NOISE IMPACT ANALYSIS

IRWINDALE REGIONAL SHOPPING CENTER

CITY OF IRWINDALE, CALIFORNIA

LSA

August 8, 2014

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A: HIGHWAY TRAFFIC NOISE MODEL OUTPUT

INTRODUCTION

This noise impact analysis has been prepared to evaluate the potential noise impacts and mitigation measures associated with the proposed commercial use project located in the City of Irwindale (City), California. This report is intended to satisfy the City's requirement for a project-specific noise impact analysis by (1) examining the impacts of the proposed project on noise-sensitive uses in the project area and impacts on the proposed on-site land uses from adjacent noise sources, and (2) evaluating the mitigation measures incorporated as part of the project design.

The project is the proposed Irwindale Regional Shopping Center, which includes the development of up to 700,000 square feet of commercial space, a development agreement, and associated discretionary actions, and is the "project" under scrutiny in this noise impact study. Unless otherwise noted, the terms "Irwindale Regional Shopping Center," "proposed project," and "project" are used interchangeably.

PROJECT DESCRIPTION

PROJECT LOCATION

As indicated in Figure 1, the project site is generally located west of Interstate 605 (I-605), south of Interstate 210 (I-210), and north of Interstate 10 (I-10) in the northwestern portion of the City of Irwindale in the County of Los Angeles. The project site is specifically located at the southwest corner of the I-605/Live Oak Avenue interchange approximately 750 feet east of Arrow Highway. The project site is currently occupied by the Irwindale Event Center (aka Irwindale Speedway) with an address of 500 Speedway Drive. The project site consists of three parcels of land identified as Assessor's Parcel Numbers (APNs) 8532-004-022, 8532-004-025, and 8532-004-026 totaling approximately 63.5 acres. The project site is bordered by Live Oak Avenue and a landfill to the north, an active quarry to the south, I-605 to the east, and a trucking and distribution center to the west.

PROJECT CHARACTERISTICS

The proposed Irwindale Regional Shopping Center consists of an approximately 700,000 square-foot shopping center and associated parking on an approximately 63.5 acre site. In addition to the primary function of the shopping center to provide commercial space for shopping opportunities, the project includes ancillary amenities including a central plaza for public gatherings, entryway features, an outdoor entertainment/performance area, and a food court. The proposed project will include related improvements, including, but not limited to parking, landscape planters, fencing, and walls. The project would be completed in two phases. Phase 1 of the project would develop approximately 455,000 square feet or 65 percent of the total project building space. Phase 2 would develop approximately 245,000 square feet or 35 percent of the total project space (refer to Figure 2).

The project site is generally level and fully developed with the Irwindale Speedway. The Irwindale Speedway would be demolished and the concrete and asphalt would be used as on-site fill for the racing oval as part of the proposed project's construction. Depending on the results of soil testing currently underway, on-site soils will likely need to be over-excavated and re-compacted or replaced with suitable soils.

Access to the site would be from three driveways on Live Oak Avenue. Parking for customers and employees would exist on all sides of the proposed shopping center. The shopping center is expected to employ approximately 5,000 people. However, the hours of operation of the facility are expected to be as follows:

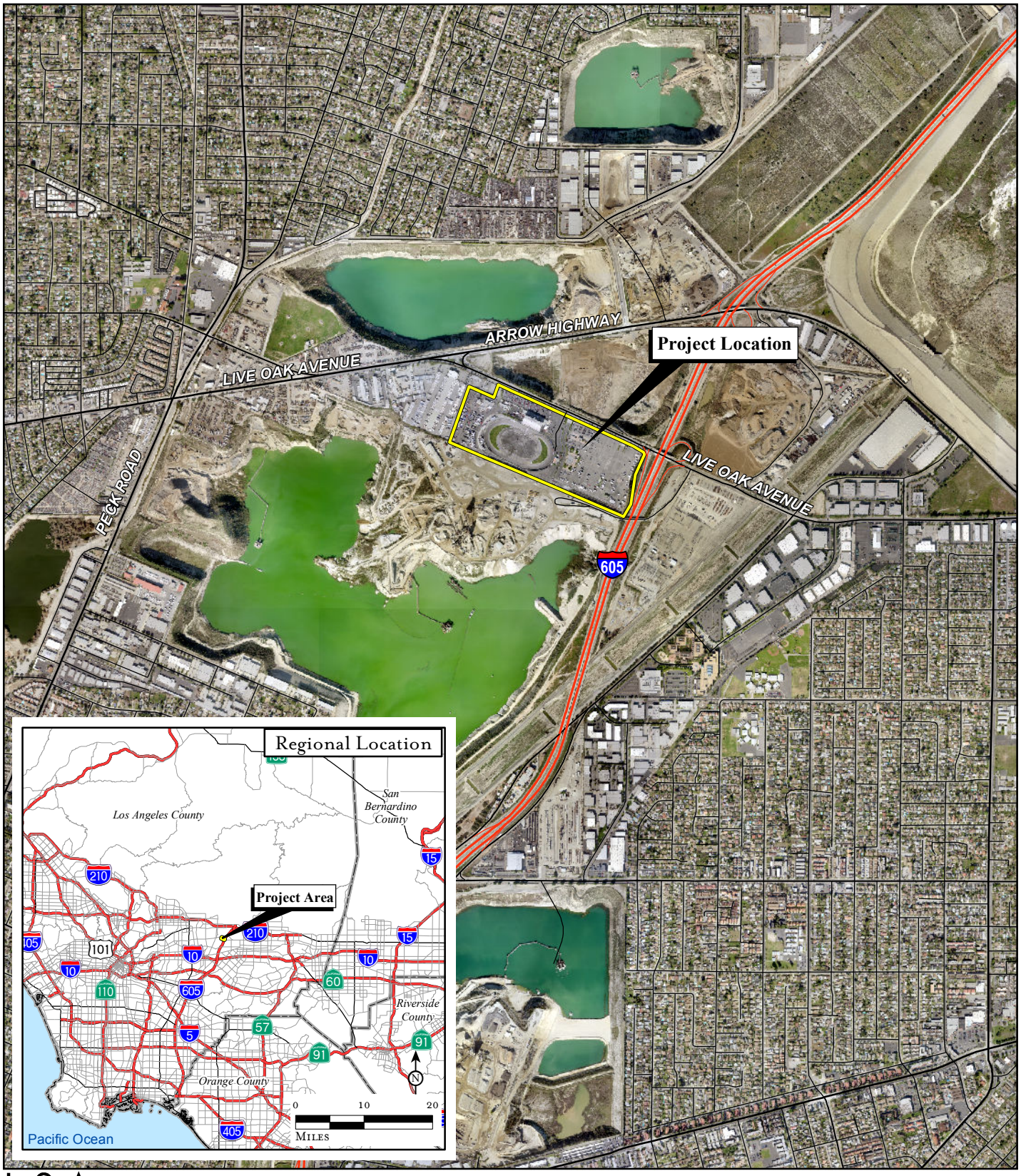

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FIGURE 1

N

0 1,000 2,000

Feet

Irwindale Regional Shopping Center

SOURCE: LARIAC, 2012; Thomas Bros., 2009

Regional and Project Location

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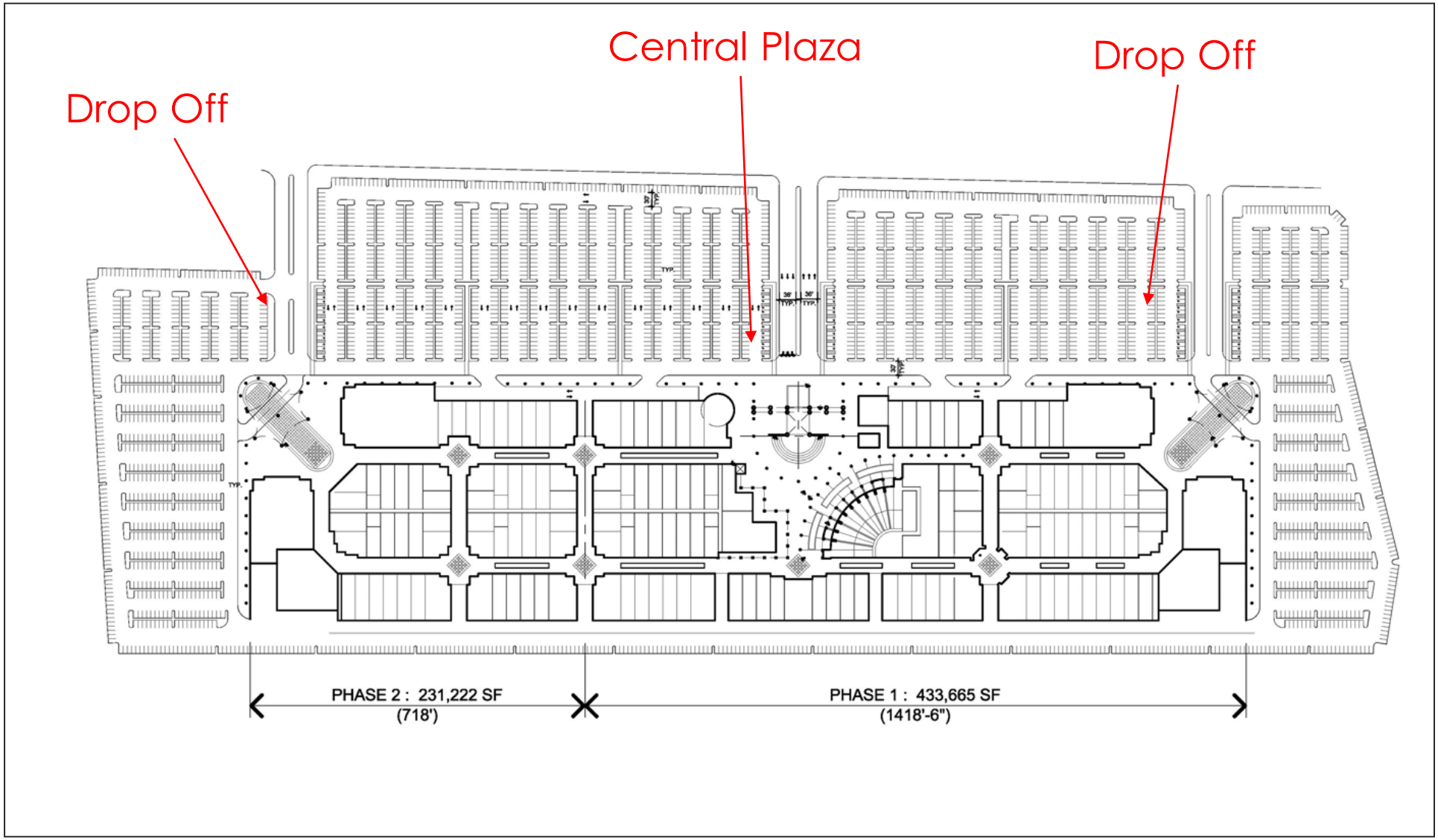

