

## DEVELOPMENT OF A WATER QUALITY CREDITING AND TRADING FRAMEWORK FOR FINE SEDIMENT LOADING FROM URBAN STORMWATER IN LAKE TAHOE, CA

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**Project Costs:** \$180,521

**Project Completion:** 2007-Present

Achieving the goal of protecting Lake Tahoe's famed clarity while allowing 90,000 residents and millions of visitors to live, work and recreate in the sensitive watershed requires innovation. Researchers have risen to this challenge, developing the Lake Clarity and Watershed Models, experimenting with wetland treatment in the Tahoe's cold climate and analyzing BMPs to reduce nutrient and sediment concentration to levels below what is considered baseline for much of the country. The nation and states have risen to the challenge through funding the Environmental Improvement Program (EIP). The Regional Board has developed innovative regulations through municipal storm water permits that require effluent limits and pave the way for loading limits.

The proposed water quality trading feasibility study will determine if water quality trading is viable in the Lake Tahoe Basin and the project team will deliver a recommended trading system design. Potentially more important for the ultimate success of the TMDL, however, are components of the trading system and the outside perspectives brought by the most innovative policy makers in the country.

Trading has emerged nationally as one of the most cost-effective policy options to improve water quality. However, while the concept of water quality trading has found favour with many in the regulated and policymaking communities, the application of water quality trading has achieved only limited success in the few watersheds where it has been applied. Water quality trading programs face unique challenges given that it includes both regulated and unregulated sources, must address complex fate and transport issues, and must be able to quantify reductions from non-point sources that are often not directly measurable. Because of these challenges, trading feasibility analysis requires a unique combination of local knowledge, technical and experiential expertise and a persistent desire to seek innovations where regulatory policy alone will not achieve implementation goals. There are likely few entities that can bring such a combination of the necessary skills as those put forth by the project team for this Tahoe Basin endeavour.

By defining pollutant load reduction "credits", this project will provide a clear, recognizable focal point to protect lake clarity. Project implementers will design strategies to maximize the generation and use of such "credits" to accelerate water quality improvements, provide environmental benefits beyond those achieved with traditional command and control approaches, and conserve economic resources for additional environmental investments. Funders will be able to monitor success through "credit" production, not just dollars spent. As part of the education initiative, school children will estimate the number of "credits" they have generated by implementing residential BMPs. And, regulators will track load reduction "credits" to determine if an entity is in compliance with its load allocation.

Further, to develop trading areas, the project team will analyze expected costs of load reduction in specific areas as well as working with watershed modelers to determine baselines. The addition of the economic perspective of this project team to the watershed process and expertise of the IWQMS development team will

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result in a more equitable load allocation system that addresses the concerns of economically minded stakeholders.

The trading ratio analysis will challenge both project teams to quantify the impact of load reductions from different media (air versus land) and different areas within the watershed. The ratio quantifies the “quality” of an expected load reduction credit based on physical potential and level of certainty. The myriad of policies and regulations in the Basin will also require an intricate level of analysis to determine baseline conditions for credit generation. How these baseline conditions are determined will greatly affect the viability of an economically and environmentally beneficial trading program. Trading ratio and baseline deliberations require a skill set based on a detailed local knowledge of existing programs and a robust working knowledge of other trading systems and applications. These are essential to generate a transparent system that will guide project implementation efforts either with or without a trading program in place.

While the final products of this project will be a report, a handbook and an online credit tracking system, each product will also be an educational tool and guide. The report will communicate lessons learned from innovative market-based policies being tested across the continent and the globe. The handbook will capture the basic rules for producing load reductions in the Tahoe Basin. The online tracking tool will show the locations of projects to protect the lake, how and what reductions were achieved, and the costs. The integrated efforts with Project 1 will result in a tracking that will be suited for tracking multiple programs.

Such specified outcomes include:

- GOAL 1: Establishing a Project Advisory Committee to guide product development that will give both national level expert input and knowledge of the Lake Tahoe Basin.
- GOAL 2: Determining the initial feasibility of Water Quality Trading in the Lake Tahoe Basin.
- GOAL 3: Developing the underpinnings of the WQT program in coordination with BMP and watershed modeling efforts.
- GOAL 4: Developing the protocols and governance structure for operating and adapting the WQT system consistent with the Lake Tahoe Basin-wide Management System.
- GOAL 5: Developing incentives that will inspire private homeowners and businesses to implement the most effective BMPs.
- GOAL 6: Developing a trade tracking system integrated with the load reduction tracking system for the IWQMS.
- GOAL 7: Developing final reports with Pathway agency, expert advisor and public input that are useful for the operation of a WQT system and/or inform the implementation of other load reduction efforts.
- GOAL 8: Incorporating public and stakeholder input in to analyses and engage the public through Pathway 2007 and other venues. Gain public and stakeholder understanding through appropriately directed reports, presentation and exercises.

The project team strategy is to provide innovative yet practical analyses that integrate trading opportunities with existing efforts and policies as well as comport with the social, political, legal and scientific basis for Lake Tahoe management strategies. In this complex setting, this can only be provided by a diverse technical team with the most broad-based trading experience in the U.S.