

Chapter IV.

ENVIRONMENTAL HAZARDS

NOISE ELEMENT

PURPOSE

Noise represents a potential hazard to the Town's residents, business people and visitors. This Element is designed to consider the land use patterns of the Land Use Element in the context of the noise it will generate, and the ambient noise levels in Town. The proper attenuation of noise is particularly critical to assure that the noise environment is controlled as the Town grows. The Noise Element describes the current and future noise environment, identifies those areas where noise levels are expected to be unacceptable, and establishes policies and programs designed to reduce these noise levels in the long term.

BACKGROUND

California law governs the scope and content of Noise Elements. Government Code Section 65032(f) identifies the requirements for the evaluation of the noise environment in a community, while the California Environmental Quality Act (CEQA) allows the Town to establish standards to determine whether noise levels will have an effect on the Town's environment. In addition, the California Building Code establishes standards for acceptable noise levels inside new buildings. The Town implements these standards through its Building Department.

The Land Use and Circulation Elements have the most direct impact on the Noise Element. The distribution of land uses, and their relationship to noise sources, is critical to the quality of life of Apple Valley. Similarly, the number of vehicle trips generated on the Town's roadways will continue to be the single largest source of noise in the community for the long term.

Development in general, and urbanization in particular, typically lead to increased levels of noise in the environment. Excessive noise levels have the potential to contribute to temporary and permanent physical impairments including hearing loss, fatigue, stress, annoyance, and anxiety. In order to prevent noise levels from becoming excessive, standards can be adopted and implemented through this Element to establish maximum acceptable levels of noise for all land uses.

The noise environment also in Apple Valley is primarily affected by traffic on Town roadways, and by local airport operations associated with general aviation aircraft at the Apple Valley Airport.

Community Noise Assessment

Noise Rating Terminology

Noise levels are calculated on a logarithmic scale in decibels (dB), which is the unit of measurement that describes the amplitude, or strength, of sound. The measurements are weighted and added over a specified time period to reflect not only the magnitude of the sound, but also its

duration, frequency and time of occurrence. An increase of 10 decibels indicates a sound energy that is ten times greater, which would be perceived by the human ear as being twice as loud.

The most common unit for measuring noise levels is the A-weighted decibel (dBA) scale, which gives less weight to the very low and high frequency components of sound, as does the human ear, resulting in an accurate correlation to the subjective reactions to noise. The most common sounds measure between 40 dBA (very quiet) and 100 dBA (very loud). A rural night-time environment typically measures about 25 dBA, while a jet engine measures 105 dBA.

Due to the logarithmic nature of the decibel scale, doubling the sound energy of a noise source only increases the decibel rating by 3dBA. Therefore, if the noise generated by one car is 72 dB, another car next to it will only increase the noise level by 3 dB, to 75 dB. A sound must be nearly 10 dBA higher than another sound before the human ear perceives it as being twice as loud. An increase of 3 dB is barely perceptible to most people, and in many cases, an increase of 5 dB must occur for the listener to consider it readily perceptible. Noise control measures should reduce noise by 5 to 10 dBA in most circumstances to effectively lower the perceived sound.

Community Noise Equivalent Level (CNEL)

Section 46026 of the California Health and Safety Code established a model noise ordinance that can be used by local communities to establish standards for appropriate levels of noise for all types of land uses. The model uses the Community Noise Equivalent Level (CNEL), which averages noise levels on a 24 hour basis; the CNEL uses a weighted scale that acknowledges the more sensitive evening and nighttime periods. Because of the decrease in ambient noise levels during the evening and nighttime, sounds appear to be louder, and may be more noticeable as a result.

Town of Apple Valley Noise Ordinance

Section 9.73 of the Town of Apple Valley Development Code establishes community-wide noise standards and emphasizes the value of an acceptable noise environment. Section 9.73 sets forth regulations for noise measurement and monitoring, as well as citing special provisions, and exemptions to the ordinance. Section 9.73 is intended to regulate excessive noise from existing uses and their activities. Violations are defined as a nuisance, and procedures, remedies and penalties to which violators are subject are included. Section 9.73 also establishes standards for construction activities, which represent a temporary, but often disruptive noise source.

Types of Noise

Noise sources can be classified as either “line sources” (such as a busy street) or “point sources” (a commercial air compressor). A number of factors affect noise as it travels through the air, including temperature, wind speed and direction, hard and soft ground surfaces, and intervening vegetation and walls. “Soft site” conditions are those that occur over natural surfaces, such as earth and vegetation, while “hard site” conditions are represented by hard ground surfaces, such as asphalt, concrete, and stone. A noise reduction rate of 4.5 dBA per doubling of distance is typically observed in soft site conditions, while a reduction of 3.0 dBA typically occurs in hard site conditions. When considering noise generated by a roadway, these factors are particularly important insofar as they can mitigate or intensify the noise level.

