Lake Tahoe Shoreline Plan

SUMMARY: Joint Fact Finding Meeting #4

Held August 25, 2016

Meeting in Brief

Boating Impacts
The JFF Committee was tasked with identifying the best available science regarding water quality impacts from boating. While the science does not show a clear linkage between boating activities and significant lake-wide water quality degradation, the Committee agrees that boating can result in site-specific impacts that should be taken into consideration. How boaters use boats is a significant factor. The Committee stressed the need for increased boater education and enforcement to minimize water quality impacts resulting from boater behavior (spread of AIS, speeding near shore, cleaning and fueling practices).

Low Lake Level Adaptation
The 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 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 BLR study) in specific locations around the lake.

Fish Habitat
Because the science does not show a clear linkage between the presence of shoreline structures and the decline in fish populations, the Committee agreed that the ban on new structures in fish habitat might need to be re-evaluated in certain circumstances, but cautioned policy-makers to err on the side of conservation and protection. Due to the complexity of the issue, a fisheries sub-committee was formed to dive more deeply into the policy implications and provide feedback to the larger JFF Committee prior to making a recommendation.

Action Item

Date	Responsible	Item
9/2	All	Provide Input to Adam on Water Quality Analysis Approach
9/12	All	Provide feedback to Rebecca/Brandy on Shoreline Interactive Map
9/14	Jan, Dan, Sudeep (Fisheries Sub-Committee)	Meet with sub-committee and provide feedback to JFF Committee regarding fish habitat and mitigation prior to next meeting

Next Meeting: **September 21, 11:00-1:30 PM**

Discussion Summary

Updates and Follow Up on Action Items from Meeting 3

Boat Use: TRPA staff continues to compile and process data needed for the boat usage assumptions. This includes data from the boat usage surveys, AIS inspection stations, fees, and boater registration. They are aiming to have this completed in October.

Boating Impacts: Additional studies related to boating impacts have been added to the TRPA website and include water quality and fisheries research.

Water Quality Impacts from Boating

The JFF Committee was tasked with identifying the best available science regarding water quality impacts from boating. The purpose of identifying this information is to inform the Steering Committee's policy making and to provide input into the approach for the Environmental Analysis. While the science does not show a clear linkage between boating activities and significant lake wide water quality degradation there was agreement that boating can result in site-specific impacts that should be taken into consideration. The Committee also stressed the need for increased boater education and enforcement to minimize water quality impacts resulting from boater behavior (spread of AIS, speeding near shore, cleaning and fueling practices). The Committee observed that reducing boating impacts is linked to public education and improvements in engine type, boating practices, and no-wake zones. Types of boats are also changing, with more wake board boats on the lake, which have cleaner engines yet bigger waves.

To inform the discussion, Adam Lewandowski prepared a memo outlining the known water quality impacts from boating and a proposed methodology for analyzing these impacts in the Environmental Analysis.

The Committee agreed that the following impacts from boating should be considered:

- Deposition of pollutants from engine emissions*
- Direct contamination from hydrocarbon (fuel spills and engine leaks)
- Direct contamination from bilge water and sewage leaks
- Sediment Resuspension and nearshore turbidity: The Committee discussed the need to also analyze the impacts of boats with larger engines and those specifically designed to produce wakes which can result in shoreline erosion and re suspension of sediments.

* Scientists do not know how much is from boats. For example, TMDL study suggest that about 50% of particulate is from engines, road dust, and wood smoke.

- AIS - It is important to recognize the relationship between boating activity and the transport of AIS as well as how changes in water quality/temperature can create an environment conducive to AIS.

Next Steps

- All – provide input to Adam L. on impacts memo.

Planning for Future Lake Level Scenarios

The Steering Committee would like input from the JFF Committee as to what lake levels we should be planning for or adapting to based on the best available science to better understand the policy implications for regulations related to extensions or relocations of piers, buoys, and ramps and overall access to the lake. The Committee cautioned that the best available science indicates high levels of certainty, necessitating adaptive management, and identifying planning scenarios depends on how those scenarios would be used. However, using the Bureau of Reclamation's Truckee Basin study would indicate that the Steering Committee could look at the central trend (which is about 6220) and the extreme work case scenario (which is about 6217 over 20-year scenarios) to evaluate the implications of policy choices. However, to provide a more informed recommendation, the JFF Committee would need to better understand the objective in more detail. The Committee concurs with the 20-year planning horizon. The Steering Committee will consider these scenarios, and then the project team will report back to the JFF Committee on more specific policy considerations / objectives so members can refine their thinking and the recommended approach to planning.

