IV. ENVIRONMENTAL IMPACT ANALYSIS
G. NOISE

1. INTRODUCTION

The section addresses potential noise and vibration impacts associated with the proposed project. The analysis describes the existing noise environment within the project area, estimates future noise and vibration levels at surrounding land uses resulting from construction and operation of the proposed project, identifies the potential for significant impacts, and provides, where feasible, mitigation measures to address significant impacts. The analysis also evaluates the compatibility of the project's proposed residential use with the site's future noise environment. In addition, an evaluation of the potential cumulative noise impacts of the proposed project and related projects is also provided. Noise calculation and data sheets for the project are included in Appendix D of this Draft EIR.

2. ENVIRONMENTAL SETTING

a. Noise and Vibration Basics

(1) Noise

Noise is usually defined as sound that is undesirable because it interferes with speech/ communication and hearing, or is otherwise annoying (unwanted sound). The decibel (dB) is a conventional unit for measuring the amplitude of sound because it accounts for the large variations in sound pressure amplitude and reflects the way people perceive changes in sound amplitude.[1] The human hearing system is not equally sensitive to sound at all frequencies. Therefore, to approximate this human frequency-dependent response, the A-weighted system is used to adjust measured sound levels (dBA). The term "A-weighted" refers to a filtering of the noise signal in a manner corresponding to the way the human ear perceives sound.

People judge the relative magnitude of sound sensation by subjective terms such as "loudness" or "noisiness." A change in sound level of 3 dB is considered "just perceptible," a

[1] *All sound levels, measured in decibel (dB), in this study are relative to $2x10^{-5}$ N/m^2.*

change in sound level of 5 dB is considered "clearly noticeable," and a change of 10 dB is recognized as "twice as loud."[2]

Community noise levels usually change continuously during the day. The equivalent sound level (L_{eq}) is normally used to describe community noise. The L_{eq} is the equivalent steady-state A-weighted sound level that would contain the same acoustical energy as the time-varying A-weighted sound level during the same time interval. For intermittent noise sources, the maximum noise level (L_{max}) is normally used to represent the maximum noise level measured during the measurement.

To assess noise levels over a given 24-hour time period, the Community Noise Equivalent Level (CNEL) descriptor is used. CNEL is the time average of all A-weighted sound levels for a 24-hour period with a 10 dBA adjustment (upward) added to the sound levels which occur in the night (10 P.M. to 7 A.M.) and a 5 dBA adjustment (upward) added to the sound levels which occur in the evening (7 P.M. to 10 P.M.). These penalties attempt to account for increased human sensitivity to noise during the quieter nighttime periods, particularly where sleep is the most probable activity. CNEL has been adopted by the State of California for development of the community noise element of general plans.[3]

(2) Ground-Borne Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. The response of humans, buildings, and equipment to vibration is more accurately described using velocity or acceleration.[4] Vibration amplitudes are usually described as either peak, as in peak particle velocity (PPV), or root-mean-square (RMS). The peak level represents the maximum instantaneous peak of the vibration signal and the RMS represents the average of the squared amplitude of the vibration signal. In addition, vibrations can be measured in the vertical, horizontal longitudinal, or horizontal transverse directions. Ground vibrations are most often greatest in the vertical direction.[5] Therefore, the analysis of ground-borne vibration associated with the proposed project is addressed in the vertical direction.

---

[2] *Engineering Noise Control, Bies & Hansen, 1988.*

[3] *State of California, General Plan Guidelines, 2002.*

[4] *Federal Transit Authority, Transit Noise and Vibration Impact Assessment, Final Report, page 7-3, April 1995.*

[5] *California Department of Transportation (Caltrans), Transportation Related Earthborne Vibrations, page 4, February 2002.*

b. Regulatory Framework

Many government agencies have established noise regulations and policies to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise and ground-borne vibration. The City of Long Beach has adopted a number of policies, which are based in part on federal and State regulations and are intended to control, minimize or mitigate environmental noise effects. The regulations and policies that are relevant to project construction and operation noise are discussed below.

(1) Applicable City of Long Beach Regulations and Policies

The Noise Element of the City of Long Beach General Plan includes a number of goals for land use planning purposes. The City also has policies and regulations to control unnecessary, excessive and annoying noise and vibration, as cited by the Long Beach Municipal Code (LBMC) Chapter 8.80, *Noise*. These regulations and plans are further described below.

(a) Noise Element

The Noise Element of the City of Long Beach General Plan includes several general goals that reflect the City's desire to attain a healthier and quieter environment for all of its citizens while maintaining a reasonable level of economic progress and development. These goals regard improvement and preservation of the unique and fine qualities of Long Beach, development of a well-balanced community, improvement of the urban environment, development of noise policy guidelines, and development of specific neighborhood noise plans.

