

8 NOISE ELEMENT

The purpose of the Noise Element is to identify sources of noise in Truckee and to define strategies for reducing the negative impact of noise to the community. Noise has become recognized as an environmental pollutant that can threaten quality of life and human health by causing annoyance or disrupting sleep and everyday activities. With the presence of significant noise sources in Truckee, including Interstate 80, the railroad, and the airport, reducing the negative impact of unwanted and excessive noise is an important aspect of maintaining the Town's valuable quality of life and community character, which includes maintenance of a peaceful mountain environment.

A. *State Requirements*

State law requires that the General Plan include a Noise Element, which is to be prepared according to guidelines adopted by the California Office of Noise Control. In accordance with State law requirements, this Noise Element provides a systematic approach to limiting community exposure to noise, including the following components:

- ◆ Quantitative analysis, based on noise measurements and modeling, of major existing and future noise sources in the community, including both mobile and stationary sources;
- ◆ Mapping of generalized noise level contours to be used as a basis for land use decision-making;
- ◆ Goals, policies and actions to address community exposure to existing and projected noise sources.

This Element is to be used as a guide to identify and mitigate noise problems in the Town of Truckee. It establishes uniformity between local policy and programs undertaken to control and abate environmental noise. It also serves as a guideline for compliance with the State's noise insulation standards.

*California Government Code
Section 65302(f) defines the re-
quirements for the General Plan
Noise Element.*

Noise Element Guiding Principles

- ❖ Preserve Truckee’s peaceful mountain environment by minimizing community exposure to noise.
- ❖ Maintain consistency with the noise criteria and policies of the Truckee Tahoe Airport Land Use Compatibility Plan as they apply in the airport environs.

Noise sensitive uses include residential development, as well as uses such as schools, hospitals and convalescent homes whose residents may be unduly affected by excessive noise.

Noise data developed for the General Plan serves as a basis for addressing noise issues, primarily by promoting development patterns that recognize identified sources of noise and by regulation of the location of noise-sensitive uses. Noise exposure information provided in this Element will also be used to provide baseline information about community noise and noise sources, in enforcement of the Town’s local noise control ordinance, which provides a mechanism for controlling noise from existing land uses in order to maintain long-term compatibility between uses.

B. Noise Terminology and Definitions

Noise is generally defined as unwanted sound. The objectionable nature of sound is caused by its pitch or its loudness. Pitch is the height or depth of a tone or sound, depending on the relative rapidity (frequency) of the vibrations by which it is produced. Higher pitched signals sound louder to humans than sounds with a lower pitch. Loudness is caused by the intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave: it is a measure of the amplitude of the sound wave.

Beyond the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. The most basic noise measurement is the decibel (dB), which is a unit of measurement indicating the relative amplitude of a sound. The zero on the decibel scale is based on the lowest sound level that the healthy, unimpaired human ear can detect. Sound levels in decibels are calculated on a logarithmic basis. An increase of 10 decibels represents a ten-fold increase in acoustic energy, while 20 decibels is 100 times more intense, 30 decibels is 1,000 times more intense, etc. Sound measurements are usually taken on an "A-weighted" scale (represented as dBA) which gives greater weight to the middle range of sounds to which the human ear is sensitive. Table N-1 describes representative outdoor and indoor noise levels in units of dBA.

Generally, the human ear cannot perceive a difference between two noises that are less than three decibels different from one another.

Since sensitivity to noise increases during the evening and at night - because excessive noise interferes with the ability to sleep - 24-hour descriptors have been developed that incorporate artificial noise penalties added to quiet-time noise events. The Community Noise Equivalent Level, CNEL, is a measure of the cumulative noise exposure in a community with a 5 dB penalty added to evening (7:00 PM - 10:00 PM) and a 10 dB penalty added to nocturnal (10:00 PM - 7:00 AM) noise levels. The Day/Night Average Sound Level, L_{dn} , is essentially the same as CNEL, but only includes the 10 dB penalty for the 10:00 PM to 7:00 AM period. Both CNEL and L_{dn} represent average noise levels occurring over a 24-hour period, during which individual noise levels might be louder or quieter than the average. State law requires that the Noise Element utilize L_{dn} or CNEL to describe the noise environment and its effects.

