Noise Element

1 INTRODUCTION

The purpose of this Noise Element Update for the community of Traver is to provide a policy framework for addressing potential noise impacts encountered in the planning process. The Noise Element shall be used as a guide for establishing land use patterns that minimize noise impacts on the community and shall include measures and solutions to address existing and foreseeable noise conflicts. It is intended that this Element be the adopted Noise Element of the Traver Community Plan, in conformance with Section 65302 (f) of the California Government Code.

The community of Traver lies within the central portion of the San Joaquin Valley. The community is located on the Valley floor at an elevation of approximately 285 feet above sea level with the surrounding area mostly flat. Figure 1 shows Traver in the context of its region. The transportation system within the Traver planning area includes State Route (SR) 99 as well as several County routes and a grid of local streets as shown in Figure 2.

The public transit system in the community of Traver includes public transit services, and within Tulare County it includes common bus carriers, AMTRAK and other local agency transit and paratransit services. In addition, the County transportation system includes general aviation facilities, air passenger facilities, freight rail service, and bicycle and pedestrian facilities.

In the Traver area, northbound Highway 99 narrows from three traffic lanes to two just south of the community. Similarly, southbound Highway 99 includes two travel lanes through Traver, but widens to three lanes south of the community. There is a full tight-diamond freeway interchange at Merritt Drive in Traver, affording access between the community and the freeway. Additionally, there is a northbound off-ramp at the southerly end of the community providing access to the highway-oriented commercial uses developed at that location and continuing onto Sixth Street which follows the previous Highway 99 alignment. Sixth Street also leads to a northbound on-ramp north of Traver, where it also intersects Avenue 368 just east of Highway 99.

Merritt Drive, a tangential extension of Avenue 368, is an arterial roadway. It follows a generally northeast/southwest alignment through the center of the community. To the northeast, Merritt Drive joins Elkhorn Avenue, which intersects Road 80 (Dinuba Highway), thus affording access between Traver and Dinuba and Reedley. To the southwest, Merritt Drive terminates just west of Highway 99 at its intersection Road 36 after crossing Highway 99 by an overpass. Merritt Drive is improved to one traffic lane in each direction for its length through Traver.

