

## Environmental Threshold Carrying Capacities (Thresholds) and Pathway Vision Statements

### Overview

The TRPA Compact defines Environmental Threshold Carrying Capacities (Thresholds) as environmental standards necessary to maintain a significant scenic, recreational, educational, scientific or natural value of region or to maintain public health and safety within the region. In August 1982, TRPA adopted Resolution No. 82-11, which adopted Thresholds for the Lake Tahoe Region.

Prior to adopting Resolution 82-11, TRPA considered lengthy public testimony, an Environmental Impact Statement (EIS), and a study report on the establishment of the Thresholds. The Thresholds set forth in Exhibit A of Resolution 82-11 address the following nine components of the environment of the Tahoe Region: water quality, soil conservation, air quality, vegetation preservation, wildlife, fisheries, noise, recreation, and scenic resources.

The Thresholds guide virtually all aspects of TRPA's planning and operating functions. Article V(c) of the Compact requires TRPA to amend the Regional Plan so that:

*...at a minimum, the plan and all of its elements, as implemented through agency ordinances, rules and regulations, achieves and maintains the adopted environmental threshold carrying capacities. Each element of the plan shall contain implementation provisions and time schedules for such implementation by ordinance.*

Article V (d) of the Compact also requires the Regional Plan to "provide for attaining and maintaining Federal, State or local air and water quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable." Each element of the plan, where applicable, must identify the means and time schedule by which air and water quality standards will be attained.

Article V (g) of the Compact requires TRPA to make specific written findings prior to approving any project in the region. These findings must "insure that the project under review will not adversely affect implementation of the Regional Plan and will not cause the adopted Environmental Threshold Carrying Capacities of the region to be exceeded."

Although not explicitly stated in the Compact, provisions in the Regional Plan Goals and Policies (Monitoring and Evaluation Subelement) and the Code of Ordinances, Chapter 32, were adopted requiring TRPA to evaluate the Thresholds and the Regional Plan at least every five years and make adjustments to the plan as well as the Thresholds to ensure the maintenance and attainment of Thresholds.

Although litigation in the mid-1980s created uncertainty as to the date of the first five-year review, the Water Quality Management Plan for the Lake Tahoe Region (TRPA, 1988) established the date for the first evaluation as September 1991. TRPA has conducted evaluations of the Thresholds in 1996, 2001, and 2006.

Numerical Standards have been adopted for Thresholds – but not in all cases. In certain instances, it was deemed infeasible to set forth such standards. In these instances, Management Standards or policy statements (to provide specific direction for Agency staff in development of the Regional Plan) were set forth instead.

The existing Threshold Standards are as follows:

### **Water Quality – Pelagic Lake Tahoe**

#### *Numerical Standard*

Reduce dissolved inorganic nitrogen (N) loading from all sources by 25 percent of the 1973-81 annual average.

Achieve the following long-term water quality standards:

- Annual mean phytoplankton primary productivity: 52gmC/m<sup>2</sup>/yr.
- Winter (December - March) mean Secchi disk transparency: 33.4m.

#### *Policy Statement*

This Threshold is currently being exceeded and will likely continue to be exceeded until some time after full implementation of the loading reductions prescribed by the Thresholds.

#### *Management Standard*

Reduce the loading of dissolved phosphorus, iron, and other algal nutrients from all sources as required to achieve ambient standards for primary productivity and transparency.

Reduce dissolved inorganic nitrogen loads from surface runoff by approximately 50 percent, from groundwater approximately 30 percent, and from atmospheric sources approximately 20 percent of the 1973-81 annual average. This Threshold relies on predicted reductions in pollutant loadings from out-of-basin sources as part of the total pollutant loading reduction necessary to attain environmental standards, even though the Agency has no direct control over out-of-basin sources. The cooperation of the states of California and Nevada will be required to control sources of air pollution which contribute nitrogen loadings to the Lake Tahoe Region.

### **Water Quality – Littoral Lake Tahoe**

#### *Numerical Standard*

Reduce dissolved inorganic nitrogen loading to Lake Tahoe from all sources by 25 percent of the 1973-81 annual average.

Decrease sediment load as required to attain turbidity values not to exceed three NTU. In addition, turbidity shall not exceed one NTU in shallow waters of the Lake not directly influenced by stream discharges.

Reduce the loading of dissolved inorganic nitrogen, dissolved phosphorus, iron, and other algal nutrients from all sources to meet the 1967-71 mean values for phytoplankton primary productivity and periphyton biomass in the littoral zone.

*Management Standard*

Reduce dissolved inorganic nitrogen loads from surface runoff by approximately 50 percent, from groundwater approximately 30 percent, and from atmospheric sources approximately 20 percent of the 1973-81 annual average. This Threshold relies on predicted reductions in pollutant loadings from out-of-basin sources as part of the total pollutant loading reduction necessary to attain environmental standards, even though the Agency has no direct control over out of Basin sources. The cooperation of the states of California and Nevada will be required to control sources of air pollution which contribute nitrogen loadings to the Lake Tahoe Region.

**Water Quality – Tributaries**

*Numerical Standard*

Attain applicable state standards for concentrations of dissolved inorganic nitrogen, dissolved phosphorus, and dissolved iron. Attain a 90<sup>th</sup> percentile value for suspended sediment concentration of 60 mg/1.