C. Truckee's Existing Noise Environment

As a prerequisite to an effective noise program, a community must be cognizant of the location and extent of local noise problems, including major noise source locations, noise sensitive receptor locations, and current levels of exposure. This data can be utilized to focus noise control and abatement efforts

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TABLE N-1 TYPICAL ENVIRONMENTAL NOISE LEVELS

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	120 dBA	
Jet fly-over at 300 meters		Rock concert
	110 dBA	
Pile driver at 20 meters	100 dBA	
		Night club with live music
	90 dBA	
Large truck pass by at 15 meters		
	80 dBA	Noisy restaurant
		Garbage disposal at 1 meter
Gas lawn mower at 30 meters	70 dBA	Vacuum cleaner at 3 meters
Commercial/Urban area daytime		Normal speech at 1 meter
Suburban expressway at 90 meters	60 dBA	
Suburban daytime		Active office environment
	50 dBA	
Urban area nighttime		Quiet office environment
	40 dBA	
Suburban nighttime		
Quiet rural areas	30 dBA	Library
		Quiet bedroom at night
Wilderness area	20 dBA	
Most quiet remote areas	10 dBA	Quiet recording studio
Threshold of human hearing	0 dBA	Threshold of human hearing

where they are most needed. In some cases, the control of noise sources will be beyond the Town's jurisdiction. However, by recognizing these limitations, more effective land use strategies can be developed to mitigate or avoid problematic noise.

A comprehensive noise monitoring survey was conducted as part of the General Plan update to document noise generated by the predominant transportation noise sources that affect Truckee. These noise sources include highways, local arterial and collector roadways, the Union Pacific Railroad, and the Truckee-Tahoe Airport. The noise monitoring survey included a combination of long-term (24-hour duration) and short-term (15-minute duration) noise measurements throughout the town's area. Long-term noise measurements characterized the daily distribution of noise levels in areas adjacent to the predominant noise sources in the community. Short-term noise measurements were conducted at selected locations to supplement the long-term noise data.

Major existing noise sources in Truckee, and noise levels associated with those sources are described briefly below. More detailed data concerning the ambient noise environment in Truckee, based on the noise monitoring survey, can be found in the General Plan EIR.

Local Roadway Network

Noise levels along major roadways were measured and calculated using a computer model developed by the Federal Highway Administration and traffic data provided by LSC Transportation Consultants, Inc. The traffic noise model predicts hourly average noise levels using peak hour traffic volumes. The Community Noise Equivalent Level (CNEL) for each roadway was estimated using the relationships of the peak hour noise level to the CNEL actually measured.

Noise levels were calculated at a standard distance of 100 feet from the centerline of the roadways. By selecting a standard distance, the relative noise levels along the various streets can be readily ascertained. In some cases, measured

noise levels were higher than that which would be expected based on existing traffic volumes and posted speed limits; this is primarily due to the particular mix of vehicles on Truckee's roadways, which includes more four-wheel drive vehicles or sport-utility vehicles with large mud and snow tires. Other factors included vehicles traveling faster than posted speed limits along some roadways, which also results in higher noise levels. An adjustment was applied in the existing and future noise modeling to account for these differences.

Noise levels measured along Truckee's major roadways are as follows:

- ◆ **Interstate 80.** Interstate 80 is the major transportation corridor in the planning area and the loudest source of noise affecting the Town of Truckee. Noise levels at a distance of 100 feet from the center of Interstate 80 range from approximately 78 to 82 CNEL. Interstate 80 affects the noise environment in the community over a distance of several thousand feet from the roadway.
- ◆ **Highway 89.** Highway 89 provides access from the Town of Truckee northward to Sierraville and southward to Tahoe City. Noise levels at a distance of 100 feet from the center of Highway 89 North range from approximately 70 to 71 CNEL. Along Highway 89 South, average noise levels are 72 to 73 CNEL, slightly higher than Highway 89 North as a result of higher traffic volumes along the roadway.
- ◆ **Highway 267.** Highway 267 connects Highway 89 North, Interstate-80, and the Town of Truckee to the North Lake Tahoe area. Noise levels at a distance of 100 feet from the center of Highway 267 range from approximately 70 to 71 CNEL.

The relatively large proportion of four-wheel drive and sport utility vehicles with high traction tires in Truckee, combined with rapid travel speeds on some low-volume roadways, resulted in measured noise levels along some of Truckee's roadways that were higher than would be expected based on traffic volumes and posted speed limits.