The Noise Element suggests the following acceptable construction noise levels, where an average maximum noise level outside the nearest building at the window of an occupied room closest to the site boundary, should not exceed:

- 70 dBA in areas away from main roads and sources of industrial noise; and
- 75 dBA in areas near main roads and heavy industries.

(b) City of Long Beach Noise Regulation

The City of Long Beach Noise Regulation is provided in Chapter 8.80 of the Long Beach Municipal Code (LBMC). Section 8.80.140 of the LBMC provides procedures for the measurement of the sound level of noise sources. The LBMC provides exterior/interior noise standards and specific noise restrictions, exemptions, variances for noise sources. Several of these requirements are applicable to the proposed project and are discussed below.

Section 8.80.150 – Exterior Noise Limits – Sound levels by receiving land use district.

A. The noise standards for the various land use districts identified by the noise control office as presented in Table IV.G-1 on page IV.G-5 shall, unless otherwise specifically indicated, apply to all such property within a designated district.

B. No person shall operate or cause to be operated any source of sound at any location within the incorporated limits of the city or allow the creation of any noise on property owned, leased, occupied, or otherwise controlled by such person, which causes the noise level when measured from any other property, either incorporated or unincorporated, to exceed:

1. The noise standard for that land use district as specified in Table IV.G-1 for a cumulative period of more than 30 minutes in any hour;

2. The noise standard plus 5 dB for a cumulative period of more than 15 minutes in any hour;

3. The noise standard plus 10 dB for a cumulative period of more than five minutes in any hour;

4. The noise standard plus 15 dB for a cumulative period of more than one minute in any hour; or

5. The noise standard plus 20 dB or the maximum measured ambient, for any period of time.

C. If the measured ambient level exceeds that permissible within any of the first four noise limit categories in subsection B of this section, the allowable noise exposure standard shall be increased in 5 dB increments in each category as appropriate to encompass or reflect the ambient noise level. In the event the ambient noise level exceeds the fifth noise limit category in subsection B of this section, the maximum allowable noise level under said category shall be increased to reflect the maximum ambient noise level.

Section 8.80.170 – Interior Noise Limits – Maximum sound levels.

A. The interior noise standards for various land use districts as presented in Table IV.G-2 on page IV.G-6 shall apply, unless otherwise specially indicated, within structures located in designated zones with windows in their normal seasonal configuration.

Table IV.G-1

Exterior Noise Limit

Receiving Land Use District*	Time Period	Noise Level** (dBA)
District One	Night: 10 P.M. to 7 A.M.	45
	Day: 7 A.M. to 10 P.M.	50
District Two	Night: 10 P.M. to 7 A.M.	55
	Day: 7 A.M. to 10 P.M.	60
District Three	Anytime	65
District Four	Anytime	70
District Five	Regulated by other agencies and laws	

** District One: Predominantly residential with other land use types also present.*

District Two: Predominantly commercial with other land use types also present.

District Three and Four: Predominantly industrial with other land types use also present.

District Five: Airport, freeways and waterways regulated by other agencies

***Districts Three and Four limits are intended primarily for use at their boundaries rather than for noise control within those districts.*

****Background Noise Correction*

Difference between total noise and background noise alone (decibels)	*Amount to be subtracted from*
6-8	*1*
9-10	*0.5*

*****In the event that alleged offensive noise contains a steady audible tone such as a whine, screech, or hum, or is a repetitive noise such as hammering or riveting or contains music or speech conveying informational content, the standard limits set forth in this table shall be reduced by 5 dB.*

Source: LBMC, Section 8.80.160

B. No person shall operate or cause to be operated, any source of sound indoor at any location within the incorporated limits of the city or allow the creation of any indoor noise that causes the noise level when measured inside the receiving dwelling unit to exceed.

1. The noise standard for that land use district as specified in Table IV.G-2 for a cumulative period of more than 5 minutes in any hour; or

2. The noise standard plus 5 dB for a cumulative period of more than 1 minute in any hour; or

3. The noise standard plus 10 dB or the maximum measured ambient, for any period of time.

Table IV.G-2

Interior Noise Limit

Receiving Land Use District	Type of Land Use	Time Period	Allowable Interior Noise Level (dBA)
All	Residential	10 P.M. to 7 A.M.	35
		7 A.M. to 10 P.M.	45
All	School	7 A.M. to 10 P.M. (while school is in session)	45
Hospital, designated quiet zones and noise sensitive zones		Anytime	40

Source: LBMC, Section 8.80.170

C. If the measured indoor ambient level exceeds that permissible within any of the first two noise limit categories in this section, the allowable noise exposure standard shall be increased in 5 dB increments in each category as appropriate to reflect the indoor ambient noise level. In the event, the indoor ambient noise level exceeds the third noise limit category, the maximum allowable indoor noise level under said category shall be increased to, reflect the maximum indoor ambient noise level.

Section 8.80.200 – Noise disturbances-Acts specified.

