

Technical Supplement and Appendix
for
PATHWAY 2007 Evaluation Report

Noise Resource

DRAFT

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9.0 Noise Overview

9.1 INTRODUCTION

Noise by definition, is “unwanted sound,” and is a subjective reaction to acoustical energy or sound levels. Due to the rural nature of the communities and the pristine natural areas in the in the Lake Tahoe Basin (Basin), noise management is an integral part of the land use planning and the environmental improvement processes at Lake Tahoe.

Visitors and residents have expressed concerns about the decline in serenity of their community and their enjoyment of the outdoors due to excessive noise from sources such as on-highway vehicles, off-highway vehicles, over-snow vehicles, watercraft, and aircraft. For this reason, the TRPA developed a noise program designed to reduce noise levels and restore and maintain the serenity to the area. The purpose of this report is to provide an evaluation of the past program and provide recommendations for future improvement.

9.1.1 Background

Over the years, residents and visitors have stated that noise levels should be controlled to preserve the serenity of the community and neighborhood, prevent disruption of their enjoyment of the outdoors, and prevent disturbance to wildlife. The 1982 TRPA Report for the Establishment of Environmental Threshold Carrying Capacities stated that background noise in the Basin was rising as a result of increased levels of human activity. As a consequence, noise thresholds were created to achieve the following objectives:

- Reduce or eliminate those activities in the Basin that produce damaging or distressing noise levels; and
- Provide for community and neighborhood tranquility.

It is these objectives that are the founding principles guiding the current noise program in the Lake Tahoe Basin (Basin).

The Tahoe Regional Planning Agency’s (TRPA) bi-state compact (Compact) requires TRPA to adopt environmental threshold carrying capacities (thresholds) for noise within the Basin and implement the corresponding ordinances, rules, and regulations necessary to achieve and maintain this threshold. The noise threshold was developed as part of the Compact’s provision to maintain the significant scenic, recreational, educational, scientific or natural value of the region or to maintain public health and safety within the Region. To this end, regulations were developed that included numerical standards for overall community noise (Community Noise Equivalent Level (CNEL)) and for single event noises. Community Noise Equivalent Level standards were developed for all plan areas and vary from place to place depending on the land use and impact of transportation systems. Single Event noise standards were also developed for specific sources such as motor vehicles, off-road vehicles, boats, snowmobiles and aircraft.

TRPA's Goals and Policies, Land Use Element, Noise Sub-Element, restates the compact requirements for noise in two goals. The first relates to attaining single event noise standards and the latter covers the community noise equivalent levels. The TRPA's Code of Ordinances (Code), Chapter 23 lists specific noise standards and methods of measurement that are applied on a project basis. Code of Ordinances, Chapter 32, Section 32.3, requires the Agency to keep a list of indicators to be monitored for evaluating the attainment status of thresholds. These are referred to as the compliance indicators and are the main tracking mechanism for threshold attainment in the noise threshold compliance forms.

Pursuant to Chapter 32 of the Code, the Agency adopted noise threshold indicators in order to evaluate the noise threshold. The current threshold indicators and associate standards are described in Table 9-1 and in more detail in the following text.

9.1.2 Public Input

The public expressed a desire to focus on two main topics with respect to noise. These topics include a consistent and equitable set of noise standards to be applied Basin-wide and an improved noise monitoring and enforcement program for the Basin.

The numbers of potential disturbing noise sources in the Basin are limited and included mainly transportation related noises, such as modified vehicles and motorcycles, boat noise, aircraft noise, and the use of truck engine exhaust brakes. To this end, the Noise Technical Working Group (TWG) focused on the development and implementation of uniform standards for these source categories that could easily be enforced throughout the Basin.

The public also expressed concern about the increased level of ambient noise, noise levels that interfere with their enjoyment of the outdoors, and the increased impact on wildlife due to excessive noise.

9.1.3 Legal and Regulatory Setting

There are multiple federal, state, and local agencies that play a part in managing noise levels in the Basin. The following is a brief overview of those agencies and their roles.

Federal

Federal Aviation Administration (FAA)

To limit the public's exposure to sound levels, the FAA adopts and enforces uniform noise standards for aircraft and airports. The FAA establishes and certifies new aircraft standards for noise emissions and sets ambient noise levels for the surrounding areas of airports. Information about aircraft or plane noise can be obtained from the Federal Aviation Administration Web site on aircraft noise Issues,

http://www.faa.gov/about/office_org/headquarters_offices/aep/aircraft_noise/

United States Environmental Protection Agency (USEPA)

The USEPA has noise regulations for certain source categories. This includes regulations governing the exhaust noise from interstate motor carriers and railroads, medium- and heavy-duty trucks, motorcycles and mopeds, portable air

compressors, and off-road vehicles. The USEPA noise standards apply at time of vehicle manufacture, rather than during the operation. For more information, contact the Federal Highway Administration's Office of Motor Carrier and Highway Safety Web site, which includes information on the Interstate Motor Carrier Noise Emission Compliance Regulations from the Code of Federal Regulations (49 CFR 325) at http://www.fmcsa.dot.gov/rules-regulations/administration/fmcsr/fmcsrguidetails.asp?rule_toc=730§ion_toc=730

United States Forest Service (USFS)

The desired conditions for the United States Forest Service (USFS) are contained in their Land and Resource Management Plan (Forest Plan) and are the social, economic and ecological attributes that characterize or exemplify the goals toward which management of the land and resources of the plan area are to be directed. The USFS, Lake Tahoe Basin Management Unit (LTBMU) adopted TRPA's noise thresholds in their 1988 Forest Plan. This Forest Plan governs the National Forest land within the Basin and takes the necessary actions to comply with the established single event and cumulative event noise thresholds. The USFS also has separate noise disturbance regulations for their campgrounds and recreational areas. Information concerning their regulations can be found at <http://www.fs.fed.us/r5/ltbmu/>.

State

California

California has adopted noise standards for on- and off-highway motor vehicles. These standards are currently in effect for the California side of the Basin and are monitored and enforced through the California Highway Patrol and the California State Parks.

Nevada

Nevada has adopted noise standards for on- and off-highway motor vehicles and watercraft. These standards are currently in effect for the Nevada side of the Basin and are monitored and enforced through the Nevada Highway Patrol and the Nevada Division of Wildlife.

Local Agencies

Various city and counties maintain what is described as nuisance noise ordinances.

City of South Lake Tahoe

The City of South Lake Tahoe adopted a noise policy that states; "It shall be unlawful for any person on residential property or a public way to make or continue, or cause to be made or continued, any offensive, excessive, unnecessary, or unusually loud noise or any noise which either annoys, disturbs, injures, or endangers the comfort, repose, health, peace or safety of others on residential property or public ways within the city".

Placer County General Plan Noise Element

Placer County has adopted a Noise Element as part of its General Plan (1994). Goal 9.A of the Noise Element states "To protect County residents from the harmful and annoying effects of exposure to excessive noise."

El Dorado County Public Health and Safety Plan

The El Dorado County General Plan Public Health and Safety Element (December 1993), includes noise as one of the issues. The goal of the noise sub-element is to ensure that County residents are not subjected to noise beyond acceptable levels. One of the objectives of the noise sub-element is to protect existing noise sensitive development (e.g., hospitals, schools, churches, and residential) from new uses that would generate noise levels incompatible with those uses and, conversely, discourage noise sensitive uses from locating near sources of high noise levels.

Douglas County

Disturbing the peace.

It is unlawful for any person to maliciously and willfully disturb the peace of any neighborhood, person, or family by loud or unusual noises or by tumultuous and offensive conduct, threatening, traducing, quarreling, challenging to fight, or fighting. (Ord. 303 §1, 1979; Ord. 292 §1, 1978)

Washoe County

Section 110.414.05 Standards. Sound levels shall not exceed the standards set forth in this section.

- (a) Industrial Development. For property being developed within any industrial zone: seventy-five (75) Ldn at the property line.
- (b) Residential Abutment. For property abutting areas developed residentially, or shown as residential on the area plan maps: sixty-five (65) Ldn at the property line.
- (c) Public/Quasi-Public Facility Abutment. For property abutting local parks, schools, hospitals, group care facilities or facilities providing child care services: sixty-five (65) Ldn at the property line. Interior noise levels shall not exceed 45 Ldn.
- (d) Development with Public/Quasi-Public Facility. For property being developed with a group care facility, school or hospital: sixty (60) Ldn at three (3) feet from any of the building's exterior walls. Interior noise levels shall not exceed 45 Ldn.
- (e) Noise Abatement Near Highways and Railroads. Prior to approving any residential development, applicant(s) shall provide site plans indicating that outside noise levels at the residences shall not exceed a maximum of 65 dB when trains are passing or 65 Ldn next to highways.
- (f) Other. If the sound levels affecting a project are greater than those allowed for project development, the developer or subdivider shall construct a noise attenuation barrier to bring sound levels down to required standards.

In addition Section 50.224 of the Washoe County Code states that:

1. It is unlawful for any person to drive a motorcycle or an off-road vehicle in an off-road vehicle area:
 - (a) Within 500 feet of any residence owned or occupied by another, except for purposes of ingress onto or egress from the person's property, or
 - (b) At a distance of more than 500 feet from any residence, if the operation disturbs the peace and quiet of any person within said residence.

2. Nothing contained in this section shall be construed to permit any motorcycle or off-road vehicle to be driven so as to disturb the peace and quiet of any neighborhood.
3. Off-road vehicle courses are allowed only as authorized in chapter 110 of this code.

[§3, Ord. No. 238; A Bill No. 401; A Ord. Nos. 1188, 1214]

Tahoe Regional Planning Agency

TRPA's Compact required the adoption of environmental threshold carrying capacities ("thresholds") to protect the values of the region. To this end, the TRPA adopted a comprehensive set of noise thresholds in August 1982. The following are the Goals and Policies that were adopted for the noise threshold:

Goal # 1: Single Event Noise standards shall be attained and maintained.

Policies

- An ordinance and enforcement program shall be developed to permit only aircraft that meet the single event noise thresholds to use the airport.
- Boats will only be allowed to use Lake Tahoe if they comply with the single event threshold
- Motor vehicles and motorcycles shall comply with the appropriate noise thresholds.
- Off-road vehicle use is prohibited in the Lake Tahoe Region except on specified roads, trails, or designated areas where the impacts can be mitigated.
- The use of snowmobiles will be restricted to designated areas.
- The plan will permit uses only if they are consistent with the noise standards. Sound proofing practices may be required on all structure containing uses that would otherwise adversely impact the prescribed noise levels.

Goal #2: Cumulative Noise event levels shall be attained and maintained.

Policies:

- Transmission of noise from the transportation corridors shall be reduced.
- Reduce noise-related impacts associated with the airport to acceptable levels.
- TRPA will further define CNELs for wilderness and roadless areas and for critical wildlife habitat areas.

These policies and the associated standards are discussed in more detail throughout this document.

9.2 Existing Management Direction and Need for Change

Over the years, residents and visitors have stated that noise levels should be controlled to preserve the serenity of the community and neighborhood and not disrupt the wildlife or their enjoyment of the outdoors. A study (*Report for the Establishment of Environmental Threshold Carrying Capacities*) was completed in

1982 and indicated that background noise in the Basin was rising as a result of increased levels of human activity. For this reason, the TRPA's Compact required the adoption of environmental threshold carrying capacities (thresholds) for noise within the Basin and implement corresponding ordinances, programs, and corresponding regulations necessary to achieve and maintain this threshold. Over the years, the noise threshold was developed and refined as part of the Compact's provisions and the following objectives or desired conditions were developed:

- Reduce or eliminate those activities in the Basin that produce damaging or distressing noise levels; and
- Provide for community and neighborhood tranquility.

