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**HUNTINGTON BEACH WALMART  
NOISE IMPACT ANALYSIS  
CITY OF HUNTINGTON BEACH, CALIFORNIA**

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**HUNTINGTON BEACH WALMART  
NOISE ANALYSIS  
CITY OF HUNTINGTON BEACH, CALIFORNIA**

**1.0 EXECUTIVE SUMMARY**

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This noise study has been completed to determine the noise impacts associated with the proposed Walmart store to be located within an existing retail shopping center at the southwest corner of Goldenwest Street and Edinger Avenue in the City of Huntington Beach. The project proposes to occupy an existing 100,865 square foot vacant retail building within an existing retail shopping center. No changes to the shopping center or the footprint of the building are proposed. The shopping center contains commercial and office buildings occupied by a variety of uses including restaurants, a Smart & Final, dental offices and small specialty retail shops. The development has a proposed opening year of 2011. The purpose of this noise assessment is to evaluate the noise impacts for the project study area and to recommend noise mitigation measures, if necessary, to minimize the potential project impacts.

1.1 Off-Site Transportation Noise Analysis

To assess the off-site noise level impacts associated with development of the proposed project, noise contour boundaries were developed for existing and Year 2015 traffic scenarios. The proposed project's contributions to off-site roadway noise increases for Year 2015 will not cause any significant impacts to any existing or future sensitive noise receptors or expose persons to noise levels in excess of the standards established in the City of Huntington Beach General Plan.

1.2 Off-Site Stationary Noise Analysis

The operational noise impacts associated with the Walmart will produce noise level impacts at the nearby residential receptors. The project related operational noise levels will vary depending on the time of day and the level of activity at the facility. Vehicle movements, the loading and unloading of the trucks at the loading docks and storage area, trash compactors and the rooftop air condensers are expected to represent the primary source of noise impacts within the neighboring residential community.

Based upon the reference noise level measurements, it is possible to estimate the noise levels from the proposed Huntington Beach Walmart to the adjacent noise-sensitive residential uses. The noise level projections were calculated based on the site plan showing the spatial relationship

between the potential on-site noise sources and the noise receptor locations. The stationary source noise level projections include, where appropriate, delivery truck noise, roof-top air condensers, vehicle activity and trash compactors. The expected noise level impacts also take into account the existing noise barriers, including a 12-foot high storage area wall, 5.5-foot high property line barrier and 3-foot high parapet barrier on the rooftop.

Section 4.2 of this analysis provides the City's Noise Ordinance which sets an exterior noise level limit of 55 dBA for daytime hours at noise-sensitive residential uses. When activities are expected to have a duration of greater than one (1) but less than five (5) minutes, the exterior noise level standard is increased by 15 dBA Leq, thus making a level of 70 dBA Leq acceptable for a period less than five (5) minutes. When assessing the expected impacts of operational noise impacts, the maximum expected noise level is also analyzed. Based on conditions in the City's Noise Ordinance, the daytime exterior noise level of 55 dBA Leq is increase by 20 dBA for all impacts with a duration less than one (1) minute, therefore, the maximum allowable noise level for any period of time at the adjacent single-family homes is 75 dBA Lmax.

The combined noise level projections from stationary sources on the project site are expected to reach a level of 64.0 dBA Leq at the nearest receptors for operations less than five (5) minutes and 74.3 dBA Lmax for any period of time. These levels are below then City of Huntington Beach exterior noise levels, and therefore operations at the City of Huntington Beach Walmart are expected to create a less-than-significant impact to the adjacent noise sensitive uses.

### 1.3 Construction Noise Analysis

Construction noise represents a short-term impact on the ambient noise levels. Noise generated by construction equipment, including trucks, power tools, concrete mixers and portable generators may reach high noise levels. The City of Huntington Beach Municipal Code exempts noise impacts from construction related activities that occur within the applicable noise hours of 7:00 a.m. and 8:00 p.m. on weekdays. Though the City of Huntington Beach Municipal Code exempts construction noise, the proposed project will incorporate the construction mitigation measures that were included in the Beach Boulevard and Edinger Corridors Specific Plan EIR, the land use document that governs the site. These mitigation measures, which are listed in Section 8.3, shall be implemented during construction in order to assure a less than significant impact to the nearby noise-sensitive residents.

The 12'-foot high temporary noise barrier required as mitigation will provide a minimum noise reduction of 15 dBA, along the southern property line for all construction phases and along the western property line during the grind/overlay operations. With the barriers, construction related noise level impacts will remain below the City of Huntington Beach maximum noise level for stationary sources of 75 dBA Lmax.

#### 1.4 Construction Vibration Impacts

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction vibration is generally associated with pile driving and rock blasting. Occasionally large bulldozers and loaded trucks can cause perceptible vibration levels at close proximity. However, since the proposed Project is not expected to employ any pile driving, rock blasting or heavy grading equipment and with residential uses located greater than 10 feet from construction activities, impacts from groundborne vibration are anticipated to be less-than-significant.

## **2.0 INTRODUCTION**

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This noise study has been completed to determine the noise impacts associated with off-site traffic noise impacts, on-site operational noise impacts, and temporary construction noise and vibration impacts related to the development of the proposed Huntington Beach Walmart located in the City of Huntington Beach, California.

### **2.1 Purpose of Report**

This noise study briefly describes the proposed project, provides information regarding noise fundamentals, describes the local noise guidelines, and presents an analysis of the potential off-site project-related noise impacts. This study has been prepared to satisfy the City of Huntington Beach noise standards.

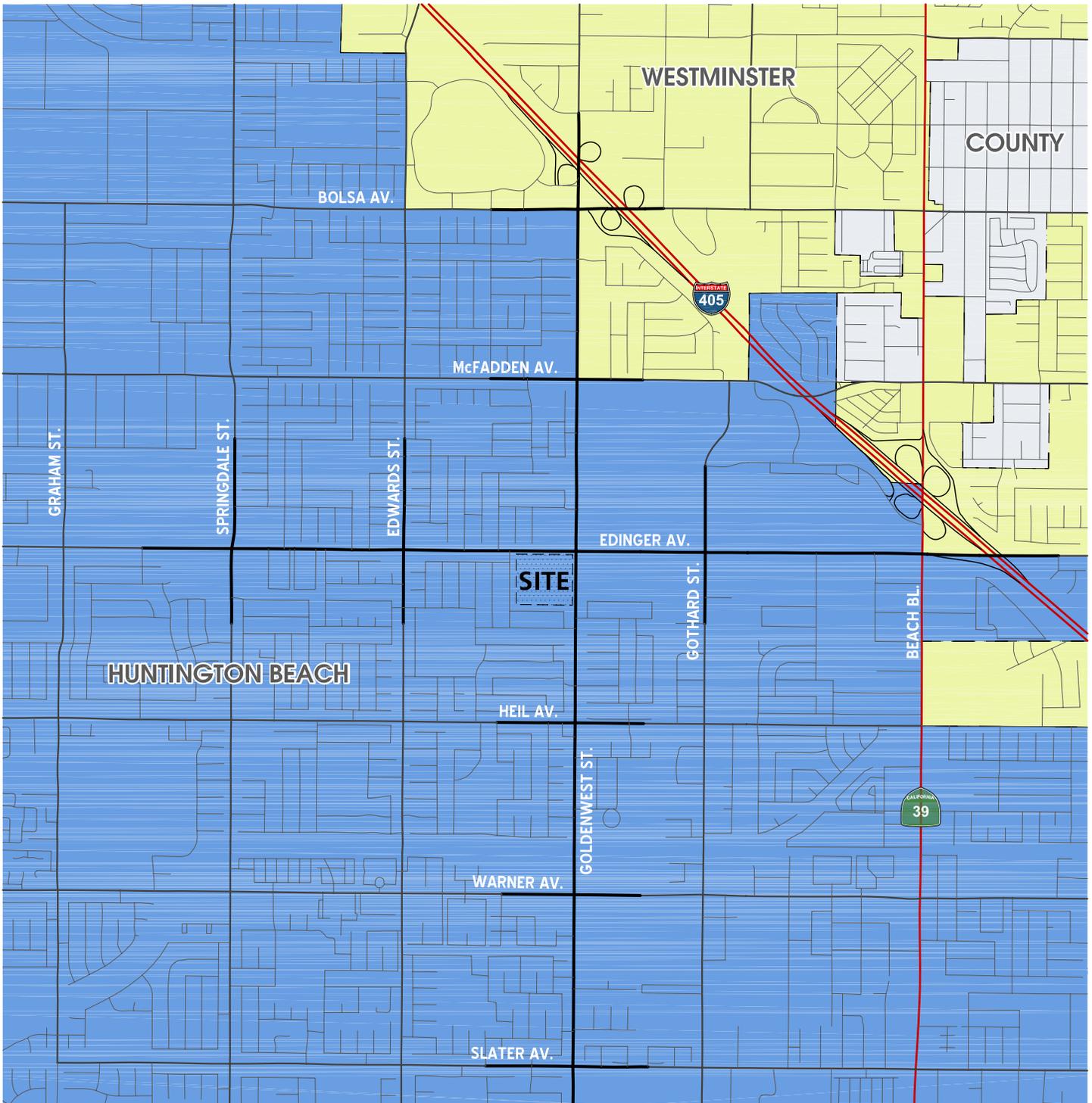
### **2.2 Site Location**

The project is located at the southwest corner of Goldenwest Street and Edinger Avenue in the City of Huntington Beach. The location of the Project site within the study area is presented at Exhibit 2-A.