Major Noise Sources in Apple Valley

Traffic Noise

The noise generated by vehicles on Town roadways is the most significant contributor to noise in Apple Valley. More heavily traveled roads generate the most noise, while local streets, which carry fewer cars, are generally quieter. The U.S. Interstate 15 (U.S. I-15) freeway is located along the northwestern Town limits. The primary thoroughfare through Apple Valley is State Route 18. Residential uses adjacent to, or in proximity to U.S. I-15 or State Route 18 are impacted by traffic noise. Schools and the hospital are also located on major roadways.

Traffic noise is also affected by the type of vehicle traveling on Town roads. The higher concentrations of heavy trucks on U. S. I-15, State Route 18, Bear Valley Road and Dale Evans Parkway result in higher noise levels in the areas surrounding these roadways. Similarly, truck traffic can significantly impact residential neighborhoods on arterial roadways. To assure that this impact is minimized, the Circulation Element includes a plan of truck routes that limits the intrusion of truck traffic into residential areas.

Aircraft Noise

Aircraft noise associated with the operation of the Apple Valley Airport, which is owned and operated by the County of San Bernardino, is limited to general aviation aircraft. The airport currently (2008) operates an average of about 103 takeoffs or landings daily, or 38,000 flight operations a year. The 60 dBA noise contour for the airport has been identified as occurring within the Airport's property, and noise levels on surrounding lands are not significantly affected. While aircraft overflights may be heard within the Town, aircraft noise does not create significant noise impacts outside the immediate area.

Rail Noise

While train noise is intermittent, train pass-bys generate high noise levels for short periods of time. A single-track rail line occurs on the north side of Quarry Road for the exclusive use of the Mojave Northern Mining Quarry, which operates trains on the lines about 2 to 4 times per week. An additional single-track rail line is located within the southern portion of Town and extends into the southerly Sphere of Influence area. This rail line is used by quarry operations in San Bernardino County, and generally runs along Tussing Ranch Road, following Kiowa Road south and Rock Springs Road west. Freight trains run on this line about twice a week.

Industrial and Commercial Noise

Industrial and commercial uses can have a varying degree of impact to adjacent uses. Noises from industrial and commercial uses are typically associated with mechanical equipment, generators, truck deliveries, loading/unloading docks, speakerphones, trash compactors and air conditioning units. The level of noise that mechanical equipment generates can be effectively attenuated through screens and baffling, as well as the orientation of the equipment as it relates to more noise-sensitive land uses in the vicinity.

Sensitive Receptors

Sensitive receptors are those land uses that are particularly sensitive to noise intrusion, including residences, schools, libraries, churches, hospitals, nursing homes, and other health care facilities. Day care centers, parks, and other outdoor recreation areas may also be considered sensitive receptors. Moderately sensitive land uses include cemeteries, golf courses, hotels and motels, and dormitories.

Potential problems occur when residential areas are located in close proximity to industrial and commercial uses. The nearest noise sensitive areas potentially impacted by industrial uses are located adjacent to the North Apple Valley Industrial Specific Plan boundary, in the existing residential areas south of Waalew Road and Central Avenue. Intense commercial uses are also located along State Route 18 and Bear Valley Road, and noise from these uses can impact adjacent residential areas.

Existing Noise Environment

The primary noise source in the Town of Apple Valley is motor vehicle traffic. Noise from railroads, which run to the west, north and south of the Town, have a limited impact on the noise environment immediately surrounding them. Aircraft noise from the Apple Valley Airport contributes to the noise environment in North Apple Valley. Other noise sources include mechanical equipment serving commercial and industrial lands, household appliances and garden maintenance equipment, as well as construction activities and equipment.

In order to establish a baseline for the Town's noise environment, the noise impact analysis⁴ prepared for this General Plan included two types of noise monitoring. Four sites were monitored for a 24-hour period, while short term monitoring was performed at 30 sites. The monitoring locations are depicted in Exhibit IV-5. Long-term and short-term monitoring results are depicted in Tables IV-2 and IV-3, respectively. As shown in these tables, the existing residential neighborhoods adjacent to State Route 18, Bear Valley Road, Central Road, Waalew Road and Corwin Road currently experience exterior noise levels approaching 65 dBA CNEL.

⁴ Town of Apple Valley Noise Element Update, Technical Study; Urban Crossroads, November 2008