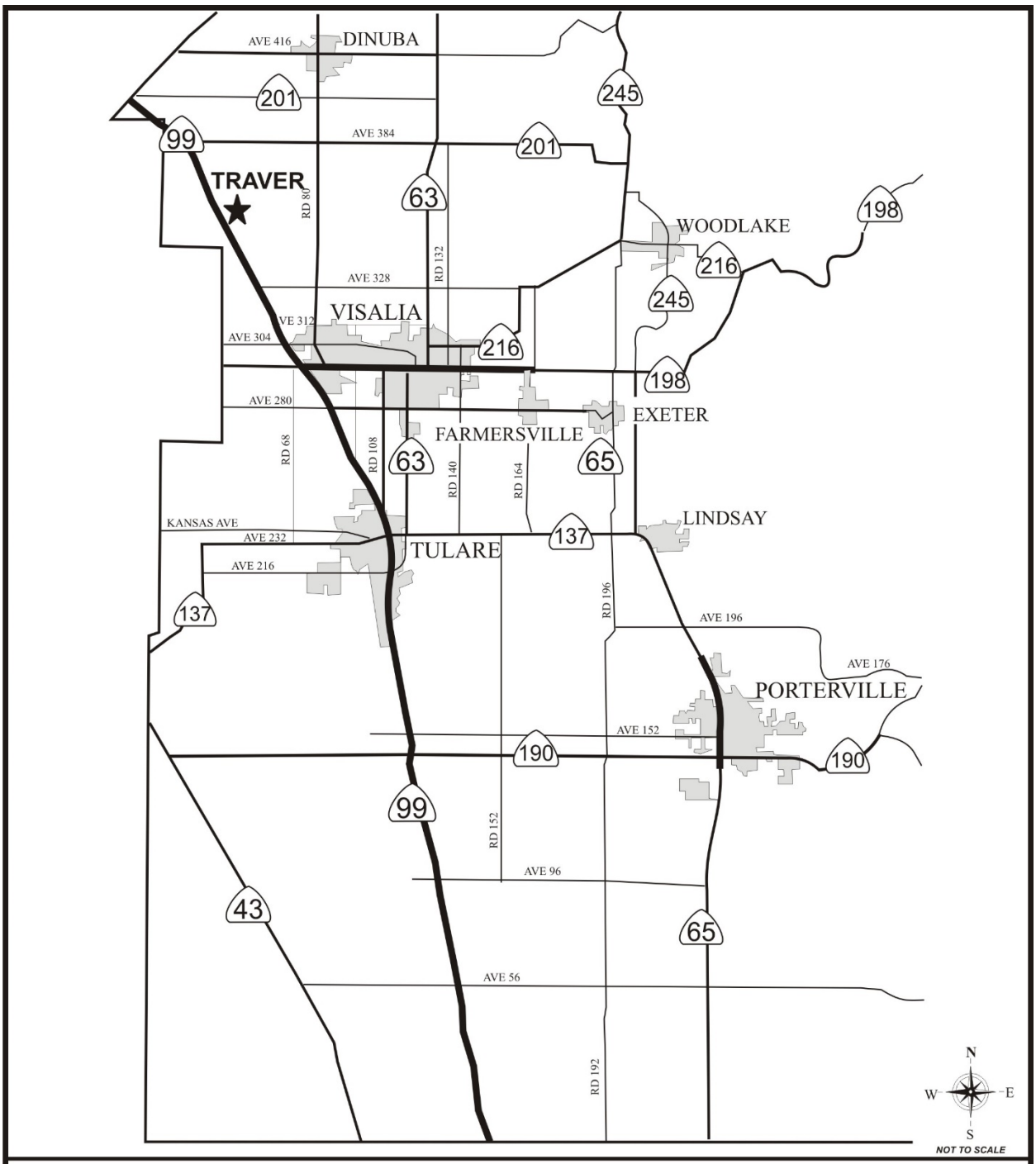

FIGURE 1

Project Vicinity

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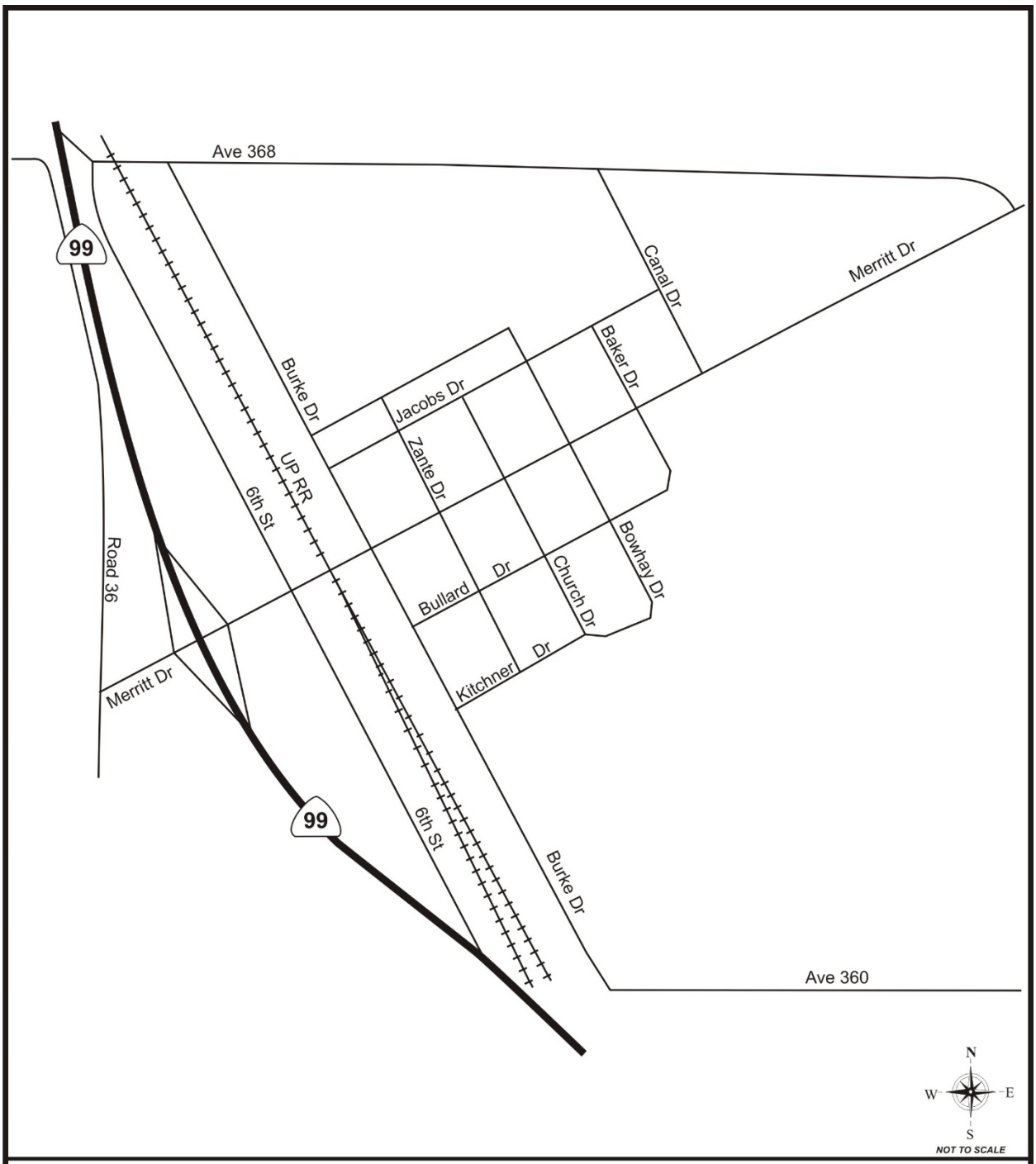

FIGURE 2

Traver Community Study Area

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Freeway — Surface Street

Sixth Street and Burke Drive are collector roads that parallel the highway on opposite sides of the Union Pacific Railroad main line, traversing the community in a southeasterly/northwesterly direction. Sixth Street carries traffic through the community and back onto Highway 99 from the highway-oriented commercial development located at the community's southerly freeway access. Sixth Street also affords access to abutting commercial and industrial properties for local traffic.

