LAKE TAHOE TMDL PROGRAM 2026 PERFORMANCE REPORT

Guiding Efforts to Restore Lake Tahoe's Historic Clarity

Background

The decline in Lake Tahoe's historic water clarity threatens its value as a world-class destination for tourism and outdoor recreation, and its ecological status as one of the few exceptionally clean and clear (ultraoligotrophic) lakes in the world. To tackle this issue, the Lahontan Regional Water Quality Control Board (Water Board) and the Nevada Division of Environmental Protection (NDEP) developed the Lake Tahoe Total Maximum Daily Load (TMDL). The TMDL Program guides ongoing efforts to restore Lake Tahoe's clarity so that people may once again see to depths of nearly 100 ft.

The TMDL Program aims to reduce fine sediment particles (FSP) - which scatter and reflect light - and the nutrients nitrogen and phosphorus – which fuel algal growth. The buildup of fine sediment particles and algae prevent light from penetrating deeper into the water column, thereby reducing lake clarity. The best available science indicated a 65%, 35% and 10% reduction in FSP, total phosphorus (TP) and total nitrogen (TN) from 2004 levels is needed to restore historic clarity within the lake. A 20-year interim transparency goal, known as the Clarity Challenge, requires basin wide pollutant load reductions to be achieved within 15 years, followed by five years of monitoring between 2026-2031, to confirm that 79 feet of transparency has been reached.

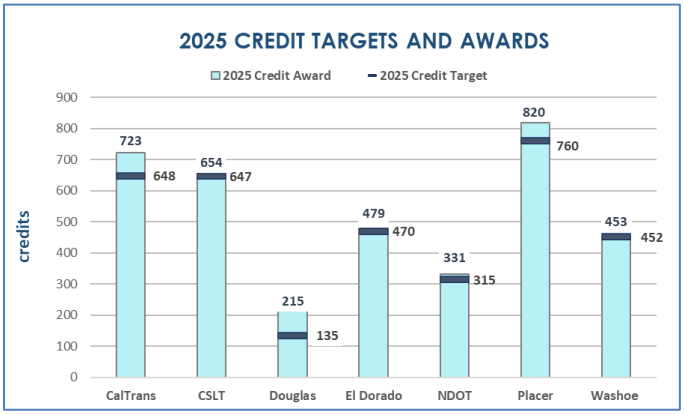
The Water Board and NDEP remain committed to continuous improvement and adaptive management of the Lake Tahoe TMDL Program. Transparent tracking and reporting of accomplishments relative to annual and multi-year load reduction targets and milestones is a critical component of progress assessment. As such, this 2026 TMDL Performance Report summarizes implementation accomplishments through 2025. Results are presented in two sections based on pollutant source category type: **Urban Uplands Source Category** and **Non-Urban Source Categories.** A final **Looking Forward** section looks at the program's progress and highlights the challenges, priorities, and direction of the program.

Urban Uplands Source Category

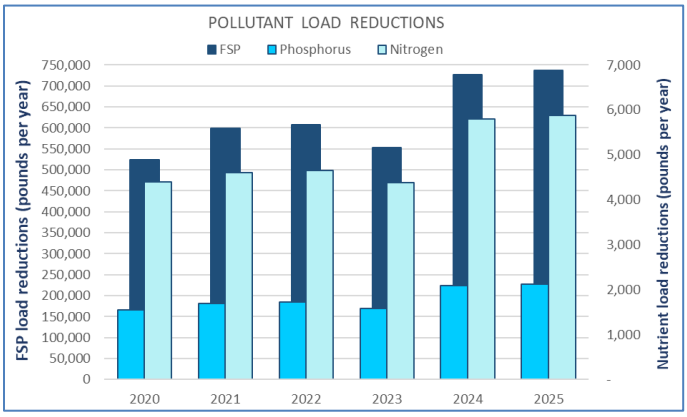
TMDL research shows FSP loads in urban stormwater must be reduced by one-third from 2004 levels to meet the Clarity Challenge. Managing urban uplands is the greatest opportunity to control FSP pollution, as runoff from roads and other urban land uses accounts for over 70 percent of total FSP loading to the lake. Urban Implementing Partners include the California and Nevada Departments of Transportation (CalTrans, NDOT); City of South Lake Tahoe (CSLT); and Douglas, El Dorado, Placer, and Washoe Counties.

Accomplishments

NDEP and the Water Board award Lake Clarity Credits to implementation partners who carry out pollutant controls such as roadway operations and maintenance, stormwater treatment facility construction and maintenance, and parcel-based best management practices (BMPs). These control measures are registered through a comprehensive accounting system known as the Lake Clarity Crediting Program (LCCP). Credits are awarded annually once ongoing effectiveness of these pollutant controls is demonstrated.