The sound of trains and their warning whistle is a source of noise in the community but also, many would say, an important part of Truckee's railroad town character.

Union Pacific Railroad

The Union Pacific Railroad bisects Truckee from east to west. The railroad has freight and passenger trains that generate intermittent, loud sounds during pass-bys. Noise generated by an individual train depends on the train type, length, speed, and whether the train uses its warning whistle. Train engines typically generate maximum noise levels of approximately 80 to 85 dBA

while train cars generate noise levels of about 70 to 75 dBA at 100 feet from the railway tracks.

Trains are required to sound their warning whistle near “at-grade” vehicle crossings (which includes the Bridge Street crossing in Downtown) to warn motorists of the oncoming train. Oftentimes, trains also sound their warning whistles when entering or leaving the train station in Downtown Truckee and at bridges. At a distance of 100 feet, a train warning whistle can generate maximum noise levels of about 100 to 105 dBA.

Noise measurements along the railroad indicate that, even though they are an intermittent element, the frequency, duration and loudness of train noise controls the overall average noise level in the vicinity of the tracks during the course of a day. The resulting noise level, at a distance of 100 feet from the railroad, is approximately 76 CNEL. This volume includes all noise associated with the railroad, including the trains themselves, and their whistles.

Truckee-Tahoe Airport

The Truckee-Tahoe airport is a general aviation airport located east of Highway 267, south of Truckee. The airport is accessed by a mix of general aviation and jet aircraft. The primary flight paths follow the highways in the area (Interstate 80, Highway 89 North, and Highway 267). Noise generated by the airport was measured northwest of the airport during the noise monitoring survey. The measured CNEL at the nearest residential land uses was 56 dBA. Individual measurements of maximum instantaneous sounds generated by aircraft typically ranged from 55 to 71 dBA. During the summer peak travel season, CNEL noise levels would be approximately 60 dBA at the nearest residential receivers, which includes homes north of Brockway Road.

Noise complaints from individuals are recorded and reported by the Truckee-Tahoe Airport District, which operates the Truckee-Tahoe Airport. Of the 197 calls logged between January and April, 2004, almost 70 percent of complaints were received from residents of the Prosser, Ponderosa Palisades and Sierra Meadows neighborhoods, indicating that these areas of Truckee are

most affected by aircraft noise.¹ The Airport District does not have the power to regulate the flight paths chosen by individual pilots using the airport. Instead, the District relies on the Airport Land Use Compatibility Plan (CLUP) and local land use regulations to control sensitive land use in areas identified as being exposed to aircraft noise. It also attempts to educate pilots about preferred flight paths that minimize flyovers of residential neighborhoods.

The Foothill Airport Land Use Commission adopted an updated Comprehensive Land Use Plan (CLUP), called the Airport Land Use Compatibility Plan, in December, 2004. The CLUP includes noise contours associated with aircraft operations that are intended to be used to avoid locating noise sensitive uses in parts of Truckee that are affected by aircraft operations at the airport. Public Utilities Code Section 21676 requires Truckee's General Plan to be in conformance with the land use plan and policies of an adopted CLUP, unless the Town Council makes specific findings to overrule the CLUP or portions of it.

Stationary Noise Sources

The Town of Truckee is not significantly affected by stationary noise sources. Most large noise-generating operations (e.g., aggregate mining) are located away from residential areas. Noise-generating businesses are generally limited to commercial or industrial areas where noise does not typically pose compatibility problems.

Other stationary noise in Truckee results from temporary and intermittent sources. Construction and demolition activities may be a source of noise anywhere in the Town. Although generally short-term and intermittent in nature, construction noise can be particularly annoying for neighbors, particularly in the context of a relatively quiet environment like that found in

¹ Tahoe-Truckee Airport District, Spring 2004 Operations Report Presentation.

many parts of Truckee. At the same time, noise is an unavoidable aspect of construction activity. Restrictions on construction hours help to reduce disruption from construction noise, while allowing reasonable accommodation for construction activity to occur. Domestic noise sources such as loud music, operation of yard maintenance equipment, and barking dogs can also be a source of disruption and annoyance for local residents. The Town of Truckee, Truckee Police Department, and Truckee Animal Control Division have significant powers to address domestic noise sources, which are generally dealt with on a complaint basis, relying on the regulations and guidelines set forth in Chapter 18.44 of the Development Code.