Along with the objectives, standards and indicators were developed that included numerical noise limits for overall CNELs and for single event noises. The CNEL standards were developed for plan areas and vary from place to place depending on the land use and the impacts nearby noise sources. As an example, it is reasonable to expect that noise in an industrial area would be louder than noise in a multi-family neighborhood and noise in close proximity to a major highway will be louder than in a single-family neighborhood.

Similarly, Single Event noise standards were developed in much the same way; taking into consideration the various types of equipment and their usage when adopting standards and programs. In doing so, individual noise standards were developed for specific sources such as on-highway vehicles, off-road vehicles, watercraft, over snow vehicles, and aircraft operating out of the South Lake Tahoe Airport.

Table 9-1 outlines the existing standards and indicators for TRPA's noise program.

Table 9-1
Summary of Existing Noise Indicators and Standards

ID #	Indicator	Standard																																															
<p align="center">N-1 Single Event Noise – Aircraft</p>	<p>Aircraft noise measured in decibels monitored pursuant to the monitoring element of the adopted Lake Tahoe Airport Master Plan.</p>	<p>Departures (all aircraft): 80 dBA at 6,500 meters from start to takeoff roll. 77.1 dBA at 6,500 meters from start to takeoff roll between 8 p.m. and 8 a.m.</p> <p>Arrivals: 84 dBA at 2,000 meters from the runway threshold approach (general aviation and commuter aircraft). 86 dBA at 2,000 meters from the runway threshold approach (transport category aircraft). 77.1 dBA (all aircraft) 2,000 meters from the runway threshold approach between 8 p.m. and 8 a.m.</p> <p>Note: Within ten years after adoption of the airport master plan, the single – event noise standard for all arrivals shall be 80 dBA.</p> <p>Noise levels will be measured at 6,500 meters from start to takeoff roll and at 2,000 meters from the runway threshold approach.</p>																																															
<p align="center">N-2 Single Event Noise – Other</p>	<p>Any single-event noise measurement made with a Type I sound level meter using the A-weighting and “slow” response pursuant to applicable manufacturer’s instructions, except that for sounds of a duration of two seconds or less, the “fast” response shall be used. See Chapter 23 of the Code of Ordinances.</p> <p>NOTE: One exceedances per year in any category is considered non-attainment</p>	<p align="center">The following are the maximum noise levels allowed:</p> <table border="1"> <thead> <tr> <th>Source</th> <th>Overall</th> <th><35 MPH</th> <th>>35 MPH</th> <th>Monitoring Distances</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Watercraft</td> <td>82</td> <td>--</td> <td>--</td> <td>50 ft.-engine at 3,000 rpm</td> </tr> <tr> <td>75</td> <td>--</td> <td>--</td> <td>At Shoreline</td> </tr> <tr> <td rowspan="2">1993 & Later</td> <td>88</td> <td>--</td> <td>--</td> <td rowspan="2">SAE J2005test</td> </tr> <tr> <td>Prior to 1993</td> <td>90</td> <td>--</td> </tr> <tr> <td>Motor Vehicles less than 6,000 GVW</td> <td>--</td> <td>76</td> <td>82</td> <td>50 feet</td> </tr> <tr> <td>greater than 6,000 GVW</td> <td>--</td> <td>82</td> <td>86</td> <td>50 feet</td> </tr> <tr> <td>Motorcycles</td> <td>--</td> <td>77</td> <td>86</td> <td>50 feet</td> </tr> <tr> <td>Off Road Vehicles</td> <td>--</td> <td>72</td> <td>86</td> <td>50 feet</td> </tr> <tr> <td>Snowmobiles</td> <td>--</td> <td>82</td> <td>--</td> <td>50 feet</td> </tr> </tbody> </table> <p>* All noise values in dBA</p>	Source	Overall	<35 MPH	>35 MPH	Monitoring Distances	Watercraft	82	--	--	50 ft.-engine at 3,000 rpm	75	--	--	At Shoreline	1993 & Later	88	--	--	SAE J2005test	Prior to 1993	90	--	Motor Vehicles less than 6,000 GVW	--	76	82	50 feet	greater than 6,000 GVW	--	82	86	50 feet	Motorcycles	--	77	86	50 feet	Off Road Vehicles	--	72	86	50 feet	Snowmobiles	--	82	--	50 feet
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<p align="center">N-3 Community Noise Equivalent Level (CNEL)</p>	<p>Community noise equivalent levels (CNELs) calculated pursuant to the Code, Section 23.4. TRPA acknowledges that development permitted by the Regional Plan may, in some locations, cause cumulative noise levels to exceed 1982 levels. Pending possible revisions to the thresholds or the Code, TRPA shall review proposed activities in the Tahoe Region taking into account site-specific noise analyses, estimated impacts on affected land uses, consistency with other provisions of the Regional Plan, and reasonable tests of significance of changes in noise levels.</p>	<p align="center">Background noise levels shall not exceed existing levels or the following levels, whichever is less:</p> <table border="1"> <thead> <tr> <th><u>Land Use Category</u></th> <th><u>Average Noise Level or CNEL Range (dBA)</u></th> </tr> </thead> <tbody> <tr> <td>High density residential areas</td> <td>55</td> </tr> <tr> <td>Low density residential areas</td> <td>50</td> </tr> <tr> <td>Hotel Areas</td> <td>60</td> </tr> <tr> <td>Commercial Areas</td> <td>60</td> </tr> <tr> <td>Industrial Areas</td> <td>65</td> </tr> <tr> <td>Urban outdoor recreation areas</td> <td>55</td> </tr> <tr> <td>Rural outdoor recreation areas</td> <td>50</td> </tr> <tr> <td>Wilderness and roadless areas</td> <td>45</td> </tr> <tr> <td>Critical wildlife habitat areas</td> <td>45</td> </tr> <tr> <td colspan="2">Highway Corridors</td> </tr> <tr> <td>Highway 50</td> <td>65</td> </tr> <tr> <td>Highways 89, 207, 28, 267, and 431</td> <td>55</td> </tr> <tr> <td>South Lake Tahoe Airport</td> <td>60</td> </tr> </tbody> </table> <p>*All Measurements in dB</p>	<u>Land Use Category</u>	<u>Average Noise Level or CNEL Range (dBA)</u>	High density residential areas	55	Low density residential areas	50	Hotel 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	Highway Corridors		Highway 50	65	Highways 89, 207, 28, 267, and 431	55	South Lake Tahoe Airport	60																			
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9.2.1 Existing TRPA Threshold – N-1 Single Event Noise (Aircraft)

The Aircraft Noise indicator was developed to specifically address noise associated with landings and takeoffs at the Lake Tahoe Airport. The airport is located in an environmentally sensitive region of the Basin adjacent to Highway 50 approximately 2 miles south of town. The airport is equipped with the following services; charter flights, private flights, auto rental, aviation fuel sales, and life flight emergency medical transportation, and is categorized by the Federal Aviation Administration (FAA) as “Non-Hub Small” airport. In some cases, arriving and departing aircraft fly directly over residences and sensitive wildlife habitat and produce damaging or distressing noise levels for the community and wildlife. The airport noise standards were developed as part of a cooperative four-party agreement that included the City of South Lake Tahoe, the California Attorney General’s Office, the League to Save Lake Tahoe, and the TRPA. This agreement specified not only operation protocols for the airport, but included noise standards as well. It is these noise standards that have been incorporated into TRPA’s regulations and threshold indicators. Aircraft noise is measured in decibels and monitored pursuant to the monitoring element of the Lake Tahoe Airport Master Plan. These standards are shown in Table 9-1 above and are divided into takeoff and landing levels as well as by day and nighttime noise standards.

9.2.1.1 Rational for Change to the Indicators N-1

The recommended changes to this indicator are based on the finding that they are not sufficient to maintain a significant value of the Region as outlined by TRPA’s Compact. Staff is proposing changes to the current indicators that include the consolidation of indicators for simplification purposes and improvements necessary to greatly improve the efficiency of the noise program.

The first rational for change involves the combining of N-1 Single Event Noise (Aircraft) indicator with the N-2 Single Event Noise (other than aircraft) into a single indicator named N-1 Single Event Noise Sources. This new indicator includes on-highway vehicles, off-highway vehicles, over-snow vehicles, watercraft, aircraft, and was done to simplify the threshold and limit the number of indicators within the noise threshold. There were no issues with this change and it was done purely to reduce the number of indicators in the noise program.

The most significant change centers on the indicator language. For N-1 Single Event Noise (Aircraft), the indicator is “Aircraft noise measured in decibels monitored pursuant to the monitoring element of the adopted Lake Tahoe Airport Master Plan”. As written, this indicator only tells you the protocols for taking a noise measurement, but does not provide any information/indication on how well you are doing at achieving the standards or desired conditions. In addition, because this indicator was specifically developed for Settlement Agreement Aircraft, it would not work with the future addition of standards for non-settlement agreement aircraft.

The same issue is found with the N-2 Single Event Noise indicator. The N-2 indicator states “Any single-event noise measurement made with a Type I sound level meter using the A-weighting and "slow" response pursuant to applicable manufacturer's instructions, except that for sounds of a duration

of two seconds or less, the "fast" response shall be used. See Chapter 23 of the Code of Ordinances". Again, this indicator only tells you the protocols for taking a noise measurement, but does not provide any information/indication on how well you are doing at achieving the standards or desired conditions.

To resolve this, new indicators were developed for Single Event Noise Sources that provide better information on the progress of attaining the standards and/or desired conditions. In addition, because the public and technical working groups expressed concern that a major challenge with the current threshold program was lack of monitoring and enforcement, additional indicators were added to address these concerns. The proposed indicators include the following.

- **Number of exceedances of the noise standard by category.** This indicator provides information necessary to evaluate and allocate resources to mitigate any issues that arise. By tracking the number of exceedances by source, it will now be possible to direct the resources to specifically address this issue.
- **Number of corrective actions taken for each noise source.** This indicator will measure agencies responses to noise violations and was developed to specifically address the public's and TWG's concern over the lack of enforcement of the noise standards. In addition, this will also provide information on the effectiveness of the agency's corrective actions. For example, if it is found that the agency is performing well at taking corrective actions on noise violations and those violations continue to accrue, this is a sign that the corrective actions in place are not adequate to control the issue and therefore must be improved. Again, this type of indicator can be directly used to evaluate and improve the noise program.
- **Percentage of planned monitoring completed by noise source.** The TRPA is currently working on a detailed monitoring plan that includes the efforts necessary to monitor each of the noise sources. This indicator will measure agencies efforts at monitoring noise violations and was developed to specifically address the public's and TWG's concern over the lack of monitoring of the noise levels throughout the Basin.

An additional improvement of these proposed indicators is that they will be measured annually. The Technical Working Group believes the proposed indicators provide a vast improvement over the existing indicators by annually measuring the level of improvement or degradation for each noise source. This provides agencies with the information necessary to evaluate the noise program and to address those areas that may need some programmatic attention or adjustments. This will move us closer to attaining our proposed desired conditions and provides the best possible allocations of resources in order to do so.

9.2.2 Existing TRPA Threshold – N-2 Single Event Noise (Other)

The existing indicators and standards for Single Event Noise (Other) are shown in Table 9-1 above. It is proposed that this indicator be combined with N-1 Single Event Noise (Aircraft) in its entirety. This was done for simplicity purposes only.

9.2.2.1 Rational for Change to the Indicators N-2

The recommended changes to these standards are based on the finding that the current standards are not sufficient to maintain the significant value of the Region as outlined in TRPA's Compact. For the most part, the majority of proposed changes to the Single Event Noise Sources standards involve making them consistent throughout the Basin and providing new procedures to monitor the noise levels of the various types of equipment. A more detailed rational for changes is discussed below by each category type.