Only those subsections applicable to the proposed project are described below.

E. Loading and unloading. Loading, unloading, opening, closing or other handling of boxes, crates, containers, building materials, garbage cans, or similar objects between the hours of 10 P.M. and 7 A.M. the following day in such a manner as to cause a noise disturbance across a residential real property line or at any time to violate the provisions of sections 8.80.150 and 8.80.170;

N. Air-conditioning or air refrigerating equipment. Operating or permitting the operation of any air-conditioning or air refrigerating equipment in such a manner as to exceed any of the following sound levels shown in Table IV.G-3 on page IV.G-7 measured as specified in the American society of heating, refrigeration and air conditioning engineers' code of recommended practices.

Table IV.G-3

Air-conditioning Equipment Noise Limits

Measurement Location	Units Installed On Or After 1-1-80, dB(A)
Any point on neighboring property line, 5 feet above grade level, no closer than 3 feet from any wall	55
Center of neighboring patio 5 feet above grade level, no closer than 3 feet from any wall	50
Outside the neighboring living area window nearest the equipment location, not more than 3 feet from the window opening, but at least 3 feet from any other surface	50

Source: LBMC, Section 8.80.200

Section 8.80.202 – Construction activity-Noise regulations.

The following regulations shall apply only to construction activities where a building or other related permit is required or was issued by the building official and shall not apply to any construction activities within the Long Beach harbor district as established pursuant to section 201 of the city charter.

A. Weekdays and federal holidays. No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition or any other related building activity which produce loud or unusual noise which annoys or disturbs a reasonable person of normal sensitivity between the hours of 7 P.M. and 7 A.M. the following day on weekdays, except for emergency work authorized by the building official. For purposes of this section, a federal holiday shall be considered a weekday.

B. Saturday. No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition or any other related building activity which produce loud or unusual noise which annoys or disturbs a reasonable person of normal sensitivity between the hours of 7 P.M. on Friday and 9 A.M. on Saturday and after 6 P.M. on Saturday, except for emergency work authorized by the building official.

C. Sundays. No person shall operate or permit the operation of any tools or equipment used for construction, alteration, repair, remodeling, drilling, demolition or any other related building activity at any time on Sunday, except for emergency work authorized by the building official or except for work authorized by permit issued by the noise control office.

(c) California Department of Health Services

The California Department of Health Services establishes noise criteria for various land uses. Table IV.G-4 on page IV.G-9 identifies the typically acceptable limits of noise exposure for various land use categories. Table IV.G-4 shows that the noise exposure for a residential land use is "normally acceptable" when the CNEL at exterior residential locations is equal to or below 60 dBA, "conditionally acceptable" when the CNEL is between 60 to 70 dBA, "normally unacceptable" when the CNEL is between 70 to 75 dBA, and "clearly unacceptable" when the CNEL is greater than 75 dBA. For office and industrial land uses, a CNEL of 75 dBA is considered "normally acceptable," while a CNEL level of greater than 75 dBA is considered "normally unacceptable." In general, CNEL increases of less than 3 dBA are not considered an adverse change in the environment, while an increase of between 3 and 5 dBA is generally considered to be an adverse impact. An increase in CNEL of 5 dBA or more is generally considered a significant impact. These guidelines apply to noise sources such as vehicular traffic.

(2) Ground-Borne Vibration

Policies and standards related to ground-borne vibration are provided in Section 8.80.200 of the LBMC, where operating or permitting the operation of any device that creates a vibration which is above the vibration perception threshold of an individual at or beyond the property boundary of the source if on private property, or at 150 feet from the source if on a public space or public right-of-way, is a code violation. The Ordinance defines the vibration perception threshold as the minimal ground- or structure-borne vibrational motion necessary to cause a normal person to be aware of the vibration by such direct means as, but not limited to, sensation by touch or visual observation of moving objects. The perception threshold is presumed to be 0.001 g's in the frequency range 0-30 hertz and 0.003 g's in the frequency range between 30-100 hertz. The minimum vibration velocity of 0.001 g's (0 – 30 Hz) and 0.003 g's (30 – 100 Hz) would be 0.002 inches per second (RMS).

c. Existing Conditions

(1) Noise-Sensitive Receptor Locations

Some land uses are considered more sensitive to intrusive noise than others due to the amount of noise exposure and the types of activities typically involved at the receptor location. Specifically, residences, schools, libraries, religious institutions, hospitals and nursing homes are generally more sensitive to noise than are commercial and industrial land uses. Existing noise sensitive uses within several hundred feet of the project site are shown in Figure IV.G-1 on page IV.G-10, and include the following:

Table IV.G-4

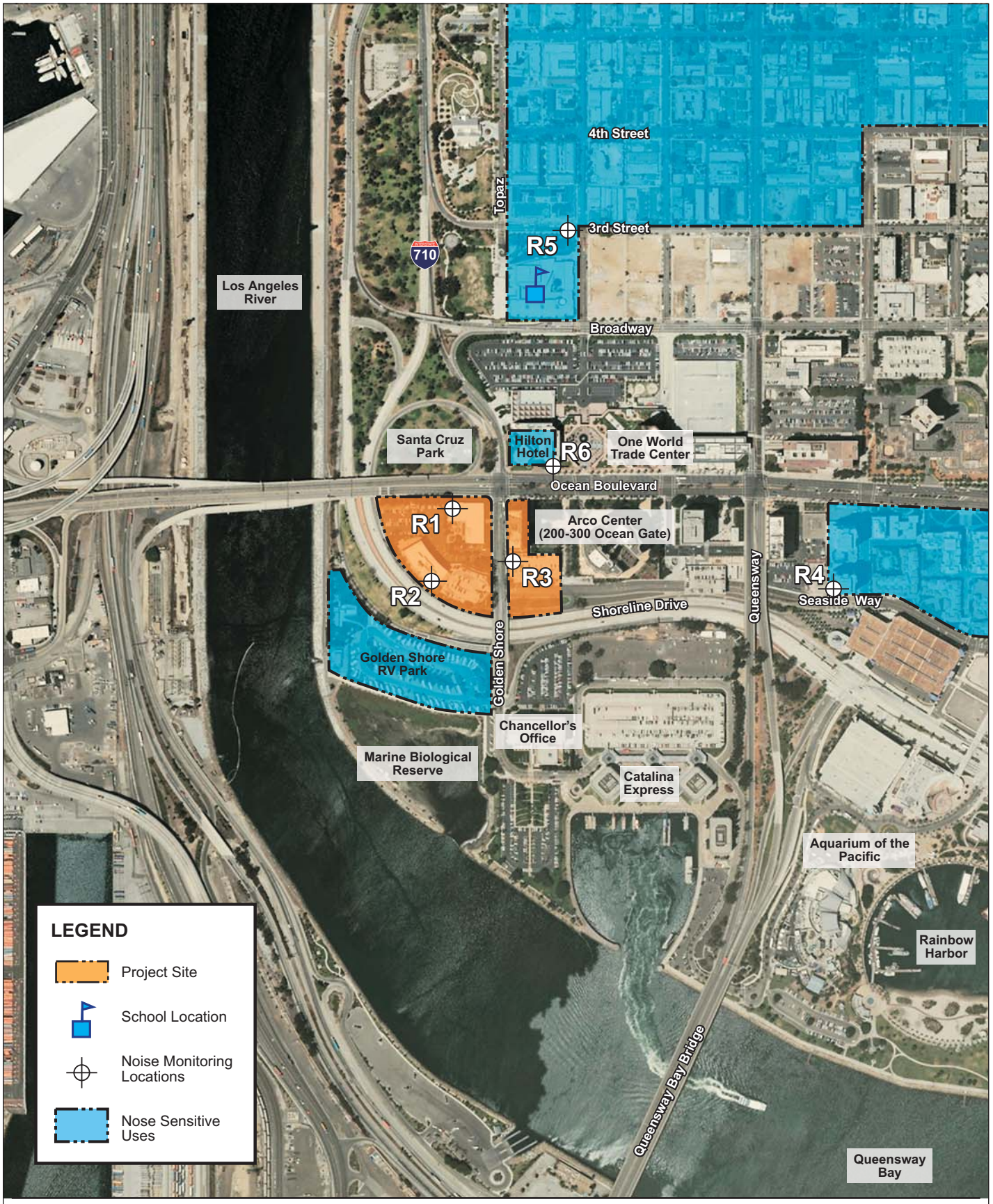
Land Use Compatibility for Community Noise Sources

Land Use Category	*Noise Exposure (L_{dn} or CNEL, dBA)*						
	55	*60*	*65*	*70*	*75*	*80*	
Residential Low Density Single Family, Duplex							
Residential Multiple Family							
Transient Lodging – Motel, Hotel							
School, Libraries, Places of Worship, Hospitals, Nursing Homes							
Auditoriums, Concert Halls, Amphitheaters							
Outdoor Spectator Sports							
Playground, Parks, Neighborhood Park							
Golf Courses, Riding Stables, Water Recreation, Cemeteries							
Office Buildings, Business Commercial and Professional							
Industrial, Manufacturing, Utilities							

	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.
	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 included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning, will normally suffice.
	NORMALLY UNACCEPTABLE: New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirement must be made and needed noise insulation features included in the design.
	CLEARLY UNACCEPTABLE: New construction or development should generally not be undertaken.

Source: Guidelines for the Preparation and content of the Noise Element of the General Plan, California Department of Health Services, in coordination with the office of Planning and Research.

- North of Project Site: The nearest noise sensitive use, a hotel, is located in the northeast corner of Ocean Boulevard and Golden Shore approximately 150 feet north of the proposed project site. A school is located on Broadway approximately 800 feet



PCR

Source: PCR Services Corporation, 2008; Google Earth, 2008.

