

Appendix F: Noise Analysis

EXECUTIVE SUMMARY

This acoustical impact analysis assesses the potential impacts for noise-sensitive areas that would be affected by the Rich-Haven Specific Plan Area project, located in the City of Ontario. On-site noise impacts were assessed in accordance with applicable laws, ordinances, and regulations established by the United States Environmental Protection Agency, California Environmental Quality Act, and the City of Ontario.

The Rich-Haven Specific Plan is approximately 510.6 gross acres of land in the southern portion of the City of Ontario. The project site is located west of Interstate 15, and south of State Route 60. Riverside Drive and the property line for Colony High School form the northern project boundary. Haven Avenue bounds the project to the west. The Edison Company substation, and dirt roads that extend through agricultural fields north of Edison Avenue, form the eastern boundary.

The Rich-Haven Specific Plan project is separated into Residential District Planning Areas and a Regional Commercial/Mixed-Use District. Rich-Haven's Residential District Planning Areas include a variety of housing products that respond to a variety of homeownership needs and desires. These housing products include detached single-family, detached and attached condominiums, townhomes, and live/work units. In total, the Land Use Plan proposes a maximum of 4,259 dwelling units (including both attached condominium, single family and small lot single family dwelling units), 889,200 square feet of commercial/office space, 25.5 acres of parkland, and a 24.8-acre middle school. This Commercial/Mixed-Use District is would include a variety of commercial uses, including retail, office, residential, medical, research, entertainment and other comparable uses.

Temporary (Construction) Impacts. Based upon the result of the analysis conducted during the course of this acoustical assessment, temporary impacts associated with the implementation of the proposed project could result in exceedances of the City's noise standards. However, with the implementation of recommended mitigation measures and adherence to the allowable hours of construction operations listed in the City's *Municipal Code*, impacts regarding construction related noise impacts would be less than significant; refer to Section 6.0 (Recommended Mitigation Measures).

Long-Term Impacts. Traffic noise levels on surrounding roadways would exceed 65 dBA; therefore, future on-site residential homes would require a focused acoustical analysis prior to Tentative Tract Map submittal. Mitigation measures have been included to ensure that the City's exterior and interior noise standards are achieved.

The analysis has concluded that with the implementation of the recommended Mitigation Measures, impacts would be less than significant.

Cumulative Impacts. Since the proposed project would not significantly increase noise levels within the project area, the proposed project would not result in a cumulative noise impact.

1.0 INTRODUCTION AND PROJECT SUMMARY

This acoustical analysis assesses potential impacts for noise-sensitive areas that will be affected by the proposed Rich Haven Specific Plan Area, located in the City of Ontario, California. On-site noise impacts were assessed in accordance with applicable laws, ordinances, and regulations established by the United States Environmental Protection Agency, California Environmental Quality Act (CEQA), and the City of Ontario.

1.1 PROJECT LOCATION

The Rich-Haven Specific Plan is approximately 510.6 gross acres in the southern portion of the City of Ontario; refer to Exhibit 1 (Regional Vicinity). The project site is located west of Interstate 15 (I-15), and south of State Route 60 (SR-60). Riverside Drive and the property line for Colony High School form the northern project boundary. Haven Avenue bounds the project to the west; refer to Exhibit 2 (Site Vicinity). The Edison Company substation, and dirt roads that extend through agricultural fields north of Edison Avenue, form the eastern boundary.

1.2 PROJECT SUMMARY

The Rich-Haven Specific Plan project is separated into Residential District Planning Areas and a Regional Commercial/Mixed-Use District. Rich-Haven's Residential District Planning Areas include a variety of housing products that respond to a variety of homeownership needs and desires. These housing products include detached single-family, detached and attached condominiums, townhomes, and live/work units. Clustered multi-family housing is to throughout the District, including its lower density neighborhoods, as described in the New Model Colony (NMC) General Plan. In general, the density of the Residential District's neighborhoods increase from north to south, with Planning Areas 1 through 14 having densities of six or fewer dwelling units per acre; refer to Exhibit 3 (Land Use Plan). Planning Areas 15, 16, 17A, 17B, 18 and 19 are located in the southernmost portion of the Residential District, bounded by Edison Avenue to the south, and have densities ranging from 6.1 to 18 dwelling units per acre.

The Regional Commercial/Mixed-Use District includes approximately 160 gross acres within Planning Areas 20, 21A, and 21B. This Commercial/Mixed-Use District would include a variety of commercial uses, including retail, office, residential, medical, research, entertainment, and other comparable uses. It is anticipated that approximately a maximum of 1,777 dwelling units and 889,200 square feet of regional commercial uses would be included in the Commercial/Mixed-Use District.

Exhibit 1 – Regional Vicinity

Exhibit 2 – Site Vicinity

Exhibit 3 – Land Use Plan

2.0 NOISE MEASUREMENT SCALES

2.1 NOISE SCALES AND DEFINITIONS

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). Because 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 sound frequencies in a manner approximating the sensitivity of the human ear.

The decibel scale is logarithmic. The logarithmic scale compresses the wide range in sound pressure levels to a more usable range similar to how the Richter scale measures earthquake magnitudes. In terms of human response to noise, a sound 10 dBA higher than another is perceived to be twice as loud; 20 dBA higher, four times as loud; and so forth. Everyday sounds normally range from 30 dBA (very quiet) to 100 dBA (very loud). Examples of various sound levels in different environments are shown in Exhibit 4 (Common Environmental Noise Levels).

In most situations, a 3 dBA change in sound pressure level is considered a “just-detectable” difference. Sound from a small localized source (approximating a “point” source) radiates uniformly outward as it travels away from the source in a spherical pattern. The sound level attenuates or drops off at a rate of 6 dBA for each doubling of the distance (6 dBA/DD). This decrease, due to the geometric spreading of the energy over an ever-increasing area, is referred to as the inverse square law. However, highway traffic noise is not a single, stationary point source of sound. The movement of the vehicles makes the source of the sound appear to emanate from a line (line source) rather than a point when viewed over some time interval. Since the change in surface area of a cylinder only increases by two times for each doubling of the radius instead of the four times associated with spheres, the change in sound level is 3 dBA per doubling of distance. Insert

2.2 NOISE EQUIVALENT LEVEL (Leq)

The Leq is the sound level containing the same total energy over a given sampling time period. The Leq is the steady sound level that, in a stated period of time, would contain the same acoustic energy as the time-varying sound level during the same period.

2.3 COMMUNITY NOISE EQUIVALENT LEVEL (CNEL)

The predominant community noise rating scale used in California for land use compatibility assessments is the community noise equivalent level (CNEL). The CNEL reading represents the average of 24 hourly readings of equivalent levels (Leq) based on an A-weighted decibel and adjusted upward to account for increased noise sensitivity in the evening and at night. These adjustments are +5 dBA for the evening (7:00 PM to 10:00 PM) and +10 dBA for the night (10:00 p.m. to 7:00 a.m.). CNEL may be indicated by “dBA CNEL” or just “CNEL”.