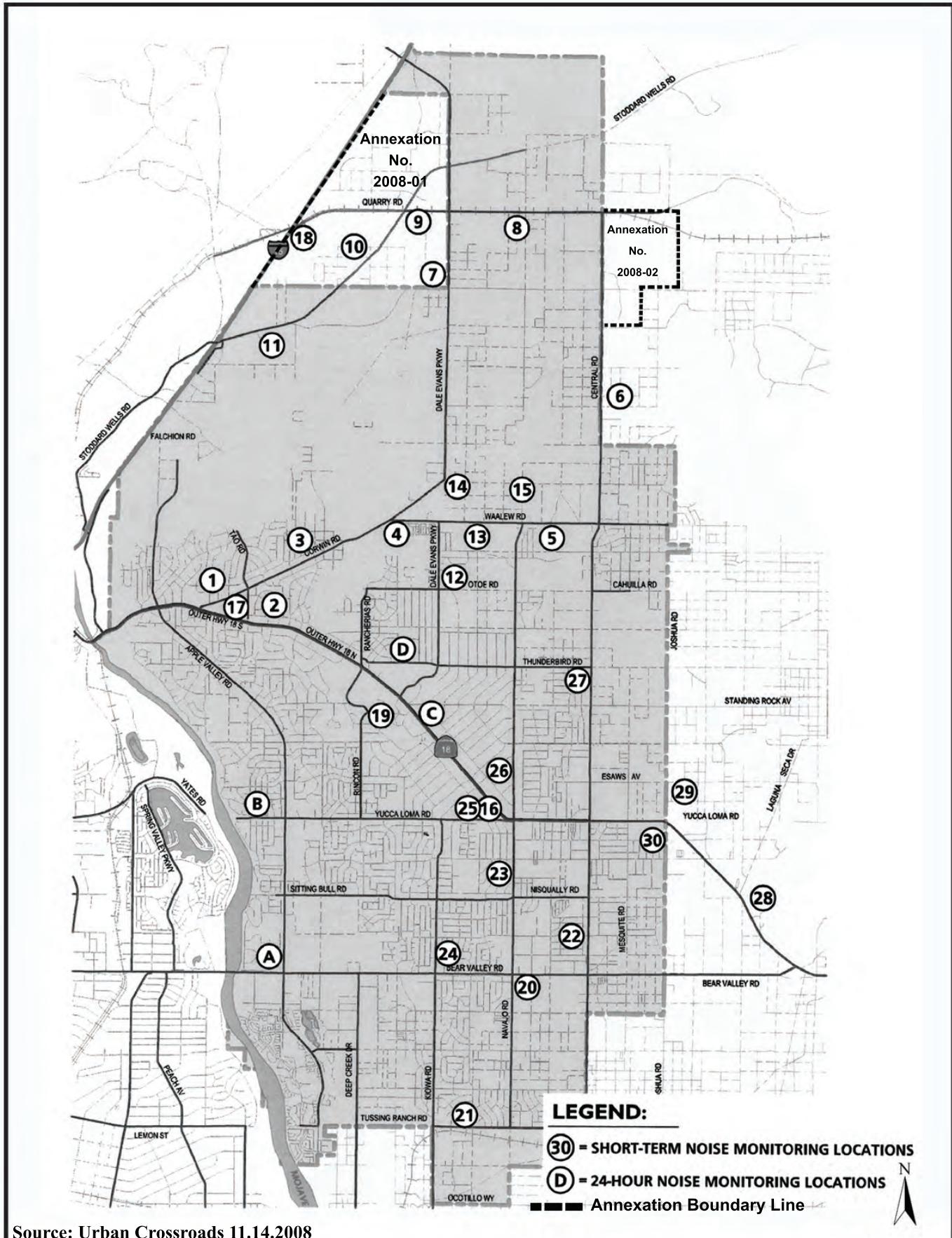
Table IV-2
Existing (Ambient) 24-hour Noise Level Measurements¹

OBSERVER LOCATION²	DESCRIPTION	HOURLY NOISE LEVELS (1h-Leq)		24- HOUR NOISE LEVELS (CNEL)
		MINIMUM	MAXIMUM	
A	Located in a residential area behind a 5-foot high sound wall.	49.1	57.8	60.5
B	Located in a residential area near the intersection of Apple Valley Rd. and Yucca Loma Rd.	58.1	66.6	69.7
C	Located in a residential area approximately 200 feet north of the 18 Highway.	48.0	66.7	65.1
D	Located at the Vista Campana Middle School approximately 200 feet from Thunderbird Rd.	52.2	66.5	65.7

¹ Noise measurements taken by Urban Crossroads, Inc. on June 18 and 19, 2008.

² See Exhibit 5-A for the location of the monitoring sites, and Appendix C for Study Area Photos.

³ Taken with a Quest DL Type 2 noise dosimeter.



Source: Urban Crossroads 11.14.2008



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Planning & Research, Inc.