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FIGURE 2

Irwindale Regional Shopping Center

Site Plan

SOURCE: FCGA Architecture, 2014

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SHOPPING HOURS

Regular Hours
Mon - Sat: 10am-9pm, Sun: 10am-7pm.

Sale/Holiday Hours:

July 4th Summer Sale: Thu, July 3 - Sun, July 6
Thu, July 3: 9am-9pm
Fri, July 4: 9am-9pm
Sat, July 5: 9am-9pm
Sun, July 6: 10am-7pm

Labor Day Weekend Sale, Fri, Aug 29 - Mon, Sept 1
Fri, Aug 29: 9am-9pm
Sat, Aug 30: 9am-9pm
Sun, Aug 31: 10am-7pm
Mon, Sept 1: 9am-9pm

Columbus Day Weekend Sale: Fri - Mon, Oct 11 - 14
Fri, Oct 10: 9am-9pm
Sat, Oct 11: 9am-9pm
Sun, Oct 12: 10am-7pm
Mon, Oct 13: 9am-9pm

Thanksgiving Eve: Wed, Nov 26
10am-6pm

Thanksgiving Day: Thu, Nov 27
6pm-Midnight

After-Thanksgiving Weekend Sale
featuring Midnight Madness: Fri - Sun: Nov 28 - 30
Fri, Nov 28: Midnight-10pm
Sat, Nov 29: 8am-10pm
Sun, Nov 30: 9am-8pm

Holiday Hours
Mon, Dec 1 - Tues, Dec 23
Mon - Sat: 9am-9pm, Sun: 10am-7pm

Week of Christmas: Sat, Dec 20 - Tue, Dec 23
Sat, Dec 20: 8am-10pm
Sun, Dec 21: 9am-8pm
Mon, Dec 22: 9am-9pm
Tue, Dec 23: 9am-9pm

Christmas Eve: Wed, Dec 24
9am-6pm

Christmas Day: Thu, Dec 25
Closed

After-Holiday Sales: Fri, Dec 26 - Thu, Jan 2
Fri, Dec 26: 7am-9pm
Sat, Dec 27: 9am-9pm
Sun, Dec 28: 10am-7pm
Mon, Dec 29: 9am-9pm
Tues, Dec 30: 9am-9pm

New Year's Eve: Wed, Dec 31
9am-6pm

New Year's Day: Thu, Jan 1
10am-9pm

The project site is zoned M-2 (Heavy Manufacturing) and has a General Plan designation of Commercial/Recreation. As stated previously, all existing site improvements (buildings, parking lots, racetrack, etc.) would be demolished and removed with the exception of the parking lot asphalt, which the applicant proposes to recycle and re-use on-site. The project proposes a zone change amendment that would change the existing zoning from M-2 to C-2 (Heavy Commercial).

As indicated previously, land use entitlements required for the project include approval of a Site Plan & Design Review Permit No. 01-2013, Development Agreement No. 01-2013, Zone Change No. 03-2013, and Lot Line Adjustment No. 01-2013 (Administrative Approval).

EXISTING LAND USES IN THE PROJECT VICINITY

As indicated previously, the project site is currently developed with the Irwindale Speedway. Prior to the Speedway, the project site was used as an outdoor swap meet for several years and prior to the swap meet, a landfill. The Irwindale Speedway was opened in 1999 and includes a one-half oval, third-mile oval, and a one-eighth mile drag strip. The speedway includes a large parking area that can accommodate over 3,000 cars, stadium lighting around the track, perimeter landscaping, and 6,000 stadium style bleacher seats. The Speedway also includes ancillary administration and concessions buildings east of the grandstands and repair and service structures west of the racetrack. The facility is used nearly every day for race training, fire and police training, filming of commercials, television programming, and for racing. The eastern portion of the project site is also used for swap meets, special event operations, and vehicle and trailer shows. Irwindale Speedway, LLC declared bankruptcy after the 2011 season and vacated the property in early 2012. The previous owner, Nu-Way Industries, and the existing Irwindale Event Center operator, 211 Enterprises, entered into a partnership shortly after the bankruptcy so that drag racing and other activities could take place in 2012. NASCAR racing returned in 2013. The project site was purchased by the current owner and

project applicant, Lindom Company in 2013. The existing lease permitting 211 Enterprises to operate the Irwindale Event Center will continue through at least December 2014.

The project site is fairly level with soils classified as Handford Silt Loam and Tujunga Fine Sandy Loam. The project site includes three major drainage areas. The majority of runoff from the site drains from the southwest to the northeast and discharges into a curb inlet near the western driveway which connects to a City storm drainage system. In addition, runoff also drains into the racetrack in-field which contains an inlet that is connected to a pump station near the northeast corner of the site. There is also an inlet in the southwest corner of the site which is piped to the pump station. The pump station discharges the runoff onto the westerly driveway. The runoff then flows north in the driveway discharging out onto Live Oak Avenue.

The project site is zoned M-2 (Heavy Manufacturing) and is relatively flat. The General Plan land use designation for the site is Commercial/Recreation. The project surroundings consist of General Plan land use designations of Industrial/Business Park, Quarry Overlay, and Regional Commercial and related zoning of M-2 and C-2 (Heavy Commercial). Water features in the area include the Santa Fe Dam approximately 0.8 mile northeast of the project site, and the San Gabriel River approximately 0.25 mile east of the project site.

As indicated previously, the project site is bordered by Live Oak Avenue and a landfill to the north, an active quarry and Graham Access Road to the south, I-605 to the east, and a truck distribution center to the west. Northwest and south of the project site are two very large mining pits that are generally filled with groundwater and runoff. These pits can be as deep as 200 feet or more, well below the existing grade. Beyond the immediately adjacent land uses are residential neighborhoods. The closest sensitive receptors to the project site are residences 0.4 mile north of the project site. The nearest schools are Olive Junior High and Walnut Elementary School approximately 0.5 mile southeast of the project site. The nearest hospital, City of Hope Helford Clinical Research Hospital, is approximately 1.3 miles northeast of the project site.

SETTING

METHODOLOGY RELATED TO NOISE IMPACT ASSESSMENT

Evaluation of noise impacts associated with a proposed industrial project includes the following:

- Determination of the short-term construction noise impacts on off-site noise-sensitive uses
- Determination of the long-term noise impacts, including vehicular traffic and on-site stationary sources, on off-site noise-sensitive uses
- Determination of the long-term noise impacts on on-site uses
- Determination of required mitigation measures to reduce long-term noise impacts from all sources

CHARACTERISTICS OF SOUND

Sound is increasing to such disagreeable levels in our environment that it can threaten our quality of life. Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep. To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect our ability to hear. Pitch is the number of complete vibrations or cycles per second of a wave that result in the tone's range from high to low. Loudness is the strength of a sound that describes a noisy or quiet environment and is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity refers to how hard the sound wave strikes an object, which in turn produces the sound's effect. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

Measurement of Sound

Sound intensity is measured through the A-weighted scale (i.e., A-weighted decibels [dBA]) to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound similar to the human ear's de-emphasis of these frequencies. Unlike linear units such as inches or pounds, decibels are measured on a logarithmic scale, representing points on a sharply rising curve. For example, 10 decibels (dB) are 10 times more intense than 1 dB, 20 dB are 100 times more intense, and 30 dB are 1,000 times more intense. Thirty decibels (30 dB) represent 1,000 times as much acoustic energy as 1 dB. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the loudness of the sound. Ambient sounds generally range from 30 dBA (very quiet) to 100 dBA (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound dissipates exponentially with distance from the noise source. For a single-point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source such as highway traffic or railroad operations, the sound decreases 3 dB for each doubling of distance in a hard site environment. Line source noise in a relatively flat environment with absorptive vegetation decreases 4.5 dB for each doubling of distance.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. However, the predominant rating scales for human communities in the State of California are the equivalent continuous sound level (L_{eq}) and Community Noise Equivalent Level (CNEL) based on dBA. L_{eq} is the total sound energy of time-varying noise over a sample period. CNEL is the time-varying noise over a 24-hour period, with a weighting factor of 5 dBA applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and with a weighting factor of 10 dBA from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). The noise adjustments are added to the noise events occurring during the more sensitive hours. Day-night average noise (L_{dn}) is similar to the CNEL but without the adjustment for nighttime noise events. CNEL and L_{dn} are normally exchangeable and within 1 dB of each other. Other noise-rating scales of importance when assessing annoyance factor include the maximum noise level, or L_{max}, and percentile noise exceedance levels, or L_N. L_{max} is the highest exponential time-averaged sound level that occurs during a stated time period. It reflects peak operating conditions and addresses the annoying aspects of intermittent noise. L_N is the noise level that is exceeded “N” percent of the time during a specified time period. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the lowest noise level experienced during a monitoring period. It is normally referred to as the background noise level.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to noise levels higher than 85 dBA. Exposure to high noise levels affects our entire system, with prolonged noise exposure in excess of 75 dBA increasing body tensions and thereby affecting blood pressure, functions of the heart, and the nervous system. In comparison, extended periods of noise exposure above 90 dBA would result in permanent cell damage. When the noise level reaches 120 dBA, a tickling sensation occurs in the human ear even with short-term exposure. This level of noise is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by the feeling of pain in the ear. This is called the threshold of pain. A sound level of 160 to 165 dBA can result in dizziness and loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying less developed areas.

