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## STAFF REPORT

Date: October 6, 2022

To: Threshold Update Initiative Stakeholders Working Group

From: TRPA Staff

Subject: Update on development of threshold standards and performance measures - 1) Forest Health, 2) Watersheds and Water Quality

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### Summary:

Staff will provide an overview of the progress in developing threshold standards and environmental improvement program performance measures in the Forest Health and Watersheds and Water Quality categories. This update is presented for discussion and guidance from the working group.

### Forest Health

Staff has been working with the Tahoe Science Advisory Council since the last meeting to revise the proposed forest health standards. The discussions have primarily focused on which data sets to be used for standard development and evaluation. At the July meeting, staff's proposal centered around the use of data developed by the Lake Tahoe West Partnership (Tahoe West). The work of Tahoe West team has now been pushed forward by successively larger regional projects. First by the work of the Tahoe Central Sierra Initiative (TCSI) which produced a blueprint for regional resilience (<https://www.fs.usda.gov/psw/topics/restoration/tcsi/publications/TCSI-Blueprint.pdf>), and later by a collaborative that assessed the entire Sierra Nevada. The frameworks used in each of the assessments share a common conceptual foundation in the TCSI pillars of resilience. The Sierra wide assessment was led by the USFS Pacific Southwest Research Station, USFS Region 5 Information Management – Mapping and Remote Sensing Team, and the Fire and Resource Assessment Program. The Sierra wide work was specifically designed to align disparate state and federal dataset and provide partners with the information necessary to make informed decisions. On September 27<sup>th</sup>, the data product for the work was released. The product, referred to as a Regional Resource Kit, includes data for all threshold measures mapped at the scale of the entire Sierra Nevada (<https://data.fs.usda.gov/geodata/rastergateway/regional-resource-kit/index.php>). The data in the

Regional Resource Kit has been vetted by federal, state, and academic scientists. In considering which data set to use for standard establishment and assessment, staff and partners are weighing the benefits of using regional datasets which the state and federal government are committed to updating, against the use of higher resolution local datasets, which would place more onus on the Tahoe partnership to maintain and update.

Staff and partners are in the process of vetting the alternative data sets to ensure alignment and all tracking requirements are met. The Tahoe Fire and Fuels team will be considering the options at their October 12<sup>th</sup> meeting.

### **Watersheds and Water Quality**

#### **Lake Clarity**

The proposed threshold standard carries forward the lake clarity standard currently adopted by the states, federal government, and TRPA. Discussions have focused on revisions to the EIP performance measures used to track progress towards the standard. Working with the leads of the Stormwater Quality Improvement Committee, a revised set of metrics were developed that better capture the work of the partnership. The results chain for the existing metrics is depicted in figure 1, and the results chain with the proposed revisions is depicted in figure 2. The proposed modifications can be grouped into two general categories, modifications to better capture infiltration and treatment, and modifications to better capture load capture and recovery work. The proposed modifications for infiltration and treatment expand the scope of performance measures from a simple focus of parcel best management practices (BMPs) to include the breadth of projects used to treat and infiltrate stormwater. These include parcel BMPs, area-wide infiltration systems, and area-wide treatment systems. The proposed modifications to the load capture and recovery PMs expand beyond the simple focus on street sweeping to include operations and maintenance work also focused on load recovery.