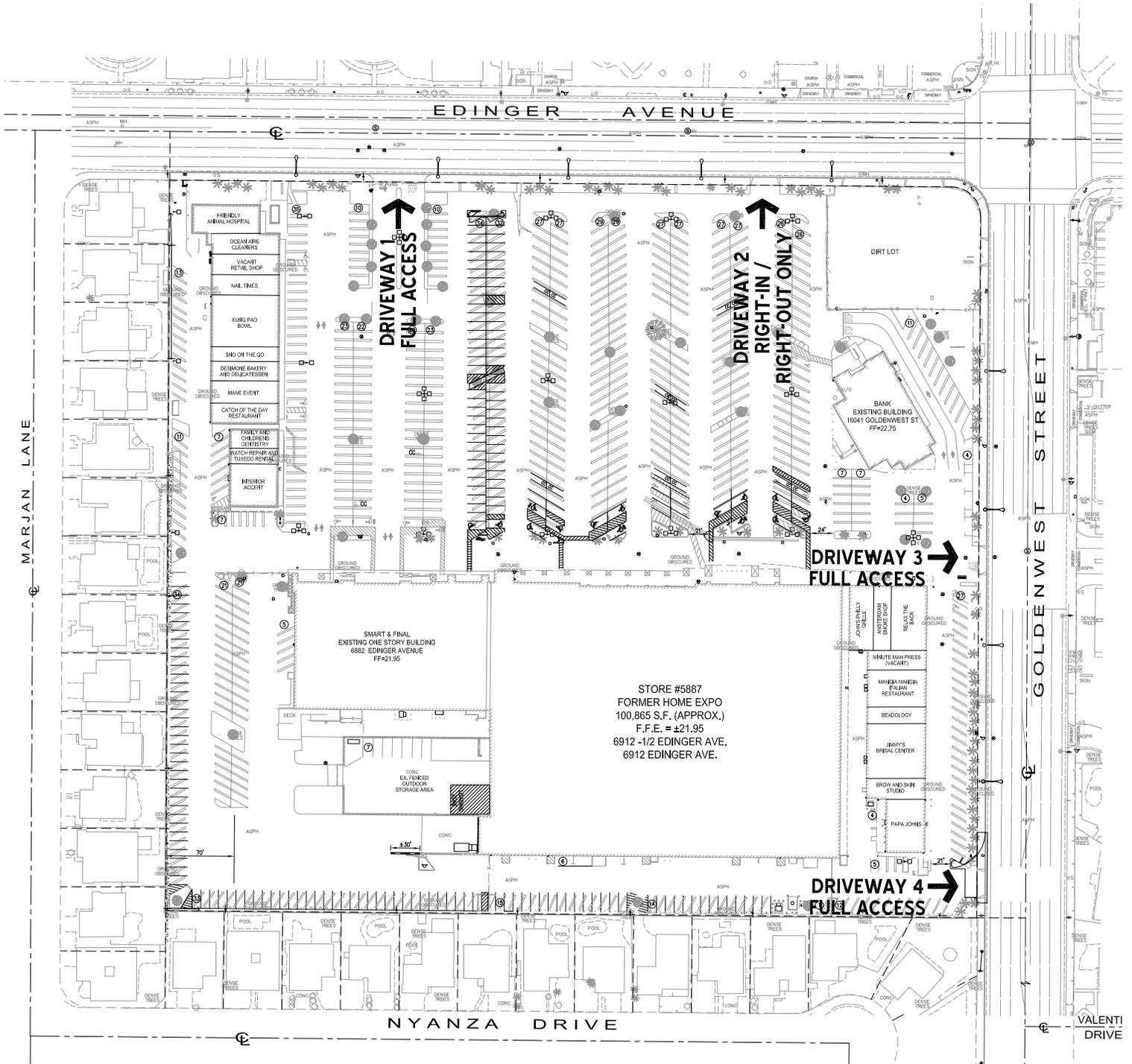
### **2.3 Project Facilities**

The project proposes to occupy an existing 100,865 square foot vacant retail building within an existing retail shopping center. The shopping center contains commercial uses and office buildings occupied by a variety of uses including restaurants, a Smart & Final, dental offices and small specialty retail shops. The proposed site plan is shown on Exhibit 2-B.

EXHIBIT 2-A  
**LOCATION MAP**



# EXHIBIT 2-B SITE PLAN



## **3.0 NOISE FUNDAMENTALS**

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The purpose of this section is to provide basic information about noise and to present key terms and concepts used in this report.

### **3.1 Introduction**

Noise has been simply defined as "unwanted sound." Sound becomes unwanted when it interferes with normal activities, when it causes actual physical harm, or when it has adverse effects on health. Noise is measured on a logarithmic scale of sound pressure level known as a decibel (dB). A-weighted decibels (dBA) approximate the subjective response of the human ear to broad frequency noise sources by discriminating against very low and very high frequencies of the audible spectrum. They are adjusted to reflect only those frequencies which are audible to the human ear.

### **3.2 Noise Descriptors**

Environmental noise descriptors are generally based on averages, rather than instantaneous, noise levels. The most commonly used figure is the equivalent level (Leq). Equivalent sound levels are not measured directly but are calculated from sound pressure levels typically measured in A-weighted decibels (dBA). The equivalent sound level (Leq) represents a steady state sound level containing the same total energy as a time varying signal over a given sample period. A single-event noise exposure level (SENEL) is the sound exposure level of a single noise event (such as an aircraft flyover or train pass-by) measured over the time interval between the initial and final times for which the sound level of the single event exceeds the background noise level.

### **3.3 Noise Control**

Noise control is the process of obtaining an acceptable noise environment for a particular observation point or receiver by controlling the noise source, transmission path, receiver, or all three. This concept is known as the source-path-receiver concept. In general, noise control measures can be applied to any and all of these three elements.

### 3.4 Ground Absorption

To account for the ground-effect attenuation (absorption), two types of site conditions are commonly used in traffic noise models, soft site and hard site conditions. Soft site conditions account for the sound propagation loss over natural surfaces such as normal earth and ground vegetation. A drop-off rate of 4.5 dBA per doubling of distance is typically observed over soft ground with landscaping, as compared with a 3.0 dBA drop-off rate over hard ground such as asphalt, concrete, stone and very hard packed earth. Based on our experience, soft site conditions better reflect the predicted noise levels. In addition, Caltrans' research has shown that the use of soft site conditions is more appropriate for the application of the FHWA (Federal Highway Administration) traffic noise prediction model used in this analysis.

### 3.5 Noise Barrier Attenuation

Effective noise barriers can reduce noise levels by 10 to 15 dBA, cutting the loudness of traffic noise in half. A noise barrier is most effective when placed close to the noise source or receiver. Noise barriers, however, do have limitations. For a noise barrier to work, it must be high enough and long enough to block the view of the noise source.

### 3.6 Community Response to Noise

Approximately ten (10) percent of the population has a very low tolerance for noise, and will object to any noise not of their own making. Consequently, even in the quietest environment, some complaints will occur. Another 25 percent of the population will not complain even in very severe noise environments. Thus, a variety of reactions can be expected from people exposed to any given noise environment.

Despite this variability in behavior on an individual level, the population as a whole can be expected to exhibit the following responses to changes in noise levels. An increase or decrease of 1.0 dBA cannot be perceived except in carefully controlled laboratory experiments. A 3.0 dBA increase may be perceptible outside of the laboratory. An increase of 5.0 dBA is often necessary before any noticeable change in community response (i.e., complaints) would be expected.

Community responses to noise may range from registering a complaint by telephone or letter, to initiating court action, depending upon each individual's susceptibility to noise and personal attitudes about noise. Several factors are related to the level of community annoyance including:

- Fear associated with noise producing activities;
- Socio-economic status and educational level of the receptor;
- Noise receptor's perception that they are being unfairly treated;
- Attitudes regarding the usefulness of the noise-producing activity;
- Receptor's belief that the noise source can be controlled.

### 3.7 Land Use Compatibility With Noise

Some land uses are more tolerant of noise than others. For example, schools, hospitals, churches and residences are more sensitive to noise intrusion than are commercial or industrial activities. As ambient noise levels affect the perceived amenity or livability of a development, so too can the mismanagement of noise impacts impair the economic health and growth potential of a community by reducing the area's desirability as a place to live, shop and work. For this reason, land use compatibility with the noise environment is an important consideration in the planning and design process.

## 4.0 REGULATORY SETTING

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Local noise guidelines are often based on the broader guidelines established by state and federal agencies. This section describes the regulatory setting for the proposed Huntington Beach Walmart.

### 4.1 City of Huntington Beach Noise Element

The City of Huntington Beach Noise Element identifies an exterior noise level impact standard of 65 dBA CNEL (Community Noise Equivalent Level) for new residential developments and states that new residential developments in those areas that will experience an exterior noise level greater than 65 dBA CNEL are required to have a noise study performed to determine what level of sound insulation, if any, is required to meet the acceptable interior noise level impact standards established. The interior noise level impact standard for the City of Huntington Beach is 45 dBA CNEL. The City of Huntington Beach Noise Element is presented in Appendix 4.1.

### 4.2 City of Huntington Beach Municipal Code

Section 8.40.050 of the City of Huntington Beach Municipal Code provides the following stationary source non-transportation related nuisance noise level standards by land use within the City:

Noise Zone	Sound Level (dBA)	Time Period
All Residential Properties	50 dBA	10:00 p.m. to 7:00 a.m.
	55 dBA	7:00 a.m. to 10:00 p.m.
All Professional Office And Public Institution Properties	55 dBA	Anytime
All Other Commercial Properties	60 dBA	Anytime
All Industrial Properties	70 dBA	Anytime

These levels are measured at the property line separating the source and the noise sensitive receptor. If a noise barrier is present, the receptor location is moved to a distance of 10 feet from the noise barrier.

If the ambient noise level exceeds the applicable limit noted above, the ambient noise level becomes the standard. Section 8.40.060: Exterior Noise Levels Prohibited, noise levels shall not exceed the ambient noise levels in Section 8.40.050 by the following dB(A) levels for the cumulative period of time specified:

- (a) For a cumulative period of more than thirty minutes in any hour;
- (b) Plus 5 dB(A) for a cumulative period of more than fifteen (15) minutes in any hour;
- (c) Plus 10 dB(A) for a cumulative period of more than five (5) minutes in any hour;
- (d) Plus 15 dB(A) for a cumulative period of more than one (1) minute in any hour;
- (e) 20 dB(A) or more for any period of time.

Section 8.40.090 (d) under the Special Provisions section states that “Noise sources associated with construction (are exempt from the noise ordinance) provided a permit has been obtained from the City; and provided said activities do not take place between the hours of 8 p.m. and 7 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday.” The City of Huntington Beach Municipal Code is presented in Appendix 4.2.

#### 4.3 Significance Criteria

The following significance criteria are based on guidance provided by Appendix G of the California Environmental Quality Act (CEQA) Guidelines. For the purposes of this report, noise impacts would be potentially significant if the proposed Project is determined to result in or cause:

- 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 existing levels without the proposed Project; or
- A substantial temporary or periodic increase in ambient noise levels in the Project vicinity above noise levels existing without the proposed Project.

While the CEQA Guidelines and the City of Huntington Beach noise standards provide direction on noise compatibility and establish noise standards by land use type, they do not define the levels at which increases above the ambient noise levels are considered substantial. However, the Federal Highway Administration and Caltrans both identify changes in noise levels of greater than 3 dBA as "barely perceptible," while changes of 5 dBA are considered "readily perceptible." This is consistent with the community response to noise characteristics described at Section 2.6 of this report.