*Management Standard*

Reduce total annual nutrient and suspended sediment load to achieve loading Thresholds for littoral and pelagic Lake Tahoe.

**Water Quality – Surface Runoff**

*Numerical Standard*

Achieve a 90<sup>th</sup> percentile concentration value for dissolved inorganic nitrogen of 0.5 mg/1, for dissolved phosphorus of 0.1 mg/1, and for dissolved iron of 0.5 mg/1 in surface runoff directly discharged to a surface water body in the Basin.

Achieve a 90 percentile concentration value for suspended sediment of 250 mg/1.

*Management Standard*

Reduce total annual nutrient and suspended sediment loads as necessary to achieve loading Thresholds for tributaries and littoral and pelagic Lake Tahoe.

**Water Quality – Groundwater**

*Management Standard*

Surface runoff infiltration into the groundwater shall comply with the uniform Regional Runoff Quality Guidelines as set forth in Table 4-12 of the Draft Environmental Threshold Carrying Capacity Study Report, May, 1982.

Where there is a direct and immediate hydraulic connection between ground and surface waters, discharges to groundwater shall meet the guidelines for surface discharges, and the Uniform Regional Runoff Quality Guide lines shall be amended accordingly.

**Water Quality – Other Lakes**

*Numerical Standard*

Attain existing water quality standards.

### **Soil Conservation – Impervious Cover**

#### *Management Standard*

Impervious cover shall comply with the Land-Capability Classification of the Lake Tahoe Basin, California-Nevada, A Guide For Planning, Bailey, 1974.

### **Soil Conservation – Stream Environment Zones**

#### *Numerical Standard*

Preserve existing naturally functioning SEZ lands in their natural hydrologic condition, restore all disturbed SEZ lands in undeveloped, unsubdivided lands, and restore 25 percent of the SEZ lands that have been identified as disturbed, developed or subdivided, to attain a 5 percent total increase in the area of naturally functioning SEZ lands.

### **Air Quality – Carbon Monoxide**

#### *Numerical Standard*

Maintain carbon monoxide concentrations at or below 9 parts per million averaged over 8 hours provided that each state shall review and certify to TRPA by February 28, 1983, as to what their carbon monoxide standards are as of that date, and this TRPA threshold standard shall be changed effective February 28, 1983, if necessary, to be the applicable state carbon monoxide standard applicable to the respective portions of the region in accordance with Article V (d) of the Compact.

#### *Management Standard*

Reduce traffic volumes on the U.S. 50 Corridor by 7 percent during the winter from the 1981 base year between 4:00 p.m. and 12:00 midnight, provided that those traffic volumes shall be amended as necessary to meet the respective state standards.

### **Air Quality – Ozone**

#### *Numerical Standard*

Maintain ozone concentrations at or below 0.08 parts per million averaged over 1 hour.

Maintain oxides of nitrogen (NO<sub>x</sub>) emissions at or below the 1981 level.

### **Air Quality – Regional Visibility**

#### *Numerical Standard<sup>1</sup>*

Achieve an extinction coefficient of 25 Mm<sup>-1</sup> at least 50 percent of the time as calculated from aerosol species concentrations measured at the Bliss State Park monitoring site (visual range of 156 kilometers, 97 miles).

Achieve an extinction coefficient of 34 Mm<sup>-1</sup> at least 90 percent of the time as calculated from aerosol species concentrations measured at the Bliss State Park monitoring site (visual range of 115 kilometers, 71 miles). (Calculations will be made on three year running periods).

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<sup>1</sup> Amended 03/22/2000

Beginning with the existing 1991-93 monitoring data as the performance standards to be met or exceeded.)

Reduce wood smoke emissions by 15% of the 1981 base values through technology, management practices and educational programs.

### **Air Quality – Subregional Visibility**

#### *Numerical Standard<sup>1</sup>*

Achieve an extinction coefficient of  $50 \text{ Mm}^{-1}$  at least 50 percent of the time as calculated from aerosol species concentrations measured at the South Lake Tahoe monitoring site (visual range of 78 kilometers, 48 miles); and

Achieve an extinction coefficient of  $125 \text{ Mm}^{-1}$  at least 90 percent of the time as calculated from aerosol species concentrations measured at the South Lake Tahoe monitoring site (visual range of 31 kilometers, 19 miles); and

Calculations will be made on three year running periods. Beginning with the existing 1991-93 monitoring data as the performance standards to be met or exceeded.)

Reduce suspended soil particles by 30% of the 1981 base values through technology, management practices and educational programs. Reduce wood smoke emissions by 15% of the 1981 base values through technology, management practices and educational programs. Reduce vehicle miles of travel by 10% of the 1981 base values.

### **Air Quality – Nitrate Deposition**

#### *Management Standard*

Reduce the transport of nitrates into the Basin and reduce oxides of nitrogen (NOx) produced in the Basin consistent with the water quality Thresholds.

Reduce vehicle miles of travel in the Basin by 10% of the 1981 base year values.

### **Air Quality – Odor**

#### *Policy Statement*

It is the policy of the TRPA Governing Board in the development of the Regional Plan to reduce fumes from diesel engines to the extent possible.

### **Vegetation Preservation – Common Vegetation**

#### *Management Standard*

Increase plant and structural diversity of forest communities through appropriate management practices as measured by diversity indices of species richness, relative abundance, and pattern.

