Noise Assessment For:

Ontario Gateway Specific Plan

CITY OF ONTARIO

Prepared For:

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1.0 EXISTING SETTING

1.1 Project Description

The Ontario Gateway Specific Plan project site encompasses approximately 41-acres. The project site is bounded by I-10 to the north and Haven Avenue to the west. The Union Pacific railroad is located to the south. The project is located in the City of Ontario. The vicinity map is presented in Exhibit 1. The project site is currently occupied by an industrial/storage facility with an approximate 200,000 square foot metal industrial building, and approximately 9,600 square feet of office space which is situated on the southern portion of the project site. The land on the northern one-third of the project site is vacant.

The project proposes the development of a 400-room hotel, a 200-bed hospital, 250,000 square feet of office, 75,000 square feet of medical office, and 80,000 square feet of auto dealership. A conceptual site plan is presented in Exhibit 2.

This report analyses the potential noise impact from the proposed project. This report discusses background information on noise and community noise assessment criteria. This is intended to give the reader a greater understanding of noise and the criteria used to assess potential impacts from noise. Existing noise levels are presented to describe the existing noise environment, potential noise impacts during construction and operation are assessed. Measures to mitigate impacts are described.

1.2 Background Information on Noise

1.2.1 Noise Criteria Background

Sound is technically described in terms of the loudness (amplitude) of the sound and frequency (pitch) of the sound. The standard unit of measurement of the loudness of sound is the decibel (dB). Decibels are based on the logarithmic scale. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range of numbers in a manner similar to the Richter scale used to measure earthquakes. In terms of human response to noise, a sound 10 dB higher than another is judged to be twice as loud; and 20 dB higher four times as loud; and so forth. Everyday sounds normally range from 30 dB (very quiet) to 100 dB (very loud).

Since the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The A-weighted decibel scale (dBA) performs this compensation by discriminating against frequencies in a manner approximating the sensitivity of the human ear. Community noise levels are measured in terms of the "A-weighted decibel," abbreviated dBA. Exhibit 3 provides examples of various noises and their typical A-weighted noise level.

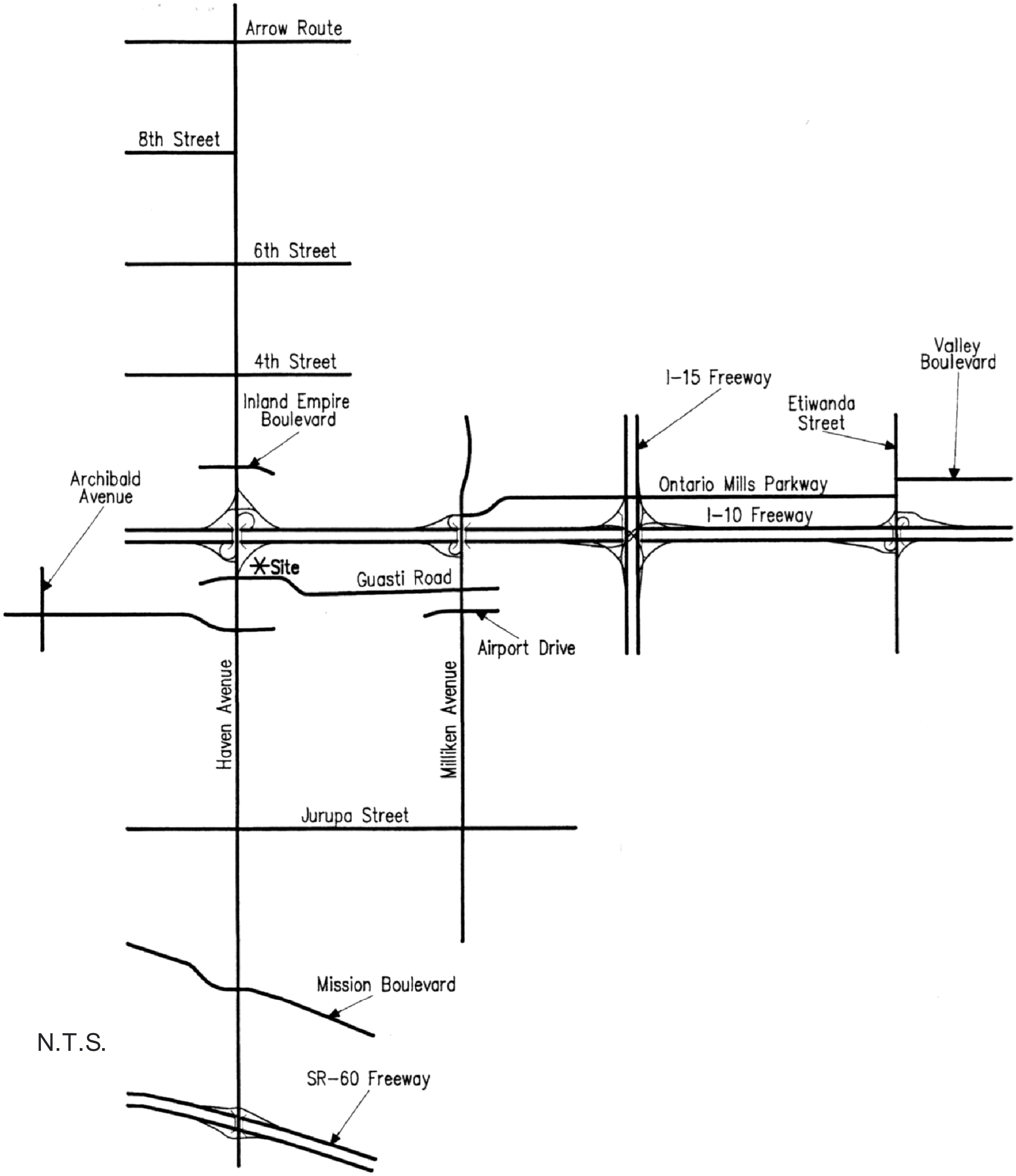

Exhibit 1
Vicinity Map

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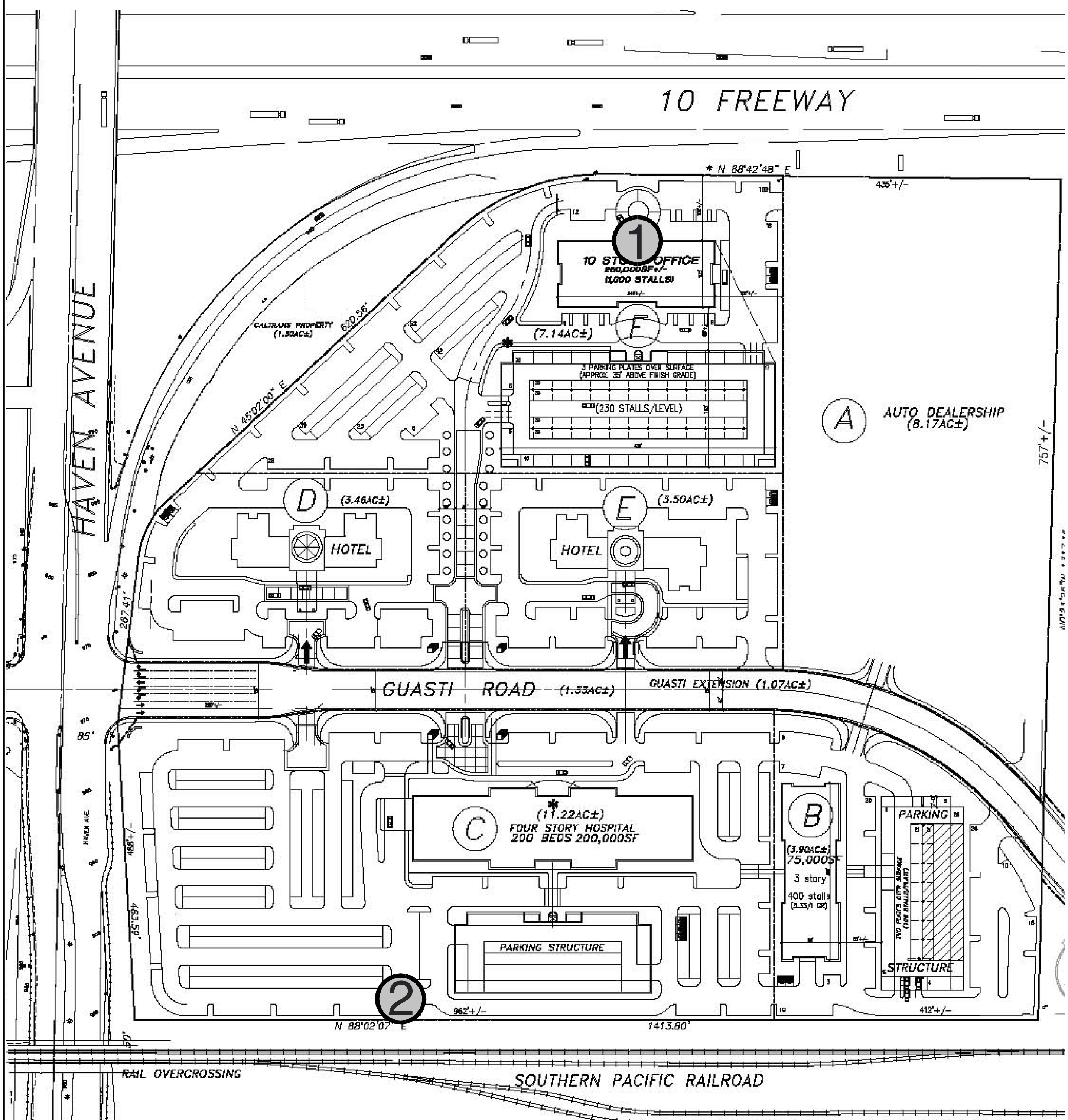


