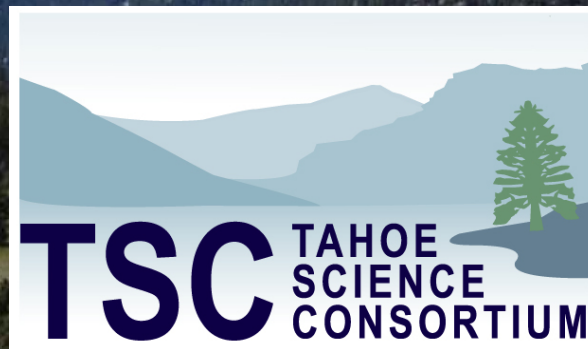


# Regional Stormwater Monitoring Program for the Lake Tahoe Basin

Tahoe Basin RSWMP Presentation to the  
Lake Tahoe Federal Advisory Committee  
authored by Alan Heyvaert  
presented by Peter Kraatz

March 24, 2008



# Timeline to Date

- **March 2007:** TSC secured SNPLMA funding to pursue science planning, specifically regional monitoring plans.
- **April - May 2007:** TSC then conducted reconnaissance surveys to identify an appropriate subject area.
- **June 2007:** Led an agency workshop to discuss regional monitoring concepts and to secure executive support for a regional stormwater monitoring program.
- **July 2007:** Identified the core working group of agency, implementer and TSC representatives.
- **August - March 2008:** This core group has completed a conceptual development plan for the regional stormwater monitoring program (Phase 1 document).

# Core Group Committee Members

## • Regulatory Agencies

- Hannah Schembri (LRWQCB)
- Jason Kuchnicki (NDEP)
- Larry Benoit (TRPA)
- Jacques Landy (USEPA)

## • Implementing Agencies

- \* Peter Kraatz (Placer County)
- Russ Wigart (El Dorado County)
- \* Scott Brown (NTCD)
- Joyce Brenner (Caltrans)
- Steve Cooke (NDOT)
- Robert Erlich (CSLT)

## • Funding / Planning Agencies

- Tricia York (CTC)
- Barbara Shanley (USFS)
- Dave Roberts (TRCD)
- Elizabeth Harrison (NDSL)

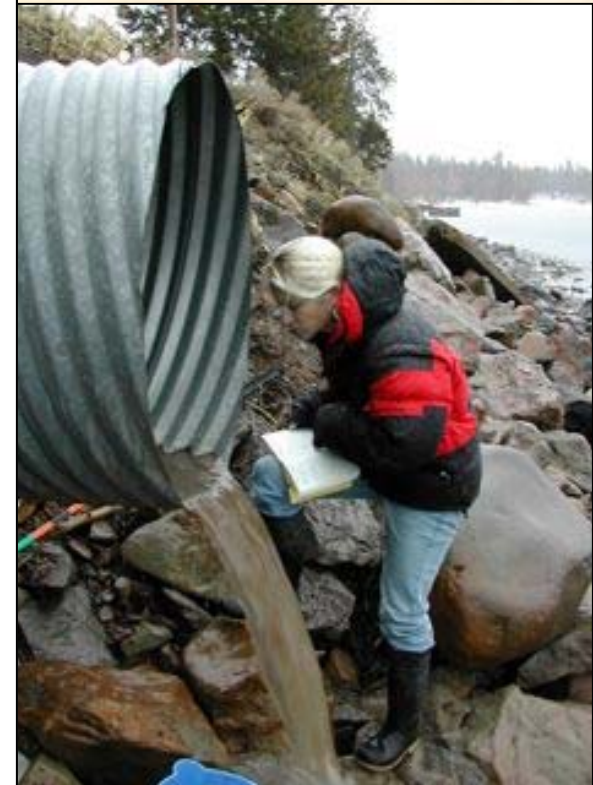
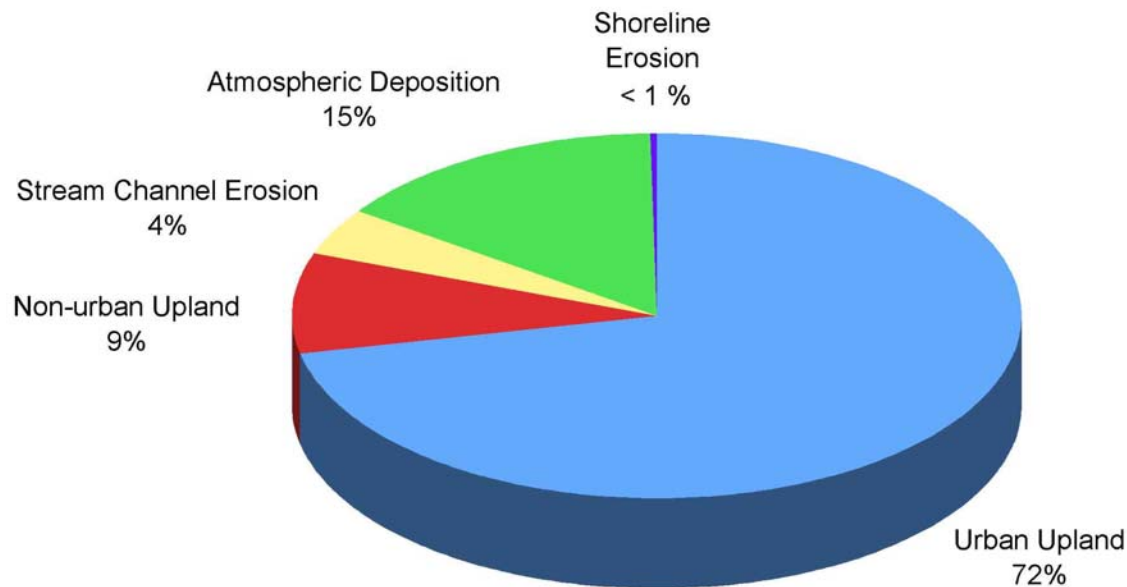
## • Science Community

