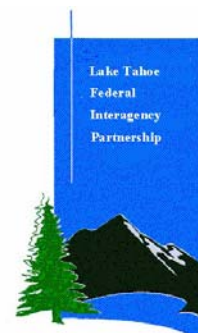


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# A Federal Vision for the Environmental Improvement Program at Lake Tahoe



*June 2006*



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**ACRONYMS**

BMP ..... Best Management Practice  
EIP ..... Environmental Improvement Program  
ITS ..... Intelligent Transportation System  
LTBEC ..... Lake Tahoe Basin Executive Committee  
LTFAC ..... Lake Tahoe Federal Advisory Committee  
MPO..... Metropolitan Planning Organization  
PCT..... Partnership Coordination Team  
SEZ..... Stream Environment Zone  
SNPLMA ..... Southern Nevada Public Lands Management Act  
TIIMS ..... Tahoe Integrated Information Management System  
TREN ..... Tahoe Regional Executives  
TRPA ..... Tahoe Regional Planning Agency  
TSC..... Tahoe Science Consortium  
VMT ..... Vehicle Miles Travels

# A Federal Vision for the Environmental Improvement Program at Lake Tahoe

## Introduction and Background

### What is the EIP?

The Environmental Improvement Program (EIP) is a cooperative effort to preserve, restore and enhance the unique natural and human environment of the Lake Tahoe Region. The EIP defines restoration needs for attaining environmental goals or “Thresholds” and, through a substantial investment of resources, increases the pace at which the Thresholds will be attained. Partnerships with all sectors of the community, including the private sector, local, State and Federal government, are key to this strategy (TRPA, 1998).

The process for developing and implementing EIP programs and projects is dynamic as conditions change. Newly-available analytic tools, such as the Lake Tahoe Watershed Assessment and the Lake Tahoe Water Clarity and Watershed models have improved the state of information pertaining to the need for, and scoping of, EIP projects. The adoption of Chapter 31 of the Tahoe Regional Planning Agency (TRPA) *Code of Ordinances* facilitates the update of the EIP by describing the relevance of the EIP to the Regional Land Use Plan. Regular updates to the EIP ensure that the document is consistent with Tahoe Basin needs and that the program meets stated objectives.

### Regional Plan and Thresholds

The *Tahoe Regional Planning Compact* was created by identical statutes in the States of California and Nevada, ratified by Congress, and signed into federal law first in 1969 (Public Law 91-148) and then as a revision in 1980 (Public Law 96-551). The Compact is the authorizing legislation for the Tahoe Regional Planning Agency (TRPA) and the Tahoe Transportation District (TTD). It describes the authority, scope, role, and governance of the respective agencies. The Compact also provides some direction for the interaction of the Federal Government at Lake Tahoe.

The *Compact* directs the TRPA to develop a regional plan that “...achieves and maintains the adopted Environmental Threshold Carrying Capacities.” It also stipulates that “[t]he regional plan shall consist of a diagram, or diagrams, and text, or texts setting forth the projects and proposals for implementation of the regional plan, a description of needs and goals of the region and a statement of the policies, standards and elements of the regional plan.” The EIP is intended to foster implementation of the Regional Plan by: defining what improvement projects need to be implemented in order to attain Thresholds, mobilizing resources to implement restoration, and focusing stakeholder action on these

In 1982, TRPA, in cooperation with the States of California and Nevada, Federal government representatives, the scientific community and local stakeholders, established Threshold standards for nine categories of values identified for the

Lake Tahoe Region. These values are considered unique to the Lake Tahoe Basin and their sustenance is desired. These Environmental Threshold Carrying Capacities are defined as, "Environmental standards necessary to maintain significant scenic, recreational, educational, scientific, or natural values of the Region or to maintain public health and safety within the Region".

A Regional Plan to achieve these Thresholds was first adopted in 1984 with a significant revision in 1987. The Regional Plan outlines a number of strategies to achieve the Thresholds. These strategies include: land use plans, development regulation, a transportation plan, and the EIP. The EIP is a strategy designed to accelerate the attainment of thresholds by the investment of public and private funds into physical projects. Examples include erosion control projects, public land acquisition, and forest fuel reduction projects. The 2001 update of the EIP (TRPA 2001) identified more than 700 projects and a cost exceeding 1.2 billion dollars.

Every five years TRPA is required to review the status of Threshold attainment. The most recent review was in 2001 (TRPA 2002). Table 1 is reproduced from that report and illustrates the attainment status over the last three evaluation periods and the trends associated with each Threshold Indicator. Only 40% of the Thresholds Indicators were meeting the standard or nearly meeting the standard, 11% were in an unknown condition, and 49% were not meeting the standards.

### **The Federal Role in Creating the Tahoe Regional Planning Compact and the Environmental Improvement Program**

The basis for the Tahoe Basin's current environmental management framework is the *Lake Tahoe Environmental Assessment*, a document created by the Western Federal Regional Council in 1979. The *Assessment* analyzed the impacts of development on the Tahoe Basin ecosystem and made recommendations for addressing the Basin's environmental concerns. These recommendations became changes to the Compact in 1980, directed the development of the Thresholds and informed the development of regulations and programs like the EIP.

During the 1997 Lake Tahoe Presidential Forum, the President issued Executive Order 13507 which created the Lake Tahoe Federal Interagency Partnership (Federal Partnership), and the President identified key environmental deliverables for Lake Tahoe (later called the Presidential Deliverables). Annual progress reports identified the progress made toward these presidential deliverables. The Federal Partnership Agreement (1997), signed during the Presidential Forum, committed participating federal departments and agencies to achieve the Executive Order, review and comment on the 1997 draft Environmental Improvement Program and to integrate appropriate federal programs and funds to help achieve the goals of the EIP. The Federal Partnership completed this review in August 1999 and found that "the EIP is a viable framework for guiding implementation of actions needed to attain the environmental thresholds for the Tahoe Basin."

In 2001 the *Lake Tahoe Restoration Act* was signed. This legislation authorized \$300 million for the Federal share of the EIP. Significant funding became available with the 2003 amendment of the *Southern Nevada Public Lands Management Act* (SNPLMA), which provided for \$300 million dollars for federal EIP projects over time. The implementing agreement for the SNPLMA specifies a process for determining which EIP projects are funded, and includes input from federal agencies and the Lake Tahoe Federal Advisory Committee (see below for more information about the LTFAC).

Table 1. Summary of Threshold Indicator Status

Environmental Threshold Compliance Indicator Trends				
Threshold	1991	Evaluations 1996	2001	Trend
<b>I. AIR QUALITY</b>				
AQ-1 CO	Nonattainment	<b>Attainment</b>	<b>Attainment</b>	▲
AQ-2 O <sub>3</sub>	Nonattainment	Nonattainment	Nonattainment	—
AQ-3 Particulate	Nonattainment	Nonattainment	<b>Attainment</b>	▲
AQ-4 Visibility	<b>Attainment</b>	Nonattainment	Nonattainment	▼
AQ-5 U.S. 50 Traffic Volume	Nonattainment	<b>Attainment</b>	Unknown	—
AQ-6 Wood Smoke	Nonattainment	Nonattainment	Unknown	▲
AQ-7 VMT	Nonattainment	Nonattainment	Nonattainment	▼
AQ-8 Atmospheric Nutrient Loading	<b>Attainment</b>	<b>Attainment</b>	Unknown	▲
<b>II. WATER QUALITY</b>				
WQ-1 Turbidity (Shallow)	<b>Attainment</b>	<b>Attainment</b>	<b>Attainment</b>	—
WQ-2 Clarity, Winter	Nonattainment	Nonattainment	Nonattainment	▲
WQ-3 Phytoplankton PPr	Nonattainment	Nonattainment	Nonattainment	▼
WQ-4 Tributary Water Quality	Nonattainment	Nonattainment	Nonattainment	▲
WQ-5 Runoff Water Quality	Nonattainment	Nonattainment	Nonattainment	—
WQ-6 Groundwater	Nonattainment	Nonattainment	Nonattainment	—
WQ-7 Other Lakes	Unknown	Unknown	Unknown	—
<b>III. SOIL CONSERVATION</b>				
SC-1 Impervious Coverage	Nonattainment	Nonattainment	Nonattainment	▼
SC-2 Naturally-Functioning SEZ	Nonattainment	Nonattainment	Nonattainment	▲
<b>IV. VEGETATION</b>				
V-1 Relative Abundance and Pattern	Nonattainment	Nonattainment	Nonattainment	▲
V-2 Uncommon Plant Communities	<b>Attainment</b>	<b>Attainment</b>	<b>Attainment</b>	▲
V-3 Sensitive Vegetation	Nonattainment	Nonattainment	Nonattainment	—
V-4 Late Seral/Old Growth (New)			Nonattainment	▲
<b>V. FISHERIES</b>				
F-1 Lake Habitat	Nonattainment	Nonattainment	Nonattainment	▲
F-2 Stream Habitat	Nonattainment	Nonattainment	Nonattainment	▲
F-3 In-Stream Flows	Unknown	Unknown	<b>Attainment</b>	—
F-4 Lahontan Cutthroat Trout (New)			<b>Attainment*</b>	▲
<b>VI. WILDLIFE</b>				
W-1 Special Interest Species	Nonattainment	Nonattainment	Nonattainment	▲
W-2 Habitats of Special Significance	<b>Attainment</b>	Nonattainment	Nonattainment	▲

\* The USWFS believes this should be listed as non-attainment.