Exhibit 4 - Common Environmental Noise Levels

2.4 DAY/NIGHT AVERAGE LEVEL (Ldn)

Another commonly used method is the day/night average level (Ldn). The Ldn measures the 24-hour average noise level at a given location, and it was adopted by the U.S. Environmental Protection Agency (EPA) for developing criteria for the evaluation of community noise exposure. It is based on a measure of the Leq (the average noise level over a given time period). The Ldn is calculated by averaging the Leq's for each hour of the day at a given location after penalizing the "sleeping hours" (defined as 10:00 p.m. to 7:00 a.m.), by adding 10 dBA to account for the increased sensitivity of people to noises that occur at night.

2.5 OTHER NOISE MEASURES

The maximum noise level recorded during a noise event is expressed as Lmax. The sound level exceeded over a specified time frame is expressed as Ln (i.e., L₉₀, L₅₀, L₁₀, etc.). L₅₀ is the level exceeded 50 percent of the time, L₁₀ ten percent of the time, etc.

3.0 LAWS, ORDINANCES, REGULATIONS AND STANDARDS

Land uses deemed sensitive by the State of California include schools, hospitals, rest homes and long-term care and mental care facilities. Many jurisdictions also consider residential uses particularly noise sensitive because families and individuals expect to use time in the home for rest and relaxation, and noise can interfere with those activities. Some jurisdictions may also identify other uses noise sensitive such as churches, libraries, and parks. Land uses that are relatively insensitive to noise include office, commercial and retail developments. There is a range of insensitive noise receptors that include uses generating significant noise levels or uses where the level of human occupancy is typically low.

This noise analysis was conducted in accordance with federal, state and local criteria described in the following sections.

3.1 U.S. ENVIRONMENTAL PROTECTION AGENCY

The U.S. Environmental Protection Agency (EPA) offers guidelines for community noise exposure in the publication *Information on the Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety*. These guidelines consider occupational noise exposure as well as noise exposure in homes. The EPA recognizes an exterior noise level of 55 dB Ldn is a general goal to protect the public from hearing loss, activity interference, sleep disturbance and annoyance. The EPA and other Federal agencies have adopted suggested land use compatibility guidelines, which indicate that residential noise exposures of 55 to 65 dB Ldn are acceptable. The EPA notes, however, that these levels are not regulatory goals, but are levels defined by a negotiated scientific consensus without concern for economic and technological feasibility or the needs and desires of any particular community.

3.2 STATE OF CALIFORNIA

The State Office of Planning and Research (OPR) Noise Element Guidelines include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The OPR Guidelines contain a land use compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of CNEL. A noise environment of 50 to 60 CNEL is considered to be “normally acceptable” for residential uses. The OPR recommendations also note that, under certain conditions, more restrictive standards than the maximum levels cited may be appropriate. As an example, the standards for quiet suburban and rural communities may be reduced by 5 to 10 dB to reflect lower existing outdoor noise levels.

3.3 CITY OF ONTARIO STANDARDS

CITY OF ONTARIO GENERAL PLAN

The City Noise Element of the 1992 *General Plan*, which is directly referenced in the New Model Colony (NMC) General Plan, has identified 65 dB CNEL as the maximum acceptable noise level

for noise sensitive uses such as residential and public institutions. The maximum acceptable noise level for recreational areas, livestock areas, and wildlife preserves is 70 dBA CNEL.

CITY OF ONTARIO MUNICIPAL CODE

The following ordinance applies to property line noise level limits between two or more land uses and has been established to prevent the creation of noise on any particular property that may be perceived as noxious at another property.

Section 9-1.3305. Noise.

The following provisions limit the unwanted and harmful emission of sound.

- (a) *Maximum permissible exterior sound levels by receiving land uses are:*
- (1) *Noise standards for the various categories of land uses set forth in Table 33-1 shall, unless otherwise specified, apply to each property or portion of property in the community. Where two (2) or more dissimilar land uses occur on a single property, the more restrictive noise standard shall apply;*
 - (2) *In the event of a dispute over the identification of a receiving land use, interpretation is to be made by the Zoning Administrator;*
 - (3) *No person shall operate or cause to be operated any source of sound or noise 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 to exceed the applicable levels indicated on Table 33-1 (refer to Table 1 [Maximum Exterior Noise Levels]).*

**TABLE 1
MAXIMUM EXTERIOR NOISE LEVELS**

Receiving Land Use Category	Noise Level (dBA)	
	10:00 p.m. to 7:00 a.m.	7:00 a.m. to 10:00 p.m.
Residential (except multi-family)	45	65
Multi-family residential and mobile home parks	50	65
Commercial (all C Zones, including AP)	60	65
Light Industrial (M1, M2)	70	70
Heavy Industrial (M3)	70	70
Source: City of Ontario, Municipal Code Sec. 9-1.3305		

(b) *Maximum permissible interior noise levels.*

- (1) *No person shall operate or cause to operate any source of sound within a residential dwelling unit or allow the creation of noise on property owned,*

leased, occupied, or otherwise controlled by such person, which causes the noise level, when measured inside a neighboring receiving dwelling unit, to exceed the environmental and/or nuisance interpretation of the applicable limits shown on Table 33-2 (refer to Table 2 [Interior Noise Standards]);

- (2) *If the ambient noise level inside a receiving dwelling unit exceeds permissible limits, the allowable noise exposure standard in that category shall be the measured ambient noise for a cumulative period of five (5) minutes in any one (1) hour, ambient plus five (5) dBA for one (1) minute within any one (1) hour, and shall not exceed the ambient plus ten (10) dBA at any time.*

TABLE 2
INTERIOR NOISE STANDARDS

Land Use Type	Time Interval	Maximum Noise Level (dBA)		
		Any time	1 min./1 hr.	5 min./1 hr.
Multi-family residential	10 p.m. to 7 a.m.	35	40	35
	7 a.m. to 10 p.m.	45	50	45

Source: City of Ontario, Municipal Code Sec. 9-1.3305

c) *Methodology for calculating noise levels shall be as follows:*

- (1) *Noise levels shall be measured by the equivalent sound level (Leq) for any hour;*
- (2) *Nuisance noise shall be measured as a sound level not to be exceeded at any time;*
- (3) *Sound levels by receiving land use shall be measured at the boundary or at any point within the boundary of the property affected;*
- (4) *Fixed location public utility distribution or fixed transmission facilities, located on or adjacent to a property line, shall be subject to noise level limits of this section measured at or beyond six (6) feet from the boundary of the easement upon which the utility equipment is located;*
- (5) *If the noise is continuous, the Leq for any hour will be represented by any lesser time period within that hour. Noise measurements of five (5) minutes or less will thus suffice to define the noise level;*
- (6) *If the noise is intermittent, the Leq for any hour may be represented by a time period typical of the operating cycle. Measurement of intermittent noise is to be made of at least three (3) noisy/quiet periods. Alternatively, measurements may be taken at two (2) periods of at least fifteen (15) minutes each may be used;*