Maintain the existing species richness of the Basin by providing for the perpetuation of the following plant associations:

- Yellow Pine Forest: Jeffrey pine, White fir, Incense cedar, Sugar pine.

- Red Fir Forest: Red fir, Jeffrey pine, Lodgepole pine, Western white pine, Mountain hemlock, Western juniper.
- Subalpine Forest: Whitebark pine, Mountain hemlock, Mountain mahogany.
- Shrub Association: Greenleaf and Pinemat manzanita, Tobacco brush, Sierra chinquapin, Huckleberry oak, Mountain whitethorn.
- Sagebrush Scrub Vegetation: Basin sagebrush, Bitterbrush, Douglas chaenactis.
- Deciduous Riparian: Quaking aspen, Mountain alder, Black cotton-wood, Willow.
- Meadow Associations (Wet and Dry Meadow): Mountain squirrel tail, Alpine gentian, Whorled penstemon, Asters, Fescues, Mountain brome, Corn lilies, Mountain bentgrass, Hairgrass, Marsh marigold, Elephant heads, Tinker's penney, Mountain Timothy, Sedges, Rushes, Buttercups.
- Wetland Associations (Marsh Vegetation): Pond lilies, Buckbean, Mare's tail, Pondweed, Common bladderwort, Bottle sedge, Common spikerush.
- Cushion Plant Association (Alpine Scrub): Alpine phlox, Dwarf ragwort, Draba.

Relative Abundance - of the total amount of undisturbed vegetation in the Tahoe Basin;

1. Maintain at least four percent meadow and wetland vegetation.
2. Maintain at least four percent deciduous riparian vegetation.
3. Maintain no more than 25 percent dominant shrub association vegetation.
4. Maintain 15-25 percent of the Yellow Pine Forest in seral stages other than mature.
5. Maintain 15-25 percent of the Red Fir Forest in seral stages other than mature.

Pattern - Provide for the proper juxtaposition of vegetation communities and age classes by;

1. Limiting acreage size of new forest openings to no more than eight acres.
2. Adjacent openings shall not be of the same relative age class or successional stage to avoid uniformity in stand composition and age.

A nondegradation standard to preserve plant communities shall apply to native deciduous trees, wetlands, and meadows while providing for opportunities to increase the acreage of such riparian associations to be consistent with the SEZ threshold.

Native vegetation shall be maintained at a maximum level to be consistent with the limits defined in the Land Capability Classification of the Lake Tahoe Basin, California-Nevada, A Guide For Planning, Bailey, 1974, for allowable impervious cover and permanent site disturbance.

#### *Policy Statement*

It shall be a policy of the TRPA Governing Board that a nondegradation standard shall permit appropriate management practices.

**Vegetation Preservation – Late Seral and Old Growth Forest Ecosystems**

*Numerical Standard<sup>2</sup>*

Attain and maintain a minimum percentage of 55% by area of forested lands within the Tahoe Region in a late seral or old growth condition, and distributed across elevation zones. To achieve the 55%, the elevation zones shall contribute as follows:

- The Subalpine zone (greater than 8,500 feet elevation) will contribute 5% (7,600 acres) of the forested lands;
- The Upper Montane zone (between 7,000 and 8,500 feet elevation) will contribute 30% (45,900 acres) of forested lands;
- The Montane zone (lower than 7,000 feet elevation) will contribute 20% (30,600 acres) of forested lands.

Forested lands within TRPA designated urban areas are excluded in the calculation for threshold attainment. Areas of the montane zone within 1,250 feet of urban areas may be included in the calculation for threshold attainment if the area is actively being managed for late seral and old growth conditions and has been mapped by TRPA. A maximum value of 40% of the lands within 1,250 feet of urban areas may be included in the calculation.

Because of these restrictions the following percentage of each elevation zone must be attained to achieve this threshold:

- 61% of the Subalpine zone must be in a late seral or old growth condition;
- 60% of the Upper Montane zone must be in a late seral or old growth condition;
- 48% of the Montane zone must be in a late seral or old growth condition;

**Vegetation Preservation – Uncommon Plant Communities**

*Numerical Standard<sup>3</sup>*

Provide for the nondegradation of the natural qualities of any plant community that is uncommon to the Basin or of exceptional scientific, ecological, or scenic value. This threshold shall apply but not be limited to (1) the deepwater plants of Lake Tahoe, (2) Grass Lake (sphagnum bog), (3) Osgood swamp, (4) the Freel Peak Cushion Plant community, (5) Taylor Creek Marsh, (6) Pope Marsh, (7) Upper Truckee Marsh, and (8) Hell Hole.

**Vegetation Preservation – Sensitive Plants**

*Numerical Standard*

Maintain a minimum number of population sites for each of five sensitive plant species.

<u>Species<sup>§§</sup></u>	<u>Number of Population Sites</u>
<u>Lewisia pygmaea longipetala</u>	2
<u>Draba asterophora v. macrocarpa</u>	2
<u>Draba asterophora v. asterophora</u>	5
<u>Rorippa subumbellata</u>	26
<u>Arabis rigidissima v. demote</u>	7

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<sup>2</sup> Amended 05/23/2001

<sup>3</sup> Amended 04/24/2002

**Wildlife – Special Interest Species**

*Numerical Standard*

Provide a minimum number of population sites and disturbance zones for the following species:

<u>Species of interest</u>	<u>Population sites</u>	<u>Disturbance zone (mi.)</u>	<u>Influence zone (mi.)</u>
Goshawk	12	0.50	3.50
Osprey	4	0.25	0.60
Bald Eagle (Winter)	2	Mapped areas	Mapped areas
Bald Eagle (Nesting)	1	0.50	Variable
Golden Eagle	4	0.25	9.0
Peregrine	2	0.25	7.6
Waterfowl	18	Mapped areas	Mapped areas
Deer	-	Mapped areas	Meadows

**Wildlife – Habitats of Special Significance**

*Management Standard*

A nondegradation standard shall apply to significant wildlife habitat consisting of deciduous trees, wetlands, and meadows while providing for opportunities to increase the acreage of such riparian associations.