In a community situation, the noise exposure is extended over a long time period, and changes in noise levels occur over years rather than the immediate comparison made in a laboratory situation. The level at which changes in community noise levels become discernible is likely to be some value greater than 1 dBA, and 3 dBA appears to be appropriate for most people. On this basis, and for the purposes of this study, a substantial increase in noise levels attributable to operations of the Project would occur if:

1. For operational noise:
  - Ambient conditions are below applicable standards, and (i) project-generated noise would result in an exceedance of the noise guidelines for surface transportation (mobile) sources in the City of Huntington Beach Noise Element at receptor land uses, or (ii) project generated noise plus ambient noise would exceed the noise guidelines for stationary sources in the City of Huntington Beach Noise Ordinance by 3 dBA (a "barely perceptible" increase) or greater; or
  - If ambient noise conditions exceed applicable Noise Element or Noise Ordinance Standards and project-generated noise would create a 3 dBA ("barely perceptible") or greater permanent increase in ambient exterior noise levels.
  
2. For construction noise, a substantial noise impact would occur during the allowed daytime construction noise hours of 7 a.m. to 8 p.m., if the noise level impacts exceed the City of Huntington Beach maximum daytime noise level standard of 75 dBA Lmax.

The level of significance criteria presented above is consistent with the significance criteria presented in the approved City of Huntington Beach and Edinger Corridors Specific Plan EIR by PBSJ in August 2009 and is included in Appendix 4.3.

## **5.0 EXISTING NOISE LEVEL MEASUREMENTS**

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To evaluate the existing noise level environment, one (1) long-term 24-hour measurement and three (3) short-term measurements were taken at locations throughout the project study area. Exhibit 5-A shows the boundaries of the project study area and the noise level measurement locations. The long-term 24-hour noise level measurement was positioned at the nearest noise sensitive single-family residents adjacent to the proposed loading dock to assess the existing ambient hourly noise levels surrounding the project site. To supplement the long-term measurements, 10-minute, short-term, sample noise level measurements were taken at other noise sensitive locations within the project study area. The noise level measurements were recorded by Urban Crossroads, Inc. on September 15<sup>th</sup> and 16<sup>th</sup>, 2010. Appendix 5.1 includes a photo index of the project study area.

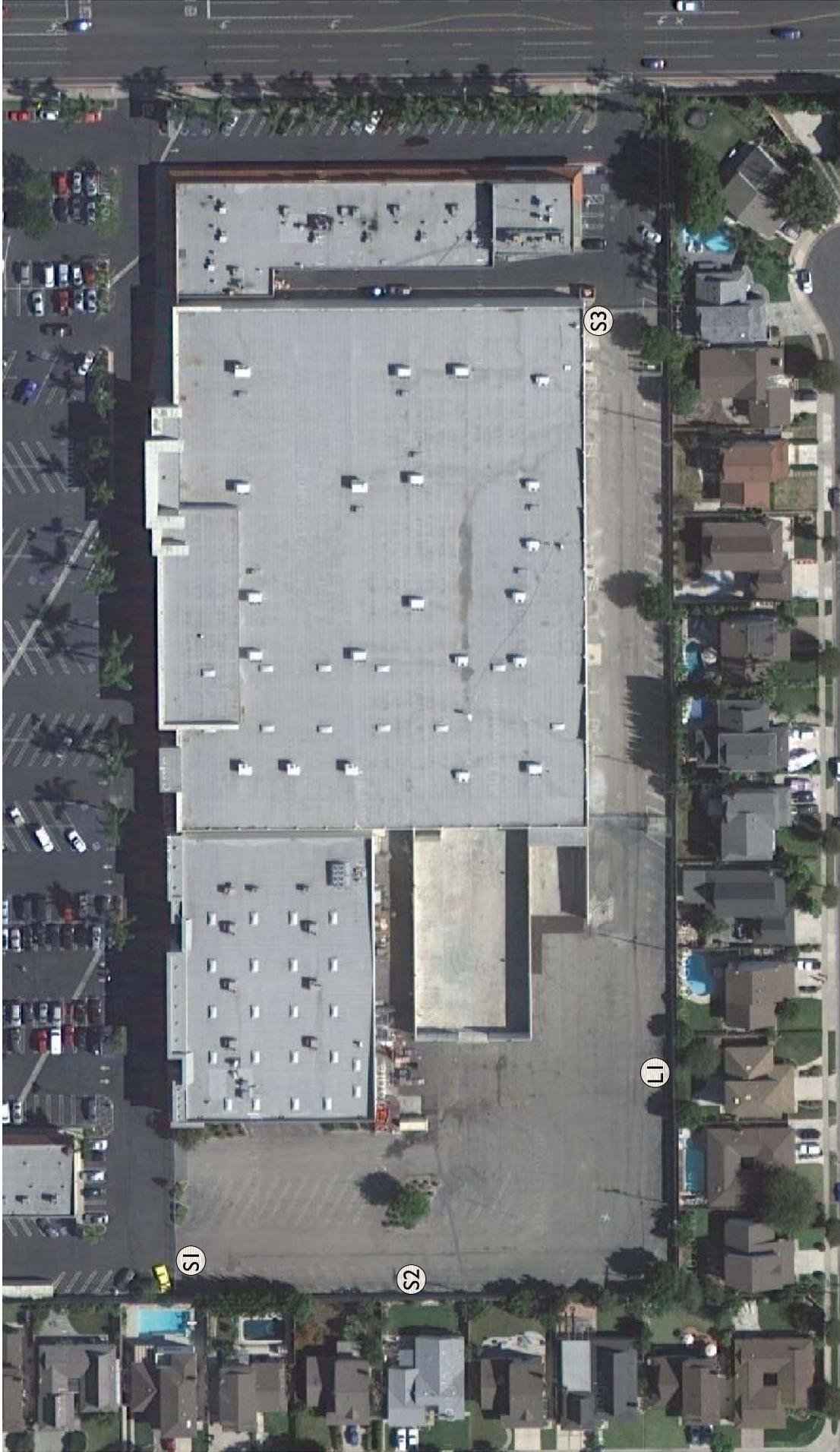
### **5.1 Measurement Procedure and Criteria**

The short-term noise measurements were taken using a Larson-Davis Model 824 Type 1 precision sound level meter. The 24-hour noise readings were recorded using a Quest DL Pro data logging Type 2 noise dosimeter. All noise meters were programmed in "fast" mode to record noise levels in "A" weighted form. The sound level meters and microphone were mounted on a tripod, five feet above the ground and equipped with a windscreen during all measurements. The Larson Davis Model 824 sound level meter was calibrated before the monitoring using a Larson-Davis calibrator, Model CAL 150 and the Quest DL noise dosimeter was calibrated using a Quest QC-10 calibrator. All noise level measurement equipment meets American National Standards Institute (ANSI) specifications for sound level meters (Standard S1.4-1983).

### **5.2 Noise Measurement Locations**

The project site is currently a vacant building located within an existing commercial area in the City of Huntington Beach. The subject site is bounded to the north by Edinger Avenue; to the east by Goldenwest Street and existing commercial uses; to the south by single-family homes; and to the west by an existing commercial store and single-family homes. The existing noise environment is dominated by traffic noise from Goldenwest Street, Edinger Avenue, and existing parking lot activities associated with the surrounding stores. Exhibit 5-A presents the noise measurement locations.

EXHIBIT 5-A  
**NOISE MONITORING LOCATIONS**



**LEGEND:**

- LI = LONG-TERM, 24-HOUR, NOISE MONITORING LOCATION
- S1 = SHORT-TERM, 10-MINUTE, NOISE MONITORING LOCATION

Long-term noise level measurement location L1 was monitored for a period of 24 hours. Site L1 is located approximately 725 feet west of the Goldenwest Street centerline along the southern property line of the proposed project adjacent to the existing single-family homes.

Short-Term noise measurement locations S1 through S3 were monitored for a time period of 10 minutes.

- Site S1 is located west of the proposed Walmart store at property line adjacent to the single-family homes at the front façade of the existing buildings.
- Site S2 is located west of the proposed Walmart store at property line adjacent to the single-family homes.
- Site S3 is located approximately 200 feet east of the Goldenwest Street centerline at the eastern property line of the project site.

### 5.3 Noise Measurement Results

The results of the noise level measurements are presented in Tables 5-1 and 5-2. All long-term noise level measurements are presented in Table 5-1 and all short-term noise level measurements are presented in Table 5-2. The hourly noise levels at Site L1 range from 48.7 to 61.6 dBA Leq. Long-term noise monitoring results printouts are included in Appendix 5.2.

To supplement the long-term noise level measurements, three (3) short-term, 10-minute noise measurements were taken in the project study area and ranged from 48.3 to 55.7 dBA Leq (10 Minutes). The estimated short-term hourly noise levels shown on Table 5-2 were calculated using the hourly results from the nearest long-term measurement location. The estimated hourly noise levels at locations S1 to S3 range from 35.4 to 55.7 dBA Leq (one-hour). The short-term noise monitoring results printouts and hourly noise level conversions are included in Appendix 5.2 and 5.3, respectively.

**Table 5-1**

**Long-Term (Ambient) Noise Level Measurements<sup>1</sup>**

Observer Location <sup>2</sup>	Description	Time Of Measurement	Primary Noise Source	Daytime Hourly Noise Levels (Leq dBA) <sup>3</sup>	Nighttime Hourly Noise Levels (Leq dBA) <sup>3</sup>
L1	Located approximately 725 feet west of the Goldenwest Street centerline along the southern property line of the proposed project site adjacent to single-family homes.	September 15-16, 2010	Ambient noise, noise impacts from the Smart and Final loading dock, and traffic on Goldenwest Street	49.7 - 61.6	48.7 - 50.9

<sup>1</sup> Noise measurements taken by Urban Crossroads, Inc. on September 15-16, 2010.

<sup>2</sup> See Exhibit 5-A for the location of the monitoring sites, and Appendix 5.1 for Study Area Photos.

<sup>3</sup> The long-term noise level measurements printouts are included in Appendix 5.2.

**Table 5-2**

**Existing Short-Term (Ambient) Noise Level Measurements<sup>1</sup>**

Observer Location <sup>2</sup>	Description	Time Of Measurement <sup>3</sup>	Primary Noise Source	Noise Level (Leq dBA)	Estimated Hourly Noise Levels (Leq dBA) <sup>4</sup>
S1	Located west of the proposed Walmart store at property line adjacent to the single-family homes at the front façade of the existing buildings.	2:24 P.M.	Parking lot activities and ambient noise	48.3	35.4 - 48.3
S2	Located west of the proposed Walmart store at property line adjacent to the single-family homes in-line with the proposed loading docks.	2:35 P.M.	Ambient noise	49.3	36.4 - 49.3
S3	Located approximately 200 feet east of the Goldenwest Street centerline at the eastern property line of the project site.	2:47 P.M.	Traffic noise impacts from Goldenwest Street and ambient noise	55.7	42.8 - 55.7

<sup>1</sup> Noise measurements taken by Urban Crossroads, Inc. on September 16, 2010.

