

***LOS ALTOS COMMUNITY CENTER MASTER PLAN
ENVIRONMENTAL NOISE ASSESSMENT
LOS ALTOS, CALIFORNIA***

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INTRODUCTION

The Los Altos Community Center Master Plan project proposes the redevelopment of the existing City Hall, Police Station, Community Center, Library, Youth Center, History House and Museum, Nuetra House, theatre, and soccer and baseball fields. The proposed project would demolish all of the existing buildings with the exception of the History House and Museum and the Nuetra House during the planned redevelopment of the site. The project would also construct a new community use on the site, a swim center.

This report evaluates potential noise impacts resulting from the Master Plan project. The Setting Section of this report presents the fundamentals of environmental noise, describes regulatory criteria that are applicable in the project's assessment, and summarizes the results of the noise monitoring survey. The Impacts and Mitigation Measures Section describes the significance criteria used to evaluate project impacts, provides a discussion of each project impact, and presents mitigation measures where necessary to provide a compatible project in relation to surrounding noise sensitive land uses.

SETTING

Background Information on Noise

Noise may be defined as unwanted sound. Noise is usually objectionable because it is disturbing or annoying. The objectionable nature of sound could be 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 intensity of sound waves combined with the reception characteristics of the ear. Intensity may be compared with the height of an ocean wave in that it is a measure of the amplitude of the sound wave.

In addition to the concepts of pitch and loudness, there are several noise measurement scales which are used to describe noise in a particular location. A *decibel (dB)* is a unit of measurement which indicates 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. There is a relationship between the subjective noisiness or loudness of a sound and its intensity. Each 10 decibel increase in sound level is perceived as approximately a doubling of loudness over a fairly wide range of intensities. Technical terms are defined in Table 1.

There are several methods of characterizing sound. The most common in California is the *A-weighted sound level or dBA*. This scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Representative outdoor and indoor noise levels in units of dBA are shown in Table 2. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior

of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events. This energy-equivalent sound/noise descriptor is called L_{eq} . The most common averaging period is hourly, but L_{eq} can describe any series of noise events of arbitrary duration.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about plus or minus 1 dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends upon the distance the receptor is from the noise source. Close to the noise source, the models are accurate to within about plus or minus 1 to 2 dBA.

Since the 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 addition to nocturnal (10:00 pm - 7:00 am) noise levels. The *Day/Night Average Sound Level, L_{dn}* , is essentially the same as CNEL, with the exception that the evening time period is dropped and all occurrences during this three-hour period are grouped into the daytime period.

Effects of Noise

Sleep and Speech Interference

The thresholds for speech interference indoors are about 45 dBA if the noise is steady and above 55 dBA if the noise is fluctuating. Outdoors the thresholds are about 15 dBA higher. Steady noise of sufficient intensity (above 35 dBA) and fluctuating noise levels above about 45 dBA have been shown to affect sleep. Interior residential standards for multi-family dwellings are set by the State of California at 45 dBA L_{dn} . Typically, the highest steady traffic noise level during the daytime is about equal to the L_{dn} and nighttime levels are 10 dBA lower. The standard is designed for sleep and speech protection and most jurisdictions apply the same criterion for all residential uses. Typical structural attenuation is 12-17 dBA with open windows. With closed windows in good condition, the noise attenuation factor is around 20 dBA for an older structure and 25 dBA for a newer dwelling. Sleep and speech interference is therefore possible when exterior noise levels are about 57-62 dBA L_{dn} with open windows and 65-70 dBA L_{dn} if the windows are closed. Levels of 55-60 dBA are common along collector streets and secondary arterials, while 65-70 dBA is a typical value for a primary/major arterial. Levels of 75-80 dBA are normal noise levels at the first row of development outside a freeway right-of-way. In order to achieve an acceptable interior noise environment, bedrooms facing secondary roadways need to be able to have their windows closed, those facing major roadways and freeways typically need special glass windows.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that the causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. When measuring the percentage of the population highly annoyed, the threshold for ground vehicle noise is about 55 dBA L_{dn} . At an L_{dn} of about 60 dBA, approximately 2 percent of the population is highly annoyed. When the L_{dn} increases to 70 dBA, the percentage of the population highly annoyed increases to about 12 percent of the population. There is, therefore, an increase of about 1 percent per dBA between an L_{dn} of 60-70 dBA. Between an L_{dn} of 70-80 dBA, each decibel increase increases by about 2 percent the percentage of the population highly annoyed. People appear to respond more adversely to aircraft noise. When the L_{dn} is 60 dBA, approximately 10 percent of the population is believed to be highly annoyed. Each decibel increase to 70 dBA adds about 2 percentage points to the number of people highly annoyed. Above 70 dBA, each decibel increase results in about a 3 percent increase in the percentage of the population highly annoyed.

TABLE 1 Definitions of Acoustical Terms Used in this Report

Term	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micro Pascals (or 20 micro Newtons per square meter), where 1 Pascal is the pressure resulting from a force of 1 Newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micro Pascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hz	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and Ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A-weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average A-weighted noise level during the measurement period.
Day-Night Level, L_{dn} or DNL	L_{dn} is the equivalent noise level for a continuous 24-hour period with a 10-decibel penalty imposed during nighttime and morning hours (10:00 pm to 7:00 am).
Community Noise Exposure Level, CNEL	CNEL is the equivalent noise level for a continuous 24-hour period with a 5-decibel penalty imposed in the evening (7:00 pm to 10:00 pm) and a 10-decibel penalty imposed during nighttime and morning hours (10:00 pm to 7:00 am)
$L_1, L_{10}, L_{50}, L_{90}$	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

TABLE 2 Typical Noise Levels in the Environment

Common Outdoor Noise Source	Noise Level (dBA)	Common Indoor Noise Source
	120 dBA	
Jet fly-over at 1000 feet		Rock concert
	110 dBA	
Pile driver at 70 feet		Night club with live music
	100 dBA	
	90 dBA	
Large truck pass by at 50 feet		
	80 dBA	
Gas lawn mower at 100 feet		Noisy restaurant
Commercial/Urban area daytime		Garbage disposal at 3 feet
Suburban expressway at 300 feet		Vacuum cleaner at 10 feet
Suburban daytime		Normal speech at 3 feet
	70 dBA	
Urban area nighttime		Active office environment
	60 dBA	
Suburban nighttime		Quiet office environment
Quiet rural areas		
	50 dBA	
Wilderness area		Library
	40 dBA	Quiet bedroom at night
	30 dBA	Quiet recording studio
	20 dBA	
	10 dBA	
Threshold of human hearing		Threshold of human hearing
	0 dBA	

Regulatory Criteria

The proposed project would be subject to noise-related regulations, plans, and policies established within documents prepared by the State of California and the City of Los Altos. These planning documents are implemented during the environmental review process to limit noise exposure at existing and proposed noise sensitive land uses. Applicable planning documents include: (1) the California Environmental Quality Act (CEQA) Guidelines, Appendix G, (2) the City of Los Altos General Plan, and (3) the City of Los Altos Municipal Code. Regulations, plans, and policies presented within these documents form the basis of the significance criteria used to assess project impacts.

State CEQA Guidelines. CEQA requires an evaluation of the significance of potential project noise impacts. Potential noise effects from a project are considered to cause a significant environmental impact if any of the following occur:

- a) exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- b) exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
- c) a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- d) a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- e) for a project located within an airport land use plan or where such a plan has not been adopted within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels;
- f) for a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Checklist items (a), (c), and (d) are relevant to the proposed project. Pile driving, the most common source of construction causing elevated vibration levels, is not expected with the project. There are no operational sources of groundborne vibration that would be perceptible beyond the project's boundaries. The project is not located in the vicinity of a public or private airstrip; therefore, checklist items (b), (e), and (f) are not carried forward in this analysis.

CEQA does not define what noise level increase would be considered substantial. Typically, project-generated noise level increases of 3 dBA L_{dn} /CNEL or greater would be considered significant where exterior noise levels would exceed the normally acceptable noise level standard. Where noise levels would remain at or below the normally acceptable noise level

standard with the project, noise level increases of 5 dBA L_{dn} /CNEL or greater would be considered significant.

City of Los Altos General Plan

The City of Los Altos has established noise-related policies in the Natural Environment and Hazards Element of the General Plan in order to guide compatible development in the community. The following policies are applicable to the proposed project:

Policy 7.1: Ensure that new development can be made compatible with the noise environment by utilizing noise/land use compatibility standards and the Noise Contours Map as a guide for future planning and development decisions.

Policy 7.2: Enforce the following maximum acceptable noise levels for new construction of various noise-sensitive uses in an existing noise environment.

- ❖ 60 dBA CNEL is the maximum acceptable outdoor noise exposure level for single-family residential areas.
- ❖ 65 dBA CNEL is the maximum acceptable outdoor noise exposure level for multiple- family residential areas.
- ❖ 70 dBA CNEL is the maximum acceptable outdoor noise exposure level for schools (public and private), libraries, churches, hospitals, nursing homes, parks, commercial, and recreation areas. Excepted from these standards are golf courses, stables, water recreation, and cemeteries.

Policy 7.3: Work to achieve indoor noise levels not exceeding 45 dBA CNEL in the event that outdoor acceptable noise exposure levels cannot be achieved by various noise attenuation mitigation measures.

Policy 7.6: Consider noise attenuation measures to reduce noise levels to City-adopted acceptable levels for any development along roadways.

Policy 7.7: Require the inclusion of design features in development and reuse/revitalization projects to reduce the impact of noise on residential development.

Policy 7.8: Require an acoustical analysis for new construction and in areas with a higher than established noise levels.

Policy 7.9: Minimize stationary noise sources and noise emanating from construction activities.

City of Los Altos Municipal Code

The City of Los Altos Municipal Code, Title 6 'HEALTH AND SAFETY', Chapter 6.16 'Noise Control', establishes noise level limits as follows:

6.16.050 Exterior noise limits.

A. Maximum permissible sound levels by receiving land use.

1. The noise standards for the various categories of land use identified by the noise control office as presented in Table 3 of this section, unless otherwise specifically indicated, shall apply to all such property within a designated zone.
2. No person shall operate, or cause to be operated, any source of sound at any location within the city, or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level, when measured on any other property, either incorporated or unincorporated, to exceed:
 - a. The noise standard for that land use as specified in Table 4 for a cumulative period of more than thirty (30) minutes in any hour; or
 - b. The noise standard plus five dB for a cumulative period of more than fifteen (15) minutes in any hour; or
 - c. The noise standard plus ten (10) dB for a cumulative period of more than five (5) minutes in any hour; or
 - d. The noise standard plus fifteen (15) dB for a cumulative period of more than one minute in any hour; or
 - e. The noise standard plus twenty (20) dB or the maximum measured ambient for any period of time.
3. If the measured ambient level exceeds that permissible within any of the first four noise limit categories above, the allowable noise exposure standard shall be increased in five dB increments in each category as appropriate to encompass or reflect such ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.
4. If the noise measurement occurs on a property adjacent to a zone boundary, the noise level limit applicable to the lower noise zone, plus five dB, shall apply.

5. If possible, the ambient noise shall be measured at a consistent location on the property with the alleged offending noise source inoperative. If for any reason the alleged offending noise source cannot be shut down, the ambient noise shall be estimated by performing a measurement in the same general source at least ten (10) dB below the ambient in order that only the ambient level be measured. If the difference between the ambient and the noise source is five to ten (10) dB, then the level of the ambient itself can be reasonably determined by subtracting a one decibel correction to account for the contribution of the source.

B. Corrections for character of sound. In the event the alleged offensive noise contains a steady, audible tone, such as a whine, screech, or hum, or contains music or speech conveying informational content, the standard limits set forth in Table 3 shall be reduced by five dB.

TABLE 3: EXTERIOR NOISE LIMITS (Levels not to be exceeded more than 30 minutes in any hour)		
Receiving Land Use Category	Time Period	Noise Level (dBA)
All R1 Zoning Districts	10:00 p.m. -- 7:00 a.m.	45
	7:00 a.m. -- 10:00 p.m.	55
All R3 and PCF Zoning Districts	10:00 p.m. -- 7:00 a.m.	50
	7:00 a.m. -- 10:00 p.m.	55
All OA Zoning Districts	10:00 p.m. -- 7:00 a.m.	55
	7:00 a.m. -- 10:00 p.m.	60
All C Zoning Districts	10:00 p.m. -- 7:00 a.m.	60
	7:00 a.m.--10:00 p.m.	65

Source: City of Los Altos Municipal Code, June 2006

6.16.070 Prohibited acts.

- A. Noise disturbances prohibited. No person shall unnecessarily make or continue, or cause to be made or continued, any noise disturbance.
- B. Specific prohibitions. The following acts, and the causing or permitting thereof, are declared to be in violation of this chapter:

6. Construction and demolition.

ii. Nonresidential properties. Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work on weekdays before 7:00 a.m. and after 7:00 p.m. and

Saturdays before 9:00 a.m. or after 6:00 p.m. or any time on Sundays or the city observed holidays of New Year’s Day, Memorial Day, Independence Day, Labor Day, Veterans’ Day, Thanksgiving Day and Christmas Day, such that the sound there from creates a noise disturbance across a residential or commercial real property line, except for emergency work of public service utilities or by special exception. This section shall apply to operations on properties other than residentially zoned property. This section shall not apply to the use of lawn or garden tools as specified in subsection (B) (11) of this section;

- a. Where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected properties will not exceed those listed in the following schedules:
 - i. Mobile equipment. Maximum noise levels for the nonscheduled, intermittent, short-term operation (less than ten (10) days) of mobile equipment:

TABLE 4: Maximum Noise Levels for the nonscheduled, Intermittent, and Short-Term Operations (Less than ten (10) days)			
	All R1 Zoning Districts	All PCF and R3 Zoning Districts	All OA and C Zoning Districts
Daily, except Sundays and legal holidays 7:00 a.m. & 7:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 7:00 p.m. & 7:00 a.m. and all day Sundays and legal holidays	50 dBA	55 dBA	60 dBA

Source: City of Los Altos Municipal Code, June 2006

- ii. Stationary equipment. Maximum noise levels for the respectively scheduled and relatively long-term operation (periods of ten (10) days or more) of stationary equipment:

TABLE 5: Maximum Noise Levels for the Respectively Scheduled and Relatively Long-Term Operations (periods of ten (10) days or more)			
	All R1 Zoning Districts	All PCF and R3 Zoning Districts	All OA and C Zoning Districts
Daily, except Sundays and legal holidays 7:00 a.m. & 7:00 p.m.	75 dBA	80 dBA	85 dBA
Daily, 7:00 p.m. & 7:00 a.m. and all day Sundays and legal holidays	50 dBA	55 dBA	60 dBA

Source: City of Los Altos Municipal Code, June 2006

- c. Deliveries, start-up and closing down. The construction times above shall apply to deliveries of materials and equipment, and arrival of workers, start-up and closing down and departure activities on a job site.

