SHORELINE IMPLEMENTATION PROGRAM

October 24, 2018

TAHOE REGIONAL PLANNING AGENCY

A Voice for Lake Tahoe

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Introduction

In 2015, the Tahoe Regional Planning Agency (TRPA) and critical stakeholder partners launched a collaborative planning process to develop a Lake Tahoe Shoreline Plan with development caps and guidelines for appropriate uses along the lake's 72 miles of shoreline. If approved by the TRPA Governing Board, the plan will update regulations for shoreline structures including piers, buoys, boat ramps, and marinas to support water-dependent recreation at Lake Tahoe and ensure effective natural resource management for continued environmental threshold attainment. Several years of collaborative work with Shoreline Steering Committee partners and the public resulted in the five key policy areas that are addressed in the Shoreline Plan: boating, access, marinas, piers, and low lake level adaptation.

This report demonstrates how the Shoreline Plan would be implemented in the years following its approval by the TRPA Governing Board, and how possible impacts identified in the Shoreline Plan environmental review and analysis will be successfully mitigated. The report provides more details on a variety of essential new shoreline programs, how these programs will be funded through fees fairly apportioned to various shoreline user groups, and how these programs will improve the environment along Lake Tahoe's shoreline and improve recreation access, safety, and experiences at the lake.

Chapter 1. Summary of Impacts

The Environmental Impact Statement (EIS) identified potential environmental impacts in response to the Shoreline Plan. As a result, a variety of program elements and mitigation measures have been put in place. These changes and measures are summarized both in this report as well as the proposed amendments to the TRPA Code of Ordinances shown in table 1.

TABLE 1. ENVIRONMENTAL IMPACTS & MITIGATION MEASURES GUIDE

POTENTIAL IMPACT	PROGRAM ELEMENT/MITIGATION MEASURE	ADDITIONAL DETAILS CAN BE FOUND IN:
<u>Fisheries and Aquatic Biological Resources</u> The EIS identified an increased risk of Aquatic Invasive Species (AIS) spread due to an increase in boating. Inclusion of the proposed AIS fee and mitigation measure would result in a less than significant impact.	• An AIS fee increase will contribute to AIS control projects throughout the lake. This fee would be collected at the boat inspection stations. • TRPA will continue to promote the development of AIS-resistant boats.	Chapter 6, Aquatic Invasive Species Control (Page 27)
	• TRPA will require marinas to develop AIS management plans within three years of adoption of the plan.	Proposed Code Section 84.6.2.B.1.
<u>Water Quality</u> The EIS identified a significant impact related to interference with littoral processes from new or redeveloped shoreline structures. Inclusion of the proposed mitigation would result in a less than significant impact.	• TRPA will specify floating pier design standards to assure that floating pier sections are not rigidly moored to the lake bottom. • TRPA will require littoral drift analyses in necessary locations and incorporate design recommendations for floating piers longer than 25 feet.	Proposed Code Section 84.4.3.A.9.
<u>Recreation</u> The EIS identified a potentially significant impact resulting from public piers extending beyond the 600-foot no wake zone. Inclusion of the proposed mitigation would result in a less than significant impact.	• TRPA will revise the design standards for public 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.	Proposed Code Section 84.4.3.D.1.A.

<u>Scenic Resources</u> The EIS identified a significant impact from alteration of views of the shore from Lake Tahoe due to additional structures. Inclusion of the proposed mitigation would result in a less than significant impact.	• TRPA will require buoy owners to offset visible mass of buoys. Each buoy would be required to mitigate the equivalent of 83 square feet of visible mass through the payment of an annual in lieu fee of $47.	Chapter 2, Section B. Moorings (Page 10)
	• TRPA will establish color standards for piers so that they are either matte medium to dark gray OR alternative colors that blend with the background of the project site. Pier applications are subject to the appropriate project-level environmental review and permitting.	Proposed Code Section 84.4.3.A.5.
<u>Air Quality</u> The EIS identified potentially significant impacts from short term construction emissions of ROG, Nox, PM10, and PM2.5. Inclusion of the proposed mitigation would result in a less than significant impact.	• TRPA will include best construction practices for emissions in the standard conditions of approval for shoreline projects. These practices include dust control, prohibition on burning vegetation, limiting idling time, and use of clean-fuel generators.	Chapter 2, Section F. Standard Conditions of Approval (Page 14)
<u>Greenhouse Gas Emissions and Climate Change</u> The EIS identified a significant impact from increased emissions associated with the construction and demolition of boating facilities and on-road motor vehicle trips to and from new boating facilities. The impact would be significant and unavoidable.	• Develop and implement a GHG reduction policy within 12 months of adoption of the Shoreline Plan. The policy will require implementation of measures for the reduction of greenhouse gas emissions generated by demolition and construction activity in the shorezone and in associated upland areas, by on-road motor vehicle trips directly associated with the operation of boating facilities, and by ongoing operation of recreational watercraft. Potential actions included in the GHG Emissions Reduction Plan include minimizing GHG emissions by requiring or incentivizing construction contractors to use cleaner construction equipment and public facilities to include infrastructure for electric vehicles and bicycles as part of their project.	Chapter 8, Greenhouse Gas Emissions Reduction Plan (Page 29)
<u>Noise</u> The EIS identified a significant impact from construction vibration related to pile driving.	• TRPA will require vibration reduction measures for shoreline projects. These measures include locating construction equipment away from vibration-sensitive uses, phasing ground-disturbance, and setbacks.	Chapter 2, Section F. Standard Conditions of Approval (Page 14)

Inclusion of the proposed mitigation would result in a less than significant impact.		
<u>Wildlife</u> The EIS identified significant impacts to osprey, bald eagle, and waterfowl from construction and recreational uses. Inclusion of the proposed mitigation would result in a less than significant impact.	• 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. • Conduct preconstruction surveys for waterfowl and implement a limited operating period, if necessary.	Chapter 2, Section F. Standard Conditions of Approval (Page 14)
<u>Vegetation</u> The EIS identified a significant impact to Tahoe Yellow Cress due to construction and recreation disturbance. Inclusion of the proposed mitigation would result in a less than significant impact.	• Conduct preconstruction surveys, avoid potential construction impacts, and avoid potential recreation impacts to Tahoe Yellow Cress plants.	Proposed Code Section 82.5.1.J.
	• This would be implemented by project-specific planning, design and environmental review, fencing and educational signage around known plant populations.	Proposed Code Section 80.4.8.
<u>Public Health and Safety</u> The EIS identified a potentially significant impact from watercraft accidents due to increased boating and navigational hazards. Inclusion of the proposed mitigation would result in a less than significant impact.	• TRPA will revise the design standards for public 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.	Proposed Code Section 84.4.3.D.1.
<u>Cultural Resources</u> The EIS identified a potentially significant impacts to historic and archeological resources from development on properties that could contain known or unknown resources. The EIS also identified a potentially significant impact resulting from degradation of ethnic and cultural values. Inclusion of the proposed mitigation would result in a less than significant impact.	• Avoid potential effects on historic resources through site-specific identification and evaluation of historic resources and avoidance. • Avoid potential effects on archaeological resources through site-specific evaluation and archeological surveys, and avoidance.	Proposed Code Section 80.4.6.

Chapter 2. Permitting

Development along the shoreline of Lake Tahoe has been the subject of decades of study and controversy. Multiple agencies with jurisdiction over Lake Tahoe's shoreline have an interest in the development that takes place in the shorezone. Today's Shoreline Plan process emphasizes continuous coordination with agencies that have jurisdiction of the shorezone including California State Lands Commission (CSLC), Nevada Division of State Lands (NDSL), and the Army Corps of Engineers. Under the Shoreline Plan, TRPA will review applications for new structures in the shorezone, including piers, moorings, ramps, and activities and structures at marinas while coordinating permitting with federal and state agencies through the Shoreline Review Committee. The Committee is made up of representatives from agencies that have jurisdiction of the shorezone to review all shoreline projects to assure they meet all applicable regulations.

To streamline the multi-permitting process for applicants, TRPA will also be responsible for maintaining a website with information on the permitting process and links to other agency applications. To the extent possible, TRPA permitting will be available electronically through Lake Tahoe Info (https://laketahoeinfo.org/), TRPA's platform designed to connect the public with information to improve decision making in the Lake Tahoe Basin. Lake Tahoe residents can currently find information specific to their parcel on the 'Parcel Tracker' page.

This section of the Shoreline Implementation Program provides details on the number of new structures, eligibility criteria, location standards, and other applicable information on specific structures. More detailed information and requirements on each structure can be found in proposed TRPA Code of Ordinances Chapter 84.

A. Piers

Allocation

The Shoreline Plan will allow for a maximum of 10 new public piers and 128 new private piers. Up to 12 new private piers may be permitted every two years with any remaining balance rolling over to subsequent years. The Shoreline Plan prioritizes multiple-use private piers that serve two or more property owners. Of the 128 additional private piers, no more than 20 percent (25 piers) may be single-parcel piers. Table 2 shows the number of private piers released each year under the plan. Public piers may be permitted on a first come, first serve basis.

TABLE 2. 16-YEAR RELEASE SCHEDULE FOR NEW PRIVATE PIERS

Implementation Years	Total	Maximum New Private Piers	
		Multiple-Parcel	Single-parcel
2019 – 2020	12	7	5
2021-- 2022	12	8	4
2023 – 2024	12	9	3
2025 – 2026	12	11	1
2027 – 2028	12	11	1
2029 – 2030	12	11	1
2031 – 2032	12	11	1
2033 – 2034	12	10	2
Total	**96**	**78**	**18**

If fewer than 12 additional piers are permitted in a given two-year period, remaining piers from that two-year period will be available during the subsequent two-year period. Following the initial 16-year period shown in Table 2, TRPA may permit three additional multiple-use piers for every eight littoral parcels that retire future pier development potential through a deed restriction, up to the 128 total private pier cap.

Location & Eligibility

Private pier eligibility is based on a variety of parcel characteristics including location, setbacks, and deed restrictions as set forth in proposed Code Section 84.4.2. New piers are prohibited within 200 feet of stream inlets. In most cases, applications for multiple-use private piers will be prioritized over single-parcel private piers.

