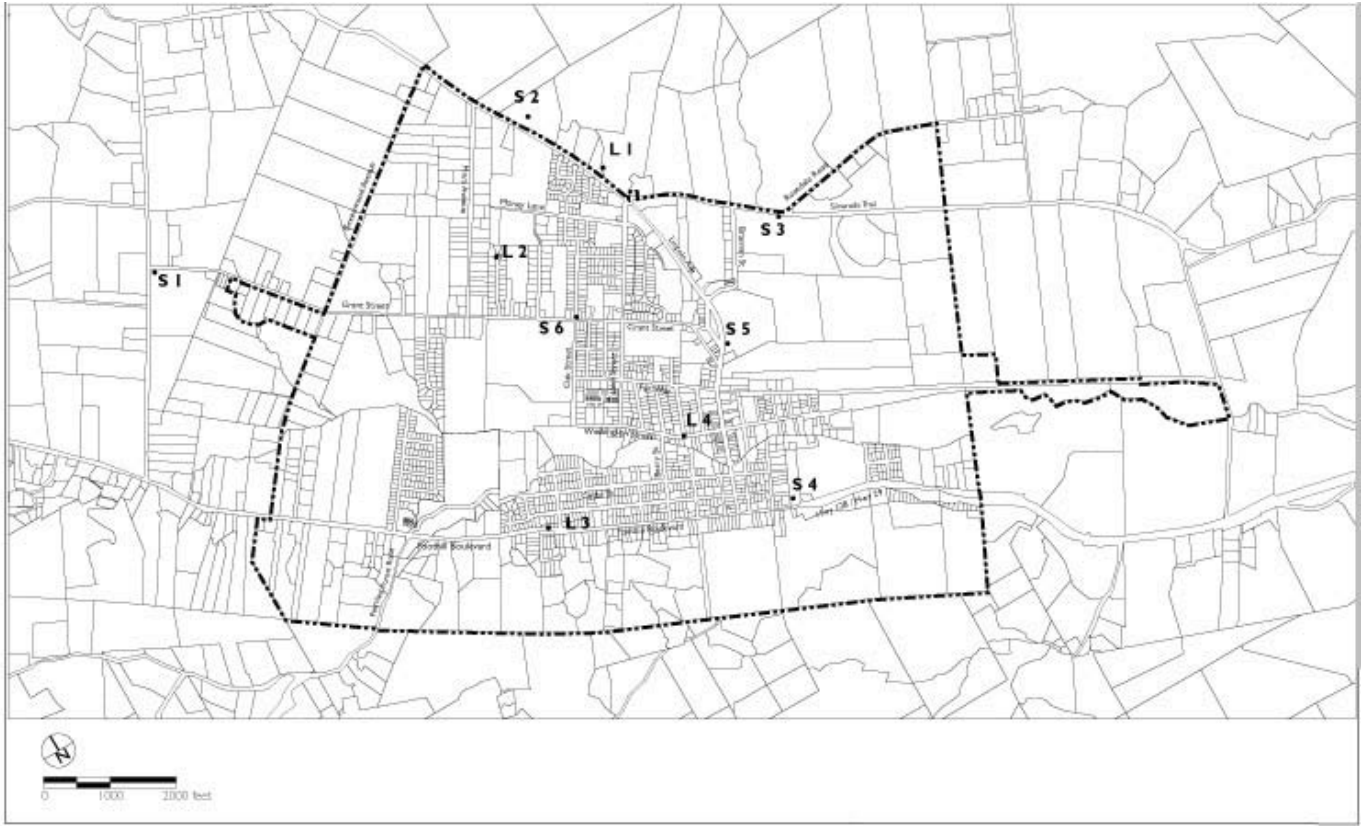


nearby vicinities include light industry, agricultural operations, agricultural wind turbines and sprint car races at the Napa County Fairgrounds. Noise from intermittent localized sources such as lawnmowers and leafblowers has also been expressed as a concern by some residents. In the past, the gliderport also contributed to community noise levels in Calistoga, but this facility closed in 1999. If the gliderport were to re-open, nearby residences could be affected by this noise source.