- 12. Air-conditioning or air-handling equipment. Operating or permitting the operation of any air-conditioning or air-handling equipment in such a manner as to exceed any of the following sound levels without a variance:

TABLE 6: Air-Conditioning or Air-Handling Equipment Operational Sound Levels	
Measurement Location	Residentially zoned properties dB(A)
Any point on a neighboring property line, five feet above grade level, no closer than three feet from any wall	50
Center of a neighboring patio, five feet above grade level, no closer than three feet from any wall	45
Outside the neighboring living area window nearest the equipment location, not more than three feet from the window opening, but at least three feet from any other surface	45

Source: City of Los Altos Municipal Code, June 2006

- 13. Swimming pool motors and equipment. Operating or permitting the operation of any swimming pool motor or swimming pool equipment, such that the sound therefrom creates a noise disturbance across a residential real property line or at any time violates the provisions of Section 6.16.050 of this chapter. Where such equipment exceeds 45 dBA at its maximum use, such equipment shall be enclosed in a noise attenuating structure.

Existing Noise Environment

The Los Altos Community Center Master Plan project is proposed at the existing Community Center site east of San Antonio Road and north of Hillview Avenue. The project site is primarily bordered by residential land uses. Existing noise levels were quantified during a noise monitoring survey from Thursday, April 16, 2009 to Tuesday, April 21, 2009. Three long-term noise measurements (LT-1, LT-2, and LT-3) were made to document existing ambient noise levels in the vicinity of the project site. Figure 1 shows the project site and the noise measurement locations.

Noise Measurement LT-1 was made on Hillview Avenue across from the existing soccer field. Hourly average noise levels ranged from 48 dBA L_{eq} to 66 dBA L_{eq} during daytime hours. Hourly average noise levels at night ranged from 36 dBA L_{eq} to 58 dBA L_{eq} . The Community Noise Equivalent Level ranged from 57 dBA CNEL during the weekend to 61 dBA CNEL during the week. Figures 2 through 6 show the daily trend in noise levels at measurement location LT-1.

Noise measurement LT-2 was made on the property line of homes near Eleanor Avenue and Edith Avenue. Daytime hourly average noise levels ranged from 44 dBA L_{eq} to 63 dBA L_{eq} , but were generally 45 dBA L_{eq} to 55 dBA L_{eq} . Hourly average noise levels at night ranged from 36 dBA L_{eq} to 55 dBA L_{eq} . The maximum instantaneous noise levels that occurred on weekdays were likely caused by landscaping activities (such as using leaf blowers) at or adjacent to the measurement site. The Community Noise Equivalent Level ranged from 51 dBA CNEL during the weekend to 57 dBA CNEL during the week. Figures 7 through 11 show the daily trend in noise levels at location LT-2.

Noise measurement LT-3 was made on the property line of homes located east of the existing baseball field. Daytime hourly average noise levels ranged from 38 dBA L_{eq} to 65 dBA L_{eq} , but were typically 45 dBA L_{eq} to 50 dBA L_{eq} . Hourly average noise levels at night ranged from 31 dBA L_{eq} to 48 dBA L_{eq} . The Community Noise Equivalent Level ranged from 49 dBA CNEL during the weekend to 54 dBA CNEL during the week. Figures 12 through 16 show the daily trend in noise levels at location LT-3.

NOISE IMPACTS AND MITIGATION MEASURES

Significance Criteria

Paraphrasing from Appendix G of the CEQA Guidelines, a project would normally result in significant noise impacts if noise levels generated by the project conflict with adopted environmental standards or plans or if ambient noise levels at sensitive receivers would be substantially increased over a permanent, temporary, or periodic basis. The following significance criteria were used to evaluate the significance of environmental noise resulting from the project:

- A significant noise impact would result if the project would expose persons to or generate noise levels that would exceed applicable noise standards presented in the General Plan or Municipal Code.
- A significant impact would be identified if traffic generated by the project would substantially increase noise levels at sensitive receivers in the vicinity. A substantial increase would occur if noise levels with the project would be 3 dBA CNEL or greater above existing conditions.
- A significant noise impact would be identified if construction related noise would temporarily increase ambient noise levels. Construction noise would be considered significant when:
 - Noise from construction activities would exceed 60 dBA L_{eq} and the ambient noise environment by at least 5 dBA L_{eq} for a period of one year or more at exterior areas of uses sensitive to noise inside and outside (e.g., residences, residential care facilities, schools, libraries); or
 - Noise from construction activities would exceed 70 dBA L_{eq} and the ambient noise environment by at least 5 dBA L_{eq} for a period of one year or more at the exterior of offices or other commercial, retail, or institutional uses with interior spaces sensitive to noise.

Impact 1: Noise and Land Use Compatibility. Exterior noise levels at portions of the project site would exceed the City’s maximum acceptable outdoor noise exposure standards. **This is a significant impact.**

The site usage would consist of a Community Center, a Police Department, a City Hall, play fields, a swim center, and a Library. The Community Center and City Hall would be located on the interior of the site in an area where noise levels would be compatible with the planned uses. The Police Department and Library would be exposed to the highest noise levels given their proximity to San Antonio Road, the predominant source of noise in the vicinity of the project site. Based on the noise contour data presented in the City’s General Plan, future exterior noise levels at a distance of 50 feet from the center of the near travel lane (the approximate setback of these buildings) would be approximately 71 dBA CNEL. According to General Plan Policy 7.2, 70 dBA CNEL is the maximum acceptable outdoor noise exposure level for libraries (consistent with the uppermost limit of the “conditionally acceptable” category as identified in General Plan Table NEH-1, Land Use Compatibility Standards). The proposed Library would be exposed to exterior noise levels 1 dBA CNEL above the maximum acceptable outdoor noise exposure level. There do not appear to be any proposed outdoor activity areas at the Library that would be sensitive to noise; however, interior noise levels could be unacceptable for the proposed use if noise control is not considered during building design.

The proposed Police Department would fall under the office building, business commercial, and professional designation as indicated in the General Plan land use compatibility standards table. The maximum “conditionally acceptable” noise level for such as use would be 75 dBA CNEL. Traffic noise levels at the Police Department are estimated to reach 71 dBA CNEL, 4 dBA CNEL below the maximum “conditionally acceptable” noise level. For an office development, the noise and land use compatibility guidelines are designed to screen projects and provide guidance in determining when special building sound insulation treatments may be necessary in order to adequately control the intrusion of environmental noise. Similar to that of the Library above, interior noise levels could be unacceptable in sensitive offices or conference rooms use if noise control is not considered during building design.

The play fields and the swim center would be located over 30 feet from the center of the near Hillview Avenue travel lane. Exterior noise levels at these use areas are calculated to be 58 dBA CNEL or less. Exterior noise levels at the proposed play fields and the swim center would meet the City’s threshold for playgrounds, parks, and water recreation (70 dBA CNEL).

Mitigation Measure 1:

An acoustical consultant should participate in the design of the Library and Police Department buildings to recommend project specific measures that would adequately reduce interior noise to levels appropriate for the proposed use. A detailed analysis should be conducted so that the design of the project incorporates treatments necessary to minimize noise intrusion in noise sensitive areas. Mitigation may include the incorporation of a complete forced-air mechanical ventilation system and sound-rated windows to allow occupants to control traffic noise intrusion by closing windows and doors.

Impact 2: On-Site Project Operational Noise. Noise levels generated by the operation of the project may exceed the standards established in the Los Altos General Plan and Municipal Code. **This is a significant impact.**

Mechanical Equipment

The operation of the project would introduce new sources of noise that may permanently increase noise levels at adjacent residential receivers. Mechanical equipment normally associated with such land uses can include heating, ventilation, and air conditioning systems, boilers, pumps, exhaust fans, etc., which produce fairly steady noise levels while the equipment is in operation. The City’s Municipal Code would regulate noise from such equipment. For steady noise (noise occurring more than 30 minutes in an hour) the Code requires that noise levels not exceed 55 dBA L₅₀ during the day or 45 dBA L₅₀ at night. If the noise involves a steady, audible tone such as a whine, screech or hum, the allowable noise or sound level is reduced by 5 dBA.

Noise levels generated by the project would be dependent on the number and type of equipment selected, the location of the equipment relative to nearby sensitive receivers, and the presence of

shielding. If noise from mechanical equipment is not properly controlled and occurs during nighttime hours, noise levels could exceed the Municipal Code noise level limits. Given the proximity of the adjacent residential receivers and relatively low ambient baseline noise levels, the impact is significant.

Parking Lot Activities

Parking would be provided throughout the site and would adjoin existing residential land uses located to the north and east. In some areas, the Master Plan project would construct new parking areas immediately adjacent to residences east of the site. Noise levels resulting from vehicle passbys, door slams, and engine starts would not be expected to last a cumulative duration of more than one minute in any hour at nearby receivers. Therefore, the applicable daytime noise limit would be 70 dBA L_2 and the nighttime noise limit would be 65 dBA L_2 . The sound of a passing car at 15 mph would typically range from 55 dBA to 65 dBA at 25 feet. The noise of an engine start and door slams would be similar. Maximum noise levels resulting from the operation of the parking lots at the perimeter of the site would not be expected to exceed 70 dBA for more than one minute in any hour during the daytime. Activities occurring at night would be less frequent and similarly would not be expected to exceed 65 dBA for more than one minute in any hour. Parking lot noises would be identifiable and audible at residences in the site vicinity. However, parking lot noise would not exceed Municipal Code standards and would not substantially increase hourly or daily average noise levels at adjacent residential receivers.

Play Fields

The Los Altos Community Center Master Plan project would relocate the existing soccer field from its current location along Hillview Avenue, east and nearer to Eleanor Avenue residences. The soccer field would be used for soccer games, practice, instruction, summer camps, and other outdoor uses. The proposed soccer field would not have lights for evening use.

The primary noise-generating community use of the field would be organized soccer games. The average noise level at 50 feet from the center of the field would be 68 dBA L_{eq} during a soccer game, and maximum instantaneous noise levels would range from about 68 dBA to 73 dBA L_{max} . At the nearest residential properties, approximately 120 feet east, noise levels would be about 8 dBA lower. Average noise levels resulting from soccer would be 60 dBA L_{eq} and maximum instantaneous noise levels would range from 60 to 65 dBA L_{max} at adjoining Eleanor Avenue residences. The sounds of children or adults using the soccer field would exceed the adjusted $L_{(50)}$ noise limit (50 dBA recognizing that the noise source contains speech conveying informational content) established in the Municipal Code and would substantially exceed typical daytime ambient noise levels (45 to 55 dBA L_{eq}) currently received along the east property line of the project site.

The baseball field would be relocated from its current location southwest of the intersection of Cielito Drive and East Edith Avenue to the south boundary of the site adjacent to Hillview Avenue. The baseball field would replace a portion of the existing soccer field along Hillview

Avenue and an existing parking lot. The proposed baseball field would be used for baseball games and other summer camp and community events. The field would not include lighting to allow evening use. Illingworth & Rodkin, Inc. has made measurements of the noise generated by baseball games at several locations throughout the Bay Area. Little League baseball games typically generate “worst case” noise levels of about 57 dBA L_{eq} at a distance of 100 feet from the center of the infield. Maximum instantaneous noise levels of about 65 dBA typically result from baseballs being hit and shouting from players and spectators. Noise levels resulting from baseball games would be similar to those currently generated by youth soccer on the existing soccer field and would not be expected to result in a substantial increase in the ambient noise environment at residential receivers south or east of the site.

Swim Center

The swim center is proposed on the southernmost portion of the project site west of the proposed baseball diamond and soccer field. The swim center would replace an existing source of noise, the existing soccer field, with a new and different source of noise. The primary differences between noises generated by a swim center as compared to noises resulting from a soccer field is that swim centers tend to generate higher average and maximum noise levels noise on a more frequent basis.

The swim center would be similar to the swim center previously proposed at Covington Park and would likely include one competitive pool, one recreational pool, a water feature, and a building that is intended to contain ancillary uses such as offices, locker room, and a mechanical room. General uses of the swim center will likely include lap swim, community youth programs, and water exercise. The pools would also be available for activities such as kayaking, SCUBA diving, synchronized swimming, Special Olympics, and private rentals. The swim center will be open every day throughout the year. Outdoor lighting would be located throughout the swim center to allow evening use. A public announcement (PA) system would be used within the swim center. The PA system would mainly be used during competition events and emergencies.