**Fisheries – Stream Habitat**

*Numerical Standard<sup>4</sup>*

Maintain the 75 miles of excellent, 105 miles of good, and 38 miles of marginal stream habitat as indicated by the Stream Habitat Quality Overlay map, amended May 1997, based upon the re-rated stream scores set forth in Appendix C-1 of the 1996 Evaluation Report.

**Fisheries – Instream Flows**

*Management Standard*

Until instream flow standards are established in the Regional Plan to protect fishery values, a nondegradation standard shall apply to instream flows.

*Policy Statement*

It shall be a policy of the TRPA Governing Board to seek transfers of existing points of water diversion from streams to Lake Tahoe.

**Fisheries – Lahontan Cutthroat Trout**

*Policy Statement*

It shall be the policy of the TRPA Governing Board to support, in response to justifiable evidence, state and federal efforts to reintroduce Lahontan cutthroat trout.

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<sup>4</sup> Amended 05/28/1997



**Fisheries – Lake Habitat**

*Management Standard*

A nondegradation standard shall apply to fish habitat in Lake Tahoe. Achieve the equivalent of 5,948 total acres of excellent habitat <sup>§</sup>as indicated by the Prime Fish Habitat Overlay Map dated 5/19/97 as may be amended from time to time.

**Noise – Single Noise Events**

*Numerical Standard<sup>5</sup>*

The following maximum noise levels are allowed: All values are in decibels)

Source	Threshold - dBA		Less Than 35 MPH	Greater Than 35 MPH	Monitoring Distances
	Overall				
Aircraft	80 <sup>1</sup>		--	--	6,500 m-start of takeoff roll 2,000 m-runway threshold approach
	77.1 <sup>2</sup>		--	--	6,500 m-start of takeoff roll 2,000 m-runway threshold approach
Watercraft <sup>3</sup>					
1. Pass-By Test	82 L <sub>max</sub>		--	--	50 ft.-engine at 3,000 rpm
2. Shoreline Test	75 L <sub>max</sub>		--	--	Microphone 5 ft. above water, 2 ft., above curve of shore, dock or platform. Watercraft in Lake, no minimum distance.
3. Stationary Test	88 dBA L <sub>max</sub> for boats manufactured before January 1, 1993;		--	--	Microphone 3.3 feet from exhaust outlet - 5 feet above water.
	90 dBA L <sub>max</sub> for boats manufactured after January 1, 1993		--	--	
Motor Vehicles Less Than	--		76	82	50 ft.

<sup>5</sup> Amended 07/23/2003 [Watercraft]

Motor Vehicles	--	82	86	50 ft.
Greater Than				
Motorcycles	--	77	86	50 ft.
Off-Road	--	72	86	50 ft.
Snowmobiles	--	82	--	50 ft.

1. The single event noise standard of 80 dBA  $L_{max}$  for aircraft departures at Lake Tahoe Airport shall be effective immediately. The single event noise standard of 80 dBA  $L_{max}$  for aircraft arrivals at Lake Tahoe Airport is not to be effective until ten years after the adoption of an airport master plan by TRPA. The schedule for phasing in the 80 dBA arrival standard shall be based on a review and consideration of the relevant factors, including best available technology and environmental concerns, and shall maximize the reduction in noise impacts caused by aircraft arrivals while allowing for the continuation of general aviation and commercial service. The beginning arrival standard shall not exceed 84 dBA for general aviation and commuter aircraft, and 86 dBA for transport category aircraft.<sup>6</sup>
2. Between the hours of 8 p.m. and 8 a.m.
3. Failure to meet any one of these three test standards exceeds the single noise event threshold for watercraft.

**Noise – Cumulative Noise Events<sup>7</sup>**

*Numerical Standard*

Background noise levels shall not exceed the following levels:

Land Use Category	Average Noise Level Or CNEL range (dBA)
High Density Residential Areas	55
Low Density Residential Areas	50
Hotel/Motel Areas	60
Commercial Areas	60
Industrial Areas	65
Urban Outdoor Recreation Areas	55
Rural Outdoor Recreation Areas	50
Wilderness and Roadless Areas	45
Critical Wildlife Habitat Areas	45

*Policy Statement*

It shall be the policy of the TRPA Governing Body in development of the Regional Plan to define, locate, and establish CNEL levels for transportation corridors

**Recreation**

*Policy Statement*

It shall be the policy of the TRPA Governing Body in development of the Regional Plan to preserve and enhance the high quality recreational experience including preservation of high-quality undeveloped shorezone and other natural areas. In developing the Regional Plan, the

<sup>6</sup> Amended 08/26/1992

<sup>7</sup> Amended 05/28/1997

staff and Governing Body shall consider provisions for additional access, where lawful and feasible, to the shorezone and high quality undeveloped areas for low density recreational uses.