- (7) *In the event the alleged noise event, as judged by the enforcement official, contains a steady, audible sound such as a whine, screech, or hum, or contains a repetitive, impulsive noise such as hammering or riveting, the standard may be reduced by five (5) dB at the discretion of the enforcement official;*
 - (8) *If the measured ambient noise level exceeds that permissible in Table 33-1 (Table 1), the allowable noise exposure standard shall be the ambient noise level. The ambient level shall be measured when the alleged noise violation source is not operating.*
- (d) *The following is prohibited:*
- (1) *No person shall unnecessarily make, continue, or cause to make or continue any noise disturbances;*
 - (2) *Sounding or permitting the sounding of any electrically operated or electronically amplified signal from any stationary bell, chime, siren, whistle, or similar device intended for non-emergency purposes, from any place, for more than one hundred twenty (120) seconds continually, in a one (1) hour period, or intermittent sounding over a five (5) minute period in one (1) hour;*
 - (3) *Creating or causing the creation of any sound within a noise-sensitive area, so as to exceed the maximum exterior noise levels set forth within Table 33-1 (Table 1).*
 - (4) *The following are exempt from these noise standards: warning devices necessary for the protection of public safety, including but not limited to, police, fire, ambulance sirens, train horns, which are exempted from the provisions of this ordinance.*

Article 33: Section 9-1.3350. Hours of Operation.

With the exception of office and security activities, any industrial production, processing, cleaning, testing, repairing, shipping or outdoor activities within 300 feet of a residential district shall be limited to the hours of 7 a.m. to 10 p.m. The city Planner may approve additional hours when it can be found that such additional hours will not generate additional disturbance, or that mitigation measures will ensure compatibility with nearby residential areas.

4.0 EXISTING CONDITIONS

4.1 AMBIENT NOISE MEASUREMENTS

In order to quantify the ambient noise levels in the project area, RBF Consulting conducted noise measurements on August 14, 2006; refer to Table 3 (Noise Measurements). The noise measurement sites were representative of typical existing noise exposure within and immediately adjacent to the project site. Ten-minute measurements were taken at each site, between 11:00 a.m. and 12:30 p.m. Meteorological conditions were typical, with light wind speeds (0 to 5 miles per hour), low humidity and partly cloudy skies.

Measured noise levels ranged from 53.5 dBA to 62.4 dBA. Noise monitoring equipment used for the ambient noise survey consisted of a Larson Davis Laboratories Model LDL 820 sound level analyzer equipped with a Larson Davis Type 2561 random incidence microphone. The instrumentation was calibrated prior to use with a Larson Davis CAL 250 acoustical calibrator to ensure the accuracy of the measurements, and complies with applicable requirements of the American National Standards Institute (ANSI) for Type I (precision) sound level meters. The accuracy of the calibrator is maintained through a program established by the manufacturer, and is traceable to the National Bureau of Standards. The results of the field measurements are indicated in Appendix A (Noise Measurement Sheets). Noise levels within the area are fairly low since the project site is primarily vacant land.

**TABLE 3
NOISE MEASUREMENTS**

Site	Location	Leq (dBA)	Time	Comments
1	Lorenzo near Oaks Loop	53.5	11:20 a.m.	Sunny, mild temperatures
2	Riverside Drive and Mill Creek	57.3	11:50 a.m.	Sunny, mild temperatures
3	Milliken Avenue, East of SCE Substation	62.4	12:25 p.m.	Sunny, mild temperatures

Source: Noise Monitoring Survey conducted by RBF Consulting, August 14, 2006.

4.2 NOISE SOURCES

MOBILE SOURCES

Vehicular noise along major roadways in the vicinity of the proposed project was modeled to estimate existing noise levels from mobile traffic. The existing and future roadway noise levels were projected using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (RD-77-108), together with several roadway and site parameters. The FHWA model is based upon reference energy mean emission levels (REMEL) for automobiles, medium trucks (2 axles), and heavy trucks (3 or more axles), with consideration given to vehicle volume and speed, roadway configuration, distance to the receiver, and the acoustical characteristics of the site. To predict CNEL values, it is necessary to determine the hourly distribution of traffic for a typical day and adjust the traffic volume input data to yield an equivalent hourly traffic volume.

Traffic volumes used in the FHWA model were obtained from the *Rich-Haven Specific Plan Traffic Impact Analysis* prepared by Meyer, Mohaddes and Associates (July 2006). Other traffic inputs into the model were obtained from field observations. These traffic inputs determine the projected impact of vehicular traffic noise and include the roadway cross-section (e.g., number of lanes), roadway width, average daily traffic (ADT), vehicle travel speed, percentages of automobile and truck traffic, roadway grade, angle of view, and site conditions (hard or soft).

Vehicular noise along major roadways was modeled to estimate existing noise levels from mobile traffic. The result of the traffic noise modeling is presented in Table 4 (Existing Traffic Noise). Based on the analysis, noise levels range from 56.1 dBA CNEL to 67.0 dBA CNEL. The highest noise levels were modeled on Riverside Drive, between Archibald Avenue to Turner Avenue.

**TABLE 4
EXISTING TRAFFIC NOISE**

Roadway Segment	ADT ¹	dBA @ 100 Feet from Roadway Centerline	Noise Contour (distance from centerline)		
			60 CNEL	65 CNEL	70 CNEL
Riverside Drive:					
West of Archibald	12,300	66.4	496	157	50
Archibald to Turner	13,940	67.0	563	178	56
Turner to Haven	13,530	63.9	205	95	44
Haven to Mill Creek	9,430	62.3	161	75	35
Mill Creek to Milliken	8,280	61.7	148	69	32
East of Milliken	8,440	64.8	341	108	34
Chino Avenue:					
West of Archibald	4,620	57.2	70	32	15
Archibald to Turner	3,170	58.4	74	23	7
Edison Avenue:					
West of Archibald	7,330	61.6	136	63	29
Archibald to Schaefer	5,730	60.5	115	54	25
Archibald Avenue:					
Edison to Schaefer	11,770	62.0	157	73	34
Schaefer to Chino	12,290	65.2	382	121	38
Chino to Riverside	15,660	66.2	487	154	49
North of Riverside	16,760	66.5	521	165	52
Turner Avenue:					
Schaefer to Chino	2,120	57.7	66	21	7
Chino to Riverside	5,020	61.4	156	49	16
North of Riverside	3,030	59.2	94	30	9
Haven Avenue:					
Chino to Riverside	2,700	56.1	59	27	13
Riverside to Creekside	11,140	66.0	450	142	45
Milliken Avenue:					
Chino to Riverside	12,040	64.2	282	89	28
North of Riverside	14,240	63.0	178	83	38
1. Traffic modeling is based upon data contained within the <i>Rich-Haven Specific Plan Traffic Impact Analysis</i> , prepared by Meyer, Mohaddes and Associates on July 2006.					