Noise Survey. A noise survey, consisting of both long-term and short-term noise measurements, was conducted in May 2000 to quantify representative noise levels throughout Calistoga. Measurement locations are mapped in Figure N-1. Long-term monitoring of noise levels was conducted at four locations over a period of approximately four days. A graphical representation of the results is contained in Figures N-2 and N-3. In addition, short-term samples were gathered at six other locations in Calistoga. During these short (10-minute) measurement periods, concurrent traffic counts were done to assist in calibrating the traffic noise model used in the development of noise contours. These measures have not been graphed because the time periods were brief. Instead, data is tabulated in Table N-3.

Table N-4 shows calculated noise contours along major roads in the City based on the noise survey results. Where no long-term measurements were conducted, noise levels were estimated based on standard engineering practices calibrated with the six short-term noise measurements. The noise contours represent roadside levels without the additional attenuation provided by roadside noise barriers, structures or topographical features.

The following paragraphs provide information about findings at each noise survey site. Unless the text states otherwise, measured noise levels are acceptable for all uses. The results show that the noise environment in Calistoga is generally one of a country town. As shown in Table N-4,



----- City Limit Line

L = 4 days measurement

S = 10 minute spot survey

FIGURE N-1

**NOISE MEASUREMENT LOCATIONS**

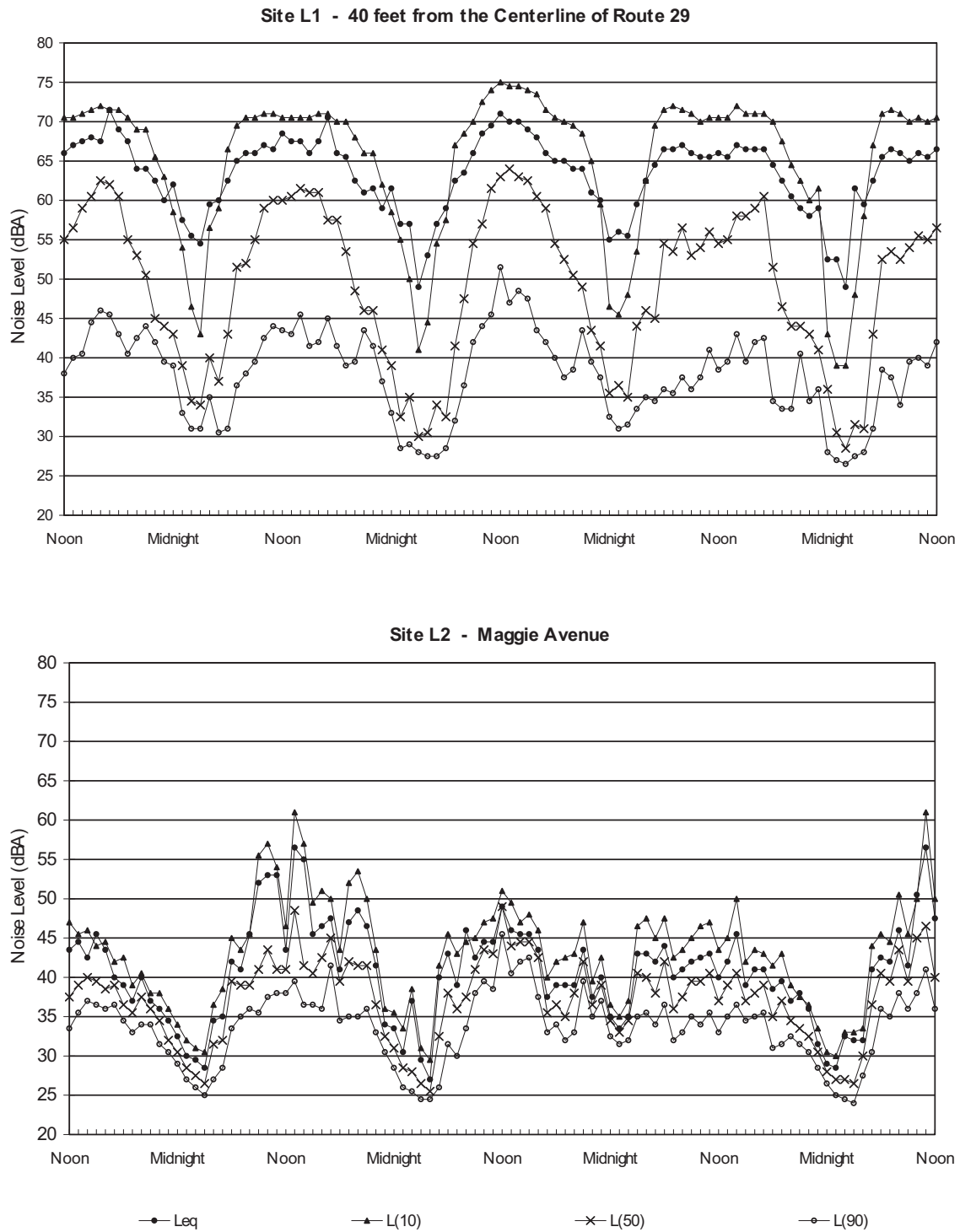
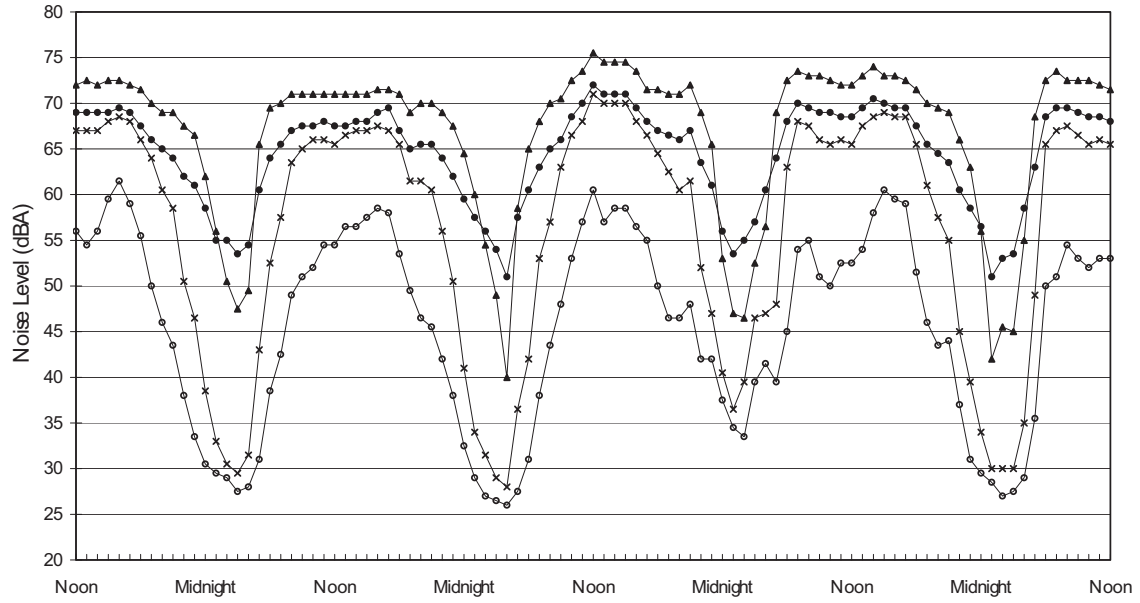