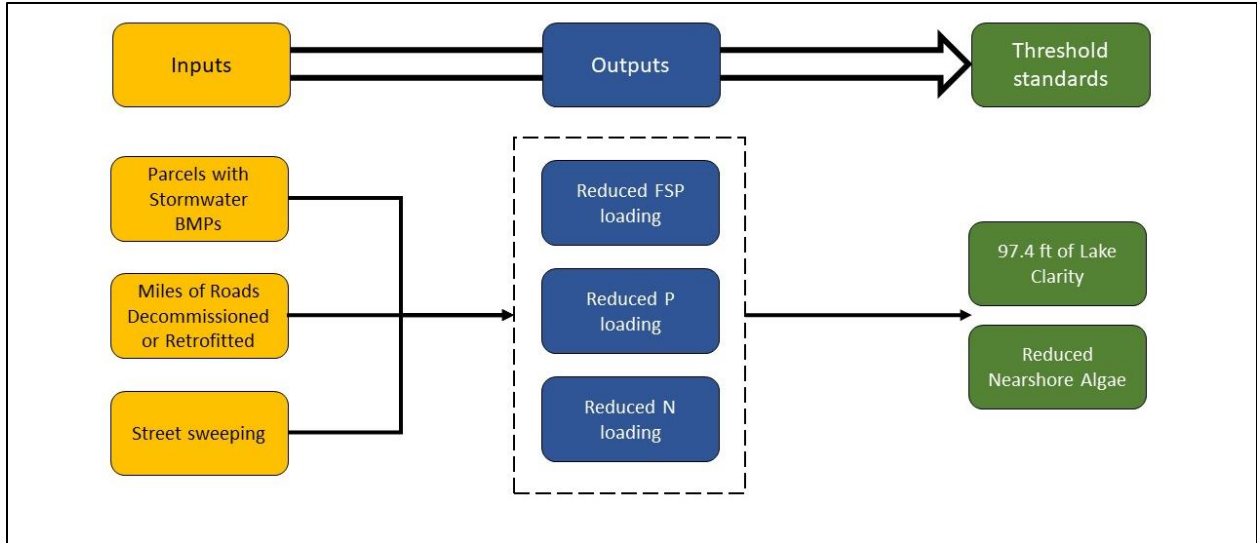


Figure 1: Results chain showing linkage between current Stormwater Performance Measures and water quality Threshold standards.