TRPA will permit the additional 128 private piers according to geographic divisions and the location of Visually Sensitive Areas. Only multiple-parcel piers are allowed in Visually Sensitive Areas, the total number of which is shown in Table 3.

TABLE 3. MAX ADDITIONAL PRIVATE PIERS IN VISUALLY SENSITIVE AREAS

State	**Quadrant**	***Total***	***In Visually Sensitive Areas***
California	Placer	58	7
	El Dorado	28	6
Nevada	Washoe	21	3
	Douglas/Carson	21	3

Permitting Schedule

Private Single – Parcel Piers

TRPA may authorize up to 5 single-parcel piers, through the issuance of permits, during the first two years after Shoreline Plan approval. Subsequent two-year periods will see the allotment for single-parcel piers diminish by one potential pier every two years. TRPA will accept for review single-parcel pier applications based on a lottery system per proposed Code Section 84.4.4.C.1 and the distribution limits set forth in Section 84.4.4.D. Table 4 lists the deadlines and details for pier proposals/applications for the applicable permitting year.

TABLE 4. SINGLE-PARCEL PROJECT PROPOSAL REVIEW AND ALLOTMENT SCHEDULE

Due Date	*Review Period*
June 1 – June 30	TRPA will accept project proposals for new single-parcel piers for a 30-day period, consistent with the criteria outlined below **(30 Days).**
July 1 – July 16	TRPA will review the project proposals for new single-parcel piers based on the criteria outlined below **(15 Days).**

July 17 – September 15	If TRPA receives more proposals for single-parcel piers than the 2-year allotment number, TRPA will conduct a random drawing selecting the appropriate amount of single-parcel pier projects to move forward with review. Chosen proposals will have 60 days from the date of the drawing to submit a complete application for a new single-parcel pier to TRPA **(60 Days)**.*
September 16	Deadline for selected proposals to submit a complete new single-use pier application to TRPA. Standard project review times will apply and will include Hearings Officer meeting per Section 2.2.2.F (2)(b) of the TRPA Code of Ordinances.

* Incomplete applications at the end of the 60-day review period will result in forfeited allotments. Any unused allotments will roll over to the subsequent two-year period within their respective multi-use or single-use categories.

Private Multiple-Use Piers

TRPA may authorize up to seven multiple-use piers, through the issuance of permits, during the first two years after Shoreline Plan approval. Subsequent two-year periods will see the allotment for multiple-parcel piers increase every year, until years 15 – 16 of the Shoreline Plan, when there will be a slight decrease. TRPA will accept for review and prioritize multiple-parcel pier applications based on the prioritization criteria in proposed Code Section 84.4.4.C.2. Table 5 lists the deadlines and details for pier proposals/applications for the applicable permitting year.

TABLE 5. MULTIPLE-USE PIER PROJECT PROPOSAL REVIEW AND ALLOTMENT SCHEDULE	
Due Date	*Review Period*
June 1	TRPA will accept project proposals for new multiple-parcel piers for a 30-day period, consistent with the criteria outlined below **(30 Days).**
July 1 – July 16	TRPA will review the project proposals for new multiple-parcel piers with the criteria set forth below (New Pier Application Criteria) **(15 Days).**
July 17 – September 15	TRPA will prioritize the project proposals received based on the criteria below (Prioritization Criteria). The top seven applications based on the application and prioritization criteria will be chosen for project review (allotment numbers will change depending on the program implementation year). Chosen proposals will have 60 days to from the date of the drawing to submit a complete application for a new multiple-parcel pier to TRPA **(60 Days)**.*
September 16	Deadline for selected projects to submit a complete new multiple-parcel pier application to TRPA, standard review times apply.

* Incomplete applications at the end of the 60-day review period will result in forfeited allotments. Any unused allotments will roll over to the subsequent two-year period within their respective multi-use or single-use categories.

B. Moorings

Allocation & Permitting

The Shoreline Plan will require that all new and existing moorings on Lake Tahoe be permitted and registered. Moorings include buoys, boat lifts, and boat slips. There are currently an estimated 8,731 existing moorings on Lake Tahoe (including slips in the Tahoe Keys).

First, the plan calls for the implementation of a buoy recognition program to identify existing buoys with a TRPA, federal, or state permit, or evidence of clear existence before 1972. Under the 2008 Shorezone Ordinance, TRPA received applications for 4,412 buoys, 3,421 of which were approved and 981 of which were pending when the program ended. Permits approved under the 2008 ordinance will be considered valid and will only require a review if changes are being proposed (to anchor locations, for example). The first year of the plan (2019) will focus on the following:

- Registering moorings to the permitting system
- Permitting buoys that have an existing State Lands (CA or NV) or U.S. Army Corps of Engineers permit, issued before September 1, 2018
- Launching the tracking and mooring enforcement program
- Identifying and removing unauthorized moorings

Second, TRPA will authorize new moorings for permitting only after determining the status of existing moorings. This likely will require a full permitting season so that new mooring applications will not be processed until 2020. Over the 20-year life of the Shoreline Plan, up to 2,116 additional moorings could be distributed to the following pools:

- 1,486 for private littoral parcels and HOAs
- 330 for marinas
- 300 for public agencies

To assure adequate mitigation of environmental effects, the plan calls for a phased program for new mooring applications in the first 10 years based on a priority system not to exceed 15 percent of remaining moorings in the pool every year, beginning in 2020. Moorings not allocated in a given year will roll over to the following year. The number of moorings released in the first 10 years of the program are shown in Table 6. The phasing system will be removed following the initial 10-year period and all remaining moorings could be allocated.

TABLE 6. MOORING RELEASE SCHEDULE

Program Year	# of Moorings Released
2020	317
2021	270
2022	229
2023	195
2024	166
2025	141
2026	120
2027	102

2028	86
2029	74

The Shoreline Plan requires that best management practices (BMPs) to reduce erosion and stormwater pollution be in place on upland properties prior to submitting applications for new moorings.

Location & Eligibility

The Shoreline Plan will generally allow up to two moorings per littoral parcel at one time. TRPA may authorize additional permanent anchor blocks to accommodate low water levels or when harbors are inaccessible due to sediment accumulation, according to the provisions set forth in Code Section 84.3.3.F. There are no new private boat slips or boat houses allowed under the plan.

New buoys are prohibited within 200 feet of stream inlets listed in Code Section 84.4.3.A. TRPA will notify the appropriate water provider(s) as part of the application process for any new mooring within ¼ mile of a public drinking water intake. In addition, these new mooring applications will be flagged for review by the Shoreline Review Committee which meets monthly. Additionally, the plan includes a set of development, eligibility and setback standards for buoys associated with a buoy field and buoys not associated with a buoy field.

Mooring Tags

All moorings would be required to be registered and permitted under the Shoreline Plan. TRPA would issue unique identification tags for each authorized mooring to track and differentiate among permitted moorings. TRPA identified RFID technology as a potential tool for tagging that will help identify each specific mooring to the right property owner.

Data from different permitting agencies with jurisdiction will be coordinated and shared. TRPA will coordinate with the local/state agencies to develop and link to a shared database for mooring information, including location, owner, TRPA permit number, state lands lease/permit number, etc. The database will also track the location coordinates of the mooring. State lands and local law enforcement agencies will have access to the database by entering the permit/lease information through TRPA's GIS Portal.

Permit Registration

All moorings would be required to be registered biennially with an annual fee. This process would be completed by the property owner through the online registration portal on Lake Tahoe Info. TRPA will develop enforcement protocols to contact property owners who have not registered their moorings. Failure to pay may result in forfeiture of the mooring and fines.

New Buoy Permits

New applications for buoys would be submitted through an online portal on Lake Tahoe Info. Once the mooring application has been approved, TRPA will issue a permit along with an RFID tag to be placed on the mooring. New moorings will then be registered in the online system by TRPA staff. Once registered, the property owner will renew each mooring registration online every two years.

Mooring Registration Fee

In order to provide additional programs under the Shoreline Plan needed to mitigate boating effects including enforcement of unauthorized moorings, no-wake zone education and enforcement, and additional control measures for AIS, the Shoreline Steering Committee recommended an annual fee of $43 for new and existing moorings. Additional details on the mooring registration fee can be found in Chapter 9, Fees.

Buoy Scenic Mitigation Fee

Through the scenic resources threshold, TRPA aims to maintain and restore the scenic qualities of the Lake's natural landscape and improve public viewing opportunities. TRPA achieves this by requiring that development in the Shoreline be designed to blend with the natural environment. While structures on land can be designed to blend in with the shoreline or be screened, it is more difficult to mitigate the scenic impacts of a boat on a buoy. Instead of requiring that each buoy owner mitigate 83 square feet of visible mass (the average area of a boat on a buoy) on land, the Steering Committee recommended that scenic impact be offset by a buoy fee contributing to the Scenic Quality Improvement Program (SQIP). The fee represents the average cost to mitigate 83 square feet of visible mass.

The SQIP identifies projects that improve the scenic environment of the shorezone, shoreland, and background view visible from Lake Tahoe. Such projects have included undergrounding of utilities, screening or recoloring of infrastructure, replacement of dilapidated structures or removal of structures on public land. The Scenic Quality Improvement Program considers opportunities for permanent or long-term scenic improvement. Additional details on the buoy scenic mitigation fee can be found in Chapter 9, Fees.

C. Ramps

Allocation & Permitting

The Shoreline Plan will allow for a maximum of two new public boat ramps. Existing ramps could be relocated to deeper water to avoid sensitive resources and dredging, provided the standards set forth in proposed Code Section 84.5.2 and 84.5.3 are met.

Location & Eligibility

Public littoral parcels are eligible for a boat ramp if the parcel does not already have an existing boat ramp and the applicant can demonstrate a need for a ramp, such as a capacity analysis. New boat ramps should be located in areas that promote geographic distribution of lake access, and where feasible, be associated with clustered development and/or transportation hubs. Only parcels located in areas exhibiting specific shoreline conditions set forth in proposed Code Section 84.5.3.4 will be eligible for a new ramp.

D. Marinas

Allocation & Permitting

There are 14 existing marinas located on Lake Tahoe. No new marinas will be allowed under the Shoreline Plan. Under the Shoreline Plan, the existing process of a Marina Master Plan is no longer required. Instead, specific marina development standards are put in place to foster environmental upgrades. Marinas that have existing approved Marina Master Plans may continue to implement the

Master Plan. Provisions are made for low lake adaptation and flexibility in design. Environmental improvements are required at marinas based on the scale of the project and increase in capacity.