On-Highway Vehicles

The staff is proposing minor changes to the standards for on-highway vehicles to make them consistent throughout the Basin. This was requested by the public, P7 Forum, and the TWGs. Currently on-highway noise standards vary between California and Nevada. This creates inequities between the two areas in fulfilling the proposed desired conditions for this standard as well as the CNELs standards. To this end, it is proposed that the current California on-highway vehicles noise standards be adopted Basin-wide. These standards reflect the most progressive standards currently adopted in the Basin and are necessary to preserve the serenity of the community and neighborhoods.

The TRPA is also proposing changes to the way we measure noise associated with on-highway motorcycles. Currently it is difficult or impossible to safely and accurately measure noise associated with on-highway motorcycles. For this reason, TPRA is proposing changes similar to those previously adopted for watercraft that make them easier and safer to administer. These changes include the adoption of a stationary motorcycle test that will provide the necessary information to evaluate and correct the current noise issues in the Basin. This procedure is not fully developed at this time. However, it will likely be very similar to the stationary off-road motorcycle test procedure currently in use in California.

Off-Highway Vehicles

The staff is proposing minor changes to the standards for off-highway vehicles to make them consistent throughout the Basin. This is consistent with the recommendations of the public, P7 Forum, and the TWGs. Currently off-highway vehicle noise standards vary between California and Nevada. This creates inequities between the two areas in fulfilling the proposed desired conditions for this standard as well as the CNELs standards. To this end, it is proposed that the current California off-highway vehicle noise standards be adopted Basin-wide. These standards reflect the most progressive standards currently adopted in the Basin and are necessary to preserve the serenity of the community and neighborhoods.

Over-Snow Vehicles

The staff is proposing minor changes to the standards for over-snow vehicles to make them consistent throughout the Basin and improve the noise levels associated with this equipment. This is consistent with the recommendations of the public, P7 Forum, and the TWGs. Currently the over-snow vehicle noise standards vary between California and Nevada. This creates inequities between the two areas in fulfilling the proposed desired conditions for this standard as well as the CNELs standards. To this end, it is proposed that single set of standards be adopted Basin-wide. Although not fully developed, these standards will reflect the most progressive standards currently available and resemble those standards adopted by other states. These new standards are necessary to preserve the serenity of the community and neighborhoods.

Similar to on-highway motorcycles, staff is proposing changes to the way we measure noise associated with over-snow vehicles. Currently it is difficult or impossible to safely and accurately measure noise associated with this equipment. For this reason, staff is proposing changes similar to those previously adopted for watercraft that make them easier and safer to administer. These changes include the adoption of a stationary test procedure that will provide the necessary information to evaluate and correct the current noise issues in the Basin. Although this procedure is not fully developed at this time, it will likely be very similar to the stationary test procedure currently adopted by other states for the same purpose.

Watercraft

No changes are proposed for the noise standards for watercraft. These standards were previously updated using the adaptive management processes and are adequate to achieve the desired condition.

Aircraft

No changes are proposed for the noise standards for Settlement Agreement Aircraft. Any changes in these standards will need to be approved by the original parties who developed them. If monitored and enforced, the P7 Forum and the TWGs agreed that the current standards are sufficient to protect the serenity of the community and neighborhood at this time.

Although there are no proposed standards for the Non-Settlement Agreement Aircraft at this time, it was recognized that the present practices and usage of this equipment are not sufficient to maintain the significant value of the Region with respect to noise as outlined in TRPA's Compact. The use of sightseeing, advertising, and amphibious aircraft were specifically noted as impacting the serenity of the community and neighborhood in addition to having negative effects on wildlife. For this reason, staff is working with Basin partners to establish noise standards for this category of aircraft in the future.

9.2.3 Existing TRPA Threshold – N-3 Community Noise Levels (CNEL)

CNEL noise measurement systems are utilized by many communities around the world and are currently used in the Basin. Periodically the CNEL standards are reviewed and updated based on proposed activities and acceptable noise levels for the various areas in the region. These standards take into account, site-specific analyses, estimated impacts on affected land uses, and consistency with other provisions of the Regional Plan.

Pursuant to Chapter 23 of the TRPA Code, TRPA established CNEL standards for each Plan Area Statements (PAS) and certain highway corridors around the Basin. These standards were developed to ensure the background noise levels in the Basin provide for community and neighborhood tranquility. Unlike single event noise levels, CNELs are average noise levels found in a given area. These standards are based on reasonable noise levels for the predominant use within a plan and are averaged over a 24-hour period. In addition, to account for the idea that areas should be quieter during the nighttime hours, the CNEL measurement protocols adds 4.77 dB to the measured noise levels during the evening period (7:00pm to 10:00pm) and 10 dB to the measured noise levels during the nighttime period (10 pm to 7 am). The existing indicators and standards for Community Noise Level (CNELs) are shown in Table 9-1 above.

9.2.3.1 Rational for Change to the Indicators N-3

The proposed changes to this indicator are based on the finding that the current indicator is not sufficient to maintain the significant value of the Region as outlined in TRPA's Compact.

The current indicator states that "Community noise equivalent levels (CNELs) calculated pursuant to the Code, Section 23.4. TRPA acknowledges that development permitted by the Regional Plan may, in some locations, cause cumulative noise levels to exceed 1982 levels. Pending possible revisions to the thresholds or the Code, TRPA shall review proposed activities in the Tahoe Region taking into account site-specific noise analyses, estimated impacts on affected land uses, consistency with other provisions of the Regional Plan, and reasonable tests of significance of changes in noise levels."

As you can see, this indicator fails to provide any information/indication on how well the Basin is doing at achieving the standards or desired conditions for the Community Noise Levels. For this reason, a new indicator is proposed.

9.2.3.2 Rational for Change to the standards N-3

The proposed changes to this standard are based on the finding that the existing CNEL standards are not sufficient to maintain the significant value of the Region as outlined in TRPA's Compact.

At this time, no changes are proposed for the CNEL standards. However due to concerns expressed by the public, P7 Forum, and the TWG over short duration noise disturbances that are not controlled with the current CNEL standards, new 1-hour noise standards are being developed for

adoption. These standards are necessary to control noise associated with activities that affect the serenity of the community and neighborhood, but do not violate the current CNELs standards.

9.3 Proposal for Noise Desired Conditions, Indicators, and Standards.

9.3.1 Overview of Threshold Status

Table 9-2 is a brief overview of the attainment status and trend of each indicator. The attainment status is reported every five years and includes information generated over those previous five years. A status of “Non-Attainment” is given if at any time in the five year monitoring period a violation of the noise standards occurs. As an example, if just one aircraft or one motorcycle violates the noise standard in a five-year period, the indicator would be labeled as non-attainment. As you can imagine, this methodology makes it is extremely difficult to either attain or maintain a status of “Attainment” for any of the noise indicators. This issue is being addressed by the Noise TWG who may include a recommendation to allow a certain percentage of noise violations before it triggers and non-attainment designation. Because of the limited monitoring data for each of the indicators; no recommendation for the appropriate percentage is proposed at this time. Table 9-2 provides an overview of the status of each of the current indicators. A more detailed explanation can be found under the current conditions and trends for each of the proposed new threshold indicators.

Table 9-2						
Noise Indicator Attainment Status						
#	Threshold Name	1991 Attainment Status	1996 Attainment Status	2001 Attainment Status	2006 Attainment Status	5-Year Trend
1	Single Event Noise - Aircraft	Non-Attainment	Non-Attainment	Non-Attainment	Unknown	Unknown
2	Single Event Noise - Other	Attainment	Attainment	Non-Attainment	Non-Attainment	Negative ¹
3	Community Noise Equivalent Level (CNEL)	Non-Attainment	Non-Attainment	Non-Attainment	Non-Attainment	Negative ¹

*Information for 1991 to 2001 was from the 2001 Threshold Report
 1. Motor vehicle noise is the primary issue associated with the status and trend of these indicators.

9.3.2 Proposed Changes for Noise Threshold

A major conclusion of the noise evaluation is that some of the threshold standards and policies require re-evaluations and/or amendments. These changes relate to

updating the management system itself and the coordination with other agencies. It is the recommendation of this report that TRPA should pursue the majority of amendments to the noise threshold as part of the Pathway 2007 process.

The following sections summarize the proposed amendments. The proposed changes include modifying the current value statements with a more encompassing vision and desired conditions. Also proposed are changes to the indicators and standards.

9.3.3 Proposed Vision Statements and Diagrams.

Figure 9-1 represents an overview of the proposed changes to the noise program. These changes represent almost two-years of work and have been agreed upon by the P7 Forum members, the general public through multiple public meetings, Basin agencies, and the Noise Technical Working Group.

Figure 9 -1

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

Proposed Desired Conditions

1. Single Event Noise Sources

Single event noise levels are controlled to preserve the serenity of the community and neighborhood and provide abundant quiet recreation areas.

2. Cumulative Noise Levels

Community noise levels are controlled to preserve the serenity of the community and neighborhood and provide abundant quiet recreation areas.

3. Effects on Wildlife

Noise levels are controlled to protect wildlife.

Proposed Indicators

All data for the indicators shown below shall be compiled by the monitoring protocol and be reported no less than annually by category, noise areas, and species of concern.

Single Event Noise Sources

4. Numbers of individual exceedances.
5. Number of corrective actions taken.
6. Percent of planned monitoring completed.

- f. On-Highway Vehicles
- g. Off-Highway Vehicles
- h. Over-Snow Vehicles
- i. Watercraft
- j. Aircraft

Cumulative Noise Levels

1. Numbers of exceedances of the CNEL noise standards.
2. Numbers of exceedances of the 1-hr noise standards.

Effect on Wildlife

Further investigation of the appropriate limits will be done by wildlife experts at a later date.

Proposed Standards

On-Hwy Vehicles – Same as the current CA stds Basin-wide & a new 20" exhaust std for motorcycles.

OHVs – Same as the current CA standards Basin-wide

Over-Snow Vehicles – 73 db and/or equivalent standards.

Watercraft – Same as current TRPA standards.

Settlement Agreement Aircraft- Same as current standards

Non-Settlement Agreement Aircraft- (Recommendation complete by November 2007)

No changes are proposed to the current CNEL standards.

Land Use Category	Average Noise Level or CNEL Range (dBA)
High density residential areas	55
Low density residential areas	50
Hotel 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
Highway Corridors	
Highway 50	65
Highways 89, 207, 28, 267, and 431	55
South Lake Tahoe Airport	60

New standards are being developed for the acceptable hourly noise levels for each plan area and will be proposed at a later date.

Under Development

The Standards will be jointly developed with wildlife programs for appropriate levels. These are not expected to be adopted before 2010.

9.3.4 Proposal for Noise Desired Conditions, Indicators and Standards

Noise by definition, is “unwanted sound,” and is a subjective reaction to acoustical energy or sound levels. Due to the nature of this community and the pristine natural areas in the Basin, noise management is an integral part of the land use planning and the environmental improvement process in the Basin.

Visitors and residents have expressed their concerns about the decline in the serenity of their community and enjoyment of the outdoors due to excessive noise from sources such as on-highway vehicles, off-highway vehicles, over-snow vehicles, watercraft and aircraft. For this reason, Basin agencies in cooperation with the community are developing a new regional plan that encompasses improvements to the current noise program that will reduce noise levels and restore the serenity to the area. The following text represents the proposed vision, guiding principles, desired conditions, indicators, and standards for the noise program as developed by the Pathway 2007 (P7) agencies and the community based P7 Forum members.