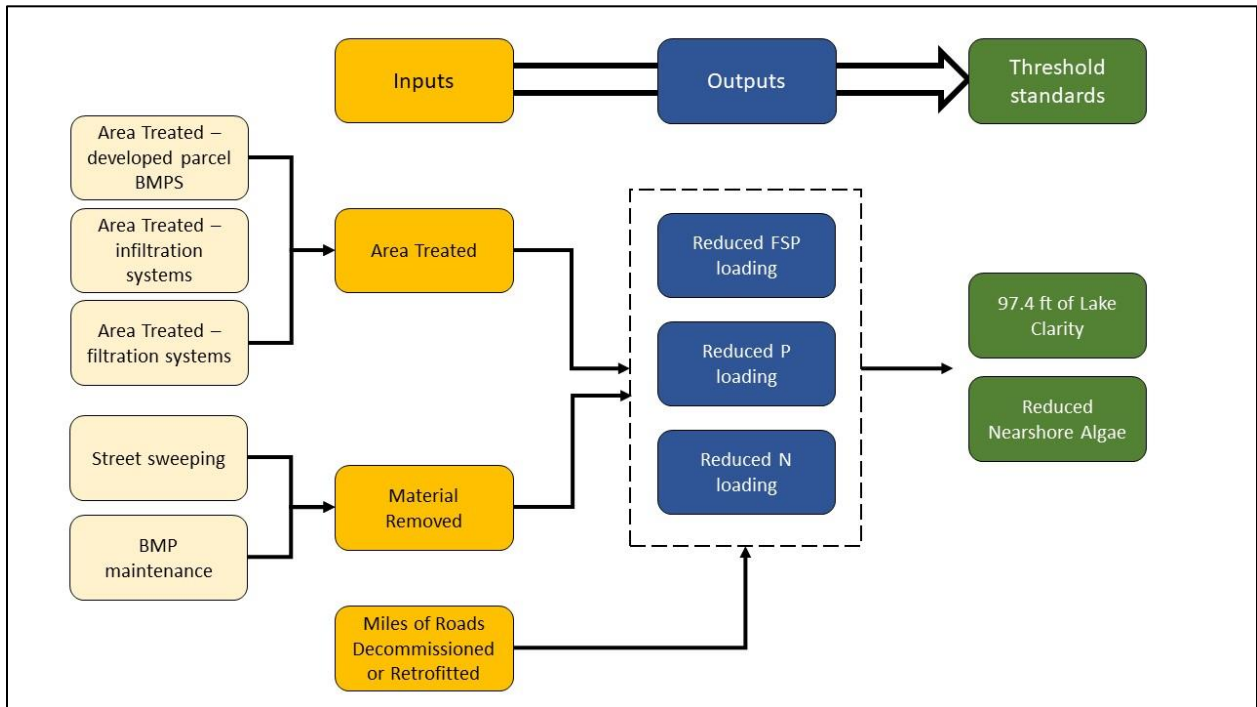


Figure 2: Results chain showing linkage between proposed Stormwater Performance Measures and water quality Threshold standards.

The proposal will be considered by the full storm-water quality improvement committee at their October 19<sup>th</sup> meeting.

The discussion at the August 10<sup>th</sup> meeting of the Threshold Update Initiative Stakeholders Working Group focused primarily on the criteria for adoption of air quality standards, but water quality standards could follow the same framework because of their unique shared requirements under the Bi-State Compact. At the August 10<sup>th</sup> meeting, the working group directed staff to move forward the adoption of air quality standards only if they offered additional environmental protection beyond that which was conferred by state and federal standards. If that convention was followed here, no standard for lake clarity would be adopted. The group noted that it did not necessarily think the same rules needed to be followed for both air and water quality standards.

### Nearshore Algae

The nearshore of Lake Tahoe is the area of relatively shallow water (depth <21m) around the lake's perimeter that is the focus of recreational activities and appreciated for its aesthetic qualities. The nearshore is where the public interacts with the lake for the first time, and often what drives public perception of the lake's health. It also provides vital habitat for native species. Attached algal monitoring in Tahoe began in 1982, and since then nearly 30 years of data have been collected. While no lake-wide trends in abundance have been identified, public perception of increased algae in the nearshore led to a peer review of the existing monitoring program, and the recommendation that alternative monitoring approaches be considered that would better represent the full suite of nearshore algae communities.

With the support of Tahoe Science Advisory Council a request for proposals for new approaches to measure and monitor nearshore algae was released on September 27, 2022, and can be found at <https://www.trpa.gov/contact/request-for-proposals/>.

Because there is no existing baseline upon which to establish a quantifiable target for nearshore algae it is unlikely that a new nearshore algae standard can articulated as part of this update. In the fall of 2023, after two seasons of the data have been collected, the information should be assessed to determine if it there is sufficient data to establish a desired condition for nearshore algae.

### Aquatic Invasive Species:

In a 2018 Science Advisory Council Report, the council identified the unique challenge of the existing AIS control threshold standards in that none of the standards specifies an end point that would allow for

objective evaluation of a standard’s attainment status or quantification of progress towards attainment. For example, “WQ11 -Abate harmful ecological impacts resulting from aquatic invasive species,” does not specify which ecological impacts, from which invasive species, or how much abatement would constitute attainment of the standard. If the ecological impacts of curly leaf pondweed on native fish species were reduced in Tahoe Keys, would that constitute standard attainment, or even meaningful progress? The Council report recommends that consideration be given to establishing specific and measurable benchmarks for aquatic invasive species control.

The 2019 Lake Tahoe Region AIS Action Agenda 2021-2030 (Action Agenda) was finalized and outlined the need for the Aquatic Invasive Species (AIS) Program to develop “a suite of Outcome-based performance metrics that assess progress in managing AIS through time.” The AIS Program has been working to towards that goal since then. In conjunction with the AIS Coordinating Committee leads, that work has coalesced into a set a recommended modifications to the thresholds, EIP PMs, and monitoring dashboard (the monitoring dashboard is not currently used for AIS). No modifications were proposed for the prevention program, so the recommendations focus on the control program. The results chain for the existing control metrics and threshold standards is depicted in figure 3, and the results chain for proposed revisions is depicted in figure 4.