Table 1. Summary of Threshold Indicator Status (Cont.)

Environmental Threshold Compliance Indicator Trends					
Threshold		1991	Evaluations 1996	2001	Trend
VII. SCENIC RESOURCES					
SR-1	Travel Route Ratings	Nonattainment	Nonattainment	Nonattainment	▲▼
SR-2	Scenic Quality Ratings	Nonattainment	Nonattainment	Nonattainment	▲▼
SR-3	Public Recreation Area Scenic Quality Ratings	Unknown	Unknown	Nonattainment	▼
SR-4	Community Design	Unknown	Nonattainment	Nonattainment	▲
VIII. NOISE					
N-1	Single Event (Aircraft)	Unknown	Nonattainment	Nonattainment	▲
N-2	Single Event (Other)	<b>Attainment</b>	<b>Attainment</b>	Nonattainment	—
N-3	Community Noise	Nonattainment	Nonattainment	Nonattainment	—
IX. RECREATION					
R-1	High Quality Recreational Experience	Unknown	Unknown	Nonattainment	▲
R-2	Capacity Available to the General Public	<b>Attainment</b>	<b>Attainment</b>	<b>Attainment</b>	▲

Positive Trend ▲ Negative Trend ▼ No Trend —

Source: 2002 Threshold Evaluation --TRPA

## Many Partners, Many Roles

Four departments and one independent agency of the federal government are represented in the Federal Partnership, including:

- U.S. Department of Agriculture
  - Forest Service (USFS)
  - Natural Resources Conservation Service (NRCS)
- U.S. Department of Defense
  - Army Corps of Engineers (USACE)
- U.S. Department of Interior
  - Bureau of Reclamation (USBOR)
  - Fish and Wildlife Service (USFWS)
  - Geological Survey (USGS)
- U.S. Department of Transportation
  - Federal Highway Administration (FHWA)
  - Federal Transit Administration (FTA)
- U.S. Environmental Protection Agency (USEPA)

The federal agencies have many roles in Lake Tahoe. These include, conducting research and studies, education, regulation, funding, and implementing projects. In addition, most Federal agencies assist other EIP partners in conducting projects either by providing direct technical assistance or by facilitating projects.

Oversight of the Federal Partnership is provided by the Tahoe Regional Executives (TREX) which consists of the regional administrators of the eight agencies (the FHWA does not have a regional administrator). Day-to-day



coordination and implementation rests with the Lake Tahoe Basin Executive Committee (LTBEC), which consists of the most-senior local agency official for each agency.

A Federal Advisory Committee (LTFAC) provides the Federal Partnership with input and feedback on issues relating to the Federal portion of the EIP. The Forest Supervisor of the Lake Tahoe Basin Management Unit is the Designated Federal Official (DFO). The Committee is comprised of 20 non-Federal representatives from different interest areas, as follows:

Education	Resort Associations
Environmental	Science & Research
Gaming	Ski Resorts
Labor	South Shore Economics & Recreation
Local Government / California	State of California
Local Government / Nevada	State of Nevada
Two Members-at-Large	Transportation
National Environmental	Tahoe Regional Planning Agency
North Shore Economics & Recreation	Washoe Tribe
Property Rights	

The LTFAC provides advice to the Federal Partnership on SNPLMA funding and other key Federal EIP activities.

### **Genesis, Review and Approval of a Federal Vision Document**

The need for this *Federal Vision for the EIP* document was identified by LTBEC and TRPA. The LTFAC and the general public reviewed and commented on an early draft of the document.

## Federal Vision and Goals

The Federal Vision of Federal Partnership is:

***We (the Federal Partnership) are committed to the restoration of the Lake Tahoe Basin through stewardship, service, and science.***

The Federal Partnership has three goals; stewardship, service and science.

***Stewardship Goal: The Federal Partnership will take actions to protect, conserve and improve the natural resources of the Lake Tahoe Region.***

The Federal Partnership will protect, conserve and attain environmental thresholds with consideration for socio-economic impacts. The Federal Partnership will work with local communities, agencies and the Washoe Tribe to foster and promote environmental stewardship on public and private lands in the Lake Tahoe Basin. The Federal Partnership will work in cooperation with local communities and agencies to implement stewardship programs and develop an environmental education strategy that will support the EIP. At the project level, the Federal Partnership will apply an adaptive management system to help ensure projects are cost effective. The Federal Partnership will consider the socio-economic impacts of proposed actions on public lands.

***Service Goal: The Federal Partnership will assist tribal, state, regional, local and private stakeholders in the implementation of the Environmental Improvement Program.***

**Programmatic assistance.** Programmatic assistance advances the capability and capacity of stakeholders to implement the EIP. Programmatic assistance encompasses assistance at the program and project level. Federal agencies will provide programmatic assistance through:

- Multi-agency program and project facilitation and integration;
- Technical expertise from national resources;
- Emphasis on a Watershed approach, not political boundaries.

**Project assistance.** Project assistance can include a specific research effort or planning, design, and construction of a physical improvement project. Federal agencies will provide project assistance through:

- Project execution on Federally and non-Federally managed lands;
- Cost-shared project partnering;
- Grant funding;
- Implementation assistance;
- Technical expertise and consultation.

***Science Goal: The Federal Partnership will promote and utilize the best available science in implementation of the EIP.***

The Federal Partnership is committed to science-based decision making and utilizing available research and monitoring in environmental protection activities. Federal agencies will continue to work with the science community to form the Tahoe Science Consortium (TSC) which will promote further integration of science into EIP projects and programs and focus critical resources on the most important applied science questions. Federal land managers will consider scientific information generated by the TSC in developing and implementing EIP projects.

The Federal Partnership will promote technology transfer from sources within and outside the Basin. The Federal Partnership is an advocate for science and will seek opportunities for education and outreach to promote the use of best available science in managing Lake Tahoe Basin resources.

The Federal Partnership will use an adaptive management approach to inform management activities and will encourage Basin-wide monitoring, including examination of cumulative impacts of proposed projects and programs. It is envisioned that this system will also facilitate review of EIP program-wide effectiveness, support collective project analysis, and improve project design over time. In order to support these efforts the Federal Partnership will utilize existing data management tools including the Tahoe Integrated Information Management System (TIIMS) and the USGS Lake Tahoe Clearinghouse.

## **Federal Environmental Improvement Focus Areas**

There are four Environmental Improvement Program Focus Areas:

- Watershed and Habitat Improvement
- Air Quality and Transportation
- Recreation and Scenic
- Forest Health

These Focus Areas are intended to support management of the EIP by allowing scheduling and programming of EIP projects. It is envisioned that funding and resources are allocated among Focus Areas and then into the programs. (see Table 2).

### ***Watershed and Habitat Improvement***

Programs and projects within the Watershed and Habitat Improvement Focus Area are intended to improve water quality; sensitive species and wildlife habitat; and stream environment zones (SEZs). Water quality is protected by retrofitting facilities, roads and trails, and other projects. Water quality is also protected through SEZ restoration which reduces stream bank erosion. These programs and projects protect or restore sensitive species habitat. Large-scale vegetation improvement projects are not part of this Focus Area, but are part of the Forest Health Focus Area. Education is a critical emphasis under the Watershed and Habitat Improvement Focus Area, as an informed public that understands and supports these projects and understands how to reduce impact to sensitive areas is essential to EIP success.

### ***Air Quality and Transportation***

Programs and projects within the Air Quality and Transportation Focus Area are intended to improve air quality to levels that are healthful for residents, visitors, and ecosystems, and supports excellent visibility within the Tahoe Basin. Air quality and transportation programs focus on controlling emissions from stationary sources (industrial, forest fuels), and mobile sources (primarily vehicles, buses, and equipment) through programmatic, voluntary and regulatory strategies. These strategies include, but are not limited to, transportation improvement projects, modeling and monitoring of air pollution and transportation measures, maintaining a database of sources and emission levels, and providing a wide range of technical assistance.

### ***Recreation and Scenic***

Programs and projects within the Recreation and Scenic Focus Area are intended to improve recreation experience and access, and to improve the scenic landscape. Recreation and scenic projects improve the resident and visitor experience of the Lake Tahoe Basin. Recreation includes two types of projects. One type is recreation facilities and the other type is visitor interpretation with educational signs and other materials. Scenic projects

primarily entail removal, screening, or refinishing of unsightly facilities. A majority of the recreation facilities have an educational element. People enjoy learning about Lake Tahoe and how to protect Lake Tahoe.

### **Forest Health**

Programs and projects within the Forest Health Focus Area are intended to improve overall forest condition for wildlife, plants and visitor use. Past human activity has resulted in a forest that has an unhealthy mix of species and density of trees, which creates a severe fire hazard. Projects will restore the forest to a healthier condition and reduce fire hazard. Other projects could include aspen stand enhancement and meadow restoration. Both of these ecosystems are impacted by conifer encroachment. Education about healthy forest condition and fire safe behavior is key to garnering public support and cooperation for needed forest projects.