Noise data collected by Illingworth & Rodkin, Inc. for similar community pool projects were used to create a credible worst-case source noise level for the proposed swim center. These data are based on noise levels measured at the Ridgway Pool in Santa Rosa, California between August 10th and 14th, 2006. There are two pools at Ridgway, a recreation pool with a slide and water play features, and a lap pool. The Lap Pool is 75-feet by 75-feet, the Rec Pool is 35-feet by 50-feet, and the slide is about 20-feet tall and has a 140-foot running length. Unattended measurements were made at one location on the fence located on the south side of the swim center directly opposite the end of the recreation pool that includes the water features and water slide. The measurement was nearer the water feature and further from the water slide. Through observations at the site, this measurement location was determined to be approximately 70 feet from the acoustic center of the recreation pool. The measurements began at 6:00 p.m. on Thursday, August 10, 2006 and concluded at about 4:30 p.m. on Monday, August 14, 2006. The schedule for activities at the pool during this time period and the number in attendance during the

recreational swim periods were obtained from the City of Santa Rosa.¹ Attendance at the Ridgway facility was generally quite heavy during the measurement period, as it was the last summer weekend prior to the start of school in Santa Rosa. The schedule of activities is shown on Table 7.

Table 7
Program and Attendance Figures at Ridgway Pool, Santa Rosa, California
August 10-14, 2006

Thursday August 10	12:00pm-4:00pm - Public Swim 4:15pm-7:15pm – Swim Lessons 4:00pm-8:00pm – Neptune Swim Team 7:00pm-9:00pm – Kayak Practice	Slide & Play Features ON; attendance 380
Friday August 11	6:00am-7:00am – Master Swim Team 7:30am-9:00am – Neptune Swim Team 9:30am-1:00pm – Lap Swim 12:00pm-4:00pm – Public Swim 4:00pm-7:30pm – Neptune Swim Team 7:30pm-9:30pm – Late Night Public Swim	Slide & Play Features ON; attendance 300 Slide & Play Features on: attendance 170
Saturday August 12	7:30am-9:30am – Neptune Swim Team 9:30am-1:00pm – Lap Swim 1:15pm-6:00pm – Public Swim 6:30pm-8:30pm – Pool Rental	Slide & Play Features ON; attendance 170 Slide & Play Features ON; attendance 200
Sunday August 13	9:30am-1:00pm – Lap Swim 1:15pm-6:00pm – Public Swim 6:30pm-8:30pm – Pool Rental	Slide & Play Features ON; attendance 150 Slide & Play Features ON; attendance 100
Monday August 14	6:00am-7:00am – Masters Swim Team 9:30am-1:00pm – Lap Swim	

Source: City of Santa Rosa

In reviewing the noise level data against the activities that were occurring at the time, it can be seen that the highest noise levels result from public swimming and pool rental periods when the slide and play features were turned on. This typically occurred between 1:00 pm and 8:30-9:30 pm. When the pool was being used in the morning for swim team activities and lap swimming, the measured noise levels at this site were affected by noise from the pool, and by distant traffic on Mendocino Avenue and Ridgway Avenue. During the noisier pool hours, the noise

¹ Email from Don Hicks, Recreation Supervisor, Santa Rosa Recreation and Parks Department to Richard Rodkin, September 5, 2006.

environment is dominated by the noise from the water features and the children playing. The children playing are the dominant noise source during public swim. The data indicate that the steady noise from the water features (in the absence of the children playing) typically ranged from about 64 to 65 dBA. The water features at Ridgway Pool include a mushroom and dump buckets that are the most significant noise sources generated by the water, and to a lesser degree, water shooting down the slide. Superimposed on this is the sound of children playing, which generated average noise levels from approximately 65 to 70 dBA L_{eq} and maximum noise levels ranging from about 72 to 82 dBA L_{max} . There were occasional excursions above this range but they were most likely due to a noisy child near the sound level meter. Master swim and lap swim generated noise levels at least 10 dBA lower, with average noise levels typically in the range of 50 to 57 dBA and maximum noise levels typically in the range of 65 to 70 dBA.

Short-term attended measurements were made at Ridgway Pool during the mid-afternoon on Saturday, August 12. Measurements were made to the east and southeast of the pool at a distance of 80 meters (approximately 260 feet) from the pool. The average noise level at these locations was about 54 to 55 dBA L_{eq} . Noise levels at the pool were about 66 to 67 dBA L_{eq} at the same times. During these measurements, the dominant noise sources were noted that were contributing to the measured levels. It was apparent that the dominant noise sources were the water features and the children playing in the recreation pool. Children on the slide were only occasionally audible and identifiable and made no measurable contribution to average or maximum noise levels during the attended noise survey. There were sometimes as many as 6 to 8 children lined up near the top of the slide, but they were orderly and were not boisterous. There was a supervisor stationed at the top of the slide.

Recreational swimming periods are clearly the noisiest activities associated with a public swimming pool complex. At the Ridgway Pool in Santa Rosa, the time period beginning at 1:00 pm and ending at 9:00 pm on Friday, Saturday, and Sunday afternoons/evenings was the time period when there was nearly continuous recreational swimming. This time period was selected to characterize credible worst-case noise levels that could be generated at the pool. Based on these data, a source noise level of 67 dBA L_{eq} at a distance of 70 feet from the acoustic center of the pool facility is used.

The nearest residential land uses are located approximately 140 feet south of the acoustic center of the proposed swim center (southernmost portion of near pool). Average noise levels would be about 61 dBA L_{eq} at the nearest receivers to the south. Maximum noise levels would range from about 66 to 76 dBA L_{max} at the nearest receivers south of Hillview Avenue. Noise levels resulting from the proposed swim center would exceed the adjusted Municipal Code noise limit for steady noise (50 dBA L_{50}), allowable maximum noise levels, and ambient traffic noise levels resulting from Hillview Avenue. This would represent a significant noise impact.

Mitigation Measures 2:

- Locate the heating, ventilating, and air conditioning (HVAC) equipment away from adjacent residences located to the north and east of the project site. Shield rooftop mechanical equipment with rooftop screens or perimeter parapet walls, employ noise control baffles, sound attenuators, or enclosures where required. The goal of this mitigation is achieve a continuous noise level of 45 dBA or less at the adjacent residential property line as stated in City's Municipal Code. HVAC noise controls shall be analyzed and reviewed by a qualified acoustical consultant prior to issuance of a building permit.
- Construct a six to eight-foot noise barrier along the site's eastern property boundaries common to residences along Cielito Drive, East Edith Avenue, and Eleanor Avenue. Suitable materials include wood (when properly detailed), concrete or masonry panels, or masonry block. The final design of the noise barrier shall be confirmed when grading plans are complete.
- Relocate the swim center to a location on site as far as possible from residences and utilize buildings and noise barriers to attenuate swim center noise to below Municipal Code noise level limits.
- The use of loudspeakers or public address systems shall be prohibited before 7:00 a.m. or after 10:00 p.m. daily. The selected public address system shall not generate maximum noise levels exceeding 50 dBA at neighboring residential properties.
- Signs shall be posted in the parking lot reminding park users to be good neighbors. Automobile stereos shall be turned off while in the parking lot.

Impact 3: Off-Site Traffic Noise Increases. Project traffic would not substantially increase traffic noise levels along area roadways. **This is a less-than-significant impact.**

Traffic data provided by AECOM was reviewed to calculate potential project-related traffic noise level increases along roadways serving the project site. These data included turning movement counts at six intersections for existing conditions and projections for proposed project trips. Link volumes under the existing plus project scenario were compared to existing conditions to calculate the noise increase attributable to the project.

The turning movement data indicates that traffic volumes in the site vicinity will increase as a result of the proposed project. Traffic noise levels due to the proposed project are calculated to increase by less than 2 dBA CNEL above existing traffic noise conditions along Hillview Avenue (west of the proposed driveway) and by less than 1 dBA CNEL along all other roadways serving the project site (including Hillview Avenue east of the proposed driveway). Traffic noise increases resulting from the proposed project would not increase by 3 dBA CNEL or more and would not be considered substantial. This is a less-than-significant impact.

Mitigation 3: None Recommended.

Impact 4: Construction Noise. Noise generated by construction activities is anticipated to exceed the average and maximum instantaneous noise level limits identified in the significance criteria. **This is a significant impact.**

The construction of the project would be completed in three phases and would extend over several construction seasons. Construction activities would include demolition, grading, paving, installation of underground utilities, and construction of the proposed buildings, playfields, and swim center. Phase 1A would construct the Police Station, City Hall and Community Center along with associated parking lots. This Phase would be completed over a period of approximately 18-24 months between mid-2012 and mid-2014. Phase 1B would demolish the existing Community Center following the completion of Phase 1A structures. Phase 1B would last approximately two to four weeks. Phase 2 would last approximately 10 to 12 months and would consist of the construction of the swim center and associated parking lots, soccer field, and baseball diamond. This phase would begin construction one year after Phase 1 is completed. Phase 3 would construct the Library and associated parking lot. Phase 3 would also last approximately 10 to 12 months and would occur approximately one year after Phase 2 is completed.

Noise impacts resulting from construction depend on the noise generated by various pieces of construction equipment, the timing and duration of noise generating activities, and the distance between construction noise sources and noise sensitive areas. Construction noise impacts primarily result when construction activities occur during noise-sensitive times of the day (e.g., early morning, evening, or nighttime hours), the construction occurs in areas immediately adjoining noise sensitive land uses, or when construction lasts over extended periods of time.

The significance criteria developed to assess project-related construction noise impacts uses both hourly average noise levels and maximum instantaneous noise levels for comparative purposes. On an hourly average noise level basis, construction noise would be considered significant when:

- Noise from construction activities would exceed 60 dBA L_{eq} and the ambient noise environment by at least 5 dBA L_{eq} for a period of one year or more at exterior areas of uses sensitive to noise inside and outside (e.g., residences, residential care facilities, schools, libraries); or
- Noise from construction activities would exceed 70 dBA L_{eq} and the ambient noise environment by at least 5 dBA L_{eq} for a period of one year or more at the exterior of offices or other commercial, retail, or institutional uses with interior spaces sensitive to noise.

As stated in the Municipal Code, construction activities occurring on weekdays before 7:00 a.m. and after 7:00 p.m. and Saturdays before 9:00 a.m. or after 6:00 p.m. or any time on Sundays or the city observed holidays are prohibited if the sound there from creates a noise disturbance

across a residential or commercial real property line, except for emergency work of public service utilities or by special exception. The Municipal Code also states that where technically and economically feasible, construction activities shall be conducted in such a manner that the maximum noise levels at affected residential properties will not exceed 75 dBA L_{max} between 7:00 a.m. and 7:00 p.m. daily except Sundays and legal holidays. Maximum instantaneous noise levels at adjacent office land uses should not exceed 85 dBA L_{max} .

Construction activities generate considerable amounts of noise, especially during the demolition phase and the construction of project infrastructure when heavy equipment is used. Tables 8 and 9 show typical noise levels generated by construction equipment at a distance of 50 feet from the source and at a distance of 50 feet from the construction activity center, respectively. Maximum instantaneous noise levels generated by construction activities would range from 90 to 98 dBA L_{max} at a distance of 50 feet from the source. Typical hourly average noise levels during active construction would range from about 77 to 89 dBA L_{eq} measured at 50 feet from the center of the site during busy construction periods. Construction generated noise levels drop off at a rate of about 6 dBA per doubling of distance away from the source. Shielding provided by buildings or terrain often results in much lower construction noise levels at distant receptors.

Table 10 summarizes the anticipated hourly average (L_{eq}) and maximum instantaneous (L_{max}) noise levels expected at receivers near the site during each phase of the project. Construction noise levels were estimated from the center of the construction area. A 10 dB reduction was applied to unattenuated construction noise levels where existing or future buildings would provide acoustical shielding. Estimated construction noise levels at residential land uses exceeding 60 dBA L_{eq} (and 70 dBA L_{eq} for office uses) or 75 dBA L_{max} (and 85 dBA L_{max} for office uses) are indicated in bold to show the receivers that would be exposed to construction noise levels exceeding the significance criteria developed for the noise impact assessment.

	A-Weighted Noise Level (dB) at 50 Feet						
	60	70	80	90	100	110	
<i>Earth Moving:</i>							
Compactors (Rollers)			██████████				
Front Loaders			██████████	██████████			
Backhoes			██████████	██████████			
Bulldozers			██████████	██████████			
Scrapers, Graders			██████████	██████████			
Pavers				██████████			
Trucks			██████████	██████████			
<i>Materials Handling:</i>							
Concrete Mixers			██████████	██████████			
Concrete Pumps			██████████	██████████			
Cranes (Movable)			██████████	██████████			
Cranes (Derrick)				██████████			
<i>Stationary:</i>							
Pumps			██████████	██████████			
Generators			██████████	██████████			
Compressors			██████████	██████████			
<i>Impact Equipment:</i>							
Pneumatic Wrenches				██████████			
Jackhammers & Rock Drill			██████████	██████████			
Pile Drivers (Peak)				██████████	██████████		
<i>Others:</i>							
Vibrators			██████████	██████████			
Saws			██████████	██████████			

Source: Handbook of Noise Control, Cyril M. Harris, 1979

Construction Equipment Noise Level Range	TABLE 8
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TABLE 9 Typical Ranges of Noise Levels at 50 Feet from Construction Sites (dBA L_{eq})

	Domestic Housing		Office Building, Hotel, Hospital, School, Public Works		Industrial Parking Garage, Religious Amusement & Recreations, Store, Service Station		Public Works Roads & Highways, Sewers, and Trenches	
	I	II	I	II	I	II	I	II
Ground Clearing	83	83	84	84	84	83	84	84
Excavation	88	75	89	79	89	71	88	78
Foundations	81	81	78	78	77	77	88	88
Erection	81	65	87	75	84	72	79	78
Finishing	88	72	89	75	89	74	84	84

I - All pertinent equipment present at site.