In 2025, the number of credits awarded to Urban Implementing Partners was 3,675. All Urban Implementing Partners met or exceeded individual credit targets, with a total exceedance of 248 credits basin wide. One credit is equivalent to roughly 200 lbs/year of FSP reduced, meaning the loads of FSP reduced in 2025 exceeded 736,600 lbs, which is approximately 29% less FSP delivered to the lake compared to 2004 baseline levels. Loads of nitrogen were reduced by nearly 5,875 lbs/year, representing a decrease of about 17% from 2004 baseline levels. Loads of phosphorus were also reduced by almost 2,120 lbs/year, representing a decrease of about 23% from 2004 baseline levels.



Non-Urban Source Categories

Forest uplands, stream channel erosion, and atmospheric deposition contribute just over one-quarter of the total FSP loading to Lake Tahoe. Non-urban sources also make up a significant percentage of the nitrogen and phosphorus loading (71 and 43 percent, respectively). Thus, actions taken by local, state, and federal land and natural resource management agencies to improve water quality are integral to helping achieve TMDL goals.

Pollutant load reductions from non-urban sources are tracked and assessed using a set of activity-based performance measures. Performance measures are compared against priority implementation actions in the TMDL Program to determine if progress is being made over time.

Accomplishments

The TMDL strategy to reduce pollutants from atmospheric deposition calls for controls to limit dust from roadways, parking lots, and construction sites in the Lake Tahoe Basin. In 2025, over 12,353 miles of streets were swept; 6 non-compliant wood stoves were removed or replaced; and 14 miles of pedestrian and bicycle routes were improved, designated, or constructed. The atmospheric component of the TMDL strategy also relies on the Tahoe Regional Planning Agency's (TRPA) air quality and transportation management plan to reduce nitrogen deposition from vehicle emissions. The plan's accomplishments are summarized in the TRPA 2025 Annual Report.

The TMDL strategy to reduce pollutants from forestlands is to control stormwater runoff from paved and unpaved roads, disturbed areas, and public facilities. To that end, six upland facilities were retrofitted for stormwater controls in 2025, 0.3 miles of forest road was decommissioned or retrofitted; and 5,485 acres of disturbed areas were enhanced. Forest partners continue to regularly inspect their road networks and perform maintenance as needed.

The TMDL Program prioritizes channel restoration and enhancement of the Upper Truckee River, Blackwood Creek, and Ward Creek. These three systems make up the vast majority of FSP loading from stream bed and bank erosion in the Basin. In 2025, 1,720 linear feet of stream channel were restored on Marlette Creek, 150 linear feet of stream channel were enhanced in the Upper Truckee River watershed, and 149 linear feet of stream channel were enhanced in the McKinney Creek watershed.

Looking Forward

Long-term trends in clarity have been seen as a more representative metric of Lake health than year-to-year variation. The Tahoe Science Advisory Council (Science Council) facilitated a rigorous statistical analysis of clarity data to determine trends and the difference between natural variability versus statistically significant changes over time. Lake Tahoe's annual average clarity was 69.2 feet in 2025. This is 7 feet clearer than last year's annual average of 62.3 feet, but it is not statistically different than last year. This value remains consistent with the range observed over the last 20 years, indicating that annual average clarity continues to remain stabilized. The data continues to show a trend of declining summer clarity that corresponds with seasonal peak of fine particles and more stabilized clarity in the winter season. While clarity is not improving, the clarity decline observed through the 1990's has stopped.

Changes to watershed conditions (such as wildfires), increased stratification, evolving physical dynamics, and other perturbations - including aquatic invasive species - that were not fully foreseen at the time of TMDL development may be affecting recent lake dynamics and clarity in Lake Tahoe. In 2026, researchers will work to better understand the drivers of clarity, including implementing new techniques to investigate the role of phytoplankton and picoplankton. Despite uncertainties, scientists and agencies agree that continued reductions in pollutant loads are fundamental to protecting the lake's water quality.

Opportunities for Improvement

2026 marks the fifteenth year of TMDL implementation and the load reduction goal necessary to achieve the Clarity Challenge of 79 feet of clarity by 2031. Reviewing processes and tools will be essential to informing future adaptive management actions during the Clarity Challenge period. Multiple efforts are underway for the coming year. The Lake Clarity Crediting Program (LCCP) will be reviewed to identify opportunities for improvements and increased efficiencies. Also underway is a more comprehensive evaluation of the Regional Stormwater Monitoring Program (RSWMP) dataset, a 13-year record of urban stormwater monitoring across the Tahoe Basin. Management agencies and partners are also working to modernize the information technology structure and platforms that support implementation of the TMDL program. While FSP and nutrients are key drivers of deep water clarity, their effects extend to nearshore water quality as well. A two-day workshop is planned for late 2026 to explore nearshore water quality dynamics, establish a shared understanding of current conditions, and develop recommendations for future research and monitoring. These actions will help inform upcoming management actions, including permit and interlocal agreement updates for both management agencies.

California Water Boards
State Water Resources Control Board
Regional Water Quality Control Boards

Nevada Division of Environmental Protection

Weblinks accessible from this document's e-version on the Lake Clarity Tracker (clarity.laketahoeinfo.org).