### **Agency Involvement**

The missions and authorities of the nine federal agencies steer the activities of these agencies into one or more of the Focus Areas. Table 2 identifies the relationship of agencies and Focus Areas.

Table 2. Relationship between Focus Areas and Agencies

Federal Lake Tahoe EIP Programs	Focus Areas			
	Watershed & Habitat Improvement	Air Quality & Transportation	Recreation & Scenic	Forest Health
<b>U.S. Department of Agriculture</b>				
Forest Service	•	•	•	•
Natural Resources Conservation Service	•			•
<b>U.S. Department of Defense</b>				
Army Corps of Engineers	•	•		
<b>U.S. Department of Interior</b>				
Bureau of Reclamation	•			•
Fish and Wildlife Service	•			
Geological Survey	•	•		
<b>U.S. Department of Transportation</b>				
Federal Highway Administration	•	•		
Federal Transit Administration	•	•		
<b>U.S. Environmental Protection Agency</b>	•	•		

## **Federal Environmental Improvement Programs**

Within the four Focus Areas there are twelve programs. It is within these programs that scheduling and project coordination occurs. Projects are identified and ranked according to program objectives. Scheduling of projects is done relative to importance of the project, capacity of the implementing agency, coordination with related state and local projects, and other factors. Programs are led by interagency staff with expertise in the subject of the program.

### **Watershed and Habitat Improvement Focus Area**

- Threatened, Endangered, and Sensitive Species
- Watershed and Stream Environment Zone Restoration
- Habitat Improvement
- Water Quality Protection
- Road and Trail Water Quality Retrofit
- Facilities Water Quality Retrofit

### **Air Quality and Transportation Focus Area**

- Air Quality
- Transportation

### **Recreation and Scenic Focus Area**

- Interpretation Services
- Recreation

### **Forest Health Focus Area**

- Vegetation Management
- Fuels Management

Similar to most past and current projects within the EIP, a project listed within one Focus Area and program will have benefits to multiple Thresholds. Table 3 indicates the likely Threshold benefit for a project within different programs. For more detail please see Appendix C, which links each program to the 36 Threshold Indicators.

Table 3. Thresholds Improved by Projects in Federal Lake Tahoe EIP Programs (See Appendix C for a detailed list by Threshold Indicator).

Federal Tahoe EIP Programs	Thresholds <sup>1</sup>								
	Air Quality	Water Quality	Soil Cons	Vegetation	Fish	Wildlife	Scenic	Noise	Recreation
Threatened, Endangered, and Sensitive Species				●	●	●			
Watershed and Stream Environment Zone Restoration		●	●	●	●	●			
Habitat Improvement		●	●	●	●	●			
Water Quality Protection	●	●	●						
Road and Trail Water Quality Retrofit		●	●		●				●
Facilities Water Quality Retrofit		●	●				●		●
Air Quality	●	●							●
Transportation	●	●	●						
Interpretation Services			●	●	●	●			●
Recreation									●
Vegetation Management		●	●	●	●	●	●		
Fuels Management		●	●	●		●			

1. Based on the current thresholds. The Pathway process is revising these thresholds. This table will be revised with the new thresholds

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## Threatened, Endangered, and Sensitive Species Program (TES)

### Focus Area:

Watershed and Habitat Improvement

### Threshold Categories:

Vegetation  
Fisheries  
Wildlife

### Number of Objectives:

Stewardship:	8
Education:	1
Assistance:	3
Science:	4

---

## Threatened, Sensitive, and Endangered Species Program (TES)

There are a number of rare plants and animals within the Tahoe Basin. The health and recovery of most of these species is dependent upon minimization of human disturbance and improvement of habitat. Threatened, Endangered and Sensitive Species includes all species listed in the Wildlife and Vegetation Threshold (see TRPA, 2001 for a summary), and all Candidate species listed by the USFWS.

### Stewardship

A few of the plant or animal species have a conservation strategy in place, and the Federal Partnership is committed to full and robust support of these conservation strategies. The key to successful stewardship is cooperation with State, regional and local partners.

Stewardship objectives for the Threatened, Sensitive and Endangered Species Program include:

TES-S1—Develop and implement appropriate conservation actions with state, regional and local partners to preclude the need to list sensitive species.

TES-S2—Implement the Tahoe Yellow Cress Conservation Strategy:

- a. Protect occupied habitat and potentially suitable habitat that does/could support natural populations;
- b. Improve the vigor and value of Tahoe yellow cress populations;
- c. Implement an interagency adaptive management framework.

TES-S3—Implement all appropriate conservation measures from the Pacific Bald Eagle Recovery Plan including actions developed for Recovery Zone 28 (Sierra-Nevada Mountains -CA/NV):

- a. Conserve and protect bald eagle nesting sites;
- b. Conserve and protect wintering populations by buffering suitable habitat from adverse human activities;
- c. Develop a comprehensive management plan for bald eagles in the Lake Tahoe Basin including both nesting and wintering populations.



TES-S4—Conserve migratory birds and their habitats throughout the Lake Tahoe Basin consistent with the North American Bird Conservation Initiative and its component Plans (Federal and State) and Executive Order 13186:

- a. Protect, maintain, enhance, and restore migratory bird habitat;
- b. Minimize take of migratory birds.

TES-S5—Conserve and enhance native meso-carnivore (medium-sized predatory furbearing mammals) populations:

- a. Conserve and protect late-seral forest habitats;
- b. Reduce forest fragmentation;
- c. Maintain habitat connectivity at the landscape scale to meet dispersal and emigration requirements;
- d. Work with state, regional and local partners to develop a conservation strategy for this group of species.

TES-S6—Conserve and protect native amphibian populations:

- a. Protect existing populations;
- b. Restore species to formerly occupied habitats wherever reasonable;
- c. Prevent the spread of diseases known to affect populations;
- d. Eliminate non-native fish species known to be a conflict;
- e. Develop a conservation and restoration strategy.

TES-S7—Reestablish Lahontan cutthroat trout populations in the Lake Tahoe Basin to meet recovery objectives within the Lahontan Cutthroat Trout Recovery Plan.

TES-S8—Eliminate non-native species impacts on all native fish assemblages and populations where appropriate.

## **Education**

Education can reduce impacts to sensitive species and garner support for management actions.

Education objectives for this program include:

TES-ED1—Develop and implement an environmental education program and outreach strategy to ensure the protection and conservation of TES species.

## **Assistance**

Collaboration with state, regional and local partners may require more than just coordination, and may entail providing resources or expertise.

Assistance objectives for this program include:

TES-A1—Collaborate with State, regional and local partners on the development of management plans.

TES-A2—Coordinate management actions with State, regional and local partners.

TES-A3—Support the actions of State, regional and local partners

## **Science**

Science can inform future management actions and assist in the identification of future actions. In addition, science-based monitoring can improve project effectiveness.

Science objectives for this program include:

TES-SC1—Monitor and evaluate populations of:

- a. Native fish species,
- b. Tahoe yellow cress,

- c. Bald eagle,
- d. Native amphibians,
- e. Migratory birds.

TES-SC2—Conduct research that directly increases effectiveness of conservation and restoration actions.

TES-SC3—Characterize the impact of recreation on different sensitive species.

TES-SC4—Conduct research on the most effective conservation and restoration techniques for Tahoe yellow cress.

#### **Key Agencies and Programs**

U.S. Fish & Wildlife Service

- Endangered Species Program
- Candidate Conservation Program
- Invasive Species Program
- Migratory Bird Program
- Fisheries Program

U.S. Forest Service

- Wildlife, Fish, & Plant Program
- Vegetation Management Program

U.S. Bureau of Reclamation

- Tahoe Regional Wetlands Development Program

Natural Resources Conservation Service

- Wildlife Habitat Incentives Program

#### **Guidance and Planning Documents**

- Endangered Species Act
- Migratory Bird Treaty Act
- Bald and Golden Eagle Protection Act
- Lahontan Cutthroat Trout Recovery Plan
- U.S. Forest Service – LTBMU Land & Resource Management Plan
- Sierra Nevada Forest Plan Amendment (2004)
- Tahoe Yellow Cress Conservation Strategy
- North American Waterfowl Management Plan
- U.S. Shorebird Conservation Plan
- North American Waterbird Conservation Plan
- North American Landbird Conservation Plan
- Nevada Partners in Flight Bird Conservation Plan
- California Partners in Flight Riparian Bird Conservation Plan
- California Partners in Flight Sierra Nevada Bird Conservation Plan
- Pacific Bald Eagle Recovery Plan

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## Watershed and Stream Environment Zone Restoration Program (WSEZR)

### Focus Area:

Watershed and Habitat Improvement

### Threshold Categories:

Water Quality  
Soil Conservation  
Vegetation  
Fisheries  
Wildlife

### Number of Objectives:

Stewardship: 5  
Education: 1  
Assistance: 2  
Science: 4

---

## Watershed and Stream Environment Zone Restoration Program (WSEZR)

The majority of riparian and Stream Environment Zones (SEZs) have been altered by past human activity or land use. These activities include channel alteration, impoundment, and other hydrologic changes. The restoration of these areas is critical to improving water quality and providing habitat for aquatic-associated biota (amphibians, fish, wildlife, invertebrates, and plants).