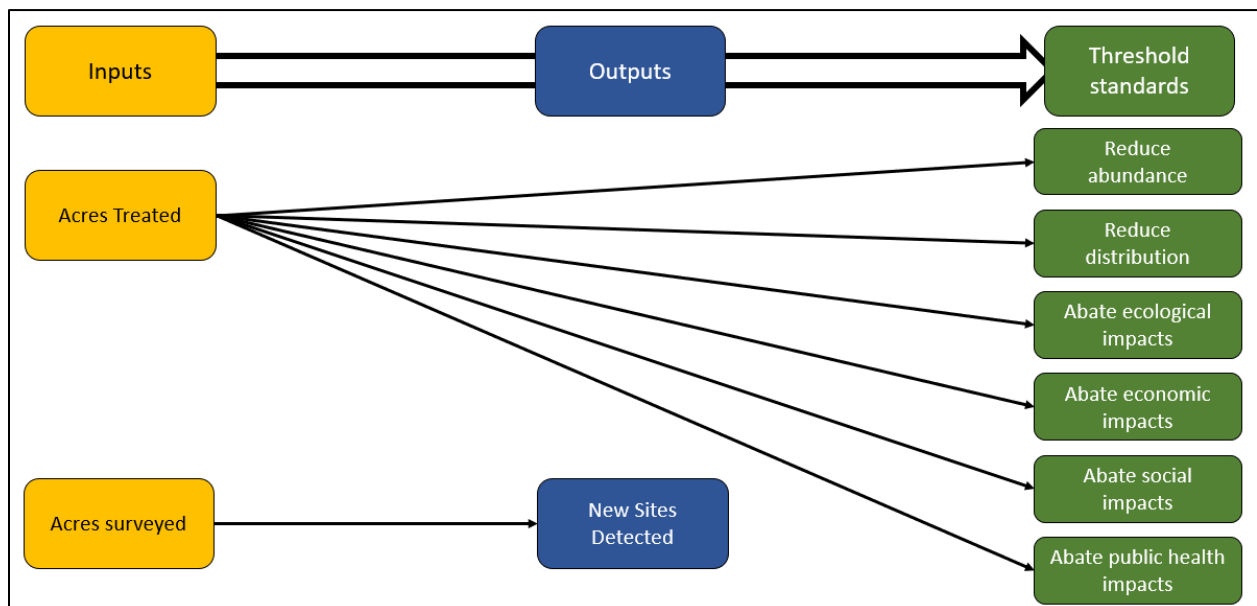


Figure 3: Results chain showing linkages between current and proposed AIS Performance Measures and AIS Threshold standards.

The initial outline proposed that the six current AIS controls standards be replaced with a single control standard. The current proposal includes two threshold standards for AIS control, one standard for overall abundance of AIS in the lake, and a second standard that targets conditions at each known site. The recommendations include the replacement of the “new sites detected” performance measure with an “abundance reduced” performance measure, that better captures the benefits of AIS treatments and their link to the threshold standards.