II - Minimum required equipment present at site.

Source: United States Environmental Protection Agency, 1973, Legal Compilation on Noise, Vol. 1, p. 2-104.

TABLE 10 Construction Noise Levels by Phase

Receivers	Construction Phase and Duration	Distance from Acoustic Center of Activities (feet)	Average Noise Level Range (dBA)	Maximum Instantaneous Noise Level Range (dBA)
West of San Antonio Road	1A - 18 to 24 months	450	58-70	71-79
Navajo Lane/Sioux Lane	1A - 18 to 24 months	150	67-79	80-88
Cielito Drive/East Edith Avenue	1A - 18 to 24 months	350	60-72	73-81
Eleanor Avenue ²	1A - 18 to 24 months	850	42-54	55-63
Hillview Avenue	1A - 18 to 24 months	800	53-65	66-74
San Antonio - Hillview Offices	1A - 18 to 24 months	500	57-69	70-78
West of San Antonio Road ³	1B - 2 to 4 weeks	1,200	39-51	52-60
Navajo Lane/Sioux Lane	1B - 2 to 4 weeks	850	52-64	65-73

² Assumes existing community center buildings would provide 10 dBA of noise attenuation during Phase 1A construction.

³ Assumes Phase 1A buildings would provide 10 dBA of noise attenuation during Phase 1B demolition.

Receivers	Construction Phase and Duration	Distance from Acoustic Center of Activities (feet)	Average Noise Level Range (dBA)	Maximum Instantaneous Noise Level Range (dBA)
Cielito Drive ⁴	1B - 2 to 4 weeks	500	47-59	60-68
Eleanor Avenue/East Edith Avenue	1B - 2 to 4 weeks	150	67-79	80-88
Hillview Avenue	1B - 2 to 4 weeks	250	63-75	76-84
San Antonio - Hillview Offices	1B - 2 to 4 weeks	750	53-65	66-74
West of San Antonio Road ⁵	2 - 10 to 12 months	850	42-54	55-63
Navajo Lane/Sioux Lane ⁶	2 - 10 to 12 months	875	42-54	55-63
Cielito Drive	2 - 10 to 12 months	600	55-67	68-76
Eleanor Avenue/East Edith Avenue	2 - 10 to 12 months	550	56-68	69-77
Hillview Avenue	2 - 10 to 12 months	100	71-83	84-92
San Antonio - Hillview Offices	2 - 10 to 12 months	350	60-72	73-81
West of San Antonio Road	3 - 10 to 12 months	250	63-75	76-84
Navajo Lane/Sioux Lane ⁷	3 - 10 to 12 months	550	46-58	59-67
Cielito Drive	3 - 10 to 12 months	600	55-67	68-76
Eleanor Avenue/East Edith Avenue	3 - 10 to 12 months	950	51-63	64-72
Hillview Avenue	3 - 10 to 12 months	600	55-67	68-76
San Antonio - Hillview Offices	3 - 10 to 12 months	200	65-77	78-86

⁴ Assumes existing residences would provide 10 dBA of noise attenuation during Phase 1B demolition.

⁵ Assumes existing/Phase 1A buildings would provide 10 dBA of noise attenuation.

⁶ Assumes existing residences would provide 10 dBA of noise attenuation during Phase 2 demolition/construction.

⁷ Assumes existing residences would provide 10 dBA of noise attenuation during Phase 3 demolition/construction.

Phase 1A would construct the Police Station, City Hall, Community Center, and associated parking lots, and Phase 1B would demolish the existing Community Center. As indicated in Table 10, construction Phase 1A would result in hourly average noise levels exceeding 60 dBA L_{eq} at most receivers adjoining the site with the exception of those in the Eleanor Avenue area where construction noise levels would be attenuated by the existing Community Center buildings. Maximum instantaneous noise levels would exceed 75 dBA L_{max} at receivers west of San Antonio Road, north of the site along Navajo Lane and Sioux Lane, and along Cielito Drive. Phase 1B would generate noise levels above the significance criteria thresholds at receivers in the Navajo/Sioux, Eleanor, East Edith, and Hillview neighborhoods. The highest noise levels would occur in the Eleanor and East Edith neighborhoods where hourly average noise levels would be expected to range from 67 to 79 dBA L_{eq} . Maximum noise levels would be expected to range from 80 to 88 dBA L_{max} .

Phase 2 would construct the swim center and associated parking lots, soccer field, and baseball diamond. This construction phase would generate hourly average noise levels exceeding 60 dBA L_{eq} and maximum instantaneous noise levels exceeding 75 dBA L_{max} at receivers in the Cielito, Eleanor, East Edith, and Hillview neighborhoods. Hourly average noise levels would exceed 70 dBA L_{eq} and maximum instantaneous noise levels would exceed 85 dBA L_{max} at the San Antonio-Hillview office buildings west of the site. Phase 2 construction noise levels would not exceed the significance criteria levels at receivers west of San Antonio Road or receivers in the Navajo Lane/Sioux Lane neighborhood.

Phase 3 would construct the Library and associated parking lot. Phase 3 construction activities would generate hourly average noise levels exceeding 60 dBA L_{eq} at receivers west of San Antonio Road, and receivers in the Cielito, Eleanor, East Edith, and Hillview. Maximum instantaneous noise levels would exceed 75 dBA L_{max} at receivers west of San Antonio Road, along Cielito Drive, and along Hillview Avenue. Phase 3 construction activities would also result in hourly average and maximum instantaneous noise levels above 70 dBA L_{eq} and 85 dBA L_{max} , respectively, at the San Antonio-Hillview office buildings.

The active uses on the project site would be exposed to the highest levels of construction noise. Some of the existing and proposed buildings contain noise-sensitive interior spaces, particularly the Library, City Hall, and Police Station. Given that on-site facilities would continue to operate throughout the entire construction process, employees and frequent visitors to the site would be exposed to the intermittent construction noise for up to 19 years.

As with off-site uses, noise levels at the existing and proposed buildings on the project site would vary as the distance to the active construction area changes and new buildings are constructed between the noise source and the receiver, which would partially shield the receiver from construction noise. For this reason, noise levels at the new Police Station, City Hall, and Community Center are expected to drop during Phase 2 construction activities. During this phase, these facilities would be partially shielded by the Museum Complex, which would remain on the site for the entire construction process. The new City Hall, and to a lesser extent, the Police Station would be exposed to elevated noise levels during Phase 3 of project construction.

Mitigation 4: Develop a construction mitigation plan in close coordination with adjacent noise-sensitive land uses so that construction activities can be scheduled to minimize noise disturbance. The construction mitigation plan shall consider the following available controls to reduce construction noise levels as low as practical.

- Pursuant to the Municipal Code, restrict noise-generating activities at the construction site or in areas adjacent to the construction site to the hours between 7:00 a.m. and 7:00 p.m., Monday through Friday and 9:00 a.m. to 6:00 p.m. on Saturday. Construction shall be prohibited on Sundays and city observed holidays.
- Construct solid plywood fences (minimum 8 feet in height) around the construction site or near the residential property line to shield adjacent residences;
- Equip all internal combustion engine-driven equipment with mufflers, which are in good condition and appropriate for the equipment;
- Prohibit all unnecessary idling of internal combustion engines;
- Route construction related traffic to and from the site via designated truck routes and avoid residential streets where possible;
- Utilize “quiet” models of air compressors and other stationary noise sources where technology exists;
- Locate all stationary noise-generating equipment, such as air compressors and portable power generators, as far away as possible from adjacent land uses;
- Shield adjacent sensitive uses from stationary equipment with individual noise barriers or partial acoustical enclosures;
- Locate staging areas and construction material storage areas as far away as possible from adjacent land uses;
- Notify all adjacent land uses of the construction schedule in writing;
- 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. Conspicuously post a telephone number for the disturbance coordinator at the construction site and include it in the notice sent to neighbors regarding the construction schedule.

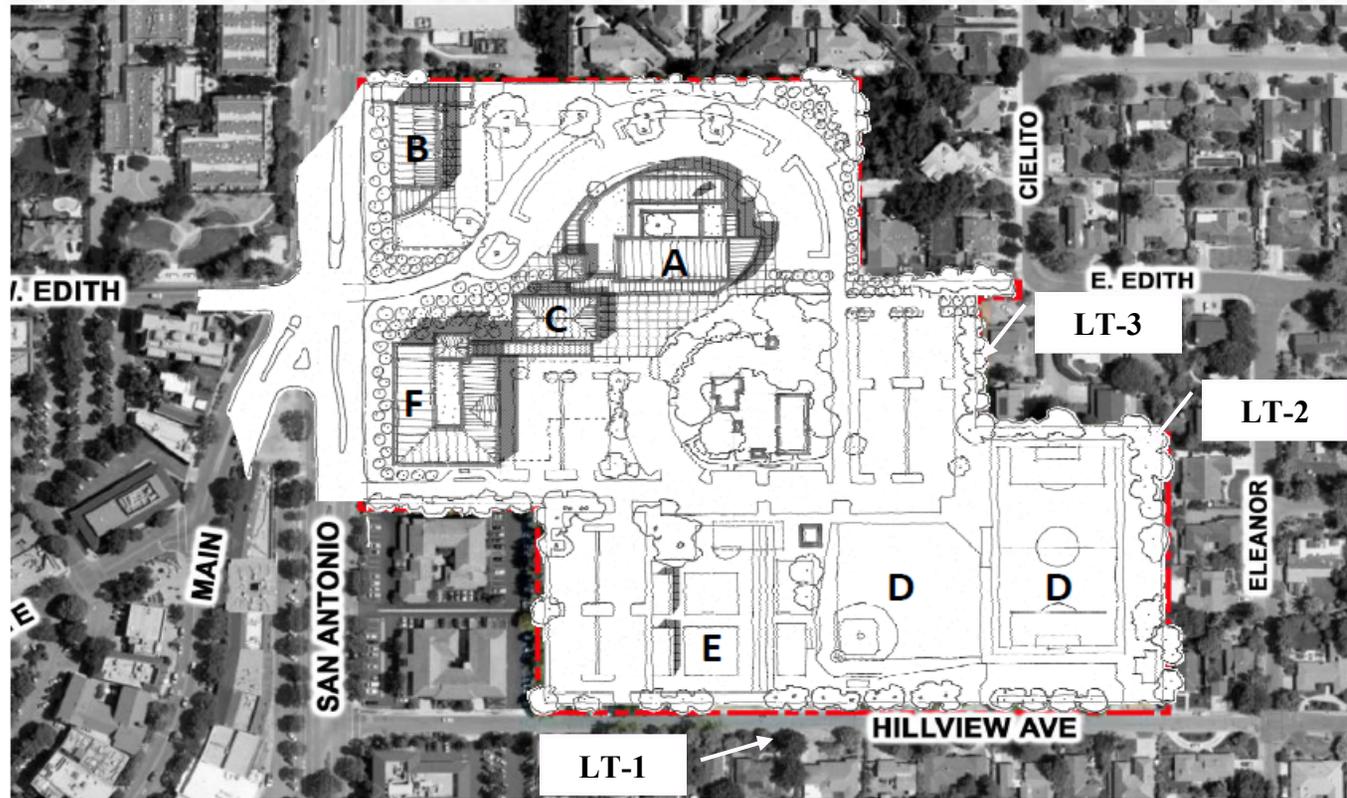
Impact 5: Cumulative Traffic Noise. Cumulative traffic conditions would not substantially increase traffic noise levels along area roadways, and the project would not make a cumulatively considerable contribution (1 dBA CNEL or more) to the cumulative noise increase. **This is a less than significant impact.**

The project would result in a significant cumulative traffic noise impact if noise levels at existing sensitive receivers would be substantially increased (i.e., 5 dBA CNEL above existing traffic noise levels where noise levels would remain at or below 60 dBA CNEL or 3 dBA CNEL above existing traffic noise levels where noise levels would exceed 60 dBA CNEL) and if the Project would make a “cumulatively considerable” contribution to the overall traffic noise level increase. A “cumulatively considerable” contribution would be defined as an increase of 1 dBA CNEL or more attributable solely to the proposed project.

Traffic noise levels in the project vicinity are calculated to not increase substantially over the long-term as the area is generally built-out. Cumulative traffic noise level increases resulting from the project were calculated by comparing cumulative plus project traffic volumes to cumulative no project volumes. Cumulative traffic noise levels are calculated to increase by 2 dBA CNEL or less over existing conditions along roadways serving the project site. The project’s contribution to cumulative noise level increases would be less than 1 dBA CNEL in the long-term. This increase in noise would not be substantial or “cumulatively considerable”. This is a less than significant impact.