### Stewardship

Many Lake Tahoe Basin riparian and Stream Environment Zones need physical repair. Stewardship involves restoration of the hydrologic and vegetative conditions of these systems.

Stewardship objectives for the Watershed and Stream Environment Zone Restoration Program include:

WSEZR-S1—Reconnect and restore hydrologic function to low gradient streams and meadows under Federal management.

WSEZR-S2—Eliminate headcutting in higher gradient streams that are producing excessive sediment.

WSEZR-S3—Minimize or eliminate impacts from existing recreational infrastructure and activities.

WSEZR-S4—Restore, enhance, and protect the physical, chemical and biological integrity of rivers, streams and creeks under Federal management.

WSEZR-S5—Eliminate excessive bank and bed erosion of rivers, streams and creeks under Federal management.

## Education

Education can both reduce impact to SEZs and garner support for, and acceptance of, management actions.

Education objectives for the Watershed and Stream Environment Zone Restoration Program include:

WSEZR-ED1—Develop and implement an environmental education program and outreach strategy that will assist in the restoration of riparian and Stream Environment Zones.

## Assistance

Collaboration with State, regional and local partners may require more than just coordination, and may entail providing resources or expertise.

Assistance objectives for the Watershed and Stream Environment Zone Restoration Program include:

WSEZR-A1—Coordinate management actions with State, regional and local partners.

WSEZR-A2—Support the SEZ restoration actions of State, regional and local partners.

## Science

Science can inform future management actions and assist in the identification of future actions. In addition, science-based monitoring can improve project effectiveness.

Science objectives for this program include:

WSEZR-SC1—Conduct research that directly supports increasing the effectiveness of conservation and restoration actions.

WSEZR-SC2—Conduct research on the greatest impact to SEZs and ways to mitigate these impacts.

WSEZR-SC3—Identify the change in riparian, meadow, and aquatic conditions over time.

WSEZR-SC4—Maintain or increase LTIMP for SEZs.

### Key Agencies and Programs:

U.S. Forest Service

- Watershed Restoration Program
- Wildlife, Fish, and Sensitive Plant Program
- Vegetation Management Program

U.S. Army Corps of Engineers

- Watershed Development, Restoration and Management Program
- Section 108 Lake Tahoe Restoration Program
- General Investigations Program

Natural Resources Conservation Service

- Wildlife Habitat Incentives Program
- Environmental Quality Incentives Program

U.S. Geological Survey

- Lake Tahoe Interagency Monitoring Program

U.S. Bureau of Reclamation

- Tahoe Regional Wetlands Development Program

U.S. Fish and Wildlife Service

- Fisheries Program

### Guidance and Planning Documents

- No documents available

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## Habitat Improvement Program (HIP)

### Focus Area:

Watershed and Habitat Improvement

### Threshold Categories:

Water Quality  
Soil Conservation  
Vegetation  
Fisheries  
Wildlife

### Number of Objectives:

Stewardship: 4  
Education: 4  
Assistance: 4  
Science: 4

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## Habitat Improvement Program (HIP)

Many habitats within the Lake Tahoe Basin have been degraded by past land use practices or the suppression of natural processes such as fire. There are habitats which require improvement that are not directly related to listed or sensitive species, Stream Environment Zones or the general forest. Examples of habitat improvement activities include: Physically buffering sensitive wildlife and plant communities from disruptive activities; Preventing and controlling noxious and non-native invasive plants and non-native wildlife and; Restoring unique habitats like Freel Peak cushion plant communities.

### Stewardship

Stewardship of habitat for native plants and wildlife is critical for a healthy and resilient ecosystem in the Tahoe Basin. Projects within this program endeavor to restore conditions that support important habitat in the Tahoe Basin.

Stewardship objectives for the Habitat Improvement Program include:

HIP-S1—Implement habitat restoration and protection provisions contained within current and future management plans.

HIP-S2—Treat 100% of the locations of noxious and invasive weeds on the Tahoe Basin Weed Watch list.

HIP-S3—Use appropriate landscape design to buffer sensitive wildlife and plant habitats from detrimental human disturbance.

HIP-S4—Decommission unnecessary roads and trails in sensitive wildlife habitat or reroute roads and trails around sensitive wildlife habitats.

### Education

Education can reduce impact to wildlife and plant habitat and can garner support for, and acceptance of, management actions.

Education objectives for the Habitat Improvement Program include:

HIP-ED1—Develop and implement an environmental education program and outreach strategy that will assist in the restoration of riparian habitat and Stream Environment Zones.

HIP-ED2—Provide outreach and education to partners, including private landowners, endeavoring to provide wildlife habitat.

HIP-ED3—Provide outreach and education to private landowners in the conservation or restoration of terrestrial and aquatic habitats.

HIP-ED4—Provide outreach and education to private landowners in the exclusion, detection, and eradication of noxious or invasive biological species and provide for restoration of treated areas.

## **Assistance**

Collaboration with State, regional and local partners may require more than just coordination, and may entail providing resources or expertise.

Assistance objectives for the Habitat Improvement Program include:

HIP-A1—Provide resources to State, local, and regional partners implementing habitat restoration and protection projects.

HIP-A2—Provide technical assistance to partners, including private landowners, endeavoring to provide wildlife habitat.

HIP-A3—Provide technical assistance to private landowners in the conservation or restoration of terrestrial and aquatic habitats.

HIP-A4—Provide technical assistance to private landowners in the exclusion, detection, and eradication of noxious or invasive biological species and provide for restoration of treated areas.

## **Science**

Science can inform management actions and assist in the identification of the need for future actions. In addition, science-based monitoring can improve project effectiveness.

Science objectives for the Habitat Improvement Program include:

HIP-SC1—Conduct research that directly supports increasing effectiveness of conservation and restoration actions.

HIP-SC2—Identify species that can act as indicators of health for different habitats.

HIP-SC3—Identify areas of high biological diversity.

### **Key Agencies and Programs:**

U.S. Forest Service

- Watershed Restoration Program
- Wildlife, Fish, and Sensitive Plant Program
- Vegetation Management Program
- Access Travel and Management Program

U.S. Bureau of Reclamation

- Tahoe Regional Wetlands Development Program

U.S. Fish and Wildlife Service

- Partners for Fish and Wildlife

Natural Resources Conservation Service

- Conservation Technical Assistance, Backyard Conservation Program
- Wildlife Habitat Incentives Program

U.S. Army Corps of Engineers

- Watershed Development, Restoration and Management Program
- Section 108 Lake Tahoe Restoration Program

- General Investigations Program

**Guidance and Planning Documents**

- USFS Land and Resource Management Plan

- Riparian Bird Conservation Plan
- Sierra Nevada Bird Conservation Plan
- Lake Tahoe Interagency Weed Group

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## Water Quality Protection Program (WQP)

### Focus Area:

Watershed and Habitat Improvement

### Threshold Categories:

Air Quality  
Water Quality  
Soil Conservation

### Number of Objectives:

Stewardship: 2  
Education: 1  
Assistance: 3  
Science: 6

---

## Water Quality Protection Program (WQP)

Water quality protection includes activities that help attain Thresholds and standards in lakes, streams and wetlands in the Lake Tahoe Basin. This also includes prohibiting activities that degrade water quality and conducting projects to restore and maintain water quality. Pollution that degrades water quality can be categorized as point source pollution (e.g., end-of-pipe) and nonpoint source pollution (e.g., storm water runoff from roads).

A key strategy for protecting water quality in the Lake Tahoe Basin is to reduce nonpoint source pollution at the source. The Backyard Conservation Program/BMP Retrofit program provides technical assistance to property owners to implement Best Management Practices (BMPs) on their properties. BMPs minimize development impacts on hydrology as well as reduce contaminants, sediment, and nutrients entering roadways and water courses.

Lake Tahoe is an important source of drinking water for over half of the Lake Tahoe Basin population. The federal government plays an important role in oversight of drinking water standards compliance. Source water protection activities are incorporated with overall drinking water protection.

### Stewardship

Protection of water quality is the concern of all federal agencies. Stewardship of lands managed by the Federal government is a critical element of water quality protection. In addition, stewardship involves coordination with State, regional and local partners as projects and programs must be integrated.

Stewardship objectives for the Water Quality Protection Program include:

WQP-S1—Work with contractors and lessees to the USFS to assure construction BMPs and monitor BMP compliance.



WQP-S2—Improve water quality by reducing sediment (source control) on lands managed by Federal agencies.

## Education

Educating landowners about BMPs for buildings and facilities is a central strategy for reducing non-point source pollution.

Education objectives for the Water Quality Protection Program include:

WQP-ED1—Develop and implement an environmental education program and outreach strategy that will assist landowners in implementing BMPs.

## Assistance

Federal assistance will include support and technical assistance in the implementation of water quality improvements.

Assistance objectives for the Water Quality Protection Program include:

WPQ-A1—Provide conservation technical assistance and other resources to tribal, state and local partners and private landowners to support implementation of the Backyard Conservation Program/BMP Retrofit Program.

WPQ-A2—Provide technical assistance and/or resources to local public utility districts to implement sewer line relocation/rehabilitation projects.

WPQ-A3—Provide support to water quality projects through grants to local governments.