1 On-site noise measurement receptor locations

Exhibit 2
Conceptual Site Plan

Mestre Greve Associates

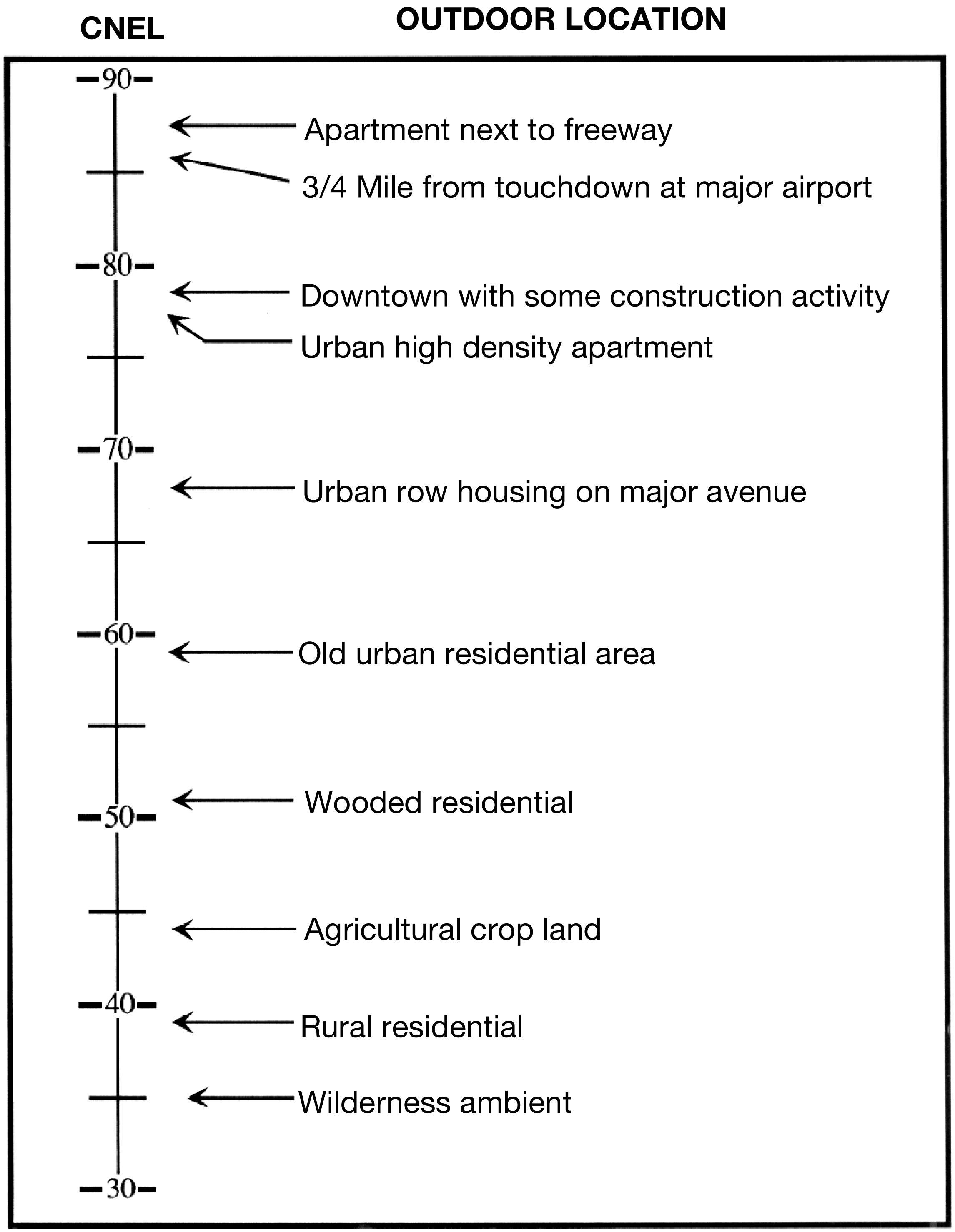


Exhibit 3
Typical CNEL Noise Levels

Sound levels decrease as a function of distance from the source as a result of wave divergence, atmospheric absorption and ground attenuation. As the sound wave form travels away from the source, the sound energy is dispersed over a greater area, thereby dispersing the sound power of the wave. Atmospheric absorption also influences the levels that are received by the observer. The greater the distance traveled, the greater the influence and the resultant fluctuations. The degree of absorption is a function of the frequency of the sound as well as the humidity and temperature of the air. Turbulence and gradients of wind, temperature and humidity also play a significant role in determining the degree of attenuation. Intervening topography can also have a substantial effect on the effective perceived noise levels.

Noise has been defined as unwanted sound and it is known to have several adverse effects on people. From these known effects of noise, criteria have been established to help protect the public health and safety and prevent disruption of certain human activities. This criteria is based on such known impacts of noise on people as hearing loss, speech interference, sleep interference, physiological responses and annoyance. Each of these potential noise impacts on people are briefly discussed in the following narratives:

> **HEARING LOSS** is not a concern in community noise situations of this type. The potential for noise induced hearing loss is more commonly associated with occupational noise exposures in heavy industry or very noisy work environments. Noise levels in neighborhoods, even in very noisy airport environs, are not sufficiently loud to cause hearing loss.
>
> **SPEECH INTERFERENCE** is one of the primary concerns in environmental noise problems. Normal conversational speech is in the range of 60 to 65 dBA and any noise in this range or louder may interfere with speech. There are specific methods of describing speech interference as a function of distance between speaker and listener and voice level.
>
> **SLEEP INTERFERENCE** is a major noise concern for traffic noise. Sleep disturbance studies have identified interior noise levels that have the potential to cause sleep disturbance. Note that sleep disturbance does not necessarily mean awakening from sleep, but can refer to altering the pattern and stages of sleep.
>
> **PHYSIOLOGICAL RESPONSES** are those measurable effects of noise on people that are realized as changes in pulse rate, blood pressure, etc. While such effects can be induced and observed, the extent is not known to which these physiological responses cause harm or are sign of harm.
>
> **ANNOYANCE** is the most difficult of all noise responses to describe. Annoyance is a very individual characteristic and can vary widely from person to person. What one person considers tolerable can be quite unbearable to another of equal hearing capability.

1.2.2 Noise Assessment Metrics

The description, analysis and reporting of community noise levels around communities is made difficult by the complexity of human response to noise and the myriad of noise metrics that have been developed for describing noise impacts. Each of these metrics attempts to quantify noise levels with respect to community response. Most of the metrics use the A-Weighted noise level to quantify noise impacts on humans. A-Weighting is a frequency weighting that accounts for human sensitivity to different frequencies.

Noise metrics can be divided into two categories: single event and cumulative. Single-event metrics describe the noise levels from an individual event such as an aircraft fly over or perhaps a heavy equipment pass-by. Cumulative metrics average the total noise over a specific time period, which is typically 1 or 24-hours for community noise problems. For this type of analysis, cumulative noise metrics will be used.

Several rating scales have been developed for measurement of community noise. These account for: (1) the parameters of noise that have been shown to contribute to the effects of noise on man, (2) the variety of noises found in the environment, (3) the variations in noise levels that occur as a person moves through the environment, and (4) the variations associated with the time of day. They are designed to account for the known health effects of noise on people described previously. Based on these effects, the observation has been made that the potential for a noise to impact people is dependent on the total acoustical energy content of the noise. A number of noise scales have been developed to account for this observation. Two of the predominate noise scales are the: Equivalent Noise Level (LEQ) and the Community Noise Equivalent Level (CNEL). These scales are described in the following paragraphs.

LEQ is the sound level corresponding to a steady-state sound level containing the same total energy as a time-varying signal over a given sample period. LEQ is the "energy" average noise level during the time period of the sample. LEQ can be measured for any time period, but is typically measured for 1 hour. This 1 hour noise level can also be referred to as the Hourly Noise Level (HNL). It is the energy sum of all the events and background noise levels that occur during that time period.

CNEL, Community Noise Equivalent Level, is the predominant rating scale now in use in California for land use compatibility assessment. The CNEL scale represents a time weighted 24-hour average noise level based on the A-weighted decibel. Time weighted refers to the fact that noise that occurs during certain sensitive time periods is penalized for occurring at these times. The evening time period (7 p.m. to 10 p.m.) penalizes noises by 5 dBA, while nighttime (10 p.m. to 7 a.m.) noises are penalized by 10 dBA. These time periods and penalties were selected to reflect people's increased sensitivity to noise during these time periods. A CNEL noise level may be reported as a "CNEL of 60 dBA," "60 dBA CNEL," or simply "60 CNEL." Typical noise levels in terms of the CNEL scale for different types of communities are presented in Exhibit 4.

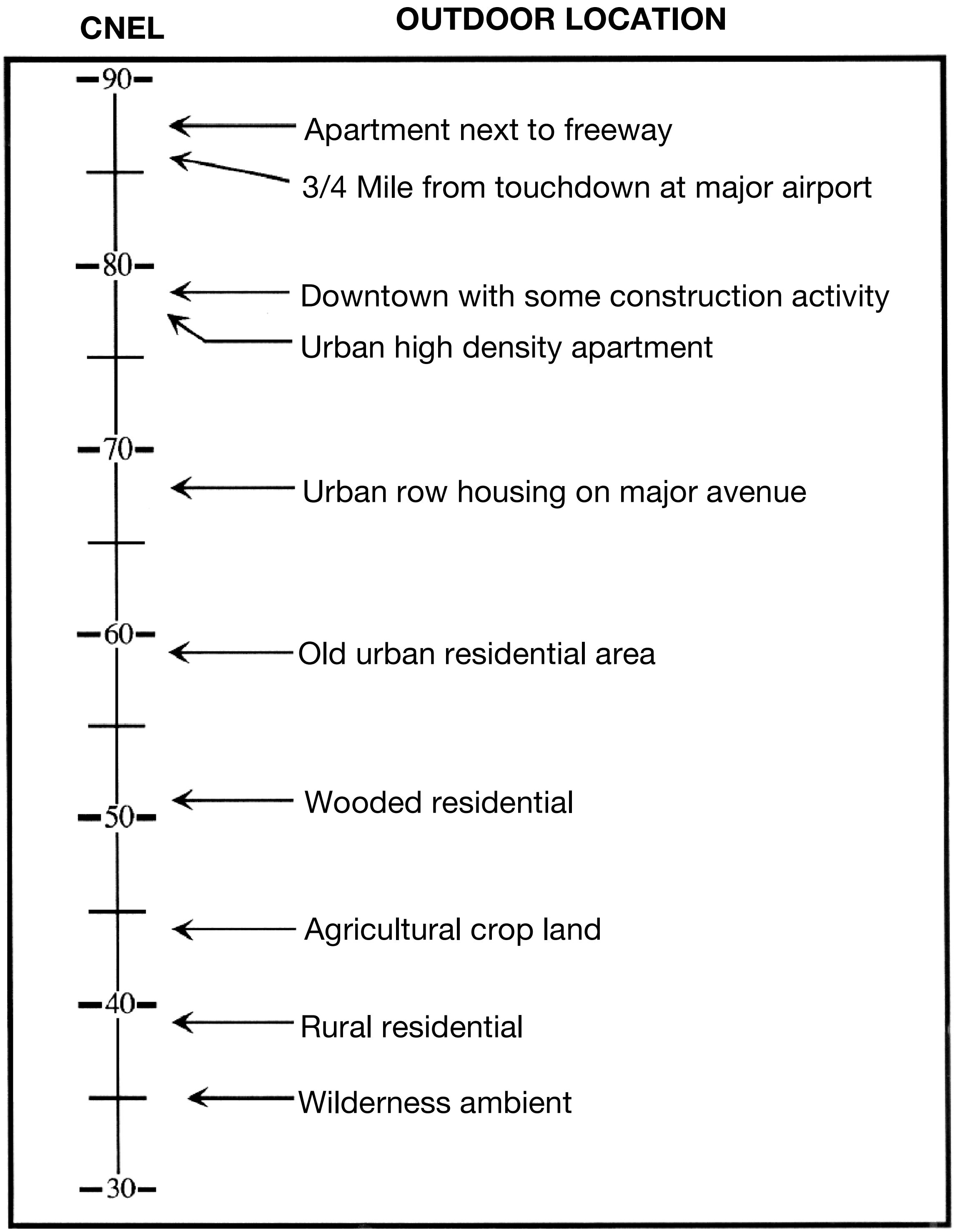


Exhibit 4
Typical CNEL Noise Levels

Mestre Greve Associates

Ldn, the day-night scale is similar to the CNEL scale except that evening noises are not penalized. It is a measure of the overall noise experienced during an entire day. The time-weighted refers to the fact that noise that occurs during certain sensitive time periods is penalized for occurring at these times. In the Ldn scale, those noise levels that occur during the night (10 pm to 7 am) are penalized by 10 dB. This penalty was selected to attempt to account for increased human sensitivity to noise during the quieter period of a day, where home and sleep is the most probable activity.