To begin the process, Basin agencies in conjunction with the community developed a vision for the noise program. This vision was developed in recognition that even if the best available technologies and standards are utilized, noise levels may still be higher than preferred by a segment of the public. For this reason, the purpose of this vision is to provide the foundation for the overall program and set the tone for future improvements for the noise program and our community. The proposed vision is as follows:

Noise Vision

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

In addition, Guiding Principles were developed to update TRPA’s Goals and Policy document. These principles are the overlying spirit or intent of the noise program and will play an integral part in the development of future regulations, policies, and projects with respect to the Noise Threshold.

Guiding Principles:

- The Basin should maintain an adequate noise monitoring and enforcement program.
- Single event and community noise levels should be controlled to preserve the serenity of the community and neighborhood and provide abundant quiet recreation areas.
- Basin transportation plans and projects should include noise improvements.

- Noise levels should be controlled to protect wildlife.

In addition to the vision statement, three separate desired conditions were developed. The desired conditions represent the foundation to which the programmatic elements of the new noise program were built. The following text outlines and provides the rationale for the proposed changes to the current threshold.

9.3.5 Proposed Changes for: Single Event Noise Sources

As stated earlier, visitors and residents have expressed their concerns about the decline in serenity of their community and their enjoyment of the outdoors due to excessive noise from sources such as on-highway vehicles, off-highway vehicles, over-snow vehicles, watercraft and aircraft. For this reason, improvements to the existing noise threshold are being proposed that will help reduce noise levels and restore the serenity to the area. Because it is proposed to combine the existing Single Event Noise (Aircraft) with the Single Event Noise (Other than Aircraft), these two indicators have been combined in the following section.

9.3.5.1 Current Condition and Trend for Single Event Noise Sources

N-1 Single Event Noise (Aircraft) Status of indicator - Unknown

This indicator is directly tied to the monitoring and enforcement of the noise regulations as stipulated by the Lake Tahoe Airport Settlement Agreement. Unfortunately monitoring equipment was not functional from December 1997 to June 2000 and from late 2003 to present. In addition, data for the remaining periods are currently unavailable due to the failure of equipment used to store the data. For this reason, it is not possible to accurately assess the attainment status or the progress of this indicator at this time.

The Noise TWG expressed concern regarding the designation of Unknown for this indicator. They believed there is enough anecdotal evidence to warrant a Non-Attainment status for this indicator. Their reasoning included: the Airport Settlement Agreement stipulated that the noise standards for aircraft arrivals be lowered to 80 dB in 2002 and there were very few jet aircraft operating at the airport that could meet this level; aircraft known to violate the noise standard continue to operate at the airport; it takes only one violation to generate a non-attainment designation, and noise complaints have persisted. For these reasons, they believed it was reasonable to speculate that the noise standards continue to be violated and therefore a non-attainment status was justified. The TRPA staff is currently awaiting additional information and may alter the attainment status of this indicator in the future.

The monitoring equipment remains inoperative at the airport as of this writing. However, the City of South Lake Tahoe's (CSLT) Council approved their staff's recommendation to seek upwards of up to \$300,000 from the Federal Aviation Administration for the purchase and installation

of noise monitoring equipment. The TRPA looks forward to working with the CSLT in their implementation of an automated noise monitoring and reporting system. The TRPA is also in process of implementing an on-line noise complaint form to monitor public complaints and will be sharing this information with the CSLT in order to mitigate any noise issues at their facility.

2006 Status evaluation relative to threshold attainment schedules

Threshold interim target status

The 2001 Threshold Report stated the interim target was; “By August 26, 2002, implement a single-event noise standard of 80 dBA for all aircraft arrivals and establish procedures that allow exceedances in special weather conditions”. The TRPA implemented the Airport Settlement Agreement stipulation that noise standards for aircraft arrivals be lowered in 2002. However, because the settlement agreement does not allow adjustments to the noise standards, it was not possible to developed procedures to allow exceedances in special weather conditions. It is recommended that the special weather conditions exemption be explored with the Airport Settlement Agreement Parties.

Status of 2001 Threshold Recommendations

Table 9-3 lists the three recommendations listed in the 2001 Threshold Evaluation for the aircraft noise single event indicator. As of 2006, only one of the recommendations has been completed due to the lack of resources. For this reason, the overall effectiveness of the measures for this indicator is being categorized as marginally effective.

Table 9-3		
Status of 2001 Aircraft Noise Threshold Recommendations		
Recommendation	Comments	Status
TRPA should re-evaluate the threshold and consider adding an exemption for military aircraft, or seek cooperation from the military to reduce flights (August 2002)	Complete the task when resources become available.	Awaiting resources
TRPA will work with the South Lake Tahoe Airport to implement the reduced arrival noise levels. (August 2002)	¹ The CSLT does not acknowledge the phase in of the new standards at this time. Monitor and enforce program.	Complete
TRPA should clarify the threshold to establish when noise measurements apply to threshold attainment (August 2002)	Complete the task when resources become available.	Awaiting resources

N-2 Single Event Noise (Other than Aircraft)

Status of indicators - Non-attainment

This indicator includes watercraft, motor vehicles, motorcycle, off-road vehicles, and snowmobiles. The TRPA conducted limited monitoring of this equipment over the last four years. This data indicated all of the snowmobiles operated by the commercial operations were in compliance, 64 percent of the watercraft tested were in compliance, and between 94 to 99 percent (depending on location) of the motor vehicles tested were in compliance with the standards. Because all of sources in this category are overseen by other agencies, staff attempted to obtain enforcement records from the appropriate agencies. However, the TRPA was unable to find any dedicated enforcement activities or violations being issues for any of the categories contained under this indicator. Although staff was unable to find any enforcement activities from other jurisdictions, TRPA's monitoring revealed that multiple categories of equipment violated their respective noise standards. For this reason, this indicator was listed as non-attainment. In addition, because this indicator has moved from an attainment to non-attainment status over the last 10 years, it has been evaluated to have a negative trend.

Status of additional factors

Because the TRPA does not have police powers to delay vehicular traffic to perform enforcement testing, it will remain difficult to enforce and/or control this category. The TRPA will be working with enforcement agencies on the development with cooperative agreements to enforce standards as soon as resources are available.

2006 Status evaluation relative to threshold attainment schedules

Threshold interim target status

The 2001 interim target for this threshold stated that; "No more than five monitored single-event noise occurrences per year by December 2003". Because more than five single event noise violations were recorded, the threshold target was not achieved.

Status of 2001 Threshold Recommendations

Table 9-4 lists the four recommendations in the 2001 Threshold Evaluation for single event noises. As of 2006, one of the recommendations has been completed. A number of the recommendations have not been implemented due to lack of resources for this threshold. For this reason, the overall effectiveness of the single noise event measures is being categorized as ineffective at this time.

Table 9-4		
Status of 2001 Single Event Noise Threshold Recommendations		
Recommendation	Comments	Status
TRPA with the input of the Noise Working Group and other consultants shall create and implement a consistent noise monitoring program for single and community noise events. (March 2004)	Complete the task when resources become available.	Awaiting resources
TRPA shall adopt measurement protocols that allow for boat noise enforcement (November 2002)	Standards have been adopted. More emphasis is needed on enforcement of the program.	Complete
TRPA should develop and implement a program to study the effects of noise on wildlife. (December 2002)	Complete the task when resources become available.	Awaiting resources
Utilize data from the above wildlife study, TRPA shall adopt standards in cooperation with the U.S. Forest Service for wilderness and non-urban areas (December 2004)	Complete the task when resources become available.	Awaiting resources

9.3.5.2 Legal Requirement and Standards (Aircraft and Other)

Federal Agencies

Federal Aviation Administration (FAA)

To limit the public's exposure to sound levels, the federal government sets and enforces uniform noise standards for aircraft and airports. The FAA established aircraft noise standards as part of their certification process. The FAA noise levels are expressed in terms of the Effective Perceived Noise Level (EPNL) and is dependant on the number of engines and the weight of an aircraft.

The Aircraft Noise Abatement Act of 1968 (P.L. 90-411) requires the FAA to develop and enforce safe standards for aircraft noise. In developing these standards, the FAA generally follows the noise restrictions established by the International Civil Aviation Organization (ICAO). Federal noise regulations define aircraft according to four classes: Stage 1 through Stage 4, with Stage 1 aircraft being the loudest. All Stage 1 aircraft have been phased out of commercial operation, and all unmodified Stage 2 aircraft over 75,000 pounds were phased out by December 31, 1999, as required by the Airport Noise and Capacity Act of 1990 (P.L. 101-508, Subtitle D). Stage 3 aircraft must meet separate standards for runway takeoffs, landings, and sidelines, ranging from 89 to 106 dbA depending on the aircraft's weight and its number of engines. Stage 4 standards are the most stringent and require an additional overall reduction of 10 dbA from Stage 3 standards. The Stage 4 standards are relatively new and are based on standards that the ICAO adopted in June 2001. The FAA approved the Stage 4 standards in July 2005, and adopted the ICAO standards by reference. The Stage 4 standards apply to newly manufactured airplanes for which a new design is submitted for airworthiness certification on or after January 1, 2006. Although the

majority of aircraft designed in recent years already attain the Stage 4 standards, some manufactures have had a tougher time than others in achieving them. At this time, existing Stage 3 aircraft will be allowed to continue operation.

In addition to aircraft certification standards, airports receiving federal funds are required to meet noise control standards for their operation, based on land use. The standards range from 65 dbA for residential areas to over 85 dbA for agricultural and transportation uses. The Airport and Airway Improvement Act of 1982 (P.L. 97-248) established the Airport Improvement Program (AIP) to provide federal assistance for airport construction projects and to award grants for mitigating noise resulting from the expansion of airport capacity. Airport operators applying for such grants must design noise exposure maps and develop mitigation programs to ensure that noise levels are compatible with relevant land uses, noted above.

Federal legislation also placed limits on the noise restrictions an airport proprietor may place on aircraft operating at airports, requiring that any limitations on aircraft operations be subject to FAA approval. However, those limits do not apply to TRPA's noise standards due to Congressional mandates and the dual federal authority provided by the Compact.

The single event noise level limits currently in effect for the Lake Tahoe Airport were adopted as stipulated by the Airport Settlement Agreement. This agreement was developed by the City of South Lake Tahoe, The League to Save Lake Tahoe, the California Attorney Generals Office, and the TRPA, and approved by the District 9 Federal Court. The current noise limits are 80 dBA for landing and takeoffs during daytime hours (8:00 a.m. to 7:59 p.m.) and 77.1 dBA for landing and takeoffs at nighttime (8:00 p.m. to 7:59 a.m.). They are to be monitored at multiple locations that correspond to the measurement protocols used by the FAA in its FAR Part 36 aircraft type certification procedures. The locations are: 6,500 meters from the start of takeoff roll (for takeoffs), and 2,000 meters from the "runway threshold approach" (for arrivals).

United States Environmental Protection Agency (USEPA)

The USEPA has noise regulations for certain source categories. This includes regulations governing the exhaust noise from interstate motor carriers and railroads, medium- and heavy-duty trucks, motorcycles and mopeds, portable air compressors, and off-road vehicles. The USEPA noise standards apply at time of vehicle manufacture, rather than during the operation.

The Noise Control Act directed EPA to set and enforce noise standards for transportation, construction, electrical equipment, and motors or engines. Under this authority, EPA established standards for motorcycles and mopeds, medium and heavy-duty trucks over 10,000 pounds, and portable air compressors. The standards for motorcycles only apply to those manufactured after 1982 and range from 80 to 86 dbA, depending on the model year and whether the motorcycle is designed for street or off-road use. Noise from mopeds is limited to 70 dbA. The standards for trucks

over 10,000 pounds only apply to those manufactured after 1978 and range from 80 to 83 dbA depending on the model year. These standards are separate from those for interstate motor carriers. Noise from portable air compressors is limited to 76 dbA. The Noise Control Act also authorized EPA to require labels for products which reduce noise.