FIGURE N-2  
**HOURLY NOISE LEVEL MEASUREMENTS: HIGHWAY 29 AND MAGGIE AVENUE, MAY 12-16, 2001**

Site L3 - 45 feet from the Centerline of Foothill Boulevard



Site L4 - 100 feet from the Centerline of Washington Street

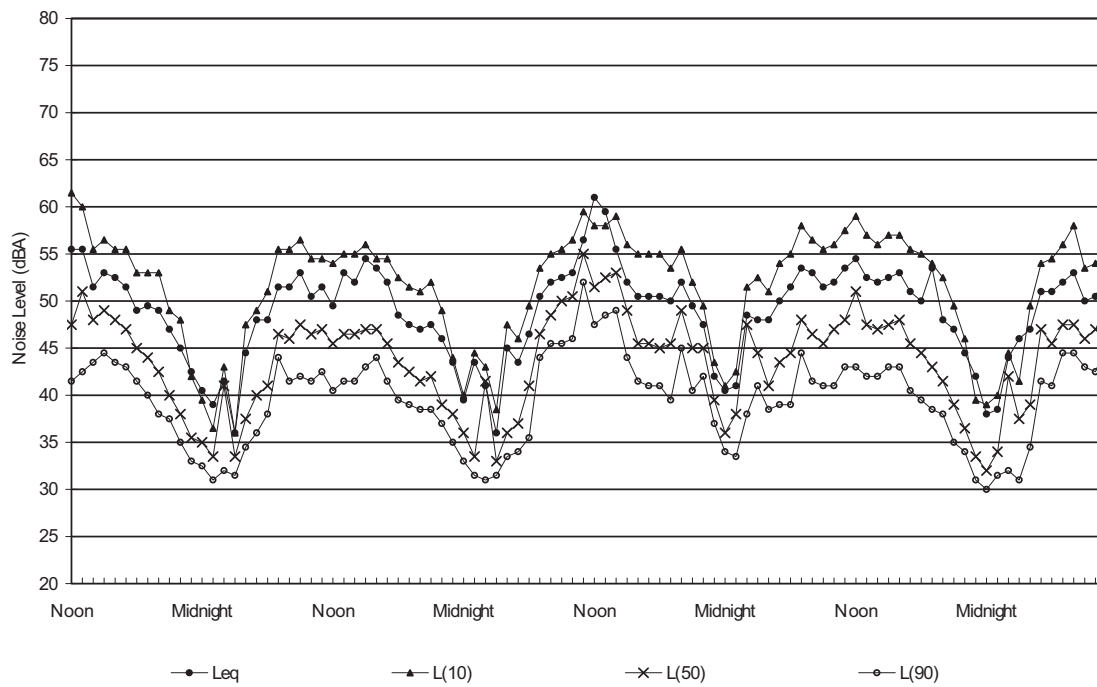


FIGURE N-3  
 HOURLY NOISE LEVEL MEASUREMENTS: FOOHILL BOULEVARD AND WASHINGTON STREET, MAY 12-16,  
 2001

CITY OF CALISTOGA  
 2003 GENERAL PLAN  
 NOISE ELEMENT

TABLE N-3 RESULTS OF SHORT-TERM MID-DAY NOISE MEASUREMENTS (MAY 16, 2000)

Roadway Segment	Start Time	Distance From Edge of Near Lane (feet)	Measured Noise Level					Comments
			L <sub>eq</sub>	L <sub>01</sub>	L <sub>1</sub>	L <sub>50</sub>	L <sub>90</sub>	
S1 Tubbs Lane near Myrtdale Road	10:55	60	63	72	68	54	42	The large range between L <sub>90</sub> and L <sub>01</sub> shows that noise is the result of infrequent cars passing by quickly
S2 Highway 29 near Greenwood Avenue	11:15	50	62	75	67	48	37	Infrequent fast car passbys
S3 Silverado Trail near Silver Rose Inn	11:30	50	65	76	70	54	42	Infrequent fast car passbys
S4 Highway 29 south of Pine Street	11:50	40	73	81	77	70	58	Traffic with trucks moving faster than 55 mph speed limit
S5 Lincoln Avenue at Gliderport Plaza	12:05	55	62	71	66	60	52	Slow moving traffic and other downtown noise
S6 Grant Street at North Oak Street	12:20	50	55	65	57	44	38	Infrequent traffic

L<sub>eq</sub> is the average noise level during the measurement period.

L<sub>01</sub> is the noise level exceeded one percent of the time, L<sub>10</sub> is the noise level exceeded 10 percent of the time, L<sub>50</sub> is the noise level exceeded 50 percent of the time, L<sub>90</sub> is the noise level exceeded 90 percent of the time.