L(%) is a statistical method of describing noise which accounts for variance in noise levels throughout a given measurement period. L(%) is a way of expressing the noise level exceeded for a percentage of time in a given measurement period. For example since 5 minutes is 25% of 20 minutes, L(25) is the noise level that is equal to or exceeded for five minutes in a twenty minute measurement period. It is L(%) that is used for most Noise Ordinance standards. For example most daytime County, state and City Noise Ordinances use an ordinance standard of 55 dBA for 30 minutes per hour or an L(50) level of 55 dBA. In other words, the Noise Ordinance states that no noise level should exceed 55 dBA for more that fifty percent of a given period.

1.3 Noise Criteria

The City of Ontario Noise Ordinance and Noise Element of the General Plan contain the City's policies on noise. The Noise Ordinance applies to noise on one property impacting a residential neighbor. It sets limits on noise levels that can be experienced at the residence. The Noise Ordinance is part of the City's Municipal Code and is enforceable throughout the City. A project that proposes a zone change to residential uses must provide measures to ensure that existing noise sources do not violate the Noise Ordinance standards. The Noise Ordinance cannot be enforced against vehicles traveling on public roadways, railroads or aircraft. Control of the mobile noise sources on public roads is preempted by federal and State laws. It can be applied to vehicles traveling on private property (e.g. parking lots or loading docks).

The Noise Element of the General Plan presents limits on noise levels from transportation noise sources, vehicles on public roadways, railroads and aircraft. These limits are imposed on new developments. The new developments must incorporate the measures to ensure that the limits are not exceeded. The Noise Ordinance and Noise Element policies are presented below.

1.3.1 City of Ontario Noise Element

The City of Ontario General Plan Noise Element specifies outdoor and indoor noise standard for various land uses impacted by transportation noise sources. The City's noise standards are consistent with the State of California's noise standards. The interior and exterior noise standards are in terms of the Community Noise Equivalent Level (CNEL). The standards specify that the interior of commercial buildings shall not exceed 45 CNEL for hospital and hotel uses, 50 CNEL for office and 55 CNEL for retail uses. The City of Ontario noise standards for various land uses are presented in Exhibit 5.

LAND USE CATEGORIES		ENERGY AVERAGE CNEL	
CATEGORIES	USES	INTERIOR[1]	EXTERIOR[2]
RESIDENTIAL	Single Family, Two Family, Multiple Family	45[3]	65
	Mobile Home	na	65[4]
COMMERCIAL INDUSTRIAL INSTITUTIONAL	Hotel, Motel, Transient Lodging	45	65[5]
	Commercial Retail, Bank, Restaurant	55	na
	Office Building, Research and Development, Professional Offices, City Office Building	50	na
	Amphitheater, Concert Hall Auditorium, Meeting Hall	45	na
	Gymnasium (Multipurpose)	50	na
	Sports Club	55	na
	Manufacturing, Warehousing, Wholesale, Utilities	65	na
	Movie Theaters	45	na
INSTITUTIONAL	Hospital, Schools' Classroom	45	65
	Church, Library	45	na
OPEN SPACE	Parks	na	65

INTERPRETATION

1. Indoor environment excluding: Bathrooms, toilets, closets, corridors
2. Outdoor environment limited to: Private yard of single family
   Multi-family private patio or balcony which is served by a means of an exit from inside.
   Mobile home park
   Hospital patio
   Park's picnic area
   School's playground
   Hotel and motel recreation area
3. Noise level requirement with closed windows. Mechanical ventilating system or other means of natural ventilation shall be provided as part of Chapter 12, Section 1205 of UBC.
4. Exterior noise level should be such that the interior noise level will not exceed 45 CNEL.
5. Except those areas affected by aircraft noise.

Exhibit 5
City of Ontario Noise Standards

1.3.2 City of Ontario Noise Ordinance

A noise ordinance is designed to control unnecessary, excessive and annoying sounds from stationary (non-transportation) noise sources. Noise ordinance requirements can not applied to mobile noise sources such as heavy trucks when traveling on public roadways. Federal and state laws preempt control of mobile noise sources on public roads. Noise ordinance standards typically apply to industrial and commercial noise sources impacting residential areas. They are also applicable to noise generated at parks and schools impacting residential areas.

The City of Ontario noise ordinance is contained in Title 9 (Development Code), Chapter 1 (Zoning and Land Use Requirements), Article 33 (Environmental Performance Standards), Section 9-1.3305 (Noise) of the City's municipal code. The noise ordinance standards are presented in Table 1.

Table 1
City of Ontario Environmental Performance (Noise Ordinance) Standards

Receiving Land Use Category	Noise Metric	Noise Level Not To Be Exceeded 7 a.m. to 10 p.m. (Daytime)	10 p.m. to 7 a.m. (Nighttime)
EXTERIOR NOISE STANDARDS			
Residential (except multi-family)	Leq (1hr)	65 dBA	45 dBA
Multi-family and Mobile Home Park	Leq (1hr)	65 dBA	50 dBA
Commercial (all C zones, including AP)	Leq (1hr)	65 dBA	60 dBA
Light industrial (M1, M2)	Leq (1hr)	70 dBA	70 dBA
Heavy industrial	Leq (1hr)	70 dBA	70 dBA
INTERIOR NOISE STANDARDS (Multi-family)			
5 Minute/Hour	L8.3	45 dBA	35 dBA
1 Minute/Hour	L1.7	50 dBA	40 dBA
Any period of time	Lmax	45 dBA	35 dBA

The City of Ontario has applied 65 dBA Leq (1-hour) daytime (7 a.m. to 10 p.m.) and 45 dBA Leq (1-hour) nighttime (10 p.m. to 7 a.m.) noise standards to fixed (stationary) noise sources. This means that a fixed noise source cannot cause the Leq noise level for 1-hour to exceed 65 dBA during the daytime or 45 dBA at the nearest residential property line. Also, a fixed noise source cannot exceed 65 dBA Leq during the daytime and 60 dBA Leq during the nighttime at the nearest commercial land uses.

1.4 Existing Noise Measurements

To document the existing noise environment at the project site, ambient noise measurements were made on October 13, 2006 between 11:00 a.m. and 1:00 p.m. at two locations. Measurement Site 1 was located along I-10, approximately 100 feet from the edge of the freeway, and Site 2 was located near the south boundary of the project adjacent to the Union Pacific Railroad (UPRR). The existing on-site noise includes heavy trucks and forklift activities from the distribution warehouse center. The locations of the noise measurement sites are previously shown in Exhibit 2.

Two 10-minute measurements were made at each of the measurement sites. The measurements were made with a Brüel & Kjær Modular Precision Sound Level Meter, Type 2236. The system was calibrated before and after each measurement series with calibration traceable to the National Institute of Standards and Technology. The wind speeds during the time of measurements were light (0 to 5 miles per hour).

The measurement results are presented in Table 2. The noise measurement levels are in terms of the equivalent noise levels (Leq), maximum noise levels, minimum noise levels and percentile noise levels (L%). L(%) is a way of expressing the noise level exceeded for a percentage of time in a given measurement period. For example, L(25) is the noise level that is equal to or exceeded for five minutes in a twenty minute measurement period since 5 minutes is 25% of 20 minutes. Similarly, the L50 percentile level represents the noise levels exceeded 50 percent of the time, and usually represent the average ambient noise level. The L90 noise levels represent the background noise levels which are exceeded 90 percent of the time. The other percentile levels as well as the L50 relate to the Noise Ordinance limits presented previously.

Table 2
Existing Noise Measurements (dBA)

Site	Time	Leq	Lmax	Lmin	L1.7	L8.3	L25	L50	L90
1	11:50 am	65.9	73.4	61.1	69.0	68.0	66.5	65.5	63.0
		66.2	78.2	61.4	71.0	68.0	66.0	65.0	63.0
2	12:12 pm	53.3	63.5	46.8	60.0	56.5	53.5	51.0	48.5
		52.4	62.5	47.5	57.0	55.0	52.5	51.0	49.0

At Site 1, the dominant source of noise was traffic on I-10. Noise from the distant Haven Avenue and a train event also contributed to the noise environment along with occasional truck activities on the project site. The ambient L50 noise levels were in the 65 dBA range. A train horn were the cause of the maximum noise level during the first measurement. A heavy truck caused the maximum noise level during the second measurement.

At Site 2, the dominant source of noise was traffic on Haven Avenue, on-site heavy truck/forklift activities, and occasionally the aircraft departing from Ontario International Airport. The ambient L50 noise levels were in the low 50 dBA range. Traffic on Haven Avenue and heavy truck and forklift activities on-site were the cause of the maximum noise levels.

1.5 Existing Roadway Noise Levels

The highway noise levels projected in this report were computed using the Highway Noise Model published by the Federal Highway Administration ("FHWA Highway Traffic Noise Prediction Model," FHWA-RD-77-108, December, 1978). The FHWA Model uses traffic volume, vehicle mix, vehicle speed, and roadway geometry to compute the "equivalent noise level." A computer code has been written which computes equivalent noise levels for each of the time periods used in the calculation of CNEL. Weighting these noise levels and summing them results in the CNEL for the traffic projections used. CNEL contours are found by iterating over many distances until the distances to the 60, 65, and 70 CNEL contours are found. For the roadway analysis, worst-case assumptions about future motor vehicle traffic and noise levels have been made and were incorporated in the modeling effort, specifically, no reductions in motor vehicle noise have been assumed in spite of legislation requiring quieter vehicles at the time of manufacture.

Traffic volumes and estimated speeds were used with the FHWA Model to estimate the noise levels in terms of CNEL. Existing traffic volumes for arterials utilized were obtained from the traffic study prepared by Kunzman Associates, Inc., September 20, 2006

The distances to the CNEL contours for the roadways in the vicinity of the project site are given in Table 3. These represent the distance from the centerline of the road to the contour value shown. Note that the values given in Table 3 do not take into account the effect of any noise barriers or topography that may affect ambient noise levels.