**Apple Valley General Plan
Noise Monitoring Locations
Apple Valley, California**

Exhibit

IV-5

Table IV-3
Existing (Ambient) Noise Level Measurements¹

OBSERVER LOCATION ²	DESCRIPTION	TIME OF MEASUREMENT	PRIMARY NOISE SOURCE	MEASURED NOISE LEVELS (Leq dBA)	CALCULATED NOISE LEVELS (Leq CNEL)
1	Located 50 feet from the road centerline by the Valley Crest Residential Care.	8:30 a.m.	traffic noise from Corwin Road	65.2	65.8
2	Located approximately 150 feet from the road centerline by the Corwin Park.	8:50 a.m.	traffic noise from Corwin Road	56.5	57.1
3	Located 50 feet from the road centerline in a residential area along Corwin Road south of Choco Road.	9:10 a.m.	traffic noise from Corwin Road	66.8	67.4
4	Located 50 feet from the road centerline in front of the Rancho Del Lago residential community near a 7-foot high masonry wall.	9:30 a.m.	traffic noise from Corwin Road	62.1	62.7
5	Located 50 feet from Waalew Road centerline in a single family frontyard across the Specific Plan area.	9:50 a.m.	traffic noise from Waalew Road.	63.2	63.8
6	Located 50 feet from Central Road near residential developments.	10:20 a.m.	traffic noise from Central Road.	62.5	63.1
7	Located approximately 100 feet from Dale Evans Parkway south of Johnson.	10:40 a.m.	traffic noise from Dale Evans Pkwy.	59.4	60.0
8	Located 50 feet from Quarry Road centerline east of Dale Evans Pkwy.	11:10 a.m.	traffic noise from Quarry Rd.	62.1	62.6
9	Located 30 feet from the centerline of Quarry Road in front of a house.	11:30 a.m.	traffic noise from Quarry Rd.	62.5	63.0
10	Located 50 feet from the centerline of Stoddard Wells Road by a single family home.	11:50 a.m.	traffic noise from Stoddard Wells Rd.	57.5	58.0
11	Located 50 feet from Stoddard Wells Road west of Johnson Road.	8:50 a.m.	traffic noise from Stoddard Wells Rd.	61.5	62.1
12	Located 50 feet from Dale Evans Parkway south of Waalew Rd. near single family homes.	9:20 a.m.	traffic noise from Dale Evans Pkwy.	58.4	59.0

Table IV-3
Existing (Ambient) Noise Level Measurements¹

OBSERVER LOCATION ²	DESCRIPTION	TIME OF MEASUREMENT	PRIMARY NOISE SOURCE	MEASURED NOISE LEVELS (Leq dBA)	CALCULATED NOISE LEVELS (Leq CNEL)
13	Located 100 feet from Waalew Rd. near a gas station east of Dale Evans Pkwy. south.	9:40 a.m.	traffic noise from Waalew Rd.	61.1	61.7
14	Located 50 feet from the centerline of Stoddard Wells Road by a single family home.	11:50 a.m.	traffic noise from Stoddard Wells Rd.	57.5	58.0
15	Located 50 feet from Stoddard Wells Road west of Johnson Road.	8:50 a.m.	traffic noise from Stoddard Wells Rd.	61.5	62.1
16	Located 50 feet from Dale Evans Parkway south of Waalew Rd. near single family homes.	9:20 a.m.	traffic noise from Dale Evans Pkwy.	58.4	59.0
17	Located 100 feet from Waalew Rd. near a gas station east of Dale Evans Pkwy. south.	9:40 a.m.	traffic noise from Waalew Rd.	61.1	61.7
18	Located 100 feet from Dale Evans Pkwy. approximately 500 feet from Waalew Rd.	10:00 a.m.	traffic noise from Dale Evans Pkwy.	53.9	54.5
19	Located 400 feet from Waalew Rd. near a single family home east of Dale Evans Pkwy.	10:20 a.m.	traffic noise from Waalew Rd.	47.6	48.2
20	Located at the Apple Valley High School approximately 100 feet from Bear Valley Rd.	2:00 p.m.	Traffic noise from Bear Valley Rd.	64.1	69.2
21	Located in a residential area approximately 100 feet north of Tussing Ranch Rd.	2:20 p.m.	Traffic noise from Tussing Ranch Rd.	57.1	62.2
22	Located in a residential area approximately 100 feet west of Central Rd.	2:50 p.m.	Traffic noise from Central Rd.	57.0	61.3
23	Located at the Apple Valley Middle School approximately 100 feet east of Navajo Rd.	3:00 p.m.	Traffic noise from Navajo Rd.	62.2	66.5
24	Located in a residential area approximately 100 feet west of Kiowa Rd.	3:20 p.m.	Traffic noise from Kiowa Rd.	59.9	64.2
25	Located in a residential area approximately 40 feet from Yucca Loma Rd.	1:40 p.m.	Traffic noise from Yucca Loma Rd.	59.8	64.1
26	Located in a residential area approximately 100 feet from State Route 18.	1:20 p.m.	Traffic noise from State Route 18	53.4	58.3

Table IV-3
Existing (Ambient) Noise Level Measurements¹

OBSERVER LOCATION ²	DESCRIPTION	TIME OF MEASUREMENT	PRIMARY NOISE SOURCE	MEASURED NOISE LEVELS (Leq dBA)	CALCULATED NOISE LEVELS (Leq CNEL)
27	Located in a residential area approximately 150 feet from Central Rd.	11:50 p.m.	Traffic noise from Central Rd.	67.1	71.4
28	Located at the Horseman's Center Park.	12:10 p.m.	Traffic noise from State Route 18.	53.4	57.7
29	Located at a park by the swimming pool approximately 150 feet from Dale Evans Pkwy.	11:10 a.m.	Traffic noise from Dale Evans Pkwy.	59.6	65.0
30	Located in a residential area approximately 100 feet west of Joshua Rd.	3:00 p.m.	Traffic noise from Joshua Rd.	54.5	58.8

¹ All measurements were taken with a Larson Davis 824 Series Type 1 noise meter.