STATIONARY NOISE SOURCES

The primary sources of stationary noise in the project vicinity are generated from urban- and agricultural-related activities (i.e., mechanical equipment, landscape maintenance, conversations [normal to loud]). Noise is also generated by residential activities (i.e., air conditioners, pool/spa equipment, landscape maintenance, and conversations). The noise associated with these sources may represent a single event noise occurrence, short-term or long-term/continuous noise.

5.0 ACOUSTICAL ANALYSIS

SIGNIFICANCE CRITERIA

In accordance with CEQA, the effects of a project are evaluated to determine whether they would result in a significant impact on the environment. The criteria (standards) used to determine the significance of impacts may vary, depending on the nature of the project. Acoustical impacts resulting from implementation of the proposed project could be considered significant if they would:

- 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;
- Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project;
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project;
- 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; and
- 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.

Based on these standards, the noise effects of the proposed project have been categorized as either a “less than significant impact” or a “potentially significant impact.” Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a significant and unavoidable impact.

SIGNIFICANCE OF CHANGES IN AMBIENT NOISE LEVELS

A project is considered to have a significant noise impact where it causes an adopted noise standard to be exceeded for the project site or for adjacent sensitive receptors. In addition to concerns regarding the absolute noise level that might occur when a new source is introduced into an area, it is also important to consider the existing ambient noise environment. If the ambient noise environment is quiet and the new noise source greatly increases the noise exposure, even though a criterion level might not be exceeded, an impact may occur. Lacking adopted standards for evaluating such impacts, a general standard for community noise environments is that a change of over 5 dBA, regardless of the ambient noise level without

project, is readily noticeable and is therefore considered a significant impact; refer to Table 5 (Significance of Changes in Cumulative Noise Exposure). In areas where the ambient noise level without project is 60-65 dBA, some individuals may notice an increase in the ambient noise level of greater than 3 dBA. Changes in community noise levels by 1.5 dBA or more in areas where the ambient noise level is greater than 65 dBA is considered a significant impact because the increase would contribute to an existing noise deficiency.

TABLE 5
SIGNIFICANCE OF CHANGES IN CUMULATIVE NOISE EXPOSURE

Ambient Noise Level Without Project (Ldn or CNEL)	Significant Impact is Assumed to Occur if the Project Increases Ambient Noise Levels by:
< 60 dBA	+ 5.0 dBA or more
60 - 65 dBA	+3.0 dBA or more
> 65 dBA	+1.5 dBA or more
dBA = A-weighted decibel; CNEL = community noise equivalent level; Ldn = day/night average noise level	
Source: U.S. Environmental Protection Agency Office of Noise Abatement and Control, <i>Noise Effects Handbook – A Desk Reference to Health and Welfare Effects of Noise</i> , October 1979 (revised July 1981).	

5.1 PROJECT IMPACTS

Impact 5-1

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? **Less Than Significant Impact with Mitigation.**

SHORT-TERM CONSTRUCTION NOISE

Construction activities have the potential to cause short-term noise impacts at sensitive receptors. In this case, the nearest sensitive receptor would be the Colony High School located north at the northwest corner of the project and surrounding residential homes. The surrounding area is primarily agricultural land for dairy farming. Construction of the proposed project is anticipated to occur in two phases. Development of individual planning areas and associated park facilities would occur as appropriate levels of master infrastructure, public facilities, and any required dedications are provided. The phasing sequence is subject to change over time to respond to various factors. Development phasing would be implemented by the City through the approval of tentative tract maps and development permits.

Noise produced by construction equipment varies substantially depending upon the type of equipment being used and its operation and maintenance. Construction noise is generally of relatively short duration, lasting from a few days to a period of months. Noise impacts associated with construction activities would typically occur in several distinct phases, each with its own noise characteristics. The first phase, site preparation, is generally the noisiest and has the shortest duration. Activities that occur during this phase include earthmoving and compacting of soils. The figures indicated in Table 6 (Estimated Construction Noise in the

Project Area), represent typical sound levels of common construction equipment. The estimates illustrated below are worst-case assumptions for three pieces of equipment operating simultaneously. In order to reduce impacts associated with the operation of construction equipment, Mitigation Measure NOI-1 would be implemented. Mitigation Measure NOI-1 provides specifications such as locating equipment as far from sensitive receptors as possible and using mufflers. Compliance with Mitigation Measure NOI would reduce impacts to less than significant levels.

In accordance with the City of Ontario requirements, mitigation measures necessary to minimize or eliminate adverse construction noise impacts would be incorporated into the project plans and specifications; refer to Section 6.0 (Mitigation Measures). In addition, as specified in Mitigation Measure NOI-2, construction activities would be required to adhere to the City of Ontario *Municipal Code*, Article 33: Section 9-1.3350, which provides limits on construction hours between 7:00 a.m. and 10:00 a.m. It is anticipated that no significant sources of construction vibration would be related to this project. However, any vibration impacts would be limited to annoyance effects. With the implementation of Mitigation Measures NOI-1 and NOI-2, construction noise impacts would be less than significant.

TABLE 6
ESTIMATED CONSTRUCTION NOISE IN THE PROJECT AREA

Distance Attenuation	
Distance to Receptor (Feet)	Sound Level at Receptor (dBA)
50	92
100	86
200	80
400	73
600	69
800	67
1,000	64
NOTE: The following assumptions were utilized: Basic sound level drop-off rate: 6.0 dB per doubling distance Molecular absorption coefficient: 0.7 dB per 1,000 feet Analogous excess attenuation: 1.0 dB per 1,000 feet Reference sound level: 92 dBA Distance for reference sound level: 50 feet Assumes simultaneous operation of 1 scraper, 1 heavy truck and 1 bulldozer	

Impact 5-2

*Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? **Less Than Significant Impact.***

It is not anticipated that short-term construction operations or long-term operations for the proposed project would result in excessive groundborne vibration or ground borne noise levels. Vibration producing construction equipment such as pile drivers is not typically used for the type of residential homes and commercial buildings that would be developed as part of the Rich-Haven Specific Plan. Although the proposed project would include the use of heavy-duty construction equipment, vibration impacts that would be generated would not damage

structures within the project vicinity. In addition, long-term operation at residential units typically would not produce excessive ground vibration. Impacts are considered to be less than significant.

Impact 5-3

*A substantial permanent increase in ambient noise levels in the project vicinity above existing levels without the project? **Less Than Significant Impact With Mitigation Incorporated.***

LONG-TERM MOBILE NOISE

Off-Site Noise

In Table 7 (Year 2015 Traffic Noise Levels), the dBA at 100 feet from the roadway centerline depicts the noise level that would be heard 100 feet perpendicular to the roadway centerline. According to Table 7, under the “2015 Without Project” scenario, noise levels at a distance of 100 feet from centerline would range from approximately 48.7 dBA to 70.4 dBA. The highest noise levels would occur along Edison Avenue, west of Archibald Avenue.