USFS Noise Policies, Standards and Management Strategies

The USFS, Lake Tahoe Basin Management Unit (LTBMU) adopted the TRPA noise thresholds in its 1988 Land and Resource Management Plan (Forest Plan) for the National Forest lands within the Basin. As stated within the Forest Plan, the LTBMU would take the necessary actions to comply with the established single event and cumulative event noise thresholds for the Basin.

In addition to the policy direction contained within the 1988 Forest Plan, the Forest Service also enforces several noise related federal regulations as contained within the Code of Federal Regulations (CFRs). There are two primary enforcement areas that apply to National Forest lands:

1. General Forest prohibitions: Under Subpart A, Title 36, Part 261.4(d) Disorderly Conduct, it is prohibited to "Cause public inconvenience, annoyance or alarm by making unreasonably loud noise." Also under 36CFR261.10(i) Occupancy & Use, it is prohibited to "Operate or use in or near a campsite, developed recreation site, or over an adjacent body of water without a permit, any device that produces noise, such as a radio, television, musical instrument, motor or engine in such a manner and at such a time that it unreasonably disturbs any person."
2. The second enforcement area involves OHVs (off-highway vehicles). Under Subpart A, Title 36, Part 261.13(d), it is prohibited to operate any vehicle off Forest Development Roads (State or County), that are in violation of any applicable noise emission standard established by any Federal or State agency." The prohibition is tiered to CVC38370 (California Vehicle Code), as approved by the Governor, September 14, 2002. Under this section of the CVC, "The Department of Motor Vehicles shall not identify any new off-highway motor vehicle, which is subject to identification and which produces a maximum noise level that exceeds the following noise limit, at a distance of 50 feet from the centerline of travel, under test procedures established by the Department of California Highway Patrol (any such vehicle manufactured on or after January 1, 1986: 82 dBA).

In addition, for off-road-vehicles excluding snowmobiles, when operating pursuant to Section 38001, they shall not exceed a noise level of 96 dBA if manufactured on or after January 1, 1986 when measured at a distance of 20 inches using test procedures established by the Society of Automotive Engineers under Standard J-1287 as applicable. At this time, there are no Federal noise regulations specific to snowmobiles they can enforce to California and Nevada's vehicle code for any noise violations.

State Agencies

California

California regulations provide noise standards governing the operation of aircraft and aircraft engines for all airports operating under a valid permit issued by the Department of Transportation. These standards are based upon two separate legal grounds: (1) the power of airport proprietors to impose noise ceilings and other limitations on the use of the airport, and (2) the power of the state to act to an extent not prohibited by federal law. The regulations are designed to cause the airport proprietor, aircraft operator, local governments, pilots, and the department to work cooperatively to diminish noise problems. The regulations accomplish these ends by controlling and reducing the noise impact area in communities in the vicinity of airports.

California has noise regulations for watercraft, on-highway vehicles (including motorcycles), and off-highway vehicles (including snowmobiles). These standards apply to the condition of the exhaust system as well as to the noise level while operated. California has both stationary and mobile noise standards and test procedures, depending on the category of vehicle. The majority of the proposed noise standards and test procedures are already in effect in California.

Nevada

Nevada has adopted noise regulations for watercraft (same as California's), all on-highway vehicles (including motorcycles) and off-highway vehicles (including snowmobiles). For the on-highway vehicles, the standards are applied to the sale of a new vehicle, rather than to the operation of the vehicle. After a vehicle has been purchased, the Nevada Administrative Code requires that every motor vehicle shall at all times be equipped with a muffler in good working order and in constant operation to prevent emissions greater than those allowed by the noise standards.

TRPA

TRPA Planning Compact

In 1969, California and Nevada created the Tahoe Regional Planning Compact (P.L. 91-148; 83 Stat. 360), which named the Tahoe Regional Planning Agency (TRPA) as the regional land use and environmental resource-planning agency for the Lake Tahoe Region.

TRPA Goals & Policies

The TRPA Goals and Policies is a key document of the Regional Plan. Article V(c)(1) of the Tahoe Regional Planning Compact calls for a "land use plan for the...standards for the uses of land, water, air space and other natural resources within the Region..."

Relevant TRPA Code of Ordinances

TRPA's Code of Ordinances includes Chapter 23 which regulates noise. The purpose of Chapter 23 is to: "implement the Goals and Policies, Land Use Element, Noise Sub-element, and to attain and maintain the TRPA noise thresholds." The chapter includes noise standards and indicators,

measurement and monitoring rules, performance standards, and compliance issues.

TRPA Environmental Threshold Carrying Capacities

Pursuant to Chapter 32 of the Code, TRPA adopted noise threshold indicators and standards. A summary of these are shown in Table 9-1 “Summary of Existing Noise Indicators and Standards”.

9.3.5.3 Public Input Single Event (Aircraft)

Public input with respect to individual noise sources focused on managing transportation-related noise. Aircraft noise was specifically identified by the public as a high priority for improvement. In addition, due to the increase in aircraft sightseeing, usage over sensitive areas, and seaplane activity in the lake, the public requested additional efforts be placed on these activities to ensure noise levels are controlled to preserve the serenity of the community and neighborhood, provide abundant quiet recreation areas and protect wildlife.

Single Event (Other than Aircraft)

The primary input from the public with respect to Single Event Noise (Other than Aircraft) was that they wanted a more uniform set of standards and rigorous monitoring and enforcement of the standards.

The public found it very confusing and unjust that there were different noise standards depending on which side of the Basin you were on. This makes it very difficult for businesses and the public alike to know if there equipment is legal to operate in any given portion of the Basin. In addition, by having different standards for each side of the Basin, they felt it was inequitable that one side of the Basin would benefit from a lower noise level and therefore enjoy a higher degree of serenity.

Another concern of the public was that there is not an acceptable level of monitoring and enforcement of the current standards. Most parties agreed that until an adequate monitoring and enforcement program is implemented, little noise improvements would occur. At this time, the public perceived that the current monitoring and enforcement levels are inadequate.

9.3.5.4 Technical Input Single Event (Aircraft)

The Noise TWG and Core Group determined that although not all aircraft could meet the current standards, there was sufficient numbers of aircraft that could; therefore no technological barrier exists for these standards. Further, because the FAA continues to adopt more stringent noise standards as time goes on, a greater amount of aircraft will be capable of meeting these standards. The FAA’s new standards require all newly manufactured subsonic jet and transport-category airplanes (those with an mtow of 12,500 pounds or more) meet new noise certification levels that are a cumulative 10 EPNdB (effective perceived noise level in decibels) lower than the previous limits in effect when the original airport standards

were agreed upon by the airport Settlement Agreement parties. According to FAA's Advisory Circular 36H, there are aircraft capable of meeting the 80 dB noise standards currently in effect. The FAA's Advisory Circulate can be found at the following internet address:

[http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/aeab4e3e783d2b6086256e3700762a57/\\$FILE/AC36-3H.pdf](http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rgAdvisoryCircular.nsf/0/aeab4e3e783d2b6086256e3700762a57/$FILE/AC36-3H.pdf)

The current aircraft standards were established by the Lake Tahoe Airport Master Plan Settlement Agreement dated September 11, 1992 and were included in the City of South Lake Tahoe's Airport permit. These standards were developed to ensure that only the quietest aircraft manufactured would be allowed to operate at airport. In addition, the standards adopted for nighttime operations were set at levels that were known to effectively prohibit nighttime landings by jet aircraft.

As stated in TRPA's "Environmental Impact Statement for the Establishment of Environmental Threshold Carrying Capacities", May 1982; "The threshold recommended for aircraft will limit the various types of airplanes that can land and takeoff at the South Lake Tahoe Airport". It also went on to say that; "The physical and biological consequences are positive in terms of the noise level within the environment. Some may feel, however, a reduced social cost and actual economic loss if larger aircraft continue to be prohibited." Therefore, it was recognized that there would be both a social and economic consequence for implementing aircraft noise standards and protocols when all parties agreed to the Airport Settlement Agreement in 1992.

Single Event (Other than Aircraft)

The Noise TWG and Core Group determined that there are no technological barriers in achieving the standards for the motorized equipment in the single event noise source indicator. These standards are currently in effect in California and other states with exception of the proposed stationary test procedures, which are being designed only for ease of use and not for lower noise levels.

However, it is understood that it will be difficult for equipment that has been modified, in poor shape, and possibly some older models of equipment to meet these standards. This is similar to actions taken for previously adopted regulations and is considered an acceptable situation as well as necessary in order to meet our desired conditions.

9.3.5.5 Proposed Desired Condition for Single Event Noise Sources

The desired conditions represent the foundation for which the programmatic elements of the new noise program would be built. Because controlling single event noises is critical to achieve our Vision statement, it was important to create a desired condition statement for them. The following is the proposed Desired Condition statement:

Proposed Desired Condition Statement:

Single event noise levels are controlled to preserve the serenity of the community and neighborhood and provide abundant quiet recreation areas.

9.3.5.6 Proposed Indicators for Single Event Noise Sources

The proposed indicator combines the current N-1 Single Event Noise (Aircraft) indicator with the N-2 Single Event Noise (other) into a single indicator named N-1 Single Event Noise Sources. This was done primarily to simplify the threshold and reduce the number of indicators within the noise threshold.

Secondly, TRPA is proposing to change the individual indicators for each category of equipment. The current indicators only describe how you take the noise measurements, but do not provide any valuable information on the number of noise violations, how well the threshold was monitored, or what actions were taken to address the problem.

In addition, the public along with the technical working group expressed concern that the major challenge with the current threshold was lack of monitoring and enforcement. To address this, new indicators were developed for each of the single event noise sources. The proposed indicators include:

- *Number of exceedances of the noise standard by noise source.*
- *Number of corrective actions taken by noise source.*
- *Percentage of planned monitoring completed by noise source.*

9.3.5.7 Proposed Standards for Single Event Noise Sources

Table 9-5 shows the proposed standards for single event noise sources. As stated earlier, it is proposed to consolidate the current standards for Single Noise Event (Aircraft) with the standards for the Single Noise Event (Other) into a one category (Single Noise Event Sources). In addition, the primary change to the standards is a proposal to adopt the current California noise standards for single event noise sources Basin-wide. With minor exceptions, these standards are identical to those currently in place on the California side of the Basin and are considered the most progressive and necessary to preserve the serenity of the community and neighborhood.

Additional changes include the clarification of the standards for Settlement Agreement Aircraft noise, the proposal for standards for non-settlement agreement aircraft which remain in progress as of this writing, and the implementation of new stationary exhaust standards for snowmobiles and on-highway motorcycles.