Table 3
Modeled Existing Roadway Traffic Noise Levels

Roadway Segment	CNEL @ 100' †	Distance To CNEL Contour (feet)† 70 CNEL	65 CNEL	60 CNEL
Haven Avenue				
North of Arrow Route	67.8	71	154	332
Arrow Route to 8th St.	69.1	86	186	401
8th St. to 6th St.	68.8	84	180	389
6th St. to 4th St.	68.8	84	180	389
4th St. to Inland Empire Blvd.	69.0	86	185	399
Inland Empire Blvd. to I-10	70.3	104	225	484
I-10 to Guasti Rd.	70.3	104	225	484
Guasti Rd. to Airport Dr.	69.6	94	203	438
Airport Dr. to Jurupa St.	69.0	85	184	396
Jurupa St. to Mission Blvd.	68.4	79	169	365
Mission Blvd. to SR-60	67.9	72	156	336
South of SR-60	64.9	46	99	212
Archibald Avenue				
North of Airport Dr.	64.8	45	97	210
South of Airport Dr.	58.5	RW	37	79
Milliken Avenue				
North of I-10	68.1	75	161	347
I-10 to Guasti Rd.	68.1	74	160	344
Guasti Rd. to Airport Dr.	67.2	65	139	300
Airport Dr. to Jurupa St.	66.4	57	123	265
South of Jurupa St.	67.3	66	143	307
Etiwanda Street				
North of Ontario Mills Pkwy.	65.4	49	107	229
Ontario Mills Pkwy. to I-10	65.9	54	115	249
Arrow Route				
East of Haven Ave.	67.9	72	156	336
West of Haven Ave.	66.9	63	135	290
8th Street				
West of Haven Ave.	52.5	RW	RW	32

† From roadway centerline
RW – Noise contour falls within roadway right-of-way.

Table 3 (Continued)
Modeled Existing Roadway Traffic Noise Levels

Roadway Segment	CNEL @ 100' †	Distance To CNEL Contour (feet)† 70 CNEL	65 CNEL	60 CNEL
6th Street				
East of Haven Ave.	61.2	RW	56	120
West of Haven Ave.	60.5	RW	50	109
4th Street				
East of Haven Ave.	63.5	37	79	171
West of Haven Ave.	62.0	RW	63	137
Inland Empire Boulevard				
East of Haven Ave.	64.7	44	96	206
West of Haven Ave.	64.4	42	91	197
Guasti Road				
East of Milliken Ave.	56.9	RW	RW	62
Milliken Ave. to Project site	59.2	RW	41	88
East of Haven Ave.	48.5	RW	RW	RW
West of Haven Ave.	60.0	RW	46	100
Airport Drive				
East of Milliken Ave.	63.3	36	77	167
West of Milliken Ave.	61.5	RW	58	126
East of Haven Ave.	62.9	34	72	156
West of Haven Ave.	63.3	36	77	167
West of Archibald Ave.	62.7	33	70	152
Jupura Street				
East of Milliken Ave.	67.5	68	147	317
Milliken Ave. to Haven Ave.	66.0	54	116	251
West of Haven Ave.	64.5	43	92	198
Mission Boulevard				
East of Haven Ave.	63.6	37	80	173
West of Haven Ave.	64.6	43	94	202
I-10				
East of Etiwanda St.	81.2	559	1,204	2,595
Etiwanda St. to I-15	81.5	582	1,254	2,702
I-15 to Milliken Ave.	81.7	605	1,303	2,807
Milliken Ave. to Haven Ave.	81.8	613	1,320	2,845
West of Haven Ave.	81.8	616	1,327	2,859
I-15				
North of I-10	82.4	674	1,452	3,128
South of I-10	82.8	715	1,541	3,320

† From roadway centerline
RW – Noise contour falls within roadway right-of-way.

Table 3 shows that major noise corridors occur along Haven Avenue, Milliken Avenue, Etiwanda Street, I-15, Arrow Route, I-10, SR-60 and portions of Jupura Street. The areas in the immediate vicinity of these roadways experience noise levels in excess of 70 CNEL. Noise levels along 6th Street, 4th Street, Inland Empire Boulevard, Airport Drive, Mission Boulevard, and a portion of Archibald Avenue are in excess of 65 dBA. Areas adjacent to Guasti Road, and a portion of Archibald experience noise levels in excess of 60 CNEL, but less than 65 CNEL. 8th Street experiences low level of traffic and hence low level of noise.

1.6 Existing Aircraft Noise Levels

The project is located on Haven Avenue near the northeast corner of Ontario International Airport. Noise contours for aircraft operations at the airport were obtained from the "Noise Technical Report-Pacific Gateway Cargo Center" prepared by URS, March 2006. The airport's runways run from east to west with departures typically in the easterly direction. The project site is not subject to any direct over flights but will be exposed to sideline noise as aircraft depart the airport under normal operations. Currently, the existing noise levels from the aircraft are less than 65 CNEL on the project site.

1.7 Existing Railroad Noise Levels

The Union Pacific Railroad (UPRR) line is located adjacent to the southern boundary of the project site. To determine train noise levels, the Wyle Model was used ("Assessment of Noise Environments Around Railroad Operations," Wyle Laboratories Report WCR-73-5, July, 1973). The noise generated by train operations can be divided into two components; noise generated by the engine or locomotive, and noise generated the railroad cars. The characteristic frequency of the engine is different than the characteristic frequency of the cars. The noise generated by the engine is the result of the mechanical movements of the engine parts, and to a lesser extent, the exhaust system. The noise generated by the cars is a result of the interaction between the wheels and the railroad track. A zero source height is used for the car noise, and a source height of 10 feet is utilized for the locomotive.

Existing railroad operations were obtained from Mr. Freddy Chung at the UPRR on October 10, 2006. Mr. Chung stated that there are approximately 36 freight train operations with more than half occurring at night. Amtrak and Metrolink trains also utilized the railroad. Currently, there are two Amtrak operations scheduled in the daytime. There are also seven Metrolink operations in the daytime, two in the evening time and three at nighttime. Existing Metrolink operations were obtained from Ms. Joanna Capella on October 30, 2006. It should be noted that railroads are free to change operations at their discretion. The total number of operations and the times at which they occur are therefore subject to change.

The existing operational data was utilized in conjunction with the Wyle Model to project train noise levels on the project site. Table 4 presents the distance to the existing CNEL contours from the track centerline. Note that the projection does not include topography or barriers that may reduce the noise level.

Table 4
Existing Railroad Noise Levels Impacting Project Site

	70 CNEL	65 CNEL	60 CNEL
Distance to Contour (ft)†	296	539	989

† from track centerline

2.0 POTENTIAL NOISE IMPACTS

Potential noise impacts are commonly divided into two groups; temporary and long term. Temporary impacts are usually associated with noise generated by construction activities. Long-term impacts are further divided into impacts on surrounding land uses generated by the proposed project and those impacts that occur at the proposed project site.

2.1 Noise Impact Criteria

Off-site impacts from on-site activities, short-term and long-term, are measured against the Noise Ordinance criteria discussed in Section 1.3.2. Construction activities for the proposed project will be required to meet the standards along with any noise generating activities associated with the operation of the project.

Long-term off-site impacts from traffic noise are measured against two criteria. Both criteria must be met for a significant impact to be identified. First, project traffic must cause a substantial noise level increase (greater than 3dB) on a roadway segment adjacent to a noise sensitive land use. Second the resulting future with project noise level must exceed the criteria level for the noise sensitive land use. In this case, the criteria level is 65 CNEL for residential land uses.

In community noise assessment, changes in noise levels greater than 3 dB are often identified as significant, while changes less than 1 dB will not be discernible to local residents. In the range of 1 to 3 dB, residents who are very sensitive to noise may perceive a slight change. Note that there is no scientific evidence is available to support the use of 3 dB as the significance threshold. In laboratory testing situations, humans are able to detect noise level changes of slightly less than 1 dB. In a community noise situation, however, noise exposures are over a long time period, and changes in noise levels occur over years, rather than the immediate comparison made in a laboratory situation. Therefore, the level at which changes in community noise levels become discernible is likely to be some value greater than 1 dB, and 3 dB appears to be appropriate for most people.

Long-term cumulative off-site impacts from traffic noise are also measured against two criteria. Both criteria must be met for a significant impact to be identified. First, future traffic noise levels must increase by 3 dB or more compared to existing conditions on a roadway segment adjacent to a noise sensitive land use. Second, the resulting future with project noise level must exceed the criteria level for the noise sensitive land use. In this case, the criteria level is 65 CNEL for residential land uses. The project will have considerably contributed to this increase if it contributes more than 1 dB to the increase

Traffic noise impacting the project site is measured against the standards from the City's Noise Element of the General Plan. The City's noise standards were presented previously in Exhibit 5. The outdoor standards applicable to the project include the 65 CNEL standards for hotel recreation areas and the 65 CNEL standard hospital patio areas. The indoor standards applicable to the project include the 45 CNEL standard for hotel and hospital uses, the 50 CNEL standard for office uses, and the 55 CNEL standard for retail uses.

2.2 Temporary Impacts

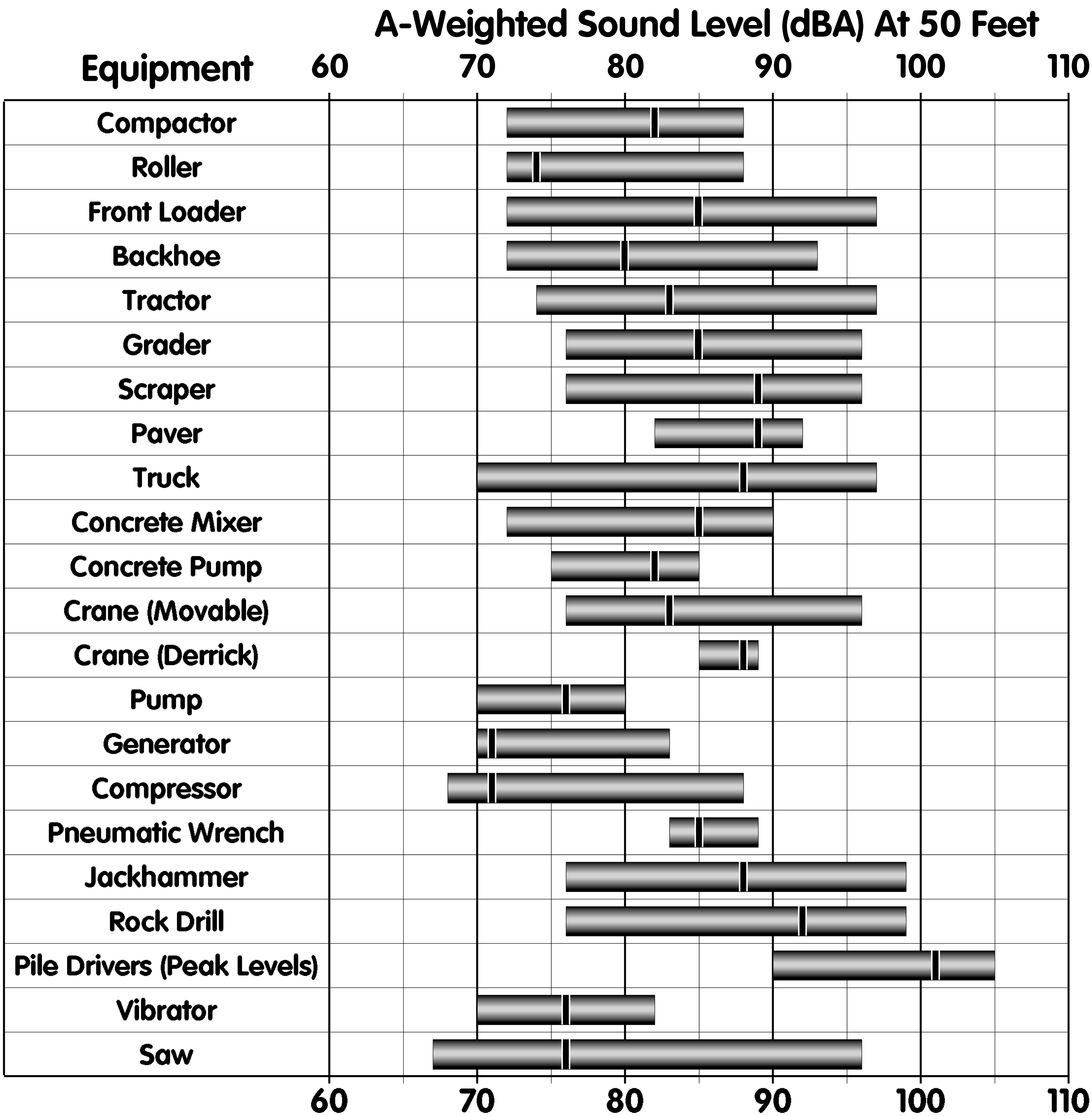
2.2.1 Construction Noise

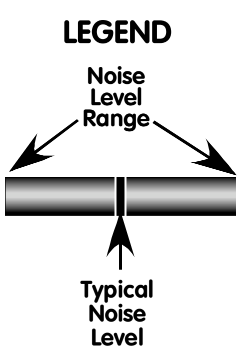
Construction noise represents a short-term impact on ambient noise levels. Noise generated by construction equipment, including trucks, graders, bulldozers, concrete mixers and portable generators can reach high levels.