Figure IV.G-1
Noise Monitoring Locations and Existing Noise Sensitive Uses

north of the project site. Single- and multifamily residential uses are located along 3rd Street approximately 1,200 feet north of the project site.

- South of Project Site: Golden Shore RV Park is located on Golden Shore approximately 200 feet south of the project site.

- East of Project Site: Multi-family residential uses are located along Seaside Way approximately 1,200 feet east of the project site.

The measurement distances provided above (Source: Google Earth map) represent the shortest "property line to property line" distance between the project site and each location and do not account for intervening structures or the actual location of the sensitive receptor on the specific property.

(2) Ambient Noise Levels

The predominant noise source surrounding the project site is roadway noise from traffic on Ocean Boulevard to the north, Shoreline Drive to the south and west, and Golden Shore to the east. Secondary noise sources include existing general commercial activities, loading dock/delivery truck activities, trash compaction, and refuse service activities.

Ambient noise measurements were made at six locations, representing the project site and existing noise receptors in the vicinity of the project site, identified in Figure IV.G-1 on page IV.G-10 as R1 through R6. Descriptions of the measurement locations are described below:

- Measurement Location R1: The sound level meter was placed on the roof of an office building located at 1 Golden Shore Boulevard, north of the project site. Location R1 represents the existing general noise environment at the project site.

- Measurement Location R2: The sound level meter was placed at the southwestern corner of the existing office buildings located at 11 Golden Shore, on the project site near Shoreline Drive. This measurement location is also representative of the existing noise environment of the project site and RV park uses on the west side of Golden Shore.

- Measurement Location R3: The sound level meter was placed at the eastern sidewalk of Golden Shore near the existing office building located at 400 Oceangate, east of the project site. Location R3 also represents the noise environment of the project site.

- Measurement Location R4: The sound level meter was placed in front of the existing multi-family residential tower on northern sidewalk of Seaside Way. This measurement location represents the existing noise environment of the multi-family residential areas along Seaside Way approximately 1,200 feet (actual distance

between the noise monitoring equipment location and the project's nearest property line) east of the project site.

- Measurement Location R5: The sound level meter was placed in front of a multi-family residential loft, across from an elementary school on 3rd Street. Location R5 represents the existing noise environment of multi-family residential uses and school uses along 3rd Street.

- Measurement Location R6: The sound level meter was placed in front of the hotel on the north side of Ocean Boulevard. This measurement location represents the existing noise environment of the hotel uses on Ocean Boulevard.

Ambient sound measurements were conducted from Thursday, November 20, through Monday, November 24, 2008, to characterize the existing noise environment in the project vicinity. In accordance with the City's noise standards, a series of noise readings were recorded for a minimum of 30 minutes.[6] A 30-minute measurement is a reasonable duration for sampling ambient noise levels where street traffic is the dominant source (typical of urban noise environment), as traffic noise generally does not vary significantly within 30 minutes. Long-term (72-hour) measurements including weekdays and weekends were conducted at locations R1 and R2. One short-term (30-minute) measurement was taken during the weekday daytime hours at each of four locations R3, R4, R5, and R6.

The ambient noise measurements were conducted using Larson-Davis 820 Precision Integrated Sound Level Meter (SLM). The Larson-Davis 820 SLM is a Type 1 standard instrument as defined in the American National Standard Institute (ANSI) S1.4. All instruments were calibrated and operated according to the applicable manufacturer specification. In accordance with the City's noise standards (LBMC Section 8.80.140) and with industry practice, the microphone was placed at a height of 5 feet above the local grade at locations R3 through R6. At location R1, the microphone was placed at 5 feet above the roof of the existing office building (approximately 35 feet in height) and at location R2, the microphone was place at 8 feet above the podium of the existing office building (approximately 30 feet above Shoreline Drive).

A summary of noise measurement data is provided in Table IV.G-5 on page IV.G-13. As shown in Table IV.G-5, the existing ambient noise levels at the nearby noise sensitive receptors, single- and multi-family residential areas, exceed the City's exterior noise limits of 50 dBA during the day and 45 dBA at night as shown in Table IV.G-1. In addition, the measured and calculated CNEL levels at the project site ranged from 69 CNEL at the north project boundary to 73 CNEL at the southwest boundary. Based on the Land Use Compatibility for Community