Major marina projects are generally considered those that expand the use or could have a potential environmental impact. Examples of these projects include new dredging, reconfiguration of facilities that result in expansion of use, permanent pier extensions, and alterations that accommodate public health and safety access. In addition to meeting the requirements for a minor project, major projects must implement one or more of the environmental improvements listed in Code Section 84.6.2.B.3.

Marina projects that are considered minor are generally projects that do not expand, or temporarily expand existing use. Examples of minor projects include reconfiguration or conversion of existing facilities, low lake level adaptation including additional buoy anchors, temporary pier extensions, and establishing concessions that do not expand use. These projects may be permitted if they meet TRPA and other applicable permitting agencies' standards and requirements.

Environmental Improvements

All marinas will be required to implement an Aquatic Invasive Species (AIS) Management Plan within three years of the adoption of the Shoreline Plan. The AIS Management Plan must identify strategies to prevent, control, and reduce existing aquatic invasive species or the threat of aquatic invasive species. The plan also includes monitoring, early detection, and public education components.

Smaller projects within marinas may be approved if the marina has documented to TRPA that it is certified as a Clean Marina. The Clean Marine Program strives to maintain a healthy, pollution-free environment by certifying marinas that provide services that support clean boating, educating customers about clean boating practices, and training staff to be partners in the Clean Marine Program. Marinas in both California and Nevada can be certified through the Clean Marine Program.

E. Dredging

The Shoreline Plan will continue to allow maintenance dredging that complies with TRPA's approved dredging best management practices (BMPs) and installation of all upland BMPs. New dredging would be allowed only at marinas, public boat ramps, and essential public health and safety facilities.

Additional details on filling and dredging can be found in proposed Code Section 84.9.

Permitting Program Funding and Timeline

A shorezone activity is reviewed either as a project or some form of exempt activity. Different categories of actions are subject to differing levels of review depending upon the potential for new environmental effects. The permitting program for all shorezone structures listed in this chapter are primarily funded by permit application fees (i.e., the costs of reviewing individual applications are borne by the applicants). A portion of the annual mooring fees will be used to develop a permitting portal on Lake Tahoe Info.

F. Standard Conditions of Approval

TRPA currently requires certain conditions to be met before a project or activity in the shorezone can commence. As part of the Shoreline Plan, TRPA will update its Standard Conditions of Approval for

Shorezone Projects (TRPA Permit Attachment S) to ensure all possible environmental impacts are avoided.

Standard Conditions of Approval will be revised to include best construction practices for wildlife, air quality, and ground vibration. Projects that are located within TRPA-designated disturbance zones for nesting osprey and bald eagle must prepare and implement habitat enhancement plans or other compensatory measures for unavoidable impacts. Measures relating to air quality and ground vibration include phasing of ground disturbances, setbacks, prohibition on burning vegetation, limiting equipment idling time, and the use of clean-fuel generators.

G. Exempt/Qualified Exempt Projects

The Tahoe Regional Planning Compact requires that all "projects" be reviewed and approved by TRPA prior to being undertaken. The Compact and Code set forth which activities may occur without detailed TRPA review and approval. These activities are known as Exempt and Qualified Exempt activities (See current Code Chapter 2). Compliant Exempt activities may be undertaken without notice to TRPA; qualified exempt actions must first submit a declaration to TRPA attesting that the described activity will be undertaken consistent with the code requirements. TRPA has five days to notify the QE applicant that they may not proceed; if no notice from TRPA is received, the applicant may proceed with the action without further TRPA review.

The line between detailed review and exempt activity generally depends on the potential for below water or lakebed disturbance. In general, activities on existing structures that occur only above waterline may be undertaken as an exempt activity regardless of cost. **Exempt** shorezone activities covers maintenance and repairs of existing structures. Activities that also occur below water and with minimal lake bottom disturbance may proceed as Qualified Exempt activities but only if a strict set of conditions are met. **Qualified Exempt** activities are generally repairs occurring below water (e.g., pile replacement). Actions involving significant substrate disturbance can only be undertaken after review and approval by TRPA as a project.

For Qualified Exempt activities, the applicant must submit a Qualified Exempt Declaration that includes a description and characteristics of the proposed activity, supporting evidence of existing structures, and prior project approvals. In some cases, a Qualified Exempt Declaration may be reviewed over the counter. Certain maintenance, repair, reconstruction, or demolition activities in the shorezone, even if they are Qualified Exempt, may require more time to review. Exempt and Qualified Exempt projects must comply with standard conditions of approval including Tahoe Yellow Cress, wildlife, cultural and historic resource survey requirements.

More details on Exempt and Qualified Exempt projects can be found in proposed Code Section 82.4 and 82.5.

H. Reconstructions of Existing Structures

Reconstructions in kind of shorezone structures are generally considered a project eligible for express check review. Existing shorezone structures are classified as either conforming or non-conforming structures. Non-conforming structures, such as a rock crib pier (currently 43 on Lake Tahoe), are structures that were once legally established but now no longer meet location and design standards. Conforming structures are compliant with the allowed uses and meet the applicable location and design standards set forth in the Code.

The Shoreline Plan would allow reconstructions of both existing conforming and nonconforming structures to be considered for an express check permit. Express Check Permitting provides quick review for projects that are limited in scope and have minimal environmental impacts. The project must meet the standards of the express check eligibility criteria included in the express check permits information packet, http://www.trpa.org/wp-content/uploads/EXPRESS-CHECK-INFO-PACKET_050218_FINAL.pdf.

I. California Public Trust Easement

On the California side of Lake Tahoe, the public may access areas along the shoreline between high and low water – i.e., along the Public Trust easement. No similar public right exists on the Nevada side of the lake.

The Shoreline Plan requires that TRPA and California State Lands Commission (CSLC) (the state agency in charge of implementing the Public Trust easement in California at Lake Tahoe) enter into a memorandum of understanding (MOU) prior to TRPA implementing a pier permitting system in California on March 1, 2019:

> *No permits shall be issued for new pier construction, non-exempt modification, or expansion in California until TRPA has a valid agreement with the California State Lands Commission governing pier development activities within the shorezone in California. This requirement for such an agreement only governs and applies to the California side of Lake Tahoe, and in no way affects, or is intended to affect, the Nevada side of Lake Tahoe or the sovereign interests of the State of Nevada.*

During pier permitting, the MOU process ensures CSLC the opportunity to work with the pier project applicant to require measures that will protect reasonable public access along the shore. Since CSLC is charged with protection of the public trust through its leasing and other opportunities and TRPA must review all pier projects, the MOU provides all concerned parties with a coordinated process by which pier permit approval conditions can be aligned.

More details can be found in proposed Code Section 84.4.F.

J. Tahoe Keys Permitting & Registration Administration

Approximately one-fifth of the moorings serving boats that use Lake Tahoe are in the Tahoe Keys lagoons. Under the Shoreline Plan, all existing Tahoe Keys motorized boat moorings must register and pay the annual mooring fee to offset the identified environmental effects of motorized boating on Lake Tahoe. For decades, the Tahoe Keys Property Owners Association (TKPOA) has administered its own architectural and design criteria for structures within the lagoons of the Keys. Once the Shoreline Plan is approved and implemented for the lake proper, TRPA and TKPOA will enter into a separate and updated agreement (MOU) delegating the administration of moorings and lagoon structures to the POA's Architecture and Review Committee. Mooring registration and fee payment will be required but may or may not be accepted as a delegated responsibility under the MOU.

Chapter 3. Boating Enforcement Program

History and experience at Lake Tahoe proves that the most successful enforcement programs take a step-wise approach. First, public users are fully educated on the program and its reasons, in order to create voluntary behavior change that is compliant with new rules. "Soft enforcement," with education and warnings, is later followed by formal targeted enforcement of continuing violations. That general approach will be pursued for the Shoreline Plan.

600 Foot No-Wake Zone
In June 1997, the TRPA Governing Board approved a no-wake zone delineation prohibiting speeds in excess of 5 MPH by motorized watercraft within 600 feet of the waterline of Lake Tahoe. The rule was created to address noise impacts, water quality impacts, on-water recreation conflicts, boating safety impacts, and wildlife impacts. The no-wake zone speed limit would be sufficient to allow people on the beach to have a conversation at normal speech volume, to prevent recreational conflicts among users, swimmers, fisherman, and watercraft, and to provide for increased boating safety in congested areas. With the growing mix of motorized and non-motorized boaters on the lake, TRPA has identified an opportunity to increase enforcement and education of boater safety regulations.

Today, the TRPA watercraft team primarily uses educational techniques for compliance with the no-wake zone. They display "slow, no-wake zone" signs to boaters who are violating speed limits and stop and educate boaters whenever possible. Due to safety concerns and the nature of TRPA's civil authority, the watercraft team does not chase down violators. The team also spends significant amount of time educating the public on boater safety regulations at boat ramps and marinas.

Listed below, TRPA has identified areas with of heightened recreation user conflict and a higher likelihood of boaters violating the TRPA no-wake zone. The watercraft team focuses its attention on these areas; however, they have a limited presence due to the size of the lake.

- Nevada Beach State Park
- Tahoe Keys
- Camp Richardson Marina
- D.L. Bliss State Park
- Sugar Pine Point State Park
- Tahoe City
- Emerald Bay
- Kings Beach
- Incline Village
- Sand Harbor State Park
- Cave Rock
- Zephyr Cove

A. No-Wake Enforcement Strategy

Under the Shoreline Plan, TRPA would increase enforcement of the no-wake zone, create additional no-wake buffer zones, and strengthen coordination with local law enforcement agencies on Lake Tahoe. Similar to the successful two-stroke watercraft enforcement strategy, the primary focus for enforcement will initially be education through informative stops followed by more consequential enforcement mechanisms such as corrective actions or civil penalties.

- *Additional TRPA Watercraft Team*

TRPA will add capacity to its no-wake zone education and enforcement program by putting in service its second boat and watercraft crew beginning during boating season 2019. The second crew will work on Lake Tahoe five days a week including weekends, eight hours per day from Memorial Day through Labor Day weekend, doubling the amount of time the TRPA watercraft team currently spends on enforcement and education of the no-wake zone rules.