Worst-case examples of construction noise at 50 feet are presented in Exhibit 5. The peak noise level for most of the equipment that will be used during the construction is 70 to 95 dBA at a distance of 50 feet. At 200 feet, the peak construction noise levels range from 58 to 83 dBA. At 400 feet, the peak noise levels range from 52 to 77 dBA. Note that these noise levels are based upon worst-case conditions. Typically, noise levels near the site will be less. Noise measurements made by Mestre Greve Associates for other projects show that the noise levels generated by commonly used grading equipment (i.e. loaders, graders and trucks) generate noise levels that typically do not exceed the middle of the range shown in Exhibit 6.

The nearest existing residential areas are located a minimum of 2,100 feet to the northwest of the project site. Based on this distance, the nearest homes may experience worst-case unmitigated peak construction noise levels between 38 and 63 dBA. Average noise levels would not be expected to exceed 45 dBA at the nearest residences. It should be noted that I-10 is located between the project site and the nearest residential area. Noise generated by traffic on I-10 will typically mask any construction noise at the nearest residences. Construction of the project will not result in a significant short-term noise impact at the nearest residential areas.

The project site is located adjacent to the commercial uses to the west. The closest is an existing commercial parking lot while the nearest commercial buildings are located approximately 315 feet away. Based on this distance, the worst case peak construction noise could range between 54 and 79 dBA. However, actual construction noise on-site would be more subdued. The average noise levels are typically 5 to 15 dB lower than the peak noise levels. Therefore, the closest commercial buildings could experience average noise between 49 and 64 dBA due to construction noise on the project site. Construction of the project will not result in a significant short-term noise impact at the nearest commercial buildings.





Sources: "Handbook of Noise Control," by Cyril Harris, 1979
"Transit Noise and Vibration Impact Assessment" by Federal Transit Administration, 1995

Exhibit 6
Construction Equipment Noise Levels

Mestre Greve Associates

2.3 Long-Term Off-Site Impacts

This section examines noise impacts from the proposed project on the surrounding land uses. Specifically traffic noise increases due to the project are examined as well as potential noise impacts from activities on the project site. The uses proposed that have the potential to result in noise impacts from on site activities are parking lots and delivery trucks.

2.3.1 Traffic Noise

Table 5 shows the incremental traffic noise level increases on roadways in the vicinity of the project. Noise level increases are presented for the expected project opening year of 2008 and planning horizon year of 2030. The first column shows the roadway and segment for which the increase is shown. The next two columns show the projected traffic noise level increases in 2008. The first of these columns "Over Existing" is the projected increase in noise levels over existing conditions due to all projected growth. This value is used to assess cumulative impacts due to the project. The second "Due to Project" is the amount of the noise level increase that results from the project. The rightmost two columns show the same data for the year 2030. Noise levels increases greater than 3 dB are shown in bold-italics.

The noise level increases were calculated using traffic volumes presented in the previously referenced traffic study prepared for the project by Kunzman Associates, September 20, 2006. The traffic volumes used are presented in the appendix.

Table 5
Traffic Noise CNEL Increases (dB)

	2008		2030	
Roadway Segment	**Over Existing**	**Due to Project**	**Over Existing**	**Due to Project**
Haven Avenue				
North of Arrow Route	0.5	0.1	0.8	0.0
Arrow Route to 8th St.	0.5	0.0	0.7	0.0
8th St. to 6th St.	0.5	0.1	0.6	0.1
6th St. to 4th St.	0.5	0.1	0.8	0.1
4th St. to Inland Empire Blvd.	0.5	0.1	0.8	0.1
Inland Empire Blvd. to I-10	0.5	0.1	1.0	0.1
I-10 to Guasti Rd.	0.4	0.4	1.1	0.3
Guasti Rd. to Airport Dr.	0.6	0.2	1.3	0.1
Airport Dr. to Jurupa St.	0.5	0.1	1.3	0.1
Jurupa St. to Mission Blvd.	0.5	0.1	1.6	0.0
Mission Blvd. to SR-60	0.5	0.1	1.6	0.1
South of SR-60	0.5	0.1	2.7	0.1
Archibald Avenue				
North of Airport Dr.	0.4	0.0	***3.1***	0.0
South of Airport Dr.	2.5	0.2	***9.8***	0.0

Table 5 (Continued)
Traffic Noise CNEL Increases (dB)

Roadway Segment	2008 Over Existing	2008 Due to Project	2030 Over Existing	2030 Due to Project
Milliken Avenue				
North of I-10	0.5	0.0	1.6	0.0
I-10 to Guasti Rd.	0.6	0.2	2.1	0.2
Guasti Rd. to Airport Dr.	0.5	0.1	2.3	0.1
Airport Dr. to Jurupa St.	0.5	0.1	1.7	0.1
South of Jurupa St.	0.4	0.0	1.5	0.0
Etiwanda Street				
North of Ontario Mills Pkwy.	0.4	0.0	1.5	0.0
Ontario Mills Pkwy. to I-10	0.4	0.0	1.9	0.0
Arrow Route				
East of Haven Ave.	0.4	0.0	0.5	0.0
West of Haven Ave.	0.4	0.0	0.8	0.0
8th Street				
West of Haven Ave.	1.0	0.0	***6.1***	0.0
6th Street				
East of Haven Ave.	0.4	0.0	1.7	0.0
West of Haven Ave.	0.4	0.0	1.7	0.0
4th Street				
East of Haven Ave.	0.4	0.0	2.3	0.0
West of Haven Ave.	0.5	0.1	***3.3***	0.1
Inland Empire Boulevard				
East of Haven Ave.	0.5	0.1	2.2	0.0
West of Haven Ave.	0.5	0.1	1.9	0.1
Guasti Road				
East of Milliken Ave.	0.4	0.0	0.4	0.0
Milliken Ave. to Project site	1.9	1.5	1.9	1.5
East of Haven Ave.	***12.2***	***11.5***	***12.2***	***11.5***
West of Haven Ave.	0.4	0.0	2.8	0.0
Airport Drive				
East of Milliken Ave.	0.4	0.0	2.3	0.0
West of Milliken Ave.	0.5	0.0	2.7	0.0
East of Haven Ave.	0.5	0.1	2.3	0.0
West of Haven Ave.	0.6	0.2	2.5	0.1
West of Archibald Ave.	0.5	0.1	***3.1***	0.1
Jupura Street				
East of Milliken Ave.	0.5	0.0	1.9	0.0
Milliken Ave. to Haven Ave.	0.5	0.1	2.0	0.0
West of Haven Ave.	0.5	0.0	1.8	0.0
Mission Boulevard				
East of Haven Ave.	0.4	0.0	2.1	0.0
West of Haven Ave.	0.4	0.0	2.0	0.0

Table 5 (Continued)
Traffic Noise CNEL Increases (dB)

	2008		2030	
Roadway Segment	**Over Existing**	**Due to Project**	**Over Existing**	**Due to Project**
I-10				
East of Etiwanda St.	0.4	0.0	1.3	0.0
Etiwanda St. to I-15	0.4	0.0	1.0	0.0
I-15 to Milliken Ave.	0.5	0.0	2.1	0.0
Milliken Ave. to Haven Ave.	0.5	0.0	2.1	0.0
West of Haven Ave.	0.6	0.0	2.0	0.0
I-15				
North of I-10	0.7	0.0	2.3	0.0
South of I-10	0.7	0.0	1.6	0.0

Table 5 shows that the project is not projected to result in a substantial noise increase along any of the roadway segments except Guasti Road east of Haven Avenue. The project is projected to cause a maximum of 11.5 dB traffic noise level increase along Guasti Road east of Haven Avenue. However, this segment of Guasti Road runs through the project site and therefore, the increase will not impact any off site uses. Additionally, there are no sensitive land uses along this roadway segment, and as a result, the noise increase becomes insignificant. The project will not result in a significant off site noise impact.

Table 5 shows that there are six roadway segments projected to experience substantial noise increases (greater than 3 dBA) over existing conditions; (1) Archibald Avenue north of Airport Drive, (2) Archibald Avenue, south of Airport Drive, (3) 8th Street west of Haven avenue, (4) 4th Street West of Haven Avenue, (5) Guasti Road east of Haven Avenue, and (6) Airport Drive west of Archibald. There are no existing noise sensitive uses along the Archibald Avenue, Guasti Road, and Airport Drive segments. There are residential uses located along 8th Street west of Haven Avenue and 4th Street West of Haven Avenue.

The homes along 8th Street are located across a railroad track from 8th Street, more than 38 feet from the roadway centerline. Future (2030) traffic noise levels are presented in Table 6. This table shows that future noise levels along 8th Street west of Haven Avenue will be less than 65 dB CNEL more than 38 feet from the centerline. Therefore, these homes will not be exposed to traffic noise levels exceeding 65 CNEL from traffic on 8th Street and will not be cumulatively impacted. Further, the project does not contribute to the projected noise level increase and the increase is due to other growth projected for the area.

There are multi-family residential units located along 4th Street west of Haven. The buildings are located approximately 80 feet from the roadway centerline. At this distance, the future traffic noise level is projected to be 66.8 CNEL. Any outdoor living areas within 105 feet of the road and with direct line of sight to the road would be exposed to noise levels exceeding 65 CNEL. However, any noise barriers that block the line of sight to the roadway would reduce the noise level to below 65 CNEL. Homes along 4th Street west of Haven Avenue without barriers will be significantly cumulatively impacted by traffic noise. However, the project only contributes 0.1 dB to the projected overall increase of 3.3 dB over existing conditions. The project's contribution to the overall increase is indiscernible. The projected traffic noise level increase causing the cumulative impact is due to other growth projected for the area and not the project. Therefore, the project is not required to mitigate the impact.