It shall be the policy of the TRPA Governing Body in development of the Regional Plan to establish and ensure a fair share of the total Basin capacity for outdoor recreation is available to the general public.

### **Scenic Resources – Roadway and Shoreline Units**

#### *Numerical Standard*

Maintain or improve the numerical rating assigned each unit, including the scenic quality rating of the individual resources within each unit, as recorded in the Scenic Resources Inventory and shown in Tables 13-3, 13-5, 13-8 and 13-9 of the Draft Study Report.

Maintain the 1982 ratings for all roadway and shoreline units as shown in Tables 13-6 and 13-7 of the Draft Study Report.

Restore scenic quality in roadway units rated 15 or below and shoreline units rated 7 or below.

### **Scenic Resources – Other Areas<sup>8</sup>**

#### *Numerical Standard*

Maintain or improve the numerical rating assigned to each identified scenic resource, including individual subcomponent numerical ratings, for views from bike paths and other recreation areas open to the general public as recorded in the 1993 Lake Tahoe Basin Scenic Resource Evaluation.

### **Scenic Resources – Built Environment**

#### *Policy Statement*

It shall be the policy of the TRPA Governing Body in development of the Regional Plan, in cooperation with local jurisdictions, to insure the height, bulk, texture, form, materials, colors, lighting, signing and other design elements of new, remodeled and redeveloped buildings be compatible with the natural, scenic, and recreational values of the region.

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<sup>8</sup> Amended 09/22/1993

## Alternative 1

### Summary

Alternative 1, the “no action” alternative, assumes the continuation of the goals, policies, regulations, and programs of the 1987 Regional Plan and continued maintenance of the existing Thresholds.

### Environmental Threshold Carrying Capacities (Threshold Standards)

There are no changes proposed changes to the Thresholds under Alternative 1.

## Alternative 2

### Summary

Some existing Thresholds are not consistent with State or Federal standards. Additionally, new information has been published that can improve TRPA’s ability to assess environmental conditions relative to a Threshold Standard or Management Standard or enhance public safety. In Alternatives 2 and 4, the proposal is to adopt new or updated Threshold or Management Standards to: 1) reflect new State or Federal Standards, 2) recognize new information (science), and/or 3) enhance public safety.

However, issues surrounding the readiness of certain Thresholds and Indicators identified in the Pathway process were not resolved. Additional time is needed to develop updated Thresholds and Indicators to a level acceptable to the stakeholders. Consequently, TRPA proposes a modest, albeit needed, update to the existing suite of Thresholds in the action Alternatives.

In addition, all Alternatives propose to adopt the Vision Statements collaboratively developed for each Threshold Category in the Pathway process. The intent of the Vision Statements is to provide guidance to staff in development of goals, policies, and implementation strategies to achieve the desired conditions for Threshold categories.

### Pathway Vision Statements

Proposed Vision Statements by Threshold Category and Policies Subelement are provided below:

#### Air Quality

*Air quality in the Lake Tahoe basin is healthful for residents, visitors, and ecosystems and supports excellent visibility.*

#### Noise

*Noise levels provide for community and neighborhood serenity, abundant quiet recreational areas, and are not harmful to wildlife.*

#### Recreation

*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*

Scenic Resources

*The Lake Tahoe Basin is internationally recognized for its outstanding natural beauty and is a resource of national significance. Characteristic views within the Basin are of the natural appearing forest, meadows, mountains, and expansive blue lake. The built environment harmonizes with this natural appearing setting in a sustainable manner that supports a vibrant community and healthy economy.*

Soil Conservation

*Soil resources are conserved for the betterment of the environment and public. Soils function naturally, and land-use activities are assigned to suitable soils and landscape settings. Risks to life and property from natural hazards are reduced to acceptable levels. Stream environment zones (SEZs) function at natural levels within the context of the watershed, and provide values commensurate with their functions. Societal and beneficial uses of SEZs, such as water management, cultural and scientific purposes, limited agriculture and recreation are compatible with the naturally functioning conditions of SEZ lands.*

Vegetation

*Vegetation in the Lake Tahoe Basin is healthy and dynamic with the full complement of native plant communities, wildlife habitats and ecological processes.*

Water Quality

*Exceptional water quality provides restored clarity, environmental and human health, and human enjoyment of Lake Tahoe waters.*

Wildlife and Fisheries

*Environmental conditions in the Lake Tahoe Basin support healthy and sustainable native terrestrial and aquatic animal populations and vegetation communities.*

**Environmental Threshold Carrying Capacities**

The following amendments are proposed for the Thresholds under Alternative 2:

Threshold Category	Threshold Value/Goal – Pathway Desired Condition	Component of Desired Condition	Proposed Action	Purpose and Need	Proposed Standard
Air Quality	Human & Ecosystem Health	Carbon Monoxide	Adopt new standards for <u>Carbon Monoxide</u> for the Lake Tahoe Region.	Current TRPA standards for Carbon Monoxide do not adequately protect human health according to California Standards. The Compact requires that Regional Plan shall provide for attaining and maintaining Federal, State, or local air and water quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable. The agency may, however, adopt air or water quality standards or control measures more stringent than the applicable State implementation plan or the applicable Federal, State, or local standards for the region, if it finds that such additional standards or control measures are necessary to achieve the purposes of this Compact.	<ul style="list-style-type: none"> <li>• <u>Threshold Standard</u>: Shall not equal or exceed 6ppm averaged over any 8-hour period.</li> <li>• <u>Threshold Standard</u>: Shall not exceed an average of 20ppm measured over a 1-hour period.</li> </ul>
Air Quality	Human & Ecosystem Health	Ozone	Adopt new air quality standards for <u>Ozone</u> for the Lake Tahoe Region.	Current TRPA standards for Ozone do not adequately protect human health according to new California Standards. The Compact requires that Regional Plan shall provide for attaining and maintaining Federal, State, or local air and water quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable. The agency may, however, adopt air or water quality standards or control measures more stringent than the applicable State implementation plan or the applicable Federal, State, or local standards for the region, if it finds that such additional standards or control measures are necessary to achieve the purposes of this Compact.	<ul style="list-style-type: none"> <li>• <u>Threshold Standard</u>: Shall not exceed an average of 0.080 ppm measured over a 1-hour period.</li> <li>• <u>Threshold Standard</u>: Shall not exceed an average of 0.070 ppm measure over an 8-hour period.</li> </ul>

Threshold Category	Threshold Value/Goal – Pathway Desired Condition	Component of Desired Condition	Proposed Action	Purpose and Need	Proposed Standard
Air Quality	Human & Ecosystem Health	PM <sub>10</sub>	Adopt new air quality standards for PM <sub>10</sub> (Particulate Matter) for the Lake Tahoe Region.	Current TRPA standards for PM <sub>10</sub> do not adequately protect human health according to new Standard. The Compact requires that Regional Plan shall provide for attaining and maintaining Federal, State, or local air and water quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable. The agency may, however, adopt air or water quality standards or control measures more stringent than the applicable State implementation plan or the applicable Federal, State, or local standards for the region, if it finds that such additional standards or control measures are necessary to achieve the purposes of this Compact.	<ul style="list-style-type: none"> <li>• <u>Threshold Standard:</u> Shall not exceed an annual arithmetic mean of 20 µg/m<sup>3</sup>.</li> <li>• <u>Threshold Standard:</u> Shall not exceed an average of 50 µg/m<sup>3</sup> measured over a 24 hour period.</li> </ul>
Air Quality	Human & Ecosystem Health	PM <sub>2.5</sub>	Adopt new air quality standards for PM <sub>2.5</sub> (Particulate Matter) for the Lake Tahoe Region.	Current TRPA standards for PM <sub>2.5</sub> do not adequately protect human health according to new Standard. The Compact requires that Regional Plan shall provide for attaining and maintaining Federal, State, or local air and water quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable. The agency may, however, adopt air or water quality standards or control measures more stringent than the applicable State implementation plan or the applicable Federal, State, or local standards for the region, if it finds that such additional standards or control measures are necessary to achieve the purposes of this Compact.	<ul style="list-style-type: none"> <li>• <u>Threshold Standard:</u> Shall not exceed an annual arithmetic mean of 12 µg/m<sup>3</sup></li> <li>• <u>Threshold Standard:</u> Shall not exceed an average of 35 µg/m<sup>3</sup> measured over a 24 hour period.</li> </ul>

Threshold Category	Threshold Value/Goal – Pathway Desired Condition	Component of Desired Condition	Proposed Action	Purpose and Need	Proposed Standard
Fisheries	Aquatic/Riparian Ecosystem Biological Integrity	Lake Tahoe - Littoral Fish Habitat	Update fish habitat maps per Metz and Harold (2004) report.	The existing TRPA fish habitat map for Lake Tahoe is a coarse representation of distribution and abundance of submerged littoral substrates and has identified errors, such as including backshore as fish habitat and inaccuracy in representing water depth. TRPA needs to update this map to recognize new mapping technology. New research has provided TRPA with a more accurate and precise estimate of the abundance and distribution of littoral fish habitat as well as bathymetry (underwater topography and water depth).	A nondegradation standard shall apply to fish habitat in Lake Tahoe. Achieve the equivalent of 5,948 total acres of prime habitat as indicated by the Prime Fish Habitat Overlay Map (Metz and Harold 2004) as may be amended from time to time.
Noise	Single Event Noise Sources	Off-highway vehicle noise	Adopt new noise standard for off-highway vehicle noise for the Lake Tahoe Region.	Current TRPA noise standard for OHV are difficult to enforce and inconsistent with other noise standards applicable to the Region. TRPA proposes to adopt new standards to improve monitoring and enforcement capabilities and be consistency with other agencies in our efforts to reduce this source of noise pollution.	<u>Threshold Standard:</u> Noise emissions of all off-highway vehicles shall be limited to not more than 96 dbA if manufactured on or after January 1, 1986, and not more than 101 dbA if manufactured prior to January 1, 1986, when measured from a distance of 20 inches.