Following, Table A lists “Definitions of Acoustical Terms.” Table B shows “Common Sound Levels and Their Noise Sources.” Table C shows “Land Use Compatibility for Exterior Community Noise” recommended by the California Department of Health, Office of Noise Control.

Table A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of level that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in one second (i.e., number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. All sound levels in this report are A-weighted, unless reported otherwise.
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1 percent, 10 percent, 50 percent, and 90 percent of a stated time period.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dBA to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all encompassing noise associated with a given environment at a specified time, usually a composite of sound from many sources at many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.

Source: Handbook of Acoustical Measurements and Noise Control (1991).

Table B: Common Sound Levels and their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise	Noise Source
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room			
Music	85	Loud	
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	
Near Freeway Auto Traffic	70	Moderately Loud	Baseline
Average Office	60	Quiet	One-half as loud
Suburban Street	55	Quiet	
Light Traffic; Soft Radio			
Music in Apartment	50	Quiet	One-quarter as loud
Large Transformer	45	Quiet	
Average Residence without Stereo Playing	40	Faint	One-eighth as loud
Soft Whisper	30	Faint	
Rustling Leaves	20	Very Faint	
Human Breathing	10	Very Faint	Threshold of Hearing
	0	Very Faint	

Source: Compiled by LSA Associates, Inc. (1998).

Table C: Land Use Compatibility for Exterior Community Noise

Land Use Category	Noise Range (L_{dn} or CNEL), dB			
	I	II	III	IV
Passively used open spaces	50	50–55	55–70	70+
Auditoriums, concert halls, amphitheaters	45–50	50–65	65–70	70+
Residential: low-density single-family, duplex, mobile homes	50–55	55–70	70–75	75+
Residential: multifamily	50–60	60–70	70–75	75+
Transient lodging: motels, hotels	50–60	60–70	70–80	80+
Schools, libraries, churches, hospitals, nursing homes	50–60	60–70	70–80	80+
Actively used open spaces: playgrounds, neighborhood parks	50–67	—	67–73	73+
Golf courses, riding stables, water recreation, cemeteries	50–70	—	70–80	80+
Office buildings, business commercial and professional	50–67	67–75	75+	—
Industrial, manufacturing, utilities, agriculture	50–70	70–75	75+	—

Source: Office of Noise Control, California Department of Health (1976).

Noise Range I—Normally Acceptable: Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.
Noise Range II—Conditionally Acceptable: New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features are included in the design. Conventional construction, but with closed windows and fresh air supply systems or air-conditionging, will normally suffice.
Noise Range III—Normally Unacceptable: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.
Noise Range IV—Clearly Unacceptable: New construction or development should generally not be undertaken.

CNEL = Community Noise Equivalent Level
dB = decibels
L_{dn} = day-night average noise level

Vibration

Vibration refers to ground-borne noise and perceptible motion. Ground-borne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernible; however, without the effects associated with the shaking of a building, there is less adverse reaction. Vibration energy propagates from a source through intervening soil and rock layers to the foundations of nearby buildings. The vibration then propagates from the foundation throughout the remainder of the structure. Building vibration may be perceived by the occupants as the motion of building surfaces, the rattling of items on shelves or hanging on walls, or as a low-frequency rumbling noise. The rumbling noise is caused by vibrating walls, floors, and ceilings, which are radiating sound waves. Building damage is not a factor for normal transportation projects, including rail projects, with the occasional exception of blasting and pile driving during construction. Annoyance from vibration often occurs when the vibration exceeds the threshold of perception by 10 dB or less. This is an order of magnitude below the damage threshold for normal buildings.

Typical sources of ground-borne vibration are construction activities (e.g., blasting, pile driving, and operating heavy-duty earth-moving equipment), steel-wheeled trains, and occasional traffic on rough roads. Problems with ground-borne vibration and noise from these sources are usually localized to areas within approximately 100 ft from the vibration source, although there are examples of ground-borne vibration causing interference out to distances greater than 200 ft (Federal Transit Administration [FTA] 2006). When roadways are smooth, vibration from traffic, even heavy trucks, is rarely perceptible. It is assumed for most projects that the roadway surface will be smooth enough that ground-borne vibration from street traffic will not exceed the impact criteria; however, both construction of the project and the freight train operations could result in ground-borne vibration that could be perceptible and annoying. Ground-borne noise is not likely to be a problem because noise arriving via the normal airborne path usually will be greater than ground-borne noise.

Ground-borne vibration has the potential to disturb people as well as to damage buildings. Although it is very rare for train-induced ground-borne vibration to cause even cosmetic building damage, it is not uncommon for construction processes such as blasting and pile driving to cause vibration of sufficient amplitudes to damage nearby buildings (FTA 2006). Ground-borne vibration is usually measured in terms of vibration velocity, either the root-mean-square (RMS) velocity or peak particle velocity (PPV). RMS is best for characterizing human response to building vibration, and PPV is used to characterize potential for damage. Decibel notation acts to compress the range of numbers required to describe vibration. Vibration velocity level in decibel is defined as:

$$L_v = 20 \log_{10} [V/V_{ref}]$$

where L_v is the velocity in decibels (VdB), a “V” is the RMS velocity amplitude, and “V_{ref}” is the reference velocity amplitude, or 1×10^{-6} inches/second used in the United States.

Factors that influence ground-borne vibration and noise include the following:

- **Vibration Source:** Vehicle suspension, wheel types and condition, track/roadway surface, track support system, speed, transit structure, and depth of vibration source
- **Vibration Path:** Soil type, rock layers, soil layering, depth to water table, and frost depth
- **Vibration Receiver:** Foundation type, building construction, and acoustical absorption

Among the factors listed above, there are significant differences in the vibration characteristics when the source is underground compared to at the ground surface. In addition, soil conditions are known to have a strong influence on the levels of ground-borne vibration. Among the most important factors are the stiffness and internal damping of the soil and the depth to bedrock.

Vibration propagation is more efficient in stiff clay soils than in loose sandy soils, and shallow rock seems to concentrate the vibration energy close to the surface and can result in ground-borne vibration problems at large distances from the track. Factors such as layering of the soil and depth to water table can have significant effects on the propagation of ground-borne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils.

EXISTING NOISE ENVIRONMENT

Sensitive Land Uses in the Project Vicinity

Certain land uses are considered more sensitive to noise than others. Examples include residential areas, educational facilities, hospitals, childcare facilities, and senior housing. The project vicinity consists of a residential neighborhood to the north approximately 0.4 mile (2,112 feet) from the project site, two schools (Olive Junior High and Walnut Elementary School) approximately 0.5 mile (2,640 feet) to the southeast of the project site, and City of Hope Helford Clinical Research Hospital approximately 1.3 miles (6,864 feet) to the northeast of the project site. These are the nearest land uses that would be considered sensitive receptors.

Overview of the Existing Noise Environment

Existing noise levels in the vicinity of the proposed project are from transportation and industrial sources. The primary sources of noise and vibration in the project area include an active quarry and Graham Access Road to the south, I-605 to the east, Live Oak Avenue and a landfill to the north, and a truck distribution center to the west.

The Federal Highway Administration (FHWA) highway traffic noise prediction model (FHWA RD 77 108) was used to evaluate highway traffic-related noise conditions along the roadway segments in the project vicinity. Traffic volumes in the traffic study that was prepared for this project (Translutions, Inc., June 2014) were used to assess the existing traffic noise impacts. Table D provides the traffic noise levels along the roadways adjacent to the project site. These noise levels represent the worst-case scenario, which assumes that no shielding is provided between the traffic and the location where the noise contours are drawn. The specific assumptions used in developing these noise levels and model printouts are provided in Appendix A.

THRESHOLDS OF SIGNIFICANCE

Existing policies and regulations with respect to noise include those found in the General Plan for the City of Irwindale, noise standards for operations activities, and the Irwindale Municipal Code.

CITY OF IRWINDALE NOISE STANDARDS

Noise Element of the General Plan

The applicable noise standards governing the project site are the criteria in the City of Irwindale 2020 General Plan Noise Element and Municipal Code (Noise Ordinance, see Chapter 9.28). The General Plan noise policies cite to applicable State standards including the California Administrative Code, Section 1092 of Title 25, Chapter 1, Subchapter 1, Article 4 and Section 5014 of Title 21, Subchapter 6, Article 2. The City's General Plan Noise Element has not adopted any specific noise policies that can be used in the CEQA review process.

Municipal Code

The City of Irwindale Municipal Code (Chapter 9.28 - Noise Regulation) has established ambient base noise levels. Where the ambient noise level is less than designated, the ambient base noise level in the Municipal Code shall govern. Table D outlines these criteria.