**Table 9-5
Proposed Single Event Noise Standards**

#	NAME	STANDARDS																																																	
N-1	Single Event Noise Sources	<p align="center">Aircraft</p> <p>All aircraft operating between the hours of 8:00 am and 7:59 pm shall not exceed 80 dBA on arrivals or departures</p> <p>All aircraft operating between the hours of 8:00 pm and 7:59 am shall not exceed 77.1 dBA on arrivals or departures.</p> <p>Noise levels will be measured at 6,500 meters from start to takeoff roll and at 2,000 meters from the runway threshold approach.</p> <p>Non-Settlement agreement aircraft noise levels & procedures will be developed at a later date.</p>																																																	
		<p align="center">Motorized Vehicles</p> <p align="center">The following are the maximum noise levels</p> <table border="1"> <thead> <tr> <th data-bbox="735 877 1161 905"><u>Source</u></th> <th data-bbox="1161 877 1214 905"><u>dB</u></th> <th data-bbox="1214 877 1390 905"><u>Monitoring Procedures</u></th> </tr> </thead> <tbody> <tr> <td data-bbox="735 926 873 953">Watercraft</td> <td data-bbox="873 926 1161 953">Moving</td> <td data-bbox="1161 926 1390 953">82 SAE J-34</td> </tr> <tr> <td data-bbox="735 968 873 995"></td> <td data-bbox="873 968 1161 995">At Shoreline</td> <td data-bbox="1161 968 1390 995">75 SAE J-1970</td> </tr> <tr> <td data-bbox="735 1010 873 1037"></td> <td data-bbox="873 1010 1161 1037">Stationary Test</td> <td data-bbox="1161 1010 1390 1037">SAE J-2005</td> </tr> <tr> <td data-bbox="735 1037 873 1064"></td> <td data-bbox="873 1037 1161 1064">1993 & Later</td> <td data-bbox="1161 1037 1390 1064">88</td> </tr> <tr> <td data-bbox="735 1064 873 1092"></td> <td data-bbox="873 1064 1161 1092">Prior to 1993</td> <td data-bbox="1161 1064 1390 1092">90</td> </tr> <tr> <td data-bbox="735 1115 873 1142">Motor Vehicles</td> <td data-bbox="873 1115 1161 1184">less than 6,000 GVW & less than 35 MPH and greater than 35 MPH</td> <td data-bbox="1161 1115 1390 1184">76 CA Vehicle Code</td> </tr> <tr> <td data-bbox="735 1199 873 1226"></td> <td data-bbox="873 1199 1161 1268">greater than 6,000 GVW & less than 35 MPH and greater than 35 MPH</td> <td data-bbox="1161 1199 1390 1268">82 CA Vehicle Code</td> </tr> <tr> <td data-bbox="735 1283 873 1310"></td> <td data-bbox="873 1283 1161 1310">greater than 35 MPH</td> <td data-bbox="1161 1283 1390 1310">86</td> </tr> <tr> <td data-bbox="735 1283 873 1310">On-Highway Motorcycles</td> <td data-bbox="873 1310 1161 1337">less than 35 MPH and</td> <td data-bbox="1161 1310 1390 1337">77 CA Vehicle Code</td> </tr> <tr> <td data-bbox="735 1337 873 1365"></td> <td data-bbox="873 1337 1161 1365">greater than 35 MPH</td> <td data-bbox="1161 1337 1390 1365">86 CA Vehicle Code</td> </tr> <tr> <td data-bbox="735 1365 873 1392"></td> <td data-bbox="873 1365 1161 1392">Stationary Exhaust</td> <td data-bbox="1161 1365 1390 1392">tbd tbd</td> </tr> <tr> <td data-bbox="735 1392 873 1419">Off-Road Vehicles</td> <td data-bbox="873 1419 1161 1446">less than 35 MPH and</td> <td data-bbox="1161 1419 1390 1446">72 CA Vehicle Code</td> </tr> <tr> <td data-bbox="735 1446 873 1474"></td> <td data-bbox="873 1446 1161 1474">greater than 35 MPH</td> <td data-bbox="1161 1446 1390 1474">86 CA Vehicle Code</td> </tr> <tr> <td data-bbox="735 1474 873 1501"></td> <td data-bbox="873 1474 1161 1501">Stationary 20" Exhaust</td> <td data-bbox="1161 1474 1390 1501">96 SAE J-1287</td> </tr> <tr> <td data-bbox="735 1501 873 1528">Snowmobiles</td> <td data-bbox="873 1501 1161 1528">15MPH or less</td> <td data-bbox="1161 1501 1390 1528">73</td> </tr> <tr> <td data-bbox="735 1528 873 1556"></td> <td data-bbox="873 1528 1161 1556">Stationary Exhaust Test</td> <td data-bbox="1161 1528 1390 1556">tbd SAE J-2657</td> </tr> </tbody> </table>	<u>Source</u>	<u>dB</u>	<u>Monitoring Procedures</u>	Watercraft	Moving	82 SAE J-34		At Shoreline	75 SAE J-1970		Stationary Test	SAE J-2005		1993 & Later	88		Prior to 1993	90	Motor Vehicles	less than 6,000 GVW & less than 35 MPH and greater than 35 MPH	76 CA Vehicle Code		greater than 6,000 GVW & less than 35 MPH and greater than 35 MPH	82 CA Vehicle Code		greater than 35 MPH	86	On-Highway Motorcycles	less than 35 MPH and	77 CA Vehicle Code		greater than 35 MPH	86 CA Vehicle Code		Stationary Exhaust	tbd tbd	Off-Road Vehicles	less than 35 MPH and	72 CA Vehicle Code		greater than 35 MPH	86 CA Vehicle Code		Stationary 20" Exhaust	96 SAE J-1287	Snowmobiles	15MPH or less	73	
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<p>Due to their complexity, standards for "Non-settlement agreement aircraft" are not expected until after 2008 and the new stationary test procedure for snowmobiles and on-highway motorcycles are not expected until after 2007.</p>																																																			

9.3.5.8 Potential Use

Single Event (Aircraft)

No changes are proposed for the standards for Settlement Agreement Aircraft. These standards are currently contained in the Airport Master Plan and would require concurrence by the parties to the Airport Master Plan Settlement Agreement if they were to change. These standards are monitored and enforced by the City of South Lake Tahoe and the TRPA who are required to maintain trained personnel, adequate sound level measurement equipment, and monitor the sound levels produced by aircraft at the airport. Although it is recommended that standards be developed for non-settlement agreement aircraft, due to resource constraints and lack of technical information, no standards are being proposed at this time. Standards for these aircraft will likely center around the adoption of minimum heights for sensitive noise areas, prohibitions of aircraft advertising (aircraft flying banners), and recommended flight pattern in the Basin. Because no standards are being proposed at this time, the potential use cannot be determined.

Single Event (Other than Aircraft)

Monitoring and enforcement of these standards is crucial to the success of the program. For this reason, it is essential that the policing authorities sanction and support these standards. In addition, because the TRPA does not have police powers or misdemeanor fines, the policing authorities must develop the regulatory and statutory language for their respective departments. Given that noise violations are typically not a high priority for safety-oriented agencies, securing the necessary resources to implement this program may be challenging. However, if done, these programs and associated standards will be successful toward accomplishing our desired condition.

9.3.6 Proposed Changes for Cumulative Noise Levels

The cumulative noise level is the combined or overall noise in a given area. This noise is made up of all the noise sources in the area and may not be easily broken down by individual sources. The TRPA currently evaluates cumulative noise levels by measuring areas according to CNELs protocols. Unlike single event noise measurements, this type of noise measurement system averages noise levels over a 24-hour day and is employed by many communities around the world. Adjustments are being proposed to this indicator that will improve our ability to achieve the desired condition.

9.3.6.1 Current Condition and Trend for Community Noise Levels

Status of indicators - Non-attainment

Over the last 4 years, the TRPA tested 9 plan areas for their CNELs. Each of these plan areas exceeded the adopted noise standard. In addition, 8 of the 9 tested areas show consistently higher noise levels for each monitoring period since 1991. Based on the available data, this indicator has been classified as non-attainment with a negative trend.

Status of additional factors

Due to resource constraints, very little monitoring has occurred for this standard. For this reason, only limited evaluations are possible to develop noise mitigation programs. The TRPA will be drafting a noise monitoring plan for management's approval and funding. Upon completion and allocations of the necessary resources, staff believes this program can be dramatically improved.

Status evaluation relative to threshold attainment schedules

Threshold interim target status

The 2001 interim target for this threshold stated that; "By June 30, 2003, adopt interagency noise enforcement MOU, complete a 2004 Noise Work program by June 30, 2001, and conduct roadway pavement testing by March 2003". The TRPA completed the 2004 Noise Work program". However, due to resource constraints, they were not able to complete the remaining targets. For this reason, the target status has not been achieved.

Status of 2001 Threshold Recommendations

Table 9-6 lists three recommendations in the 2001 Threshold Evaluation for the CNEL indicator. As of 2006, none of the recommendations have been completed due to the lack of resources for this threshold. For this reason, the overall effectiveness of the CNEL measures is being categorized as ineffective.

Table 9-6		
Status of 2001 CNEL Threshold Recommendations		
Recommendation	Comments	Status
TRPA with the input of the Noise Working Group and other consultants shall develop a more thorough CNEL monitoring program. Noise measurements need to be performed more often, perhaps on an annual basis, in order to determine if standards are being met. (March 2004)	Complete the task when resources become available.	Awaiting resources
TRPA, with the input of the Noise Working Group and other consultants, should re-evaluate the thresholds for traffic corridors. Any threshold changes should include corrections to then numeric values based upon roadway grades, pavement conditions, etc. (March 2004)	This recommendation needs to include language that states that the numerical values should only be changed if the noise levels cannot be obtained with the use of the best available control technology. Complete the task when resources become available.	Awaiting resources
To help attain the roadway standards, TRPA recommends that a test be performed to evaluate different pavement types and their potential for noise reductions (March 2003)	Complete the task when resources become available.	Awaiting resources

9.3.6.2 Legal Requirements for Community Noise Levels

Federal

The Federal Highways Administration's noise requirements are included in Section 772.3 of their noise standards and require, noise analyses, noise abatement criteria, and requirements for informing local officials in this regulation constitute the noise standards mandated by 23 U.S.C. 109(i). All highway projects which are developed in conformance with this regulation shall be deemed to be in conformance with the Federal Highway Administration (FHWA) noise standards as listed in Table 9-7.

Table 9-7			
FHWA Highway Noise Standards			
(Hourly A-Weighted Sound Level Decibels (dBA)\1\)			
Activity	Description of Activity	Leq(h)	L10(h)
A	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.	57 (Exterior)	60 (Exterior)
B	Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.	67 (Exterior)	70 (Exterior)
C	Community Noise Equivalent Level (CNEL)	72 (Exterior)	75 (Exterior)
D	Undeveloped lands	N/A	N/A
E	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.	52 (Interior)	55 (Interior)
\1\ Either L10(h) or Leq(h) (but not both) may be used on a project.			

California

The standard for the acceptable level of aircraft noise for persons living in the vicinity of airports is established to be a CNEL of 65 dB. This standard forms the basis for the following limitation. No airport proprietor of a noise problem airport shall operate an airport with a noise impact area based on the standard of 65 dB CNEL unless the operator has applied for or received a variance.

Local Agencies

Counties and Cities

Each city and county in California is required to adopt a Noise Element in their General Plan. The noise element provides guidelines and standards for compatible land use with respect to noise, and is applied to new land development projects. If the TRPA's noise standards are deemed to be more stringent, they override the local noise standards.

Cities and counties in California and Nevada may adopt noise control ordinances to address excessive noise from existing, previously-approved, noise sources subject to local control. None of the local jurisdictions in the Tahoe Basin has adopted a quantitative noise ordinance, but each is empowered to abate nuisances due to noise.

TRPA

Planning Compact

In 1969, California and Nevada created the Tahoe Regional Planning Compact (P.L. 91-148; 83 Stat. 360), which named the Tahoe Regional Planning Agency (TRPA) as the regional land use and environmental resource-planning agency for the Lake Tahoe Region.

TRPA Goals & Policies

THE TRPA GOALS AND POLICIES IS A KEY DOCUMENT OF THE REGIONAL PLAN. ARTICLE V(C)(1) OF THE TAHOE REGIONAL PLANNING COMPACT CALLS FOR A "LAND USE PLAN FOR THE...STANDARDS FOR THE USES OF LAND, WATER, AIR SPACE AND OTHER NATURAL RESOURCES WITHIN THE REGION..."

Relevant TRPA Code of Ordinances

TRPA's Code of Ordinances includes Chapter 23 that regulates noise quality. The purpose of Chapter 23 is to: "implement the Goals and Policies, Land Use Element, Noise Sub-element, and to attain and maintain the TRPA noise thresholds." The chapter includes noise standards and indicators, measurement and monitoring rules, performance standards, and compliance measures.