Burke Drive extends from Avenue 360 at the southerly edge of the planning area boundary to Avenue 368 at the northerly end of the community. It carries traffic generated by local industrial and residential development and affords access to abutting commercial and industrial properties.

All other streets and roads in the community's planning area function essentially as local streets, carrying only traffic accessing abutting urban and rural properties. Canal Street, at the northeastern end of the community, serves the Traver School, which is just northeast of its intersection with Merritt Drive.

2 Sound and the Human Ear

The amplitude of a sound determines its loudness. Loudness of sound increases and decreases with increasing and decreasing amplitude. Sound pressure amplitude is measured in units of micro-Newton per square meter (N/m2), also called micro-Pascal (µPa). One µPa is approximately one-hundred billionth (0.00000000001) of normal atmospheric pressure. The pressure of a very loud sound may be 200 million µPa, or 10 million times the pressure of the weakest audible sound (20 µPa). Because expressing sound levels in terms of µPa would be very cumbersome, sound pressure level (SPL) is used instead to describe in logarithmic units the ratio of actual sound pressures to a reference pressure squared. These units are called bels, named after Alexander Graham Bell. To provide a finer resolution, a bel is subdivided into 10 decibels, abbreviated dB.

2.1 A-Weighted Decibels

Sound pressure level alone is not a reliable indicator of loudness. The frequency, or pitch, of a sound also has a substantial effect on how humans will respond. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness or human response is determined by the characteristics of the human ear. Human hearing is limited not only in the range of audible frequencies but also in the way it perceives the SPL in that range. In general, the healthy human ear is most sensitive to sounds between 1,000 Hz and 5,000 Hz, and it perceives a sound within that range as being more intense than a sound of higher or lower frequency with the same magnitude. To approximate the frequency response of the human ear, a series of SPL adjustments is usually applied to the sound measured by a sound level meter. The adjustments (referred to as a weighting network) are frequency dependent. The A-scale weighting network approximates the frequency response of the average young ear when listening to most ordinary sounds. When people make judgments of the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have

been devised to address high noise levels or other special problems (e.g., B-scale, C-scale, D-scale), but these scales are rarely, if ever, used in conjunction with highway traffic noise. Noise levels for traffic noise reports are typically reported in terms of A-weighted dBAs. In environmental noise studies, A-weighted SPLs are commonly referred to as noise levels.

Unfortunately, there is no completely satisfactory way to measure the subjective effects of noise, or of the corresponding reactions of annoyance and dissatisfaction. This is primarily because of the wide variation in individual thresholds of annoyance, and habituation to noise over differing individual experiences with noise. Thus, an important way of determining a person's subjective reaction to a new noise is the comparison of it to the existing environment, referred to as the "ambient" environment. In general, the more a new noise exceeds the previously existing ambient noise level, the less acceptable the new noise will be judged by the hearers. With regard to increases in A-weighted noise level, knowledge of the following relationships will be helpful in understanding this report:

- ✓ Except in carefully controlled laboratory experiments, a change of 1 dB cannot be perceived by humans.
- ✓ Outside of the laboratory, a 3 dB change is considered a just-perceivable difference.
- ✓ A change in level of at least 5 dB is required before any noticeable change in community response would be expected.
- ✓ A 10 dB change is subjectively heard as approximately a doubling in loudness.

2.2 Sound Pressure Levels and Decibels

Because of the ability of the human ear to detect a wide range of sound pressure fluctuations, sound pressure levels are expressed in logarithmic units called decibels. The sound pressure level in decibels is calculated by taking the log of the ratio between the actual sound pressure and the reference sound pressure squared. The reference sound pressure is considered the absolute hearing threshold. In addition, because the human ear is not equally sensitive to all sound frequencies, a specific frequency-dependent rating scale was devised to relate noise to human sensitivity. A dBA scale performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. The basis for comparison is the faintest sound audible to the average ear at the frequency of maximum sensitivity. This dBA scale has been chosen by most authorities for purposes of environmental noise regulation. Typical indoor and outdoor noise levels are presented in Figure 3 (Common Environmental Sound Levels).

2.3 Sound, Noise, and Acoustics

Sound is a disturbance created by a moving or vibrating source in a gaseous or liquid medium or the elastic stage of a solid and is capable of being detected by the hearing organs. Sound may be thought of as the mechanical energy of a vibrating object transmitted by pressure waves through a medium to a hearing organ, such as a human ear. For traffic sound, the medium of concern is air. Noise is defined as sound that

is loud, unpleasant, unexpected, or undesired. Sound is actually a process that consists of three components: the sound source, the sound path, and the sound receiver. All three components must be present for sound to exist. Without a source to produce sound, there is no sound. Likewise, without a medium to transmit sound pressure waves, there is also no sound. Finally, sound must be received; a hearing organ, sensor, or object must be present to perceive, register, or be affected by sound or noise. In most situations, there are many different sound sources, paths, and receptors rather than just one of each. Acoustics is the field of science that deals with the production, propagation, reception, effects, and control of sound.