Table D: Irwindale Municipal Code Ambient Base Noise Level

Zone	Ambient Base Noise Level (dB)	
	10 p.m. to 7 a.m.	7 a.m. to 10 p.m.
Residential	45	50
Commercial	50	55
Industrial	60	70

Source: Irwindale Municipal Code Chapter 9.28.

Daytime hours are defined as 7 a.m. to 10 p.m. Nighttime hours are defined as 10 p.m. to 7 a.m. The criteria in Table 4.6.B are assumed to be A-weighted levels (dBA).

Any noise at a level that exceeds the ambient or the ambient base level as set forth above, whichever is greater, by more than 10 dB when measured at any boundary line of the property from which the noise emanates shall constitute sufficient proof of a violation.

Construction authorized by the Municipal Code Chapter 9.28 shall be limited to 7 a.m. to 7 p.m. from Monday through Saturday. No construction shall be allowed during any hours on Sunday without a permit by the City.

Noise Standards for Operations Activities of the Proposed Project

The *Guidelines for California Environmental Quality Act*[1] do not define the levels at which temporary and permanent increases in ambient noise are considered "substantial." A noise level increase of 3 dBA is barely perceptible to most people, a 5 dBA increase is readily noticeable, and a difference of 10 dBA would be perceived as a doubling of loudness. Based on this information, the following generally acceptable standards would apply to the operation activities of the proposed project:

- Less than 3 dBA difference in noise levels would not be discernable; therefore, the difference would not be significant.
- Between 3 dBA and 5 dBA would be noticeable, but not significant, if noise levels were to remain below the noise level standards recommended by the State Model Community Noise Ordinance.
- A noise level difference of 5 dBA or greater would be readily noticeable and therefore considered significant.

In addition to the 3.0 dBA definition of a potentially significant change in noise levels, the applicable noise standards governing the project site have to be considered. Although a change in noise of 3.0 dBA or greater is considered substantial, it is not significant unless the total noise (background plus project) exceeds the City's noise standards. A significant impact regarding peak noise levels would occur if a project were to generate noise levels, measured in dBA L_{max} or dBA L_{eq}, that exceed the standards contained in the Irwindale Municipal Code.

THRESHOLDS OF SIGNIFICANCE

A project will normally have a significant effect on the environment related to noise if it will substantially increase the ambient noise levels for adjoining areas or conflict with adopted environmental plans and goals of the community where it is located. The six thresholds for significance associated with noise impacts are:

- Exposure of persons to or generation of excessive ground-borne vibration or ground-borne noise levels;
- For a project located within an airport land use plan or, where such a plan has not been adopted, within 2 miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels;
- For a project within the vicinity of a private airstrip, exposure of people residing or working in the project area to excessive noise levels;

[1] California Code of Regulations, Title 14, Chapter 3, State of California, Sections 15000–15387, as amended December 1, 2004.

- 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;
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; and/or
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the proposed project.

The following standard within the *City of Irwindale 2020 General Plan* and *Municipal Code* determines the acceptable noise environment for proposed project and its vicinity:

- Ensure through the design review process that exterior noise levels at adjacent residential areas, schools, and hospitals do not exceed the City's daytime ambient base noise level of 50 dBA.

VIBRATION IMPACT CRITERIA

The criteria for environmental impact from ground-borne vibration and noise are based on the maximum levels for a single event.

Federal Transit Administration and Federal Railroad Administration

Both the FTA in its *Transit Noise and Vibration Impact Assessment* (FTA 2006) and the Federal Railroad Administration (FRA) in its *High-Speed Ground Transportation Noise and Vibration Impact Assessment* (FRA 1998) included ground-borne vibration and noise impact criteria guidance, as shown in Table E. The criteria presented in Table E account for variation in project types as well as the frequency of events, which differ widely among transit projects. Most experience is with the community response to ground-borne vibration from rail rapid transit systems, with typical headways in the range of 3 to 10 minutes and each vibration event lasting less than 10 seconds. It is intuitive that when there will be fewer events each day, as is typical for commuter rail projects, it should take higher vibration levels to evoke the same community response. This is accounted for in the criteria by distinguishing between projects with frequent and infrequent events, where the term "frequent events" is defined as more than 70 events per day. Most commuter rail projects will fall into the infrequent event category, although some commuter rail lines serving major cities are in the frequent event category.

Table E: Ground-borne Vibration and Noise Impact Criteria

Land Use Category	Ground-borne Vibration Impact Levels (VdB re 1 µin/sec)		Ground-borne Noise Impact Levels (dB re 20 µPa)	
	Frequent[1] Events	Infrequent[2] Events	Frequent[1] Events	Infrequent[2] Events
Category 1: Buildings where low ambient vibration is essential for interior operations.	65 VdB[3]	65 VdB[3]	B[4]	B[4]
Category 2: Residences and buildings where people normally sleep.	72 VdB	80 VdB	35 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use.	75 VdB	83 VdB	40 dBA	48 dBA

Source: Federal Transit Administration (2006).

[1] Frequent events are defined as more than 70 events per day.

[2] Infrequent events are defined as less than 70 events per day.

[3] This criterion limit is based on levels that are acceptable for most moderately sensitive equipment, such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the heating, ventilation, and air-conditionging (HVAC) systems and stiffened floors.

[4] Vibration-sensitive equipment is not sensitive to ground-borne noise.

µin/sec = micro-inches per second
µPa = micro-Pascals
dB = decibels
dBA = A-weighted decibels
VdB = vibration velocity decibels

IMPACTS AND MITIGATION MEASURES

Noise levels on and in the vicinity of the project site would change as a result of the proposed project. Potential noise impacts associated with the project include noises created from construction and during the operation phase of the project.

PROJECT IMPACTS

Less than significant noise impacts include those related to vibration, airports, short-term off-site construction traffic, and long-term off-site traffic.

Off-Site Traffic Impacts

Short-Term Off-Site Construction Traffic. Construction crew commutes and the transport of construction equipment and material to the project site would incrementally increase noise levels on access roads leading to the site. There would be a relatively high single-event noise exposure potential, at a maximum of 87 dBA L_{max} at 50 ft from passing project construction vehicles, causing possible short-term intermittent annoyances. However, the effect in long-term ambient noise levels would be less than 1.0 dBA when averaged over a longer period of time such as an hour or 8 hours, which is the appropriate measure for roadway noise. Therefore, short-term construction-related impacts associated with worker commute and construction equipment transport and soil import to the project site would result in a less than significant impact on noise sensitive receptors along the access routes.

Permanent Increase in Off-Site Ambient Noise Levels (Traffic). The noise study estimated exterior noise levels within the project using the FHWA noise assessment model. Based on the proposed project's site plan, the existing and future CNEL noise levels along the affected roadway segments are presented. The predicted sound levels are listed in Tables F through M for existing and future opening year/cumulative scenarios for both weekdays and weekends. These tables show that project-related traffic noise level increases would be 0.8 dBA or less. This range of traffic noise level changes is small and not discernible to the human ear. Therefore, project-related traffic noise impacts to off-site land uses would be small and less than significant. No mitigation measures would be required.

Table F: Existing Weekday Traffic Noise Levels Without the Project

Roadway Segment	ADT	Centerline to 70 CNEL (Feet)	Centerline to 65 CNEL (Feet)	Centerline to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
E. Live Oak Ave west of Peck Rd	22,300	63	129	274	68.9
E. Live Oak Ave between Peck Rd and Arrow Hwy	28,900	74	152	325	70.0
Live Oak Ave between Arrow Hwy and Rivergrade Rd	28,600	73	151	323	69.9
Live Oak Ave between Rivergrade Rd and Baldwin Park	27,600	72	148	315	69.8
Myrtle Ave north of Longden Ave	23,800	54	110	235	68.3
Myrtle Ave between Longden Ave and E. Live Oak Ave	18,500	< 50	94	199	67.2
Peck Rd south of E. Live Oak Ave	19,600	59	119	251	68.3
Longden Ave west of Myrtle Ave	22,300	< 50	66	141	66.1
Arrow Hwy from Baldwin Park to Maine Ave	29,900	75	156	332	70.1
Arrow Hwy east of Maine Ave	30,300	76	157	335	70.2
Stewart Ave south of Live Oak Ave	5,000	< 50	< 50	52	59.6
Baldwin Park south of Live Oak Ave	9,700	< 50	62	130	64.4
Maine Ave south of Arrow Hwy	9,000	< 50	60	124	64.1

Source: LSA Associates, Inc., August 2014.
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Table G: Existing Weekday Traffic Noise Levels With Project

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane	Increase CNEL (dBA) 50 Feet from Centerline of Outermost Lane
E. Live Oak Ave west of Peck Rd	22,300	63	129	274	68.9	0.0
E. Live Oak Ave between Peck Rd and Arrow Hwy	30,100	76	156	334	70.2	0.2
Live Oak Ave between Arrow Hwy and Rivergrade Rd	29,300	74	154	328	70.0	0.1
Live Oak Ave between Rivergrade Rd and Baldwin Park	27,400	72	147	314	69.8	0.0
Myrtle Ave north of Longden Ave	23,900	54	111	236	68.3	0.0
Myrtle Ave between Longden Ave and E. Live Oak Ave	18,400	< 50	93	198	67.2	0.0
Peck Rd south of E. Live Oak Ave	19,700	59	119	252	68.3	0.0
Longden Ave west of Myrtle Ave	22,300	< 50	66	141	66.1	0.0
Arrow Hwy from Baldwin Park to Maine Ave	29,600	75	155	330	70.1	0.0
Arrow Hwy east of Maine Ave	30,100	76	156	334	70.2	0.0
Stewart Ave south of Live Oak Ave	5,200	< 50	< 50	54	59.7	0.1
Baldwin Park south of Live Oak Ave	9,700	< 50	62	130	64.4	0.0
Maine Ave south of Arrow Hwy	9,000	< 50	60	124	64.1	0.0