<sup>2</sup> See Exhibit 5-A for monitoring site locations, Appendix 5.1 for Study Area Photos, and Appendix 5.2 for Noise Monitoring Printouts.

<sup>3</sup> Measurement at locations S1-S3 were monitored for a period of 10 minutes.

<sup>4</sup> Estimated hourly Leq calculation are included in Appendix 5.3.

## **6.0 OFF-SITE TRAFFIC NOISE IMPACTS**

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To assess the off-site noise level impacts associated with development of the proposed Huntington Beach Walmart, noise contours were developed based on the Traffic Impact Analysis. Noise contours were developed for the following traffic scenarios:

Existing Year (2010): This scenario refers to the existing present-day noise conditions, without construction of the proposed project.

Year (2015) With / Without Project: This scenario refers to the background noise conditions at future Year 2015 with and without the proposed project. This scenario corresponds to 2015 conditions with the project, and includes all cumulative projects identified in the Traffic Impact Analysis.

The following section outlines the methods and procedures used to model and analyze the future traffic noise environment.

### **6.1 FHWA Traffic Noise Prediction Model**

The projected roadway noise impacts from vehicular traffic were projected using a computer program that replicates the Federal Highway Administration (FHWA) Traffic Noise Prediction Model- FHWA-RD-77-108 (the "FHWA Model"). The FHWA Model arrives at a predicted noise level through a series of adjustments to the Reference Energy Mean Emission Level (REMEL). The adjustments made to the REMEL account for: the roadway classification (e.g., collector, secondary, major or arterial), the roadway active width (i.e., the distance between the center of the outermost travel lanes on each side of the roadway), the total average daily traffic (ADT), the travel speed, the percentages of automobiles, medium trucks, and heavy trucks in the traffic volume, the roadway grade, the angle of view (e.g., whether the roadway view is blocked), the site conditions ("hard" or "soft" relates to the absorption of the ground, pavement, or landscaping), and the percentage of total ADT which flows each hour throughout a 24-hour period.

## 6.2 Traffic Noise Prediction Model Inputs

Table 6-1 presents the FHWA Traffic Noise Prediction Model roadway parameters used in this analysis. Soft site conditions were used to develop the noise contours to analyze the traffic noise impacts to the study area to take into account the varying ground surface types between the roadways and receiver locations.

The average daily traffic volumes used for this study are presented in Table 6-2 were provided by the Huntington Beach Walmart Traffic Impact Analysis completed by Urban Crossroads Inc. in November 2010. Table 6-3 presents the hourly traffic flow distributions (vehicle mix) including the percentages of automobile, medium trucks and heavy trucks for input into the FHWA Model used for this analysis.

## 6.3 Traffic Noise Contours

Noise contours represent the distance to noise levels of a constant value and are measured from the center of the roadway. CNEL noise contours are determined below for the 55, 60, 65 and 70 dBA noise levels.

The distance from the centerline of the roadway to the CNEL contours for roadways in the proposed project's vicinity are presented in Tables 6-4 through 6-6. The purpose of the off-site noise contours is to assess the incremental off-site transportation related noise impacts at land uses adjacent to roadways conveying project traffic. The noise contours conservatively do not take into account the effect of any existing noise barriers or topography that may affect ambient noise levels. In addition, in that the noise contours reflect modeling of vehicular noise along area roadways, they appropriately do not reflect noise contribution from the surrounding commercial and industrial uses and railroad line to the study area.

## 6.4 Existing Roadway Noise Levels

Table 6-4 presents the existing noise contours. Most of the off-site study area is currently developed with residential uses. Table 6-4 shows that the unmitigated exterior noise levels along Edinger Avenue and Goldenwest Street currently exceed the City of Huntington Beach 65 dBA CNEL exterior baseline compatibility standard for residential uses at 100 feet from each roadway's centerline. For all other segments analyzed, the existing noise contours at 100 feet from roadway

**Table 6-1**

**Off-Site Roadway Parameters**

Roadway	Segment	Roadway Classification <sup>1</sup>	Vehicle Speed (MPH)	Site Conditions
Edinger Ave.	Graham St. to Springdale St.	Primary Arterial Street	45	Soft
Edinger Ave.	Springdale St. to Edwards St.	Primary Arterial Street	45	Soft
Edinger Ave.	Edwards St. to Goldenwest St.	Primary Arterial Street	45	Soft
Edinger Ave.	Goldenwest St. to Gothard St.	Primary Arterial Street	45	Soft
Edinger Ave.	Gothard St. to Beach Blvd.	Primary Arterial Street	45	Soft
Edinger Ave.	Beach Blvd. to I-405 Freeway	Primary Arterial Street	45	Soft
Goldenwest St.	I-405 to Bolsa Ave.	Primary Arterial Street	45	Soft
Goldenwest St.	Bolsa Ave. to McFadden Ave.	Primary Arterial Street	45	Soft
Goldenwest St.	McFadden Ave. to Edinger Ave.	Primary Arterial Street	45	Soft
Goldenwest St.	Edinger Ave. to Heil Ave.	Primary Arterial Street	45	Soft
Goldenwest St.	Heil Ave. to Warner Ave.	Primary Arterial Street	45	Soft
Goldenwest St.	Warner Ave. to Slater Ave.	Primary Arterial Street	45	Soft
McFadden Ave.	Goldenwest St. to Gothard St.	Secondary Arterial Street	40	Soft
Heil Ave.	Edwards St. to Goldenwest St.	Secondary Arterial Street	40	Soft
Heil Ave.	Goldenwest St. to Gothard St.	Secondary Arterial Street	40	Soft
Edwards St.	McFadden Ave. to Edinger Ave.	Secondary Arterial Street	40	Soft
Edwards St.	Edinger Ave. to Heil Ave.	Secondary Arterial Street	40	Soft
Gothard St.	McFadden Ave. to Edinger Ave.	Secondary Arterial Street	40	Soft
Gothard St.	Edinger Ave. to Heil Ave.	Secondary Arterial Street	40	Soft

<sup>1</sup> According to the City of Huntington Beach General Plan Circulation Element.

**Table 6-2**

**Average Daily Traffic For Existing And Year 2015 Conditions**

Roadway	Segment	Average Daily Traffic (1,000's)		
		Existing	Year 2015	
			No Project	With Project
Edinger Ave.	Graham St. to Springdale St.	19.2	21.2	21.6
Edinger Ave.	Springdale St. to Edwards St.	21.5	24.2	25.0
Edinger Ave.	Edwards St. to Goldenwest St.	23.3	26.8	28.0
Edinger Ave.	Goldenwest St. to Gothard St.	27.7	33.4	34.3
Edinger Ave.	Gothard St. to Beach Blvd.	33.9	45.3	46.3
Edinger Ave.	Beach Blvd. to I-405 Freeway	30.1	34.4	34.9
Goldenwest St.	I-405 to Bolsa Ave.	40.8	43.9	44.8
Goldenwest St.	Bolsa Ave. to McFadden Ave.	42.0	45.8	47.0
Goldenwest St.	McFadden Ave. to Edinger Ave.	37.1	40.0	41.2
Goldenwest St.	Edinger Ave. to Heil Ave.	32.6	34.9	36.6
Goldenwest St.	Heil Ave. to Warner Ave.	32.3	35.0	36.2
Goldenwest St.	Warner Ave. to Slater Ave.	32.1	34.3	35.0
McFadden Ave.	Goldenwest St. to Gothard St.	19.3	22.0	22.1
Heil Ave.	Edwards St. to Goldenwest St.	14.4	15.7	15.9
Heil Ave.	Goldenwest St. to Gothard St.	14.5	16.2	16.4
Edwards St.	McFadden Ave. to Edinger Ave.	16.7	17.8	18.0
Edwards St.	Edinger Ave. to Heil Ave.	17.1	18.3	18.4
Gothard St.	McFadden Ave. to Edinger Ave.	16.6	20.7	20.8
Gothard St.	Edinger Ave. to Heil Ave.	19.6	23.6	23.7

<sup>1</sup> Traffic volumes according to the Huntington Beach Wal-Mart Traffic Impact Analysis by Urban Crossroads, Inc. on June 7, 2011.

**Table 6-3**

**Hourly Traffic Flow Distribution <sup>1</sup>**

Motor-Vehicle Type	Daytime (7 am to 7 pm)	Evening (7 pm to 10 pm)	Night (10 pm to 7 am)	Total % Traffic Flow
Automobiles	77.5%	12.9%	9.6%	97.42%
Medium Trucks	84.8%	4.9%	10.3%	1.84%
Heavy Trucks	86.5%	2.7%	10.8%	0.74%

<sup>1</sup> Typical Southern California vehicle mix.

Table 6-4

Existing Conditions Noise Contours

Road	Segment	CNEL at 100 Feet (dBA) <sup>2</sup>	Distance to Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Edinger Ave.	Graham St. to Springdale St.	64.5	RW	102	219	473
Edinger Ave.	Springdale St. to Edwards St.	<b>65.0</b>	RW	110	237	510
Edinger Ave.	Edwards St. to Goldenwest St.	<b>65.3</b>	RW	116	250	538
Edinger Ave.	Goldenwest St. to Gothard St.	<b>66.1</b>	60	130	280	604
Edinger Ave.	Gothard St. to Beach Blvd.	<b>67.0</b>	69	149	321	691
Edinger Ave.	Beach Blvd. to I-405 Freeway	<b>66.5</b>	64	137	296	638
Goldenwest St.	I-405 to Bolsa Ave.	<b>67.8</b>	78	168	363	781
Goldenwest St.	McFadden Ave. to Edinger Ave.	<b>67.4</b>	73	158	340	733
Goldenwest St.	McFadden Ave. to Edinger Ave.	<b>67.4</b>	73	158	340	733
Goldenwest St.	Edinger Ave. to Heil Ave.	<b>66.8</b>	67	145	312	673
Goldenwest St.	Heil Ave. to Warner Ave.	<b>66.8</b>	67	144	310	669
Goldenwest St.	Warner Ave. to Slater Ave.	<b>66.7</b>	67	143	309	666
McFadden Ave.	Goldenwest St. to Gothard St.	62.9	RW	80	172	371
Heil Ave.	Edwards St. to Goldenwest St.	61.7	RW	66	142	305
Heil Ave.	Goldenwest St. to Gothard St.	61.7	RW	66	142	307
Edwards St.	McFadden Ave. to Edinger Ave.	62.3	RW	73	156	337
Edwards St.	Edinger Ave. to Heil Ave.	62.4	RW	74	159	342
Gothard St.	McFadden Ave. to Edinger Ave.	62.3	RW	72	156	336
Gothard St.	Edinger Ave. to Heil Ave.	63.0	RW	81	174	375