Figure 1: Noise Measurement Locations and Proposed Site Plan

Preferred Scenario – Architectural Concept



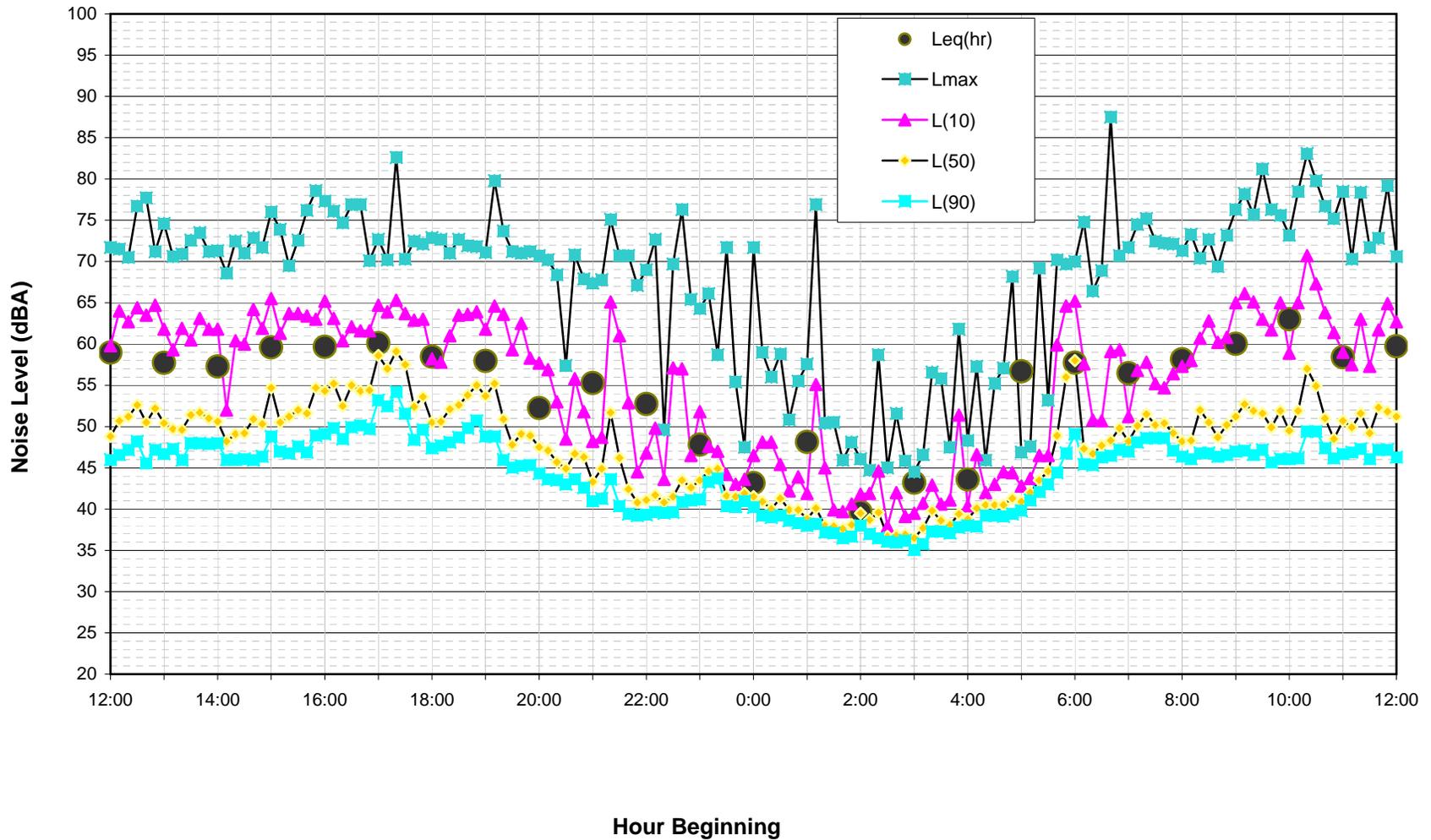
- A Community Center
- B Police
- C City Hall
- D Play Fields
- E Swim Facility
- F Library

SERVICE + ENVIRONMENT = EXPERIENCE

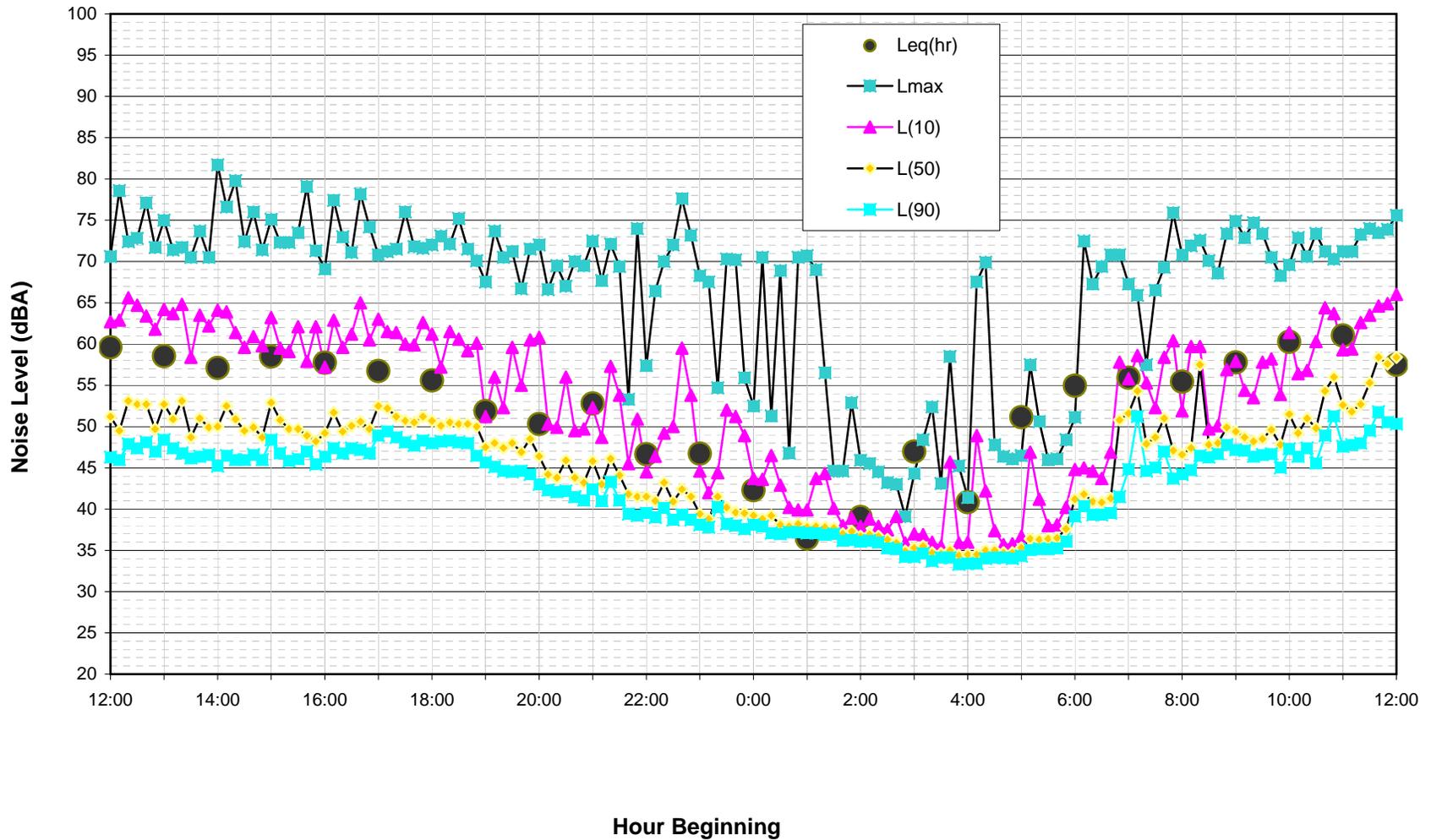
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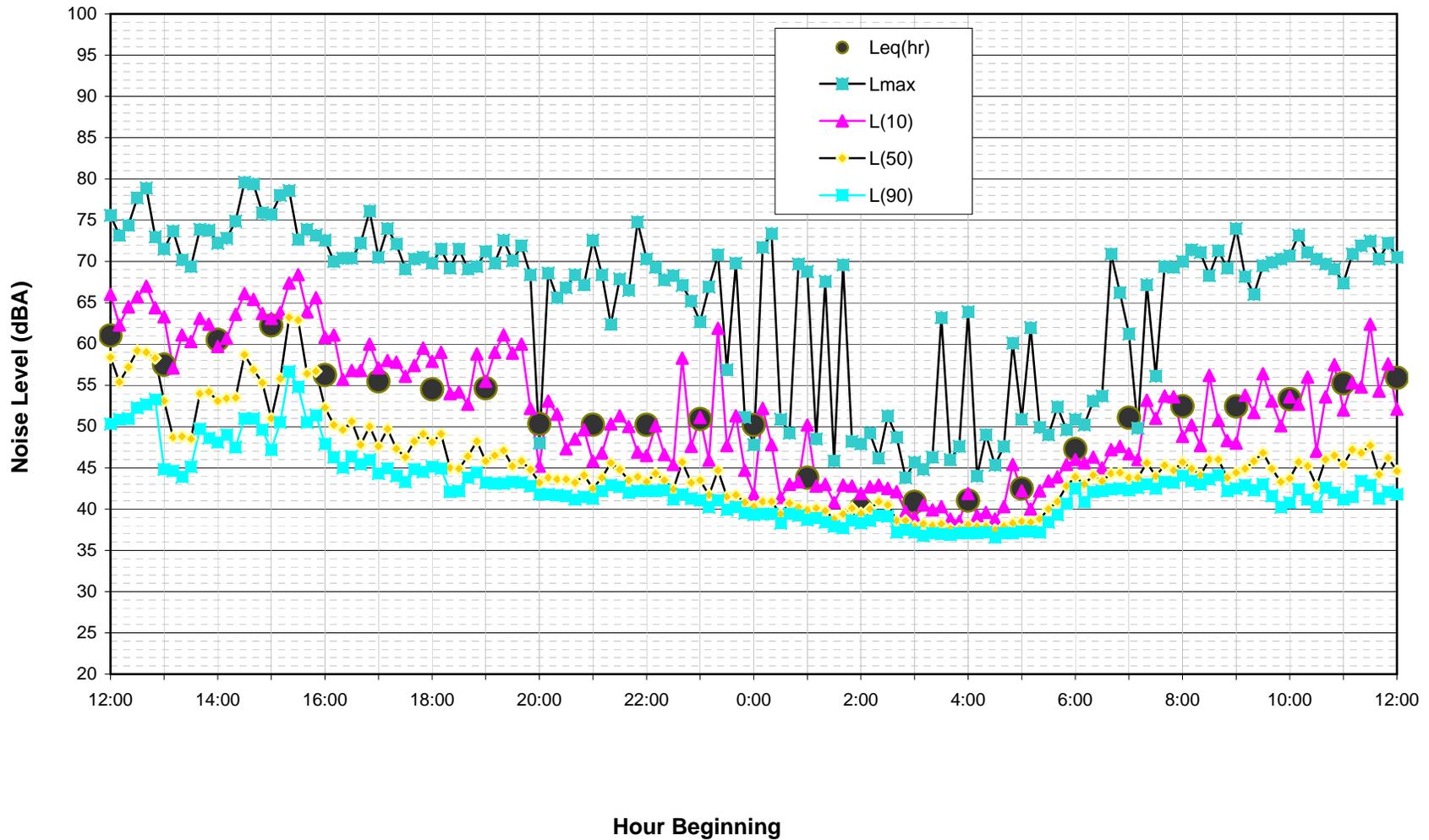
**Noise Level at LT-1
On Hillview Avenue Across from Soccer Field
April 16-17, 2009**



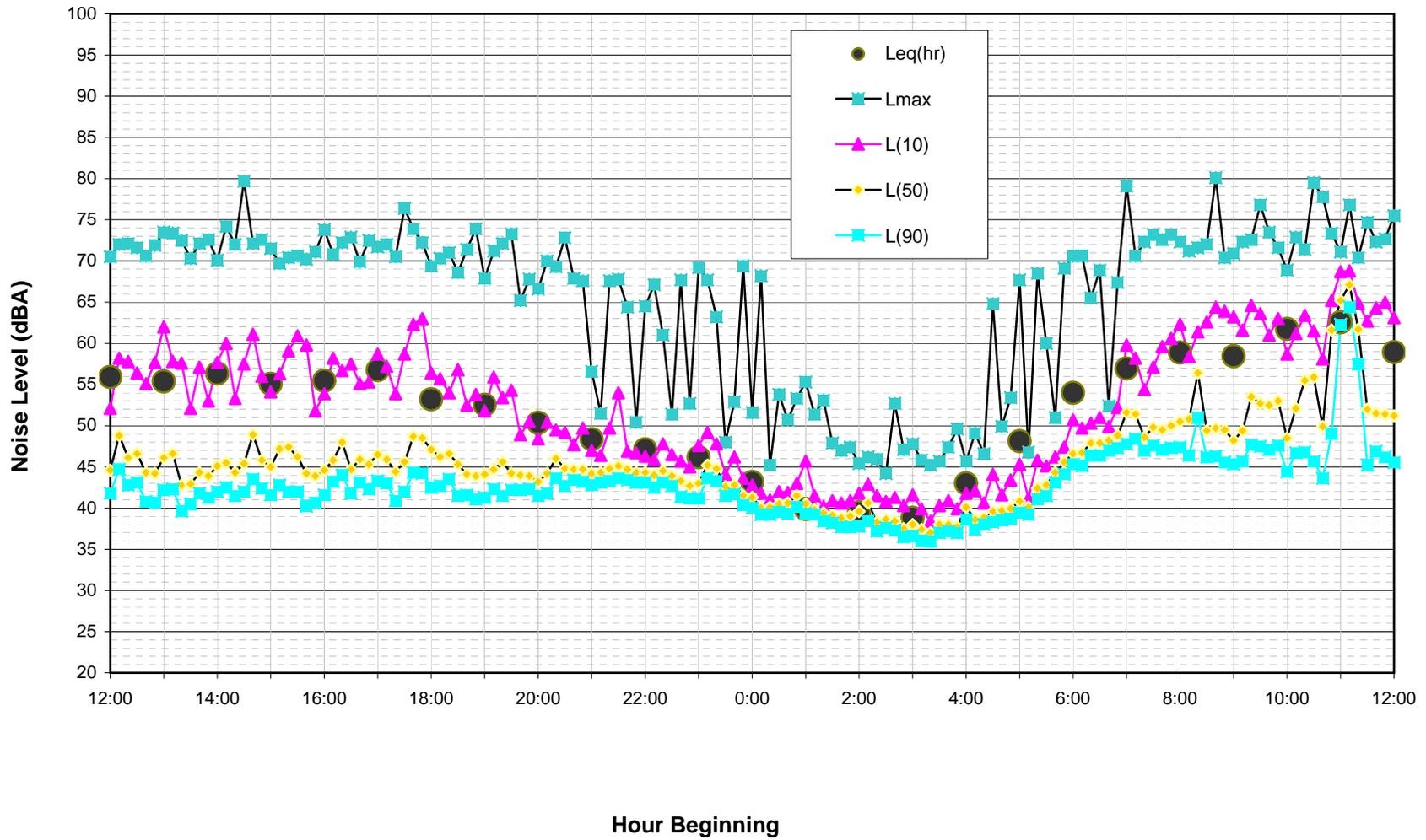
**Noise Level at LT-1
On Hillview Avenue Across from Soccer Field
April 17-18, 2009**