2.4 Frequency and Hertz

A continuous sound can be described by its frequency (pitch) and its amplitude (loudness). Frequency relates to the number of pressure oscillations per second. Low-frequency sounds are low in pitch, like the low notes on a piano, whereas high-frequency sounds are high in pitch, like the high notes on a piano. Frequency is expressed in terms of oscillations, or cycles, per second. Cycles per second are commonly referred to as Hertz (Hz). A frequency of 250 cycles per second is referred to as 250 Hz. High frequencies are sometimes more conveniently expressed in units of kilo-Hertz (kHz), or thousands of Hertz. The extreme range of frequencies that can be heard by the healthiest human ear spans from 16–20 Hz on the low end to about 20,000 Hz (or 20 kHz) on the high end.

2.5 Addition of Decibels

Because decibels are logarithmic units, sound pressure levels cannot be added or subtracted by ordinary arithmetic means. For example, if one automobile produces an SPL of 70 dBA as it passes an observer, two cars passing simultaneously would not produce 140 dBA; they would, in fact, combine to produce 73 dBA. When two sounds of equal SPL are combined, they will produce a combined SPL 3 dBA greater than the original individual SPL. In other words, sound energy must be doubled to produce a 3 dBA increase. If two sound levels differ by 10 dBA or more, the combined SPL is equal to the higher SPL; in other words, the lower sound level does not increase the higher sound level.

3 Characteristics of Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks, and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Noise generated by mobile sources typically attenuates (is reduced) at a rate between 3.0 and 4.5 dBA per doubling of distance. The rate depends on the ground surface and the number or type of objects between the noise source and the receiver. Hard and flat surfaces, such as concrete or asphalt, have an attenuation rate of 3.0 dBA per doubling of distance. Soft surfaces, such as uneven or vegetated terrain, have an attenuation rate of about 4.5 dBA per doubling of distance. Noise generated by stationary sources typically attenuates at a rate between 6.0 and about 7.5 dBA per doubling of distance. Sound levels can

be reduced by placing barriers between the noise source and the receiver. In general, barriers contribute to decreasing noise levels only when the structure breaks the "line of sight" between the source and the receiver. Buildings, concrete walls, and berms can all act as effective noise barriers. Wooden fences or broad areas of dense foliage can also reduce noise, but are less effective than solid barriers.

3.1 Noise Descriptors

Noise in the daily environment fluctuates over time. Some of the fluctuations are minor; some are substantial. Some noise levels occur in regular patterns; others are random. Some noise levels fluctuate rapidly, others slowly. Some noise levels vary widely; others are relatively constant. Various noise descriptors have been developed to describe time-varying noise levels. The following is a list of the noise descriptors most commonly used in traffic noise analysis:

- ✓ Equivalent Sound Level (Leq) - Leq represents an average of the sound energy occurring over a specified period. Leq is, in effect, the steady-state sound level that, in a stated period, would contain the same acoustical energy as the time-varying sound that actually occurs during the same period. The one-hour A-weighted equivalent sound level, Leq(h), is the energy average of the A-weighted sound levels occurring during a one-hour period and is the basis for the Noise Abatement Criteria (NAC) used by the California Department of Transportation (Caltrans) and the Federal Highway Administration (FHWA).
- ✓ Percentile-Exceeded Sound Level (Lx) - Lx represents the sound level exceeded for a given percentage of a specified period. For example, L10 is the sound level exceeded 10 percent of the time, and L90 is the sound level exceeded 90 percent of the time.
- ✓ Maximum Sound Level (Lmax) - Lmax is the highest instantaneous sound level measured during a specified period.

3.2 Sound Propagation

When sound propagates over a distance, it changes in both level and frequency content. The manner in which noise reduces with distance depends on the following factors:

- ✓ Geometric Spreading - Sound from a small, localized source (i.e., a point source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates (or drops off) at a rate of six dBA for each doubling of distance. Highway noise is not a single, stationary point source of sound. The movement of the vehicles on a highway makes the source of the sound appear to emanate from a line (i.e., a line source) rather than a point. This line source results in cylindrical spreading rather than the spherical spreading that results from a point source. The change in sound level from a line source is three dBA per doubling of distance.
- ✓ Ground Absorption - Most often, the noise path between the highway and the observer is very close to the ground. Noise attenuation from ground absorption and reflective wave canceling adds to the

attenuation associated with geometric spreading. Traditionally, the excess attenuation has also been expressed in terms of attenuation per doubling of distance. This approximation is done for simplification only; for distances of less than 60 m (200 ft), prediction results based on this scheme are sufficiently accurate. For acoustically hard sites (i.e., those sites with a reflective surface, such as a parking lot or a smooth body of water, between the source and the receiver), no excess ground attenuation is assumed. For acoustically absorptive or soft sites (i.e., those sites with an absorptive ground surface, such as soft dirt, grass, or scattered bushes and trees, between the source and the receiver), an excess ground attenuation value of 1.5 dBA per doubling of distance is normally assumed. When added to the geometric spreading, the excess ground attenuation results in an overall drop-off rate of 4.5 dBA per doubling of distance for a line source and 7.5 dBA per doubling of distance for a point source.