<sup>1</sup> "RW" = Location of the respective noise contour falls within the right-of-way of the road

Table 6-5

Year 2015 Without Project Conditions Noise Contours

Road	Segment	CNEL at 100 Feet (dBA)	Distance to Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Edinger Ave.	Graham St. to Springdale St.	64.9	RW	109	234	505
Edinger Ave.	Springdale St. to Edwards St.	65.5	RW	119	256	552
Edinger Ave.	Edwards St. to Goldenwest St.	65.9	RW	127	274	590
Edinger Ave.	Goldenwest St. to Gothard St.	66.9	68	147	317	684
Edinger Ave.	Gothard St. to Beach Blvd.	68.2	84	180	389	838
Edinger Ave.	Beach Blvd. to I-405 Freeway	67.0	70	150	324	697
Goldenwest St.	I-405 to Bolsa Ave.	68.1	82	177	381	820
Goldenwest St.	McFadden Ave. to Edinger Ave.	67.7	77	166	358	771
Goldenwest St.	McFadden Ave. to Edinger Ave.	67.7	77	166	358	771
Goldenwest St.	Edinger Ave. to Heil Ave.	67.1	70	152	327	704
Goldenwest St.	Heil Ave. to Warner Ave.	67.1	71	152	327	705
Goldenwest St.	Warner Ave. to Slater Ave.	67.0	70	150	323	696
McFadden Ave.	Goldenwest St. to Gothard St.	63.5	41	87	188	405
Heil Ave.	Edwards St. to Goldenwest St.	62.0	RW	70	150	323
Heil Ave.	Goldenwest St. to Gothard St.	62.2	RW	71	153	330
Edwards St.	McFadden Ave. to Edinger Ave.	62.6	RW	76	163	352
Edwards St.	Edinger Ave. to Heil Ave.	62.7	RW	77	166	358
Gothard St.	McFadden Ave. to Edinger Ave.	63.2	RW	84	181	389
Gothard St.	Edinger Ave. to Heil Ave.	63.8	42	91	197	424

<sup>1</sup> "RW" = Location of the respective noise contour falls within the right-of-way of the road

**Table 6-6**

**Year 2015 With Project Conditions Noise Contours**

Road	Segment	CNEL at 100 Feet (dBA)	Distance to Contour (Feet)			
			70 dBA CNEL	65 dBA CNEL	60 dBA CNEL	55 dBA CNEL
Edinger Ave.	Graham St. to Springdale St.	<b>65.0</b>	RW	110	237	511
Edinger Ave.	Springdale St. to Edwards St.	<b>65.6</b>	RW	121	262	564
Edinger Ave.	Edwards St. to Goldenwest St.	<b>66.1</b>	61	131	282	608
Edinger Ave.	Goldenwest St. to Gothard St.	<b>67.0</b>	70	150	323	696
Edinger Ave.	Gothard St. to Beach Blvd.	<b>68.3</b>	85	183	395	850
Edinger Ave.	Beach Blvd. to I-405 Freeway	<b>67.1</b>	70	152	327	704
Goldenwest St.	I-405 to Bolsa Ave.	<b>68.2</b>	83	179	386	832
Goldenwest St.	McFadden Ave. to Edinger Ave.	<b>67.8</b>	79	169	365	786
Goldenwest St.	McFadden Ave. to Edinger Ave.	<b>67.8</b>	79	169	365	786
Goldenwest St.	Edinger Ave. to Heil Ave.	<b>67.3</b>	73	157	337	727
Goldenwest St.	Heil Ave. to Warner Ave.	<b>67.3</b>	72	155	335	721
Goldenwest St.	Warner Ave. to Slater Ave.	<b>67.1</b>	71	152	327	705
McFadden Ave.	Goldenwest St. to Gothard St.	63.5	41	88	189	406
Heil Ave.	Edwards St. to Goldenwest St.	62.1	RW	70	151	326
Heil Ave.	Goldenwest St. to Gothard St.	62.2	RW	72	155	333
Edwards St.	McFadden Ave. to Edinger Ave.	62.6	RW	76	164	354
Edwards St.	Edinger Ave. to Heil Ave.	62.7	RW	77	167	360
Gothard St.	McFadden Ave. to Edinger Ave.	63.2	RW	84	181	390
Gothard St.	Edinger Ave. to Heil Ave.	63.8	43	92	198	426

<sup>1</sup> "RW" = Location of the respective noise contour falls within the right-of-way of the road

centerline are below 65 dBA CNEL.

#### 6.5 Future Conditions Roadway Noise Levels

Tables 6-5 and 6-6 present the Year 2015 without and with project noise contours. Tables 6-5 and 6-6 suggest that the noise level increases on the study area roadway segments are primarily the result of other cumulative development projects and regional growth expressed in the without project conditions noise contours.

For reference purposes, the CNEL level at a distance of 100 feet from the highway centerline is also included in the tables mentioned above. The off-site FHWA model printouts are included in Appendix 6.1. Project contributions are discussed in the following sections.

#### 6.6 Year 2015 Project Traffic Noise Level Contributions

Table 6-7 presents a comparison of the Year 2015 with and without project noise levels shown in Tables 6-5 and 6-6. The roadway noise impacts will increase by 0.0 dBA CNEL to 0.2 dBA CNEL with the development of the proposed project.

#### 6.7 Off-Site Transportation Related Project Noise Impacts

To be considered a substantial noise impact, the off-site project traffic must either cause an exceedance of the local jurisdiction's exterior noise threshold; or, if ambient conditions exceed the jurisdiction's Standards guideline, project traffic must create a "barely perceptible" 3.0 dBA or greater permanent increase in ambient exterior noise levels.

Table 6-7 shows that for the Year 2015 analysis, the development of the proposed project will increase the off-site noise levels by up to 0.2 dBA CNEL. An increase of less than 3.0 dBA CNEL is not considered substantial in terms of community noise impacts. Therefore, the proposed project's contributions to off-site roadway noise level increases will not cause any significant impacts to any existing or future sensitive noise receptors.

**Table 6-7**

**Year 2015 Off-Site Project Related Traffic Noise Impacts**

Roadway	Segment	CNEL at 100 Feet (dBA)			Potential Significant Impact? <sup>1</sup>
		No Project	With Project	Project Contribution	
Edinger Ave.	Graham St. to Springdale St.	64.9	65.0	0.1	NO
Edinger Ave.	Springdale St. to Edwards St.	65.5	65.6	0.1	NO
Edinger Ave.	Edwards St. to Goldenwest St.	65.9	66.1	0.2	NO
Edinger Ave.	Goldenwest St. to Gothard St.	66.9	67.0	0.1	NO
Edinger Ave.	Gothard St. to Beach Blvd.	68.2	68.3	0.1	NO
Edinger Ave.	Beach Blvd. to I-405 Freeway	67.0	67.1	0.1	NO
Goldenwest St.	I-405 to Bolsa Ave.	68.1	68.2	0.1	NO
Goldenwest St.	McFadden Ave. to Edinger Ave.	67.7	67.8	0.1	NO
Goldenwest St.	McFadden Ave. to Edinger Ave.	67.7	67.8	0.1	NO
Goldenwest St.	Edinger Ave. to Heil Ave.	67.1	67.3	0.2	NO
Goldenwest St.	Heil Ave. to Warner Ave.	67.1	67.3	0.2	NO
Goldenwest St.	Warner Ave. to Slater Ave.	67.0	67.1	0.1	NO
McFadden Ave.	Goldenwest St. to Gothard St.	63.5	63.5	0.0	NO
Heil Ave.	Edwards St. to Goldenwest St.	62.0	62.1	0.1	NO
Heil Ave.	Goldenwest St. to Gothard St.	62.2	62.2	0.0	NO
Edwards St.	McFadden Ave. to Edinger Ave.	62.6	62.6	0.0	NO
Edwards St.	Edinger Ave. to Heil Ave.	62.7	62.7	0.0	NO
Gothard St.	McFadden Ave. to Edinger Ave.	63.2	63.2	0.0	NO
Gothard St.	Edinger Ave. to Heil Ave.	63.8	63.8	0.0	NO

<sup>1</sup> A significant impact is considered both a level above 60 dBA CNEL and an increase greater than 3.0 dBA.

In summary, the project will not generate a substantial permanent increase in transportation-related noise levels, nor cause exposure of persons to noise levels in excess of the standards established in the City of Huntington Beach Noise Elements.

## **7.0 OFF-SITE OPERATIONAL ACTIVITY RELATED NOISE IMPACTS**

This section analyzes the potential off-site operational noise impacts resulting from the proposed Huntington Beach Walmart.

### **7.1 Project Related Stationary Source Noise**

The stationary noise impacts associated with the proposed project include truck loading/unloading docks, trash compactors, general vehicle activities, and roof-top air condensers. The project is surrounded by various commercial uses to the west, north, and east as well as noise sensitive residential uses to the south and west.

### **7.2 Reference Noise Level Impacts**

This section provides a detailed description of the reference noise level measurement results shown on Table 7-1. It is important to note that the following projected noise levels assume the worst-case noise environment with the loading docks, trash compactors, parking lot activities and roof-top air condensers all operating simultaneously. In reality, these noise level impacts will vary throughout the day. The stationary noise source locations expected on the project site are shown on Exhibit 7-A. A detailed description of the unloading process for semi and 2-axle trucks, the Delivery Truck Matrix, and the location of the delivery truck movements and are shown on Exhibits 7-B and 7-C, respectively.

#### **7.2.1 Loading Dock Activities**

In order to evaluate the noise impacts associated with semi-truck unloading/loading activities, reference noise level measurements were taken at the project site loading dock by Urban Crossroads Inc. on April 14, 2011. Because the trailer seals to the loading dock, employees unload the semi from the inside of the store. The receiving crew places a 20' long rolling conveyor assembly inside the trailer to roll merchandise (on pallets or in boxes) into the store. The primary noise generated by semi-trucks unloading is the noise of the truck arriving, backing into the dock area, detaching the cab, attaching the cab to the empty trailer, and exiting the loading dock. The unmitigated noise level was measured at 77.3 dBA Leq at a distance of 20 feet from the semi-truck with a maximum noise level of 85.3 dBA Lmax.