The primary responsibility of the second TRPA watercraft will be to patrol and educate boaters who are speeding within 600 feet of the shore. The team will first engage violators as a warning. Repeat offenders are subject to corrective actions or civil penalties. Penalty amounts could be up to $5,000 per violation. Repeat offenders are also subject to local law enforcement fines. The watercraft team will also spend time at ramps and marinas educating boaters entering the lake.

- *Additional No-Wake Buffer zones*

  The Shoreline Plan includes a number of added measures that expand no-wake zones to provide additional safety in conflict areas. The Shoreline Plan includes new regulations on no-wake buffer zones that adds an expanded no-wake zone to all of Emerald Bay (speeds limited to 5mph throughout). It also creates a 100-foot moving no-wake zone buffer around non-motorized boaters or swimmers, and 200-foot no-wake zone buffer around structures (piers, buoys, swim floats, etc.). Current California and Nevada state law provide that boaters must maintain a speed less than 5mph within 100-feet from active bathers, and 200-feet from a beach frequented by bathers. Nevada Administrative Code prohibits operation of a watercraft at speeds that cause a wake within 100-feet of an anchored or moored vessel, or any manually propelled vessel however, there is no such law on the California side of the lake. The additional safety zones create more consistency between TRPA regulations and current state laws already enforced by local law enforcement and provides more safety for non-motorized recreators in addition to current state regulations.

- *Coordination with local law enforcement agencies*

  TRPA is entering into an enforcement coordination MOU with all other agencies with boat patrol and law enforcement presence on the Lake: The Coast Guard, Nevada Department of Wildlife (NDOW), Nevada State Parks, Douglas County Sheriff's Office, Washoe County Sheriff's Office, Placer County Sheriff's Office, El Dorado County Sheriff's Office, and the City of South Lake Tahoe Police Department. The new coordination MOU will focus on each local jurisdiction committing to enforce its applicable no-wake zone and/or speed limit laws as well as assisting with education of TRPA ordinances. A newly established watercraft task force, made up of MOU member representatives, will meet throughout the boating season to discuss issues and conflict areas, and coordinate strategies for compliance of boating regulations on the lake. The purpose of this agreement is to better coordinate and prioritize enforcement strategies across the different jurisdictions. This MOU will be in place within six months of Shoreline Plan adoption.

[More details on the no-wake safety zones can be found in proposed Code Section 84.10.1.C.]

B. Noise Enforcement Strategy

TRPA uses the maximum level recorded on a noise meter, L-MAX, to measure single noise events. Watercraft must meet each of the separate threshold measurement standards defined in existing TRPA Code Section 68.3.1.C.

Most excessive noise associated with motorized watercraft can be attributed to engine operation and exhaust. The operation of motorized watercraft inside of the established 600-foot no-wake zone may cause exceedances of the maximum allowable noise levels when measured from the shoreline.

TRPA currently utilizes monitoring equipment in several locations around the lake to determine areas with continuous levels of noise exceedance from watercraft. Once identified, the TRPA watercraft team increases its presence in these 'problem areas' to educate boaters on TRPA noise ordinances. On-the-lake education is the current primary mechanism for noise compliance. The Shoreline Plan adds the following:

- *Boat Noise*

  The Shoreline Plan prohibits vessels that have an exhaust system that discharges directly to the air and generate noise that exceeds TRPA or applicable state standards from operating on Lake Tahoe. This regulation is consistent with State of Nevada regulation (NRS 488.195) and State of California vehicle code (CA Harbors and Navigation Code, Section 654A), which requires that vessels be equipped with a permanently installed, constantly operating muffler system that effectively prevents exceedances of the maximum noise levels described above. Exceptions to this regulation would be given to antique boats.

  Under the Shoreline Plan, boats inspected at watercraft inspection stations, boat launching facilities, and marinas and identified with open air or altered exhaust systems that create noise in excess of maximum noise levels. Boats with such exhaust systems will be informed that their system is not compliant with state law and TRPA Code. Boaters will be notified that they will not be allowed to launch the boat unless it is repaired or altered (e.g. muffler, disabled "Captain's Call") or the boater shows proof that the system meets TRPA noise standards.

- Increased wake zone/additional resources

  The existing 600-foot no-wake zone and additional no-wake buffer zones around buoys, structures, swimmers, and non-motorized watercraft will keep boats farther away from the shore and help minimize the noise impacts of motorized watercraft on residents, visitors and wildlife. The TRPA watercraft team will increase its enforcement of the no-wake zone (as described above) during the boating season as an additional noise reduction effort.

- *Violations for Repeat Offenders*

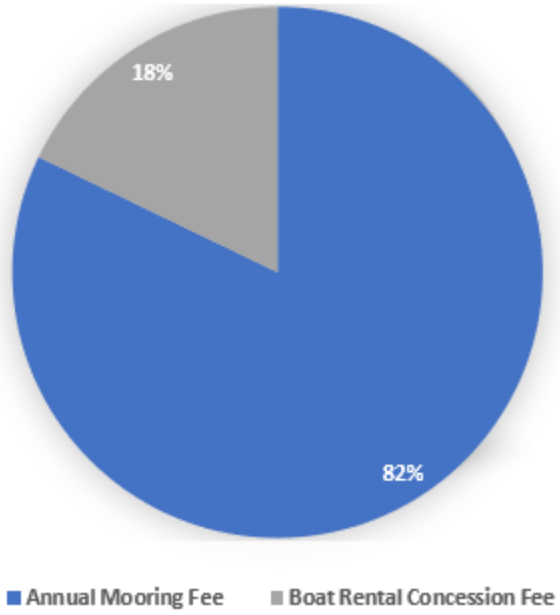
  TRPA would issue corrective actions including possible civil penalties for those vessels found to be repeatedly exceeding noise standards. Fine amounts could be up to $5,000 per violation.

Funding and Timeline

Total Annual Program Cost: $112,000

The No-Wake Zone and Noise Enforcement Program would primarily be funded through the annual mooring fee as well as increases to the boat rental concession fee. An additional TRPA watercraft will be placed on the water during the 2019 boating season. The MOU with enforcement agencies is anticipated to be in effect by the adoption of the program.

No-Wake & Noise Enforcement Program



No Wake Enforcement Program

- Estimated annual budget $112,000
- One-time cost to develop mobile application
- Advertising and signage for Take Care campaign, other education and signage programs
- Additional TRPA Boat Crew for no wake enforcement

C. Mooring Enforcement Program

The Shoreline Plan provides for a coordinated mooring enforcement among TRPA and agencies in California and Nevada. The permit and registration status of all buoys and other moorings will be tracked, illegal buoys removed, and other illegal moorings otherwise taken out of use. TRPA has an existing MOU with NDSL and the Nevada Department of Fish and Wildlife (NDOW) allowing the agencies to cooperatively identify unauthorized buoys, notify the applicable owner, and remove the buoy if it is deemed unauthorized.

A similar agreement is being executed on the California side of Lake Tahoe, allowing TRPA to work with the California State Lands Commission (CSLC) to identify and remove unauthorized buoys. Under this MOU, TRPA will contact CSLC to share all known information about an unauthorized buoy. The CSLC will determine whether the identified buoy is authorized by the commission. In the event it is unauthorized, the CSLC will prepare a 30-day notice for TRPA to attach to the buoy. If the buoy is deemed abandoned at the end of the 30-day notice period, CSLC can request that TRPA remove the buoy, or contract to have the buoy removed by a third party. The MOU with CSLC must be in place within six months of the Shoreline Plan approval.

In addition to agreements with California and Nevada, better technology will assist in the identification of unauthorized moorings. An RFID tagging system will be used to identify and support the information needed to remove unauthorized moorings. As described in the Mooring section, the tagging system will include a database of all permitted buoys which can be shared with other agencies and local law

enforcement. The RFID tag and database will enable TRPA and other agencies to identify the specific properties and owners associated with specific buoys.

TRPA will continue to investigate unauthorized moorings through complaints and random audits. With the additional TRPA watercraft team, there will be increased mooring enforcement capacity to investigate these complaints.

Funding and Timeline

Total Annual Program Cost: $240,000

The mooring enforcement program would be fully funded by the annual mooring fee. Funds would be used for the RFID tagging system to more efficiently identify unauthorized moorings, personnel and the additional TRPA watercraft crew to administer the program and tag every mooring, and noticing, removal, and storage of unauthorized buoys.

TRPA would begin implementing the program on March 1, 2019. Identification of illegal moorings would begin during the 2019 boating season and continue as TRPA registers more buoys.

Chapter 4. Boater Education Program

The Shoreline Plan includes a strategic outreach campaign to educate the public on recreation and boating safety regulations, including the 600-foot no-wake zone and no-wake buffer zones. Among these strategies, the Shoreline Plan will create a new partnership with the Lake Tahoe Water Trail, a designated water route along the 72-mile shoreline that connects public launch and landing sites to help paddlers have a safe recreation experience while practicing good stewardship. The Lake Tahoe Water Trail develops and distributes educational materials including paddling and kayaking best practices, navigation aids, maps of access points, landmarks, and boating laws. The Shoreline Plan will include approximately $40,000 of funding annually to the Water Trail. Funding will be used to distribute materials at boat rentals (motorized and non-motorized) and at boating access points including marinas and ramps.

Other key components of the outreach and education campaign include:

- *Lake Tahoe Boating Map/Brochure (targeting motorized boaters)*

  TRPA will update its educational materials targeting motorized boaters. This material would include maps of the no-wake zone and high priority/conflict areas in addition to state parks, ramps, and marinas (fueling stations). There will also be information on motorized boating laws and aquatic invasive species prevention.

- *Lake Tahoe Boating App*

  TRPA is partnering with the League to Save Lake Tahoe to develop a Lake Tahoe boating mobile phone application. The Lake Tahoe Boating app will help boaters better navigate around the lake and identify no-wake zones, conflict areas, public access points, marinas ramps, and other landmarks or hazards. The Lake Tahoe boating app will include an interactive map that shows a boater's GPS location relative to the 600-foot no-wake zone allowing boaters not familiar with TRPA boating rules to easily identify or avoid no-wake zones and conflict areas. Important information about boating safety, aquatic invasive species, and emergency contacts will be available as well as the location of key services such as fuel stations and bathrooms. The app will also include viewpoints to help boaters find their way and real-time weather alerts and warnings to notify boaters about changing weather conditions.