Under the “2015 With Project” scenario, noise levels at a distance of 100 feet from the centerline would range from approximately 53.7 to 70.7 dBA. The highest noise levels would occur along Haven Avenue, between and Riverside Avenue and Creekside Avenue. As shown in Table 7, the “2015 With Project” scenario would result in a maximum increase of 12.2 dBA along Mill Creek Road, between Edison Avenue and Chino. Although an increase of 12.2 dBA is considered significant per the *Significance Criteria* specified in Table 5, the overall resultant traffic noise levels along this segment of Mill Creek Road would be below the City’s standards of 65 dBA CNEL (i.e., 60.6 dBA). Therefore, ambient noise levels would not significantly increase as a result of the proposed project. Mobile noise sources would be considered less than significant.

On-Site Noise

As indicated in Table 7, noise levels at the roadways bordering the proposed project along Riverside Drive, Edison Avenue, Archibald Avenue, Haven Avenue, and Milliken Avenue would have noise levels above 65 dBA. Therefore, on-site residential land uses located along these roadways would require additional noise attenuation to ensure that noise levels comply with the City’s exterior and interior noise standards of 65 dBA CNEL and 45 dBA CNEL. As the development phasing would be implemented through the approval of tentative tract maps and development permits, the proposed project would be required to implement Mitigation Measure NOI-4, which requires that an acoustical analysis be required for residential units upon submittal final site design plans. Mitigation NOI-4 includes providing attenuation measures such as soundwalls or increasing the distance between habitable spaces and roadways. With compliance with Mitigation Measure NOI-4, impacts from roadways noise to on-site residential homes would be less than significant.

TABLE 7
YEAR 2015 TRAFFIC NOISE LEVELS

Roadway Segment	Future Without Project		Future Plus Project		Difference in dBA @ 100 Feet from Roadway
	ADT	dBA @ 100 Feet from Roadway Centerline	ADT	dBA @ 100 Feet from Roadway Centerline	
Riverside Drive:					
West of Archibald	16,694	67.8	18,258	68.1	0.3
Archibald to Turner	14,635	67.2	15,852	67.5	0.3
Turner to Haven	17,380	65.0	18,802	65.3	0.3
Haven to Mill Creek	23,752	66.3	26,243	66.8	0.5
Mill Creek to Milliken	30,040	67.3	26,215	66.7	-0.6
East of Milliken	28,323	70.0	29,514	70.1	0.1
Chino Avenue:					
West of Archibald	3,693	56.3	3,960	56.6	0.3
Archibald to Turner	4,976	60.4	4,333	59.8	-0.6
Turner to Haven	2,378	54.3	3,357	55.8	1.5
Mill Creek to Milliken	7,62	49.4	2,031	53.7	4.3
Schaefer Avenue:					
West of Archibald	4,667	57.3	4,788	57.4	0.1
Archibald to Turner	6,519	58.7	7,165	59.1	0.4
Turner to Edison	6,911	59.0	7,577	59.4	0.4
Edison Avenue:					
West of Archibald	55,495	70.4	58,253	70.6	0.2
Archibald to Schaefer	40,780	69.0	44,809	69.5	0.5
Schaefer to Haven	43,543	69.3	48,373	69.8	0.5
Haven to Mill Creek	49,389	69.9	55,592	70.4	0.5
Archibald Avenue:					
Edison to Schaefer	31,520	66.3	31,538	66.3	0.0
Schaefer to Chino	38,129	70.1	38,686	70.2	0.1
Chino to Riverside	37,669	70.1	38,187	70.1	0.0
North of Riverside	40,337	70.4	40,468	70.4	0.0
Turner Avenue:					
Schaefer to Chino	1,214	55.2	1,239	55.3	0.1
Chino to Riverside	1,756	56.8	1,756	56.8	0.0
North of Riverside	3,397	59.7	3,570	59.9	0.2
Haven Avenue:					
South of Edison	24,929	65.8	26,646	66.1	0.3
Edison to Chino	25,655	65.9	28,503	66.4	0.5
Chino to Riverside	26,570	66.0	33,433	67.0	1.0
Riverside to Creekside	27,196	69.9	33,225	70.7	0.8
Mill Creek:					
South of Edison	3,188	55.6	3,952	56.5	0.9
Edison to Chino ²	652	48.7	5,601	60.9	12.2
Chino to Riverside	2,598	57.6	5,170	60.6	3.0
Milliken Avenue:					
South of Edison	22,893	64.2	24,816	64.5	0.3
Edison to Chino	17,677	65.9	20,624	66.6	0.7
Chino to Riverside	16,973	65.7	20,031	66.4	0.7
North of Riverside	45,548	69.8	50,081	70.2	0.4
1. Traffic modeling is based upon data contained within the <i>Rich-Haven Traffic Impact Analysis</i> , prepared by Meyer, Mohaddes and Associates on July 2006.					
2. Noise levels along this Mill Creek, between Edison and Chino would increase by 12.2 dBA. However, this is not considered a significant impact because noise levels along this roadway would be 60.9 dBA. Noise levels would be below the City's 65 dBA CNEL.					

LONG-TERM OPERATIONAL (STATIONARY SOURCES)

As previously discussed, the proposed project includes Residential District Planning Areas (Planning Areas [PAs] 1 through 19) and Commercial/Mixed Use Planning Areas (PA 20-21); refer to Exhibit 3 for planning area locations. PAs 1 through 19 would include primarily residential and neighborhood parks, with the exception of PA 13, which is a proposed middle school and PA 7, which is the Southern California Edison (SCE) easement. Currently SCE power transmission lines traverse the site. PAs 20 –21 would include primarily commercial land uses with the potential for some residential homes.

Mechanical Equipment

Mechanical equipment, such as generators, trash compactors, heating, ventilation and air conditioning (HVAC) units would be included as part of the proposed improvements. Mechanical equipment would be utilized in commercial as well as institutional areas. Typically, equipment noise is 55 dBA at 50 feet from the source. Noise generated from mechanical equipment could impact residential uses and other sensitive receptors within the project vicinity by exceeding the City's 65 dBA noise standard. However, the proposed project would be subject to the provisions of Ontario *Municipal Code*, which requires that noise levels emitted from such equipment not exceed 65 dBA at any property line within a residential zone, residential use, or other noise-sensitive use. Noise levels from mechanical equipment would be further minimized with implementation of mitigation requiring the orientation of equipment away from any sensitive receptors, proper selection of equipment, and installation of equipment with proper acoustical shielding; refer to Mitigation Measure NOI-5. With implementation of Mitigation Measure NOI-5 and compliance with Ontario *Municipal Code* provisions, potential impacts from mechanical equipment are considered less than significant.

