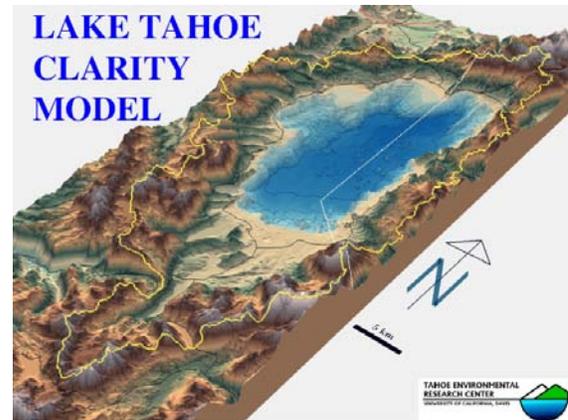


**DEVELOPMENT OF A WATER QUALITY CREDITING AND TRADING FRAMEWORK FOR  
FINE SEDIMENT LOADING FROM URBAN STORMWATER IN LAKE TAHOE, CA**

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

**Project Completion:** 2007-2010



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 concentrations 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) in the Lake Tahoe Basin whereby a Regional Board has developed innovative regulations through municipal storm water permits that require numeric effluent limits paving the way for loading limits.

Given projected costs of \$1-2B to address urban stormwater loads that are largely responsible for declining secchi depths of one foot/year, creative ways to select, prioritize and credit cost-effective actions are necessary. A water quality crediting scheme was devised by K&A under contract with Environmental Incentives based in South Lake Tahoe, CA. Funded by an EPA Targeted Watershed Grant, a feasibility study determined that water quality crediting and trading structures are viable in the Lake Tahoe Basin. The project team will delivered a recommended system design in 2010. Components of this trading system for urban stormwater are transferable to other national settings where urban stormwater and altered hydrology are impairing water quality.

By defining pollutant load reduction "credits", this project provided a clear, recognizable focal point to protect lake clarity. BMP 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. Regulators will track load reduction credits to determine if an entity is in compliance with its load allocation that will be uniquely defined in Phase II stormwater permits. Also unique in this application are fine particle sediment (< 20 microns) reductions targeted by the TMDL and established as the crediting parameter.

To develop trading zones, K&A analyzed expected costs of load reduction in specific areas as well as working with watershed modelers to determine baselines. This economic perspective resulted in a more equitable load allocation system that addresses the concerns of economically minded stakeholders. A trading ratio analysis examined 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 required an intricate level of analysis to determine baseline conditions for credit generation. How these baseline conditions are determined greatly affects the viability of an economically and environmentally beneficial trading program. Trading ratio and baseline deliberations required a skill set based on a detailed local knowledge of existing programs and a robust working knowledge of other trading systems and applications. These were essential to generate a transparent system that will guide project implementation efforts either with or without a trading program in place. This program, now active in the Tahoe Basin, is focusing on credit trades for fine sediments in urban stormwater.