- *No Beaching Zones*

  The Shoreline Plan includes a prohibition on beaching boats in spawning habitat. For compliance, spawning habitat has been mapped as "protected no-beaching zones" on boating maps, in on-site signage, and in the Lake Tahoe boating app. TRPA would distribute educational materials to be provided to boaters at aquatic invasive species inspection stations, boat rental concessions, and boat launch facilities. These measures would provide additional protection for fish spawning habitat and would reduce the likelihood that spawning habitat would be degraded because of boat beaching.

- *Take Care Message*

  The basin partnership's Take Care slogan for boaters will be shared at all boat facilities and aquatic invasive species inspection stations for public awareness of no-wake zone regulations before launching.

  Signs with the Take Care message will be installed at marinas, ramps, and aquatic invasive species inspection stations. Stickers with the message will be distributed at boat rental facilities and placed on rental boats. Other promotional materials for boaters could incorporate the Take Care message including key floats, towels, hats, etc.

Draft Take Care Message

- *Concessionaire Training and Compliance Checks*

  Working with and through implementing partners, TRPA will train non-motorized and motorized concessionaires on how to educate renters of boats on boating safety and resource protection laws and best practices. Renters must provide a signature when renting a boat acknowledging that they understand and will follow the TRPA 600-foot no-wake zone and other no-wake buffer zones. Renters can download the Lake Tahoe Boating App (when available) that shows the boat's location relative to the 600-foot no-wake zone. TRPA will spot check concessions throughout the year to ensure compliance with these rules.

- *Increased Education & Training*

  Working with and through implementing partners, aquatic invasive species inspection station personnel, and marina and ramp operators will receive training from TRPA on boating safety and laws.

- *Website Updates*

  TRPA's Current Planning Division will enhance its online resources to include shoreline permitting information and boating regulations.

- *Demarcation Buoys (optional)*

  TRPA and/or public agencies may place limited demarcation buoys to identify the 600-foot no-wake zone in locations that have been identified as high priority conflict areas for no-wake zone education and enforcement.

- *Additional Seasonal Staff (optional)*

  The Shoreline Plan may fund added seasonal TRPA staff or contractors to monitor impacts of the plan, take surveys, and continue to educate people at marinas and boat ramps about the 600-foot no-wake zone.

Funding and Timeline

Total Annual Program Cost: $34,000 - $75,000

The Education and Outreach Program would be funded by the annual mooring fee and increases to the aquatic invasive species boat sticker fee. Educational materials as well as training and compliance checks for concessionaires will be rolled out during the 2019 boating season. This will be done primarily by TRPA in conjunction with the basinwide partnership's Take Care Campaign for certain educational components.

Chapter 5. Environmental Monitoring

Consistent with TRPA's mission to preserve, restore, and enhance the unique natural and human environment of the Lake Tahoe Region, the Shoreline Plan makes a commitment to continuously monitor the Plan's potential environmental impacts. TRPA currently partners with local, state, and federal agencies and organizations around the lake to collect data and provide knowledge for sound stewardship and decision making. A full list of current noise, water quality, and air quality monitoring programs in the Basin can be found in Attachment A.

The purpose of this section is to provide an overview of the current and proposed environmental monitoring through the Shoreline Plan, which includes enhancements to existing noise, nearshore turbidity, and recreation monitoring programs.

A. Noise Monitoring

TRPA currently monitors noise along the shoreline of Lake Tahoe, in all local Plan Areas in the Basin, and along major highways. Details on TRPA's shoreline noise monitoring program is shown in Table 7.

TABLE 7. TRPA LAKE TAHOE SHORELINE NOISE MONITORING	
Investigator	TRPA
Years	2000-Present
Funders	TRPA
Description	TRPA monitors noise from motorized watercraft along Lake Tahoe's shoreline. Noise from boats along Lake Tahoe's shoreline is monitored to ensure noise is not damaging to the public's enjoyment of the lake and does not damage wildlife. Under TRPA code, noise from boats is not allowed to exceed 75 dB for a "one-time event" (a boat passing by, for example).
Constituents Measured	TRPA uses a single-event noise threshold to assess whether noise levels are being exceeded in the shoreline. All noise events over 75 dB are automatically recorded, and then listened to by a noise technician to differentiate between noise from boats and non-boats (waves, airplanes, etc.). Noise monitors are generally placed in the shoreline for 2+ weeks during peak noise periods (July 4th to Labor Day).
Monitoring location(s)	TRPA monitors 10 shoreline locations all around the lake at least once every 2 years.

Proposed Noise Monitoring Program Enhancements

The Shoreline Plan will enhance TRPA's existing Shoreline Noise Monitoring Program to include necessary staff and equipment. The plan would upgrade TRPA's current monitoring equipment to include noise and photo identification (not now available) to allow evidence of the source of noise exceedances at locations of concern such as Rubicon Point, allowing identification of vessels that may be repeatedly causing excessive noise. Monitoring equipment can be moved or repositioned in locations based on response to complaints or certain activities.

Upgraded equipment would be purchased during the 2019 boating season. The additional proposed monitoring would have an estimated annual cost of $30,000, funded by the annual mooring fee and increases to the boat sticker fee.

B. Water Quality Monitoring

1. Nearshore Turbidity

Boating activity in shallow water has the potential to re-suspend sediment from the lake bottom and increase water turbidity. Sediment resuspension is unlikely to impact mid-lake clarity but could impact nearshore clarity for short periods of time. Currently, UC Davis and the Tahoe Environmental Research Center (TERC) provide continuous nearshore turbidity monitoring at 11 locations around Lake Tahoe, with the goal to install at least 10 additional stations as funding becomes available. The Desert Research Institute is also working to identify effective methods for measuring turbidity in the nearshore. Table 8 and Table 9 include details on current nearshore monitoring programs.

TABLE 8. NEARSHORE MONITORING NETWORK	
Investigator	Public/ private partnership
Years	2015-Current
Funders	Public/ private partnership, Lahontan
Description	There are 11 continuous monitors deployed in Lake Tahoe's nearshore which primarily focus on factors contributing to nearshore clarity decline.
Constituents Measured	Turbidity, chlorophyll, dissolved oxygen, temperature, electrical conductivity, and wave height

TABLE 9. PILOT IMPLEMENTATION OF LAKE TAHOE NEARSHORE MONITORING FRAMEWORK	
Investigator	Desert Research Institute (DRI)
Funders	Nevada Division of State Lands (NDSL)
Years	2017-Current
Description	DRI measures turbidity in the nearshore of Lake Tahoe in this pilot program. The focus of this effort is to develop and refine methods for data collection.
Constituents Measured	Turbidity, light transmissivity, chlorophyll

Proposed Nearshore Turbidity Monitoring Program Enhancements

The 600-foot no-wake zone reduces boat speed in most of the shallow areas of the lake which limits the potential impact of turbidity. However, there are some areas of the shallow nearshore that extend beyond the no-wake zone. The proposed monitoring is intended to compare turbidity in those shallow areas outside the no-wake zone with turbidity in areas of the nearshore that are governed by the no-wake zone. The data could be used in conjunction with other nearshore sensors to assess whether or to what extent boating contributes to exceedances of the nearshore turbidity standard, and to provide additional information on drivers of nearshore turbidity.

TRPA will partner with UC Davis and TERC to fund the installation of two turbidity monitors and cameras in 2019. This includes a one-time cost estimated at $130,000, to be paid from fees collected in the 2008-2010 shorezone program.

2. Monitoring of Gasoline Constituents

Elevated levels of hydrocarbons or other contaminants in Lake Tahoe could result from increased boating activity and boating facilities. Gasoline and diesel fuels contain hydrocarbon contaminants, including the group of volatile organic compounds collectively known as BTEX (Benzene, Toluene, Ethylbenzene, and Xylenes). 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.

The EIS analyzed BTEX and PAH data collected during a two-year period from 2009-2001 to predict boat emissions in the EIS. Given the rapid rate of biodegradation of hydrocarbon compounds, the low levels measured in the lake, and current TRPA regulations pertaining to control of discharges of contaminants from boating facilities, the increased amount of boating activity under the Shoreline Plan would have a less than significant impact on water quality. In order to confirm the results of previous data collection and ensure the data used in the EIS analysis is sufficient, TRPA will partner with UC Davis to monitor BTEX and PAH for one season during the most popular boating days at the more popular locations, beginning in 2019. This monitoring includes a one-time cost estimated at $10,000, to be paid from fees collected in the 2008-2010 shorezone program.

C. Air Quality Monitoring

1. Monitoring of Ozone Precursors

Based on estimates of boating activity and emissions modeling and analysis, the EIS found that implementation of the Shoreline Plan would not result in the long-term increase in emissions of ozone precursors and therefore would not result in the deterioration of ambient air quality or the exceedance of applicable air quality standards. This is because the emission rates for recreational watercraft on Lake Tahoe would decrease substantially over the planning horizon of the Shoreline Plan and any increase in boating activity and associated roadway vehicle travel would be more than offset by fleet turnover and the increasingly stringent California and federal emissions standards for recreational watercraft.

In order to confirm the results of previous data collection and ensure the data used in the EIS analysis is sufficient, TRPA will partner with the Desert Research Institute for one season to monitor ozone precursors during the most popular boating days at a mid-lake buoy, beginning in 2019. This monitoring includes a one-time cost estimated at $5,000, to be paid from fees collected in the 2008-2010 shorezone program.

D. Recreation Monitoring

In response to public concern of recreation impacts, the Shoreline Plan creates an opportunity for TRPA to further analyze levels of use at recreation facilities, recreation conflicts between motorized and non-motorized boaters, and general access to recreation on Lake Tahoe.

TRPA's recreation threshold protects the qualities of undeveloped shorezone and maintains a fair share of recreational capacity for the public. TRPA evaluates compliance with thresholds every four years, measuring both recreation quality and experience and access to recreational opportunities as well as fair share distribution of recreation capacity in the Tahoe Basin. To measure these, TRPA currently partners with multiple local and federal agencies and organizations to collect recreation surveys about user satisfaction, recreation experiences, and facilities.