Source: LSA Associates, Inc., August 2014.
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Table H: Existing Saturday Traffic Noise Levels Without Project

Roadway Segment	ADT	Centerline to 70 CNEL (Feet)	Centerline to 65 CNEL (Feet)	Centerline to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
E. Live Oak Ave west of Peck Rd	11,300	< 50	84	175	65.9
E. Live Oak Ave between Peck Rd and Arrow Hwy	14,300	< 50	97	204	66.9
Live Oak Ave between Arrow Hwy and Rivergrade Rd	12,600	< 50	90	188	66.4
Live Oak Ave between Rivergrade Rd and Baldwin Park	11,000	< 50	83	172	65.8
Myrtle Ave north of Longden Ave	16,400	< 50	87	184	66.7
Myrtle Ave between Longden Ave and E. Live Oak Ave	12,900	< 50	75	157	65.6
Peck Rd south of E. Live Oak Ave	14,200	< 50	97	203	66.9
Longden Ave west of Myrtle Ave	11,500	< 50	< 50	91	63.2
Arrow Hwy from Baldwin Park to Maine Ave	15,400	< 50	102	214	67.3
Arrow Hwy east of Maine Ave	16,500	< 50	106	224	67.6
Stewart Ave south of Live Oak Ave	2,300	< 50	< 50	< 50	56.2
Baldwin Park south of Live Oak Ave	4,600	< 50	< 50	80	61.2
Maine Ave south of Arrow Hwy	5,700	< 50	< 50	92	62.1

Source: LSA Associates, Inc., August 2014.
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Table I: Existing Saturday Traffic Noise Levels With Project

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane	Increase CNEL (dBA) 50 Feet from Centerline of Outermost Lane
E. Live Oak Ave west of Peck Rd	11,700	< 50	86	179	66.1	0.2
E. Live Oak Ave between Peck Rd and Arrow Hwy	16,900	< 50	108	228	67.7	0.8
Live Oak Ave between Arrow Hwy and Rivergrade Rd	14,900	< 50	100	210	67.1	0.7
Live Oak Ave between Rivergrade Rd and Baldwin Park	11,600	< 50	85	178	66.0	0.2
Myrtle Ave north of Longden Ave	16,500	< 50	87	185	66.7	0.0
Myrtle Ave between Longden Ave and E. Live Oak Ave	12,800	< 50	74	156	65.6	0.0
Peck Rd south of E. Live Oak Ave	14,400	< 50	98	205	67.0	0.1
Longden Ave west of Myrtle Ave	12,000	< 50	< 50	94	63.4	0.2
Arrow Hwy from Baldwin Park to Maine Ave	15,600	< 50	103	216	67.3	0.0
Arrow Hwy east of Maine Ave	16,700	< 50	107	226	67.6	0.0
Stewart Ave south of Live Oak Ave	2,700	< 50	< 50	< 50	56.9	0.7
Baldwin Park south of Live Oak Ave	4,700	< 50	< 50	82	61.3	0.1
Maine Ave south of Arrow Hwy	5,800	< 50	< 50	93	62.2	0.1

Source: LSA Associates, Inc., August 2014.
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Table J: Opening Year Weekday Traffic Noise Levels Without Project

Roadway Segment	ADT	Centerline to 70 CNEL (Feet)	Centerline to 65 CNEL (Feet)	Centerline to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
E. Live Oak Ave west of Peck Rd	24,700	67	138	293	69.3
E. Live Oak Ave between Peck Rd and Arrow Hwy	32,100	79	163	349	70.4
Live Oak Ave between Arrow Hwy and Rivergrade Rd	33,400	81	167	358	70.6
Live Oak Ave between Rivergrade Rd and Baldwin Park	30,900	77	159	340	70.3
Myrtle Ave north of Longden Ave	25,900	56	117	249	68.7
Myrtle Ave between Longden Ave and E. Live Oak Ave	20,000	< 50	99	210	67.5
Peck Rd south of E. Live Oak Ave	21,200	62	125	265	68.6
Longden Ave west of Myrtle Ave	24,700	< 50	70	151	66.5
Arrow Hwy from Baldwin Park to Maine Ave	34,100	82	170	363	70.7
Arrow Hwy east of Maine Ave	35,100	83	173	370	70.8
Stewart Ave south of Live Oak Ave	5,600	< 50	< 50	57	60.1
Baldwin Park south of Live Oak Ave	10,700	< 50	66	139	64.8
Maine Ave south of Arrow Hwy	9,900	< 50	63	132	64.5

Source: LSA Associates, Inc., August 2014.
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Table K: Opening Year Weekday Traffic Noise Levels With Project

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane	Increase CNEL (dBA) 50 Feet from Centerline of Outermost Lane
E. Live Oak Ave west of Peck Rd	24,800	68	138	294	69.3	0.0
E. Live Oak Ave between Peck Rd and Arrow Hwy	33,200	80	167	356	70.6	0.2
Live Oak Ave between Arrow Hwy and Rivergrade Rd	34,000	81	169	362	70.7	0.1
Live Oak Ave between Rivergrade Rd and Baldwin Park	30,700	77	159	338	70.3	0.0
Myrtle Ave north of Longden Ave	25,900	56	117	249	68.7	0.0
Myrtle Ave between Longden Ave and E. Live Oak Ave	20,000	< 50	99	210	67.5	0.0
Peck Rd south of E. Live Oak Ave	21,300	62	125	266	68.7	0.1
Longden Ave west of Myrtle Ave	24,800	< 50	71	152	66.5	0.0
Arrow Hwy from Baldwin Park to Maine Ave	33,800	81	169	361	70.7	0.0
Arrow Hwy east of Maine Ave	34,900	83	172	368	70.8	0.0
Stewart Ave south of Live Oak Ave	5,800	< 50	< 50	58	60.2	0.1
Baldwin Park south of Live Oak Ave	10,700	< 50	66	139	64.8	0.0
Maine Ave south of Arrow Hwy	9,900	< 50	63	132	64.5	0.0

Source: LSA Associates, Inc., August 2014.
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Table L: Opening Year Saturday Traffic Noise Levels Without Project

Roadway Segment	ADT	Centerline to 70 CNEL (Feet)	Centerline to 65 CNEL (Feet)	Centerline to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane
E. Live Oak Ave west of Peck Rd	12,400	< 50	89	186	66.3
E. Live Oak Ave between Peck Rd and Arrow Hwy	15,600	< 50	103	216	67.3
Live Oak Ave between Arrow Hwy and Rivergrade Rd	14,100	< 50	96	202	66.9
Live Oak Ave between Rivergrade Rd and Baldwin Park	12,300	< 50	88	185	66.3
Myrtle Ave north of Longden Ave	17,700	< 50	91	193	67.0
Myrtle Ave between Longden Ave and E. Live Oak Ave	13,900	< 50	78	165	66.0
Peck Rd south of E. Live Oak Ave	15,400	< 50	102	214	67.3
Longden Ave west of Myrtle Ave	12,700	< 50	< 50	97	63.6
Arrow Hwy from Baldwin Park to Maine Ave	17,700	56	111	235	67.9
Arrow Hwy east of Maine Ave	19,400	59	118	250	68.3
Stewart Ave south of Live Oak Ave	2,700	< 50	< 50	< 50	56.9
Baldwin Park south of Live Oak Ave	5,200	< 50	< 50	87	61.7
Maine Ave south of Arrow Hwy	6,400	< 50	< 50	99	62.6

Source: LSA Associates, Inc., August 2014.
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

Table M: Opening Year Saturday Traffic Noise Levels With Project

Roadway Segment	ADT	Center-line to 70 CNEL (Feet)	Center-line to 65 CNEL (Feet)	Center-line to 60 CNEL (Feet)	CNEL (dBA) 50 Feet from Centerline of Outermost Lane	Increase CNEL (dBA) 50 Feet from Centerline of Outermost Lane
E. Live Oak Ave west of Peck Rd	13,100	< 50	92	193	66.6	0.3
E. Live Oak Ave between Peck Rd and Arrow Hwy	18,700	58	115	244	68.1	0.8
Live Oak Ave between Arrow Hwy and Rivergrade Rd	16,700	< 50	107	226	67.6	0.7
Live Oak Ave between Rivergrade Rd and Baldwin Park	13,000	< 50	92	192	66.5	0.2
Myrtle Ave north of Longden Ave	18,000	< 50	92	196	67.1	0.1
Myrtle Ave between Longden Ave and E. Live Oak Ave	13,900	< 50	78	165	66.0	0.0
Peck Rd south of E. Live Oak Ave	15,600	< 50	103	216	67.3	0.0
Longden Ave west of Myrtle Ave	13,400	< 50	< 50	105	63.9	0.3
Arrow Hwy from Baldwin Park to Maine Ave	18,000	56	112	238	67.9	0.0
Arrow Hwy east of Maine Ave	19,600	59	119	251	68.3	0.0
Stewart Ave south of Live Oak Ave	3,100	< 50	< 50	< 50	57.5	0.6
Baldwin Park south of Live Oak Ave	5,300	< 50	< 50	88	61.8	0.1
Maine Ave south of Arrow Hwy	6,500	< 50	< 50	100	62.7	0.1

Source: LSA Associates, Inc., August 2014.
Note: Traffic noise within 50 feet of the roadway centerline should be evaluated with site-specific information.