Threshold Category	Threshold Value/Goal – Pathway Desired Condition	Component of Desired Condition	Proposed Action	Purpose and Need	Proposed Standard
Noise	Single Event Noise Sources	On-highway vehicle noise	Adopt California noise standard for on-highway vehicle noise for the Lake Tahoe Region.	Currently, TRPA's on-highway and CNEL noise levels are being violated due to on-highway vehicle noise. The proposed standard is consistent with California's vehicle code and if attained would reduce this source of noise pollution.	<u>Threshold Standard:</u> All on-highway motor vehicles operating in jurisdiction of the TRPA shall meet noise standards and regulations as stipulated by the California Vehicle Code sections 23130, 23130.5 and 27150.
Soil Conservation	Land Coverage and Disturbance	Land Coverage (Impervious Cover)	Adopt an updated land capability map of the Tahoe Basin based on the 2007 soil survey update.	Existing language is not explicit as to what aspect(s) of the "Land-Capability Classification of the Lake Tahoe Basin, California and Nevada, A Guide for Planning (Bailey 1974)" constitute the threshold standard for impervious cover. The updated language specifies exactly what components of Bailey (1974) constitute the threshold standard for impervious cover.	<u>Management Standard:</u> Allowable land coverage in the Tahoe Basin shall be set in accordance with the land capability district classification methodology and district t-based coverage limitations set forth in the Land-Capability Classification of the Lake Tahoe Basin, California-Nevada, A Guide for Planning (Bailey 1974)

Threshold Category	Threshold Value/Goal – Pathway Desired Condition	Component of Desired Condition	Proposed Action	Purpose and Need	Proposed Standard
Vegetation	Special Status Plant Species	All	Add management standard to survey and protect sensitive plant species listed by the US Forest Service – Lake Tahoe Basin Management Unit.	Currently, TRPA's special interest species list does not include the same plant species as the USFS – LTBMU sensitive plant species list. Adopting the proposed management standard would improve consistency between the two agencies and would enhance protection of these species.	<u>Management Standard:</u> Survey and protect all known occurrences of listed special status plant species.
Water Quality	Lake Clarity	Pelagic Lake Tahoe Clarity (transparency)	Change existing Winter Average Threshold Standard Secchi depth of 33.4m to Annual Average Secchi depth of 29.7m.	Current TRPA winter average Threshold Standard does not measure annual average and is not consistent with the California lake clarity standard. Need to update standard to provide consistency with state standard.	<u>Threshold Standard:</u> Secchi depth transparency shall not be less than an annual average of 29.7 meters.
Wildlife	Special Interest Species	Northern Goshawk	Revise management standard to delineate disturbance zones from a radius to the equivalent acreages to capture most suitable Northern Goshawk habitat around known nest sites. (0.5 mile radius = 500 acres)	Existing standard language does not take into account the suitability of habitat within the 0.5 mile radius “disturbance-zone”. If disturbance-zone mapping approach is updated to most suitable 500 acres, protection of suitable habitat around nest sites would be improved.	<u>Management Standard:</u> A non-degradation standard applies to 500 acres of the most suitable nesting, feeding, and/or post-fledgling habitat surrounding a population (nest) site.

## **Alternative 3**

### **Summary**

Despite Alternative 3 being characterized as the “Status Quo” Alternative, certain changes are proposed to the Thresholds in light of new threats and new knowledge that cannot be ignored. Modifications are proposed as a result of input received from the TRPA Governing Board and from the public during the environmental scoping process.

The updates proposed for Alternative 3 are the same as those proposed for Alternative 2 except for the modifications listed below for Air Quality and Noise Thresholds. Under Alternative 3, these Thresholds are modified to adopt separate Air Quality and Noise standards for each state.

In addition, the Alternative 2 change to the goshawk disturbance zone standard is not proposed under Alternative 3, and the existing half-mile radius standard will continue to apply.

### **Pathway Vision Statements**

Same as Alternative 2.

### **Environmental Threshold Carrying Capacities**

Same as Alternative 2 with the following exceptions:

Threshold Category	Threshold Value/Goal – Pathway Desired Condition	Component of Desired Condition	Proposed Action	Purpose and Need	Proposed Standard
Air Quality	Human & Ecosystem Health	Carbon Monoxide	Adopt California standards for <u>Carbon Monoxide</u> for the CA side of the Region.	Current TRPA standards for Carbon Monoxide do not adequately protect human health according to new California Standard. The Compact requires that Regional Plan shall provide for attaining and maintaining Federal, State, or local air and water quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable. The agency may, however, adopt air or water quality standards or control measures more stringent than the applicable State implementation plan or the applicable Federal, State, or local standards for the region, if it finds that such additional standards or control measures are necessary to achieve the purposes of this Compact.	<ul style="list-style-type: none"> <li>• <u>Threshold Standard</u>: Shall not equal or exceed 6 ppm averaged over any 8-hour period.</li> </ul>
Air Quality	Human & Ecosystem Health	Ozone	Adopt new air quality standards for <u>Ozone</u> for the CA side of the Region.	Current TRPA standards for Ozone do not adequately protect human health according to new California Standard. The Compact requires that Regional Plan shall provide for attaining and maintaining Federal, State, or local air and water quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable. The agency may, however, adopt air or water quality standards or control measures more stringent than the applicable State implementation plan or the applicable Federal, State, or local standards for the region, if it finds that such additional standards or control measures are necessary to achieve the purposes of this Compact.	<ul style="list-style-type: none"> <li>• <u>Threshold Standard</u>: Shall not exceed an average of 0.08 ppm measured over a 1-hour period.</li> <li>• <u>Threshold Standard</u>: Shall not exceed an average of 0.07 ppm measure over an 8-hour period.</li> </ul>