- ✓ Atmospheric Effects - Research by Caltrans and others has shown that atmospheric conditions can have a significant effect on noise levels within 60 m (200 ft) of a highway. Wind has been shown to be the most important meteorological factor within approximately 150 m (500 ft) of the source, whereas vertical air temperature gradients are more important for greater distances. Other factors such as air temperature, humidity, and turbulence also have significant effects. Receptors located downwind from a source can be exposed to increased noise levels relative to calm conditions, whereas locations upwind can have lower noise levels. Increased sound levels can also occur as a result of temperature inversion conditions (i.e., increasing temperature with elevation).
- ✓ Shielding by Natural and Human-Made Features - A large object or barrier in the path between a noise source and a receiver can substantially attenuate noise levels at the receiver. The amount of attenuation provided by this shielding depends on the size of the object and the frequency content of the noise source. Natural terrain features (e.g., hills and dense woods) and human-made features (e.g., buildings and walls) can substantially reduce noise levels. Walls are often constructed between a source and a receiver specifically to reduce noise. A barrier that breaks the line of sight between a source and a receiver will typically result in at least 5 dBA of noise reduction.

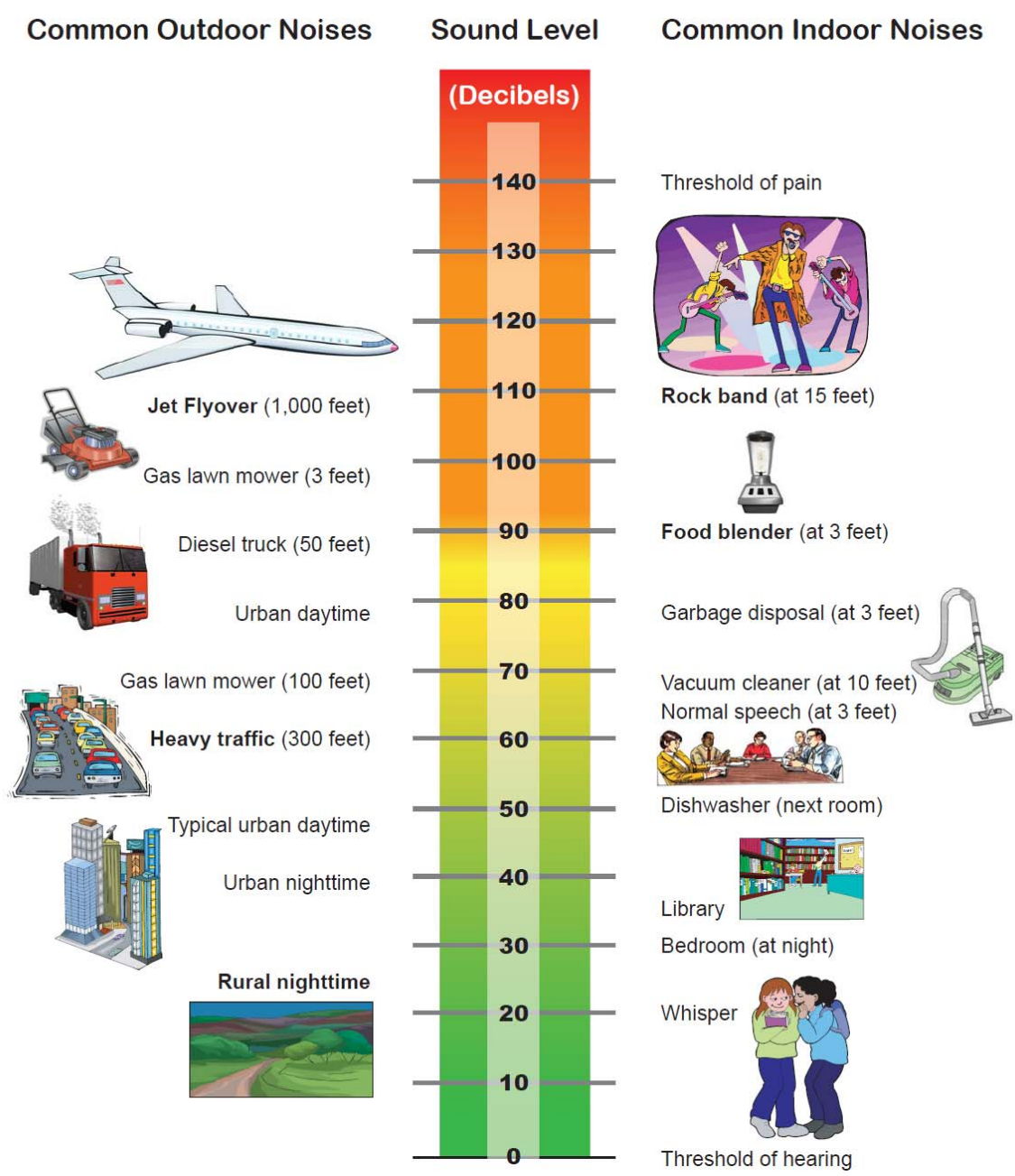

FIGURE 3

Common Environmental Sound Levels

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4 Methodology

When preparing a Noise Element, guidelines set by affected agencies must be followed. Acoustical terminology used for this Noise Element is documented in Appendix A. In analyzing noise levels, the FHWA Highway Traffic Noise Prediction methodology must be applied. Safety concerns must also be analyzed to determine the need for appropriate mitigation resulting from increased noise due to increased traffic in the community area and other evaluations such as the need for noise barriers and other noise abatement improvements. Unless otherwise stated, all sound levels reported are in A-weighted decibels (dBA). A-weighting de-emphasizes the very low and very high frequencies of sound in a manner similar to the human ear. Most community noise standards use A-weighting, as it provides a high degree of correlation with human annoyance and health effects.

4.1 California Government Code

The content of the Noise Element and the methods used in its preparation have been determined by the requirements of Section 65302 (f) of the California Government Code and by the Guidelines for the Preparation and Content of Noise Elements of the General Plan adopted and published by the California Office of Noise Control (ONC) in 1976. The ONC Guidelines require that major noise sources be quantified by preparing generalized noise exposure contours for current and projected conditions. The Noise Element shall be used as a guide for establishing land use patterns that minimize noise impacts on the Community and shall include measures and solutions to address existing and foreseeable noise conflicts.

4.2 Tulare County