² See Exhibit 5-A for the location of the monitoring sites, and Appendix C for Study Area Photos.

³ Noise measurements 1 to 10 taken by Urban Crossroads, Inc. on March 24, 2006.

⁴ Noise measurements 11 to 16 taken by Urban Crossroads, Inc. on January 26, 2007.

⁵ Noise measurements 16, 17 and from 25 to 30 taken by Urban Crossroads, Inc. on May 20, 2008.

⁶ Noise measurements 18 to 24 taken by Urban Crossroads, Inc. on June 9, 2008.

The Community Noise and Land Use Compatibility Model

In the Town of Apple Valley, the applicable limit for outdoor noise levels in single-family residential areas is 50 dBA from 7 am to 10 pm, and 40 dBA from 10 pm to 7 am. (Ordinance 9.73.050).

The standard used for maximum outdoor noise levels in residential areas in California is a CNEL of 65 dBA. These noise impacts are characteristically “unmitigated” and represent the worst-case noise impact without any obstruction of the noise.

Table IV-4 below shows the CNEL ranges of allowable exterior ambient noise levels for various land uses at build out. The allowable noise levels increase as the sensitivity of the receptor decreases. Therefore, noise levels at a commercial shopping center, where people will congregate for short periods during the day, but are not present at night, can be higher than noise levels in residential neighborhoods.

The Town has consistently implemented the noise levels shown in Table IV-4 for a number of years.

Table IV-4
Land Use Compatibility for Community Noise Environments

Land Uses	CNEL (dBA)						
	50	55	60	65	70	75	80
Residential - Single Family Dwellings, Duplex, Mobile Homes	█	█					
Residential – Multiple Family	█	█	█	█	█	█	█
Transient Lodging: Hotels and Motels	█	█	█	█	█	█	█
School Classrooms, Libraries, Churches, Hospitals, Nursing Homes and Convalescent Hospitals	█	█	█	█	█	█	█
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	█	█	█	█	█	█	█

Source: California Department of Health Services, "Guidelines for the Preparation and Content of the Noise Element of the General Plan," 1990



Normally Acceptable: With no special noise reduction requirements assuming standard construction.



Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirement is made and needed noise insulation features included in the design



Normally Unacceptable: New construction is discouraged. If new construction 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 should generally not be undertaken.

Projected Future Noise Levels

Based the land use map and projected traffic increases resulting from build out of the General Plan, noise level estimates have been prepared, and are depicted in Table IV-5 below. The noise levels shown in the Table do not reflect any barrier that may currently occur on the roadway, such as walls or landscaping screens.

Table IV-5
General Plan Build Out Noise Contours

Road	Segment	dBA At 100 Feet	Distance To Contour (Feet)			
			CNEL 70 dBA CNEL	CNEL 65 dBA CNEL	CNEL 60 dBA CNEL	CNEL 55 dBA CNEL
Alembic Street	between Norco Street & Saugus Road	72.6	149	321	692	1,492
Alembic Street	between Saugus Road & Stoddard Wells Road	73.1	161	348	749	1,613
Alembic Street	n/o High Desert Corridor	75.3	227	488	1,051	2,265
Alembic Street	s/o High Desert Corridor	73.2	163	352	758	1,632
Apple Valley Road	between Bear Valley Road & Tussing Ranch Road	71.8	131	282	607	1,308
Apple Valley Road	between Sitting Bull Road & Bear Valley Road	73.9	181	391	842	1,815
Apple Valley Road	between SR-18 & Yucca Loma Road	71.3	122	263	567	1,221
Apple Valley Road	between Yucca Loma Road & Sitting Bull Road	73.5	171	369	795	1,713
Apple Valley Road	n/o SR-18	69.4	91	196	422	910
Bear Valley Road	between Apple Valley Road & Deep Creek Drive	74.3	193	416	896	1,931
Bear Valley Road	between Central Road & SR-18	69.7	95	205	442	952
Bear Valley Road	between Deep Creek Drive & Kiowa Road	74.1	188	405	872	1,880
Bear Valley Road	between Kiowa Road & Navajo Road	72.8	153	330	711	1,533
Bear Valley Road	between Navajo Road & Central Road	71.6	128	275	593	1,279
Bear Valley Road	w/o Apple Valley Road	75.2	222	478	1,030	2,220
Central Road	between Bear Valley Road & Tussing Ranch Road	68.9	85	183	394	848
Central Road	between Nisqually Road & Bear Valley Road	71.4	125	268	578	1,245
Central Road	between SR-18 & Nisqually Road	71.8	131	283	610	1,314
Central Road	between Thunderbird Road & SR-18	72.3	143	308	664	1,430
Central Road	between Waalew Road & Thunderbird Road	73.8	180	387	834	1,797
Central Road	n/o Waalew Road	72.9	155	334	720	1,552
Central Road	n/o Lafayette Street	70.8	112	242	522	1,124
Choco Road	between Norco Street & Saugus Road	69.7	96	207	446	960
Corwin Road	between SR-18 & Tao Road	71.4	124	267	575	1,238
Corwin Road	between Tao Road & Waalew Road	70.5	108	233	502	1,081