TRPA Environmental Threshold Carrying Capacities

Pursuant to Chapter 32 of the Code, TRPA has adopted noise threshold indicators so that the noise threshold can be evaluated. These are as follows:

N-3 – Community Noise Events

Community Noise Equivalent Levels (CNEL) calculated pursuant to the Code, Section 23.4. TRPA shall review proposed activities in the Region taking into account site-specific analyses, estimated impacts on affected land uses, consistency with other provisions of the Regional Plan, and reasonable tests of significance of change in noise levels.

9.3.6.3 Public Input for Community Noise Levels

As stated earlier, visitors and residents have expressed their concerns about the decline in serenity of their community and their enjoyment of the outdoors due to excessive noise. The level of noise in a community at any given time is a random value that is continually changing as the activity or level of activity changes. Community noise levels have increased from the last evaluation, with vehicle traffic being the predominant source of noise. The public has expressed a strong will to reduce noise levels; with most of the concerns centering around the use of loud motorcycles, off-highway vehicle activity in close proximity to houses and recreational activities, trucks using their engine brakes, and concerts or entertainment activities near residential areas.

In addition, because construction seems to be predominant activity in the Basin, the public has requested the agencies reduce this noise on weekends and holidays which corresponds to the time when most users enjoy the serenity of the Basin.

9.3.6.4 Technical Input for Community Noise Levels

The Core Group and TWG concurred that the practices and procedure necessary to reduce the CNELs to acceptable levels are currently available, and therefore found no technical issues that hindering the achievement of the standards.

Because noise associated with transportation sources dominate the noise levels in the Basin, primary efforts should be placed on controlling these sources. It is recommended that practices such as enforcement of on-highway vehicle standards, prohibitions of engine brakes, use of low noise pavement, and aircraft height restrictions be put in place at the earliest practical date. In addition, major roadway or highway projects should include noise mitigation efforts when improved.

Another recommendation is to develop and implement a more thorough monitoring program. It is recommended that CNEL measurements be performed on an annual basis and continuously for some areas around the Basin. This will provide the necessary data to better evaluate the cause of the violations and develop appropriate corrective actions to bring the Basin into compliance.

With regard to construction noise, the TWG believes reducing this noise would move us closer to meeting our desired conditions. It was recommended that policies be put in place to mitigate some of the construction noise by restricting non-emergency construction on Sundays and Holidays. This is similar to policies adopted by other communities for the same purpose.

9.3.6.5 Proposed Desired Conditions for Community Noise Levels

There is little difference in the overall intent of the various noise elements. For this reason, the proposed desired condition for the cumulative noise level is identical to that of the single event noise source.

Proposed Desired Condition Statement:

Community noise levels are controlled to preserve the serenity of the community and neighborhood and provide abundant quiet recreation areas.

9.3.6.6 Proposed Standards for Community Noise Levels

Periodically CNEL standards are reviewed and updated based on proposed activities in the Region. This is accomplished by taking into account site-specific analyses, estimated impacts on affected land uses, and consistency with other provisions of the Regional Plan. Although no changes are being proposed at this time for CNEL levels, this may change as the agencies develop transect planning as part of the Basin's adaptive management process.

However, due to concerns by the public, Pathway 2007 Forum, and the noise working group, new 1-hour standards are currently being developed to limit noise sources that are not subject to the single event noise source regulations or violate the 24-hr CNEL standards. Controlling these noise sources is crucial if we are to achieve our desired condition. The actual numerical values for this standard are currently under development and will be used to direct resources in order to improve or develop the necessary strategies to preserve the serenity of the community and neighborhood and provide abundant quiet recreation areas. Table 9-8 shows the standards for the cumulative noise levels including the placeholder for the numerical values of the 1-hour standards.

Table 9-8		
Proposed Cumulative Noise Levels Standards		
Land Use Classification Areas		
Areas	24-hr CNEL db	1-hr ¹ db
High Density Residential	55	TBD
Low Density Residential	50	TBD
Hotel/Motel Facilities	60	TBD
Commercial Areas	60	TBD
Industrial Areas	65	TBD
Urban Outdoor Recreation Areas	55	TBD
Rural Outdoor Recreation Areas	50	TBD
Wilderness and Roadless Areas	45	TBD
Critical Wildlife Habitat Areas	45	TBD
Transportation Corridor Standards		
Highway	24-hr CNEL db	1-hr ¹ db
50	65	TBD
28	55	TBD
89	55	TBD
207	55	TBD
267	55	TBD
431	55	TBD
South Lake Tahoe Airport	60	TBD
¹ 1-hr standards are currently being developed and are anticipated in the 2007 timeframe		

9.3.6.7 Proposed Indicators for Community Noise Levels

Staff is proposing new indicators for cumulative noise levels. The previous indicators were protocols for measuring noise levels and were not designed to measure progress or attainment status. Although new indicators are being proposed, the actual noise measurement protocols will not change. The following indicators will be used to determine attainment status and direct resources in order to improve or develop the necessary strategies to preserve the serenity of the community and neighborhood and provide abundant quiet recreation areas.

- *Number of exceedances of the 24-hour noise standard.*
- *Number of exceedances of the 1-hour noise standard.*

9.3.6.7 Potential Use for Community Noise Levels

The CNELs are the combined or overall noise levels for a given area. For this reason, they are excellent indicators of cumulative noise levels in the

Basin. By measuring CNELs, it will enable us to measure and evaluate our progress at preserving the serenity of our communities and neighborhoods and providing abundant quiet recreation areas.

The proposed 1-hr noise standards provide the ability to accurately assess and mitigate longer duration individual noise sources that may interfere with achieving our desired conditions. Although the specific standards are not proposed at this time, they will be designed to eliminate noise that is not controlled through either the single event noise or 24-hour CNEL standards. These short duration noise sources are detrimental to achieving our desired condition and were pointed out as source of concern by the public.

9.3.7 Proposed Changes for the Effects on Wildlife

Due to resource limitations, the studies necessary to fully develop an appropriate noise program for the protection of wildlife have not been completed. However, enough information exists to recognize that noise associated with human activities has a negative affect on wildlife in the Basin. For this reason, the public and TWG was able to begin drafting the outline for the noise program in relation to wildlife.

9.3.6.1 Current Condition and Trend for the Effects on Wildlife

Status of indicators - None

This is a proposed indicator and therefore, there is no current condition or trend.

9.3.6.2 Legal Requirements for the Effects on Wildlife

Federal

USFS Noise Policies, Standards and Management Strategies

The USFS, Lake Tahoe Basin Management Unit (LTBMU) adopted the TRPA noise thresholds in its 1988 Land and Resource Management Plan (Forest Plan) for the National Forest lands within the Basin. As stated within the Forest Plan, the LTBMU would take the necessary actions to comply with the established noise standards in the Basin. In addition, the LTBMU has also included language in their Forest Plan Need for Change section to clarify their authority to enforce noise levels and to conduct additional community noise level (CNEL) monitoring on their lands around the Basin.

TRPA

TRPA Planning Compact

In 1969, California and Nevada created the Tahoe Regional Planning Compact (P.L. 91-148; 83 Stat. 360), which named the Tahoe Regional Planning Agency (TRPA) as the regional land use and environmental resource-planning agency for the Lake Tahoe Region.

TRPA Goals & Policies

Goal #2: Cumulative Noise event levels shall be attained and maintained.

Policy

- Transmission of noise from the transportation corridors shall be reduced.
- Reduce noise-related impacts associated with the airport to acceptable levels.
- TRPA will further define CNELs for wilderness and roadless areas and for critical wildlife habitat areas.

Relevant TRPA Code of Ordinances

TRPA's Code of Ordinances includes Chapter 23 that regulates noise. The purpose of Chapter 23 is to: "implement the Goals and Policies, Land Use Element, Noise Sub-element, and to attain and maintain the TRPA noise thresholds." The chapter includes noise standards and indicators, measurement and monitoring rules, performance standards, and compliance issues.

TRPA Environmental Threshold Carrying Capacities

Pursuant to Chapter 32 of the Code, TRPA has adopted noise threshold indicators so that the noise threshold can be evaluated. These are as follows:

TRPA's noise thresholds are based on achieving the following objectives as they relate to noise:

1. Provide for community and neighborhood tranquility; and
2. Reduce or eliminate those activities in the Basin that produce damaging or distressing noise levels. The components of noise were defined as:
 - The characteristics of sound and noise;
 - The sources that produce noise;
 - People's perception of noise; and
 - Noise impacts on wildlife

9.3.6.3 Public Input on the Effects on Wildlife

There was considerable discussion on noise levels with respect to wildlife. The public has increasing concern over the loss of both species and habitat due to increasing noise levels. Of particular concern was the noise associated with aircraft over sensitive areas.

9.3.6.5 Proposed Desired Conditions for the Effects on Wildlife

Because we know noise effects wildlife in terms of their breeding, habitat location, and behavior, it was fairly easy to develop a desired condition for the effects on wildlife. The P7 Forum, Basin agencies, and the Noise TWG adopted this following desired condition.

Noise levels are controlled to protect wildlife.

9.3.6.6 Proposed Standards for the Effects on Wildlife

Staff is currently working with the wildlife experts from multiple agencies to develop the appropriate standards for the desired condition. However, due to resource limitations, staff does not expect the necessary studies to begin until 2008 with proposed standards in the 2012 timeframe.

9.3.6.7 Proposed Indicators for the Effects on Wildlife

Staff is currently working with the wildlife experts from multiple agencies to develop the appropriate indicators for the desired condition. However, due to resource limitations, staff does not expect the necessary studies to begin until 2008 with proposed indicators in the 2012 timeframe.

9.3.6.8 Potential Use of the Effects on Wildlife

When developed, it is envisioned that the indicators and standards will provide the information necessary to develop and implement a program to mitigate noise issues associated with human activity in and around sensitive wildlife habitat.

9.4 Further Considerations or Recommendations

The proposed changes will be evaluated in an Environmental Assessment to be completed before public hearings and requests for Governing Board action. The Compliance Measure updates are included in the evaluations being carried out under Pathway and will be moving forward at a policy level for inclusion in the Goals and Policies EIS Scoping for the Regional Plan Update.

Throughout the process, the staff, P7 Forum, and working groups agreed that only limited changes were necessary for the noise program and that the primary focus should be securing the necessary resources to develop and implement a noise monitoring and enforcement program. The TRPA staff will be drafting a monitoring program in the near future and will be requesting the help from our local law enforcement agencies to monitor and enforce portions of the program. The following are the major non-regulatory focus areas that are proposed:

Monitor for baseline information

Currently there is limited data on which to base our indicator status or to enable us to provide programmatic enhancements. As a first step, it is recommended that permanent and automated noise monitors be purchased and installed at the airport and various sites around the Basin. This will enable us to determine the indicator status and potential solutions if issues are determined to exist. In addition, several portable and automated noise monitors are needed to address the issues associated with point source noise pollution. These monitors would primarily address issues associated with single event noise sources and allow us to actively monitor, enforce, and improve the noise levels in the Basin.

Enforce current standards

The majority of the noise standards in place today seem to be appropriate and applicable to achieving and maintain the noise threshold. One item that would benefit from improvement includes educational processes that will actively engage

our Basin partners in order to help enforce the current standards. As an example, one of the primary causes of noise violations in both our CNELs and Single Event Noise areas is the vehicle noise associated with modified vehicles. Because the local state law enforcement agencies and the USFS are the only entities that retain the authority to stop and test vehicles, it is imperative that they take an active role in supporting the noise threshold. That said: it is also imperative that the necessary resources be provided to them so that they can play a proactive role in this program.