Slowly Moving Trucks (Deliveries)

It is anticipated that truck deliveries would occur at the proposed commercial uses, as described above, and may potentially occur at the proposed institutional uses. The maximum noise levels of slow moving heavy and small trucks range between 73 and 70 dBA, respectively, at 50 feet. Noise generated by delivery trucks on the project site could exceed the City's 65 dBA noise standard and a significant impact could occur unless mitigated. Delivery truck noise impacts would be minimized through compliance with the provisions of Ontario *Municipal Code*, Article 33: Section 9-1.3350 as specified in Mitigation Measure NOI-6, which includes limitations on hours of operation, would reduce noise impacts from trucks to less than significant levels.

It should be noted that delivery truck traffic is not of sufficient volume to exceed community noise standards that are based on a time averaged scale such as the CNEL scale. The CNEL is most useful where the noise is more or less continuous, such as traffic noise.

Loading Docks

Noise sources at loading docks located with the Mixed Use District may include maneuvering and idling trucks, truck refrigeration units, fork lifts, banging and clanging of equipment (i.e.,

hand carts and roll-up doors), noise from public address systems, and voices of truck drivers and employees. The maximum noise level associated with loading docks is typically 73 dBA at 75 feet. The project proposes commercial uses, as described above that may contain loading docks. Noise generated by loading docks could exceed the City's 65 dBA noise standard for residential and/or other sensitive noise receptors.

Loading dock noise impacts are considered less than significant following compliance with the provisions of Ontario *Municipal Code* as specified in Mitigation Measure NOI-6, which would reduce noise impacts from loading docks to less than significant levels.

Parking Areas

The commercial and institutional uses proposed by the project would include designated parking areas. Traffic associated with parking lots is not of sufficient volume to exceed community noise standards that are based on a time averaged scale such as the CNEL scale. However, the instantaneous maximum sound levels generated by a car door slamming, an engine starting-up, and car passing by may be an annoyance to adjacent sensitive receptors. Estimates of the maximum noise levels associated with some parking lot activities are presented in Table 8 (Maximum Noise Levels Generated by Parking Lots). Conversations in parking areas may also be an annoyance to adjacent sensitive receptors. Sound levels of speech typically range from 33 dBA at 48 feet for normal speech to 50 dBA at 50 feet for very loud speech.¹

TABLE 8
MAXIMUM NOISE LEVELS GENERATED BY PARKING LOTS

Noise Source	Maximum Noise Levels @ 50' from Source
Car door slamming	63 dBA
Car starting	60 dBA
Car accelerating	55 dBA
People shouting, laughing	65 dBA
Car idling	61 dBA
Source: Wieland Associates, 2002.	

Parking lot noise levels at the property line of nearby sensitive receptors could exceed the City's 65 dBA noise standard. This impact is considered potentially significant unless mitigated. Mitigation Measure NOI-7 has been recommended requiring that subsequent noise analyses be prepared for future uses, as determined necessary by the City of Ontario, which demonstrate that all feasible sound attenuation has been incorporated into proposed parking areas (i.e., landscaping and brushed driving surfaces), so that noise from the parking areas has been minimized to the greatest extent practicable.

Following mitigation, noise generated by parking lots is not expected to exceed the 65 dBA noise standard and a less than significant impact would occur in this regard. Also, it should be noted

¹ Cyril M. Harris, *Handbook of Noise Control*, 1979.

that noise attenuation from existing walls and intervening vegetation and topography would further lessen potential impacts.

Neighborhood Park

The project proposes a neighborhood park located. Currently there are three parks proposed within the project site. These parks are located in PA 5, PA 12, and PA 18. As specified within the *Rich-Haven Specific Plan* the parks would include both active and passive uses. Neighborhood parks in PA 5 and PA 12 would include picnic areas, basketball courts, tot lots, football, soccer, or softball facilities. The neighborhood park in PA 18 could potentially include a tot lot, a play lawn (croquet field), rose gardens, and picnic areas.

Activities at the park could expose surrounding receptors to noise impacts from events at these facilities, primarily from crowd noise. As indicated in Table 8, people shouting/laughing generate maximum noise levels of 65 dBA at 50 feet from the source. Since the residences would be located at a minimum of 50 feet from the proposed park facilities, noise generated from people utilizing the park would not exceed the City's 65 dBA noise standard. Furthermore, potential park activities would be limited to operation during daytime hours. Impacts in this regard are considered less than significant.

Landscape Maintenance

Development of the proposed uses would introduce new landscaping requiring periodic maintenance. The proposed neighborhood park would require the greatest amount of landscape services. Noise generated by gas lawnmowers is estimated to be approximately 70 dBA at a distance of 5.0 feet from the source. For each doubling of distance from a point noise source (i.e. lawnmower), the sound level will decrease by 6 dBA. Additionally, walls attenuate noise at an average of 9 dBA. Based on the distance between the proposed neighborhood park and the closest residence, momentary noise levels of up to 52 dBA may occur at the nearest resident property line. Although, maintenance activities would operate during daytime hours for brief periods of time and would increase ambient noise levels in the project vicinity, the gas lawnmower noise levels at the nearest residential property line would not exceed the City's 65 dBA noise standard.

Potential impacts from landscaping activities would be minimized with adherence to the Ontario *Municipal Code*, which prohibits loud and unnecessary noise. Additionally, a subsequent noise analysis shall be prepared during preparation of the Final Development Plans, demonstrating that site placement of stationary noise sources identified above would not exceed City Code criteria for adjacent residences and sensitive receptors. Therefore, with implementation of the recommended mitigation measures, landscape maintenance noise generated from the proposed uses would be reduced to a less than significant level.

Impact 5-4

*A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? **Less Than Significant.***

Impacts are not anticipated to be significant. Refer to Impact Statement 5-1, for further information.

Impact 5-5

*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? **No Impact.***

The project site is located approximately three miles from the Ontario International Airport and approximately 5 miles away from the Chino Airport. The project site is not located within any airport comprehensive airport land use area. No noise-related impacts related to aircraft or airport operations would result from implementation of the proposed project.

5.2 CUMULATIVE IMPACTS

Implementation of the proposed project, combined with development of cumulative projects, would increase ambient noise levels in the project area as a result of vehicular traffic noise along local roadways. However, due to Zoning and limited vacant land surrounding the project site, ambient noise levels from stationary sources associated with development would not increase ambient noise levels in the project area.

As previously noted, the project would not result in cumulatively significant mobile noise impacts along the roadway segments analyzed. As indicated in Table 7, noise levels would not increase at significant levels based on the established *Significance Criteria*. On-site residential homes located within the project; however, would require additional acoustical analysis upon final design. Surrounding roadways would have noise levels above 65 dBA and proper noise attenuation shall be implemented to ensure the City's exterior and interior standards of 65 dBA CNEL and 45 dBA CNEL are met.