On-Site Traffic Noise Impacts

On-Site Outdoor Land Uses. Since the proposed commercial uses are not considered noise-sensitive, no traffic noise impacts would occur for the proposed on-site land uses. No mitigation measures would be required.

Ground-Borne Noise and Vibration from Vehicular Traffic. Because the rubber tires and suspension systems of buses and other on-road vehicles provide vibration isolation and reduced noise, it is unusual for on-road vehicles to cause ground-borne noise or vibration problems. When on-road vehicles cause effects such as rattling of windows, the source is almost always airborne noise. Most problems with on-road vehicle-related noise and vibration can be directly related to a pothole, bump, expansion joint, or other discontinuity in the road surface. Smoothing the bump or filling the pothole will usually solve the problem. The proposed project would have new roads with smooth pavement and would not result in significant ground-borne noise or vibration impacts from vehicular traffic.

Construction Noise Impacts

Noise levels from grading and other construction activities for the proposed project may range up to 84 dBA L_{max} at the closest residential uses to the south of the project site for very limited times when construction occurs near them. Construction noise impacts of the proposed project would be potentially adverse. Therefore, mitigation measures would be required.

The second type of short-term noise impact is related to noise generated during excavation, grading, and construction. Construction is performed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated and, therefore, the noise levels along the project alignment as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table O lists construction noise levels (L_{max}) included in the FHWA *Highway Construction Noise Handbook* (2006), based on a distance of 50 ft between the equipment and a noise receptor.

Table O: RCNM Default Noise Emission Reference Levels and Usage Factors

Equipment Description	Impact Device?	Acoustical Usage Factor	Spec. 721.560 L_{max} at 50 ft (dBA, slow)	Actual Measured L_{max} at 50 ft (dBA, slow)	Number of Actual Data Samples (Count)
All other Equipment > 5 HP	No	50	85	N/A	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	N/A	0
Blasting	Yes	N/A	94	N/A	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	N/A	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (< 25 kVA, VMS Signs)	No	50	70	73	74
Gradall	No	40	85	83	70
Grader	No	40	85	N/A	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydraulic Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	N/A	0
Impact Derive	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact Hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarifier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	40	55	75	1
Pneumatic Tools	No	50	85	85	90
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/Chipping Gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (single nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Sheers (on backhoe)	No	40	85	96	5

Table O: RCNM Default Noise Emission Reference Levels and Usage Factors

Equipment Description	Impact Device?	Acoustical Usage Factor	Spec. 721.560 L_{max} at 50 ft (dBA, slow)	Actual Measured L_{max} at 50 ft (dBA, slow)	Number of Actual Data Samples (Count)
Slurry Plant	No	100	78	78	1
Slurry Trench Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	N/A	0
Tractor	No	40	84	N/A	0
Vacuum Excavator (Vac-Truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44
Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

Source: Federal Highway Administration, *Highway Construction Noise Handbook* (2006).
dBA = A-weighted decibels
ft = foot/feet
HP = horsepower
kVA = kilovolt-ampere
L_{max} = maximum instantaneous noise level
N/A = Not Applicable
RCNM = Roadway Construction Noise Model
VMS = variable-message sign

Typical noise levels at 50 ft from an active construction area range up to 90 dBA L_{max} during the noisiest construction phases. The site preparation phase, which includes grading and paving, tends to generate the highest noise levels, since the noisiest construction equipment is earthmoving equipment. Earthmoving equipment includes excavating machinery such as backhoes, bulldozers, and front loaders. Earthmoving and compacting equipment includes compactors, scrapers, and graders. Typical operating cycles for these types of construction equipment may involve 1 or 2 minutes of full power operation followed by 3 to 4 minutes at lower power settings.

Construction of the proposed project is expected to require the use of scrapers, bulldozers, motor grader, and water and pickup trucks. Noise associated with the use of construction equipment is estimated to reach between 79 and 89 dBA L_{max} at a distance of 50 ft from the active construction area for the grading phase. As seen in Table L, the maximum noise level generated by each scraper is assumed to be approximately 84 dBA L_{max} at 50 ft from the scraper in operation. Each bulldozer would also generate approximately 82 dBA L_{max} at 50 ft. The maximum noise level generated by the sound sources with equal strength increases the noise level by 3 dBA. Each piece of construction equipment operates as an individual point source. The worst-case composite noise level during this phase of construction would be 90 dBA L_{max} at a distance of 50 ft from an active construction area.

Based on these projections, and due to the lack of sensitive receptors in the project vicinity, it is not anticipated that worst-case project construction noise levels would exceed City standards. In addition, the proposed project will be required to comply with the City's Municipal Code Chapter 9.28 which limits construction to 7 a.m. to 7 p.m. from Monday through Saturday with no construction allowed on Sundays without a permit by the City. Therefore, construction noise impacts are less than significant and mitigation is not required.

On-Site Operational Noise Impacts

Potential long-term noise impacts would be associated with on-site stationary sources. These activities are potential point sources of noise that could affect off-site noise-sensitive receptors. On-site noise-producing activities include loading/unloading activities, and slow-moving vehicles, doors slamming, vehicle engines starting, and people conversing in the parking lots.

As noise spreads from a source, it loses energy; thus, the farther the noise receiver is from the noise source, the lower the perceived noise level by the receiver. Geometric spreading causes the sound level to attenuate, or be reduced, resulting in a 6 dBA reduction in the noise level for each doubling of distance from a single-point source of noise, such as a car door slam, to the noise-sensitive receptor of concern.

Loading/Unloading Activities at Docks. Trucks at the on-site dock loading/unloading areas would result in a maximum noise level similar to noise readings from loading and unloading activities for other industrial projects, which generates a noise level of 75 dBA L_{max} at 50 ft. At a distance of 2,112 feet (0.4 mile) to the nearest sensitive receptors, this noise level will be reduced by 32.5 dBA when compared to the noise level measured at 50 feet. With intervening natural berms or man-made structures, more noise attenuation would be expected. Therefore, loading/unloading activity noise would be reduced to below 42 dBA L_{max}. This level of exterior noise is below the ambient noise in the project area and would not result in any significant noise impact. In addition, although a typical truck unloading process takes an average of 10–15 minutes, this maximum noise level occurs in a much shorter period of time (i.e., in only a few minutes). It is not expected that truck loading/unloading activities would result in this maximum noise level lasting more than 5 minutes in any hour when it occurs.

Parking Lot Activity Noise. The representative parking lot activities, such as door slamming, engine starting, and slow-moving vehicles would generate approximately 60 to 70 dBA L_{max} at 50 ft. The closest on-site parking spaces are located more than 2,112 feet from the nearest off-site sensitive receptors (residences). At this distance, the residences would be exposed to noise levels of up to 37.5 dBA L_{max}. Noise levels generated by parking lot activities would not exceed the City's daytime exterior noise standard of 75 dBA L_{max} or the nighttime exterior noise standard of 65 dBA L_{max}. Therefore, no significant noise impacts would occur on off-site noise-sensitive land uses from parking lot activities associated with the proposed on-site commercial uses. No mitigation measures are required.

HVAC Equipment Noise: The proposed project would potentially expose its HVAC equipment noise to closest sensitive receptors at 2,112 feet from the project site. HVAC equipment generates a sound pressure level (SPL) of up to 95 dBA at 1 foot. The closest off-site residences are more than 2,112 feet from the on-site noise-generating HVAC source. With the effect of distance divergence, noise generated by HVAC equipment would be reduced to 28.5 dBA L_{max} at the closest sensitive receptors to the project site. Noise levels generated by HVAC equipment would not exceed the City's daytime exterior noise standard of 75 dBA L_{max} or the nighttime exterior noise standard of 65 dBA

L_{max}. Therefore, no significant noise impacts would occur on on-site noise-sensitive land uses from the HVAC equipment. No mitigation measures are required.

On-Site Vibration Impacts

Vibration refers to groundborne noise and perceptible motion. Groundborne vibration is almost exclusively a concern inside buildings and is rarely perceived as a problem outdoors, where the motion may be discernable, but without the effects associated with the shaking of a building there is less adverse reaction. Construction on the project site would result in the exposure of persons to excessive groundborne vibration or groundborne noise levels. Groundborne vibration during construction activity is temporary and would cease to occur after project construction is completed.

Construction Vibration. Ground-borne noise and vibration from construction activity would be mostly low to moderate except if pavement breaking or sheet pile vibration occurs on site. Bulldozers and other heavy-tracked construction equipment generate approximately 92 VdB of ground-borne vibration when measured at 50 ft, based on the FTA *Transit Noise and Vibration Impact Assessment* (2006). This level of ground-borne vibration exceeds the threshold of human perception, which is around 65 VdB. Based on the Caltrans *Transportation-Related Earthborne Vibration, Technical Advisory* (Rudy Hendricks 1992), vibration level at 100 ft is approximately 6 VdB lower than the vibration level at 50 ft. Vibration at 200 ft from the source is more than 6 VdB lower than the vibration level at 100 ft, or more than 12 VdB lower than the vibration level at 50 ft. Therefore, receptors at 100 ft and 200 ft from the construction activity may be exposed to ground-borne vibration up to 86 VdB and 80 VdB, respectively.

The proposed project would require the use of excavators, scrapers, and graders, as well as a bulldozer and other construction equipment. As shown in Table P, a large bulldozer would generate approximately 0.089 PPV (in/sec) when measured at 25 feet, while a loaded truck would generate 0.076 PPV (in/sec) at 25 feet. Table P also shows that caisson drilling and a jackhammer would generate approximately 0.035 to 0.089 PPV (in/sec) when measured at 25 feet.