[6] *Long Beach Municipal Code, Section 8.80.160.*

Table IV.G-5

Summary of Ambient Noise Measurements

Measurement Location and Date/ Day of Week	Measured Ambient Noise Levels [a] (dBA) Daytime (7 A.M. to 10 P.M.) Hourly L_{eq}	Nighttime (10 P.M. to 7 A.M.) Hourly L_{eq}	24-Hour Average, CNEL
R1			
11/20/08 (partial 13 hours)/ Thursday	59 – 71	54 – 57	N/A
11/21/08 (full 24 hours)/ Friday	65 – 70	55 – 66	70
11/22/08 (full 24 hours)/ Saturday	63 – 68	60 – 64	70
11/23/08 (full 24 hours)/ Sunday	63 – 68	57 – 63	69
R2			
11/20/08 (partial 13 hours)/ Thursday	67 – 69	65 – 67	N/A
11/21/08 (full 24 hours)/ Friday	66 – 69	59 – 68	73
11/22/08 (full 24 hours)/ Saturday	64 – 69	60 – 69	73
11/23/08 (full 24 hours)/ Sunday	63 – 70	58 – 67	71
R3			
11/20/08 / Thursday Daytime	65	N/A	N/A
R4			
11/20/08 / Thursday Daytime	62	N/A	N/A
R5			
11/20/08 / Thursday Daytime	65	N/A	N/A
R6			
11/20/08 / Thursday Daytime	70	N/A	N/A

[a] *Detailed measured noise data, including hourly L_{eq} levels, are included in Appendix D of this Draft EIR.*

Source: PCR Services Corporation, 2009.

Noise criteria provided in Table IV.G-4, this noise environment is generally considered "Normally Unacceptable" for multi-family residential/hotel. Therefore, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design for any new residential development.

To further characterize the project area's noise environment, the CNEL noise levels generated by existing traffic on local roadways was calculated using a noise prediction model developed based on calculation methodologies provided in the Caltrans Technical Noise Supplement (TeNS) document and traffic data provided by the project traffic consultant.[7] The

[7] *California Department of Transportation (Caltrans) Technical Noise Supplement (TeNS), 1998.*

roadway noise calculation procedures provided in the Caltrans TeNS are consistent with Federal Highway Administration RD-77-108 roadway noise prediction methodologies. This methodology, considered an industry standard, allows for the definition of roadway configurations, barrier information (if any), and receiver locations.

A traffic model calibration test was performed to establish the noise prediction model's accuracy. Road segments included in the calibration test were Golden Shore (R3), 3rd Street (R5), and Ocean Boulevard (R6). At each noted location, a minimum of 15-minute noise recording was made concurrent with logging of actual traffic volumes and auto fleet mix (i.e., standard automobile, medium duty truck, or heavy duty truck). Traffic noise levels were calculated based on actual traffic counts which were entered into the noise model along with the observed speed, lane configuration, and distance from measurement position to the roadway. The results of the traffic noise model calibration are provided in Table IV.G-6 on page IV.G-15. As indicated therein, the noise model results are within less than 1 dBA of the measured noise levels, which is within the industry standard tolerance of the noise prediction model. Therefore, the project traffic noise prediction model is considered accurate and specific to the project conditions.

The traffic noise prediction model calculates the 24-hour CNEL noise levels based on specific information including; Average Daily Traffic Volume (ADT), percentages of day, evening and nighttime traffic volumes relative to ADT, vehicle speed and distance between the noise receptor and the roadway. Vehicle mix/distribution information used in the noise calculations are shown in Table IV.G-7 on page IV.G-15. Sixteen roadway segments were selected to analyze the existing traffic noise levels. The analyzed roadway segments were selected based on the proximity to noise sensitive uses along the roadway segments and potential increase in traffic volume from the proposed project. As indicated in Table IV.G-8 on page IV.G-16, the calculated CNEL (at a distance of 25 feet from the roadway right-of-way) from existing traffic volumes on the analyzed roadway segments ranged from 56.8.0 dBA to 71.6 dBA. These CNEL noise levels are based on surface-street traffic volumes only. The calculated traffic noise levels are generally consistent with the measured ambient noise levels (provided in Table VI.G-5). As shown therein, noise levels at the nearest sensitive receptors to each analyzed roadway segment exceed normally acceptable noise levels at Single- Family Residential areas, i.e. 60 dBA CNEL or lower or at Multi- Family Residential areas, i.e. 65 dBA CNEL or lower, except at multi- family residential uses along Chestnut Place and Seaside Way.

(3) Vibration-Sensitive Receptor Locations

Typically, ground-borne vibration generated by man-made activities (i.e., rail and roadway traffics, mechanical equipment and typical construction equipment) diminishes rapidly as the distance from the source of the vibration becomes greater. FTA uses a screening distance

Table IV.G-6

Traffic Noise Model Calibration Results

Road Segment/ Noise Measurements Locations	Traffic Counts during Noise Readings, [a] 15-minutes: Autos	Medium Trucks [b]	Heavy Trucks [c]	Measured Traffic Noise Levels, L_{eq} (dBA)	Project Traffic Noise Model Predicted Noise Levels, L_{eq} (dBA)	Difference between Predicted and Measured Levels, dBA
Golden Shore / R3	65	3	3	64.9 [d]	64.2	-0.7
3rd Street / R5	137	5	0	64.9 [e]	64.5	-0.4
Ocean Boulevard / R6	330	17	7	70.4 [d]	70.6	0.2

[a] *Traffic counts during noise measurement on November 20th 2008 between 10 A.M. and 12 P.M.*
[b] *Medium Truck – 2 axle trucks based on field observations.*
[c] *Heavy Truck – 3 or more axles trucks and buses based on field observations.*

Source: PCR Services Corporation, 2009.