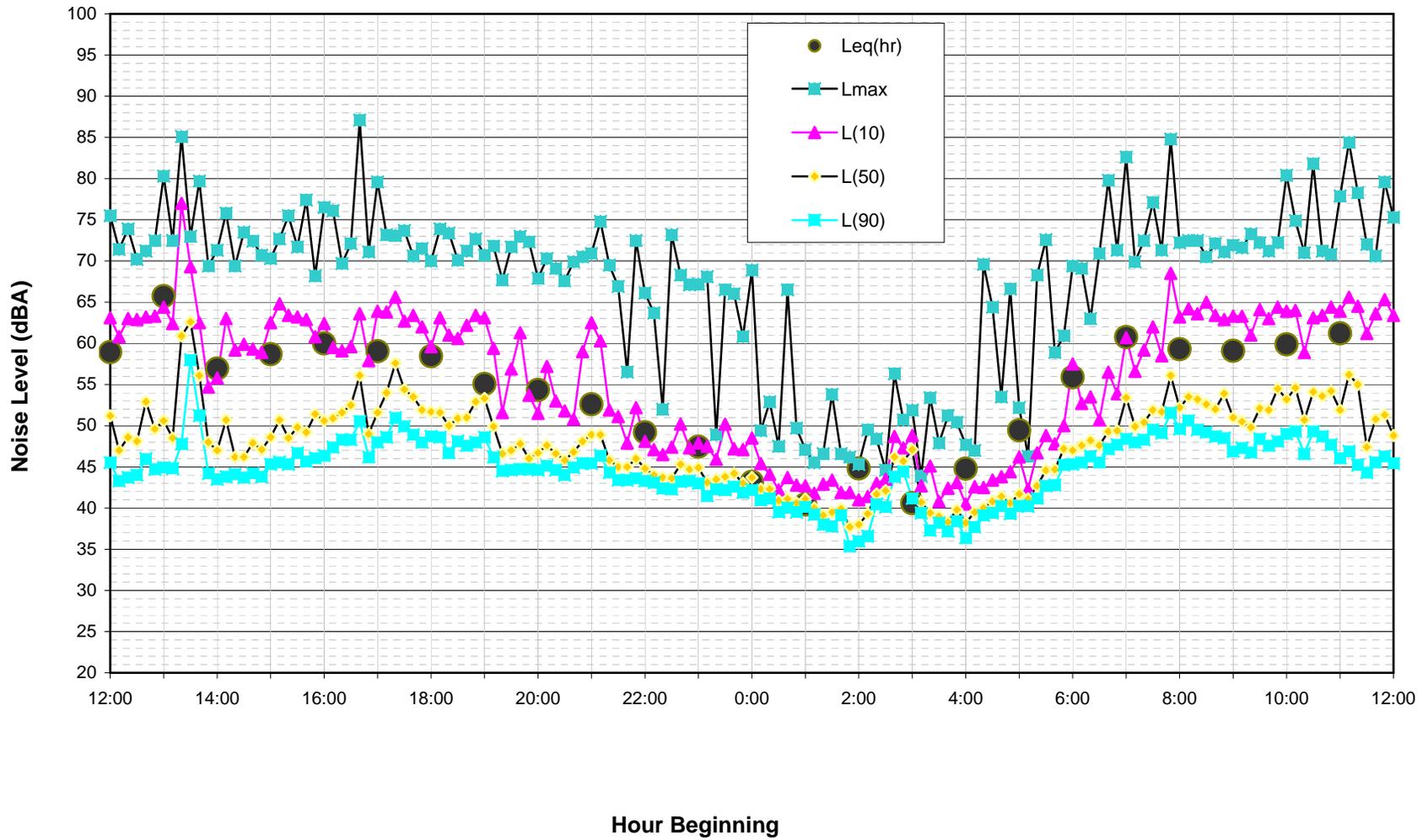
**Noise Level at LT-1
On Hillview Avenue Across from Soccer Field
April 18-19, 2009**



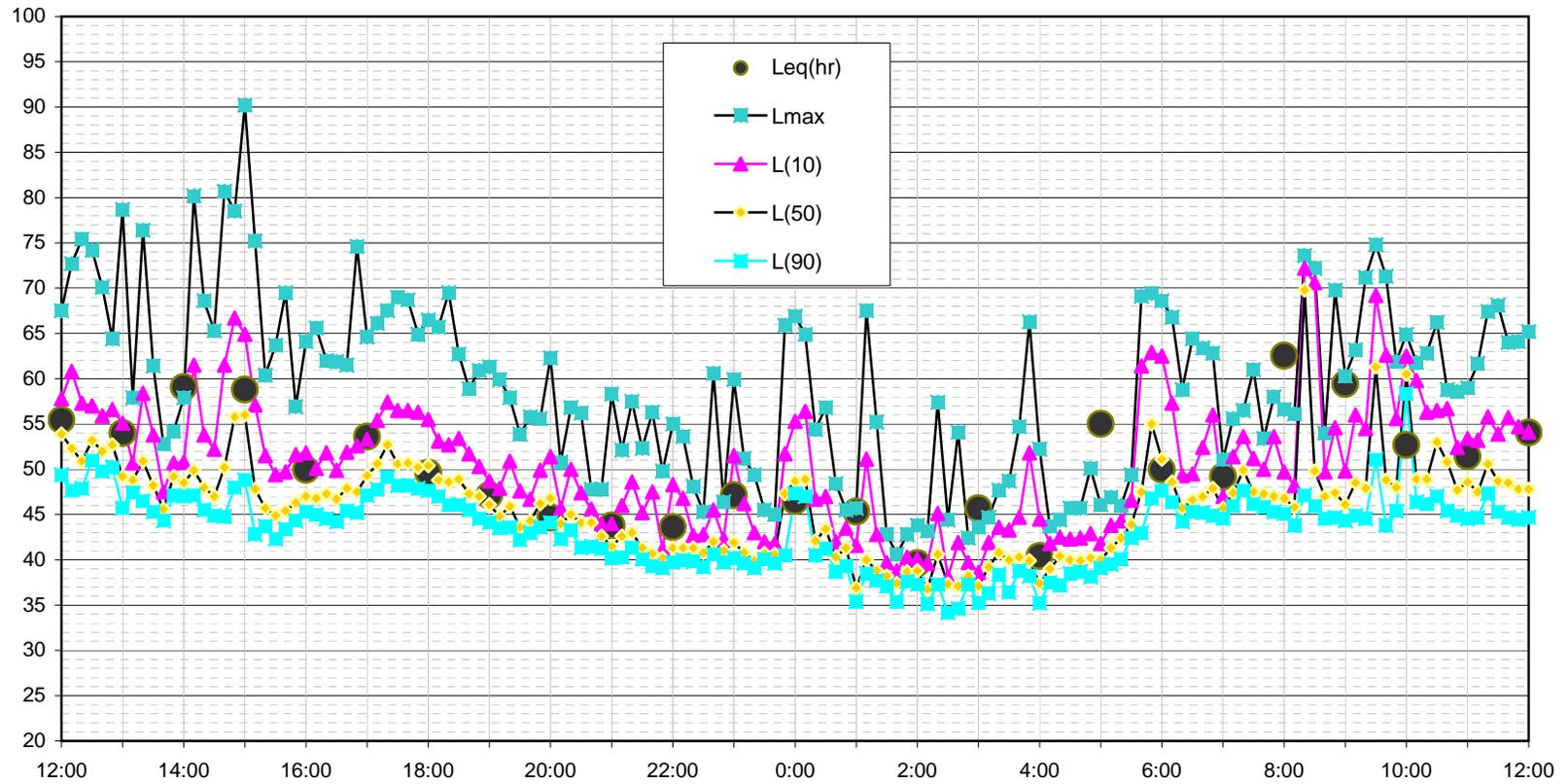
**Noise Level at LT-1
On Hillview Avenue Across from Soccer Field
April 19-20, 2009**



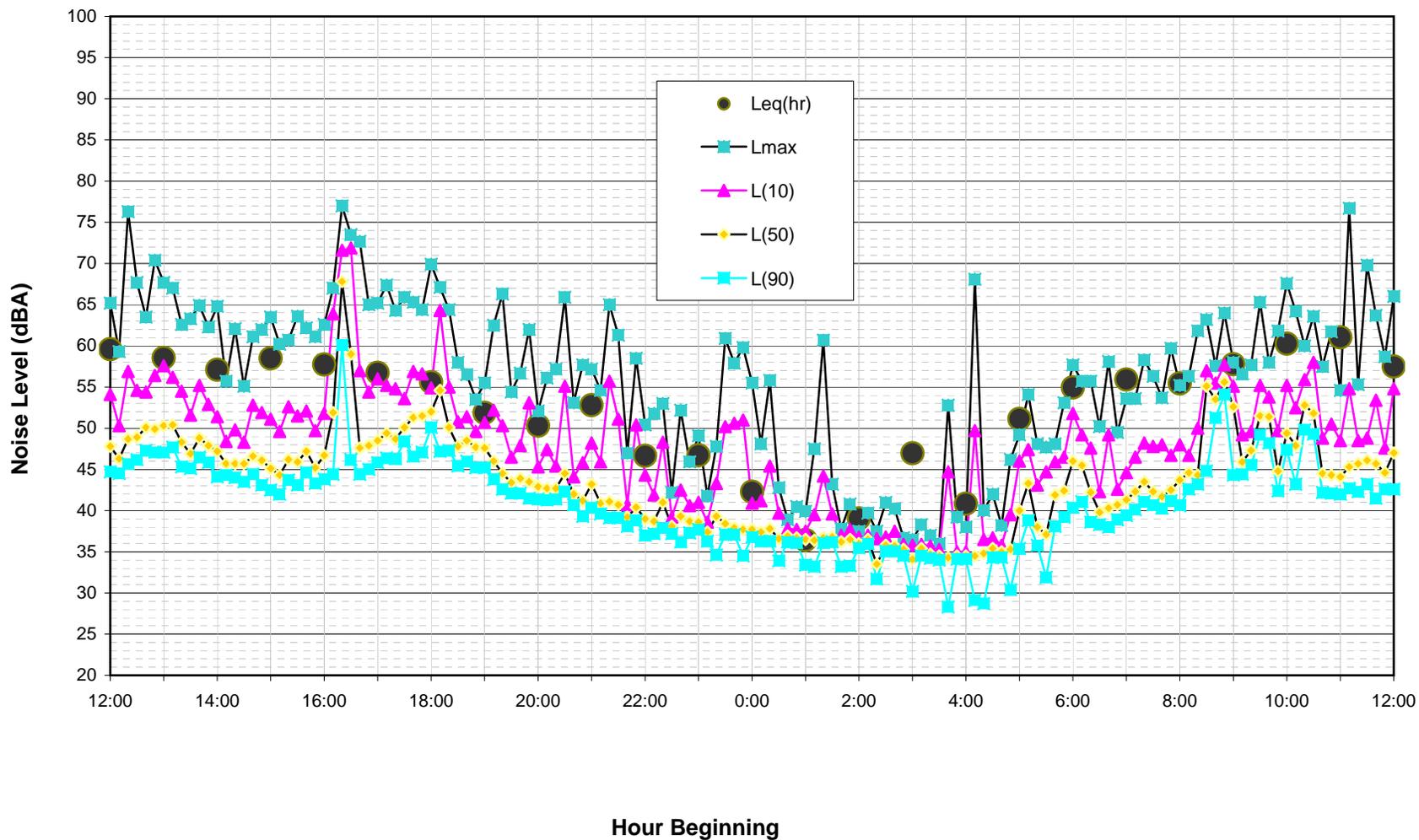
**Noise Level at LT-1
On Hillview Avenue Across from Soccer Field
April 20-21, 2009**



