



# Lake Tahoe Shoreline Plan

## 06 Policy Topic: Low Lake Level Adaptation

07.20.2016

## Brief Description

In 2015, Lake Tahoe dropped to its lowest level since 1991. Studies on the impacts of climate change in the Lake Tahoe region predict warming temperatures and less precipitation in the coming years, an indication that low lake levels may persist. Prolonged low lake levels have resulted in several issues relating to access to and use of shoreline waters.

Lake access and recreational uses are limited where piers, buoys, and boat ramps do not provide adequate access or moorage depths during low water conditions. Shallow water conditions at public boat ramps has limited usage of some ramps. This creates crowding, lines, and parking constraints at facilities that can operate during these conditions.

Shallow water conditions have also constrained boat use and navigation at existing marinas. Marina operators have expressed an interest in new dredging when lake levels are low to better accommodate boating access. Most marinas already conduct maintenance dredging on an as-needed basis.

Finally, recent low lake levels have limited emergency response access because boating facilities are unavailable due to low water levels.

## Action Items

Action Item	Date	Name
Identify Issues	Done June 2016	Steering Committee
Track Army Corps Regional Permit for routine minimally impacts projects on Lake Tahoe	7/2016	Brandy McMahon, TRPA
Identify science + lake level range or scenario to inform policy decisions	8/2016	JFF Committee
Work with Cal Dept. of Fish & Wildlife to confirm benefit of two sets of buoy blocks as preferable to moving one set and disturbing lakebed	8/1/2016	Tiffany Good, TRPA
Explore 401 permit approval for certain shoreline activities	9/1/2016	Bob Larson, Lahontan + Shoreline Review Committee

## Policy Issues to Consider in the Shoreline Plan

### Usage

Different standards may be appropriate for single-use, multiple-use, or public-use structures. The existing code provides flexibility for pier extension for multiple-use piers, but not for single-use piers. The intent of the existing code provision is to limit the cumulative scenic effects of pier extensions. However, because of this provision, many single-use piers are not functional at low lake levels.

One steering committee member raised the question as to whether creating the pathway for boaters to rely on marinas during low lake level years might be preferable to accommodating new individual moorings and buoys, recognizing that this choice would necessitate a set of policies that would support marinas coming up-to-date and being able to accommodate more tenants. Another committee member suggested that homeowners associations may warrant a similar consideration.

### Duration

Structure adaptations to address low-lake levels can occur as either permanent changes or changes on a temporary basis during low lake levels. Permanent changes could be accommodated by altering development standards for pier length and buoy location to allow for permanent structure placement that is more conducive to low lake levels.

Navigational safety and environmental considerations could emerge as part of permanent relocation. Relocating permanently might reduce the environmental impact and would likely make enforcement easier. However, California Department of Fish and Wildlife (CDFW) has expressed concern about disturbance to fish habitat with frequent relocation of anchor blocks. CDFW issues permits for new and relocated anchors.

Alternatively, temporary modifications to pier length and buoy location could be allowed to accommodate low lake levels when needed. Temporary extensions for multiple-use piers are presently allowed where lake levels prevent or significantly reduce access to open water recreation. Where buoys are relocated, permanent anchor blocks may help to limit frequent disturbance. If these temporary modifications are allowed, lake level criteria that would trigger allowing or prohibiting the use of temporary modifications should be reviewed.

## Effects on Environmental Functions and Values

Dredging can increase local turbidity, which may pose water quality concerns for the ultra-oligotrophic condition of Lake Tahoe. Turbidity control measures, such as sediment curtains, may be less effective in windy conditions. In addition to dredging, prop scour caused by boat usage in shallow water can also generate turbidity. In high-traffic areas, such as public boat ramps, the duration of water quality impacts associated with boat use may pose an ongoing impact to water quality conditions. The tradeoffs between ongoing prop scour and infrequent, but larger-scale disturbance associated with dredging should be considered. The potential effects of repeated disturbance associated with maintenance or follow-up dredging should also be considered when considering allowed dredging depths, areas, and frequency.

In some cases, pier extension or buoy relocation may provide potential alternatives to dredging. Pier float extensions and buoys can potentially increase localized turbidity if lake levels are low enough that a portion of pier floats or buoy chains rest on or drag over the substrate.

## Effects on Navigation

Low lake-level adaptation measures are generally intended to improve access and navigation in shallow waters. However, extending piers or buoys to accommodate low lake levels (buoys require a 10-foot clearance) raises the potential for those features to become navigation hazards.

## Effects on Scenic Character

Extension of piers and relocation of buoys would alter the existing scenic character of the Lake Tahoe Shoreline. In order to moderate the cumulative effect of these piers and buoys, consider whether to establish a limit to the number and/or type of modifications permitted.