Experience with groundborne vibration indicates that vibration propagation is more efficient in stiff clay soils than in loose sandy soils. Shallow rock concentrates the vibration energy close to the surface and can result in groundborne vibration problems at some distance from the source. Factors such as layering of the soil and depth to the water table can have significant effects on the propagation of groundborne vibration. Soft, loose, sandy soils tend to attenuate more vibration energy than hard, rocky materials. Vibration propagation through groundwater is more efficient than through sandy soils.

Table P: Vibration Source Amplitudes for Construction Equipment

Equipment	Reference PPV at 25 ft (in/sec)
Pile Driver (impact), typical	0.644
Pile Driver (sonic), typical	0.170
Vibratory roller	0.210
Large bulldozer	0.089

Caisson drilling	0.089
Loaded trucks	0.076
Jackhammer	0.035
Small bulldozer	0.003
Crack-and-seat operations	2.400

Sources: Federal Transit Administration, 2006 (except Hanson 2001 for vibratory rollers); and California Department of Transportation, 2000 (for crack-and-seat-operations).
ft = feet in/sec = inches per second
PPV = peak particle velocity

Regarding the potential for building damage, Table P shows that vibration levels from construction equipment and activities, including bulldozers, drilling, trucks, and jackhammers, would be less than 0.1 in/sec at 25 feet from the project site and lower than the PPV of 0.2 in/sec vibration damage criteria at the nearest sensitive uses for non-engineered timber and masonry buildings (FTA 2006). For new residential buildings, the vibration damage potential threshold recommended by Caltrans is 1 in/sec from transient sources such as pile driving and blasting. Caltrans also states that it takes at least 0.9 in/sec of PPV for the human response to be strongly perceptible, or 0.25 in/sec to be distinctly perceptible (Caltrans 1992). The nearest residences are more than 2,000 feet to the north, and no commercial or industrial buildings are within 100 feet of the project construction area. None of the predicted vibration levels (all below 0.1 in/sec) for sensitive uses in the vicinity of the project site would reach either of these two threshold levels. Thus, no significant vibration impacts are anticipated, and no mitigation is required.

Similarly, regarding human perception of vibration, bulldozers and other heavy-tracked construction equipment generate approximately 92 VdB of groundborne vibration when measured at 50 feet, based on the FTA's Transit Noise and Vibration Impact Assessment (2006). Based on the Caltrans 1992 Transportation-Related Earthborne Vibrations, Technical Advisory, the vibration level at 100 feet is approximately 6 VdB lower than the vibration level at 50 ft. Vibration at 200 feet from the source is more than 6 VdB lower than the vibration level at 100 feet, or more than 12 VdB lower than the vibration level at 50 feet. Therefore, receptors at 25, 100, 200, and 300 feet from construction activity may be exposed to groundborne vibration up to 98, 86, 80, and 76 VdB, respectively. However, the nearest residential uses are more than 2,000 feet to the north of the project site, and would not be exposed to vibration levels exceeding 30 VdB. This range of groundborne vibration levels would not exceed the 80 VdB threshold for residences due to infrequent events but would not result in any potential vibration damage impacts at the nearest residences in the project site vicinity. No mitigation measures are required.

In summary, the project would not expose sensitive receptors to significant vibration impacts and mitigation is not required.

MITIGATION MEASURES

Construction Noise

The following measures can be implemented to reduce potential construction noise impacts on nearby sensitive receptors:

1. During all site excavation and grading, the project contractors shall equip all construction equipment, fixed or mobile, with properly operating and maintained mufflers consistent with manufacturers' standards.
2. The project contractor shall place all stationary construction equipment so that emitted noise is directed away from sensitive receptors nearest the project site, to the south and southwest of the project site.
3. The construction contractor shall locate equipment staging in areas that will create the greatest distance between construction-related noise sources and noise-sensitive receptors nearest the project site during all project construction.
4. During all project site construction, the construction contractor shall adhere to the City's standards, which includes limiting construction activities to the hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday. No construction activities are permitted outside of these hours or on Sundays and national holidays without a permit by the City.

On-Site Traffic Noise

No mitigation measures are required.

Off-Site Traffic Noise

No mitigation is required.

On-Site Operational Noise

No mitigation measures are required.

Level of Significance after Mitigation

No significant noise impacts from short-term construction or long-term traffic would result after implementation of the mitigation measures listed above.

CUMULATIVE IMPACTS

The cumulative area for noise impacts is the City of Irwindale. Implementation of the project would result in the introduction of new noise sources and levels from on-site activities and from increased traffic volumes on vicinity roadway and freeways.

Construction crew commutes and the transport of construction equipment, and materials to the project area would incrementally increase noise levels on access roads leading to the site. Secondary sources of noise would include noise generated during demolition, excavation, grading, and building erection on the project site. The net increase in project site noise levels generated by these activities and other sources has been quantitatively estimated and compared to the applicable noise standards and thresholds of significance. Although it is not possible to predict if contiguous properties may be constructed at the same time and create cumulative noise impacts that would be greater than if

developed at separate times, it is unlikely that adjacent properties will be developed at the same time as the project area since the adjacent sites currently contain a mining operation and trucking facility. However, in the unlikely event that adjacent properties are developed at the same time as the proposed project, adherence to the City's Municipal Code provisions that regulate construction activities and other development standards would render the cumulative impacts of the proposed project to less than significant levels.

The noise analysis contained in this section also provides an assessment of on-site operational noise level impacts on sensitive receptors, both existing and future. Additionally, on-site operational noises are individual noise occurrences and are not typically additive in nature. It is extremely unlikely that adjacent properties will generate noises that would be additive in nature because of two important reasons. First, the noise sources would have to be adjacent or in close proximity to one another in order for the noises to intermingle. Second, the sensitive receptor or receptors would also have to be adjacent to or in close proximity to the noise generators. Although it is not possible to predict if contiguous or proximate properties may generate noise at the same time that would be additive in nature and thus create a significant cumulative noise impact at sensitive receptors, adherence to the City's Municipal Code provisions that regulate nuisance noise from land uses and other development standards would reduce contributions of the project to potential cumulative impacts to less than significant levels.

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———. Highway Traffic Noise Prediction Model, FHWA RD 77 108. 1977.

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APPENDIX A

HIGHWAY TRAFFIC NOISE MODEL OUTPUT

TABLE Existing Weekday without Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave west of Peck Rd
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
63.5	128.9	273.8	587.9

TABLE Existing Weekday without Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave between Peck Rd and Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 28900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.99

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
73.9	152.4	325.1	698.7

TABLE Existing Weekday without Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Arrow Hwy and Rivergrade Rd
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 28600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.94

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
73.4	151.4	322.8	693.8

TABLE Existing Weekday without Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Rivergrade Rd and Baldwin Park
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.79

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
71.9	147.9	315.3	677.6

TABLE Existing Weekday without Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave north of Longden Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23800 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
53.6	110.3	235.2	505.4

TABLE Existing Weekday without Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave between Longden Ave and E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18500 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.21

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	93.8	199.1	427.4

TABLE Existing Weekday without Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Peck Rd south of E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
59.0	118.6	251.4	539.5

TABLE Existing Weekday without Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Longden Ave west of Myrtle Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22300 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.07

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	65.8	141.4	304.3

TABLE Existing Weekday without Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy from Baldwin Park to Maine Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 29900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.14

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
75.4	155.8	332.5	714.7

TABLE Existing Weekday without Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy east of Maine Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.19

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
76.0	157.2	335.4	721.0

TABLE Existing Weekday without Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Stewart Ave south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5000 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.57

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	52.5	112.5

TABLE Existing Weekday without Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Baldwin Park south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	62.5	130.2	278.3

TABLE Existing Weekday without Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Maine Ave south of Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Existing Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.08

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	59.7	124.0	264.8

TABLE Existing Saturday without Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave west of Peck Rd
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.91

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	84.0	175.0	374.2

TABLE Existing Saturday without Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave between Peck Rd and Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.93

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	97.2	204.3	437.6

TABLE Existing Saturday without Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Arrow Hwy and Rivergrade Rd
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	89.8	188.0	402.3

TABLE Existing Saturday without Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Rivergrade Rd and Baldwin Park
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.79

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	82.6	172.0	367.6

TABLE Existing Saturday without Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave north of Longden Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16400 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.69

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	86.8	183.8	394.5

TABLE Existing Saturday without Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave between Longden Ave and E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12900 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.64

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	74.6	156.9	336.3

TABLE Existing Saturday without Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Peck Rd south of E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14200 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	96.8	203.3	435.6

TABLE Existing Saturday without Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Longden Ave west of Myrtle Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11500 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.19

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	91.0	195.8

TABLE Existing Saturday without Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy from Baldwin Park to Maine Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15400 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	101.8	214.5	459.7

TABLE Existing Saturday without Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy east of Maine Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16500 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.56

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	106.3	224.4	481.3

TABLE Existing Saturday without Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Stewart Ave south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2300 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.20

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	67.2

TABLE Existing Saturday without Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Baldwin Park south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4600 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	80.5	169.9

TABLE Existing Saturday without Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Maine Ave south of Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Existing Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.10

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	92.2	195.7

TABLE Existing Weekday with Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave west of Peck Rd
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
63.5	128.9	273.8	587.9

TABLE Existing Weekday with Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave between Peck Rd and Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
75.7	156.5	333.9	717.9

TABLE Existing Weekday with Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Arrow Hwy and Rivergrade Rd
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 29300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.05

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
74.5	153.8	328.0	705.1

TABLE Existing Weekday with Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Rivergrade Rd and Baldwin Park
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 27400 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.76

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
71.6	147.2	313.8	674.3

TABLE Existing Weekday with Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave north of Longden Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 23900 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.32

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
53.8	110.6	235.8	506.8

TABLE Existing Weekday with Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave between Longden Ave and E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18400 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.19