Program Management

As with any program, it is important to reevaluate the program and processes at regular intervals. For this reason, it would be beneficial to assess this program on a yearly basis. This should include the monitoring program as well as the programmatic improvements that have been implemented. This will enable us to make the necessary adjustments to ensure we are attaining and maintaining our noise program objectives at the earliest practical date.

The following is a compilation of the effectiveness and more specific recommendations for each indicator.

N-1 Single Event Noise (Aircraft)

Recommended Changes

The first recommendation for this threshold is to develop and implement an automated monitoring program designed to examine, evaluate and recommend improvements to this threshold. Without such a system, the threshold cannot be evaluated for either attainment or for effectiveness of the control measures.

Modifications or deletion of past compliance measures

The following Compliance Measures were identified as “measures in place” in the 2001 Threshold Evaluation Report: 174, 179, 182, 185, and 187. However, only two of these measures, 179 pertaining to land use planning and controls and 187 pertaining to exemptions to noise limitations, have been implemented. Because many of the compliance measures have not been completed, it is difficult to recommend any modifications or adjustments to them. With this caveat, it is recommended that any modifications to these five measures be prioritized as follows:

Airport Master Plan SLT – The South Lake Tahoe Airport does not recognize the noise standards currently in effect. Because the airport is the key monitoring and enforcement agency, until this is resolved, only limited progress in attaining the standards can be achieved. Because much of the previous conditions have changed since the initial master plan, it is also recommended that the CSLT develop a new master plan that would include noise abatement and mitigation efforts.

Noise Enforcement Program – It is assumed that the installation of equipment and the monitoring of airport noise are included in this measure. If this is the case, then this measure becomes critical as a foundation for enforcement and mitigation measures.

Public Concern System - Without an appropriate public concern system, it is difficult to measure the success of this program or to evaluate any adjustments that are made. For this reason, a new system needs to be developed and implemented that will provide the necessary information to be used in conjunction with our the Basin's adaptive management program.

Exemptions to noise limitations – The original language for this program consisted of mainly of exempting emergency operations and had little to do with the airport. For this reason, it is recommended that this be removed from the N-1 indicator. Noise exemptions for aircraft can be proposed at a later date after noise monitoring and public concern systems have been operational, and the agencies have had a chance to analyze the data.

Land use – No modifications are proposed at this time. This could change pending monitoring information or the impacts of the ongoing transect planning efforts.

N-1 Single Event Noise (Other than Aircraft) Recommended changes for 2006

Given the resource shortage associated with this indicator, the first recommendation would be to prioritize the current program and focus only on two or three recommendations. The first priority would be to establish a noise monitoring program for single event noises that would include monitoring frequency and the protocols for the actual measurements. The second recommendation should be to secure the resources necessary to monitor, evaluate and recommend improvements to this threshold. Only limited monitoring equipment exists at the agency and very little staff time was allotted for this purpose. Previous noise monitoring included contractor services that sampled for one or two days for each of the N-2 noise categories over the last 5 years. Clearly this monitoring effort is inadequate to manage the threshold. The third priority should be given to manage the noise associated with on- and off-highway vehicles. Current information indicates that on- and off-highway vehicles, including motorcycles, are the primary source of single event noise violations. Because the TRPA does not have the authority to detain or test these vehicles for compliance, it is imperative that the law enforcement agencies take the lead in the enforcement efforts.

Implementation of supplemental compliance measures

Although listed under the 2001 Compliance Measures, Supplemental Measure 190 (Create an interagency noise enforcement MOU for the Tahoe Region.) had inadvertently been left off the previous form. Due to lack of resources, no progress has been made on this compliance measure and therefore it is recommended that this be added to the future compliance measures when resources become available.

Modifications or deletion of past compliance measures

The following Compliance Measures were identified as “measures in place” in the 2001 Threshold Evaluation Report: 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, and 189. However, only six of the compliance measures were completed (179, 180, 183, 184, 187, and 189) and of these four were estimated to be effective or marginally effective (179, 184, 187, and 189). Staff is recommending the removal of compliance measures 180 and 187. There is no conclusive evidence that mass transit operations (see measure 180) lowers

noise levels and compliance measure 187 has been completed. Given resource challenges, it is recommended that the compliance measures be prioritized and activated according to the prioritization and available staff.

N-3 Community Noise Levels (CNEL)

Recommended changes

Given the resource shortage associated with this indicator, the first recommendation would be to prioritize the current program and focus only on two or three recommendations. The first priority would be to establish a noise monitoring program for community event noises that would include monitoring frequency and the protocols for the actual measurements as well as some automated continuous monitors. The second recommendation should be to secure the resources necessary to monitor, evaluate and recommend improvements to this threshold. Currently, no functional monitoring equipment exists at the agency and only limited staff time was allotted for this purpose. Noise monitoring over the last 4 years includes a one-time estimate of the CNELs for 9 out of the 180 plan areas. As stated in previous threshold reports, this monitoring effort is clearly inadequate to manage this threshold. Similar to the single event noise indicator, the third priority should be given to manage the noise associated with transportation in the Basin. Current information indicates that vehicle noise is the primary source of CNEL violations. Because the TRPA does not have the authority to detain or test these vehicles for compliance, it is imperative that the law enforcement agencies take the lead at enforcing this standard.

Implementation of supplemental compliance measures.

Because this indicator remains in non-compliance and the primary compliance measures were not successful, it is recommended that the supplemental compliance measures (229, 230, and 231) be activated as resources become available.

Modifications or deletion of past compliance measures.

The Compliance Measures identified as “measures in place” in the 2001 Threshold Evaluation Report for N-3 are the same as N-2 (see discussion for N-2) above. Only six of the 16 compliance measures were completed (179, 180, 183, 184, 187, and 189) and of these, four were estimated to be effective or marginally effective (179, 184, 187, 189).

Staff is recommending the removal of compliance measures 180, 183, 187 and 189. There is no conclusive evidence that mass transit operations (see measure 180) lower noise levels and compliance measures 183, 187, and 189 have been completed. Given resource challenges, it is recommended that the compliance measures be prioritized and activated according to the prioritization and available staff.

Implement a new N-3 indicator for Effect on Wildlife.

Noise associated with human activities dominates the noise environment in the Lake Tahoe Basin. This noise affects not only the visitors and residents, but also has a negative effect on wildlife. In general, the same noise that affects people also affects wildlife. These primary noise sources include on-highway vehicles, off-highway vehicles, over-snow vehicles, watercraft, and aircraft. Staff will continue to work with the wildlife experts from multiple agencies to develop the appropriate indicators or standards for this desired condition.

9.5 REFERENCES

- TRPA. 1982. Environmental Impact Statement for the Establishment of Environmental Threshold Carrying Capacities. Tahoe Regional Planning Agency, Zephyr Cove, NV
- TRPA. 2001. 2001 Environmental Threshold Evaluation. Tahoe Regional Planning Agency, Zephyr Cove, NV
- TRPA 2004. Noise Threshold Update Report (August 6, 2004). Brown-Buntin Associates Inc.

APPENDIX A

Noise EIP Implementation Status

Completed Noise EIP Projects

There are six projects under the heading of noise that have been identified in the Environmental Improvement Program (EIP). The TRPA's records indicate that 50 percent of these EIP projects have been completed as of this writing. The remaining EIP projects include the efforts necessary to correct the majority of improvements needed for the noise program. The EIP program is currently in the process of being updated. Therefore, recommendations for additional noise projects should be made through that process. Table A1 below, contains a list of the projects and their status. Additional information regarding benefits of each project is detailed in the following text.

Table A1			
Completed EIP Capital Improvement Projects			
EIP Number	Title	Project Description	Status
547	AMENDMENT OF CNEL THRESHOLD (N-3)	Amend CNEL threshold to change wilderness and roadless areas and critical wildlife habitat to 45 CNEL, and create a tourist/commercial CNEL category of 60 CNEL within transportation corridors. This project was considered complete in the 2001 EIP Update.	Completed
548	STUDY - PERSONAL WATERCRAFT NOISE	Complete noise study of personal watercraft, assess current noise level, and amend code and threshold standard as necessary.	Completed
549	NOISE ENFORCEMENT MOU AND MONITORING	Adopt interagency noise enforcement MOU with CHP and NHP and locals for on-road noise, with the USFS for OHVs noise, and With CSLT for airport noise.	Incomplete
550	AMEND BACKGROUND NOISE LEVEL THRESHOLD	Study Community Noise Equivalency Level (CNEL) threshold requirement that "background noise levels shall not exceed existing levels or the following levels, whichever is less". The CNEL threshold was amended as part of the 1996 Threshold Evaluation.	Completed
551	NOISE REDUCTION PROGRAM	Implement various noise monitoring and reduction strategies in order to attain and maintain compliance with the Noise Threshold	Incomplete
10157	DEVELOP NOISE SCORING STANDARDS	Monitor all current noise in Basin and evaluate data to determine appropriate indicators for threshold updates. Establish regular ongoing monitoring program and determine most feasible and productive noise reduction strategies / regulations where needed.	Incomplete

EIP 547 - AMENDMENT OF CNEL THRESHOLD (N-3)

Previously adopted language included a noise standard of 25 dB for wilderness and road-less areas. However, because a 25 dB noise level is less than a whisper, even the noise generated by wind through the trees would violate this standard. For this reason, staff drafted an amendment to the threshold to increase the allowable noise standard in wilderness and road-less areas from 25 dB to 45 db. Although there is a category of commercial listed in the current standards, there is no reference to transportation corridors and staff was unable to find any reference to this at the time of this report. This project was listed as complete in 2001.

EIP 548 - STUDY - PERSONAL WATERCRAFT NOISE

Staff completed a noise study of personal watercraft that included an assessment of the current noise levels and a recommendation on mitigation measures. This study led to the amendment of TRPA's ordinances and a creation of a 600 foot no wake zone around

the Lake Tahoe. This dramatically lowered the noise levels for people living and recreating in the shorezone.

EIP 549 - NOISE ENFORCEMENT MOU AND MONITORING

EIP number 549 is a project that will develop and adopt interagency noise enforcement MOU's with CHP and NHP and locals for on-road noise, with the USFS for OHVs noise, and With CSLT for airport noise. Currently, one of the principal problems with the noise program is the lack of enforcement. Because the TRPA does not have police power to conduct vehicle stops to test for noise compliance or issue citations, it is necessary to enlist the help of other Basin agencies who have this authority. This project remains incomplete and is awaiting resources to develop and implement this project.

EIP 550 - AMEND BACKGROUND NOISE LEVEL THRESHOLD

This project was completed in the early 1990's and resulted in amendments to the 1996 Threshold Evaluation which set CNEL levels for the Basin.

EIP 551 - NOISE REDUCTION PROGRAM

The purpose of this project was to implement various noise monitoring and reduction strategies in order to attain and maintain compliance with the Noise Threshold. This project is closely tied to EIP# 10157 which is the more intensive monitoring program. The primary purpose of this project is to develop and implement the actual strategies necessary to improve the noise levels within the Basin. Unfortunately, lack of resources has prevented this project from moving forward.

EIP 10157 - DEVELOP NOISE SCORING STANDARDS

The purpose of this project is to monitor the current noise in Basin and evaluate data to determine appropriate indicators for threshold updates. This project will also establish an ongoing monitoring program and determine the most feasible and productive noise reduction strategies/regulations where needed. Monitoring is vital component in order to evaluate areas and individual noise sources in order to adopt the most efficient noise reduction plan possible. As an example, most monitoring techniques employed in the past provide only limited information as to the noise source. Without specific source information, we are only able to state that the noise level has been violated. Although important information, this does not allow us to identify the source and subsequently implement mitigation measures. Unfortunately, lack of resources has prevented this project from moving forward.