## Dredging Standards

Dredging is typically characterized in two ways: maintenance dredging and “new dredging.” Maintenance dredging refers to deepening the lakebed to accommodate boating or other access in areas that are periodically dredged. New dredging references dredging in areas that have not previously been dredged.

TRPA’s current standard for “new dredging” requires TRPA to find that any “new dredging” be “beneficial to existing shorezone conditions or water quality and clarity,” not just neutral. As a result, the TRPA Governing Board has not approved “new dredging” since 1991, a year in which a prolonged drought brought lake levels down very low. That year, the Governing Board adopted Resolution (Res. 1991-12), at the request of the Placer

County Sheriff and U.S. Coast Guard, which allowed TRPA to accept applications from marina operators to carry out new dredging during calendar year 1991 to provide adequate boat access for emergency vessels.

To accommodate new dredging, the following may be considered:

- Move away from the existing “beneficial” requirement to a policy of “non-degradation.” A “non-degradation” policy could be similar to the Lahontan RWQCB approach. This “non-degradation” policy could be applied broadly to all uses or narrowly to the 14 existing marinas where maintenance dredging already occurs or to public health and safety facilities.
- Conformance around a single standard, such as existing federal and state standards rather than having a separate TRPA standard. Through the shoreline plan, TRPA could consider whether existing federal and state standards would be adequate or be able to demonstrate benefit. Even with a change of the standard, individual new dredging projects still require environmental review.
- Identification of specific conditions or variables to evaluate where new dredging would be allowed. Identifying areas with opportunity and those with sensitivities could inform the discussion on the conditions. Other variables might involve a public access or public health and safety benefit.

## Permit Flexibility

Permits and leases could provide lake users with increased flexibility to adapt to low lake conditions when they occur. Permits and leases could allow users to move buoys between established anchors or to install pier float extensions when water levels go below a specific level. If consistent with applicable state laws, CA State Lands and NV State Lands could also consider preparing and issuing leases and permits that would offer a similar flexibility. TRPA currently allows for low lake level modifications under one-year temporary permits only. Programmatic permits could apply to maintenance dredging; however, such permits should be consistent with state and federal permitting agencies.

## Permit Coordination and Timing

Implementation of the water quality control programs and permitting of shoreline modifications is a bi-state, interagency effort. The following agencies have the primary responsibility for implementing and enforcing rules and regulations in Lake Tahoe:

- Tahoe Regional Planning Agency
- Army Corps of Engineers
- U.S. Coast Guard
- U.S. Environmental Protection Agency
- Lahontan Regional Water Quality Control Board (RWQCB) – CA

California Department of Fish and Wildlife – CA  
California State Lands Commission – CA  
Nevada Division of State Lands - NV  
Nevada Division of Environmental Protection (NDEP) – NV  
Nevada Division of Wildlife – NV

Given the multiple agencies responsible for permitting and enforcement, a coordinated approach to permitting lake level adaptation measures would be helpful. There may be opportunities to streamline permits through Memorandums of Understanding (MOUs) among the agencies or through the adoption of programmatic permits by federal and state agencies.

In California, TRPA has delegated the review and primary authority for issuing permits for maintenance dredging at marinas (12 in CA) to the Lahontan RWQCB through an MOU. In Nevada, TRPA and NDEP, as well as other permitting agencies, review applications and issue permits for both maintenance and new dredging.

Currently, all of the permitting agencies require separate approvals for moving an individual buoy or buoy field. Stakeholders have described the process as cumbersome, complex, costly, and slow and have asked that the permitting process be streamlined and more flexible.

Timing of different agency approvals can result in delays, which can prove challenging for marinas, for example, who are trying to provide a service during the boating season. To facilitate approval, marina owners report that they must decide in January or February whether to apply for dredging to accommodate the summer boating season. Stakeholders urge more nimble responses may be needed to address falling lake levels.

## Enforcement

Authorizing the placement of additional anchors to allow for adaptive repositioning of buoys could present enforcement issues. Owners may be tempted to increase mooring capacity by attaching floats to all anchors, rather than just adjusting the permitted amount among the anchors. Also, anchor owners may prefer to maintain the floats lakeward in deeper waters than moving them back in when water levels rise. This would have the effect of pushing the current “buoy line” another 50 feet or more lakeward. Currently, permitting agencies lack staff and capacity to oversee and enforce the repositioning of buoys back and forth. The Steering Committee should consider enforcement and how to pay for enforcement mechanisms. For example, they may consider having buoy owners pay fees to ensure compliance with permits terms.

