



Lake Tahoe Shoreline Plan

06 Policy Topic: Low Lake Level Adaptation

V7

Last Updated 03.13.2017

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
Explore 401 permit approval for certain shoreline activities	Jan 2017	Bob Larsen, Lahontan + Shoreline Review Committee
Continue developing low lake level adaptation policy for piers	Jan-Mar 2017	Steering Committee
TRPA Regional Plan Implementation Committee votes to support Preliminary Recommendations on Phased Approach, Directing Access toward Marinas and other Public Ramps and Public Boat Ramp Extensions	Done 11.16.2016	RPIC
Track Army Corps Regional Permit for routine minimal impact projects on Lake Tahoe	Out for review	Brandy McMahon, TRPA
Identify science + lake level range or scenario to inform policy decisions	Done 8.25.2016	JFF Committee Meeting 4

		Summary, 8.25.2016
Work with Cal Dept. of Fish & Wildlife to confirm benefit of permanent additional buoy block placement as preferable to temporary moving of buoy blocks and disturbing lakebed	Done via Email	Tiffany Good, TRPA
Identify Issues	Done June 2016	Steering Committee

Statement of Intent

This memo provides a summary of relevant issues identified during scoping of the Shoreline Plan with the intent of providing context and background in support of the overall planning effort. The Shoreline Steering Committee's discussion of these issues has been ongoing since early 2016.

Policy Issues under Consideration 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 and other effects of pier extensions. However, because of this provision, many single-use piers are not functional at low lake levels.

Several areas are under discussion by the Steering Committee, including:

- Creating a pathway for boaters to rely on marinas and other public ramps which are operational 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 and other public ramps adapting to low lake conditions and being able to accommodate more tenants.
- Homeowners associations may warrant a similar consideration.
- Existing design standards for single-use piers limit the maximum distance and/or depth which may not be adequate during low lake levels.

Duration

Structure adaptations to address Phase 2 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. 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. CDFW supports allowing permanent additional anchors in lieu of repeated relocation and lakebed 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. In some areas, structures may provide an aid to navigation.

By their existence, they identify shallow shoal areas where boating is not safe. However, extending piers or buoys to accommodate low lake levels (buoys require a minimum 10-foot depth, more in areas where sand movement and wave fetch increases mooring depth) raises the potential for those features to become navigation hazards.

Effects on Scenic Character

Extension of piers and relocation of buoys may alter the existing scenic character along the shoreline. Consider what, if any, limits may be necessary to moderate the cumulative effect associated with low lake level adaptation.

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, including marinas, public facilities, and private harbors. Such maintenance operations may avoid potential need to extend, expand, or add structures. 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:

- Consider conforming TRPA’s standard to a “non-degradation” policy to match the existing Lahontan RWQCB and Army Corps of Engineers approach. This “non-degradation” policy could be applied broadly to all uses or narrowly to the 14 existing marinas where maintenance dredging already occurs, public ramps, and 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 protective 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.

Alternatives to new dredging may also include the use of temporary buoys for private harbors and marinas in lieu of dredging during periods of low lake levels.

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 authorized 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 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 these 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 the application process 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. Development of a low lake adaptation enforcement program will need to address deterrents to an increase in mooring capacity. This program will need to engage with the buoy placement companies as well as the owners and users of buoys. The Steering Committee should consider enforcement and possible funding mechanisms to ensure compliance.

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 has been addressed on an expedited timeline. The overarching goal is to have one designated access facility per lake quadrant in addition to the federal Coast Guard pier.

Joint Fact-Finding

Climate change in the Sierra Nevada is likely to cause reduced snow accumulation and earlier peak runoff, as more precipitation falls as rain instead of snow. The number of days below freezing has declined by almost 30 days since the start of the 20th century. The lake itself has steadily warmed since regular measurements began in 1970, and the volume averaged temperature of the lake is now nearly 0.8 °F (0.24 °C) warmer than it

was 35 years ago. Warmer water temperatures may favor smaller algae cells, which could impair clarity.

Climate forecasts suggest extreme events, including extended droughts and heavy precipitation events, will be more frequent in the future. Observations from the last 114 years suggest that Lake elevation is fluctuating more today, and falling below the natural rim (6223 ft) more frequently. There is significant uncertainty in climate forecasts, and planning for a 20-year time horizon requires a mix between consideration of short term weather patterns and longer term change in central climate tendency for the region.