The evaluation of noise impacts is typically determined on a project-by-project basis in order to focus mitigation on a particular noise source. As such, future development proposals within the City would require separate discretionary approval and CEQA assessment, which would address potential noise impacts and identify attenuation measures where appropriate. As previously stated above, the proposed project, as well as cumulative development projects, would be individually required to reduce noise impacts to below City noise standards and demonstrate adherence to the Ontario *Municipal Code* requirements.

6.0 RECOMMENDED MITIGATION MEASURES

6.1 SHORT-TERM CONSTRUCTION

NOI-1 Prior to Grading Permit issuance, the Applicant shall demonstrate that the project complies with the following:

- All construction equipment, fixed or mobile, shall be equipped with properly operating and maintained mufflers, to the satisfaction of the Noise Control Officer;
- During construction, stationary construction equipment shall be placed such that emitted noise is directed away from sensitive noise receivers, to the satisfaction of the City Planner; and
- During construction and to the satisfaction of the City Planner, stockpiling and vehicle staging areas shall be located as far as practical from noise sensitive receptors during construction activities.

NOI-2 Operating or causing the operation of any tools or equipment used in construction, drilling, repair, alteration, or demolition work between the hours of 10:00 p.m. and 7:00 a.m. during is prohibited. The City Planner may approve additional hours when it can be found that such additional hours will not generate additional disturbance, or that mitigation measures will ensure compatibility with nearby residential areas.

6.2 LONG-TERM OPERATIONAL

NOI-3 Prior to the construction of residential development along Riverside Drive, Haven Avenue, Mill Creek Avenue, Edison Avenue, and Milliken Avenue, an acoustical noise analysis should be prepared prior to the submittal of final tentative tract maps to ensure that exterior and interior noise levels are met. The acoustical analysis shall demonstrate that the buildings have been designed to limit interior noise levels to 45 dBA CNEL and exterior noise (backyards and habitable balconies and patios) to less than 65 dBA CNEL. Individual developments shall, to the extent feasible, implement site-planning techniques such as:

- Increase the distance between the noise source and the receiver;
- Use non-noise sensitive structures such as garages to shield noise-sensitive areas;
- Orienting buildings to shield outdoor spaces from a noise source;
- Individual developments shall incorporate architectural design strategies, which reduce the exposure of noise-sensitive spaces to stationary noise sources

(i.e., placing bedrooms or balconies on the side of the house facing away from noise sources). These design strategies shall be implemented based on recommendations of acoustical analysis for individual developments as required by the City to comply with City noise standards;

- Individual developments shall incorporate noise barriers, walls, or other sound attenuation techniques, based on recommendations of acoustical analysis for individual developments as required by the City to comply with City noise standards; and
- Elements of building construction (i.e., walls, roof, ceiling, windows, and other penetrations) shall be modified as necessary to provide sound attenuation. This may include sealing windows, installing thicker or double-glazed windows, locating doors on the opposite side of a building from the noise source, or installing solid-core doors equipped with appropriate acoustical gaskets.

6.3 LONG-TERM OPERATIONAL (STATIONARY)

NOI-4 Prior to final development plan approval, on a project-by-project basis and to the discretion of the Ontario Planning Department, subsequent noise studies shall be prepared, which demonstrates the site placement of stationary noise sources would not exceed criteria established in the City of Ontario *Municipal Code*. The analysis shall verify that loading dock facilities, rooftop equipment, trash compactors and other stationary noise sources are adequately shielded and/or located at an adequate distance from residential areas in order to comply with the City's noise standards.

NOI-5 Prior to Building Permit issuance and to the satisfaction of the Ontario Planning Department, the Project Applicants, on a project-by-project basis, shall demonstrate compliance with the following with respect to mechanical equipment:

- Mechanical equipment shall include specifications of quiet equipment;
- Mechanical equipment shall be properly selected and installed, and shall include sound attenuation packages;
- To the extent possible, mechanical equipment shall be oriented away from the nearest noise sensitive receptors; and
- The need for sound attenuation measures, and design of, such measures shall be determined as part of the final engineering design on a project-by-project basis.

NOI-6 Where a commercial zone abuts a residential zone or residential use, all deliveries of goods and supplies; trash pick-up, including the use of parking lot trash sweepers; and the operation of machinery or mechanical equipment which emits noise levels in excess

of 65 dBA, as measured from the closest property line to the equipment, shall only be allowed between the hours of 7:00 a.m. and 10:00 p.m., unless otherwise specified in an approved conditional use permit or other discretionary approval.

- NOI-7 Prior to final development plan approval, on a project-by-project basis, a subsequent noise analysis shall be prepared, to the satisfaction of the Ontario Planning Department, which demonstrates that all feasible sound attenuation has been incorporated into the parking areas (i.e., landscaping and brushed driving surfaces), such that noise from parking area has been minimized to the greatest extent practicable.

6.4 CUMULATIVE

No mitigation measures required.

7.0 REFERENCES

7.1 LIST OF PREPARERS

RBF Consulting
14725 Alton Parkway
Irvine, Ca 92618
(949) 855-3612

Eddie Torres, INCE, Environmental & Acoustical Analyst
Maria Cadiz, Environmental Analyst

7.2 DOCUMENTS

1. California Department of Transportation, *Technical Noise Supplement: A Supplement to the Traffic Noise Analysis Protocol*, October 1998.
2. City of Ontario, *General Plan*, 1992.
3. Cyril Harris, *Handbook of Noise Control, Second Edition*, 1979.
4. L.L. Beranek, I.L. Ver, *Noise and Vibration Control Engineering: Principals and Applications*, 1992.
5. Meyer, Mohaddes and Associates, *Rich-Haven Specific Plan Traffic Impact Analysis*, July 2006.
6. RBF Consulting, *Rich-Haven Specific Plan Draft II*, July 11, 2006.

7.3 SOFTWARE

FHWA Highway Traffic Noise Prediction Model, FHWA-RD-77-108, initially released December 1978.

7.4 WEBSITES

City of Ontario, <http://www.ci.ontario.ca.us/>.



MEMORANDUM

To: Aaron Pfannensteil
From: Maria Cadiz
Date: January 29, 2007
Subject: Rich Haven Acoustical Response to Comments

Aaron,

Below is a response to the comments provided by the City of Ontario regarding the acoustical analysis for the Rich Haven Project:

A. 8. RBF commented that noise and air quality sections need to analyze the export/import of soil. RBF needs to provide approximate volumes and locations of borrow/disposal sites. The RBF noise study will need to be augmented.