## Related Policy Issues

### Issue

Access and boating facilities are key issues related to low lake level adaptation. General issues related to access and boating facilities are addressed in separate memorandums.

### Health and Safety

Public health and safety is on its own separate process to address permanent public health and safety needs on a shorter timeline than is necessary to address the full range of shoreline issues. The overarching goal is to have one designated access facility per quadrant in addition to the federal Coast Guard pier.

## Questions for Joint Fact-Finding

### General

- What is the best available science regarding climate change effects on lake management? (flora, fauna, lake temperatures)
- What is the lake level range and planning horizon that the shoreline plan will adapt to or manage for?

### Inventory

- How many buoys, piers, and boat ramps are usable at low lake levels?
- How often do marinas conduct maintenance dredging?

### Environmental

- What is the best available science regarding the environmental effects from in-water structures (i.e. piers, ramps, buoys, etc.)?

## Existing Data, Information & Science

### Lake Tahoe Total Maximum Daily Load

The Final Lake Tahoe Total Maximum Daily Load Report (TMDL) 2010 found that the ongoing decline in Lake Tahoe's deep water transparency is a result of nitrogen,

phosphorus, and sediment particles, primarily from urban stormwater runoff. The Lake Tahoe TMDL did not identify dredging as a major contributor to Lake Tahoe transparency loss; however, episodic incidents associated with dredging may affect localized turbidity.

## Existing Codes

### Piers

#### Existing TRPA Standards for Pier Length

Pursuant to the TRPA Code of Ordinances, single-use piers cannot extend beyond lake bottom elevation 6,219 feet, Lake Tahoe Datum, or beyond the pierhead line, whichever is more limiting (TRPA Code, Section 84.5.1.D). The pierhead line is depicted on the TRPA Shorezone Tolerance/Pierhead Line Maps. Multiple-use piers may be permitted to extend beyond the pierhead line if they will reduce development potential and be shared by multiple littoral properties or if the pier is available for general public use (TRPA Code, Section 84.9.4.). TRPA Regional Plan Policies regarding piers, Chapter 84 of the TRPA Code, and the Pierhead Line Map are provided as Attachments A, B, and C, respectively.

#### Temporary Structures

Where it is found that low lake levels prevent or significantly reduce access to open water recreation and that dredging cannot be permitted, the Code allows for temporary structures (such as floating docks) to be permitted beyond an elevation of 6,219 or the pierhead line to facilitate lake access for multiple-use piers. Temporary structures can be allowed as long as low lake level conditions persist. This provision does not apply to single-use piers (TRPA Code, Section 84.15.4).

#### Scenic Standards for Piers

TRPA maintains the scenic threshold through the implementation of Chapter 66: *Scenic Quality* of the TRPA Code of Ordinances. Chapter 66 requires scenic assessments with all projects, including piers, document baseline conditions and include mitigation for any increases in visible mass. Thus, the scenic impacts of single-use piers can be mitigated pursuant to existing code provisions. However, multiple-use piers that reduce overall development potential have generally been viewed as a more desirable option because they decrease the overall cumulative scenic impacts associated with multiple single-use piers. During the



stakeholder assessment, a few interviewees suggested revisiting ordinances related to scenic resources because they can be complicated to implement.

## Buoys

### Current Status of Buoy Permitting at TRPA

TRPA is not permitting additional buoys at this time (including existing buoys which have been permitted/leased by other agencies with jurisdiction in Tahoe, but not by TRPA). Buoys permitted between 2008 and 2010, prior to the 2008 Shorezone Ordinance being vacated, are valid.

### General Buoy Relocation Standards per TRPA's Partial Permitting Program

- Buoys may be relocated under Code Section 84.7.1
- Under Code section 82.4.4, a modification/relocation cannot cause a conforming buoy to become non-conforming, nor can a non-conforming buoy be made more non-conforming.
- TRPA Code Section 84.7.1.C states that buoys must be located within 350 feet of the high water line
- If an existing buoy is located beyond 350 feet of the high water line, it cannot be moved further out, per TRPA Code Section 82.4.4
- An exception to buoy location rule is for deviations from standards which may be granted by the Governing Board for multiple-use facilities (buoy fields)

### Multi-Use Buoy Fields

Buoys (individual and fields) designed to serve individuals on a multiple- or commercial-use basis may be relocated based on the following:

- TRPA may issue temporary permits for relocation of the most landward row of buoys in a buoy field to outside of the most lakeward row of buoys in the buoy field
- The Temporary Permit is valid while lake surface elevations remain at or below 6,225 Lake Tahoe Datum for a period not to exceed one year from permit issuance
- Once the year is up and if lake levels have not risen above 6,225, the applicant may apply for a permit extension good for one more year
- Applicant pays a security, which TRPA can release once the buoys have been relocated according to the conditions of the permit

### Individual, Private Buoys

- TRPA issues temporary permits for relocation of legally existing buoys according to TRPA Code Section 84.7.1.C and 84.7.1.C.D

## Buoy Permits by Other Agencies

The following lists additional agencies that review and issue buoy permits in Lake Tahoe.