D. Future Noise Environment

This section describes the projected future noise environment in Truckee over the next twenty years. Projection of the future noise environment in Truckee was modeled based on the future land uses and traffic volumes described in the Land Use Element and Circulation Element of this General Plan and in the General Plan EIR.



Construction activity can be a significant source of community noise.

Anticipated train noise was taken from existing levels, since it is not possible to predict if future levels of train activity will increase, remain the same, or decrease.

The major noise sources in Truckee will continue to be transportation related, including roadways, trains, and aircraft. To a lesser degree, industrial sources such as mining and aggregate processing operations will also continue to generate noise. Transportation noise sources, as well as individual stationary and industrial noise generators, must be considered in the planning process to ensure long-term noise compatibility. Greater detail on the future noise environment in Truckee can be found in the General Plan EIR.

The increase in noise levels from existing conditions to future conditions identifies those locations where anticipated noise impacts may occur. The greatest increases in noise are projected in the downtown area and along Highway 89, Highway 267, and Brockway Road. Noise levels along these roadways are estimated to increase by about 2 to 5 dBA with the build-out of the General Plan. Noise levels along Interstate 80 are estimated to increase by about 2 dBA during the same period. Figure N-1 maps the future noise contours associated with area roadways and the railroad based on distance from the roadway/railroad centerline. These distances are summarized in Table N-2. Sensitive receptors adjacent to these roadways within these contour areas may be impacted by future traffic noise. This is particularly true with older homes that take direct access from the roadway or where individuals in outdoor activity areas such as front or rear yards and porches can see directly to vehicles driving behind their homes, with no intervening barriers. It is projected that many existing residences may be exposed to future noise levels exceeding 60 CNEL, particularly those in neighborhoods north of Interstate 80, in the Downtown and the Gateway area, and in proximity to Truckee's other highways and major arterials. These residences would experience elevated interior noise levels that would need to be addressed.

Airport noise contours, illustrated in Figure N-2, also show a substantial increase under future conditions. Under average day, peak season conditions,

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TABLE N-2 **FUTURE NOISE CONTOUR DISTANCES**

Corridor	Segment	Distance to Noise Contour (Feet from Centerline)			
		CNEL* at 100 feet	70 CNEL	65 CNEL	60 CNEL
UPRR Railroad	Within Town Limits	76	290	700	1700
Interstate 80	West of Donner Lake Rd	83	720	1,560	3,360
	East of Donner Lake Rd.	84	850	1,840	3,950
	East of Donner Pass Rd	84	850	1,840	3,950
	East of Southbound SR 89	84	890	1,920	4,140
	East of NB SR 89/ SB SR 267	80	490	1,060	2,280
Highway 89 South	South of I-80	75	200	440	950
	South of West River St.	74	180	390	850
	South of Squaw Valley Rd.	74	200	420	910
	South of Alpine Meadows Rd	74	190	420	900
Highway 89 North	North of Alder Creek Rd.	74	170	380	810
	South of Alder Creek Rd.	74	170	380	810
	South of Prosser Dam Rd.	74	190	410	890
	South of Donner Pass Rd.	75	210	440	960
Highway 267	South of I-80	75	220	470	1,010
	South of Brockway Rd.	76	240	520	1,110
	South of Truckee Airport Rd	75	220	470	1,020
Donner Pass Road	West of Cold Stream Road	64	--	90	190
	East of Cold Stream Road	64	--	90	200
	East of Northwoods Blvd	65	50	100	210
	East of River Road	66	50	110	240
	East of I-80 (downtown)	66	50	110	240
	East of Bridge Street	64	--	90	190
	North of Glenshire Drive	64	--	90	190
	South of SR 89	65	50	100	220
Brockway Road	East of Bridge Street	71	110	240	510
	East of Palisades Drive	70	110	230	490
Glenshire Drive	East of Donner Pass Road	67	60	130	270
Northwoods Blvd.	North of Donner Pass Road	71	110	240	510
	East of River Rd.	68	70	160	350
River Street	East of McIver Crossing	73	160	350	750
	East of Bridge Street	71	120	260	560

CNEL: Community Noise Level Equivalent

the 60 dBA contour would include a number of existing homes in the area north of Brockway Road, and potentially some homes at the far west end of Olympic Heights. New development proposed within these contours may be significantly affected by airport noise, and must therefore be addressed by the land use and development review standards.