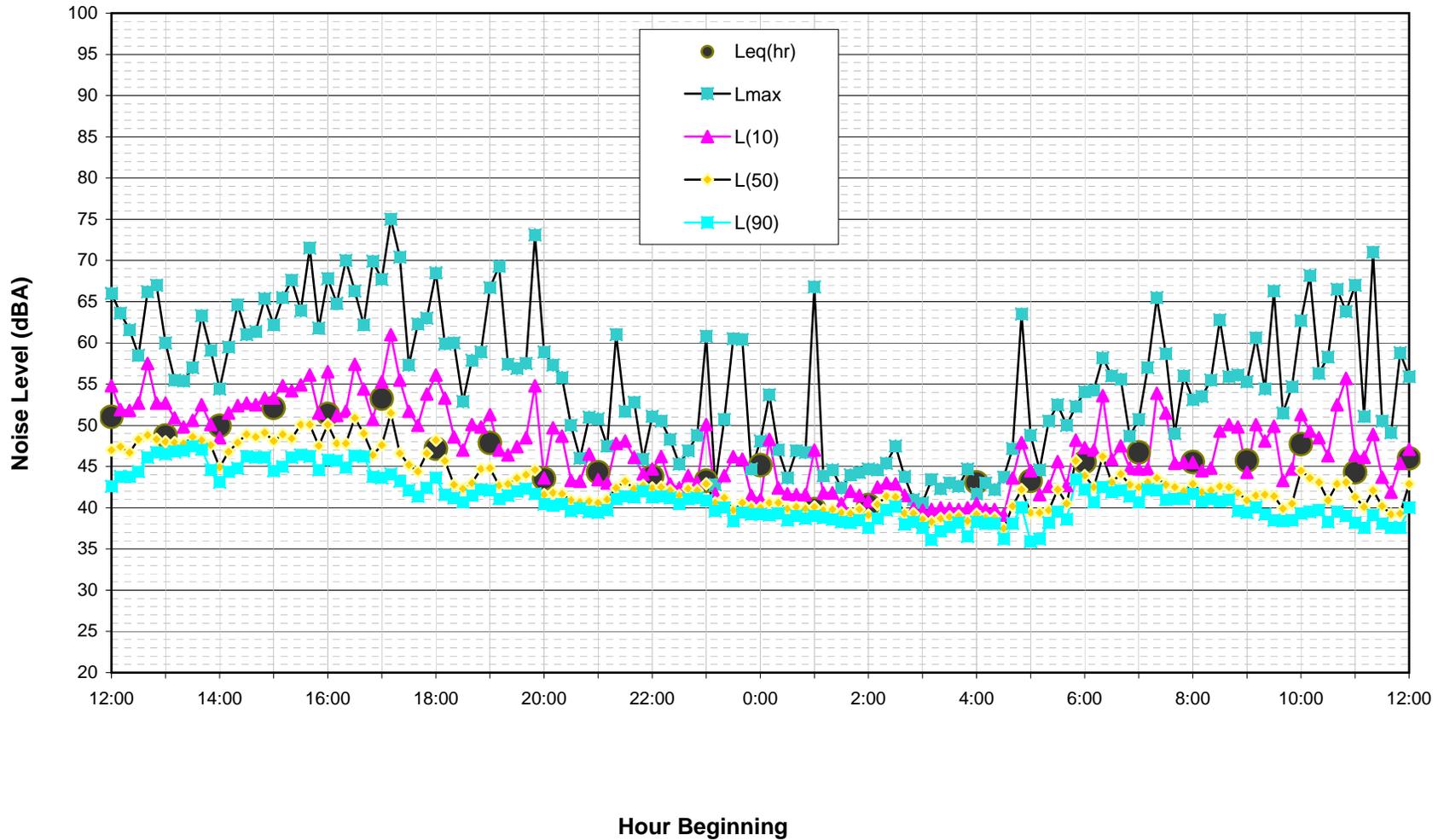
Noise Level at LT-2
On Property Line of Homes near Edith Avenue and Eleanor Avenue
April 16-17, 2009



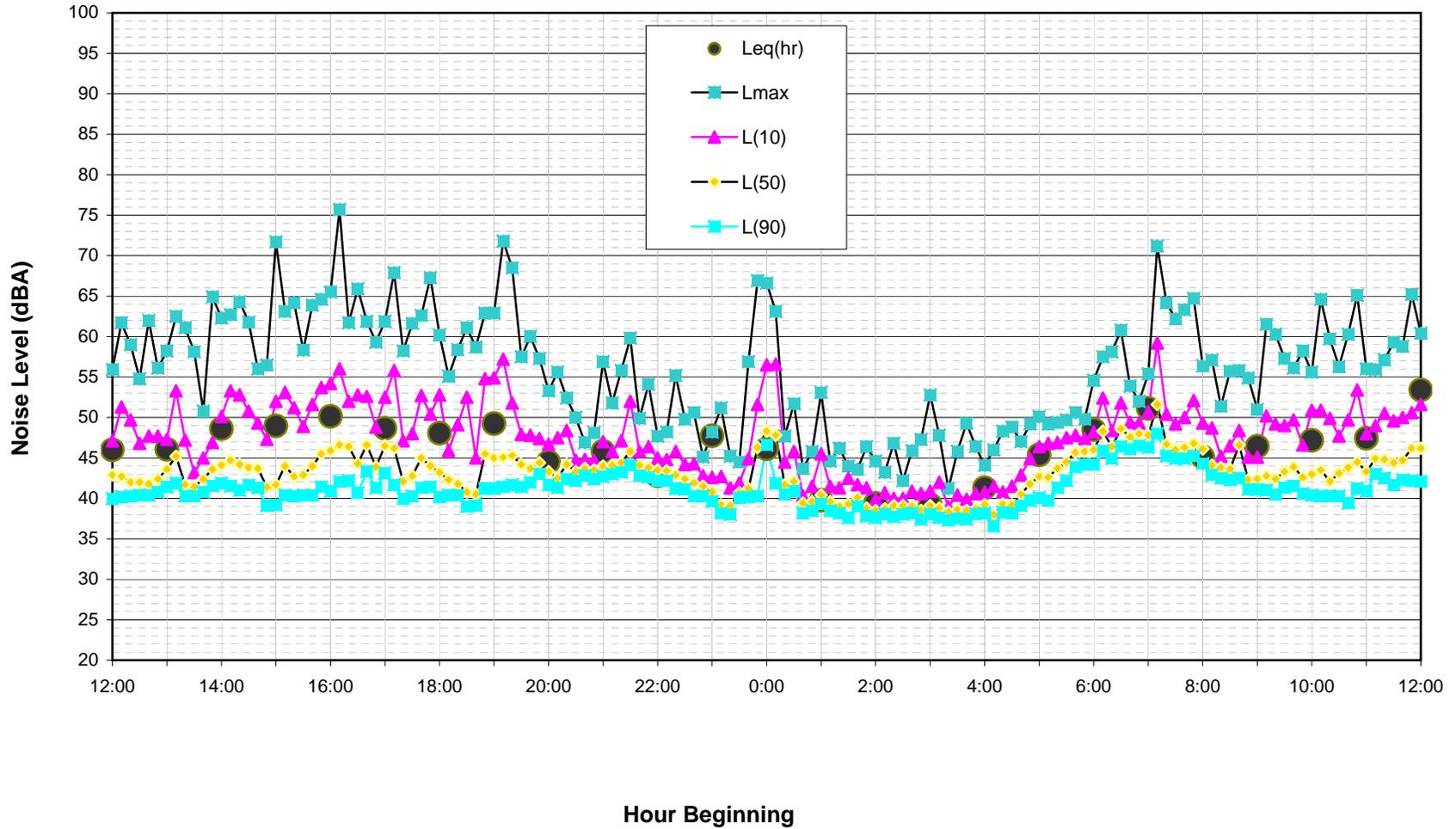
**Noise Level at LT-2
On Property Line of Homes near Edith and Eleanor
April 17-18, 2009**



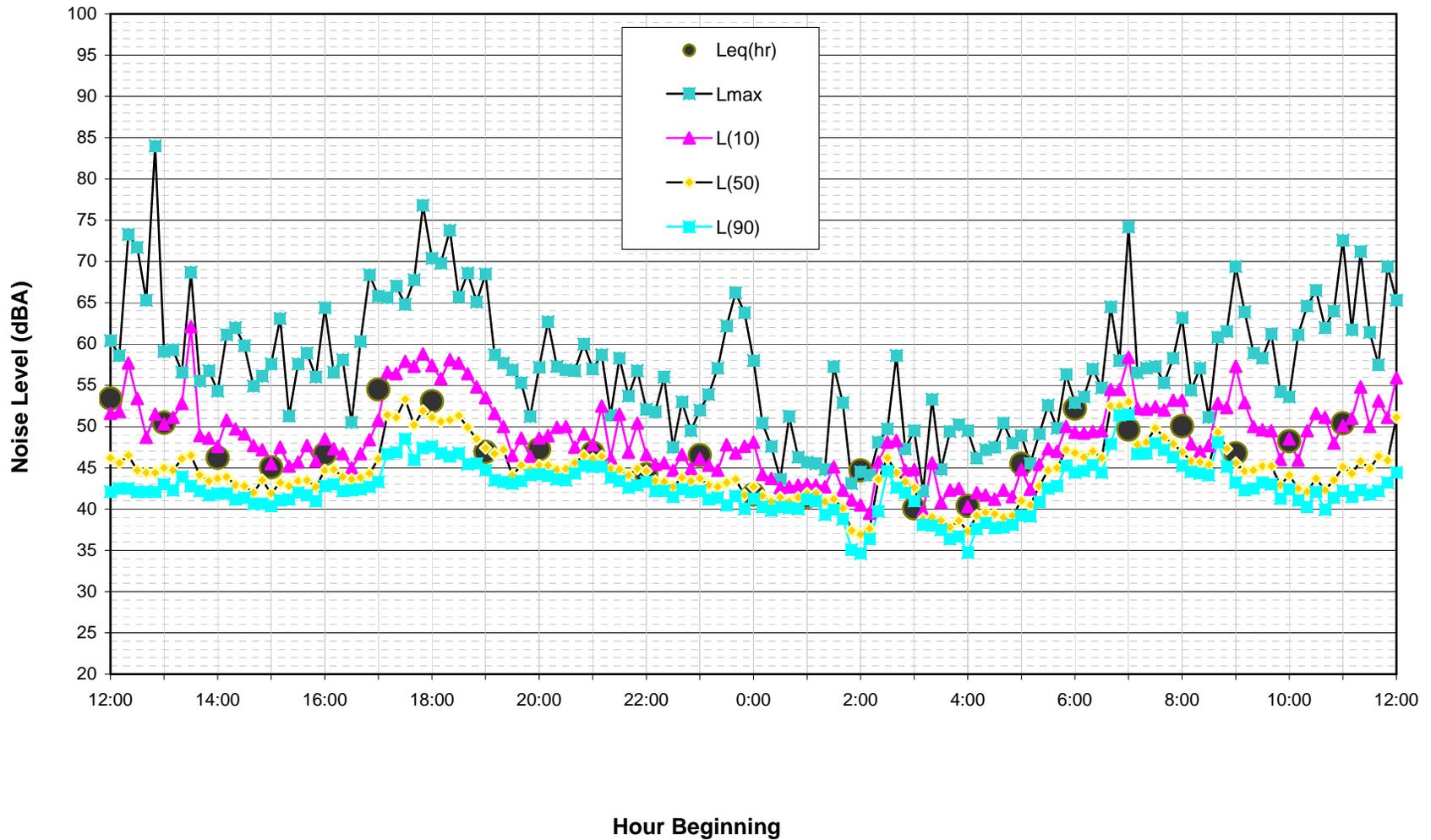
Noise Level at LT-2
On Property Line of Homes near Edith Avenue and Eleanor Avenue
April 18-19, 2009



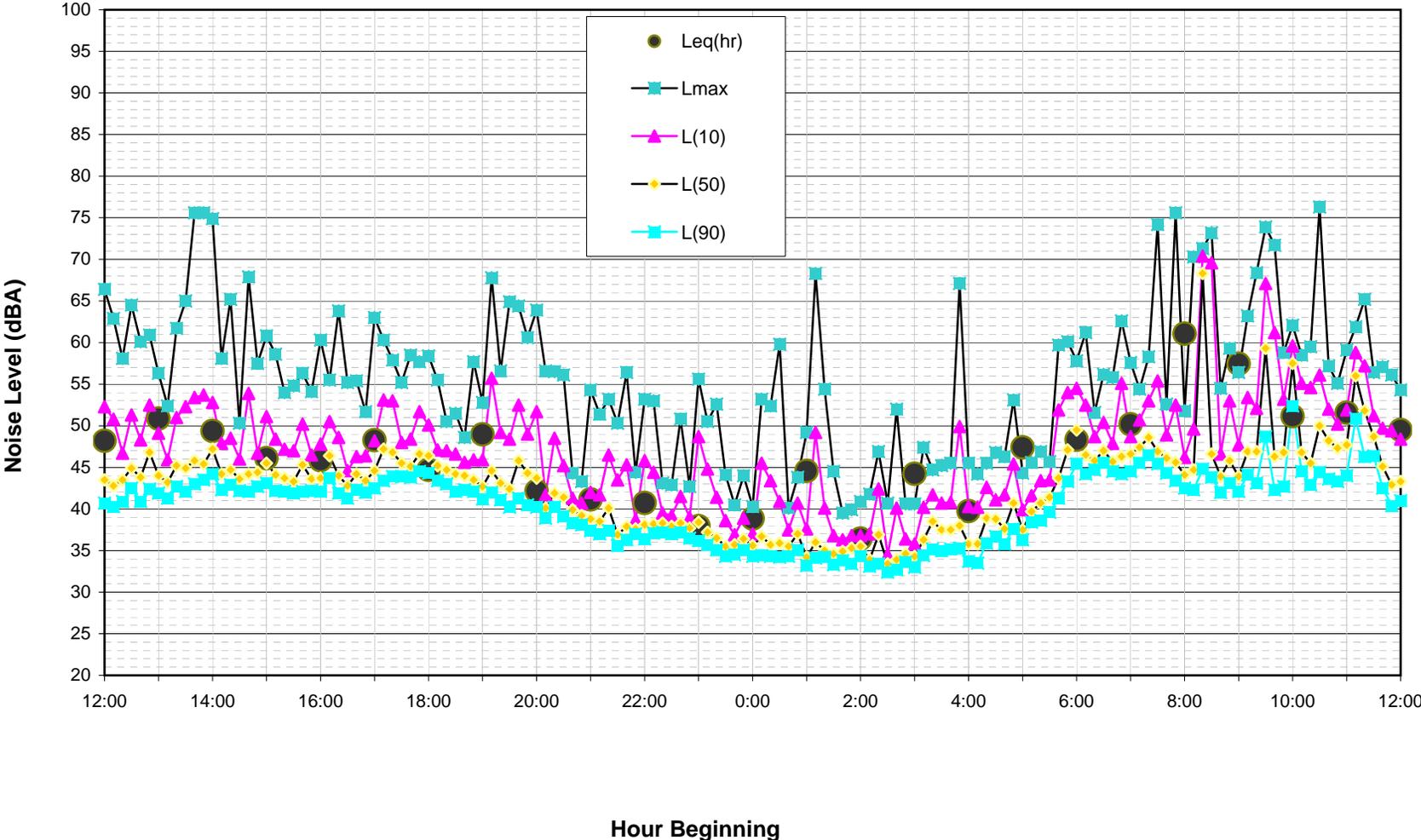
Noise Level at LT-2
On Property Line of Homes near Edith Avenue and Eleanor Avenue
April 19-20, 2009