Threshold Category	Threshold Value/Goal – Pathway Desired Condition	Component of Desired Condition	Proposed Action	Purpose and Need	Proposed Standard
Air Quality	Human & Ecosystem Health	PM <sub>10</sub>	Adopt new air quality standards for PM <sub>10</sub> (Particulate Matter) for the.	Current TRPA standards for PM <sub>10</sub> do not adequately protect human health according to new California Standard. The Compact requires that Regional Plan shall provide for attaining and maintaining Federal, State, or local air and water quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable. The agency may, however, adopt air or water quality standards or control measures more stringent than the applicable State implementation plan or the applicable Federal, State, or local standards for the region, if it finds that such additional standards or control measures are necessary to achieve the purposes of this Compact.	<ul style="list-style-type: none"> <li>• <u>Threshold Standard:</u> CA side of Region: Shall not exceed an annual arithmetic mean of 20 µg/m<sup>3</sup>.</li> <li>• <u>Threshold Standard:</u> CA side of Region: Shall not exceed an average of 50 µg/m<sup>3</sup> measured over a 24 hour period.</li> <li>• <u>Threshold Standard:</u> NV side of Region: Shall not exceed an average of 150 µg/m<sup>3</sup> measured over a 24 hour period.</li> </ul>

Threshold Category	Threshold Value/Goal – Pathway Desired Condition	Component of Desired Condition	Proposed Action	Purpose and Need	Proposed Standard
Air Quality	Human & Ecosystem Health	PM <sub>2.5</sub>	Adopt new air quality standards for PM <sub>2.5</sub> (Particulate Matter) for the Lake Tahoe Region.	Current TRPA standards for PM <sub>2.5</sub> do not adequately protect human health according to new California Standard. The Compact requires that Regional Plan shall provide for attaining and maintaining Federal, State, or local air and water quality standards, whichever are strictest, in the respective portions of the region for which the standards are applicable. The agency may, however, adopt air or water quality standards or control measures more stringent than the applicable State implementation plan or the applicable Federal, State, or local standards for the region, if it finds that such additional standards or control measures are necessary to achieve the purposes of this Compact.	<ul style="list-style-type: none"> <li>• <u>Threshold Standard:</u> CA side of Region: Shall not exceed an annual arithmetic mean of 12 µg/m<sup>3</sup></li> <li>• <u>Threshold Standard:</u> All of Region: Shall not exceed an average of 35 µg/m<sup>3</sup> measured over a 24 hour period.</li> <li>• <u>Threshold Standard:</u> NV side of Region: Shall not exceed an annual arithmetic mean of 15 µg/m<sup>3</sup></li> </ul>
Noise	Single Event Noise Sources	Off-highway vehicle noise	Adopt new noise standard for off-highway vehicle noise for the California side of the Region.	Current TRPA noise standard for OHV is inconsistent with California noise standards. TRPA proposes to adopt new California State law to improve consistency with state law and reduce this source of noise pollution on the CA side of the Region.	<u>Threshold Standard:</u> Noise emissions of all off-highway vehicles shall be limited to not more than 96 dbA if manufactured on or after January 1, 1986, and not more than 101 dbA if manufactured prior to January 1, 1986, when measured from a distance of 20 inches.

Threshold Category	Threshold Value/Goal – Pathway Desired Condition	Component of Desired Condition	Proposed Action	Purpose and Need	Proposed Standard
Noise	Single Event Noise Sources	On-highway vehicle noise	Adopt new noise standard for on-highway vehicle noise for the California side of the Region.	Currently, TRPA's on-highway and CNEL noise levels are being violated due to on-highway vehicle noise. The proposed standard is consistent with California's vehicle code and if attained would reduce this source of noise pollution.	<u>Threshold Standard:</u> All on-highway motor vehicles operating on the CA side of the Region shall meet noise standards and regulations as stipulated by the California Vehicle Code sections 23130, 23130.5 and 27150.

## **Alternative 4**

### **Summary**

Alternative 4 proposes the same set of Threshold updates as Alternative 2 except for the following modifications listed below for the Fisheries and Wildlife Thresholds. Modifications are proposed as a result of input received from the TRPA Governing Board and from the public during the environmental scoping process.

Under Alternative 4, the Wildlife Threshold standard for Goshawk would be modified to retain the existing half-mile non-disturbance zone in addition to the overlay of a 500-acre area of most suitable habitat.

### **Pathway Vision Statements**

Same as Alternative 2

### **Environmental Threshold Carrying Capacities**

Same as Alternative 2 with the following exceptions:



Threshold Category	Threshold Value/Goal – Pathway Desired Condition	Component of Desired Condition	Proposed Action	Purpose and Need	Proposed Standard
Wildlife	Special Interest Species	Northern Goshawk	Maintain the existing 0.5 mile radius non-disturbance zone and amend the management standard to add the equivalent acreages to capture most suitable Northern Goshawk habitat around known nest sites. (0.5 mile radius = 500 acres)	This Implementation Measure, which retains the existing 1/2-mile radius non-disturbance zone plus the overlay of a 500-acre non-disturbance zone based on best available goshawk nesting and postfledging habitat, is incorporated because of public input received through the environmental scoping process. It should be noted that, though this combined approach to goshawk habitat restricts land use on more land, it does not necessarily provide more protection to the goshawks themselves.	<u>Management Standard:</u> A non-degradation standard applies to a 0.5 mile radius and to 500 acres of the most suitable nesting, feeding, and/or post-fledgling habitat surrounding a population (nest) site.