E. Land Use Compatibility

The State Office of Noise Control has developed guidelines showing the compatibility of a range of noise levels for various land use categories. These guidelines are used by the Town of Truckee to create both interior and exterior noise standards.

Exterior Noise Standards

The noise compatibility matrix shown in Figure N-3 establishes the compatibility guidelines of exterior ground transportation noise (excluding airport noise) for various land uses in Truckee, and provides definitions of compatibility standards. Compatibility standards for exterior airport noise are found in the most recently-adopted Airport Land Use Compatibility Plan. The matrix defines noise in terms of a community noise equivalent level (CNEL) expressed in decibel units (dB or dBA). As noted in Section B, above, these measures account for noise levels which occur over a 24-hour period. When computing the CNEL, noise levels occurring during evening and night-time hours are weighted more heavily than daytime noise in recognition of increased sensitivity to sound during these hours.

The Noise Compatibility Matrix is to be used as a guideline by the Town and development project proponents to achieve long-term noise compatibility for land uses in the Town of Truckee. These guidelines, and the Airport CLUP guidelines shall be used both to determine the compatibility of situating land uses within a certain noise environment, and for the location of development and transportation system projects that may impact existing uses. Guidance for both sensitive land uses (homes, schools, hospital, and congregate care

The Development Code provides further specificity for noise standards for sensitive land uses and commercial uses, based on cumulative exposure, in minutes per hour, to unacceptable noise levels. These guidelines include more stringent standards for noise exposure occurring during the evening and nighttime.

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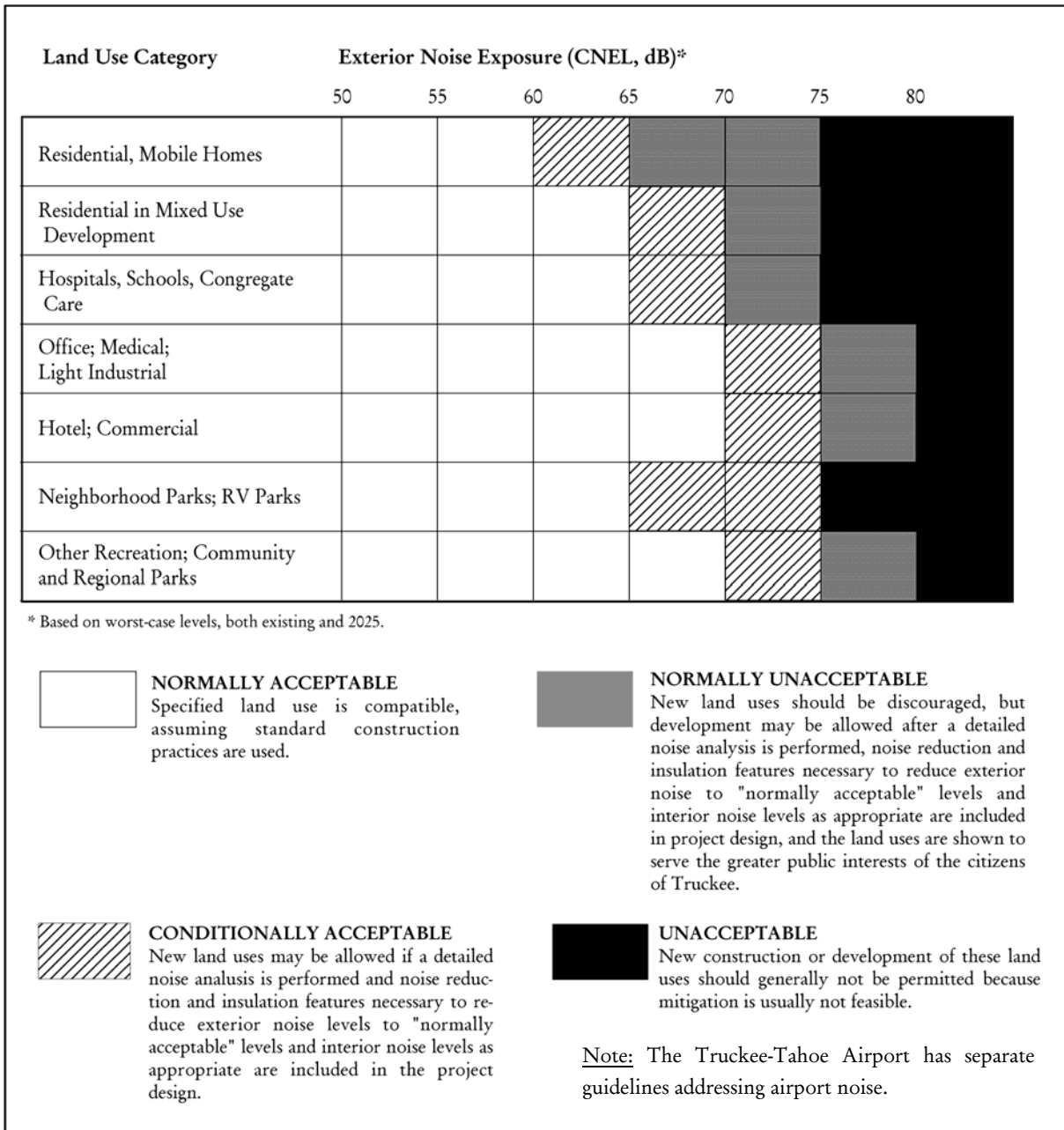