Table IV.G-7

Vehicle Mix for Traffic Noise Model

Vehicle Type	Percent of ADT, (%): Daytime hours (7 A.M. to 7 P.M.)	Evening Hours (7 P.M. to 10 P.M.)	Nighttime Hours (10 P.M. to 7 A.M.)	Total % of ADT per Vehicle Type
Automobile	77.6	9.7	9.7	97.0
Medium Truck[a]	1.6	0.2	0.2	2.0
Heavy Truck[b]	0.8	0.1	0.1	1.0

[a] *Medium Truck – 2 axle trucks based on field observations.*
[b] *Heavy Truck – 3 or more axles trucks and buses based on field observations.*

Source: PCR Services Corporation, 2009.

of 100 feet and 50 feet for high vibration sensitive buildings (e.g., hospital with vibration sensitive equipment) and residential uses, respectively. With respect to structures, vibration-sensitive receptors generally include historic buildings, buildings in poor structural condition, and uses that require precision instruments (e.g., hospital operating rooms or scientific research laboratories). No vibration-sensitive structures such as historic buildings and fragile buildings or uses such as hospital operation rooms and scientific laboratories are currently present within 100 feet of the project site where they could potentially be affected by the proposed project. There are no residential uses located within the applicable screening distance (50 feet).

Table IV.G-8

Predicted Existing Vehicular Traffic Noise Levels

Roadway Segment	Adjacent Land Use	Existing Noise Exposure Compatibility Category [b]	Existing CNEL (dBA) at Referenced Distances from Roadway Right-of-Way [a]	
			25 Feet	50 Feet
Golden Shore				
North of Ocean Boulevard	Hotel	Conditionally Acceptable	64.6	62.8
Between Ocean Boulevard and Seaside Way	Project Site	Conditionally Acceptable	63.8	62.0
Between Seaside Way and I-710 SB Off-Ramp	Project Site	Conditionally Acceptable	61.9	60.2
Between I-710 SB Off-Ramp and EB Shoreline Drive	RV Park	Conditionally Acceptable	61.5	59.8
Ocean Boulevard				
Wes of Golden Shore	Project Site	Normally Unacceptable	71.6	70.2
Between Golden Shore and Magnolia Avenue	Project Site / Hotel	Conditionally Acceptable	68.6	67.2
Between Magnolia Avenue and Chestnut Place	Multi- Family Residential / Commercial	Conditionally Acceptable	68.6	67.2
Between Chestnut Place and Pacific Avenue	Multi- Family Residential / Commercial	Conditionally Acceptable	68.6	67.3
Magnolia Avenue				
Between 3rd Street and 5th Street	Single-and Multi- Family Residential	Conditionally Acceptable	61.5	59.8
Between 5th Street and 6th Street	Single-and Multi- Family Residential	Conditionally Acceptable	62.0	60.2
North of 6th Street	Single-and Multi- Family Residential	Conditionally Acceptable	62.2	60.4
Chestnut Place				
Between Seaside Way and Ocean Boulevard	Multi- Family Residential / Commercial	Normally Acceptable	56.8	54.7
Seaside Way				
West of Chestnut Place	Multi- Family Residential / Commercial	Normally Acceptable	58.0	56.3
Alamitos Avenue				
Between Ocean Boulevard and Broadway	Multi- Family Residential / Commercial	Conditionally Acceptable	65.3	63.7

Table IV.G-8 (Continued)

Predicted Existing Vehicular Traffic Noise Levels

Roadway Segment	Adjacent Land Use	Existing Noise Exposure Compatibility Category [b]	Existing CNEL (dBA) at Referenced Distances from Roadway Right-of-Way [a]	
			25 Feet	50 Feet
Between Broadway and 4th Street	Multi- Family Residential / Commercial	Conditionally Acceptable	66.5	65.0
North of 4th Street	Multi- Family Residential / Commercial	Conditionally Acceptable	66.3	64.7

[a] *Calculated based on existing traffic volumes.*
[b] *Based on noise levels at 25 feet distance from the roadway.*

Source: PCR Services Corporation, 2009.