The distances to the future (2030) with project 60, 65 and 70 CNEL contours for the roadways in the vicinity of the proposed project site are presented in Table 6. These represent the distance from the centerline of the road to the contour value shown. The CNEL at 100 feet from the roadway centerline is also presented. The contours do not take into account the effect of any noise barriers or topography that may reduce traffic noise levels. Traffic volumes, speeds and traffic mixes used to calculate the noise levels are presented in the appendix.

Table 6
Future (2030) With Project Traffic Noise Levels

Roadway Segment	CNEL @ 100' †	Distance To CNEL Contour† (feet) 70 CNEL	65 CNEL	60 CNEL
Haven Avenue				
North of Arrow Route	68.6	81	175	377
Arrow Route to 8th St.	69.7	96	207	447
8th St. to 6th St.	69.4	92	197	425
6th St. to 4th St.	69.6	94	203	437
4th St. to Inland Empire Blvd.	69.8	97	208	449
Inland Empire Blvd. to I-10	71.3	122	263	566
I-10 to Guasti Rd.	71.4	124	268	577
Guasti Rd. to Airport Dr.	70.9	115	247	533
Airport Dr. to Jurupa St.	70.2	103	223	480
Jurupa St. to Mission Blvd.	70.1	101	218	469
Mission Blvd. to SR-60	69.5	92	199	429
South of SR-60	67.6	69	149	320
Archibald Avenue				
North of Airport Dr.	67.9	73	157	337
South of Airport Dr.	68.3	77	165	356
Milliken Avenue				
North of I-10	69.7	96	206	444
I-10 to Guasti Rd.	70.1	102	220	474
Guasti Rd. to Airport Dr.	69.5	93	200	431
Airport Dr. to Jurupa St.	68.1	75	161	346
South of Jurupa St.	68.8	83	180	387
Etiwanda Street				
North of Ontario Mills Pkwy.	66.9	63	135	290
Ontario Mills Pkwy. to I-10	67.9	72	155	335
Arrow Route				
East of Haven Ave.	68.4	78	168	363
West of Haven Ave.	67.8	71	153	329
8th Street				
West of Haven Ave.	58.6	RW	38	81

RW – Noise contour falls within roadway right-of-way.
† From Roadway Centerline

Table 6 (Continued)
Future (2030) With Project Traffic Noise Levels

Roadway Segment	CNEL @ 100' †	Distance To CNEL Contour† (feet) 70 CNEL	65 CNEL	60 CNEL
6th Street				
East of Haven Ave.	62.9	33	72	155
West of Haven Ave.	62.3	31	66	142
4th Street				
East of Haven Ave.	65.8	53	114	245
West of Haven Ave.	65.3	49	105	226
Inland Empire Boulevard				
East of Haven Ave.	66.9	62	134	289
West of Haven Ave.	66.3	57	122	264
Guasti Road				
East of Milliken Ave.	57.3	RW	31	66
Milliken Ave. to Project site	61.1	RW	55	118
East of Haven Ave.	60.7	RW	52	112
West of Haven Ave.	62.8	33	71	154
Airport Drive				
East of Milliken Ave.	65.7	51	111	239
West of Milliken Ave.	64.2	41	89	191
East of Haven Ave.	65.2	48	103	222
West of Haven Ave.	65.8	52	113	244
West of Archibald Ave.	65.8	52	113	243
Jupura Street				
East of Milliken Ave.	69.4	92	198	426
Milliken Ave. to Haven Ave.	68.0	73	158	340
West of Haven Ave.	66.2	56	121	261
Mission Boulevard				
East of Haven Ave.	65.7	52	111	240
West of Haven Ave.	66.6	59	128	276
I-10				
East of Etiwanda St.	82.5	686	1,478	3,184
Etiwanda St. to I-15	82.5	682	1,470	3,166
I-15 to Milliken Ave.	83.9	841	1,811	3,902
Milliken Ave. to Haven Ave.	83.9	842	1,814	3,907
West of Haven Ave.	83.9	842	1,813	3,907
I-15				
North of I-10	84.7	956	2,059	4,435
South of I-10	84.4	913	1,967	4,238

RW – Noise contour falls within roadway right-of-way.
† From Roadway Centerline

Table 6 shows that Haven Avenue, Archibald Avenue, Milliken Avenue, Etiwanda Street, I-15, Arrow Route, 4th Street, Inland Empire Boulevard, I-10, Jurupa Street, Mission Boulevard and portions of Airport Drive will continue to generate substantial noise levels. 6th Street and Guasti

Road will continue generate noise levels of in excess of 65 CNEL. 8th Street will generate noise levels of greater than 60 CNEL, but less than 65 CNEL.

2.3.2 On-site Activities

Noise levels generated on the project site must comply with they City's Noise Ordinance. The Noise Ordinance defines the noise level limits that can be generated at a residential area by a noise source on private property. Potential noise associated with the development of the site includes parking lots and delivery trucks. However, there are no residential land uses adjacent to the project site. The closest residential area is located a minimum of 2,100 feet to the northwest, and therefore, on-site parking lot and delivery truck activities are not considered to be significant noise sources.

The noise ordinance also regulates noise at adjacent commercial uses. The closest commercial are to the project site is the existing parking lot while the commercial buildings are located approximately 315 feet to the west. It is projected that parking lot and loading dock activities would not be expected to exceed the average Leq noise standards at these commercial areas. Mechanical equipment, especially around a central plant, and repair facility at the car dealership could exceed the Leq standards. This could result in a significant impact and mitigation is required.

The proposed hospital would include a helipad for emergency airlift services. Helicopter operations to and from the hospital helipad would need to not interfere with operations at the Ontario International Airport and typically approach the hospital from the west-northwest and depart to the east/northeast, parallel to airport operations. Only 12 to 15 helicopter operations per year are expected. The nearest noise sensitive, residential, receptors are located more than 3,500 feet from the proposed hospital. At this distance helicopters arriving and departing the hospital would be at a high enough elevation as they passed the homes that they would not create considerable levels of noise. Depending on the specific operations the helicopter activities may be audible at the residences. However, the levels would be expected to be similar to noise levels generated by individual commercial aircraft operations at Ontario International Airport.

Federal law prohibits local regulation of noise generated by the helicopter operations. Noise impacts generated by aircraft, along with most transportation sources, are typically evaluated against the CNEL criteria defined in the City's Noise Element. Due to the large distance to the nearest homes and the relatively few events expected, noise generated by the helicopter operations would not generate an appreciable CNEL noise level, nor would the helicopter operations affect CNEL noise levels experienced in the area. Based on this, an emergency helicopter pad at the proposed hospital would not result in a significant noise impact.

2.4 Long-Term On-Site Impacts

The project site is impacted by traffic noise from the I-10 freeway and local streets, train noise from the railroad located along the southern boundary of the project site, and aircraft noise from Ontario International Airport. Noise generated by each of these sources is discussed below and the cumulative noise impacts on the project site are examined.

2.4.1 On-Site Traffic Noise Exposure

The distances to the future (2030) with project 60, 65 and 70 CNEL contours for the roadways in the vicinity of the proposed project site were presented above in Table 6. Road segments impacting the proposed project include I-10 from Milliken Avenue to Haven Avenue, Haven Avenue from I-10 to Guasti Road and Guasti Road to Airport Drive, and Guasti Road East of Haven Avenue.

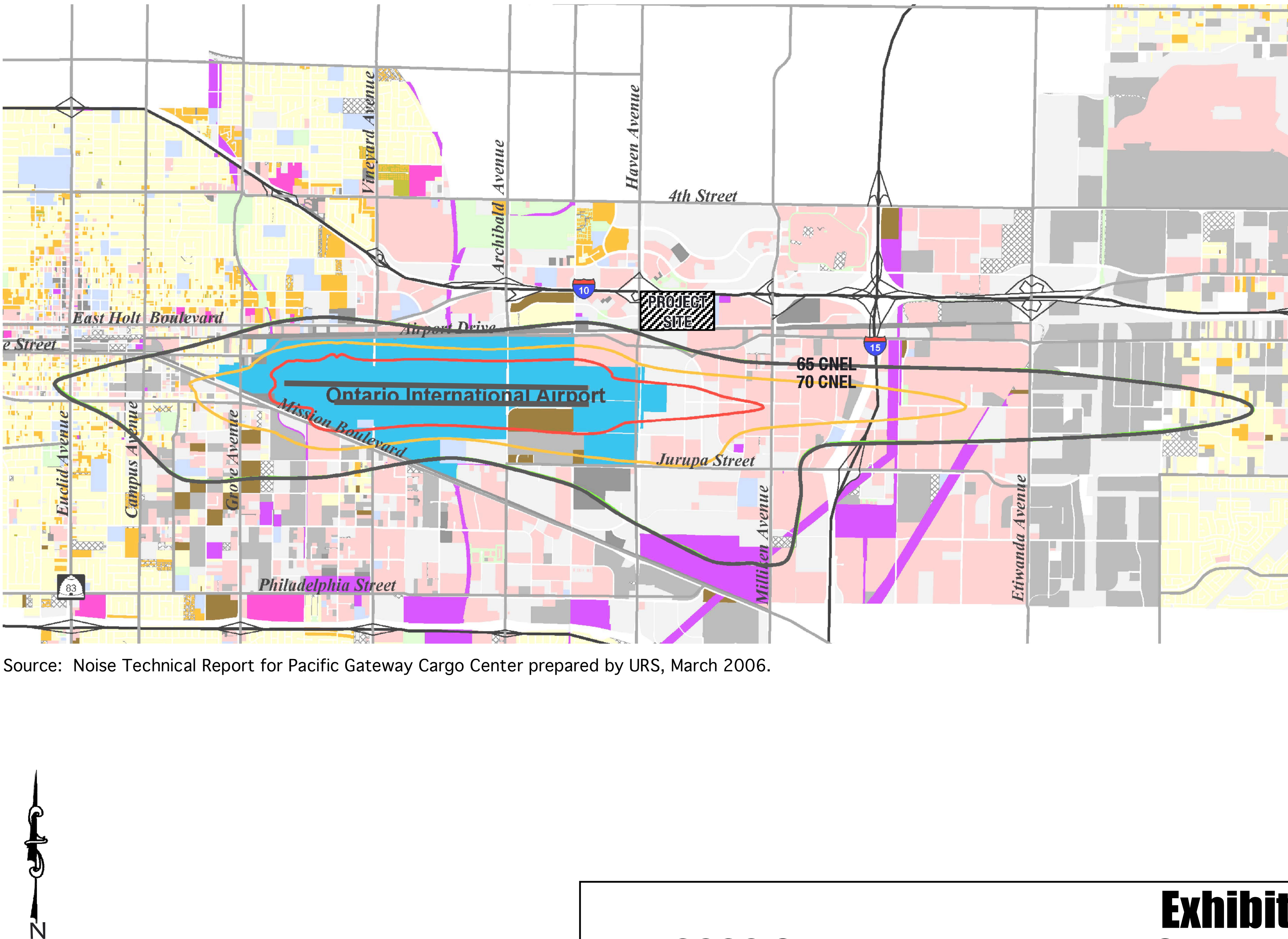
The traffic data in Table 5 and the site plan indicate that limited portions of the project site proposed for commercial office and auto dealership uses adjacent to I-10 could experience traffic noise levels in excess of 75 CNEL without mitigation.