Table IV-5
General Plan Build Out Noise Contours

Road	Segment	dBA CNEL At 100 Feet	Distance To Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Corwin Road	between Waalew Road & Dale Evans Parkway	70.2	103	222	477	1,029
Corwin Road	between Dale Evans Parkway & Dakota Road	72.1	138	297	640	1,379
Dachshund Avenue	n/o Fresno Road	67.7	70	151	326	702
Dakota Road	s/o Fresno Road	71.1	118	255	550	1,184
Dale Evans Parkway	between Corwin Road & Waalew Road	73.6	174	374	806	1,736
Dale Evans Parkway	between Thunderbird Road & SR-18	70.4	106	228	492	1,059
Dale Evans Parkway	between Waalew Road & Thunderbird Road	72.1	139	299	645	1,389
Dale Evans Parkway	n/o Fresno Road	74.2	191	411	885	1,907
Dale Evans Parkway	s/o I-15 Freeway	74.2	191	412	889	1,914
Dale Evans Parkway	between High Desert Corridor & Corwin Road	75.1	219	472	1,017	2,190
Dale Evans Parkway	between High Desert Corridor & Norco Street	74.8	210	452	974	2,098
Dale Evans Parkway	s/o Quarry Road	74.1	187	402	866	1,866
Deep Creek Drive	between Bear Valley Road & Tussing Ranch Road	63.9	RW	85	183	394
Deep Creek Drive	s/o of Rock Springs Road	59.0	RW	RW	86	186
Falchion Road	between Apple Valley Road & Pauma Street	71.1	119	257	554	1,193
Falchion Road	between Pauma Street & Alembic Street	71.3	123	265	571	1,230
Falchion Road	w/o Apple Valley Road	68.2	76	163	352	759
Falchion Road	e/o Alembic Street	70.3	104	224	483	1,041
Fresno Road	between Dale Evans Parkway & Navajo Road	69.6	95	204	440	948
High Desert Corridor	between Alembic Street & I-15 freeway	79.8	451	972	2,094	4,510
High Desert Corridor	between Central Road & Waalew Road	76.4	268	577	1,243	2,677
High Desert Corridor	between Dale Evans Parkway & Alembic Street	79.1	405	872	1,878	4,046
High Desert Corridor	between Standing Rock Avenue & Central Road	73.6	174	374	806	1,736
High Desert Corridor	between Waalew Road & Dale Evans Parkway	78.0	341	735	1,583	3,411
Kiowa Road	between Bear Valley Road & Tussing Ranch Road	71.3	123	265	571	1,230

Table IV-5
General Plan Build Out Noise Contours

Road	Segment	dBA CNEL At 100 Feet	Distance To Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Kiowa Road	between Sitting Bull Road & Bear Valley Road	71.2	121	261	562	1,210
Kiowa Road	between SR-18 & Yucca Loma Road	68.2	76	163	351	756
Kiowa Road	between Yucca Loma Road & Sitting Bull Road	71.2	121	260	560	1,207
Lafayette Street	w/o Dale Evans Parkway	69.0	86	186	401	864
Navajo Road	between Bear Valley Road & Tussing Ranch Road	64.2	RW	89	192	413
Navajo Road	between Nisqually Road & Bear Valley Road	71.3	122	264	568	1,224
Navajo Road	between SR-18 & Nisqually Road	71.9	134	289	622	1,341
Navajo Road	between Thunderbird Road & SR-18	69.6	94	202	436	940
Navajo Road	s/o Lafayette Street	67.3	66	142	305	658
Norco Street	w/o Alembic Street	70.6	110	237	510	1,099
Outer Highway I-15 S	between Quarry Road & Dale Evans Parkway	68.5	80	172	371	800
Outer Highway I-15 S	between Stoddard Wells Road & Quarry Road	69.9	98	212	456	982
Pauma Street	n/o Falchion Road	69.7	95	205	441	950
Pauma Street	s/o Saugus Road	70.3	104	224	483	1,040
Quarry Road	between Dale Evans Parkway & Navajo Road	69.9	99	214	460	992
Quarry Road	between I-15 Frontage Road & Stoddard Wells Road	73.6	175	377	812	1,749
Quarry Road	e/o I-15 freeway	75.1	219	472	1,018	2,193
Quarry Road	e/o Navajo Road	68.7	82	176	380	819
Quarry Road	w/o Dale Evans Parkway	72.2	140	301	649	1,397
Rincon Road	between SR-18 & Yucca Loma Road	67.1	64	137	295	637
Saugus Road	w/o Pauma Street	69.1	88	189	407	877
Sitting Bull Road	between Apple Valley Road & Kiowa Road	66.3	57	122	262	565
SR-18	between Apple Valley Road & Corwin Road	74.0	184	397	856	1,845
SR-18	between Central Road & Joshua Road	67.7	71	152	328	706
SR-18	between Corwin Road & Tao Road	71.3	123	264	570	1,227
SR-18	between Dale Evans Parkway & Kiowa Road	72.8	153	330	711	1,533
SR-18	between Kiowa Road & Navajo Road	70.8	114	245	528	1,137
SR-18	between Navajo Road & Central Road	71.8	133	286	615	1,326
SR-18	between Rancherias Road & Dale Evans Parkway	72.1	139	299	644	1,387
SR-18	between Tao Road & Rancherias Road	72.8	154	333	716	1,543