FIGURE N-3 NOISE COMPATIBILITY GUIDELINES *

facility and those uses considered less sensitive (commercial, office, industrial, and recreation areas) are provided. The standards identified are consistent with the State Office of Noise Control Guidelines and the California Noise Insulation Standards. In the environs of the Truckee-Tahoe Airport, the compatibility criteria for noise set forth in the adopted Truckee Tahoe Airport Land Use Compatibility Plan shall be used by the Town for evaluating the effects of aircraft noise.

Interior Noise Insulation Standards

California noise insulation standards were officially adopted by the California Commission of Housing and Community Development in 1974. In November 1988, the Building Standards Commission approved revisions to these standards (Title 24, Part 2, California Code of Regulations). The standards currently reside in Appendix Chapter 12 to the California Building Code. The code states that "Interior noise levels attributable to exterior sources shall not exceed 45 dB in any habitable room. The noise metric shall be either Ldn or CNEL, consistent with the noise element of the local general plan."

Additionally, the Code specifies that multi-family residential buildings or structures to be located within exterior CNEL (or Ldn) contours of 60 dB or greater of sources such as a freeway, expressway, parkway, major street, thoroughfare, airport, rail line, rapid transit line, or industrial noise source shall require an acoustical analysis showing that the building has been designed to limit intruding noise to an interior CNEL (or Ldn) of 45 dB.

State-wide noise insulation standards regulate maximum interior noise levels associated with outside sources. These standards are used by the Town of Truckee in enforcement of building code standards for new construction in the town.

F. Goals, Policies and Actions

Goal N-1 Minimize community exposure to excessive noise by ensuring compatible land uses relative to noise sources.
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Definitions of acoustical terms used in Noise Element goals, policies and actions are provided in Section B, above and in the Glossary.

Policies

- P1.1 Allow new development only if consistent with the ground transportation noise compatibility guidelines illustrated in Figure N-3 and the policies of this Element. Noise measurements used in establishing compatibility shall be measured in dBA CNEL and based on worst-case noise levels, either existing or future, with future noise levels to be predicted based on projected 2025 levels.
- P1.2 Require new development to mitigate exterior noise to “normally acceptable” levels in outdoor areas where quiet is a benefit, such as in the backyards of single-family homes.
- P1.3 Enforce the California Noise Insulation Standards for interior noise levels attributable to exterior sources for all proposed new single- and multi-family residences.
- P1.4 Support retrofitting of homes exposed to existing unacceptable interior noise levels, and those that become exposed to unacceptable interior noise in the future, with sound insulating features.
- P1.5 Allow land uses within Normally Unacceptable categories only where the allowed use can be shown to serve the greater public interests of the citizens of Truckee.
- P1.6 When considering development proposals in the environs of the Truckee Tahoe Airport, enforce the noise compatibility criteria and policies set forth in the adopted Truckee Tahoe Airport Land Use Compatibility Plan.
- P1.7 Reduce potential impacts from groundborne vibration associated with rail operations by requiring that vibration-sensitive buildings (e.g., residences) are sited at least 100-feet from the centerline of the railroad tracks whenever feasible and that development of vibration-sensitive buildings within 100-feet from the

centerline of the railroad tracks require a study demonstrating that groundborne vibration issues associated with rail operations have been adequately addressed (i.e., through building siting or construction techniques).

