The Lake Tahoe TMDL
Outline

• What is the Tahoe TMDL?

• How does the TMDL work?

• How are we going to implement the TMDL?
What is the Tahoe TMDL?

- TMDL stands for Total Maximum Daily Load
  - A science-based water quality restoration plan to address an identified water quality concern, in this case, declining lake water clarity.
  - A decade-long effort by state, federal, local governments agencies, science and academic communities, private and stakeholder entities.
  - The TMDL was initiated and developed by NDEP and CA Water Board. Although it was approved by EPA, the TMDL is implemented by the states.
What is the Problem?

DECLINE OF WATER CLARITY AT LAKE TAHOE

METERS

FEET

YEAR

Transparency Target
NDEP and CA Water Board selected a common numeric target for the TMDL: to restore water transparency to 1967-1971 levels.

• Equivalent to an annual average Secchi depth of 29.7 meters (97.4 feet).

• TMDL indicates goal can be achieved within 65 years.
How Does the TMDL Work?

- Determine what pollutants are causing Lake Tahoe’s clarity decline
  - Suspended Fine Sediment Particles (<16 micrometers) approx. 2/3 problem
  - Floating algae (caused by nitrogen and phosphorous)
How Does the TMDL Work?

- Identify the primary pollutant sources

**Fine Sediment Particles (less than 16 micrometers)**

Contribution by Source

- Urban Upland: 72%
- Non-urban Upland: 9%
- Stream Channel Erosion: 4%
- Atmospheric Deposition: 15%
- Shoreline Erosion: < 1%
How Does the TMDL Work?

• Provide general framework for reducing pollutant loading from major sources
  – Increase the efficiency and effectiveness of urban storm water management practices
  – Reduce fine sediment dust on paved and unpaved roads
  – Many other ongoing activities, such as forest and stream restoration.
Clarity Challenge (interim target)
Reverse clarity decline and measurably improve clarity

Year
1968  1988  2008  2028  2075

METERS

FEET

Transparency Target

Existing Condition

1st Clarity Challenge

2009 Average: 69 feet

20
The TMDL analysis established load reduction milestones based on an assumption that past levels of resource expenditure could continue.

Economic conditions have changed greatly since that analysis.

NDEP and CA Water Board are aware of economic concerns and are taking them into consideration during the implementation process.
How Will the TMDL be Implemented?

• Implementation of the TMDL will be overseen by NDEP and CA Water Board.

• Pollutant load reductions will be achieved through projects and practices carried out by local jurisdictions, transportation agencies, government entities and private parties.

• Detailed plans and strategies are being developed.
TMDL Implementation - Common Program Elements

- Development of Stormwater Load Reduction Plans (NV) and Pollutant Load Reduction Plans (CA) by municipalities.
- Consistent use of Lake Clarity Crediting Program to track load reduction progress.
- Joint TMDL Management System (under development)
TMDL Implementation - Common Program Benefits

• Allows customized solutions to specific problems.
• Opportunities for multi-agency projects and sharing of pollutant load reduction credits.
• Encourages valuable public/private partnerships to design and implement cost-effective solutions.
• Provides pre-project determination of pollutant load reduction credits (project certainty).
Storm water runoff has been regulated under the federal NPDES program since 1992. Caltrans and municipalities regulated with NPDES Permit.

- Municipal Permit update (December 2011) included TMDL requirements (5-year load reductions).
- NPDES muni permit also include standard federal storm water management plan elements.
- Statewide Caltrans Permit update in progress.
Nevada Implementation Approach

- Nevada has chosen to utilize a Memorandum of Agreement (MOA) approach instead of issuing permits.
- MOAs are being developed with Douglas County, Washoe County and NDOT. The agreements lay out how the implementers plan to achieve pollutant load reductions.
- The MOAs are based on Stormwater Load Reduction Plans, which provide detailed strategies and identify the best areas for pollutant reduction.
Nevada Implementation Approach

- A Memorandum of Agreement (MOA) approach is most effective for Nevada, given the state’s regulatory structure and economic conditions.
- Same science, same goal, same project planning process, same crediting program, just a different implementing mechanism.
- While we have the authority to make the process more regulatory if the MOA approach does not work, we do not anticipate any problems.
Benefits of the MOA Approach

• Collaboration
  – Addressing the problem is a “team effort” between the State and implementers.

• Adaptability
  – More nimble process allows implementers to take advantage of changing conditions and opportunities without revising permits.

• Flexibility
  – More funding opportunities available than under a permit program.

• Efficiency
  – Resources are focused on getting on-the-ground results instead of meeting administrative permit requirements.
TRPA’s Role in the TMDL

- NDEP and CA Water Board are working with TRPA to ensure smooth integration of the TMDL into the Regional Plan Update and other TRPA functions.
- The TMDL always contemplated that TRPA would support the states in the TMDL process through the use of incentives and other planning tools, rather than playing a regulatory role.
The Tahoe TMDL is an unprecedented effort and a great challenge.

Implementation is a long-term process which will continue to evolve and improve.

The TMDL is not the end of the work at Lake Tahoe.

Continued teamwork and coordination will be required.