**Table 7-1**

**Reference Noise Level Measurements<sup>1</sup>**

Noise Source	Duration (mm:ss) <sup>6</sup>	Distance From Source (Feet)	Noise Source Height (Feet)	Drop-Off Rate <sup>7</sup> (Leq dBA)	Noise Level (Leq dBA)	Maximum Noise Level (dBA Lmax)
Loading Docks Activities <sup>1</sup>	1:00	20.0	8.0	6.0	77.3	85.3
Semi-Truck Movements <sup>2</sup>	1:00	40.0	8.0	6.0	73.5	85.4
Semi-Truck Enter/Exiting <sup>3</sup>	1:00	30.0	8.0	6.0	69.5	75.5
Trash Compactor <sup>4</sup>	-	40.0	5.0	6.0	45.5	-
Air Condenser Units <sup>5</sup>	-	10.0	5.0	6.0	73.0	-
2-Axel Truck Unloading	3:00	40.0	8.0	6.0	60.8	84.9

<sup>1,2,3</sup> As measured by Urban Crossroads, Inc. on 4/14/11.

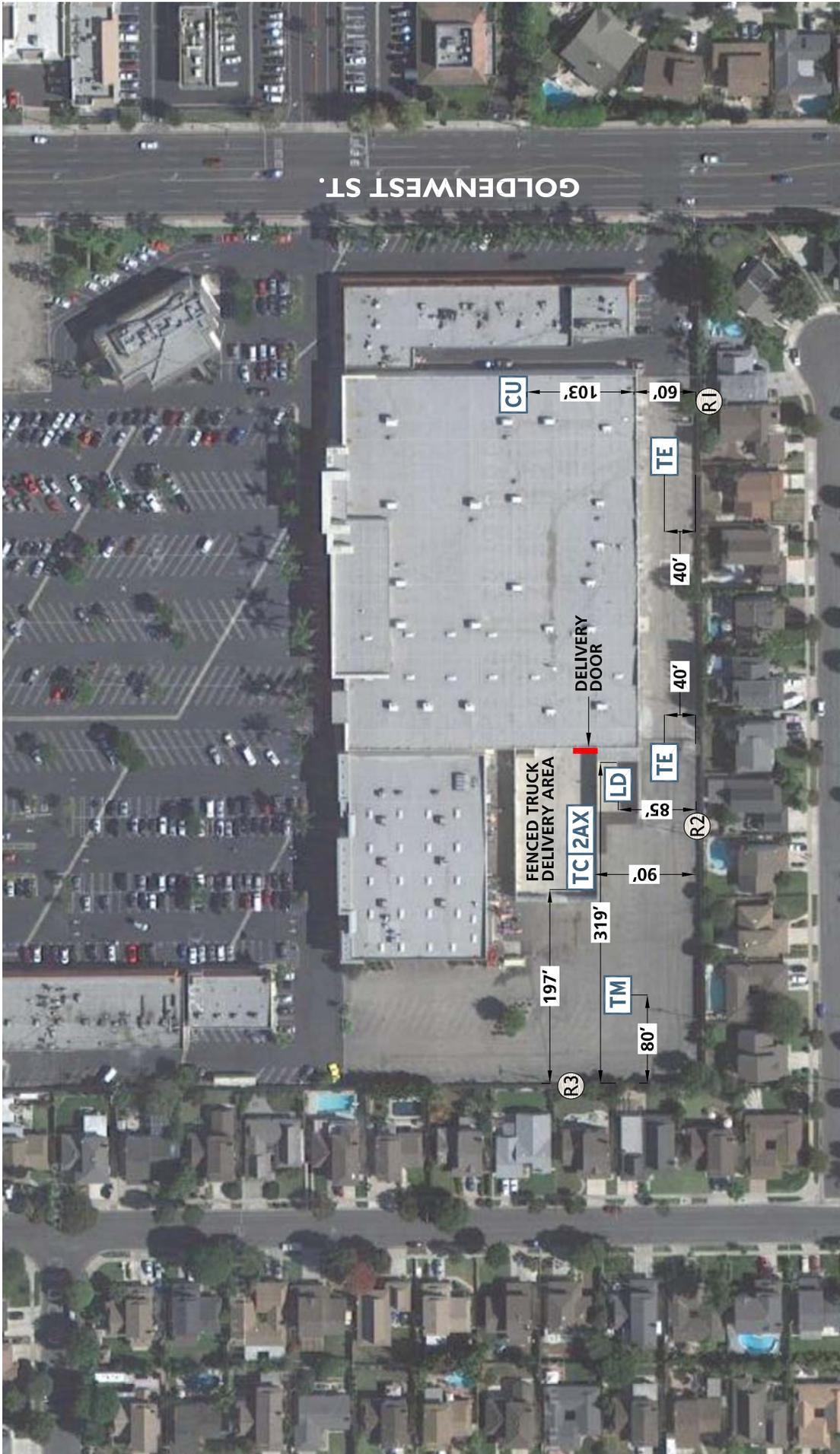
<sup>4</sup> As measured by Urban Crossroads, Inc. on 5/29/2001

<sup>5</sup> Data provided by the Krack Technical Bulletin: 0607\_469 Rev 0509

<sup>6</sup> Noise measurement duration is consistent with approximate time for each event to occur.

<sup>7</sup> Noise level (dBA) drop-off rate per doubling of distance.

EXHIBIT 7-A  
**OFF-SITE OPERATIONAL NOISE IMPACTS**



**LEGEND:**

- TC = TRASH COMPACTOR
- LD = LOADING DOCK
- TE = TRUCK ENTER/EXIT
- CU = CONDENSER UNIT
- 2AX = 2-AXLE DELIVERY TRUCKS
- TM = SEMI-TRUCK MOVEMENT
- RI = NOISE-SENSITIVE RECEPTOR

EXHIBIT 7-B  
**DELIVERY TRUCK SCHEDULE**

	Semi-truck w/ Refrigerator Unit (TRU) <sup>1</sup>		Semi w/o TRU <sup>2</sup>				2 Axel (plus Coke and Pepsi semis)	Total Average Trucks per week
	Frozen/dairy/deli	Meat/produce	General merchandise	Dry Grocery	McLanes	Operations <sup>3</sup>		
<b>Supercenter</b>	7	7	10	8	4	4	DSD <sup>4</sup> (Direct Service Delivery)	<b>Semis – 42</b>
							47 (45 + 2)	<b>2 axel - 45</b>

<sup>1</sup> Merchandise is unloaded on pallets and is stored in the walk-in refrigerator, it takes about 30 minutes to unload the truck. TRU semis typically deliver merchandise between 7 am and 10 pm.

<sup>2</sup> Merchandise is unloaded on pallets and is stored in the walk-in refrigerator, it takes about 30 minutes to unload the truck. Semis typically deliver merchandise between 7 am and 10 pm.

<sup>3</sup> Pick up of contents of trash compactor, cardboard bailer, grocery compost, customer returns. Trucks typically deliver between 8 am – 5 pm..

<sup>4</sup> 2-axel truck are unloaded using a dolly, after which merchandise on dolly enters store through DSD door (located inside the outdoor storage area). Trucks / semis typically deliver between 7 am and 5 pm.



### 7.2.2 Semi-Truck Parking Lot Movements

In order to evaluate the noise impacts associated with semi-truck movements within the parking lot, reference noise level measurements were taken at the project site by Urban Crossroads Inc. on April 14, 2011. Trucks (semi and 2-axle) will use the internal truck route depicted on Exhibit 7-C to enter and exit the site. The trucks will approach the site from Goldenwest Street travelling south, enter the site at Driveway 4, travel westbound behind the store to the southwest corner of the parking lot approaching no closer than 70 feet from the western property line, and back into the truck well and the loading dock. To exit, drivers pull out of the delivery dock, make a U-turn near the southwest corner of the parking lot, drive behind the store, and exit the parking lot onto Goldenwest Street at Driveway 4. The measurement included the release of air brakes and reverse of direction. The unmitigated noise level was measured at 73.5 dBA Leq at a distance of 40 feet from the semi-truck with a maximum noise level of 85.4 dBA Lmax.

### 7.2.3 Semi-Truck Pass-by

In order to evaluate the noise impacts associated with semi-truck pass-bys along the southern property line, reference noise level measurements were taken at the southern property line of the project site by Urban Crossroads Inc. on April 14, 2011. The measurement included the exiting of the semi-truck along the southern driveway heading towards Goldenwest Street. The unmitigated noise level was measured at 69.5 dBA Leq at a distance of 30 feet from the semi-truck with a maximum noise level of 75.5 dBA Lmax.

### 7.2.4 Trash Compactors

In order to assess the impacts created by the trash compactors planned on the project site, reference noise levels were gathered from the Albertson's Shopping Center in Ladera Ranch, CA by Urban Crossroads Inc. on May 29, 2001. The unmitigated exterior noise levels were measured at 45.5 dBA Leq at a distance of 45 feet from the compactors.

### 7.2.5 Air Condenser Units

In order to assess the impacts created by the roof-top air conditioning units at the planned project site, reference noise levels were gathered from the Krack Technical Bulletin:

0607\_469 Rev 0509. The unmitigated exterior noise levels were measured at 73.0 dBA Leq at a distance of 10 feet.

#### 7.2.6 2-Axle Delivery Truck Activity

Two-axle trucks will park and deliver inside the fenced delivery area. These trucks will enter the fenced delivery area, park, and transfer merchandise to a dolly for hand-delivery to the DSD door located on the wall of the building at the southeast corner of the delivery area.

To evaluate 2-axle delivery truck unloading impacts, noise level measurements were taken by Urban Crossroads, Inc. on January 4, 2008. At a distance of 40 feet from the noise source, the reference noise levels associated with vehicle activity were measured at 60.8 dBA Leq with a maximum noise level of 84.9 dBA Lmax. The loud noise impacts are due mainly to the raising and lowering of sliding doors along with the placement of product on hand dollies or pallets.

### 7.3 Project Only Stationary Source Noise Impacts

Based upon the reference noise levels provided on Table 7-1, it is possible to project noise levels from the proposed commercial center to the adjacent noise-sensitive uses. The noise level projections were calculated based on the site plan showing the spatial relationship between the potential on-site noise sources and the noise receptor locations. Table 7-2 presents the expected noise level impacts associated with the proposed Huntington Beach Walmart commercial center to the neighboring noise receptor locations surrounding the project site. The stationary source noise level projections include, where appropriate, semi-truck loading dock activities, semi-truck movements, roof-top air condensers, 2-axle delivery truck activity and trash compactors. The expected noise level impacts also take into account the existing noise barriers, including a 12-foot high storage area barrier, 5.5-foot high property line barrier and 3-foot high parapet barrier on the rooftop. With the existing noise barriers, the project only noise levels at the receptor locations are expected to range from 62.1 to 64.0 dBA Leq and 68.1 to 74.3 dBA Lmax. The stationary source noise prediction calculations are included in Appendix 7.1.