## Science

Science is important to improving future water quality projects.

Science objectives for the Water Quality Protection Program include:

WQP-SC1—Conduct research that directly supports increasing effectiveness of water quality projects.

WQP-SC2—Conduct research on the impacts of infiltration of storm water on ground water.

WQP-SC3—Continue or increase LTIMP water quality monitoring.

WQP-SC4—Conduct research on the baseline values of nutrients entering Lake Tahoe.

WQP-SC5—Identify the amount of nutrient reduction needed to reach regional water quality standards.

WQP-SC6—Conduct research on the effectiveness of maintenance of erosion projects.

### Key Agencies and Programs:

U.S. Forest Service

Natural Resources Conservation Service

- Conservation Technical Assistance, Backyard Conservation Program

U.S. Environmental Protection Agency

- CWA Section 319 Nonpoint Source Pollution Program

U.S. Bureau of Reclamation

- Tahoe Regional Wetlands Development Program

U.S. Geological Survey

- Lake Tahoe Interagency Monitoring Program

U.S. Army Corps of Engineers

- Watershed Development, Restoration and Management Program
- Section 108 Lake Tahoe Restoration Program
- General Investigations Program

**Guidance and Planning Documents**

- USFS Land and Resource Management Plan

- CWA Section 208 Water Quality Management Plan

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## Road, Trail and Facility Water Quality Retrofit Program (RTFP)

**Focus Area:**

Watershed and Habitat Improvement

**Threshold Categories:**

Air Quality  
Water Quality  
Soil Conservation  
Scenic  
Recreation

**Number of Objectives:**

Stewardship: 5  
Education: 0  
Assistance: 0  
Science: 1

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### Road, Trail and Facility Water Quality Retrofit Program (RTFP)

The application of Water Quality Best Management Practices to USFS roads, trails, and recreation facilities (including but not limited to: parking lots, trailheads, day use areas, and campgrounds and including those facilities operated under Special Use Permit) is an iterative process involving appropriate planning, design, implementation, maintenance, monitoring, evaluation, and public education.

**Stewardship**

Stewardship of the Federally managed lands means retrofitting existing facilities. Projects range in size from very small to total redesign of a facility (i.e. total parking lot redesign is an example).

Stewardship objectives for the Road, Trail and Facility Water Quality Retrofit Program include:

RTFP-S1—Inventory and evaluate water quality risks associated with all USFS roads, trails, and recreation facilities.

RTFP-S2—Develop a plan and public process to determine which roads, trails, and facilities should be maintained, upgraded, relocated, or decommissioned.

RTFP-S3—Decommission, relocate, maintain, or upgrade USFS roads, trails, and recreation facilities based on water quality risk assessment and public or administrative need.

RTFP-S4—Upgrade all critical drainage facilities and crossings on USFS system roads, trails, and recreation facilities to meet appropriate storm criteria.

RTFP-S5—Minimize the erosive effects of water concentrated by road, trail and recreation facility drainage features and minimize the erosion of road, trail, and recreation facility surface materials, reducing the likelihood of sediment production.

## Science

Science is important to improving future retrofit projects.

Science objectives for the Road, Trail and Facility Water Quality Retrofit Program include:

RTFP-SC1— Conduct research that directly increases effectiveness of road, trail and facility water quality retrofit projects.

### **Key Agencies and Programs:**

- U.S. Forest Service
  - Roads BMP Upgrade and Decommissioning Program
  - Trails BMP Upgrade and Decommissioning Program
  - Recreation Facilities Upgrade and Decommissioning Program

### **Guidance and Planning Documents**

- USFS Land and Resource Management Plan
- USFS Road Access and Travel Management Plan.
- USFS Trail Access and Travel Management Plans.
- USFS Recreation and Facility Master Plans.
- Water Quality Management for Forest System Lands in California, Best Management Practices.
- Water Quality Control Plan for the Lahontan Region, Chapter 5, Water Quality Standards and Control Measures for the Lake Tahoe Basin.

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## Air Quality Program (AQ)

### Focus Area:

Air Quality & Transportation

### Threshold Categories:

Water Quality  
Air Quality  
Recreation

### Number of Objectives:

Stewardship: 4  
Education: 2  
Assistance: 3  
Science: 4

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## Air Quality Program (AQ)

Air quality in the Lake Tahoe Basin is considered better than most urban and rural areas throughout the country. However, the Lake Tahoe Basin remains in non-compliance with several health-based air quality standards set by Federal, State and local regulatory agencies. For this reason, the Air Quality Program primarily focuses on the need for programs and control strategies necessary to achieve the various Federal, State and local standards. Secondary air quality programmatic goals are to achieve excellent visibility and for the air quality to be healthful for the ecosystem of the Lake Tahoe Basin.

Automobiles and other transportation related sources are the primary cause of most of the air quality issues in the Lake Tahoe Basin. These sources pollute the air through exhaust emissions, the re-entrainment of dirt/dust on the highway, and through the wear associated with tires, brakes, and the road itself. For this reason, the air quality program works closely with the transportation sector to ensure that the goal of transportation planning is to reduce to the extent feasible air pollution caused by motor vehicles. The primary transportation corridors and tourist attractions in the Lake Tahoe Basin are under jurisdiction of the Federal government, and the Federal Partnership plays a key role in helping to implement programs that attain and maintain air quality standards in the Tahoe Basin.

The second category of air pollutants are from the burning of wood products from such sources as wood stoves/fireplaces and from forest fuels reduction programs. The Forest Service is the primary implementer of forest fuel reduction programs and plays a pivotal role in helping to reduce air pollution in the Lake Tahoe Basin.

The air quality in the Lake Tahoe Basin also is affected by the re-entrainment of dust and dirt coming from both paved and unpaved roads. This re-entrainment

of dust not only causes health concerns, but also causes the decline in visibility of the air and plays a significant role in lake clarity. The Federal government owns approximately 75 percent of the land in the Lake Tahoe Basin and plays a significant role in helping to reduce this pollutant in the environment.

## **Stewardship**

The protection of air quality is a concern to and mandate for Federal agencies. Federal stewardship of lands, roadways, transportation, and forest health is a critical element of the protection of the air quality and environment in the Lake Tahoe Basin. This stewardship involves the coordination with State, regional and local partners to ensure the protection of human health and our ecosystem.

Stewardship objectives for the Air Quality Program include:

AQ-S1— Establish, implement and maintain an air quality monitoring network and reporting program with State, regional and local partners.

AQ-S2 — Establish, implement and maintain an emission modeling program and inventory of all the sources of pollution from Federal lands and their use with state, regional and local partners.

AQ-S3 — In cooperation with State, regional and local partners, establish implement and maintain a transportation program that provides public access to Federal lands thereby reducing air pollution.

AQ-S4 — Maintain Federal lands in such a manner to have the least amount of environmental degradation as possible. This includes the installation of BMPs on all Federal lands as soon as possible utilizing the best available technology.

## **Education**

Education is a key area in which the Federal government could help out with respect to implementing and making the EIP a success.

Education objectives for the Air Quality Program include:

AQ-ED1—Develop and implement an education program and outreach strategy that will inform the public about federally sponsored alternative transportation measures which could be utilized while visiting the Tahoe Basin and enjoying public lands.

AQ-ED2—Develop and implement an environmental education program and outreach strategy that informs the public about the emission reduction strategies used while conducting forest fuels reduction programs.

## **Assistance**

Federal assistance will include support and technical assistance in the implementation of air quality improvements.

Assistance objectives for the Air Quality Program include:

AQ-A1—Provide technical assistance and/or resources to study, design, and implement an air quality monitoring network.

AQ-A2—Provide technical assistance and/or resources to Lake Tahoe Basin agencies to study, design, and implement large scale emission reduction transportation projects.

AQ-A3— Provide technical assistance and/or resources to Lake Tahoe Basin agencies to study, design, and implement forest fuels reduction programs that have minimal impacts to air quality.

## Science

Federal assistance includes support and technical assistance in the implementation of air quality monitoring, air quality impacts and mitigation measures associated with forest fuels reduction, air quality and water quality impacts as it relates to roads, trails and traffic.

Science objectives for the Air Quality Program include:

AQ-SC1—Conduct research that directly increases effectiveness of air quality projects.

AQ-SC2—Conduct research on appropriate locations for air monitoring.

AQ-SC3—Conduct research on the factors that affect air deposition into Lake Tahoe.

AQ-SC4—Refine estimates on “in” versus “out of basin” sources of air deposition into Lake Tahoe.