### California State Lands Commission

- CSLC may “modify” or “amend” leases for permanent relocations for legally existing buoy fields and individual, private buoys
- CSLC must amend the lease each time a buoy moves
- Temporary relocations are problematic for CSLC because every time the locations of buoy blocks change, the lease has to be amended. This is prohibitive for issuing temporary permits
- CSLC does not currently draft leases where the lessee can have additional blocks so buoys can be rotated. There are no specific prohibitions against additional buoy blocks for buoy rotation; however, leasing challenges would arise in this situation that CSLC staff would need to address on a case-by-case basis

### California Department of Fish and Wildlife

- As the trustee agency for fish and wildlife resources, CDFW must be notified when a project (buoys, piers, ramps, dredging, etc.) involves potential impacts to fish and/or wildlife habitat, will provide the requisite biological expertise to review and comment upon environmental documents and impacts arising from project activities, and may require a permit depending on the type of project proposed within Lake Tahoe.
- Anytime there is lakebed disturbance (i.e. a new or relocated buoy block), the applicant needs a CFG Code Section 1600 permit issued by CDFW

### Nevada Division of State Lands

- May issue permits for permanent relocations for legally existing buoy fields and individual, private buoys
- NDSL must issue a permit each time a buoy moves
- NDSL can permit flexibly for buoy locations within a legally existing buoy field given water level fluctuations. For example, the permittee pays for 60 buoy anchors but is authorized to have 50 buoys out at a time. When lake levels are low, they can move their most inland row of buoys out to the anchors in deepest waters without having to amend the permit.

### Nevada Division of Wildlife

- Nevada Division of Wildlife (NDOW) processes applications for buoy field relocations only for buoy fields recognized by NDOW (i.e. Zephyr Cove, Glenbrook,

Roundhill Pines). These buoy fields are designated in Nevada under the Nevada Administrative Code (NAC).

- An applicant can apply to move buoys to different locations within these designated buoy fields. This is not a relocation; these are fields that are designated in Nevada under NAC.
- NDOW does not issue permits for single, private buoys. Permits for single, private buoys are issued by Nevada State Lands, who rely on NDOW for enforcement.

#### Army Corps of Engineers

- U.S. Army Corps of Engineers (USACE) regulates all work in, over, or under navigable waters. This includes structures (buoy blocks), dredging, and the placement of fill.
- A proposed buoy field relocation in either California or Nevada is allowed per USACE regulations, and would need a USACE permit.

## Dredging

### Existing TRPA Standards

#### **84.15.1. Artificial Beach Replenishment**

If beaches are to be artificially replenished, only non-organic, chemically, and biologically inert material shall be used. The preferred method of beach replenishment is bypass dredging.

#### **84.15.2. Filling**

There shall be no fill placed in the lakezone or shorezone, except as otherwise associated with approved bypass dredging, shoreline protective structures, or beach replenishment projects, or as otherwise found by TRPA to be beneficial to existing shorezone conditions or water quality and clarity.

#### **84.15.3. Dredging**

There shall be no removal or materials within the lakezone or shorezone, except at those locations where such removal or rearrangement is found by TRPA to be beneficial to existing shorezone conditions, and water quality and clarity. Maintenance dredging may be permitted where TRPA finds it is necessary to continue an existing use.

#### **84.15.4. Temporary Structures in Lieu of Dredging**

Where it is found that low lake levels prevent or significantly reduce access to open water recreation and that dredging cannot be permitted pursuant to subsection 84.15.3, temporary structures that extend beyond lake bottom elevation 6,219 feet or the pier headline may be permitted to facilitate lake access. Permits for the temporary use of structures shall be subject to the provisions outlined in Chapter 22, with the exception that the temporary use of a structure may be extended indefinitely provided that TRPA finds

that lake levels remain at or below a level that prevents or significantly reduces lake access. The use of temporary structures in conjunction with single use piers shall not be allowed.

#### **84.15.5. Disposal of Dredged Material**

Where dredging, other than bypass dredging, is permitted, spoil materials shall not be deposited in the lakezone or shorezone, in wetlands or within the 100 year floodplain of any tributary to a lake except as provided under subsection 84.15.2.