Actions

- A1.1 Amend the Development Code and Town Building Code as necessary to implement the policies of Goal N-1 and to be consistent with the noise policies and criteria of the Truckee Tahoe Airport Land Use Compatibility Plan.
- A1.2 Conduct a study at least every five years to identify homes that may become exposed to unacceptable interior noise levels. On the basis of these studies, initiate a program to seek funding and assist homeowners with sound insulation retrofits of existing homes that are exposed to unacceptable interior noise.
- A1.3 Conduct a noise monitoring study at least every five years to measure noise levels associated with operation of the Truckee-Tahoe Airport, and determine the noise impact boundary of the airport, in accordance with Section 5500 et. seq. of Title 21 of the California Code of Regulations.
- A1.4 Annually evaluate and provide a report to the Town Council on the Airport District's noise monitoring efforts, data, and noise abatement efforts. Develop needed actions in response to the findings of the report.

<p>Goal N-2 Address noise issues through the planning and permitting process.</p>
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"Significant noise impacts" are defined as occurring when new development would result in exposure of persons to, or generation of noise in excess of, the standards defined in this General Plan, the Development Code, or the applicable standards of other agencies, such as those described in the Airport Comprehensive Land Use Plan.

A range of construction techniques can be applied to reduce interior noise levels, including use of dense sheeting materials in walls, tightly sealed acoustic windows and doors; use of sound-absorbing insulation materials; specially designed ventilation ports or ducts, and/or active ventilation systems that makes it unnecessary to open windows or doors for ventilation.

Policies

- P2.1 Require mitigation of all significant noise impacts as a condition of project approval.
- P2.2 Require preparation of a noise analysis/acoustical study, which is to include recommendations for mitigation, for all proposed projects which may result in potentially significant noise impacts to nearby noise sensitive land uses such as residences.
- P2.3 Require preparation of a noise analysis/acoustical study, which is to include recommendations for mitigation, for all proposed development within noise-impacted areas that may be exposed to levels greater than "normally acceptable."
- P2.4 Discourage the construction of sound walls and require development projects to evaluate site design techniques, building setbacks, earthen berms, alternative architectural layouts and other means to meet noise reduction requirements.
- P2.5 Require the application of the provisions in the California Building Code Appendix Chapter II, Sections 1208A.8: Exterior Sound Transmission Control, to apply to all new single-family residences.

Actions

- A2.1 Adopt significance thresholds to be used to assess noise impacts for projects reviewed under the CEQA process, and develop a list of acceptable mitigations that might be applied to mitigate noise impacts to acceptable levels, including specific guidelines for their implementation. Chapter 4 of the US Department of Housing and Urban Development's (HUD) *Noise Guidebook*, or the Federal Aviation Authority's (FAA) *Guidelines for the Sound Insulation of Residences Exposed to Aircraft Operations*, may be a

suitable source for development of recommendations and guidelines for noise attenuation.

- A2.2 Adopt criteria and location maps that specify the locations and circumstances under which a noise analysis or acoustical study will need to be prepared for a proposed project (e.g., occurring within certain distances of transportation corridors that are, or will generate significant noise levels). Develop guidelines for conducting such studies that address aspects such as:
- ◆ Selection of a qualified acoustical consultant
 - ◆ Documentation of the existing and projected future noise environment, and the methodology and basis for analysis of these conditions.
 - ◆ Indication of the report's reference to the noise standards and policies of the General Plan;
 - ◆ Project-specific noise impacts, and specific, feasible, measures that mitigate those impacts;
 - ◆ Identification of significant noise impacts that cannot be mitigated to a less-than-significant level;
 - ◆ Site plan graphics, indicating projected noise contours where noise levels would exceed an average DNL of 45 dBA.
- A2.3 Amend the Development Code to implement Policy 2.4 regarding installation of sound walls.
- A2.4 Work with Caltrans to implement methods other than sound walls to attenuate traffic noise along highways in Truckee.
- A2.5 Amend the Development Code to reflect the specific requirement of California Building Code Appendix Chapter II, Sections 1208A.8: Exterior Sound Transmission Control.

Goal N-3 Reduce noise levels from sources such as domestic uses, construction and car stereos, and from mobile sources, including motor vehicle traffic and aircraft operations.