- John Reuter (UCD)
- Alan Heyvaert (DRI)
- Wally Miller (UNR)
- Zach Hymanson (TSC)

# Tahoe Regional Stormwater Monitoring Program

(RSWMP will contribute to stormwater management)

**Fine Sediment Particle Number Estimates:**  
(particles less than 20 microns)  
**Percent Contribution per Source Category**



# RSWMP Operating Principles

- **Not reinventing the wheel:** Tahoe RSWMP will build on the experience of similar programs from around the country.
- **Assumes a shared commitment:** with anticipated “shared financial support, direction, and participation of regulatory agencies, funding groups and the regulated community.”
- **Compatible with other programs:** RSWMP will help fulfill monitoring information needs of the Tahoe TMDL, and would operate in a manner consistent with the Tahoe Adaptive Management System and with the objectives of Pathway 2007.
- **Conducted within an adaptive management framework:** will include scheduled reviews of program goals, objectives and results in order to assess alignment with agency and implementer needs.



## Tahoe RSWMP

A coordinated basin-wide program is needed to:

- determine specific sources,
- identify reduction opportunities,
- track progress.



# Three Phases to RSWMP

- **Phase 1: Conceptual Planning**

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- **Phase 2: Detailed Program Specification**

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- **Phase 3: Project Implementation**

—

# Three Phases to RSWMP

- **Phase 1: Conceptual Planning**
  - August 2007 through March 2008
- **Phase 2: Detailed Program Specification**
  - Anticipated: May 2008 through June 2009
- **Phase 3: Project Implementation**
  - Anticipated: from July 2009 onward



# Three Phases to RSWMP (1)

- **Phase 1.** Framework development as a collaborative effort by core group members representing diverse interests, including:

# Three Phases to RSWMP (1)

- **Phase 1.** Framework development as a collaborative effort by core group members representing diverse interests, including:
  - consensus development of RSWMP goals and objectives;
  - general outline of the monitoring design necessary to accomplish objectives;
  - recommended organizational structures for RSWMP implementation;
  - with documents submitted to USFS for Phase 2 funding.

# Three Phases to RSWMP (2)

- **Phase 2:** Develop detailed monitoring plan, including:

# Three Phases to RSWMP (2)

- **Phase 2:** Develop detailed monitoring plan, including:
  - detailed specifications for monitoring design, costs, resources, personnel, etc;
  - plans for database management, reporting requirements, analysis protocols, QA/QC procedures;
  - RSWMP organizational structure, funding arrangements, agency roles and responsibilities, internal and external peer-review, etc;
  - inventory and evaluations of existing stormwater monitoring projects and data.