The Health and Safety section of Tulare County's 2030 General Plan serves as the primary policy statement for the County for implementing policies to maintain and improve the noise environment in the Tulare County sphere of influence. The Health and Safety section presents Goals and Objectives relative to planning for the noise environment within the County. Future noise/land use incompatibilities can be avoided or reduced with implementation of Tulare County's noise criteria and standards. Tulare County realizes that it may not always be possible to avoid constructing noise sensitive developments in existing noisy areas and therefore provides noise reduction strategies to be implemented in situations with potential noise/land use conflicts.

Table 1 shows Tulare County's Land Use Compatibility for Community Noise Environments. During preparation of this Noise Element, conformance to the Land Use Compatibility for Community Noise Environments is used to evaluate potential noise impacts.

4.3 Study Methods and Procedures

Site Selection

Developed and undeveloped land uses in the community of Traver were identified through land use maps, aerial photography, and site inspection. Within each land use category, sensitive receptors were then identified. Land uses in the community of Traver include agricultural, single-family residences, retail, and industrial uses. The generalized land use data and location of particular sensitive receptors and existing traffic volumes were the basis for the selection of the noise monitoring and analysis sites. One (1) field receptor location was measured in the field and represents a residential land use adjacent to Merritt Drive. Traver is a small community with a population of just of 700 and Merritt Drive, which runs through the heart of the community, provides access to all of the local roads. This field receptor location is shown in Figure 4 and described in Table 2. Figure 4 also shows additional modeled receptor locations that reflect locations of other sensitive receptor locations. Modeled receptors 2 - 5 represent outdoor areas of residential, industrial, and school land uses.

Noise Level Measurement Procedure

Existing noise levels in the community of Traver were sampled in the afternoon because traffic counts conducted in the study area show a greater volume of traffic in the PM peak hour than the AM peak hour. All measurements were made using an Extech Type 2 sound level meter datalogger.

The following measurement procedure was utilized:

- ✓ Calibrate sound level meter.
- ✓ Set up sound level meter at a height of 1.5 m (5 ft).
- ✓ Commence noise monitoring.
- ✓ Collect site-specific data such as date, time, direction of traffic, and distance from sound level meter to the center of the roadway.
- ✓ Count passing vehicles for a period of 15 minutes. Vehicles were split into three categories: Heavy Trucks, Medium Trucks, and Automobiles.
- ✓ Stop measurement after 15 minutes.

TABLE 1

Tulare County Land Use Compatibility for Community Noise Environments

Land Use Category	Community Noise Exposure-L_{dn} or CNEL (dB)						
	50	55	60	65	70	75	80
Residential - Low Density Single Family, Duplex, Mobile Homes							
Residential - Multi-Family							
Transient Lodging - Motels, Hotels							
Schools, Libraries, Churches, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Sports Arenas, Outdoor Spectator Sports							
Playgrounds, Neighborhood Parks							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing, Utilities, Agriculture							

Normally Acceptable	Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Conditionally Acceptable	New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air
Normally Unacceptable	New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Clearly Unacceptable	New construction or development generally should not be undertaken.