### Key Agencies and Programs:

U.S. Forest Service

U.S. Environmental Protection Agency

U.S. Department of Transportation

Federal Highway Administration

- Interim Guidance for Implementing the Transportation Conformity Provisions in SAFETEA-LU
- Lake Tahoe South Shore CO Attainment Plan
- Mitigation Options in Forest Land
- Clean Burning Wood Stoves and Fireplaces: U.S. EPA Label
- Open Burning and Environmental Alternatives to Open Burning
- USFS Land and Resource Management Plan
- Water Quality Control Plan for the Lahontan Region, Chapter 5, Water Quality Standards and Control Measures for the Lake Tahoe Basin.
- TMPO/TRPA Regional Transportation Plan
- Bicycle & Pedestrian Program of the Federal Highway Administration's Office

### Guidance and Planning Documents

- State Implementation Plan Development Guidance
- US EPA “Granting Air Quality Credit Land Use Measures”
- US EPA “Evaluation of Modeling Tools for Assessing Land Use Policies and Strategies”
- US EPA “Improving Air Quality Through Land Use Activities” Report
- Title CFR 40: Protection of the Environment
- Clean Air Act

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## Transportation Program (TRANS)

### Focus Area:

Air Quality and Transportation

### Threshold Categories:

Water Quality  
Air Quality

### Number of Objectives:

Stewardship: 3  
Education: 0  
Assistance: 3  
Science: 3

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## Transportation Program

The Lake Tahoe Region holds various transportation planning authorities that range from the Lake Tahoe Planning Compact to the Federal Transportation bill (SAFETEA-LU). Each authority has an overarching goal to provide for comprehensive regional transportation planning program that promotes the development, management, and operation of a safe and efficient transportation system that considers the economic health of the region. As the designated Metropolitan Planning Organization (MPO) for the Lake Tahoe Region, the TRPA is responsible for implementing the mandates of SAFETEA-LU and its planning initiatives. Recognizing the amount of public lands in the Tahoe Basin (75 percent), SAFETEA-LU also calls for the direct involvement of the U.S. Forest Service in the regional transportation planning process.

### Stewardship

The Lake Tahoe Region currently provides a transportation network that serves the residents of the Region, and the influx of visitors that come to experience Lake Tahoe and all of the activities that are available. Many of the activity centers that attract visitors are public lands that provide, to name a few, hiking, skiing, and lake access opportunities. In order to provide the delivery of projects that address the influx of visitors, transportation projects have inherent complementary abilities to enhance both water quality and air quality solutions beyond the developed centers of the Region. Federal and State land management agencies need to participate together in the regional transportation planning process to assist with the development, and operations of complementary solutions.

Stewardship objectives for this program include:

TRANS-S1—Provide a world-class transportation system that serves residents and visitors of the Region.

TRANS-S2—Provide alternative transportation access to public lands.



TRANS-S3—Participate in a comprehensive transportation strategy that explicitly includes all State and Federal Agencies.

## Assistance

The Lake Tahoe Region provides an extremely complex forum for transportation planning. Technical assistance from the FHWA can assist with the establishment of an integrated transportation planning process that satisfies federal requirements.

Assistance objectives for this program include:

TRANS-A1—FHWA planning assistance to establish a framework to achieve coordination and integration of transportation planning and project delivery.

TRANS-A2—Coordinate and support regional transportation funding requests.

TRANS-A3—Coordination with USFS on project planning, coordination and project delivery.

## Science

Science can assist with making enlightened planning decisions in regard to transportation projects and strategies.

Science objectives for this program include:

TRANS-SC1—Support data collection necessary to maintain and operate the Lake Tahoe Transportation Model and the Land-Use linkages to deliver smart growth concepts.

TRANS-SC2—Increase the monitoring of transportation facilities.

TRANS-SC3—Conduct research on the most effective means of education and outreach for transportation.

### Key Agencies and Programs:

- Federal Highway Administration
- Metropolitan Transportation Planning Oversight
  - ITS Program Oversight

- Federal Transit Administration
- Federal Transit Funding Assistance

- U.S. Forest Service
- Alternative Transportation in Public Lands
  - Facility Management

- U.S. Environmental Protection Agency
- Air Quality Conformity

### Guidance and Planning Documents

- SAFETEA-LU
- TMPO/TRPA Regional Transportation Plan
- Federal Transportation Improvement Program
- TMPO Overall Work Program

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## Interpretive Services Program (ISP)

### Focus Area:

Recreation and Scenic Focus Area

### Threshold Categories:

Soil Conservation  
Vegetation  
Water Quality  
Wildlife  
Air Quality  
Fisheries  
Recreation  
Scenic Resources

### Number of Objectives:

Stewardship: 5  
Education: 2  
Assistance: 2  
Science: 3

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## Interpretive Services Program (ISP)

Provide a coordinated system of interpretive and educational facilities and programs that efficiently meet the needs of target audiences and natural resource capacities. These programs will be designed to build an understanding of the connection between people's behavior and their environment and to promote sustainable management of the Lake Tahoe Basin's resources.

### Stewardship

Interpretive Services and conservation education programs build an understanding of the connection between people's behavior and their environment and promote sustainable management of the resources.

Stewardship objectives for this program include:

ISP-S1-- Develop and implement environmental education programs and outreach strategies to improve knowledge, protection, and conservation of multiple program areas within the Lake Tahoe Basin- air quality, water quality, soils conservation, vegetation and fuels management, fisheries, wildlife, threatened and endangered species, recreation and scenic resources. Education also can be used reduce impacts and garner support for and acceptance of management actions.

IISP-S2—User and provider perception surveys shall indicate positive trends which result in increased user satisfaction for quality interpretive and educational opportunities, condition of facilities, and accessibility.

ISP-S3—Program areas and facilities shall not exceed PAOT (Persons at one time) capacities, where appropriate, according to Recreation Opportunity Spectrum classification.

ISP-S4—Provide access to land, water, and shoreline which meet resident and visitor expectations in a manner consistent with desired resource conditions.

ISP-S5—Minimize the need for the use of private automobiles to access Basin-wide interpretive and educational program facilities.

## **Education**

Enhanced communication and education programs can improve knowledge of the impacts of behavior and overall environmental knowledge.

Education objectives for this program include:

ISP -ED1— Develop and implement an environmental education program that will improve knowledge of recreation opportunities, behavior, and the environmental.

## **Assistance**

Collaboration with State, regional and local partners may require more than just coordination, and may entail providing resources or expertise.

Assistance objectives for this program include:

ISP -A1—Coordinate management actions with State, regional and local partners.

ISP -A2—Support the actions of State, regional and local partners.

## **Science**

Visitor use surveys and needs assessments can inform future management actions and assist in the identification of future actions. They also improve understanding of recreation opportunities, behavior and the environment. In addition, these surveys can assist in improvement of program effectiveness.

Science objectives for this program include:

ISP-SC1—Collect long-term, consistent, reliable and comparable data as part of a comprehensive National Visitor Use Monitoring system.

ISP-SC2—Conduct visitor surveys to monitor perceptions of user satisfaction, condition of facilities, and accessibility.

ISP-SC3—Conduct visitor surveys to evaluate program delivery, effectiveness, knowledge gained, and changed behaviors.

### **Key Agencies and Programs:**

- U.S. Forest Service
  - Developed, dispersed, and wilderness recreation programs
  - Interpretive Services program
  - Heritage Resources program
  - Special Uses Program

### **Guidance and Planning Documents**

- USFS Land Management Plan

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## Recreation Program (RP)

### Focus Area:

Recreation and Scenic Focus Area

### Threshold Categories:

Recreation

### Number of Objectives:

Stewardship:	4
Education:	2
Assistance:	2
Science:	3

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## Recreation Program (RP)

The Lake Tahoe Basin's unique natural, cultural, and human environments provide sustainable recreation opportunities consistent with public desires and natural resource capacities. Recreation is linked to irreplaceable natural assets, the regional economy, and social well-being.

### Stewardship

Provide a spectrum of user-satisfying recreational opportunities while sustaining Lake Tahoe's natural setting as an outstanding recreation destination.

Stewardship objectives for this program include:

RP-S1—User and provider perception surveys shall indicate positive trends which result in increased user satisfaction for quality recreation opportunities, condition of facilities, and accessibility.

RP-S2—Recreation areas and facilities shall not exceed Persons at One Time (PAOT) capacities, where appropriate, according to Recreation Opportunity Spectrum classification.

RP-S3—Provide access to land, water, and shoreline which meet resident and visitor expectations in a manner consistent with desired resource conditions.

RP-S4—Minimize the need for the use of private automobiles to access Basin wide recreation opportunities.

### Education

Enhanced communication and education programs can improve knowledge of the impacts of behavior and overall environmental knowledge.

Education objectives for this program include:

RP -ED1— Develop and implement an environmental education program that will improve knowledge of recreation opportunities, behavior, and the environmental.

RP-ED2—User and provider perception surveys shall indicate positive trends which result in increased user satisfaction for quality recreation opportunities, condition of facilities, and accessibility.

## **Assistance**

Collaboration with State, regional and local partners may require more than just coordination, and may entail providing resources or expertise.

Assistance objectives for this program include:

RP –A1—Coordinate management actions with State, regional and local partners.

RP –A2—Support the actions of State, regional and local partners

## **Science**

Visitor use surveys and needs assessments can inform future management actions and assist in the identification of future actions. They also improve understanding of recreation opportunities, behavior and the environment. In addition, these surveys can assist in improvement of program effectiveness.

Science objectives for this program include:

RP-SC1—Collect long-term, consistent, reliable and comparable data as part of a comprehensive National Visitor Use Monitoring system.

RP-SC2—Conduct visitor surveys to monitor perceptions of user satisfaction, condition of facilities, and accessibility.

RP-SC3—Conduct research on the factors influencing recreation demand and type.