Higher average air temperatures in the region are expected to lead to greater evaporation and lower average lake levels over the long term. The USGS has collected daily water level at the Tahoe City dam since 1958, and has records of annual average elevation going back over 100 years. Average lake elevation over the past 50 years was 6225.7 ft, and median elevation 6226.1 ft. In the 110 year historic record the Lake has not dropped below 6220 ft. Forecasts suggest that by 2085 average elevation could be below 6223. Of the climate studies for the region the Bureau of Reclamation Truckee Basin Study (2015) contained the most detailed forecasts for future lake levels. The Truckee Basin Study considered a range of potential future climate scenarios for the Basin. Forecasted lake elevation over the next 20 years also remains above 6220 ft. in the average (central tendency) of the future climate scenarios.

The Joint Fact Finding Committee discussed different approaches to low lake level adaptation - using the Bureau of Reclamation Truckee Basin Study as a reference to plan for future lake levels. The JFF Committee agreed that because the science is not conclusive regarding future lake levels, an adaptive management approach may be needed for policy development. To inform planning questions, the JFF Committee recommended that the Steering Committee begin with evaluating the central trend and the worst-case scenario (shown in the Bureau of Reclamation study) in specific locations around the lake.

Based on the JFF Committee recommendations, the Steering Committee decided to move forward with developing provisions in the Shoreline Plan to adapt to a lake level of 6,220 feet lake bottom elevation, based on the projected central tendency in the Truckee Basin Study and the historic low identify by the Tahoe Environmental Research Center.

Currently, draft memos and meeting summaries are available at ShorelinePlan.org under Joint Fact Finding Committee meeting materials.

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

The Joint Fact Finding Committee has evaluated a number of these questions. Maps providing an inventory of public access points are available via ShorelinePlan.org

- How many buoys, piers, and boat ramps are usable at low lake levels?

Environmental

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

Dredging

The Joint Fact Finding Committee discussed dredging issues and requirements from the various regulatory agencies (Lahontan, TRPA, U.S. Army Corps of Engineers (Corps), NDEP) and whether state and federal requirements would provide adequate environmental protection to replace or streamline TRPA permitting. The state and federal requirements are comprehensive and require an intensive review to ensure that water quality is protected. Given the extensive review and comprehensive dredging conditions required for each project, it appears that some redundancy exists between state, federal and TRPA requirements, and in addition, that the Shoreline Plan could evaluate provisions for permit streamlining. The JFF Committee began to evaluate whether the current TRPA code provision that requires a beneficial finding for new dredging is necessary given current high standards, Best Management Practices identify specific mitigation measures, and monitoring.

The main JFF Committee questions regarding dredging are as follows:

- Are there concerns that exist with new dredging that differ from maintenance dredging?
- Regarding lifting the beneficial finding for new dredging, what value or benefits does the beneficial finding provide (given states protocols / requirements)?
- Are there conditions, based on science that the Steering Committee might consider for new dredging?

The following is a more detailed discussion of Joint Fact-Finding considerations and recommended outcomes.

Water quality impacts from dredging result from the disturbance of sediments. These are controlled and monitored during dredging activities by BMPs. The primary difference between “new” and “maintenance” dredging in this regard is the age of sediments distributed during dredging and the potential to disturb hazardous deposits. Sediment sample analysis is a permitting requirement to ensure hazardous material is not released.

Substantial opportunities exist to reduce redundancy and streamline the existing permitting process. The non-degradation requirement for new dredging required by the Army Corps of Engineers (Corps) and Lahontan could provide an opportunity to align TRPA’s more restrictive “beneficial impact” requirement. Lahontan also requires that dredging serve an important public interest.

Dredging permitting process

The Corps provides primary oversight of dredging through the 404 Clean Water Act permit process. In all cases, TRPA, state, and federal permitting or review is required for dredging. Dredging in Lake Tahoe is permitted only during the fall/winter (October -May) to avoid impacts on fish spawning. TRPA currently allows maintenance dredging subject to the measures described in the BMP Handbook for shoreline structures. A dredging certification requires BMPs and monitoring be implemented during construction to protect water quality.