Policies

Action A12.1 in the Circulation Element calls for truck routes to be established in Truckee to deter noisy truck traffic from driving through residential neighborhoods.

Concrete paving generates significantly higher vehicle noise levels than asphalt. Rubberized asphalt, which incorporates material from recycled tires, can result in even lower noise levels. Although it is more expensive to install than traditional asphalt, rubberized asphalt roads have a longer life-span than traditional asphalt surfaces, and may have other benefits, including reduced air pollution from tire wear.

- P3.1 Enforce provisions of the Municipal Noise Ordinance, which limits maximum permitted noise levels that cross property lines and impact adjacent land uses.
- P3.2 Regulate noise from non-emergency construction activities through the Municipal Noise Ordinance.
- P3.3 Control the sound of vehicle amplification systems (e.g., loud stereos) by enforcing Section 27007 of the California Motor Vehicle Code. This section prohibits amplified sound which can be heard 50 or more feet from a vehicle.
- P3.4 Control excessive vehicle exhaust noise by enforcing Section 27150 of the California Vehicle Code.
- P3.5 Investigate other methods for reducing noise associated with vehicles and diesel equipment, and support efforts to reduce vehicle and equipment noise – e.g. through fleet and equipment modernization or retrofits, use of alternative fuel vehicles, and installation of mufflers or other noise reducing equipment.
- P3.6 Encourage transportation providers to investigate and consider use of alternative road surfacing materials that minimize vehicle noise.
- P3.7 Enforce posted speed limits on Town roads.

- P3.8 Support federal and State legislation to attain lower operating noise levels on motor vehicles.
- P3.9 Support the efforts of the Truckee Tahoe Airport District to educate pilots about appropriate flight paths to minimize fly-overs of residential neighborhoods, and other District efforts to monitor, minimize, reduce and mitigate airport noise.
- P3.10 Cooperate with the Airport District to coordinate long-range planning and land use regulations that minimize community noise exposure associated with airport operations, while meeting Town goals concerning provision of housing and other uses.
- P3.11 Encourage the Union Pacific Railroad to reduce noise from its rail operations, particularly use of warning whistles, and support efforts to eliminate the need for these audible warnings, including upgrades to at-grade crossings
- P3.12 Encourage CalTrans to incorporate noise reducing features during highway improvement projects when feasible and where consistent with Town policies.
- P3.13 Require the following standard construction noise control measures to be included as requirements at construction sites in order to minimize construction noise impacts.
- ◆ Equip all internal combustion engine driven equipment with intake and exhaust mufflers that are in good condition and appropriate for the equipment.
 - ◆ Locate stationary noise generating equipment as far as possible from sensitive receptors when sensitive receptors adjoin or are near a construction project area.
 - ◆ Utilize “quiet” air compressors and other stationary noise-generating equipment where appropriate technology exists.

- ◆ The project sponsor shall designate a “disturbance coordinator” who would be responsible for responding to any local complaints about construction noise. The disturbance coordinator will determine the cause of the noise complaint (e.g., starting too early, bad muffler, etc.) and will require that reasonable measures warranted to correct the problem be implemented. The project sponsor shall also post a telephone number for excessive noise complaints in conspicuous locations in the vicinity of the project site. Additionally, the project sponsor shall send a notice to neighbors in the project vicinity with information on the construction schedule and the telephone number for noise complaints.

Actions

- A3.1 Amend the Development Code as needed to ensure that new, problematic noise sources that may arise in the community are adequately addressed, including addressing hours of operation.
- A3.2 Conduct a study to examine the costs, benefits and feasibility of using alternative, noise-reducing, paving surfaces for new town roads and when roads in Truckee are re-surfaced.
- A3.3 Initiate communication with Union Pacific to:
 - ◆ Request that Union Pacific make exceptions to its warning whistle policy for the two at-grade crossings in Truckee (at Bridge Street and near Olympic Heights)
 - ◆ Request that Union Pacific enforce its existing policies regarding noise from rail operations and use of warning whistles.
- A3.4 Conduct a study, in cooperation with the Truckee Police Department and Highway Patrol to identify town roadways where speeding is most serious. Work with these agencies to develop and implement strategies to reduce excess vehicle speeds, such as

use of mobile speed alert trailers, additional signage, or road striping that promotes reduced vehicle speeds.

- A3.5 Develop a strategy to support enforcement of California Vehicle Code requirements for excess automobile noise.

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