The Shoreline Plan includes visitor capacity surveys and expanded recreation surveys including questions relating to visitor experience, user conflicts, and motorized/non-motorized interactions, among others. The additional information collected would point to potential problem sites with problems that may require added management actions, such as additional enforcement or adaptive regulation such as an expanded no-wake zone. Data collected will also help inform TRPA's Recreation Threshold Evaluation and inform TRPA's Sustainable Recreation Program.

The data from the Shoreline Plan's enhanced recreation monitoring would be directed to and coordinated with the threshold evaluation reporting and the ongoing development of the sustainable recreation program. The enhanced

recreation monitoring would begin during the 2019 boating season. The estimated annual cost of this program is $15,000 and would be funded by the annual mooring fee and increases to the boat sticker fee.

E. Boat Use Data Collection

The Shoreline Plan includes boating and boat use surveys at the watercraft inspection stations, boat ramps, marinas and on the lake to assure that boating assumptions used in the EIS are valid. Survey components would include collecting boat engine hours, boat manufacture year and type, boat engine rating, buoy occupancy rate, and boat ramp launch data.

F. Adaptive Management

The Shoreline Plan will implement an adaptive management strategy linking monitoring of boating levels and emissions and the number of new mooring permits issued to assure that the assumptions made in the EIS emissions modeling were not unreasonable and no significant impacts will occur.

Chapter 6. Aquatic Invasive Species Control

TRPA invests significant resources in the collaborative effort to prevent and control aquatic invasive species regionally and inter-regionally through the Lake Tahoe Aquatic Invasive Species Management Plan. The Watercraft Inspection Program has been highly successful in ensuring no new aquatic invasive species enter the lake. Under the Management Plan, TRPA also partners with multiple agencies in the basin to control invasive populations that have already been introduced. The prevention portion of the program (boat inspections) costs about $1.5 million annually, funded by both public and private sources, while the control portion of the program expended an estimated $774,000 in 2017 (similar expenditures are expected for 2018), also a mix of mostly public but also private monies.

In addition to the existing funding for aquatic invasive species, the Shoreline Plan establishes an increment of new funding for the aquatic invasive species control program through an increase in the aquatic invasive species boat sticker fee. The added increment will be used for early detection and rapid response of aquatic invasive species as well as longer-term projects that reduce the abundance and distribution of existing aquatic invasive species in Lake Tahoe, including Asian clams, Eurasian watermilfoil, curly-leaf pondweed, coontail, among others. The new funding increment would allow for approximately three added acres of aquatic invasive species control treatment in Lake Tahoe annually and is needed to address the increased risk of spread of AIS due to increased boating under the Shoreline Plan.

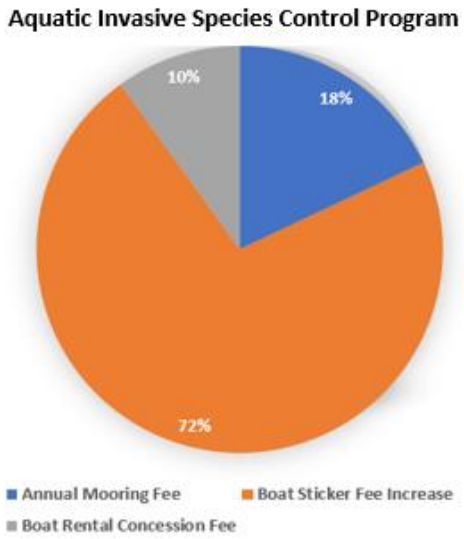
Projects will be prioritized by the multi-stakeholder Lake Tahoe Aquatic Invasive Species Coordinating Committee, informed by the Lake Tahoe Aquatic Invasive Species Implementation Plan, the Eyes on the Lake citizen monitoring program, and future monitoring results. Potential treatments that could be used include installation of gas permeable benthic barriers that block photosynthesis from occurring (rubber bottom barriers), diver assisted suction, and diver hand pulling to treat invasive aquatic plants. For Asian clam treatments, funds would support the installation of gas impermeable benthic barriers that suffocate the clams. Funds may also be used to control invasive fish populations through electrofishing.

TRPA will continue to support the development of AIS-resistant boats within the watercraft industry and community of Lake Tahoe. AIS resistant technologies include ballast tank filters, heated ballast water intakes in engines, and better draining ballast tanks. Some of these innovations are not yet commercially viable but may be by the full buildout of the Shoreline Plan.

Funding and Timeline

Total Annual Program Cost: $150,000

The Aquatic invasive species Control Program associated with the Shoreline Plan would be funded primarily through a $12 increase in aquatic invasive species boat sticker fees as well as annual mooring and boat rental concession fees. TRPA anticipates collecting funds from these sources as the permitting program is implemented, beginning in March 2019.



Chapter 7. Enhanced Watercraft Inspection Program

The Watercraft Inspection Program aims to prevent the introduction of aquatic invasive species before boats are launched into Lake Tahoe while also providing public education of the program. The Watercraft Inspection Program is an important component – prevention of new species introduction -- of the larger aquatic invasive species program described above. Boat inspectors are responsible for checking pumps, engines, bilge pads, and raw water systems for evidence of new invaders, and decontaminating boats to prevent introduction.

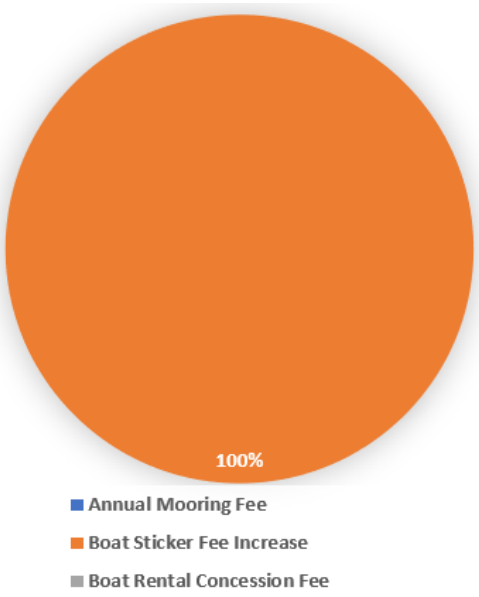
Under the Shoreline Plan, inspectors would expand their check to include watercraft exhaust type and proper sewage disposal. In addition, the Shoreline Plan would prohibit vessels that have an exhaust system that discharges directly to the air and generates noise that exceeds TRPA or applicable state standards from operating on Lake Tahoe. This regulation is consistent with Nevada State regulation (NRS 488.195) and State of California vehicle code (CA Harbors and Navigation Code, Section 654 A), which requires that vessels be equipped with a permanently installed, constantly operating muffler system that effectively prevents exceedances of the maximum noise levels described above. Boats that are likely to exceed noise standards will be identified at watercraft inspection stations and would be targeted for outreach through the Watercraft Inspection Program as well as the TRPA watercraft crew. See also Chapter 3.B, Noise Enforcement.

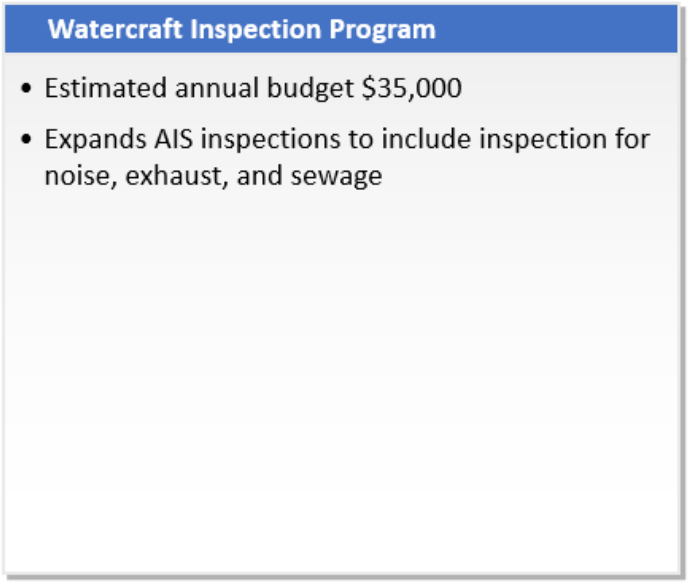
Funding and Timeline

Total Annual Program Cost: $35,000

The enhanced watercraft inspections program would be fully funded through the $12 increase in the boat sticker fee. Program implementation would begin in the 2019 boating season and would be conducted by TRPA through its contract with the Tahoe Resource Conservation District.

Enhanced Watercraft Inspection Program





Chapter 8. Greenhouse Gas Emissions Reduction Plan

The environmental impact statement calls for a Greenhouse Gas Emissions Reduction Plan within 12 months of adoption that will apply to new construction in the shorezone. TRPA will coordinate the implementation of this plan through TRPA-approved plans, project permitting, or projects/programs developed in coordination with local or other governments addressing best construction practices. Until the Greenhouse Gas Emissions Reduction Plan is adopted, TRPA will continue its existing practice to require site specific mitigation measures developed for individual projects.

The plan will require implementation of measures to reduce greenhouse gas emissions generated by three main activities in the shorezone:

- Construction in the shorezone and associated upland areas
- Motor vehicles associated with watercraft facilities
- Operation of recreational watercraft

The Greenhouse Gas Emissions Reduction Plan will include measures to reduce emissions generated by demolition and construction activity in the shorezone and in associated upland areas. These measures may include requirements for cleaner diesel-powered engines (Tier 4 emission standards or above), the use of cleaner diesel fuel or electric powered construction equipment, and/or purchasing mitigation credits to offset greenhouse gas emissions.

In order to minimize greenhouse gas emissions associated with motor vehicle trips to watercraft facilities, the plan will include a measure requiring electric charging stations and secure bike facilities be installed at parking lots that serve public piers and marinas.

Lastly, measures intended to reduce emissions from operation of recreational watercraft may include requirements or incentives for marinas to use electric rental boats, install electric boat charging stations, and install solar panels on marina buildings. The Shoreline Plan also includes a phased approach to permitting new piers and moorings that will further control the increased amount of emissions from boating each year.