2.4.2 On-Site Aircraft Noise Exposure

The project is located on Haven Avenue near the northeast corner of Ontario International Airport. Noise contours for aircraft operations at the airport were obtained from the report titled "Noise Technical Report-Pacific Gateway Cargo Center" prepared by URS, March 2006. These contours are reproduced in Exhibit 7 and the location of the project site is noted. Exhibit 7 shows that the aircraft noise levels from the Ontario International Airport will not changed significantly. The future aircraft noise levels will be less than 65 CNEL on the project site.

2.4.3 On-Site Railroad Noise Exposure

The Union Pacific Railroad (UPRR) line is located adjacent to the southern boundary of the project site. To determine train noise levels, the Wyle Model was used ("Assessment of Noise Environments Around Railroad Operations," Wyle Laboratories Report WCR-73-5, July, 1973). The noise generated by train operations can be divided into two components; noise generated by the engine or locomotive, and noise generated the railroad cars. The characteristic frequency of the engine is different than the characteristic frequency of the cars. The noise generated by the engine is the result of the mechanical movements of the engine parts, and to a lesser extent, the exhaust system. The noise generated by the cars is a result of the interaction between the wheels and the railroad track. A zero source height is used for the car noise, and a source height of 10 feet is utilized for the locomotive.



Source: Noise Technical Report for Pacific Gateway Cargo Center prepared by URS, March 2006.

Mestre Greve Associates

Exhibit 7
2020 Ontario Airport Noise Contours

Projected future railroad operations were obtained from Mr. Freddy Chung at the UPRR on October 10, 2006. Mr. Chung stated that freight train operations would increase from 36 to up to 65 operations by 2015, and more than half may occur at night. Amtrak and Metrolink trains also utilized the railroad. Currently, there are two Amtrak operations scheduled in the daytime. There are also 12 Metrolink operations, with seven in the daytime, two in the evening time and three at nighttime. Based on a conversation with an Amtrak personnel, future changes in operations for Amtrak are not known. Future Metrolink operations were obtained from Ms. Joanna Capella on October 30, 2006. Metrolink operations are projected to increase to 46 operations by year 2030. It should be noted that railroads are free to change operations at their discretion. The total number of operations and the times at which they occur are therefore subject to change. The future train data used in the noise calculations are presented in the appendix.

The projected future operational data presented in the appendix was utilized in conjunction with the Wyle Model to project train noise levels on the project site. The results of the train noise projections are displayed in Table 7 in terms of the distances from the railroad centerline to the contour value shown. Note that these projections do not include topography or barriers that may reduce the noise levels.

Table 7
Future Railroad Noise Levels Impacting Project Site

	70 CNEL	65 CNEL	60 CNEL
Distance to Contour (ft)	485	892	1,647

The nearest office building face is estimated to be approximately 160 feet from the railroad tracks. At this distance, the worst-case noise level associated with future train operations was estimated to be approximately 79.2 CNEL.

2.4.4 Total On-Site Noise Exposure

Exhibit 8 shows the on-site noise exposure contours for the project site. This exhibit combines the traffic, railroad, and aircraft noise contours discussed above. Note that the contours do not include the shielding effects of buildings, topography, or sound barriers that would lower the noise levels from what is shown in the exhibit. In, general these effects would not be expected to be substantial.

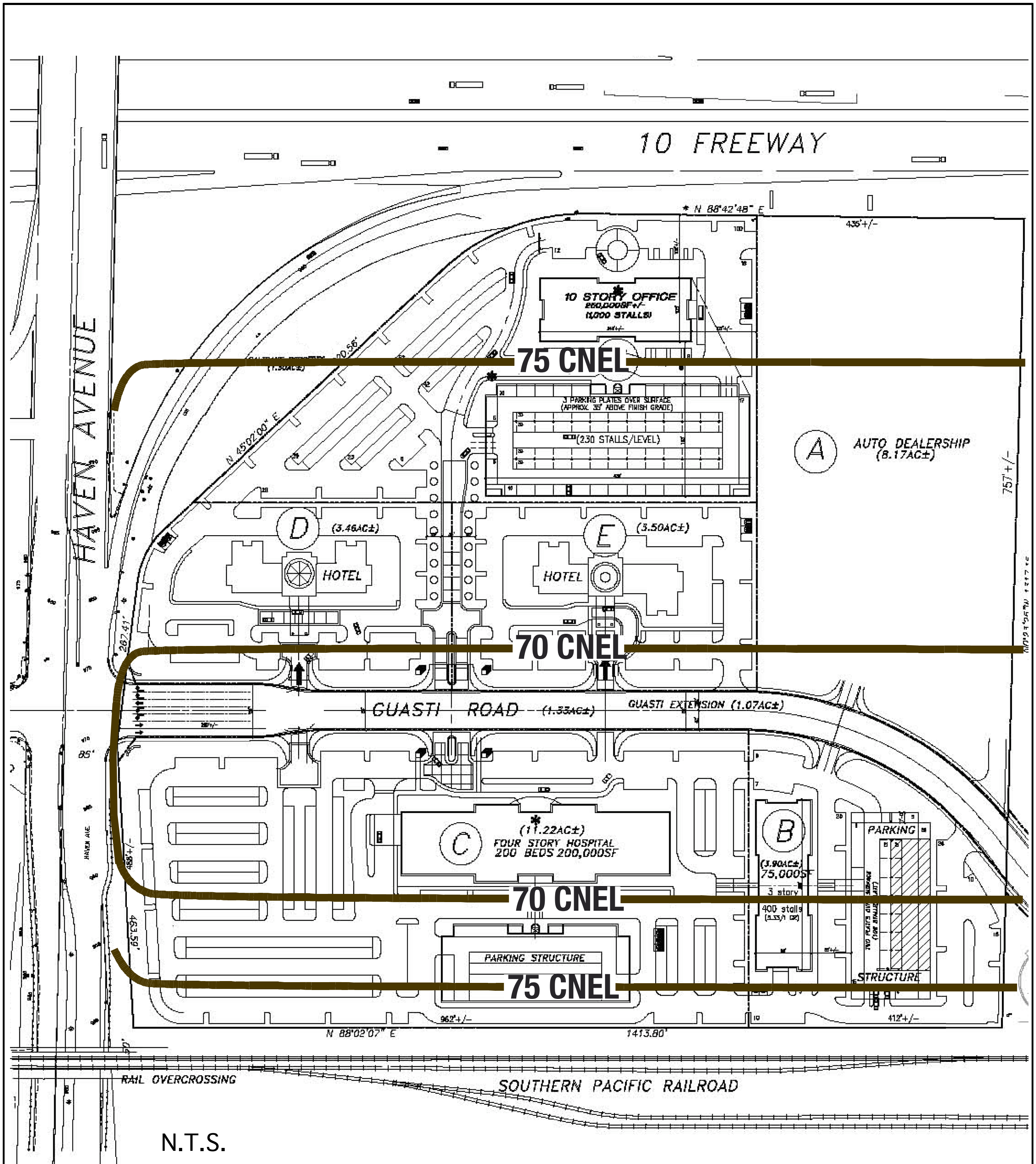


Exhibit 8
Future On-site CNEL Noise Contours

Mestre Greve Associates

Exhibit 8 shows that the entire project site is exposed to noise levels greater than 65 CNEL. Any outdoor recreation areas proposed for the hotels in Planning Areas D and E or patio areas proposed for the hospital in Planning Area C would be exposed to noise levels in excess of the City's 65 CNEL standard. At this time, the plans for the project are not detailed enough to determine the existence or location of these features. If these features are included in the final project they would be significantly impacted without mitigation. Mitigation is discussed in Section 3.3.

All of the other uses proposed by the project will be subject to interior noise standards. Typical commercial construction which includes mechanical ventilation to allow windows to remain closed achieves at least 20 dB of outdoor-to-indoor noise reduction. To demonstrate a building achieves more than 20 dB of reduction, detailed calculations are required. These calculations require near complete architectural drawings for the proposed buildings, which are not available for this project. Buildings requiring more than 20 dB of outdoor-to-indoor noise reduction to meet the applicable noise standard are potentially significantly impacted and will require mitigation to ensure they meet the City's noise standards. Mitigation is discussed in Section 3.3.

Exhibit 8 shows that the office building proposed for Planning Area F in the northwest portion of the site will primarily be exposed to noise from the I-10 freeway. This building will be located approximately 220 feet from the centerline of the freeway and be exposed to a maximum noise level of approximately 76 CNEL. The building will be required to achieve 26 dB of outdoor-to-indoor noise reduction to meet the City's 50 CNEL interior noise standard. This is greater than the 20 dB threshold discussed above and the office building proposed for Planning Area F is potentially significantly impacted by noise. Mitigation is discussed in Section 3.3.

The hotels proposed for Planning Areas D and E are exposed to noise from I-10 along their northern face and the southern face is exposed noise from the railroad tracks running along the southern boundary of the project. The buildings are proposed to be located approximately 580 feet from the centerline of I-10 and approximately 560 feet from the railroad tracks. The north face of the buildings will be exposed to noise levels of approximately 72 CNEL and the south face will be exposed to noise levels of approximately 69 CNEL. The north face of the buildings will be required to achieve 27 dB of outdoor-to-indoor noise reduction and the south face of the buildings will be required to achieve 24 dB to meet the City's 45 CNEL interior noise standard. This is greater than the 20 dB threshold discussed above and the hotels proposed for Planning Areas D and E are potentially significantly impacted by noise. Mitigation is discussed in Section 3.3.

The office building proposed for Planning Area B is exposed to noise primarily from the railroad tracks running along the southern boundary of the project. The building is proposed to be located approximately 160 feet from the railroad tracks and will be exposed to noise levels of approximately 75 CNEL. The building will be required to achieve 25 dB of outdoor-to-indoor noise reduction to meet the City's 50 CNEL interior noise standard. This is greater than the 20 dB threshold discussed above and the office building proposed for Planning Area B is potentially significantly impacted by noise. Mitigation is discussed in Section 3.3.

The hospital proposed for Planning Area C is exposed to noise primarily from the railroad tracks running along the southern boundary of the project. The building is proposed to be located approximately 280 feet from the railroad tracks and the south face will be exposed to a noise level of approximately 72 CNEL. The north face of the building will be exposed to traffic noise from I-10 Freeway. The building is proposed to be located approximately 950 feet from the centerline of I-10 and the north face of the building will be exposed to a noise level of approximately 69 CNEL. The north face of the building will be required to achieve 24 dB of outdoor-to-indoor noise reduction and the south face will be required to achieve 27 dB of noise reduction to meet the City's 45 CNEL interior noise standard. This is greater than the 20 dB threshold discussed above and the hospital proposed for Planning Area C is potentially significantly impacted by noise. Mitigation is discussed in Section 3.3.