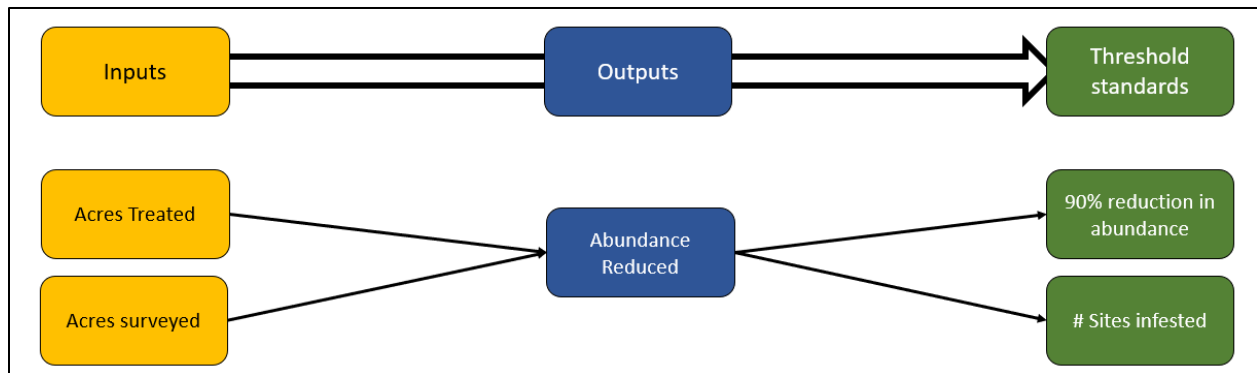


Figure 4: Results chain showing linkages between current and proposed AIS Performance Measures and AIS Threshold standards.

The proposal will be considered by the full AIS coordinating committee at their October 13<sup>th</sup> meeting.

Streams and Meadows:

Stream environment zone (SEZ) is a term unique to the Tahoe Region, that the TRPA Code of Ordinances defines as “Generally an area that owes its biological and physical characteristics to the presence of surface or ground water” (TRPA, 2012a). This definition includes perennial, intermittent, and ephemeral streams; wet meadows, marshes, and other wetlands; and riparian areas or other areas expressing the presence of surface and ground water. Historically, the region has only tracked the area of SEZ in the region, an approach that has been roundly criticized. A peer reviewer of the 2015 Threshold Evaluation summarized it as “the present approach to evaluating the condition and the improvement in SEZ’s is an overly blunt instrument with no apparent scientific basis beyond “more is better.”

In 2020, the region completed the SEZ baseline condition assessment. The assessment compiled information from a variety of sources to provide a comprehensive assessment of the health of SEZ in the Tahoe Basin. The assessment identified a set of metrics to assess site quality and integrated the quality

score with size to arrive a condition index. Details on the methodology and findings can be found at [https://gis.trpa.org/TahoeSEZViewer/SEZ%20baseline%20condition%20assessment\\_v8.pdf](https://gis.trpa.org/TahoeSEZViewer/SEZ%20baseline%20condition%20assessment_v8.pdf) and viewed spatially at <https://gis.trpa.org/tahoesezviewer/>.

The assessment provides a baseline against which to track change in conditions through time. Individual scores can be summed across the region to assess the overall health of SEZ at the basin scale. The SEZ condition index suggests that the Region’s SEZ are currently at 79% of their total possible score (Table 1).

*Table 1: SEZ Condition Index*

<b>SEZ Condition Index</b>	
Possible score	1,194,218
Current score	939,037
Current as percent of possible	79%

The assessment is currently being used as the basis for updating the restoration target. The assessment suggests there are a possible of 255,181 units of SEZ improvement available in the Region. Of the total possible improvement in SEZ quality at the region, 120,612 units would come from restoration of historic SEZ that have been lost to development. This suggests that absent removing existing development the maximum possible SEZ score in the region would be 1,073,606. Relative to this total, the region’s SEZ’s are currently at 87.5% of maximum possible score without removing development to re-establish SEZ. Staff is working with partners to build a new restoration target, that is grounded in the existing conditions of the baseline assessment and partners restoration vision for the region.

#### Other Considerations

In the discussions since the initial outline of thresholds standards a number of values were identified by partners that could be considered for the establishment of a threshold standard. Those include nearshore clarity, tributary concentrations and loads, trash, harmful algal blooms, microplastics, and human health for aquatic recreation. Staff will present brief overview of each at the meeting for discussion by the working group.

#### Contact Information:

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