# Three Phases to RSWMP (3)

- **Phase 3:** Implement the Tahoe Regional Stormwater Monitoring Program:

# Three Phases to RSWMP (3)

- **Phase 3:** Implement the Tahoe Regional Stormwater Monitoring Program:
  - with all necessary elements in place to support the program, including funding agreements;
  - integrated with other Tahoe programs and regional partners;
  - to provide data, products and recommendations based on data analysis and project evaluation;
  - including periodic programmatic review.

# Tahoe Regional Stormwater Monitoring Program Framework:

- 1) Programmatic Directives
- 2) Monitoring Goals
- 3) Data Objectives

# Programmatic Directives

- A. Develop a stormwater monitoring program that is directly responsive to the needs of both regulatory agencies and project implementers.
- B. Provide consistency in sampling design, data reporting and quality assurance.
- C. Develop data management and communication tools for efficient and effective reporting on current conditions and trends.
- D. Assure high benefit from regional stormwater monitoring through a coordinated program that informs priority management decisions.
- E. Implement sustainable RSWMP organizational structure with stable funding, dedicated personnel and adequate resources.



# Monitoring Goals

- Identify specific sources of urban stormwater pollutants.
  - ❖
- Quantify progress in pollutant reduction and restoration efforts.
  - ❖
- Develop information for improvements in BMP design, operation and maintenance.
  - ❖
- Provide data reporting, analysis and access for better project design, prioritization and long-term performance.
  - ❖

# Monitoring Goals

- Identify specific sources of urban stormwater pollutants.
  - ❖ (Pollutant Source Monitoring)
- Quantify progress in pollutant reduction and restoration efforts.
  - ❖ (Pollutant Reduction Monitoring)
- Develop information for improvements in BMP design, operation and maintenance.
  - ❖ (BMP Design, Operation and Maintenance Monitoring)
- Provide data reporting, analysis and access for better project design, prioritization and long-term performance.
  - ❖ (Data Management, Analysis and Dissemination)

# Data Objectives (partial list)

## ➤ **Pollutant Source Monitoring**

- ❖ Identify most important source areas for loads and concentrations.
- ❖ Refine relationships between land use and pollutant generation.
- ❖ Provide periodic source data updates for basin-scale modeling.

## ➤ **Pollutant Reduction Monitoring**

- ❖ Determine existing concentrations and loads to support crediting.
- ❖ Document progress toward TMDL and other regulatory goals.
- ❖ Provide data required to fulfill permit reporting.

## ➤ **BMP Design, Operation and Maintenance Monitoring**

- ❖ Provide field evaluations of BMPs and project implementation.
- ❖ Develop effectiveness matrix for BMP design variables.

# Programmatic Timelines

2007

**Draft Lake Tahoe TMDL Technical Report**

**RSWMP Goals and Objectives**

**RSWMP Phase 1 Document**

2008

**Draft Lake Tahoe TMDL to Scientific Peer Review**

**Anticipated RSWMP Phase 2 Plan**

2009

**Anticipated TMDL Adoption & RSWMP Implementation**

**RSWMP Annual Report and Review**

2010

**NPDES Permit Update (California)**

# Phase 1 Document for Phase 2 Funding

## Regional Stormwater Monitoring Program (RSWMP Phase 1) Conceptual Development Plan

March  
2008



A Cooperative Program of  
Tahoe Basin Agencies,  
Implementers and the Tahoe  
Science Consortium

## Table of Contents

1. Introduction
2. Goals and Objectives
3. Monitoring Design
4. Sampling and Analysis
5. Data Management and Analysis
6. Reporting Cycles and Products
7. Organizational Development
8. Funding Mechanisms and Operating Budget
9. Workplan and Budget for Tahoe Basin RSWMP Phase 2

# Benefits of RSWMP

- Data to assess progress in meeting the “Clarity Challenge.”
- Evaluation of EIP and threshold attainment.
- Information that improves performance of future projects.
- Program to meet regulatory monitoring requirements.
- A shared language and understanding of regional stormwater facts.
- Cost savings.
- Other ....