CITY OF CALISTOGA  
 2003 GENERAL PLAN  
 NOISE ELEMENT

TABLE N-4 NOISE CONTOUR DISTANCES FROM ROADWAY CENTERLINE

	Existing L <sub>dn</sub>						Projected L <sub>dn</sub>		
	60 dBA		65 dBA		70 dBA		60 dBA	65 dBA	70 dBA
Lincoln Avenue									
from Foothill to Fair Way	200	feet	90	feet	30	feet			
from Fair Way to Silverado Trail	160	feet	60	feet	--				
from Silverado Trail to north	180	feet	80	feet	--				
Foothill Boulevard									
from Dunaweal to Lincoln	200	feet	140	feet	50	feet			
from Lincoln to Petrified Forest	160	feet	120	feet	40	feet			
From Petrified Forest to north	180	feet	130	feet	50	feet			
Silverado Trail									
from Dunaweal to Lincoln	150 feet		60		--				
Tubbs Lane									
from Foothill to Lincoln	150 feet		60 feet		--				
Petrified Forest Road									
from Foothill Boulevard to west	240 feet		110 feet		40				

---

*Calistoga's noise levels are quite low. Roadway traffic is the most significant community-wide noise factor in Calistoga. Overall, most of Calistoga is a quiet rural town.*

---

*Surveys show that about two percent of the population is highly annoyed by traffic noise of about 60 dBA  $L_{dn}$ . When the  $L_{dn}$  increases to 70 dBA, the proportion of the population highly annoyed increases to about 12 percent.*

---

*Interference with sleep and speech interference is possible when exterior noise levels are about 57-62 dBA  $L_{dn}$  with open windows and 65-70 dBA  $L_{dn}$  if windows are closed.*

---

most of the City is outside the 55 dB noise contour, where noise levels are acceptable for all uses. Figure N-5 provides, in graphic format, noise compatibility guidelines for different land uses. One important consequence of Calistoga's relatively quiet environment is the fact that even small increases in noise levels may seem substantial here, compared to other noisier places.

*Measurement Location L1: Highway 29 North of the Silverado Trail Turnoff.* This measurement was conducted 40 feet from the roadway centerline. At this distance, the measured  $L_{dn}$  was 68 dBA. Vehicular traffic on Highway 29 was the only significant source of noise affecting measurements at this location. This site is noisier than most in Calistoga, and the properties near Highway 29 are quite noisy for residential uses. However, because the noise source is a State highway, very few measures to reduce traffic noise are feasible in terms of engineering and costs. Moreover, moving even a short distance away from the road results in a significant reduction in noise.

*Measurement Location L2: Maggie Street.* In this residential area noise sources included distant construction noise, animals, and the occasional sounds of children playing, dogs barking, birds, and horses. The measured  $L_{dn}$  was 46 dBA, which is very quiet for ambient noise measurements.

*Measurement Location L3: Foothill Boulevard at the Wayside Inn.* This measurement was made 45 feet from the centerline of Foothill Boulevard, across from Silver Street. Automobile and truck traffic on Foothill Boulevard dominated the noise environment. The measured  $L_{dn}$  was 69 dBA. This rating is considered extremely noisy for a residential area, although it should be noted that noise drops off quickly with distance from the roadway.

*Measurement Location LA: Washington Street at Second Street.* The noise monitor was placed 100 feet from the roadway centerline. Vehicular traffic in the area was the only significant source of noise. The measured  $L_{dn}$  was 54 dBA, which is considered somewhat quiet.

*Short-Term Measurement Locations.* Although measured noise levels at the six short-term measurement locations were relatively high, all measurement locations were close to major roadways and all were for short durations of time. Noise levels over longer periods would be lower, since quieter periods would be averaged in.

As noted in Table N-3, the variation between  $L_{10}$  and  $L_{90}$  is wide at several of the measurement sites. This means there were short periods of loud noise during the measurements, but that there was less noise than at other times. Each of these locations is subject to intermittent loud noises but the median noise levels ( $L_{50}$ ) for all of but one of the sites is less than 60 dBA, which means no significant noise impact indoors and limited impact for outdoor activity.

Traffic Noise. Only location S4, at Highway 29 south of Pine Street, is noisy for most of the time period measured. The measured  $L_{eq}$  of 73 dBA is above the threshold of 68 dBA at which noise interferes with normal speech for people trying to converse standing outside at the measurement site. This noise level would not impair conversation indoors nor would the noise level be unacceptable if the receptor is separated from the street by a sound barrier such as a wall. Thus, noise levels in this area are marginally acceptable.

The noise survey results show that the major source of noise in Calistoga is traffic. Much of the noise is generated by vehicles driving faster than the speed limit, which means that enforcement of speed limits would not only improve safety but would also have noise reduction benefits. Other