### **Key Agencies and Programs:**

U.S. Forest Service

- Developed, dispersed, and wilderness recreation programs
- Interpretive Services program
- Heritage Resources program
- Special Uses Program

### **Guidance and Planning Documents**

- USFS Land Management Plan

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## Vegetation Management Program (VMP)

### Focus Area:

Watershed and Habitat Improvement

### Threshold Categories:

Water Quality  
Soil Conservation  
Vegetation  
Fisheries  
Wildlife

### Number of Objectives:

Stewardship: 3  
Education: 1  
Assistance: 1  
Science: 5

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## Vegetation Improvement Program (VMP)

The general forest within the Lake Tahoe Basin has been severely impacted by past logging and the suppression of natural processes such as fire. For example, because of fire suppression, aspen stands have been invaded by shade-tolerant conifers. With time, conifers will out-compete aspen and ultimately eliminate the aspen community. Additionally, forest stands may require treatment to accelerate the development of late seral forest characteristics.

### Stewardship

Stewardship of the general forest vegetation is critical for a healthy and resilient ecosystem in the Lake Tahoe Basin. Projects within this program undertake restoration conditions that support desired densities, species mix and function.

Stewardship objectives for the Vegetation Improvement Program include:

VMP-S1—Implement habitat restoration and protection provisions contained within current and future management plans.

VMP-S2—Survey 100% of aspen stands for conifer encroachment. Treat 60% of aspen stands that need conifer removal by 2027.

VMP-S3—Mimic natural disturbance patterns in forest restoration projects.

### Education

Education can both reduce impact to vegetation communities and garner support for, and acceptance of, management actions.

Education objectives for the Vegetation Improvement Program include:

VMP-ED1—Develop and implement an environmental education program and outreach strategy that assists in the restoration of vegetation communities.

## Assistance

Collaboration with State, regional and local partners may require more than just coordination and may entail providing resources or expertise.

Assistance objectives for the Vegetation Improvement Program include:

VMP-A1—Provide resources to State, regional and local partners implementing vegetation restoration and protection projects.

## Science

Science can inform future management actions and assist in the identification of future actions. In addition, science-based monitoring can improve project effectiveness.

Science objectives for the Vegetation Improvement Program include:

VMP-SC1—Conduct research that directly supports increasing effectiveness of conservation and restoration actions.

VMP-SC2—Conduct research on historic and healthy conditions for vegetation communities.

VMP-SC3—Identify species that can serve as indicators of forest health.

VMP-SC4—Identify elements of vegetation communities that are key to biological diversity.

VMP-SC5—Conduct research on changes in vegetation communities over time.

### Key Agencies and Programs:

U.S. Forest Service

- Watershed Restoration Program
- Wildlife, Fish, and Sensitive Plant Program
- Vegetation Management Program
- Access Travel and Management Program

U.S. Bureau of Reclamation

- Tahoe Regional Wetlands Development Program

U.S. Fish and Wildlife Service

- Partners for Fish and Wildlife

Natural Resources Conservation Service

- Conservation Technical Assistance, Backyard Conservation Program

### Guidance and Planning Documents

- USFS Land and Resource Management Plan
- Riparian Bird Conservation Plan
- Sierra Nevada Bird Conservation Plan
- Lake Tahoe Interagency Weed Group

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## Fuels Management Program (FMP)

### Focus Area:

Forest Health

### Threshold Categories:

Water Quality  
Soil Conservation  
Vegetation

### Number of Objectives:

Stewardship: 5  
Education: 1  
Assistance: 1  
Science: 3

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## Fuels Management Program (FMP)

Preceding Comstock Era logging, the forests of the Lake Tahoe Basin experienced frequent low intensity fire with the occasional moderate to high intensity fire. It is estimated, based on recent research findings, that the average fire return interval for the majority of the Lake Tahoe Basin is 5-32 years (a longer fire return interval occurring at higher, west side elevations). As a result, the pre-Comstock forest was quite different than the forest seen today. Trees were generally large, fire resistant Jeffrey Pine, widely spaced, with an open understory. Using the historic species composition and density as a guide, the forest stands of today are 4-6 times more dense than pre-Comstock forest stands. Species composition is out of balance, favoring the more shade tolerant, moisture dependent, and fire intolerant white fir over the fire and drought tolerant Jeffrey Pine. Today's forests have interlaced tree crowns from the ground level to the tops of the highest trees (ladder fuels) which can lead to an intense wildland fire (crown fire) that has the potential to destroy all the vegetation, and severely impact the soils and increase erosion/sediment transport.

### Stewardship

Vegetation and Fuels Management objectives in the Lake Tahoe Basin focus on returning the forest stands to a more normal health and fire resistant condition. This includes initial entries (treatments) to begin reducing the density of the stands (through understory thinning by either mechanical or hand treatment methods) and reduction of the quantity of ground fuels to create a more fire resistant condition (through a combination of prescribed fire and biomass removal). Subsequent entries (treatments) are needed on a periodic and recurring basis to further reduce densities and reintroduce fire (through prescribed underburning) into the ecosystem to imitate historic conditions.

Stewardship objectives for the Fuels Management Program include:



FMP-S1—Complete Defense Zone and Threat Zone Treatments identified in the Stewardship Fire Assessment and the Community Wildfire Protection Plans by 2015.

FMP-S2—Complete the General Forest Zone Treatments identified in the Stewardship Fire Assessment and the Community Wildfire Protection Plans by 2020.

FMP-S3—Initiate follow-up treatments as soon as practical in areas that have received initial treatments.

FMP-S5—Maximize, to the extent possible and based on regulatory requirements and technology, the use of biomass and small diameter forest products.

## **Education**

Education can help private landowners maintain fire safe conditions around private properties and can garner support of, and acceptance for, fuel reduction projects.

Education objectives for the Fuels Management Program include:

FMP-ED1—Support outreach and education projects to improve public and agency understanding and acceptance of these projects and the short and long term impacts of implementation or lack of implementation of the projects.

## **Assistance**

Collaboration with State, regional and local partners may require more than just coordination and may entail providing resources or expertise.

Assistance objectives for the Fuels Management Program include:

FMP-A1—Support the Lake Tahoe Basin Region of the Nevada Fire Safe Council and local Fire Protection District implementation of the projects identified in Community Wildfire Protection Plans.

## **Science**

Science can inform future management actions and assist in the identification of future actions. In addition, science based monitoring can help increase project effectiveness.

Science objectives for the Fuels Management Program include:

FMP-SC1—Conduct research that directly supports decreasing the impacts of fuel removal treatments.

FMP-SC2—Conduct research on the impacts of forest fuel reduction projects.

FMP-SC3—Identify the methods for reduction of forest fuels, including burning and chipping.

### **Key Agencies and Programs**

- U.S. Forest Service
  - Vegetation, Fire, Fuels, and Urban Lot Management Programs
  - Outreach and Education Program
- Natural Resources Conservation Service
  - Conservation Technical Assistance, Backyard Conservation Program
  - Environmental Quality Incentives Program

### **Guidance and Planning Documents**

- Lake Tahoe Basin Management Unit's Land and Resource Management Plan (1988)
- Sierra Nevada Forest Plan Amendment (2004)
- Lake Tahoe Basin Management Unit's Stewardship Fire Assessment
- Lake Tahoe Basin Management Unit's Fire Management Plan

- Lake Tahoe Basin Management Unit's Annual Burn Plan
- Lake Tahoe Basin Management Unit's Urban Lot Management Plan
- National Fire Plan (2001)
- 10 Year Comprehensive Strategy
- Healthy Forest Initiative
- Healthy Forest Restoration Act
- Community Wildfire Protection Plans

# Operational Issues

## Living Programs, Living Document

This document reflects the initial state of the programs, Focus Areas, goals, and vision of the Federal government in 2006. The document is designed so that each of these elements can change, if needed. However, although projects, programs and program objectives may change or be refined, it is envisioned that the goals and vision will not change very frequently. Table 4 lists the role of each group in changing different elements of the whole.

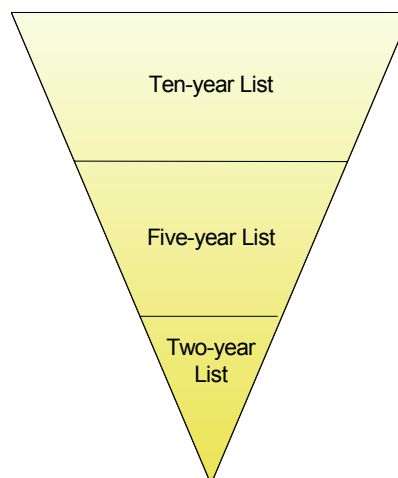
Table 4. Groups Involved in Future Changes

Element	Groups Involved
Projects	Partnership Coordination Team (PCT)
Refinement of Programs Objectives	LTBEC with TRPA (TSC for Science Objectives)
Programs	LTBEC
Focus Areas	LTBEC with review and advice from LTFAC
Federal Vision and Goals	TREX, LTBEC with review and advice from LTFAC

## Use of Document in Project Programming, Coordination and Funding

This document is designed to provide a hierarchy of management input and control. Every program will contain:

- Ten-year+ list of projects. This list is the initial entry of a project into the Federal EIP. Projects on this list may be minimally defined and only conceptual or the projects may be defined in some detail. This list mostly includes program level descriptions.
- Five-year list of projects. Projects on this list are defined; including generalized location (mapped in GIS). Program objectives are targeted. The nature of the benefits of a project to each threshold is generally articulated as well as the partners and funding sources.
- Two-year list of projects. Projects on this list are ready to be funded and will be coordinated with state, and local implementers if needed. The nature of these projects will be further refined from the five-year list descriptions. A SNPLMA funding proposal (or something similar) would be developed for each project.