Chapter 9. Fees

A. Shoreline Program Fees

The Shoreline Plan programs in Chapter two through nine are funded by fees collected from boating related structures and activities. Environmental impacts from the program are either related to the construction or placement of shoreline structures or the boating use associated with these structures. When determining which uses would be subject to fees and how to collect the fees, the Shoreline Steering Committee recommended the following principles:

- The amount of fees collected should be proportional to the impacts
- The responsibility for fees should be shared across boaters that launch, moor and use shoreline facilities being permitted under the plan
- Fee programs must be feasible to implement and administer

Fees would be collected from users at different administration points: through annual mooring registration, through the boat sticker fee collected at the aquatic invasive species boat inspection stations, and through a boat rental concession fee. Fees collected from the Shoreline Plan would pay for the following:

1. Essential program elements needed to implement the Shoreline Plan and subsequent permitting programs; and
2. Programs identified in the environmental analysis to mitigate environmental impacts associated with the plan.

A breakdown of each fee source, frequency and distribution is shown below in Table 10.

B. Shorezone Structure Mitigation Fees

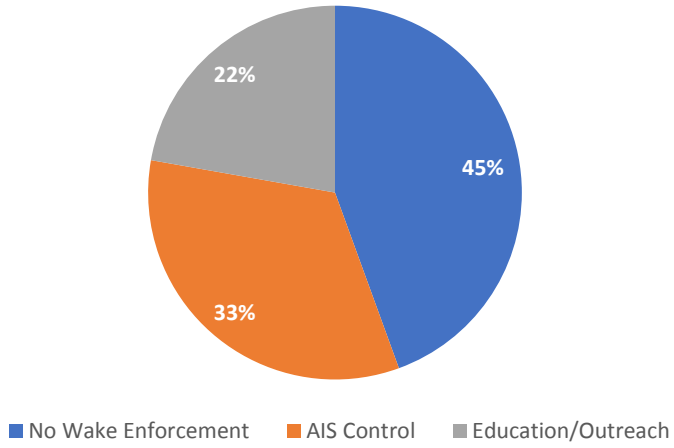
The environmental threshold for fisheries includes a management standard requiring restoration of fish habitat in Lake Tahoe as well as a standard for nondegradation of fish habitat in Lake Tahoe. To assist in providing funds for restoration of fish habitat and to mitigate any possible degradation, TRPA currently collects mitigation fees for the new construction and expansion of piers, boat ramps, and marinas, as set forth in proposed TRPA Rules of Procedure Section 10.8.5. TRPA is proposing an increase to those existing mitigation fees to provide additional funding for projects that increase public access to the shoreline, with an emphasis on projects that include serving lower income populations.

Table 10. Shoreline Program Fee Overview[1]					
Fee		**Fee Amount**	**Nexus**	**Fee Frequency**	**Fee Distributed to:**
Mooring Registration Fee	Moorings (Buoys, Lifts/Slips)	$43	• Need for mooring enforcement program • Boats on moorings create boat trips	Per mooring/year	• Mooring enforcement • No-wake zone enforcement • Aquatic invasive species control • Monitoring • Education/outreach
Buoy Scenic Mitigation Fee	Buoys	$47 ($90 total annual fee for buoys)	• Boats on buoys adds an average of 83 sq. ft. visual mass	Per buoy/year	• Scenic mitigation projects (SQIP)
Boat Rental Concession Fee[2]	Tier 1 (CARB 3+ Star Rating)	$75	• Average rental boat generates about 4 times more trips than the average moored boat • Majority of renters are visitors from outside the basin and do not know about the 600-foot no-wake zone • Rentals can contribute to spread of aquatic invasive species • Program helps fund outreach campaign to educate visitors on best practices and ordinances	Per rental boat/year	• Aquatic invasive species control • No-wake zone enforcement • Education/outreach
	Tier 2 (Lower/No CARB Star Rating)	$150		Per rental boat/year	
Boat Sticker Fee Increase		+$12	• Boat sticker fees primarily fund aquatic invasive species control • & inspection costs • Small portion of fee will fund aquatic invasive species monitoring	Per sticker/year	• Aquatic invasive species control • Watercraft inspection costs • Monitoring

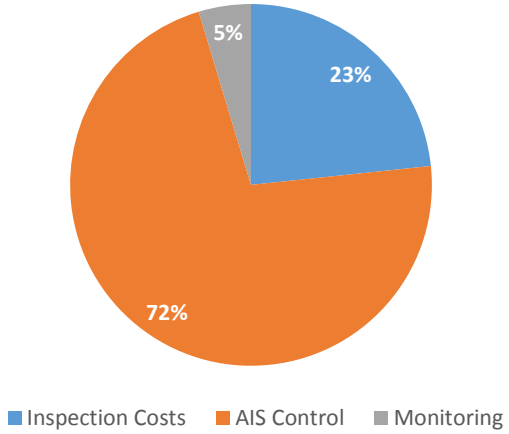
[1] Fees listed are TRPA fees only. Additional charges would be collected for the use and lease of state lands from CA State Lands Commission or NV Division of State Lands for placement of mooring structures.

[2] Boat Rental Concession Fees would be assessed in addition to the Mooring Registration Fee and/or the Buoy Scenic Mitigation Fee if the rental boat is stored in on a mooring.

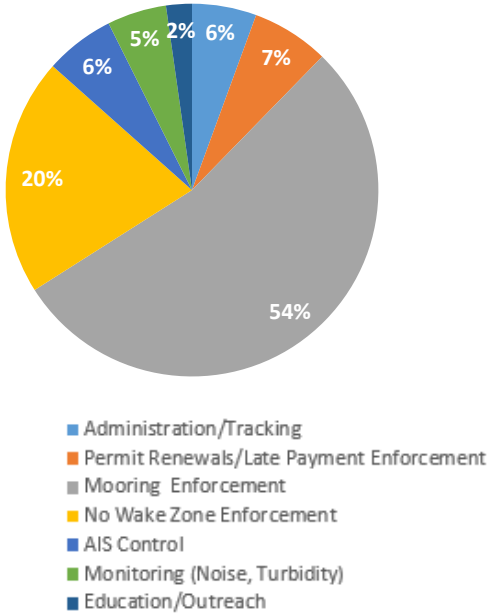
Boat Rental Concession Fee



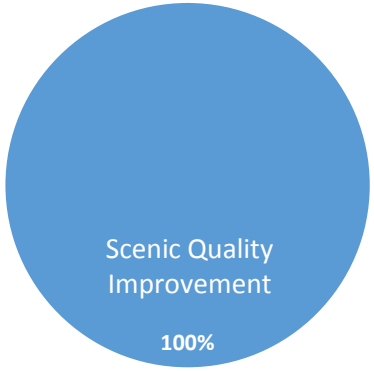
Boat Sticker Fee Increase



Annual Mooring Fee



Buoy Scenic Fee



Attachment A. Existing Environmental Monitoring Programs

Noise Monitoring Programs

Project:	TRPA Plan Area Noise Monitoring
Investigator	TRPA
Years	1982-Present
Funders	TRPA
Description	TRPA monitors background noise levels in all local Plan Areas in the Tahoe Basin to ensure noise levels are not disturbing people and wildlife, and to maintain the unique characteristics of the Basin. Each local Plan Area has its own allowable noise level in TRPA's thresholds, with maximum average 24-hour allowable noise levels ranging from 45 decibels (dB) in wilderness areas to 65 dB in industrial areas.
Constituents Measured	TRPA uses a Community Noise Equivalent Level (CNEL) measure to assess whether noise levels are being exceeded in Plan Areas. The CNEL averages decibel levels over a 24-hour period, with excess noise late at night and early in the morning being weighted greater due to humans and wildlife being more sensitive to noise at these times. Noise monitors are generally placed in Plan Areas for 1-2 weeks during peak noise periods.
Monitoring location(s)	TRPA monitors 35 Area Plans per year, and re-visits each site once every 4 years (140 total local Plan Areas are monitored).

Project:	TRPA Highway Noise Monitoring
Investigator	TRPA
Years	2001-Present
Funders	TRPA
Description	TRPA monitors background noise levels along all major highways in the Tahoe Basin including Highways 50, 28, 431, 267, 89, and 207. Highway noise is monitored to ensure local Plan Areas are not overly impacted by highway noise. Each highway has its own allowable noise level in TRPA's thresholds at 300 feet from the highway edge, with maximum average 24-hour allowable noise levels ranging from 55 decibels (dB) on more rural highways (Mt. Rose highway) to 65 dB on major highways (Hwy 50 in South Lake Tahoe).
Constituents Measured	TRPA uses a Community Noise Equivalent Level (CNEL) measure to assess whether noise levels are being exceeded along highways. The CNEL averages decibel levels over a 24-hour period, with excess noise late at night and early in the morning being weighted greater due to humans and wildlife being more sensitive to noise at these times. Noise monitors are generally placed along highways for 1-2 weeks during peak noise periods.
Monitoring location(s)	TRPA monitors 7 to 8 highway locations per year, and re-visits each site once every 4 years (30 total highway locations monitored; multiple locations along each highway).

