects shall include the following requirements as a condition of approval: If evidence of any prehistoric or historic-era subsurface archaeological features or deposits are discovered during construction-related earth-moving activities (e.g., ceramic shard, trash scatters, lithic scatters), all ground-disturbing activity in the area of the discovery shall be halted and the appropriate jurisdiction and TRPA shall be notified immediately. A qualified archaeologist shall be retained to assess the significance of the find. If the find is a prehistoric archeological site, the appropriate Native American group shall be notified. If the archaeologist determines that the find does not meet NRHP, NVRHP, or CRHR standards of significance, as applicable, for cultural resources, construction may proceed. If the archaeologist determines that further information is needed to evaluate significance, a data recovery plan shall be prepared. If the find is determined to be significant by the qualified archaeologist (i.e., because the find is determined to constitute either an historical resource or a unique archaeological resource), the archaeologist shall work with the project applicant to avoid disturbance to the resources, and if complete avoidance is not feasible in light of project design, economics, logistics, and other factors, follow accepted professional standards in recording any find including submittal of the recordation forms required by the applicable SHPO and location information to the appropriate information center.</li> </ul>		
<p><u>Impact 16-3: Degrade ethnic and cultural values</u>                      Because the project could result in physical changes to historic and prehistoric sites, unique ethnic cultural values could be affected, and historic or prehistoric religious or sacred uses within the Plan area could be restricted. Consultation with the Washoe Tribe is required by TRPA regulations; however, project activities could still uncover or destroy historic or archaeological resources as identified in Impact 16-1 (historic) and Impact 16-2 (archaeological).</p>			Alt 1, 2, 3, 4 - PS	<p><u>Mitigation 16-3: Implement Mitigation Measures 16-1 and 16-2</u> (applies to Alts 1, 2, 3, and 4)                      TRPA will implement Mitigation Measure 16-1, "Avoid potential effects on historic resources," and 16-2, "Avoid potential effects on archaeological resources," as described above.</p>	Alt 1, 2, 3, 4 - LTS	

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<b>17 Cumulative Impacts</b>						
<p>The Shoreline Plan is a long-range plan developed to manage the amount and intensity of recreational use and development along Lake Tahoe’s shore in a manner that attains and maintains the environmental thresholds. Together, the Shoreline Plan works with the other elements of the Regional Plan and the Regional Transportation Plan (RTP) to regulate the total amount and type of development within the Lake Tahoe Region. Consequently, this planning framework inherently represents the cumulative condition within the Region. Because the Shoreline Plan considers the cumulative buildout of the shoreline, the analyses contained in Chapters 4 through 16 of this EIS are cumulative in nature. Similarly, the Regional Plan regulates the buildout of portions of the Region that are outside of the shoreline, and the EIS prepared for adoption of the Regional Plan evaluated the cumulative conditions of those portions of the Region.</p> <p>The cumulative analysis identifies: whether an existing significant adverse cumulative condition exists with respect to each resource, whether implementation of the Shoreline Plan alternatives in the context of past, present, and reasonably foreseeable plans, programs and projects, would result in a significant cumulative impact, and whether the Shoreline Plan would represent a considerable contribution to the cumulative impact. In cases in which no existing significant cumulative condition is identified, the analysis addresses whether the incremental contribution of the Shoreline Plan alternatives, combined with those of related region-wide plans, programs, and projects, would create a significant cumulative impact. For each resource topic analyzed, the cumulative analysis presented in Chapter 17 determined that there would be no adverse cumulative condition, or that the Shoreline Plan alternatives would not make a considerable contribution to a significant cumulative impact.</p>			Alt 1, 2, 3, 4 - LTS	No mitigation required		No mitigation required