Source: Tulare County General Plan

TABLE 2
Receptor Locations

Receptor I.D. No.	Location	Type of Development
1	Residence. Approximately 60 feet from Merritt Drive Centerline	Residential
2	Residence/Retail Building. Approximately 60 feet from Merritt Drive Centerline	Residential/ Retail
3	Industrial. Approximately 60 feet from 6th Street Centerline	Industrial
4	Industrial. Approximately 60 feet from 6th Street Centerline	Industrial
5	School Play Area. Approximately 160 feet from Merritt Drive Centerline	School

5 Existing Noise Conditions

Existing traffic noise levels are established based on previously collected traffic data and using the Traffic Noise Model (TNM) Version 2.5. TNM 2.5 is an FHWA Traffic Noise Prediction Program. Once existing levels are established, future levels, based on expected traffic growth, are calculated and compared to both the existing noise level and the maximum allowable noise exposure to noise generation sources as described in Tulare County's General Plan. Referencing Table 1, Tulare County's criteria shows that mitigation must be considered when the exterior noise exposure level of 60 Ldn/CNEL for single family residential and exterior noise exposure level of 65 to 70 Ldn/CNEL for multi-family, transient lodging, hospitals, churches, schools, business commercial, and meeting halls has been exceeded. Levels reported in this section are in terms of A-weighted levels.

Existing traffic noise levels were evaluated using TNM 2.5. Traffic volumes collected from the circulation element completed for the Traver Community Plan and average vehicle speeds along Merritt Drive and 6th Street were entered into the model to estimate noise levels at various land uses in the Traver Community. In order to calibrate the TNM 2.5 model, the existing counts (expanded to one hour), lane geometry, and any other pertinent existing conditions were added to the model. The noise level measurements taken in the Traver area were then compared to the noise levels computed by the model. The difference between the measured and modeled noise levels, referred to as the "K constant", is then added to the modeled receptors for the Existing calculated noise levels to obtain the estimated noise levels for the 4 additional modeled receptors.

To assess the traffic noise on sensitive receptors in the community of Traver, the first step is to determine the baseline or the existing noise condition. The second is to then compare the baseline to future level results, based on expected traffic growth, and Tulare County's Land Use Compatibility for Community Noise Environments.

As shown in Table 3, the peak hour sound level measured at receptor 1 is 52.7 Leq (h) dBA. When it comes to noise levels, generally the Ldn is determined to be within +/- 2 dBA of the peak hour Leq under normal traffic conditions based upon Caltrans' Traffic Analysis Noise Protocol. Caltrans' Technical Noise Supplement includes methodology for the purpose of converting peak hour Leq to Ldn (See Appendices). Table 3 also includes the calculated Ldn based on the peak hour Leq measured at receptor 1. The estimated peak hour sound level and Ldn for the 4 additional modeled receptors is also provided in Table 3. Results of the analysis show that noise levels at all of the modeled receptors do not exceed Tulare County's Land Use Compatibility for Community Noise Environments.

Table 4 shows the existing traffic noise exposure levels at a setback of 60 feet from the roadway centerline and the approximate distances from the roadway centerline necessary to achieve 60 Ldn dB.

TABLE 3
Existing Noise Levels

Receptor I.D. No.	Location	Type of Development	Existing Noise Level Leq(h) dBA	Existing Noise Level Ldn dB
1	Residence. Approximately 60 feet from Merritt Drive Centerline	Residential	52.7	52.6
2	Residence/Retail Building. Approximately 60 feet from Merritt Drive Centerline	Residential/ Retail	52.5	52.4
3	Industrial. Approximately 60 feet from 6th Street Centerline	Industrial	43.5	43.4
4	Industrial. Approximately 60 feet from 6th Street Centerline	Industrial	49.9	49.8
5	School Play Area. Approximately 160 feet from Merritt Drive Centerline	School	43.2	43.1

TABLE 4
Existing Noise Levels for Roadway Segments

Roadway	Segment	Existing Noise Level Leq(h) dBA @ 60' Fom Roadway Centerlines	Distance (Feet) to 60 Ldn dB from Roadway Centerline
Merritt Drive	Between 6th Street and Canal Drive	52.7	26
6th Street	Between Avenue 368 and Merritt Drive	43.5	15
6th Street	South of Merritt Drive	49.9	20

6 Future Year Conditions

The noise impacts to the Traver community were analyzed considering future traffic conditions in the year 2030. The levels of traffic expected in 2030 relate to the cumulative effect of traffic increases resulting from the implementation of the General Plan of local agencies. Traffic conditions in the Year 2030 were estimated using the Tulare County Association of Governments (TCAG) regional travel model.

Traffic volumes, truck mix, and vehicle speeds were used as inputs to the model for the Future Year 2030 scenario. Traffic volumes and truck mix were determined by the Circulation Element prepared for the Traver Community Plan. Table 5 shows the predicted noise levels at the 5 sensitive receptors evaluated in this noise element. Results of the analysis show that none of the sensitive receptors will exceed Tulare County's Land Use Compatibility for Community Noise Environments for the Future Year 2030 scenario.

Table 6 shows the Future Year 2030 traffic noise exposure levels at a setback of 60 feet from the roadway centerline and the distances from the roadway centerline necessary to achieve 60 Leq (h) dBA.