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	93.5	198.4	425.9

TABLE Existing Weekday with Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Peck Rd south of E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
59.2	119.0	252.2	541.4

TABLE Existing Weekday with Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Longden Ave west of Myrtle Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 22300 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.07

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	65.8	141.4	304.3

TABLE Existing Weekday with Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy from Baldwin Park to Maine Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 29600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
74.9	154.8	330.3	709.9

TABLE Existing Weekday with Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy east of Maine Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
75.7	156.5	333.9	717.9

TABLE Existing Weekday with Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Stewart Ave south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5200 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 59.74

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	53.9	115.4

TABLE Existing Weekday with Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Baldwin Park south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.41

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	62.5	130.2	278.3

TABLE Existing Weekday with Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Maine Ave south of Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Existing Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.08

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	59.7	124.0	264.8

TABLE Existing Saturday with Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave west of Peck Rd
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.06

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	85.8	179.1	383.0

TABLE Existing Saturday with Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave between Peck Rd and Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	108.0	228.0	489.0

TABLE Existing Saturday with Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Arrow Hwy and Rivergrade Rd
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.11

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	99.7	209.9	449.7

TABLE Existing Saturday with Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Rivergrade Rd and Baldwin Park
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

---

* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 11600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.03

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	85.4	178.1	380.8

TABLE Existing Saturday with Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave north of Longden Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16500 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.71

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	87.2	184.6	396.1

TABLE Existing Saturday with Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave between Longden Ave and E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12800 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	74.2	156.1	334.6

TABLE Existing Saturday with Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Peck Rd south of E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14400 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.96

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	97.6	205.2	439.6

TABLE Existing Saturday with Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Longden Ave west of Myrtle Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12000 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.38

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	93.6	201.4

TABLE Existing Saturday with Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy from Baldwin Park to Maine Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	102.6	216.3	463.6

TABLE Existing Saturday with Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy east of Maine Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	107.2	226.2	485.1

TABLE Existing Saturday with Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Stewart Ave south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2700 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	74.7

TABLE Existing Saturday with Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Baldwin Park south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 4700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	81.6	172.3

TABLE Existing Saturday with Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Maine Ave south of Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Existing Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5800 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.17

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	93.3	198.0

TABLE Opening Year Weekday without Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave west of Peck Rd
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

---

* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
67.3	137.6	292.9	629.3

TABLE Opening Year Weekday without Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave between Peck Rd and Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 32100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.45

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
78.7	163.2	348.5	749.3

TABLE Opening Year Weekday without Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Arrow Hwy and Rivergrade Rd
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 33400 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
80.6	167.5	357.8	769.4

TABLE Opening Year Weekday without Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Rivergrade Rd and Baldwin Park
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
76.9	159.2	339.8	730.5

TABLE Opening Year Weekday without Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave north of Longden Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 25900 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
56.4	116.6	248.7	534.6

TABLE Opening Year Weekday without Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave between Longden Ave and E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	98.6	209.6	450.2

TABLE Opening Year Weekday without Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Peck Rd south of E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21200 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.64

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
61.7	124.7	264.8	568.5

TABLE Opening Year Weekday without Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Longden Ave west of Myrtle Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24700 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.51

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	70.4	151.3	325.7

TABLE Opening Year Weekday without Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy from Baldwin Park to Maine Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 34100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.71

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
81.6	169.8	362.8	780.1

TABLE Opening Year Weekday without Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy east of Maine Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 35100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.83

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
83.1	173.0	369.8	795.2

TABLE Opening Year Weekday without Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Stewart Ave south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5600 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.07

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	56.5	121.3

TABLE Opening Year Weekday without Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Baldwin Park south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.83

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	66.4	138.8	297.0

TABLE Opening Year Weekday without Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Maine Ave south of Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9900 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.50

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	63.3	131.9	282.1

TABLE Opening Year Saturday without Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave west of Peck Rd
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12400 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	88.9	186.0	398.0

TABLE Opening Year Saturday without Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave between Peck Rd and Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	102.6	216.3	463.6

TABLE Opening Year Saturday without Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Arrow Hwy and Rivergrade Rd
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 14100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.87

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	96.3	202.4	433.5

TABLE Opening Year Saturday without Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Rivergrade Rd and Baldwin Park
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.28

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	88.5	185.0	395.9

TABLE Opening Year Saturday without Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave north of Longden Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.02

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	91.2	193.3	415.0

TABLE Opening Year Saturday without Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave between Longden Ave and E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13900 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.97

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	78.2	164.8	353.4

TABLE Opening Year Saturday without Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Peck Rd south of E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15400 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	101.8	214.5	459.7

TABLE Opening Year Saturday without Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Longden Ave west of Myrtle Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 12700 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.62

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	97.2	209.1

TABLE Opening Year Saturday without Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy from Baldwin Park to Maine Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 17700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.86

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
55.8	111.2	235.0	504.2

TABLE Opening Year Saturday without Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy east of Maine Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19400 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.26

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
58.7	117.9	249.7	535.9

TABLE Opening Year Saturday without Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Stewart Ave south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 2700 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 56.90

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	74.7

TABLE Opening Year Saturday without Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Baldwin Park south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5200 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.70

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	87.0	184.2

TABLE Opening Year Saturday without Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Maine Ave south of Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday without Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6400 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.60

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	99.4	211.3

TABLE Opening Year Weekday with Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave west of Peck Rd
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24800 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 69.33

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
67.5	138.0	293.7	631.0

TABLE Opening Year Weekday with Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave between Peck Rd and Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 33200 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.59

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
80.3	166.8	356.4	766.3

TABLE Opening Year Weekday with Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Arrow Hwy and Rivergrade Rd
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 34000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.70

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
81.5	169.4	362.1	778.5

TABLE Opening Year Weekday with Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Rivergrade Rd and Baldwin Park
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 30700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.25

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
76.6	158.5	338.4	727.4

TABLE Opening Year Weekday with Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave north of Longden Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 25900 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
56.4	116.6	248.7	534.6

TABLE Opening Year Weekday with Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave between Longden Ave and E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 20000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	98.6	209.6	450.2

TABLE Opening Year Weekday with Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Peck Rd south of E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 21300 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.66

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
61.9	125.1	265.6	570.3

TABLE Opening Year Weekday with Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Longden Ave west of Myrtle Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 24800 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.53

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	70.6	151.7	326.6

TABLE Opening Year Weekday with Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy from Baldwin Park to Maine Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 33800 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
81.2	168.8	360.7	775.5

TABLE Opening Year Weekday with Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy east of Maine Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 34900 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 70.81

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
82.8	172.3	368.4	792.2

TABLE Opening Year Weekday with Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Stewart Ave south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5800 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 60.22

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	57.9	124.1

TABLE Opening Year Weekday with Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Baldwin Park south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 10700 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.83

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	66.4	138.8	297.0

TABLE Opening Year Weekday with Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Maine Ave south of Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Opening Year Weekday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 9900 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 64.50

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	63.3	131.9	282.1

TABLE Opening Year Saturday with Project-01
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave west of Peck Rd
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13100 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.55

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	92.0	192.8	412.8

TABLE Opening Year Saturday with Project-02
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: E Live Oak Ave between Peck Rd and Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.10

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
57.5	115.1	243.7	522.9

TABLE Opening Year Saturday with Project-03
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Arrow Hwy and Rivergrade Rd
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 16700 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.61

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	107.2	226.2	485.1

TABLE Opening Year Saturday with Project-04
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Live Oak Ave between Rivergrade Rd and Baldwin Park
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 66.52

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	91.6	191.9	410.7

TABLE Opening Year Saturday with Project-05
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave north of Longden Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18000 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.09

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	92.2	195.5	419.7

TABLE Opening Year Saturday with Project-06
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Myrtle Ave between Longden Ave and E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13900 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 65.97

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	78.2	164.8	353.4

TABLE Opening Year Saturday with Project-07
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Peck Rd south of E Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 15600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.31

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	102.6	216.3	463.6

TABLE Opening Year Saturday with Project-08
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Longden Ave west of Myrtle Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 13400 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 63.85

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	100.8	216.8

TABLE Opening Year Saturday with Project-09
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy from Baldwin Park to Maine Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 18000 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 67.93

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
56.3	112.4	237.6	509.8

TABLE Opening Year Saturday with Project-10
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Arrow Hwy east of Maine Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 19600 SPEED (MPH): 45 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 24 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 68.30

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
59.0	118.6	251.4	539.5

TABLE Opening Year Saturday with Project-11
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Stewart Ave south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 3100 SPEED (MPH): 30 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 6 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 57.50

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	0.0	81.9

TABLE Opening Year Saturday with Project-12
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Baldwin Park south of Live Oak Ave
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 5300 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 61.78

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	88.0	186.5

TABLE Opening Year Saturday with Project-13
FHWA ROADWAY NOISE LEVEL ANALYSIS

RUN DATE: 08/20/2014
ROADWAY SEGMENT: Maine Ave south of Arrow Hwy
NOTES: Irwindale Regional Shopping Center - Opening Year Saturday with Project

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* * ASSUMPTIONS * *

AVERAGE DAILY TRAFFIC: 6500 SPEED (MPH): 40 GRADE: .5

TRAFFIC DISTRIBUTION PERCENTAGES

	DAY	EVENING	NIGHT
AUTOS	75.51	12.57	9.34
M-TRUCKS	1.56	0.09	0.19
H-TRUCKS	0.64	0.02	0.08

ACTIVE HALF-WIDTH (FT): 18 SITE CHARACTERISTICS: SOFT

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* * CALCULATED NOISE LEVELS * *

CNEL AT 50 FT FROM NEAR TRAVEL LANE CENTERLINE (dB) = 62.67

DISTANCE (FEET) FROM ROADWAY CENTERLINE TO CNEL

70 CNEL	65 CNEL	60 CNEL	55 CNEL
0.0	0.0	100.4	213.4