The JFF 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 model included in the study shows tendencies and trends based on different climate scenarios. Dr. Geoff Schladow, UC Davis, cautioned that the data used for the model does not include more recent findings that would likely result in even lower lake levels. Additional modeling on the effects of climate change on Lake Tahoe is being done by UC Davis but will not be completed within the Shoreline Plan time frame.

There was general consensus that we need to understand the goals and objectives of the Shoreline Plan prior to choosing a lake level adaptation strategy. Is the objective to provide access for every pier around the lake, or is there an understanding that access may need to be more consolidated at public piers or to ensure safe navigation? Certain areas have specific limitations related to bathymetry, and scenic standards that would require different treatment of shoreline structure extensions or expansions. The question of whether the Shoreline Plan would include provisions for new dredging is also critical to this discussion.

It will also be important to define the planning timeline for lake level projections. The Shoreline Plan will look at a 20-year timeframe which would be the appropriate horizon for climate change adaptation planning.

The Committee agreed that because the science is not conclusive regarding future lake levels, an adaptive management approach may be needed for policy development. The

JFF Committee recommended that the Steering Committee evaluate the lake level scenarios described above in specific locations around the lake to inform policy development. It will be useful to look at specific facilities (marinas, ramps, buoys) and how operations will be affected under various lake levels.

Fish Habitat and Shoreline Structures

The JFF Committee has been tasked with identifying the best available science regarding the linkage between shoreline structures and fish habitat and fisheries abundance in Lake Tahoe. Does the presence or installation of piers, buoys, ramps and marinas have an effect on fish populations and does the current ban on structures in fish habitat achieve conservation objectives?

Multiple studies have been conducted studying the relationship of shoreline structures to fish habitat and fish populations in Lake Tahoe. While native fish populations continue to decline it is not clear when this decline began and whether or not it was linked to the presence of shoreline structures, turbidity, increasing water temperatures, or other factors. For some species, piers and other structures actually improve habitat. It is also difficult to assess the success of mitigation strategies as very few new structures have been installed since the studies began in the 1980's. Mitigation requirements include limiting size of buoy anchors, single piling piers and restoration of habitat at a 1 to 1.5 ratio.

Because the science does not show a clear linkage between the presence of shoreline structures and the decline in fish populations, the Committee agreed that the ban on new structures in fish habitat might be re-evaluated in certain circumstances but cautioned policy makers to err on the side of conservation and restoration. Impacts may be site specific, species specific and related to types of structures. Spawning habitat, in particular should continue to be protected. Due to the complexity of the issue, a fisheries sub-committee was formed to dive more deeply into the policy implications.

Next Steps

A small sub-committee (Sudeep, Dan, Jan, with hopes to add Brant Allen) will meet to respond to specific questions. The following questions were confirmed via email immediately after the meeting:

- Is there an impact of putting structures in or adjacent to fish spawning habitat or fish feed-and-cover habitat?
- Can that be mitigated? If yes, how? Could you avoid the impact by the project design? Does pier cover affect spawning behavior?

Shoreline Plan Interactive Map

TRPA staff developed an interactive, web-based map to inform the Shoreline Plan. The map includes multiple layers and information that will be useful for the JFF Committee, Steering Committee and other stakeholders. The map is located on the TRPA Shoreline web page and can be linked to from the Shoreline Plan website. At this stage, TRPA staff is welcoming suggestions to make the map more user friendly or to identify additional data layers.

Participants

Lahontan RWQCB: Mary Fiore-Wagner
CTC: Penny Stewart
California State Lands: Jason Ramos
League to Save Lake Tahoe: Jesse Patterson
Tahoe Lakefront Owners' Association: Jan Brisco
Nevada Division of State Lands: Elizabeth Kingsland
TRPA: Kenneth Kasman, Brandy McMahon, Dan Segan, John Marshall, Adam Jenson
Sierra Club: Harold Singer
Tahoe Keys POA & Beach and Harbors Ass.: John Larson
North Tahoe Marina: Jim Walsh
Interested Citizens: Steve Smith, Wayne Wong, Arnold Finn, Kristy Finn, Carol Gray

Consultants
Adam Lewandowski, Ascent Environmental
Dan Nickel, The Watershed Co.

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