### 7.4 Stationary Source Project Noise Level Impacts

To assess the commercial related noise level impacts, the stationary source noise level projections

Table 7-2

Project Only Stationary Source Impact Noise Level Projections

Receptor Location <sup>1</sup>	Noise Source	Distance From Source To Receptor (Feet)	Raw Noise Level (Leq dBA)	Raw Maximum Noise Level (dBA Lmax)	12' Loading Area Wall Noise Attenuation (dBA)	5.5' Property Line Wall Noise Attenuation (dBA)	3' Parrapet Wall Noise Attenuation (dBA)	Actual Noise Level (Leq dBA)	Actual Maximum Noise Level (dBA Lmax)
R1	Truck Enter / Exit	40'	67.0	73.0	0.0	-4.9	0.0	62.1	68.1
	Air Condenser	163'	48.8	48.8	0.0	0.0	-11.1	37.7	37.7
Overall Unmitigated Noise Level:			<b>67.1</b>	<b>73.0</b>				<b>62.1</b>	<b>68.1</b>
R2	Truck Enter / Exit	40'	67.0	73.0	0.0	-4.9	0.0	62.1	68.1
	2-Axel Unloading	90'	53.8	77.9	-10.3	0.0	0.0	43.5	67.6
	Trash Compactor	90'	38.5	38.5	-12.9	0.0	0.0	25.6	25.6
	Loading Dock	85'	64.7	72.7	0.0	-5.2	0.0	59.5	67.5
Overall Unmitigated Noise Level:			<b>69.0</b>	<b>75.9</b>				<b>64.0</b>	<b>72.5</b>
R3	Truck Movements	80'	67.5	79.4	0.0	-5.2	0.0	62.3	74.2
	2-Axel Unloading	197'	47.0	71.1	0.0	-5.4	0.0	41.6	65.7
	Trash Compactor	197'	31.7	31.7	-12.7	0.0	0.0	19.0	19.0
	Loading Dock	319'	53.2	61.2	0.0	-5.4	0.0	47.8	55.8
Overall Unmitigated Noise Level:			<b>67.7</b>	<b>79.5</b>				<b>62.5</b>	<b>74.3</b>

<sup>1</sup> See Exhibit 6-A for the noise receptor locations.

generated by the project were compared to standards established in the City of Huntington Beach Noise Ordinance.

As stated in Section 4.2 of this analysis, the City's Noise Ordinance sets an exterior noise level limit of 55 dBA for daytime hours at noise-sensitive residential uses. When activities are expected to have a duration of greater than one (1) but less than five (5) minutes, the exterior noise level standard is increased by 15 dBA Leq, thus making a level of 70 dBA Leq acceptable for a period less than five (5) minutes. When assessing the expected impacts of operational noise impacts, the maximum expected noise level is also analyzed. Based on conditions in the City's Noise Ordinance, the daytime exterior noise level of 55 dBA Leq is increased by 20 dBA for all impacts with a duration less than one (1) minute, therefore, the maximum allowable noise level for any period of time at the single-family homes is 75 dBA Lmax.

The combined noise level projections from stationary sources on the project site, as shown on Table 7-2, are expected to reach a level of 64.1 dBA Leq at the nearest receptors for operations less than five (5) minutes and 74.3 dBA Lmax for any period of time. These levels are below the City of Huntington Beach exterior noise level limits, and therefore operations at the City of Huntington Beach Walmart are expected to create a less-than-significant impacts to the adjacent noise sensitive uses.

## **8.0 OFF-SITE CONSTRUCTION RELATED NOISE IMPACTS**

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Construction noise represents a short-term impact on the ambient noise levels. Noise generated by construction equipment, including trucks, power tools, concrete mixers and portable generators can reach high levels. As mentioned in Section 4.0 of this analysis, the City of Huntington Beach Municipal Code exempts noise impacts from construction related activities that occur within the applicable noise hours of 7:00 a.m. and 8:00 p.m. on weekdays. Though the City of Huntington Beach Municipal Code exempts construction noise, the proposed project should incorporate the construction mitigation plan that was included in the approved City of Huntington Beach Beach and Edinger Corridors Specific Plan EIR. These measures which are listed below in Section 8.3, shall be implemented in order to assure a less than significant impact to the nearby noise-sensitive residents. The following construction noise impact analysis was completed to determine the expected noise levels at the surrounding land uses.

### **8.1 Construction Activities**

The project is expected to be completed within 7 months of initiation. Project construction is expected to consist of multiple phases including, demolition, building improvements, loading dock wing-wall replacement, trenching, transformer replacement, and parking lot grinding/overlay. For noise impact purposes, calculations were performed during each phase when activities are nearest to each receptor. Specific noise reductions associated with the existing 5.5-foot high property-line noise barrier during construction activities were calculated and are presented below.

### **8.2 Construction Noise Levels**

In January 2006, the Federal Highway Administration (FHWA) published a national database of construction equipment reference noise emission levels. The database, as shown in Appendix 8.1, provides a comprehensive list of the noise generating characteristics for specific types of construction equipment. In addition, the database provides an acoustical usage factor to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation.

Noise levels generated by heavy construction equipment can range from approximately 70 dBA to noise levels in excess of 100 dBA when measured at 50 feet. However, these noise levels

diminish with distance from the construction site at a rate of 6 dBA per doubling of distance. For example, a noise level of 78 dBA measured at 50 feet from the noise source to the receptor would be reduced to 72 dBA at 100 feet from the source to the receptor, and would be further reduced to 66 dBA at 200 feet from the source to the receptor. The location of the nearest noise receptors are shown in Exhibit 8-A and the existing property line barrier noise reduction printouts are show in Appendix 8.2. Noise levels generated during each phase are summarized below.

#### 8.2.1 Grind/Overlay Activities

During this phase, upgrades to the parking lot and a grind/overlay/restriping of the entire parking lot will occur. As such, removal of existing asphalt may occur, as a conservative measure, it is estimated that the entire parking lot may be removed and re-paved and re-striped.

Table 8-1 shows that during grind/overlay activities, noise levels at the property line, are expected to reach 90.0 dBA Leq when activities occur at the closest portion of the construction area.

#### 8.2.2 Physical Building Improvements

During physical building improvements, the existing structure will be repainted, primary entry doors will be replaced, and the westerly entry door where a furniture shop was located will be closed.

Table 8-2 shows that during physical building improvements, noise levels at the property lines are expected to range from 62.3 to 71.7 dBA Leq when activities occur at the closest portion of the construction area.

#### 8.2.3 Loading Dock Wing Wall Extension

In order to accommodate larger Walmart semi-trucks,, the existing loading dock wing wall is being extended to the west an additional 30 feet to shield the larger trucks while parked at the loading dock.

Tables 8-3 through 8-5 show that during the wing wall extension phase, noise levels at

EXHIBIT 8-A  
**CONSTRUCTION RELATED NOISE IMPACTS**



**LEGEND:**

- = 12.0 FOOT-HIGH TEMPORARY NOISE BLANKET PROVIDING A MINIMUM NOISE REDUCTION OF 15 dBA DURING ALL PHASES
- - - = 12.0 FOOT-HIGH TEMPORARY NOISE BLANKET PROVIDING A MINIMUM NOISE REDUCTION OF 15 dBA DURING GRIND/OVERLAY PHASE

\* NOTE: GRIND/OVERLAY ACTIVITIES CAN OCCUR OVER ENTIRE PORTION OF REAR PARKING LOT

**Table 8-1**

**Grind/Overlay Construction Noise Levels<sup>1</sup>**

Equipment Type	Quantity	Usage Factor <sup>2</sup>	Hours Of Operation <sup>3</sup>	Reference Noise Level @ 50 Feet (dBA)	Cumulative Level @ 50 Feet (dBA)
Asphalt Grinder	1	20%	1.6	90.0	83.0
Pavement Scarifier	1	20%	1.6	90.0	83.0
Pavement Truck	2	20%	1.6	81.0	77.0
Rollers	2	20%	1.6	80.0	76.0
Cumulative Noise Levels 50 Feet (dBA)					86.9

Receiver Location <sup>4</sup>	Distance To Property Line (In Feet) <sup>5</sup>	Reduction Due To Distance (dBA)	Noise Reduction Due To Property Line Wall (dBA)	Noise Reduction Due To Temporary Barrier (dBA)	Construction Noise Level (dBA)
Southern Property Line	20	8.0	-4.9	-15.0	75.0
Western Property Line	20	8.0	-4.9	-15.0	75.0

<sup>1</sup> Source: FHWA's Roadway Construction Noise Model, January 2006.

<sup>2</sup> Estimates the fraction of time each piece of equipment is operating at full power during a construction operation.

<sup>3</sup> Represents the actual hours of peak construction equipment activity out of a typical 8 hour workday.

<sup>4</sup> Receiver locations are presented on Exhibit 8-A

<sup>5</sup> Distance from the nearest point of construction activity to the nearest receiver.

**Table 8-2**

**Building Modification Noise Levels<sup>1</sup>**

Equipment Type	Quantity	Usage Factor <sup>2</sup>	Hours Of Operation <sup>3</sup>	Reference Noise Level @ 50 Feet (dBA)	Cumulative Level @ 50 Feet (dBA)	
Crane	1	16%	1.3	81.0	73.0	
Forklifts	1	20%	1.6	75.0	68.0	
Tractor/Loader/Backhoe	1	40%	3.2	80.0	76.0	
Cumulative Noise Levels 50 Feet (dBA)					78.2	

Receiver Location <sup>4</sup>	Distance To Property Line (In Feet) <sup>5</sup>	Noise Reduction Due To Distance (dBA)	Noise Reduction Due To Property Line Wall (dBA)	Noise Reduction Due To Temporary Barrier (dBA)	Construction Noise Level (dBA)
Southern Property Line	60	-1.6	-4.9	-15.0	56.7
Western Property Line	325	-16.3	-4.9	0.0	57.1

<sup>1</sup> Source: FHWA's Roadway Construction Noise Model, January 2006.

<sup>2</sup> Estimates the fraction of time each piece of equipment is operating at full power during a construction operation.

<sup>3</sup> Represents the actual hours of peak construction equipment activity out of a typical 8 hour workday.

<sup>4</sup> Distance from the nearest point of construction activity to the nearest receiver.

**Table 8-3**

**Wing Wall Demolition Construction Noise Levels<sup>1</sup>**

Equipment Type	Quantity	Usage Factor <sup>2</sup>	Hours Of Operation <sup>3</sup>	Reference Noise Level @ 50 Feet (dBA)	Cumulative Level @ 50 Feet (dBA)
Excavator	1	40%	3.2	81.0	77.0
Jackhammer	1	20%	1.6	89.0	82.0
Backhoe	1	40%	3.2	78.0	74.0
Dump Truck	1	40%	3.2	76.0	72.0
Concrete Saw	1	20%	1.6	90.0	83.0
Cumulative Noise Levels 50 Feet (dBA)					86.5

Receiver Location <sup>4</sup>	Distance To Property Line (In Feet) <sup>5</sup>	Noise Reduction Due To Distance (dBA)	Noise Reduction Due To Property Line Wall (dBA)	Noise Reduction Due To Temporary Barrier (dBA)	on Noise Level (dBA)
Southern Property Line	60	-1.6	-4.9	-15.0	65.1
Western Property Line	260	-14.3	-4.9	0.0	67.3

<sup>1</sup> Source: FHWA's Roadway Construction Noise Model, January 2006.