- In Nevada, TRPA, Nevada Department of Environmental Protection (NDEP), Nevada Division of State Lands, and the Corps review dredging requests. NDEP requires a Working in Waterways Permit for any construction activity within the lake including routine maintenance such as channel clearing and minor repairs to intake structures. For activities that require a 404 permit from the Corps, the Nevada also requires a Section 401 Water Quality Certification or a waiver.
- In California, dredging is reviewed by TRPA, the Lahontan Regional Water Quality Control Board, California State Lands Commission, and the Corps. Through a memorandum of understanding, TRPA has delegated to Lahontan the review and approval of dredging requests for the 12 marinas in California. The Corps requires a Clean Water Act section 404 permit and Lahontan also requires a section 401 Water Quality Certification or waiver.
- Opportunities exist to reduce redundancy and streamline the existing permitting process. The Lahontan Water Quality Control Board requires a CEQA analysis (with public review) or checklist as well as mitigation and monitoring to ensure surface water quality objectives are met for both maintenance and new dredging. The Corps review is guided by National Environmental Policy Act requirements (with public review). Like Lahontan, the Corps must make non-degradation findings, including a finding that all impacts can be mitigated, before project approval.

- TRPA's requirements for "new dredging" are more stringent than both applicable federal and state standards. TRPA Code, Section 84.15.3, requires TRPA to find that any "new dredging" be "beneficial to existing shorezone conditions or water quality and clarity." As a result of this requirement, the TRPA Code functions effectively as a prohibition on new dredging and TRPA has not approved "new dredging" since 1991.

Procedural considerations

- The states, TRPA, and federal permitting or review is required in all cases for maintenance and new dredging.
- The states and Corps follow the same review and permitting process for both new and maintenance dredging.
- If TRPA were to adopt the federal 404 water quality findings for dredging, it would help to streamline the permitting process and ensure Lake Tahoe maintains its designation as an Outstanding National Resource Water.

Trade-off analysis of new dredging

The potential costs and benefits of permitting additional dredging should be evaluated with regard to two considerations. First, the potential environmental impacts of alternative actions or activities that would result were dredging not allowed (e.g. extended pier lengths, boat scour). Second, the potential impacts of not allowing dredging on alternative policy mechanism to address the identified concerns (e.g. reduced recreational access).

Within this framework potential benefits could include:

- Dredging may provide access at lower lake levels that reduces the required length and overall number of pier extensions.
- Dredging may reduce sediment disturbance that result from boat operation in shallow waters, including prop scour.

Environmental concerns

Several concerns were expressed about the potential environmental impacts of new dredging:

- Potential disturbance of older sediments that may be more environmentally harmful, than encountered during maintenance dredging. Potential impacts on drinking water intake facilities from new dredging.
- Expansion of aquatic invasive species colonization through disturbance of new area of the lake bed.

- The cumulative impact of the overall footprint of dredging in the lake if new dredging were allowed
- Potential impact on fish habitat and fish populations from disturbance of areas not previously dredged.

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 shared by multiple littoral properties, common ownership associations, 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 a scenic assessment of the project parcel(s) for new, expanded, or modified piers. In addition, a mass and bulk study is also required for the shorezone structure to be added, expanded, or modified. The scenic impacts of piers can be mitigated pursuant to existing code provisions by offsetting the impact to either preserve the status quo or make improvements depending on where the project is located. TRPA's scenic standards may potentially incentivize multiple use piers which reduce overall pier quantity by banking the "saved" existing scenic impact. During the stakeholder assessment, a few interviewees suggested revisiting ordinances related to scenic resources due to issues associated with project permitting and implementation.

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 are responsible for authorizing buoys in Lake Tahoe.

California State Lands Commission

- Californian State Lands Commission (CSLC) may amend leases for permanent relocations for legally existing buoy fields and individual, private buoys
- CSLC must authorize an amendment to the lease each time an applicant requests to move a buoy
- Temporary relocations are problematic for CSLC because every time the locations of buoy blocks change, the lease has to be amended. Under the CSLC's leasing program, there isn't a specific process allowing for temporary relocations unless it is part of the lease amendment application submitted by the lessee
- CSLC has not yet received an application for the placement of additional anchors so that buoys can be rotated to adapt to low lake levels. There are no specific prohibitions against authorizing additional buoy blocks for buoy rotation; however, enforcement 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, California Department of Fish and Wildlife (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
- Nevada Division of State Lands (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) recognizes three buoy fields at Lake Tahoe (i.e. Zephyr Cove, Glenbrook, Roundhill Pines). These buoy fields are designated in Nevada under the Nevada Administrative Code (NAC) 488.458. Those buoys not located in recognized buoy fields are considered single use buoys.
- NDOW does not issue permits for buoy fields or single use buoys. Comments are solicited from NDOW for both single use buoys and buoy fields which are permitted by NDSL.

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.