LTBEC will maintain these lists of projects and with TRPA publish an annual update. LTBEC will assure coordination with local and State partners on these lists. It is envisioned that as future Basin-wide systems are developed these lists may become part of a larger coordination system, with LTBEC as a critical participant.

#### *SNPLMA Funding Process*

Early in the SNPMLA funding cycle, the LTFAC will propose general funding amounts for each Focus Area. Federal Agencies will utilize the two-year list of projects in proposing projects. The PCT will provide final coordination with State and local partners and construct a list of projects for each Focus Area that equals the amounts provided by the LTFAC. The SNPLMA funding process will be conducted as described in the implementation agreement.

#### *Annual Appropriations*

During the Federal budgeting process agencies will base their recommended budget requests on the two-year list of projects.

#### **Balance Work Program**

Federal agencies do not have the flexibility to change their staff mix of expertise or numbers on a yearly basis. Dramatic annual changes in the allocation of funds between Focus Areas and programs cannot be accommodated. This represents a significant capacity limitation. It is important to maintain a relatively steady mix of funds between Focus Areas.

Changes to staffing take two or more years to complete. Ideally program management would allow for such changes given a five year view.

#### **Development of New Projects**

In 2006 an effort to identify new EIP projects will completely reshape the EIP. These new projects will be developed with all federal agencies and will be driven by the program objectives described above. The result of this effort will be an initial ten-year+ list, five-year list and two-year list.

#### **Operations and Maintenance**

While the initial EIP described the capital project needs in term of specific projects, the 2001 EIP update discussed the need to address operation and maintenance of these capital projects. Without the funds and resources to maintain the capital improvement projects the value of these projects degrades. Not only must a funding source be identified for Federally managed capital projects, operation and maintenance must become a core component of the whole EIP.

The following is a short list of possible solutions to operations and maintenance issues:

- Reserve, in a restricted account, the required funds for foreseeable maintenance;
- Select a percentage of the total Federal funds for each year for maintenance;
- Develop, with State and local governments, a maintenance district, where future maintenance funds are turned over to the district. These maintenance funds would be part of the total capital project cost;
- Define a set funding level per year from the annual Federal appropriation or other funding.

LTBEC with advice from LTFAC will develop an operations and maintenance program with an identifiable funding source. Development and review of this program will be completed by 2007.

## References

White House, 1997, Agreement of Federal Department and Agencies on Protection of the Environmental and Economic Health of the Lake Tahoe Region. Washington, DC.

Tahoe Regional Planning Agency, 1998, Environmental Improvement Program for the Lake Tahoe Region – the cooperative effort to preserve, restore and enhance the unique natural and human environment of the Lake Tahoe region. February. Zephyr Cove, NV.

Tahoe Regional Planning Agency, 2001, Environmental Improvement Program. April. Zephyr Cove, NV.

Tahoe Regional Planning Agency, 2002, 2001 Threshold Evaluation Report. July. Zephyr Cove, NV.

## **Appendices**

- A. Mission Statements of the Nine Key Federal Agencies
- B. Federal Approach to the Vision and Goals
- C. Relationship between Threshold Indicators and Programs

## **Appendix A**

### **Mission Statements of the Nine Key Federal Agencies**

***U.S. Environmental Protection Agency (USEPA)***—“The mission of the Environmental Protection Agency is to protect human health and the environment”

***U.S. Natural Resources Conservation Service (NRCS)***—“The Natural Resources Conservation Service provides leadership in a partnership effort to help people conserve, maintain, and improve our natural resources and environment.”

***U.S. Forest Service (USFS)***—“Caring for the Land and Serving People.”

***US Fish and Wildlife Service (USFWS)***—“The U.S. Fish and Wildlife Service's mission is, working with others, to conserve, protect and enhance fish, wildlife, and plants and their habitats for the continuing benefit of the American people.”

***U.S. Geological Survey (USGS)***—“The USGS serves the Nation by providing reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.”

***U.S. Bureau of Reclamation (USBOR)***—“The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.”

***U.S. Army Corps of Engineers (USACE)***—“Our mission is to provide quality, responsive engineering services to the nation.”

***U.S. Federal Highways Administration (FHWA)***—“Enhancing Mobility Through Innovation, Leadership, and Public Service”



## **Appendix B**

### **Federal Approach to the Vision and Goals**

#### ***Values***

We are committed to operating as a team based on shared values of collaboration and service.

#### ***EIP Program Management***

The EIP maintains and supports a holistic view of Basin-wide thresholds, and we achieve EIP goals through a program management approach providing synergistic results among federal, state, local and private partners.

#### ***Watershed***

We use the Watershed as the basic unit of program planning to coordinate and prioritize projects and programs.

#### ***Science***

Science guides EIP program development using research, monitoring and adaptive management.

#### ***Public Outreach and Involvement***

Through education and outreach, Lake Tahoe communities and interest groups understand the goals of the EIP and participate in EIP's success.

**Appendix C**  
**Relationship between Threshold Indicators and Programs**

## Appendix C. Relationship between Threshold Indicators and Programs

	AIR QUALITY INDICATORS							
	AQ-1	AQ-2	AQ-3	AQ-4	AQ-5	AQ-6	AQ-7	AQ-8
Program	Carbon Monoxide	Ozone	Particulate	Visibility	U.S. 50 Traffic Volume	Wood Smoke	VMT	Atmospheric Nutrient Loading
Endangered, Threatened and Sensitive Species								
Watershed and Stream Environment Zone								
Habitat Improvement								
Water Quality Protection								
Road and Trail Water Quality Retrofit								
Facilities Water Quality Retrofit								
Air Quality and Transportation	•	•	•	•	•	•	•	•
Education and Outreach	•	•	•	•	•	•	•	•
Recreation								
Vegetation Management								
Fuels Management								

	WATER QUALITY INDICATORS							SOIL CONS. INDICATORS	
	WQ-1	WQ-2	WQ-3	WQ-4	WQ-5	WQ-6	WQ-7	SC-1	SC-2
Program	Turbidity (Shallow)	Clarity, Winter	Phytoplankton PPr	Tributary Water Quality	Runoff Water Quality	Groundwater	Other Lakes	Impervious Coverage	Naturally-Functioning SEZ
Endangered, Threatened and Sensitive Species									
Watershed and Stream Environment Zone	•	•	•	•	•	•	•	•	•
Habitat Improvement	•	•	•	•	•		•		•
Water Quality Protection	•	•	•	•	•	•	•	•	•
Road and Trail Water Quality Retrofit	•	•	•	•	•		•	•	•
Facilities Water Quality Retrofit	•	•	•	•	•		•	•	
Air Quality and Transportation		•	•		•		•	•	
Education and Outreach	•	•	•	•	•	•	•	•	•
Recreation									
Vegetation Management		•	•		•		•		•
Fuels Management		•	•		•		•		•

## Appendix C. Relationship between Threshold Indicators and Programs

	VEGETATION INDICATORS				WILDLIFE INDICATORS		FISHERIES INDICATORS			
	V-1	V-2	V-3	V-4	W-1	W-2	F-1	F-2	F-3	F-4
Program	Relative Abundance and Pattern	Uncommon Plant Communities	Sensitive Vegetation	Late Seral/Old Growth	Special Interest Species	Habitats of Special Significance	Lake Habitat	Stream Habitat	In-Stream Flows	Lahontan Cutthroat Trout (New)
Endangered, Threatened and Sensitive Species		•	•		•	•	•	•	•	•
Watershed and Stream Environment Zone	•	•	•		•	•	•	•	•	•
Habitat Improvement		•	•	•	•	•	•	•		•
Water Quality Protection										
Road and Trail Water Quality Retrofit								•		
Facilities Water Quality Retrofit										
Air Quality and Transportation										
Education and Outreach	•	•	•	•	•	•	•	•	•	•
Recreation										
Vegetation Management	•	•		•	•	•		•		
Fuels Management	•			•						

	RECREATION INDICATORS		SCENIC RESOURCES				NOISE		
	R-1	R-2	SR-1	SR-2	SR-3	SR-4	N-1	N-2	N-3
Program	High Quality Recreational Experience	Capacity Available to the General Public	Travel Route Ratings	Scenic Quality Ratings	Public Recreation Area Scenic Quality Ratings	Community Design	Single Event (Aircraft)	Single Event (Other)	Community Noise
Endangered, Threatened and Sensitive Species									
Watershed and Stream Environment Zone									
Habitat Improvement									
Water Quality Protection									
Road and Trail Water Quality Retrofit	•								
Facilities Water Quality Retrofit	•		•		•	•			
Air Quality and Transportation									
Education and Outreach	•	•	•	•	•	•			
Recreation	•	•							
Vegetation Management			•	•	•				
Fuels Management									