Table IV-5
General Plan Build Out Noise Contours

Road	Segment	dBA CNEL At 100 Feet	Distance To Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
SR-18	w/o Apple Valley Road	75.5	234	504	1,085	2,339
Stoddard Wells Road	e/o I-15 Freeway	74.6	202	436	939	2,022
Stoddard Wells Road	between Quarry Road & Dale Evans Parkway	71.2	120	258	556	1,199
Stoddard Wells Road	e/o Alembic Street	74.4	196	423	912	1,965
Stoddard Wells Road	n/o Johnson Road	71.2	120	259	558	1,201
Stoddard Wells Road	w/o Navajo Road	67.5	68	146	314	677
Thunderbird Road	between Dale Evans Parkway & Navajo Road	66.8	61	131	283	610
Thunderbird Road	between Navajo Road & Central Road	68.8	83	178	383	826
Thunderbird Road	between Rancherias Road & Dale Evans Parkway	64.7	RW	96	207	446
Tussing Ranch Road	between Apple Valley Road & Kiowa Road	70.8	113	244	526	1,134
Tussing Ranch Road	between Kiowa Road & Navajo Road	70.2	103	223	480	1,033
Tussing Ranch Road	between Navajo Road & Central Road	69.7	95	205	442	952
Tussing Ranch Road	w/o Apple Valley Road	72.1	139	299	644	1,387
Waalew Road	between Corwin Road & Dale Evans Parkway	67.3	66	143	307	662
Waalew Road	e/o Dale Evans Parkway	67.6	69	148	320	688
Waalew Road	w/o Central Road	68.0	73	158	340	733
Yucca Loma Road	between Apple Valley Road & Rincon Road	72.5	148	319	686	1,479
Yucca Loma Road	between Kiowa Road & SR-18	71.8	133	286	616	1,327
Yucca Loma Road	between Rincon Road & Kiowa Road	71.1	118	253	546	1,175
Yucca Loma Road	w/o Apple Valley Road	73.3	166	357	769	1,656

¹ RW: Noise contour located within the road right of way.

Managing the Noise Environment

The noise environment in the Town of Apple Valley can be managed using a variety of strategies. For areas particularly impacted by noise, site planning and design standards, including the use of buffer zones such as building orientation, walls, and landscaping between sensitive land uses and roadways, can effectively lessen noise levels. As new noise-sensitive projects are developed adjacent to the roadways described above, noise impact analyses will be required to assure that all possible design features and mitigation measures are incorporated into the project to lower the noise levels and assure good quality of life for the residents.

Noise is most effectively reduced by barriers. A solid row of vegetation, 15 feet in height, will reduce noise levels by about 5 dBA, while a solid masonry wall can provide a reduction of 15 dBA. Barriers must be high enough to completely block the line of sight between the noise source and the receptor. As a result, a home located on a hillside above a noisy freeway will not benefit from a sound wall adjacent to that freeway. The placement of noise barriers, therefore, is critical to their being effective.

Airport Noise

The Apple Valley Airport currently generates a limited number of flight operations, associated with general aviation. In the future, however, the County intends to expand the Airport's capabilities to better serve the industrial and commercial land uses which will develop within the North Apple Valley Industrial Specific Plan. Even with expansion, however, the future noise contours are expected to remain within the airport boundary, and noise impacts on surrounding land uses, particularly the residential development to the east, are expected to be less than significant.

Bus Stops and Bus Routes

The Victor Valley Transit Authority (VVTA) operates bus routes within Apple Valley and regionally. Currently, bus routes travel on major arterial roadways. In the future, as bus service is expanded, bus routes may occur on collector or local streets. Bus noise is equivalent to heavy truck noise in terms of its impact on sensitive receptors. Therefore, as bus service is expanded in Town, care must be taken that noise levels for sensitive receptors are not significant, if the bus routes expand onto less traveled streets.

Truck Routes

Truck routes have been assigned in the Circulation Element. These routes generally occur near U.S. I-15, on State Route 18, and on major arterials and secondary roads, in commercial and industrial areas. Based on an analysis of existing and proposed truck routes, sensitive receptors should not be significantly impacted, and the long-range increases in noise should not affect residential neighborhoods.