<sup>2</sup> Estimates the fraction of time each piece of equipment is operating at full power during a construction operation.

<sup>3</sup> Represents the actual hours of peak construction equipment activity out of a typical 8 hour workday.

<sup>4</sup> Receiver locations are presented on Exhibit 8-A

<sup>5</sup> Distance from the nearest point of construction activity to the nearest receiver.

**Table 8-4**

**Wing Wall Foundation Replacement Construction Noise Levels<sup>1</sup>**

Equipment Type	Quantity	Usage Factor <sup>2</sup>	Hours Of Operation <sup>3</sup>	Reference Noise Level @ 50 Feet (dBA)	Cumulative Level @ 50 Feet (dBA)
Bobcat	1	40%	3.2	79.0	75.0
Backhoe	1	40%	3.2	78.0	74.0
Concrete Truck	1	20%	1.6	81.0	74.0
Concrete Mixer	1	40%	3.2	79.0	75.0
Cumulative Noise Levels 50 Feet (dBA)					80.6

Receiver Location <sup>4</sup>	Distance To Property Line (In Feet) <sup>5</sup>	Reduction Due To Distance (dBA)	Noise Reduction Due To Property Line Wall (dBA)	Noise Reduction Due To Temporary Barrier (dBA)	Construction Noise Level (dBA)
Southern Property Line	60	-1.6	-4.9	-15.0	59.1
Western Property Line	260	-14.3	-4.9	0.0	61.3

<sup>1</sup> Source: FHWA's Roadway Construction Noise Model, January 2006.

<sup>2</sup> Estimates the fraction of time each piece of equipment is operating at full power during a construction operation.

<sup>3</sup> Represents the actual hours of peak construction equipment activity out of a typical 8 hour workday.

<sup>4</sup> Receiver locations are presented on Exhibit 8-A

<sup>5</sup> Distance from the nearest point of construction activity to the nearest receiver.

**Table 8-5**

**Wing Wall Construction Noise Levels<sup>1</sup>**

Equipment Type	Quantity	Usage Factor <sup>2</sup>	Hours Of Operation <sup>3</sup>	Reference Noise Level @ 50 Feet (dBA)	Cumulative Level @ 50 Feet (dBA)
Forklift	1	20%	1.6	75.0	68.0
Delivery Truck	1	40%	3.2	74.0	70.0
Concrete Truck	1	20%	1.6	81.0	74.0
Pavement Scarifier	1	20%	1.6	90.0	83.0
Cumulative Noise Levels 50 Feet (dBA)					83.8

Receiver Location <sup>4</sup>	Distance To Property Line (In Feet) <sup>5</sup>	Noise Reduction Due To Distance (dBA)	Noise Reduction Due To Property Line Wall (dBA)	Noise Reduction Due To Temporary Barrier (dBA)	Construction Noise Level (dBA)
Southern Property Line	60	-1.6	-4.9	-15.0	62.3
Western Property Line	260	-14.3	-4.9	0.0	64.6

<sup>1</sup> Source: FHWA's Roadway Construction Noise Model, January 2006.

<sup>2</sup> Estimates the fraction of time each piece of equipment is operating at full power during a construction operation.

<sup>3</sup> Represents the actual hours of peak construction equipment activity out of a typical 8 hour workday.

<sup>4</sup> Receiver locations are presented on Exhibit 8-A

<sup>5</sup> Distance from the nearest point of construction activity to the nearest receiver.

the property lines are expected to range from 61.3 to 80.1 dBA Leq.

#### 8.2.4 Trenching Activities

In order to add utility lines on the southern portion of the project site, trenching will occur approximately 10 feet south of the building façade in the existing pavement.

Table 8-6 shows that during trenching activities, noise levels at the property lines are expected to range from 67.6 to 81.9 dBA Leq when activities occur at the closest portion of the construction area.

#### 8.2.5 Transformer Replacement

In addition to new utility lines, the existing transformer on the southeast portion of the project site will be replaced.

Table 8-7 shows that during the transformer replacement, noise levels at the property lines are expected to range from 49.7 to 79.6 dBA Leq.

### 8.3 Construction Noise Impacts

Under Section 8.40.090(d) (Special Provisions) of Chapter 8.40 of the City's Municipal Code, noise sources associated with construction are exempt from the requirements of the Municipal Code, provided that the project developer has acquired the proper permit(s) from the City and construction activities do not occur between the hours of 8:00 p.m. and 7:00 a.m. on weekdays, including Saturday, or at any time on Sunday or a federal holiday. In addition to the City of Huntington Beach Municipal Code, the project will also comply with MM 4.9-1 of the City of Huntington Beach Beach and Edinger Corridors Specific Plan EIR mitigation measures.

- Two weeks prior to the commencement of construction, notification must be provided to surrounding land uses within 300 feet of a project site disclosing the construction schedule, including the various types of activities that would be occurring throughout the duration of the construction period.
- Ensure that construction equipment is properly muffled according to industry standards and be in good working condition.

**Table 8-6**

**Trenching Construction Noise Levels<sup>1</sup>**

Equipment Type	Quantity	Usage Factor <sup>2</sup>	Hours Of Operation <sup>3</sup>	Reference Noise Level @ 50 Feet (dBA)	Cumulative Level @ 50 Feet (dBA)
Backhoe	1	40%	3.2	78.0	74.0
Jackhammer	1	20%	1.6	89.0	82.0
Concrete Saw	1	20%	1.6	90.0	83.0
Small Compactor	1	20%	1.6	83.0	76.0
Delivery Truck	1	40%	3.2	74.0	70.0
Roller	1	20%	1.6	80.0	73.0
Paver	1	50%	4.0	77.0	74.0
Cumulative Noise Levels 50 Feet (dBA)					86.8

Receiver Location <sup>4</sup>	Distance To Property Line (In Feet) <sup>5</sup>	Reduction Due To Distance (dBA)	Noise Reduction Due To Property Line Wall (dBA)	Noise Reduction Due To Temporary Barrier (dBA)	Construction Noise Level (dBA)
Southern Property Line	50	0.0	-4.9	-15.0	66.9
Western Property Line	325	-16.3	-4.9	0.0	65.6

<sup>1</sup> Source: FHWA's Roadway Construction Noise Model, January 2006.

<sup>2</sup> Estimates the fraction of time each piece of equipment is operating at full power during a construction operation.

<sup>3</sup> Represents the actual hours of peak construction equipment activity out of a typical 8 hour workday.

<sup>4</sup> Receiver locations are presented on Exhibit 8-A

<sup>5</sup> Distance from the nearest point of construction activity to the nearest receiver.

**Table 8-7**

**Transformer Replacement Construction Noise Levels<sup>1</sup>**

Equipment Type	Quantity	Usage Factor <sup>2</sup>	Hours Of Operation <sup>3</sup>	Reference Noise Level @ 50 Feet (dBA)	Cumulative Level @ 50 Feet (dBA)	
Crane	1	16%	1.3	81.0	73.0	
Backhoe	1	40%	3.2	78.0	74.0	
Cumulative Noise Levels 50 Feet (dBA)					76.6	

Receiver Location	Distance To Property Line (In Feet) <sup>4</sup>	Reduction Due To Distance	Noise Reduction Due To Property Line Wall (dBA)	Noise Reduction Due To Temporary Barrier (dBA)	Construction Noise Level (dBA)
Southern Property Line	20	8.0	-4.9	-15.0	64.6
Western Property Line	630	-22.0	-4.9	0.0	49.7

<sup>1</sup> Source: FHWA's Roadway Construction Noise Model, January 2006.

<sup>2</sup> Estimates the fraction of time each piece of equipment is operating at full power during a construction operation.

<sup>3</sup> Represents the actual hours of peak construction equipment activity out of a typical 8 hour workday.

<sup>4</sup> Distance from the nearest point of construction activity to the nearest receiver.

- Place noise-generating construction equipment and locate construction staging areas away from sensitive uses, where feasible.
- Schedule high noise-producing activities between the hours of 8:00 a.m. and 5:00 p.m. to minimize disruption on sensitive uses, Monday through Saturday.
- Implement noise attenuation measures, which may include, but are not limited to, temporary noise barriers or noise blankets around stationary construction noise sources.
- Use electric air compressors and similar power tools rather than diesel equipment, where feasible.
- Construction related equipment, including heavy duty equipment, motor vehicles, and portable equipment, shall be turned off when not in use for more than 10 minutes.
- Construction hours, allowable workdays, and the phone number of the job superintendent shall be clearly posted at all construction entrances to allow for surrounding owners and residents to contact the job superintendent. If the City or the job superintendent receives a complaint, the superintendent shall investigate, take appropriate corrective action, and report the action taken to the reporting party.
- Contract specifications shall be included in the proposed project construction documents, which shall be received by the City prior to issuance of a grading permit.

Construction noise is temporary, intermittent and of short duration, and will not present any long-term impacts. While the noise level impacts presented for each Phase are a “worst-case” scenario and may at times be audible over existing traffic related noise level impacts shown in Section 6.0, these levels are not expected to be of a continuous nature. As shown in Tables 8-1 through 8-7, with a 12’-foot high temporary noise barrier providing a minimum noise attenuation of 15 dBA, consistent with the mitigation program above, along the southern property line for all phases and along the western property line during grind/overlay operations, construction related noise level impacts will remain below the City of Huntington Beach maximum noise level for stationary sources of 75 dBA Lmax.

#### 8.4 Construction Vibration Impacts

Construction activity can result in varying degrees of ground vibration, depending on the equipment and methods used, distance to the affected structures and soil type. Construction vibration is generally associated with pile driving and rock blasting. Occasionally large bulldozers and loaded trucks can cause perceptible vibration levels at close proximity. According to the Transportation and Construction-Induced Vibration Guidance Manual prepared for Caltrans, ground-borne vibration from construction activities and equipment such as such as D-8 and D-9 Caterpillars bulldozers, earthmovers and haul trucks at distances of 10 feet do not create vibration amplitudes that causes structural damage to nearby structures. Since the proposed Project is not expected to employ any pile driving, rock blasting or heaving grading equipment and with residential uses located greater than 10 feet from construction activities, impacts from groundborne vibration are anticipated to be less-than-significant.