4.2 Union Pacific Railroad Noise

The Union Pacific Railroad (UPR) operates 3,267 miles of track in California. The UPR serves the rich agricultural central valley, the Port of Oakland and the San Francisco Bay area, as well as the Los Angeles metropolitan area with its two major ports at Los Angeles and Long Beach. The I-5 and Hwy 99 corridors offer the most efficient north-south transportation service to freight customers in all three Pacific Coast states.

The UPR runs adjacent to SR 99 and the industrial land uses in the community of Traver. UPR's current operations at the Merritt Drive crossing consists of approximately 19 train movements per day based on the United State Department of Transportation crossing inventory. The typical speed of the trains over the crossing ranges from 20 to 70 mph. Train operators are required to sound the warning horn when approaching within approximately 1,000 feet of a grade crossing. As a result, train noise levels are higher

at locations near grade crossings, such as the crossing at Merritt Drive. It is estimated that noise level's from train passby's (with warning horn) at approximately 175 feet from the tracks range from 94 – 102 dB's.

TABLE 5
Traffic Noise Impacts for the Future Year 2030 Scenario

Receptor I.D. No.	Existing Noise Level Ldn dB	Future Year 2030 Noise Level Ldn dB	Noise Increase (+) or Decrease (-)[1]	Tulare County Noise Standard dBA Ldn	Impact
1	52.6	52.6	0.0	60.0	None
2	52.4	52.4	0.0	60.0	None
3	43.4	43.4	0.0	75.0	None
4	49.8	49.8	0.0	75.0	None
5	43.1	43.1	0.0	70.0	None

TABLE 6
Roadway Segment Noise Levels for the Future Year 2030 Scenario

Roadway	Segment	Future Year 2030	
		Noise Level Leq(h) dBA @ 60' Fom Roadway Centerlines	Distance (Feet) to 60 Ldn dB from Roadway Centerline
Merritt Drive	Between 6th Street and Canal Drive	52.7	26
6th Street	Between Avenue 368 and Merritt Drive	43.5	15
6th Street	South of Merritt Drive	49.9	20

7 Goals and Policies

The intent of the Traver Community Noise Element is to provide a policy framework for addressing potential noise impacts encountered in the planning process. The goals and policies outline below are consistent with Tulare County policies.

Goal 1: Protect the citizens of Tulare County from the harmful effects of exposure to excessive noise.

Policies and Standards:

1. Areas within the Traver Community shall be designated as noise-impacted if exposed to existing or projected future noise levels at the exterior of buildings which exceed 60 dB Ldn (or CNEL).

2. New development of residential or other noise-sensitive land uses which require discretionary approval under the Tulare County Zoning Ordinance of the Tulare County Subdivision Ordinance (e.g. use permits, zone changes, subdivision maps, parcel maps) will not be permitted in noise-impacted areas unless effective mitigation measures are incorporated into the specific design of such projects to reduce noise levels to 60 dB Ldn (or CNEL) or less within outdoor activity areas and 45 dB Ldn (or CNEL) or less within interior living spaces. Where it is not possible to reduce exterior noise level of up to reduce exterior noise levels within outdoor activity areas to 60 dB Ldn (or CNEL) or less after the practical application of the best available noise reduction technology, an exterior noise level of up to 65 dB Ldn (or CNEL) will be allowed. Under no circumstances will an interior noise level exceeding 45 dB Ldn be allowed with the windows and doors closed. It should be noted that in instances where the windows and doors must remain closed to achieve the required acoustical isolation, mechanical ventilation or air conditioning must be provided.

3. Noise level criteria applied to land uses other than residential or other noise-sensitive uses shall be consistent with the recommendations of the California Office of Noise Control. Tulare County shall enforce the State Noise Insulation Standards (California Administrative Code, Title 24) and Chapter 35 of the Uniform Building Code (UBC). Title 24 requires that interior noise levels not exceed 45 dB Ldn (or CNEL) with the windows and doors closed within new developments of multifamily dwellings, condominiums, hotels or motels. UBC Chapter 35 requires that common wall and floor/ceiling assemblies within multi-family dwellings comply with minimum standards concerning the transmission of airborne sound and structure-borne impact noise. Title 24 requires that conformance with the above-described standards be documented by the submission of an acoustical analysis whenever new multi-family dwellings, condominiums, hotels or motels are proposed for areas within the 60 dB Ldn (or CNEL) contour of a major noise source as determined by the local jurisdiction.

4. In conformance with the directives of State planning law, the County shall ensure that the Noise Element is consistent with and does not conflict with other elements of the Traver Community Plan.

Goal 2: Protect the economic base of Tulare County by preventing the encroachment of incompatible land uses near known noise-producing industries, railroads, airports and other sources.

Policies and Standards:

1. New development of industrial, commercial or other noise-generating land uses will not be permitted if resulting noise levels will exceed 60 dB Ldn (or CNEL) at the boundary of areas planned and zoned for residential or other noise-sensitive land uses, unless determined to be necessary to promote the public health, safety and welfare of the Traver Community.