



Allocating Allowable Pollutant Loads

Presentation Outline

1. Allocation overview
2. Allocation approach considerations
3. Recommended allocation approach
4. Next steps

Pollutant Load Allocations

- Allocation = allowable numeric loads to achieve water quality goals
- Required by US EPA TMDL process
- Defines “who” is “responsible” for reducing current loads
- Implemented via NPDES Permits and other regulatory programs

Information to Support Allocation Process

Allocation process is supported by two “foundations”:

1. Lake Tahoe Watershed Model

Model output provides upland loading analysis by land use and by jurisdiction

2. Pollutant Reduction Opportunity Analysis

Recommended Strategy provides relative load reductions among the four major source categories

Lake Tahoe Watershed Model

Model parameters account for:

Different land use patterns

Precipitation distribution

Soils and geology

Model outputs provide:

Baseline pollutant loads by jurisdiction

Relative loading by land use

Pre-development load estimates

Pollutant Load Allocation Options

Three issues to consider:

1. Total Load vs. Anthropogenic Input
2. Equal Source Reductions vs. Recommended Strategy
3. Basin-wide vs. Jurisdiction-specific allocations

Total Load vs. Anthropogenic Inputs

- Determine basin-wide and source-specific “background” load
- Determine basin-wide and source-specific “anthropogenic” load
- Allocate loads based on each source’s “anthropogenic” contribution
- Load allocations would not apply to the “background” load

Total Load vs. Anthropogenic Inputs

- Acknowledges a portion of the load is “background”
- Emphasizes the “human caused” loading
- Bulk of the Total Load is Anthropogenic

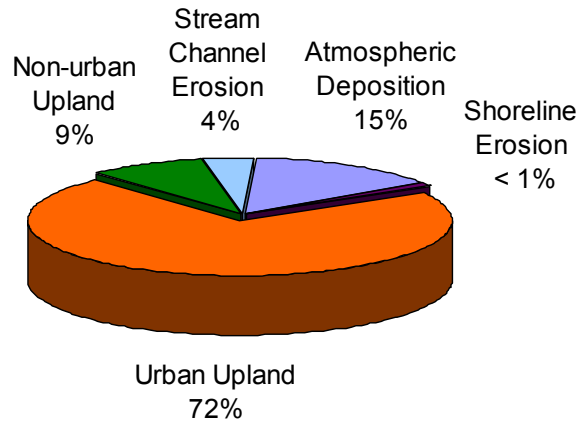
Equal Source Reductions vs. Recommended Strategy

Allocate based on the Recommended
Strategy

or....

Allocate based on Equal Source
Reductions

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



Recommended Strategy

**Determined by dividing the
on (at 15 years) by the**

Forest Uplands: $1\% / 9\% = \underline{12\% \text{ Reduction}}$

Stream Channel Erosion: $1.8\% / 3\% = \underline{53\% \text{ Reduction}}$

Atmospheric Deposition: $4.6\% / 15\% = \underline{31\% \text{ Reduction}}$

Urban Uplands: $24.5\% / 72\% = \underline{34\% \text{ Reduction}}$

Allocations based on Equal Source Reductions

Needed percent reduction (at 15 years) by source can be calculated for each source by multiplying an equivalent source percentage by the percent contribution:

Forest Uplands: 2.9% / 9% = 32% Reduction

Stream Channel Erosion: 1.3% / 3% = 32% Reduction

Atmospheric Deposition: 4.8% / 15% = 32% Reduction

Urban Uplands: 23.0% / 72% = 32% Reduction

Equal Source Reductions vs. Recommended Strategy

Percent Reduction of Basin-wide Particle Load by Source

| | Recommended Strategy | Equal Source Reduction |
|----------------|----------------------|------------------------|
| Forest Uplands | 1.0% | 2.9% |
| Stream Channel | 1.8% | 1.3% |
| Atmospheric | 4.6% | 4.8% |
| Urban Uplands | 24.5% | 23% |

Equal Source Reductions vs. Recommended Strategy

Allocations based on Recommended Strategy:

- Provides reasonable assurance to achieve interim clarity target
- Considers ability to reduce
- Provides identified, cost effective solutions

Allocations based on Equal Source Reductions:

- Perception of fairness and equity
- Does not account for ability to reduce
- Relies on implementation community to determine most cost effective reduction opportunities

Basin-wide vs. Jurisdiction-specific Allocations

Urban Uplands waste load allocations are often Jurisdiction-specific to facilitate regulation

Load allocations could be basin-wide

Forest Uplands

Stream Channel Erosion

Atmospheric Deposition

Where we're headed.....

- Allocate load and waste loads on **total baseline load**
- Use percent reductions described in the **Recommended Strategy**
- **Basin-wide** load allocations for Stream, Forest, and Atmospheric sources
- **Jurisdiction specific** waste load allocations for Urban sources

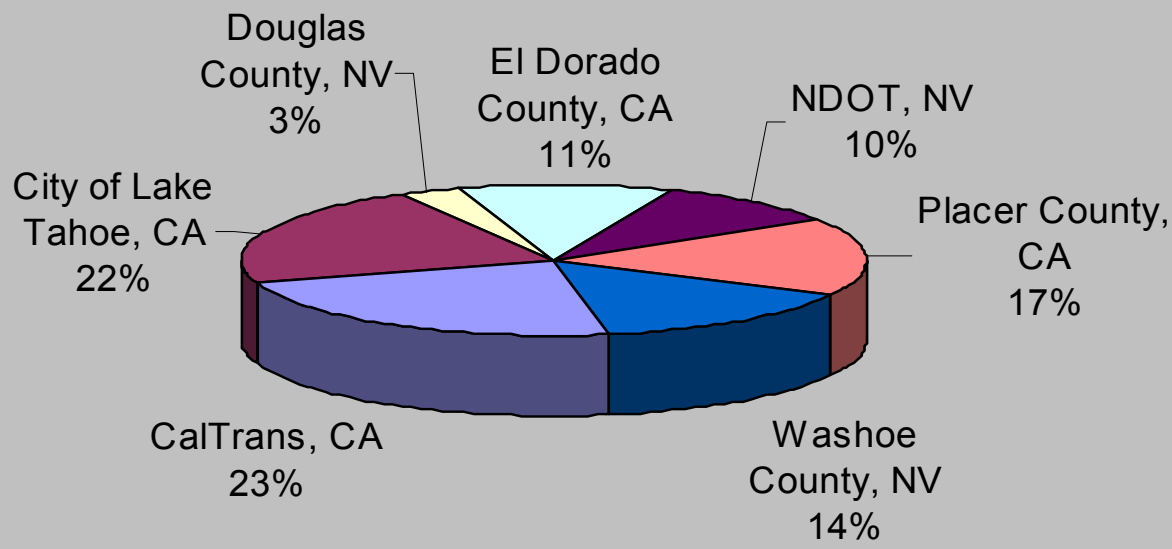
Next Steps

1. Allocation Process
2. Draft TMDL – Winter 2008
3. Peer Review – Winter 2008/09
4. Crediting, Tracking, Verification – Winter 2008/09



Urban Particle Loads – How the 72% is Distributed

Urban Fine Sediment Particle Number Estimates - Percent by Jurisdiction



Urban Particle Loads – How the 72% is Distributed