Water Quality Monitoring

Project:	Secchi Depth and Pelagic Monitoring
Investigator	UC-Davis
Years	1968-Present
Funders	TRPA / UC-Davis
Description	UC Davis collects water quality data mostly focused on the clarity and nutrients in pelagic Lake Tahoe.
Constituents Measured	Secchi Depth, VEC, SEC, Dissolved Oxygen, Nitrate, Soluble Phosphorus, Chlr-A, fluorescence, primary productivity, temperature
Waterbody	Lake Tahoe

Project:	Atmospheric Deposition into Lake Tahoe
Investigator	UC-Davis
Years	1968-Present
Funders	TRPA / UC-Davis
Description	UC Davis measures the direct atmospheric deposition of nutrients and particulate matter that reduce the clarity of Lake Tahoe.
Constituents Measured	Nutrients and particulate matter from atmospheric deposition into Lake Tahoe.
Waterbody	Lake Tahoe

Project:	Periphyton/ Phytoplankton Species Composition and Algal Growth Potential/Nearshore network
Investigator	UC-Davis
Years	2000-Present
Funders	Lahontan /UC-Davis
Description	UC Davis measures attached algae all around the nearshore of Lake Tahoe to determine changes in nutrient loading and eutrophication, as well as lake trophic status.
Constituents Measured	Attached algae (periphyton)
Waterbody	Lake Tahoe

Project:	Regional Stormwater Monitoring Program
Investigator	Tahoe – Resource Conservation District (RCD)
Years	2001-2011 (UCD) 2013-present Tahoe RCD
Funders	SNPLMA, State Water Board, EDC, CSLT, Placer, Washoe, Douglas, NDOT, Caltrans
Description	The RSWMP program measures sediments load and nutrients at selected stormwater discharge locations, some in tributaries to Lake Tahoe and some that flow into Lake Tahoe itself.
Constituents Measured	Suspended sediment and nutrients
Waterbody	Stormwater basins

Project:	Lake Tahoe Interagency monitoring Program LTIMP
Investigator	United States Geological Survey (USFS)
Years	2000 – current
Funders	USGS/TRPA/Lahontan/CTC
Description	LTIMP measures sediment and nutrients in 7 of the largest tributaries to Lake Tahoe.
Constituents Measured	Sediment load, water temperature, nutrient load
Waterbody	Tributaries

Project:	Stream Bioassessment
Investigator	TRPA, Lahontan Water Board, Nevada Department of Environmental Protection
Years	2009-current
Funders	TRPA
Description	TRPA monitors stream habitat and benthic macroinvertebrates in tributaries to Lake Tahoe to determine changes in stream habitat and water quality.
Constituents Measured	Benthic macroinvertebrates (indicators of water quality) and stream habitat (fish habitat)
Waterbody	Tributaries

Project:	Community Structure Pilot Monitoring
Investigator	University of Nevada Reno (UNR)
Funders	Lahontan, Nevada Division Environmental Protection (NDEP), TRPA
Years	2017-current
Description	This pilot program examined plants, fish, crayfish and macro-invertebrates in the Lake Tahoe nearshore, and the preliminary report gives the Lahontan Water Board and its partners the first opportunity to view the health of these organisms in one unified report.
Constituents Measured	Aquatic vertebrates and macroinvertebrates
Waterbody	Lake Tahoe

Project:	Pilot Metaphyton Monitoring
Investigator	UC-Davis
Funders	Nevada Division of State Lands (NDSL)
Years	2017-current
Description	Metaphyton is algae that are neither attached nor planktonic. Along with periphyton, it is cited as a nuisance in the nearshore. UCD-TERC is conducting a pilot monitoring effort focusing on developing methods to estimate the distribution and biomass of metaphython washing up on three beaches; Round Hill Pines Beach, NV, El Dorado Beach, CA and Regan Beach, CA.
Constituents Measured	Unattached algae (metaphyton)
Waterbody	Lake Tahoe

Project:	Nearshore Human Health Monitoring
Investigator	Nevada Tahoe Conservation District, Tahoe Resource Conservation District (RCD), Desert Research Institute (DRI)
Funders	Lahontan
Years	2018-current
Description	NTCD will conduct periodic monitoring of harmful microorganisms and toxins that affect human health in Lake Tahoe's nearshore.
Constituents Measured	Microorganisms and toxins such as coliform and cyanotoxins.
Waterbody	Lake Tahoe

Project:	Lake Tahoe Drinking Water Monitoring (Lake Tahoe surface water used as drinking water)
Investigator	Lake Tahoe Water Suppliers Association
Years	Current
Funders	Lake Tahoe Water Suppliers Association
Description	All water suppliers in Lake Tahoe that collect drinking water from Lake Tahoe (10 suppliers serving 27,000 people) itself are required to monitor water quality at the drinking water intakes in Lake Tahoe. This monitoring does not apply to Lake Tahoe's largest drinking water supplies, South Lake Tahoe Public Utility District, because they get their water from wells, not Lake Tahoe surface water.
Constituents Measured	Turbidity, arsenic, and dozens of bacterial constituents. Herbicides are not measured at these intakes which is a concern if the Water Suppliers Association if herbicides are used to control AIS.
Waterbody	Lake Tahoe

Project:	Incline Village Beaches Water Quality Monitoring
Investigator	Incline Village General Improvement District
Years	Current
Funders	Incline Village General Improvement District
Description	IVGID monitors water quality at tributaries and in the nearshore of Lake Tahoe in and around its' recreational beaches.
Constituents Measured	Temperature, turbidity, total coliform, fecal coliform, total dissolved solids, and dissolved oxygen
Waterbody	Lake Tahoe

Project:	Lake Tahoe "Clean Marina" Water Quality Monitoring
Investigator	Lahontan Water Quality Control Board and private
Years	All
Funders	Lahontan Water Quality Control Board and private
Description	Lahontan requires Lake Tahoe marinas on the California side to monitor discharge into the lake before and after storm events and in the surface waters of Lake Tahoe.
Constituents Measured	Stormwater: Total Nitrogen, Total Phosphorous, Iron, Turbidity, Oil and Grease, pH, Total Suspended Solids, Hardness, Aluminum, Copper, Lead, and Zinc Surface water: Total nitrogen, total phosphorus, turbidity, aluminum, copper, iron, lead, mercury, zinc, pH and hardness. Additional four samples between July 1 and August 1 of each year within five feet of the fueling docks for total petroleum hydrocarbon (gasoline and diesel), and (combined) oil and grease. Five samples must be taken between July 1 and August 1 of each year for bacteria (fecal and E. coli).
Waterbody	Lake Tahoe

Project:	Lake Tahoe Tributary Algae Monitoring
Investigator	Lahontan Water Quality Control Board
Years	2000-current
Funders	Lahontan Water Quality Control Board
Description	The Lahontan Water Board occasionally monitors algal growth in tributaries to Lake Tahoe, as well as harmful bacteria such as fecal coliform if a problem is suspected.
Constituents Measured	Algae, fecal coliform
Waterbody	Tributaries

Project:	Nevada Department of Environmental Protection Tributary Water Quality Monitoring
Investigator	Nevada Division Environmental Protection (NDEP)
Years	1992-current
Funders	NDEP
Description	NDEP samples tributaries on the Nevada side of Lake Tahoe on a regular basis for bacteria, nutrients, as well as some biological elements such as dissolved oxygen.
Constituents Measured	Measurements are taken on chloride, nitrate, nitrite, phosphorus, sulfate, hardness, total dissolved solids (TDS), alkalinity, total coliform, fecal coliform, and Escherichia coli (E. coli), temperature, pH, and dissolved oxygen. Qualitative information is also collected on substances attributable to domestic or industrial waste or other controllable sources including settleable solids that form bottom or sludge deposits; floating debris, oil, grease, scum, and other floating materials; odor, color, turbidity, or other conditions.
Waterbody	Tributaries

Table 5. Nearshore Monitoring Network	
Investigator	Public/ private partnership
Years	2015-current
Funders	Public/ private partnership, Lahontan
Description	There are 11 continuous monitors deployed in Lake Tahoe's nearshore which mostly focus on factors contributing to nearshore clarity decline.
Constituents Measured	turbidity, chlorophyll, DO, temp, EC, and wave height

Table 6. Pilot Implementation of Lake Tahoe Nearshore Monitoring Framework	
Investigator	Desert Research Institute (DRI)
Funders	Nevada Division of State Lands (NDSL)
Years	2017-current
Description	In this pilot program, DRI measures turbidity in the nearshore of Lake Tahoe. The focus of this effort is to develop and refine methods for data collection.
Constituents Measured	Turbidity, light transmissivity, chlorophyll

Air Quality Monitoring Programs

Project:	Tahoe Ambient Air Monitoring Program
Investigator	Desert Research Institute (DRI) / Tahoe Regional Planning Agency / UC Davis Nuclear Laboratory / US Forest Service
Years	2011-Present
Funders	TRPA, US Forest Service
Brief Description	Baseline ambient air quality conditions and track air quality trends.
Constituents Measured	Ozone (O3), Oxides of Nitrogen (NO2), Carbon Monoxide (CO), Particulate Matter (PM 2.5 and PM 10)
Monitoring location(s)	There are 3 locations operated jointly by TRPA, DRI, and UC Davis, as well as one station that is operated with the US Forest Service's help: • Stateline, NV station (TRPA / DRI): The station at Stateline monitors CO, NO2, O3, and PM 2.5. • DL Bliss State Park, CA station (USFS / TRPA / DRI / UC Davis): The station on the west shore of Lake Tahoe monitors O3, PM2.5, PM 10, and visibility. It is also part of a national network of monitors (IMPROVE network) that analyze visibility at the nation's most treasured visual resources, most of which are national parks. • Lake Tahoe Community College, CA station (TRPA / LTCC / DRI / UC Davis): This station in South Lake Tahoe monitors PM 2.5, PM 10, O3, and visibility. It is also part of a national network of monitors (IMPROVE network) that analyze visibility at the nation's most treasured visual resources, most of which are national parks.

Project:	**Local Jurisdiction Air Quality Monitoring**
Investigator	California Air Resources Board (CARB), Washoe County, Placer County
Years	2011-Present
Funders	California Air Resources Board, Washoe County, Placer County, TRPA
Brief Description	Baseline ambient air quality conditions and track air quality trends.
Constituents Measured	Ozone (O3), Particulate Matter (PM 2.5 and PM 10)
Monitoring location(s)	There are 3 locations operated by local jurisdictions in the Lake Tahoe Basin: • Incline Village, NV station (Washoe County): This site monitors ozone (O3). • Tahoe City, CA station (Placer County / TRPA): This site monitors O3 and PM 2.5. • South Lake Tahoe, CA station (CARB): This site monitors PM10.

		Pollutant					
Monitoring Site	**Site Administrator (s)**	**O_3**	**CO**	**NO_x**	**$PM_{2.5}$**	**PM_{10}**	**Visibility**
Incline Village, NV (northeast)	Washoe County	X					
Sandy Way, South Lake Tahoe, CA	CARB					X	
Tahoe City, CA (northwest)	Placer County	X			X		
Stateline (TRPA office), NV (Southeast)	TRPA/DRI	X	X	X	X		
Bliss State Park, CA (west)	TRPA/DRI/USFS/UC DAVIS	X			X	X	X
Lake Tahoe Community College, CA (south)	TRPA/DRI/UC DAVIS	X			X	X	X