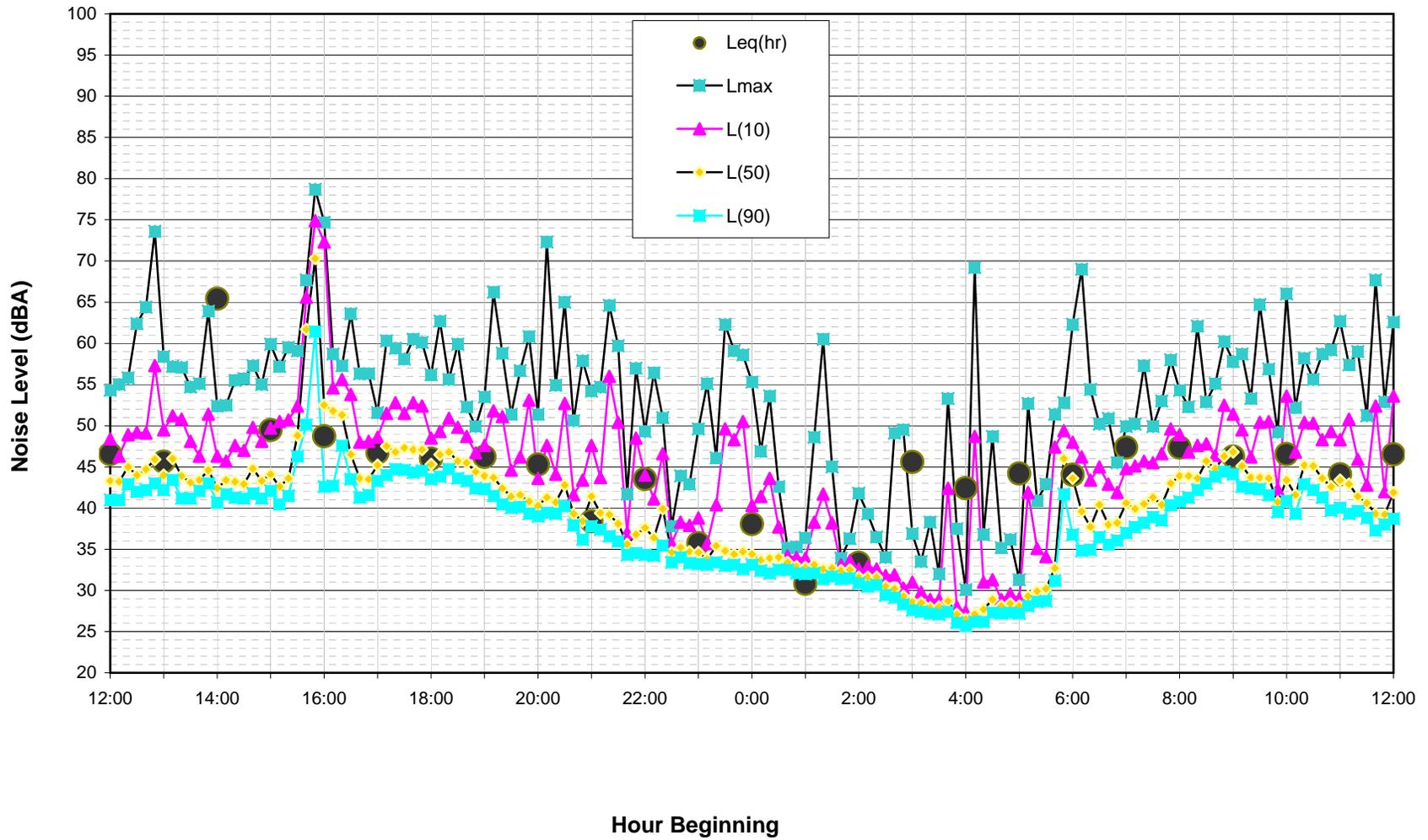
Noise Level at LT-2
On Property Line of Homes near Edith Avenue and Eleanor Avenue
April 20-21, 2009



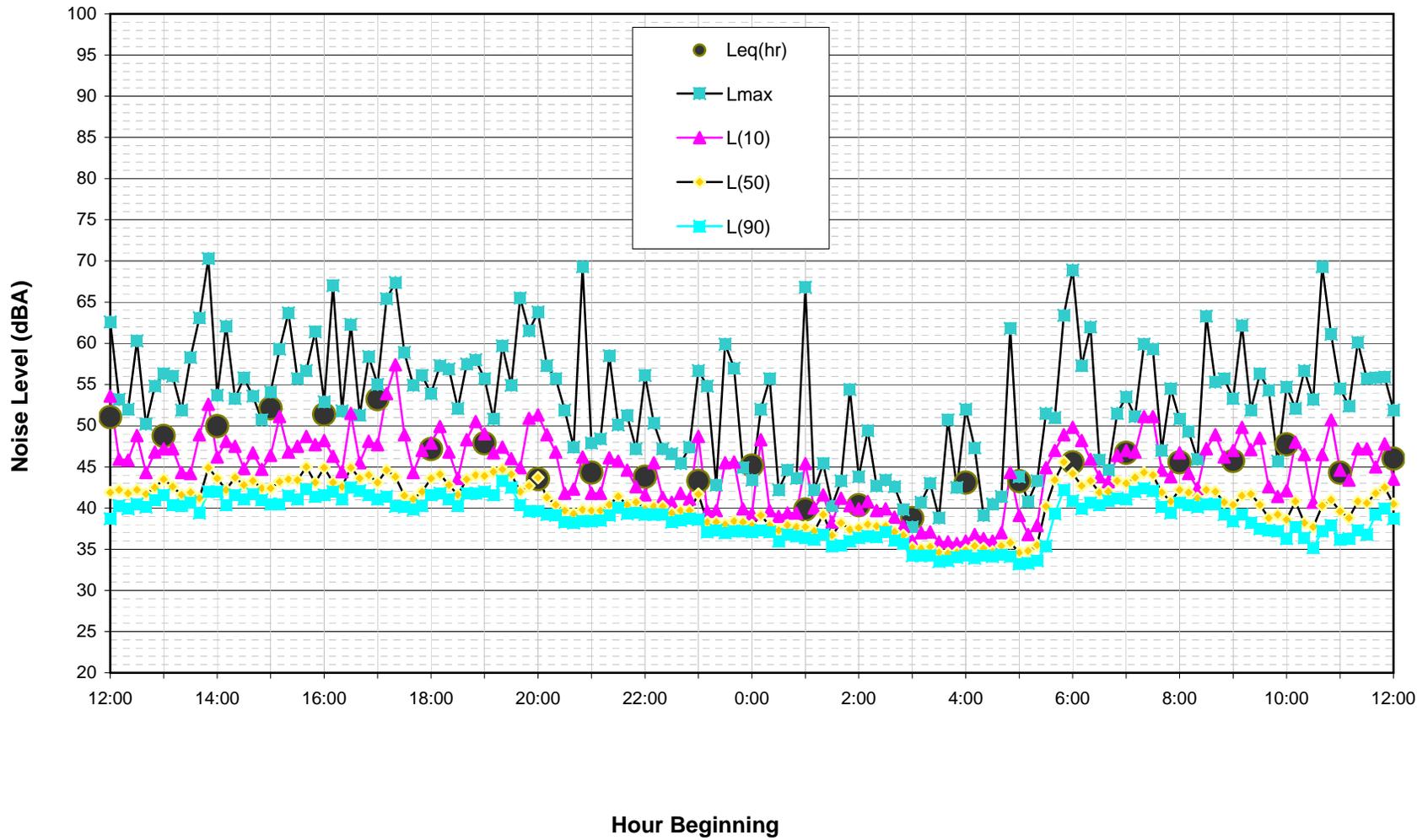
Noise Level at LT-3
Property Line of Homes at right field of Baseball Field
April 16-17, 2009



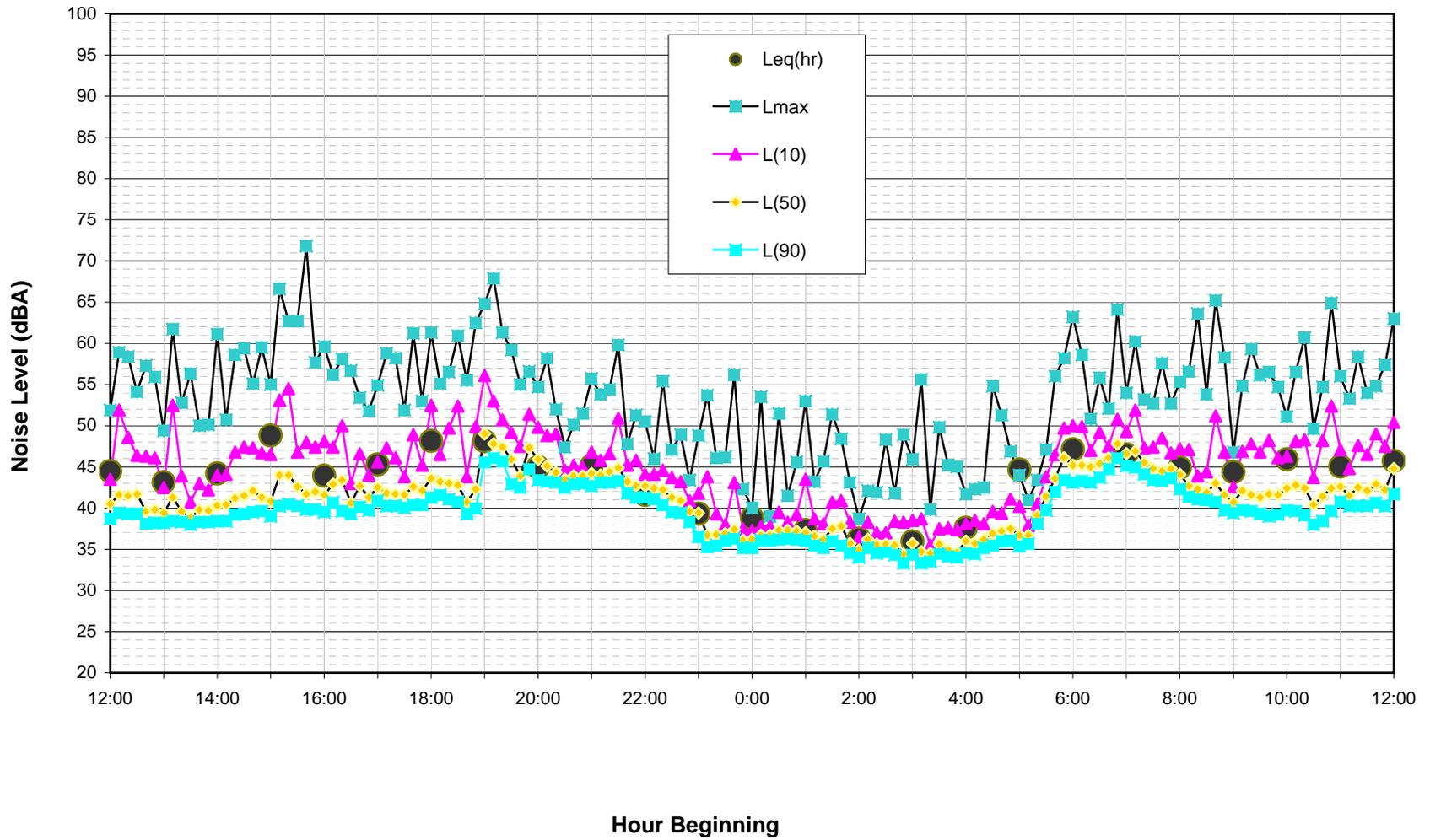
Noise Level at LT-3
Property Line of Homes at right field of Baseball Field
April 17-18, 2009



Noise Level at LT-3
Property Line of Homes at right field of Baseball Field
April 18-19, 2009



Noise Level at LT-3
Property Line of Homes at right field of Baseball Field
April 19-20, 2009



Noise Level at LT-3
Property Line of Homes at right field of Baseball Field
April 20-21, 2009