Train Traffic

The two train lines that currently operate in the planning area are owned by third parties, over which the Town has no control. Although no plans for expansion are currently known, train traffic on both lines, in the northern and southern ends of Town, could expand in the future. The trains that pass on the Quarry Road line generate noise levels of about 49 dBA CNEL at a

distance of 100 feet from the rail line; the trains operating on the rail line in the southern end of Town generate a noise level of 44 dBA CNEL at a distance of 100 feet. These noise levels reflect engine noise, and do not reflect the additional noise intrusion of whistles and horns. Should train traffic increase in the future, the noise levels would also increase, and given the land use pattern in the area of both lines, could impact sensitive receptors.

FUTURE DIRECTIONS

The Land Use pattern in Town has been designed to place sensitive noise receptors as far as possible from noise sources. However, as the Town continues to develop, and noise levels increase, it will be increasingly difficult to buffer all uses from noise sources. Careful consideration of the placement of new residential projects, and the noise-creating components of commercial and industrial projects, will need to be reviewed by Town staff and elected and appointed officials to assure that compatibility is maintained. The Town's ongoing efforts to preserve a high quality of life for all its residents, present and future, must include the protection of a quiet noise environment.

Particular care will need to be taken when the Town considers development along the High Desert Corridor. This roadway does not currently exist, but when constructed has the potential to generate significant noise levels.

GOAL, POLICIES, AND PROGRAMS

Goal

Noise levels that are consistent with the Town's rural character and high quality of life.

Policy 1.A

The Town shall adhere to the standards of "Land Use Compatibility for Community Environments."

Program 1.A.1

The Town shall continue to maintain and enforce its Noise Control Ordinance.

Responsible Agency: Planning Division, Code Enforcement, Police Department

Schedule: Ongoing

Program 1.A.2

The Town shall include noise attenuation in its development review process when development projects are proposed. Design techniques that can alleviate noise include, but are not limited to building setbacks, the installation of wall and window insulation, sound walls and earthen berms

Responsible Agency: Planning Division, Planning Commission, Town Council

Schedule: Ongoing

Program 1.A.3

The mechanical equipment associated with commercial and industrial development, including compactors, trash disposal areas, heating and air conditioning systems shall be located as far as

practicable from adjacent sensitive receptors, or from lands designated on the Land Use map for noise sensitive uses.

Responsible Agency: Planning Division

Schedule: Continuous

Policy 1.B

New development projects shall assure that exterior noise levels in back yards and/or useable open space do not exceed 65 dBA CNEL, and that interior noise levels are consistent with the requirements of the Building Code.

Program 1.A.4

Minimum requirements for noise analyses for proposed development projects shall be developed and distributed to applicants early in the development review process. Studies shall evaluate project impacts and the effectiveness of proposed mitigation measures.

Responsible Agency: Planning Division

Schedule: 2009-2010

Program 1.A.5

Residential projects proposed adjacent to any street where the build out noise level at 50 feet from centerline is expected to exceed 65 dBA shall be required to submit a noise analysis in conjunction with entitlement applications.

Responsible Agency: Planning Division

Schedule: Ongoing

Program 1.A.6

Commercial and industrial projects proposed adjacent to sensitive receptors, or lands designated for sensitive receptors, including residential, school or hospital sites, shall be required to submit a noise analysis in conjunction with entitlement applications.

Responsible Agency: Planning Division

Schedule: Ongoing

Policy 1.B

Changes proposed to the Land Use Map shall include consideration of the potential noise impacts associated with such a change.

Policy 1.C

The Town shall assure low levels of traffic within neighborhoods by assigning truck routes to major roadways only.

Policy 1.D

The development review and environmental review process shall require all development proposals within the noise impact area of U.S. I-15, State Route 18, the High Desert Corridor or the railroads to mitigate both noise and vibration to acceptable levels through the preparation of focused studies.

Program 1.D.1

The Town shall closely coordinate with Caltrans to encourage the installation of sound walls, rubberized pavement and other noise attenuating measures on roadway improvements for which it is responsible, including U.S. I-15, State Route 18 and the future High Desert Corridor.

Responsible Agency: Town Engineer, Caltrans

Schedule: Ongoing

Policy 1.E

The Town shall coordinate with adjoining jurisdictions to ensure noise-compatible land uses across jurisdictional boundaries.

Policy 1.F

The Town shall ensure that flight paths and airport improvements adhere to all local, state and federal noise regulations.

Program 1.F.1

The Town shall maintain airport compatibility standards in its Development Code, route development applications to the County of San Bernardino, and coordinate with Airport staff to assure that land uses located adjacent to the airport are not significantly impacted by airport noise.

Responsible Agency: Planning Division

Schedule: Ongoing

Policy 1.G

The Town shall monitor bus route expansions to assure that any expansion on a collector or local street does not significantly impact the noise levels of adjacent sensitive receptors.

Program 1.G.1

The Town shall coordinate with VVTA to assure the orderly expansion of bus routes on major arterials and secondary roads, and limit access on collectors and local streets. Mitigation of noise impacts on collector and local streets shall be incorporated into bus stops if necessary.

Responsible Agency: Planning Division, Town Engineer

Schedule: Ongoing

Policy 1.H

The Town shall coordinate, to the greatest extent possible, with the owners of the two rail lines to assure that significant increases in train activity do not occur.