The location of any buildings for the car dealership proposed for Planning Area A has not been determined. Buildings located at the north end of the planning area could be as close as 140 feet from the I-10 freeway and exposed to noise levels as high as 78 CNEL. Buildings located in areas exposed to noise levels higher than 75 CNEL (i.e. within 391 feet of the centerline of I-10) will require more than 20 dB of outdoor-to-indoor reduction to meet the City's 55 CNEL interior noise standard. This is greater than the 20 dB threshold discussed above and the auto dealership proposed for Planning Area A is potentially significantly impacted by noise. Mitigation is discussed in Section 3.3.

3.0 MITIGATION MEASURES

3.1 Temporary Impacts

3.1.1 Construction Noise

The analysis presented in Section 2.2.1 shows that construction of the project will not result in any significant impacts. No mitigation is required.

3.2 Long Term Off-Site Impacts

3.2.1 Traffic Noise

The analysis presented in Section 2.3.1 shows that the project will not result in any significant long-term off-site traffic noise impacts. No mitigation is required

3.2.2 On-Site Activities

The analysis presented in Section 2.3.2 concluded that, repair activities at the proposed auto dealership and mechanical equipment, especially central plant facilities, have the potential to generate noise levels in excess of the City's Noise Ordinance at adjacent commercial areas. At this time, there is not enough project detail to determine if the specific project design could result in significant impacts. The following mitigation measure will ensure a significant impact is not created as a result of these sources.

> **Mitigation Measure N-1**: Prior to issuance of building permits, city staff will review the proposed designs for location and type of mechanical equipment and location of any auto repair bays for the proposed auto dealership. If staff determines that these sources have the potential to exceed the City's Noise Ordinance criteria, a detailed noise assessment shall be prepared to ensure that these sources do not violate the Noise Ordinance. The assessment shall be prepared by a qualified acoustical engineer and shall document the noise generation characteristics of the proposed equipment and the projected noise levels at the nearest use. Compliance with the Noise Ordinance shall be demonstrated and any measures required to comply with the Noise Ordinance will be included in the project plans. The report shall be completed and approved by the City prior to issuance of building permits.

3.3 Long Term On-Site Impacts

The analysis presented in Section 2.4 concluded that outdoor recreation areas of the proposed hotels and patio areas of the proposed hospital could be exposed to noise levels in excess of the City's 65 CNEL criteria. However, the existence of, or specific location of these features is not known at this time as the site plans have not been developed to this level. None of the areas where these features would be expected to be located is projected to be exposed to noise levels in excess of 75 CNEL. Therefore, less than 10 dB of noise reduction would be required to achieve the standard. Noise barriers provide at least 5 dB of reduction when they break line of sight between the observer and the noise source and 10 dB of reduction is readily feasible. Therefore, noise barriers could be used to achieve the standard and mitigate the impact. Mitigation through site design, locating these features away from noise sources and/or behind intervening buildings would be a preferable method to mitigate the impact. Mitigation Measure N-2 will ensure that these uses meet the City's Standards and mitigate the potential significant impact.

Mitigation Measure N-2: Prior to issuance of building permits for a hotel that features an outdoor recreation area or a hospital that features outdoor patio areas a detailed noise assessment shall be prepared to show that noise levels in those areas will not exceed the City's 65 CNEL standard. The noise assessment shall be prepared by a qualified acoustical consultant and shall document the sources of noise impacting the areas and describe any measures required to meet the City's standard. These measures will be incorporated into the project plans. The report shall be completed and approved by the City prior to issuance of building permits.

The analysis also concluded that all buildings proposed by the project will require more than 20 dB of outdoor-to-indoor noise reduction to meet the City's interior noise standards. Typical commercial construction achieves at least 20 dB of outdoor-to-indoor noise reduction. Detailed calculations are required to demonstrate achievement of more than 20 dB of reduction. These calculations require near complete architectural drawings for the proposed buildings, which are not available for this project. The worst-case building will require up to 27 dB of reduction. This level of reduction is achievable with upgraded windows. Up to 35 dB of reduction is achievable with significant building upgrades. Mitigation Measure N-3 will ensure that the buildings proposed by the project meet the City's interior noise standards.

Mitigation Measure N-3: Prior to issuance of building permits for any structure with interior noise standards specified by the City a detailed noise assessment shall be prepared to demonstrate that the interior noise levels will not exceed the applicable standard. The noise assessment shall be prepared by a qualified acoustical consultant and shall document the sources of noise impacting the building and describe any measures required to meet the City's standard. These measures will be incorporated into the project plans. The report shall be completed and approved by the City prior to issuance of building permits.

4.0 Unavoidable Significant Impacts

The mitigation measures described above will mitigate all significant impacts to a level of insignificance. There are no unavoidable significant noise impacts associated with the project.

APPENDIX

Table A-1
Traffic Data Used for Noise Modeling (ADT's in 1,000's)

Roadway Segment	Speed (mph)	Mix	Exist.	--No Project-- 2008	--No Project-- 2030	--With Project-- 2008	--With Project-- 2030
Haven Avenue							
North of Arrow Route	45	1	37.7	41.5	45.1	42.0	45.6
Arrow Route to 8th St.	45	1	50.2	55.2	58.3	55.8	58.9
8th St. to 6th St.	45	1	47.8	52.6	53.8	53.5	54.7
6th St. to 4th St.	45	1	47.8	52.6	56.1	53.6	57.1
4th St. to Inland Empire Blvd.	45	1	49.7	54.7	57.9	56.2	59.4
Inland Empire Blvd. to I-10	45	1	66.5	73.0	81.6	75.4	84.0
I-10 to Guasti Rd.	45	1	66.4	66.2	79.9	72.8	86.5
Guasti Rd. to Airport Dr.	45	1	57.3	63.0	74.3	65.5	76.8
Airport Dr. to Jurupa St.	45	1	49.1	54.0	64.3	55.4	65.7
Jurupa St. to Mission Blvd.	45	1	43.5	47.9	63.3	48.9	63.4
Mission Blvd. to SR-60	45	1	38.4	42.2	54.7	42.9	55.4
South of SR-60	45	1	19.3	21.2	35.3	21.7	35.8
Archibald Avenue							
North of Airport Dr.	45	1	19.0	20.9	38.7	20.9	38.7
South of Airport Dr.	45	1	4.4	7.5	41.5	7.9	41.9
Milliken Avenue							
North of I-10	45	1	40.4	44.4	57.8	44.9	58.3
I-10 to Guasti Rd.	45	1	39.9	43.9	62.3	46.1	64.5
Guasti Rd. to Airport Dr.	45	1	32.5	35.8	54.8	36.8	55.8
Airport Dr. to Jurupa St.	45	1	27.0	29.7	39.5	30.4	40.2
South of Jurupa St.	45	1	33.6	37.0	47.4	37.2	47.6
Etiwanda Street							
North of Ontario Mills Pkwy.	45	1	21.7	23.9	30.7	24.0	30.9
Ontario Mills Pkwy. to I-10	45	1	24.5	27.0	38.2	27.0	38.2
Arrow Route							
East of Haven Ave.	45	1	38.4	42.2	43.1	42.2	43.1
West of Haven Ave.	45	1	30.9	34.0	37.2	34.1	37.3
8th Street							
West of Haven Ave.	40	1	1.5	1.9	6.1	1.9	6.1
6th Street							
East of Haven Ave.	40	1	11.0	12.1	16.1	12.2	16.2
West of Haven Ave.	40	1	9.5	10.5	14.2	10.5	14.2
4th Street							
East of Haven Ave.	40	1	18.8	20.7	32.1	20.8	32.2
West of Haven Ave.	40	1	13.4	14.7	28.1	15.1	28.5
Inland Empire Boulevard							
East of Haven Ave.	45	1	18.5	20.4	30.4	20.7	30.7
West of Haven Ave.	45	1	17.2	18.9	26.1	19.5	26.7
Guasti Road							
East of Milliken Ave.	40	1	4.1	4.5	4.5	4.5	4.5
Milliken Ave. to Project site	40	1	6.9	7.6	7.6	10.8	10.8
East of Haven Ave.	40	1	0.6	0.7	0.7	9.9	9.9
West of Haven Ave.	40	1	8.4	9.2	15.9	9.3	16.0
Airport Drive							
East of Milliken Ave.	40	1	18.1	19.9	30.9	20.0	31.0
West of Milliken Ave.	40	1	11.8	13.0	22.0	13.1	22.1
East of Haven Ave.	40	1	16.3	17.9	27.4	18.2	27.7
West of Haven Ave.	40	1	18.1	19.9	31.0	20.8	31.9
West of Archibald Ave.	40	1	15.7	17.3	31.2	17.8	31.7

Table A-1 (Continued)
Traffic Data Used for Noise Modeling (ADT's in 1,000's)

Roadway Segment	Speed (mph)	Mix	Exist.	--No Project-- 2008	--No Project-- 2030	--With Project-- 2008	--With Project-- 2030
Jupura Street							
East of Milliken Ave.	45	1	35.2	38.7	54.5	39.1	54.9
Milliken Ave. to Haven Ave.	45	1	24.8	27.3	39.1	27.8	39.2
West of Haven Ave.	45	1	17.4	19.1	26.1	19.3	26.3
Mission Boulevard							
East of Haven Ave.	45	1	14.2	15.6	23.1	15.7	23.2
West of Haven Ave.	45	1	17.9	19.7	28.5	19.8	28.6
I-10							
East of Etiwanda St.	65	2	223.0	243.5	302.0	244.6	303.1
Etiwanda St. to I-15	65	2	237.0	256.9	299.5	258.0	300.6
I-15 to Milliken Ave.	65	2	251.0	278.2	408.7	280.8	411.3
Milliken Ave. to Haven Ave.	65	2	256.0	285.7	410.5	287.3	412.1
West of Haven Ave.	65	2	258.0	290.4	409.4	293.0	412.0
I-15							
North of I-10	65	3	204.0	236.0	343.2	237.2	344.4
South of I-10	65	3	223.0	260.1	321.5	260.3	321.7

Table A-2
Traffic Mix Used For Noise Modeling

1. Arterial Roadways

	Day	Eve	Night
Auto	75.51%	12.57%	9.34%
Medium Truck	1.56%	0.09%	0.19%
Heavy Truck	0.64%	0.02%	0.08%

2. I-10

	Day	Eve	Night
Auto	68.56%	10.55%	8.79%
Medium Truck	6.71%	1.03%	0.86%
Heavy Truck	2.73%	0.42%	0.35%

3. I-15

	Day	Eve	Night
Auto	62.79%	10.76%	16.15%
Medium Truck	2.17%	0.37%	0.56%
Heavy Truck	5.04%	0.86%	1.30%

Table A-3
Existing Railroad Operation Data Used For Noise Modeling

	Freight	AMTRAK	Metrolink
Number of Trains			
Day	21	2	7
Evening	6	0	2
Night	9	0	3
Total	*36*	*2*	*12*
Number of Engines	4	1	1
Number of Cars	100	5	5
Speed (mph)	50	50	50

Table A-4
Future Railroad Operation Data Used For Noise Modeling

	Freight	AMTRAK	Metrolink
Number of Trains			
Day	32	2	26
Evening	8	0	8
Night	25	0	12
Total	*65*	*2*	*46*
Number of Engines	4	1	1
Number of Cars	100	5	5
Speed (mph)	50	50	50