Export and/or import of soil shall be required for the project. In order to avoid sensitive uses, the recommended haul routes for the proposed project would include using Haven Avenue towards Edison Avenue, and Edison Avenue to Interstate 15 (I-15) via Cantu Galleano interchange. Another potential haul route would include using Hamner Avenue toward State Route 60 (SR-60). The surrounding uses along the proposed haul routes would include primarily vacant land and industrial areas. Therefore, impacts associated with importing and exporting soil are anticipated to be less than significant and would not require further air quality and noise analysis.

B. 15. BBK commented that the noise thresholds used had not been seen before. However, they are the same as in the CEQA checklist, and the standards are from the EPA. These came from the RBF noise study and RBF needs to respond.

The City of Ontario does not provide noise significance thresholds for off-site mobile impacts within the *General Plan* or the *Municipal Code*. Therefore, the 5.0, 3.0, and 1.5 dBA noise thresholds were used to determine the project's impacts. The noise thresholds are used for most acoustical analysis and are a standard industry practice. The thresholds were also obtained from the Environmental Protection Agency (EPA), *Noise Effects Handbook – A Desk Reference to Health and Welfare Effects of Noise* (dated July 1981) and the California Department of Transportation (Caltrans), *Technical Noise Supplement: A Technical Supplement to the Traffic Noise Analysis Protocol* (dated October 1998).

C. 16. BBK commented that a table is needed to compare existing noise to future noise. RBF needs to augment their noise study.

The acoustical analysis for the Rich Haven Project analyzed the incremental impact of the proposed project to the baseline “Future Year 2015 No Project” scenario. A comparison of the “Existing” and “Future Year 2015 With Project” scenarios is typically not conducted because the “Future Year 2015 With Project” scenario accounts for future growth within the area, traffic from other proposed projects, as well as traffic resulting from the proposed project. To compare “Existing” and “Future Year 2015 With Project” scenario would penalize the proposed project for noise increases beyond the projects control generated by future growth and other projects. To illustrate this further, Table 1 (Existing and Future With Project Traffic Noise Levels) has been included to compare the two scenarios.

In Table 1, the dBA at 100 feet from the roadway centerline depicts the noise level that would be heard 100 feet perpendicular to the roadway centerline. According to Table 1, under the “Existing” scenario, noise levels at a distance of 100 feet from centerline would range from approximately 57.2 dBA to 66.5 dBA. The highest noise levels would occur along Archibald Avenue, north of Riverside. Under the “Future Year 2015 With Project” scenario, noise levels at a distance of 100 feet from the centerline would range from approximately 53.7 to 70.7 dBA. The range in noise levels during the “Existing” scenario is significantly different from the anticipated noise levels in the “Future Year 2015 With Project” scenario. The roadway segments within the project vicinity would be altered with implementation of the proposed project. As shown in Table 1, the “Future Year 2015 With Project” scenario includes 14 additional roadway segments that are currently non-existent. The additional roadways would provide alternative routes for traffic, thus changing the traffic volumes and patterns within the area. Such a change in traffic patterns would not provide a proper comparison between the “Existing” and “Future Year 2015 With Project” scenarios.

Furthermore, as shown in Table 1, the “Future Year 2015 With Project” scenario would result in a maximum increase of 9.3 dBA along Haven Avenue, between Chino Avenue and Riverside Drive. Based on the significance criteria, when comparing “Existing” and “Future Year 2015 With Project” scenarios, the proposed project would have a significant impact on ambient noise levels within the project area. Table 1 shows that noise levels, with implementation of the proposed project, would increase up to 67.0 dBA. However, since the traffic patterns would be altered with implementation of the proposed project, the noise levels do not provide an accurate depiction in the change in ambient noise levels.

The initial acoustical analysis provided the appropriate method for analyzing the project’s impacts to the ambient noise levels within the area. The baseline condition (Future Year 2015 No Project) that was utilized provided a comparable roadway system, traffic patterns, and traffic volumes. Based on the significance criteria, the analysis determined that a less than significant impact would result with implementation of the proposed project.

Table 1
Existing and Future With Project Traffic Noise Levels

Roadway Segment	Existing		Future Year 2015 Plus Project		Difference in dBA @ 100 Feet from Roadway
	ADT	dBA @ 100 Feet from Roadway Centerline	ADT	dBA @ 100 Feet from Roadway Centerline	
Riverside Drive:					
West of Archibald	12,300	66.4	18,258	68.1	1.7
Archibald to Turner	13,940	67.0	15,852	67.5	0.5
Turner to Haven	13,530	63.9	18,802	65.3	1.4
Haven to Mill Creek	9,430	62.3	26,243	66.8	4.5
Mill Creek to Milliken	8,280	61.7	26,215	66.7	5.0
East of Milliken	8,440	64.8	29,514	70.1	5.3
Chino Avenue:					
West of Archibald	4,620	57.2	3,960	56.6	-0.6
Archibald to Turner	3,170	58.4	4,333	59.8	1.4
Turner to Haven	NA	NA	3,357	55.8	NA
Mill Creek to Milliken	NA	NA	2,031	53.7	NA
Schaefer Avenue:					
West of Archibald	NA	NA	4,788	57.4	NA
Archibald to Turner	NA	NA	7,165	59.1	NA
Turner to Edison	NA	NA	7,577	59.4	NA
Edison Avenue:					
West of Archibald	7,330	61.6	58,253	70.6	9.0
Archibald to Schaefer	5,730	60.5	44,809	69.5	9.0
Schaefer to Haven	NA	NA	48,373	69.8	NA
Haven to Mill Creek	NA	NA	55,592	70.4	NA
Archibald Avenue:					
Edison to Schaefer	11,770	62.0	31,538	66.3	4.3
Schaefer to Chino	12,290	65.2	38,686	70.2	5.0
Chino to Riverside	15,660	66.2	38,187	70.1	3.9
North of Riverside	16,760	66.5	40,468	70.4	3.9
Turner Avenue:					
Schaefer to Chino	2,120	57.7	1,239	55.3	-2.4
Chino to Riverside	5,020	61.4	1,756	56.8	-4.6
North of Riverside	3,030	59.2	3,570	59.9	-0.7
Haven Avenue:					
South of Edison	NA	NA	26,646	66.1	NA
Edison to Chino	NA	NA	28,503	66.4	NA
Chino to Riverside	2,700	56.1	33,433	67.0	9.3
Riverside to Creekside	11,140	66.0	33,225	70.7	4.7
Mill Creek:					
South of Edison	NA	NA	3,952	56.5	NA
Edison to Chino	NA	NA	5,601	60.9	NA
Chino to Riverside	NA	NA	5,170	60.6	NA
Milliken Avenue:					
South of Edison	NA	NA	24,816	64.5	NA
Edison to Chino	NA	NA	20,624	66.6	NA
Chino to Riverside	12,040	64.2	20,031	66.4	2.2
North of Riverside	14,240	63.0	50,081	70.2	7.2
1. Traffic modeling is based upon data contained within the <i>Rich-Haven Traffic Impact Analysis</i> , prepared by Meyer, Mohaddes Associates on July 2006.					