(4) Existing Ground-Borne Vibration Environment

Based on field observations, the only source of ground-borne vibration in the project vicinity that could potentially impact proposed on-site sensitive land uses (residences) is vehicular travel (refuse trucks, delivery trucks, school buses, and transit buses) on local roadways. According to the FTA's technical study "Federal Transit Administration; Transit Noise and Vibration Impacts Assessments," typical road traffic induced vibration levels are unlikely to be perceptible by people. In part, FTA indicates that "it is unusual for vibration from traffic including buses and trucks to be perceptible, even in location close to major roadways."[8] Therefore, FTA published vibration data are utilized in describing the existing ground vibration environment in the vicinity of the project site. As the project site is located within 50 feet of three major roadways: Ocean Boulevard to the north, Shoreline Drive to the south and west, and Golden Shore to the east. It is likely the site is exposed to ground vibration level of 0.001 inches per second RMS. As discussed above, this vibration level is considered below perception threshold of 0.002 inches per second RMS.

[8] *Federal Transit Administration, "Transit Noise and Vibration Impact Assessment", Chapter 7, 1995.*

3. ENVIRONMENTAL IMPACTS

a. Methodology

(1) On-Site Construction Noise

On-site construction noise impacts were evaluated by determining the noise levels generated by the different types of construction activity, calculating the construction-related noise level at nearby sensitive receptor locations, and comparing these construction-related noise levels to existing ambient noise levels (i.e., noise levels without construction noise). More, specifically, the following steps were undertaking to calculated construction-period noise impacts.

1. Ambient noise levels at surrounding sensitive receptor locations were estimated based on field measurement data (see Table IV.G-5 on page IV.G-13);

2. Typical noise levels for each type of construction equipment were obtained from the Federal Highway Administration (FHWA) roadway construction noise model (RCNM);

3. Distances between construction site locations (noise source) and surrounding sensitive receptors were measured using project architectural drawings, Google Earth, and site plans;

4. The construction noise level was then calculated, in terms of hourly L_{eq}, for sensitive receptor locations based on the standard point source noise-distance attenuation factor of 6.0 dBA for each doubling of distance; and

5. Construction noise levels were then compared to the construction noise significance thresholds identified below.

(2) Operation Noise

(a) On-Site Noise Sources

Stationary point-source noise impacts were evaluated by identifying the noise levels generated by outdoor stationary noise sources such as rooftop mechanical equipment, outdoor recreational areas, etc., estimating the noise level from each noise source at surrounding residential property locations, and comparing such noise levels to ambient noise levels to determine significance.

(b) Off-Site Noise Sources (Roadway Traffic)

Roadway noise impacts were evaluated using Caltrans Traffic noise prediction model, TeNS methodology. This methodology allows the user to define roadway configurations, barrier information (if any), and receptor locations. Traffic noise levels were calculated for roadway segments with sensitive receptors at distances of 25 feet and 50 feet from the edge of the roadway. Roadway-noise attributable to project operation was calculated and compared to baseline noise levels that would occur under the "future without project" condition to determine significance.

(3) Ground-Borne Vibration (During Construction and Project Operation)

Ground-borne vibration impacts were evaluated by identifying potential vibration sources, measuring the distance between vibration sources and surrounding structure locations, and making a significance determination.

b. Thresholds of Significance

The following thresholds of significance were developed to determine project noise impacts during construction and operation periods, and are based on noise standards and regulations contained in the LBMC.

(1) Construction Noise

Since the project construction activities would not occur between the hours of 7:00 P.M. and 7:00 A.M. Monday through Friday including weekday federal holidays, between the hours of 7 P.M. on Friday and 9 A.M. on Saturday and after 6 P.M. on Saturday, or at any time on Sunday (consistent with provisions of the LBMC), noise during construction would have a significant impact if:

- *Project construction activities cause the exterior ambient noise level to increase by 5 dBA or more at a noise-sensitive use, as measured at the property line of any residence.*

(2) Construction Vibration

As described earlier, the city's vibration perception threshold is 0.001 g's in the frequency range 0 – 30 hertz and 0.003 g's in the frequency range between 30 and 100 Hz. The minimum vibration velocity of 0.001 g's (0 – 30 Hz) and 0.003 g's (30 – 100 Hz) would be

0.002 inches per second (RMS). Therefore, impacts relative to ground-borne vibration would be considered significant if the following future event were to occur:

- *Project construction activities cause ground-borne vibration levels to exceed 0.002 inches per second (RMS) at the nearest off-site residential building.*

(3) Operation Noise

(a) On-site Stationary Noise Sources

According to Section 8.80.200.N, noise from operating or permitting the operation of any air-conditioning or air refrigerating equipment should not exceed any of the sound levels shown in Table IV.G-3 on page IV.G-7. Therefore, the proposed project would have a significant impact on noise levels from on-site stationary noise sources if the following criteria are exceed:

- *Project-related stationary (any air-conditioning or air refrigerating equipment) noise sources generate noise levels that would exceed 55 dBA at any point on neighboring property line.*

- *Project-related operational (i.e., loading dock) noise sources exceed 60 dBA daytime and 55 dBA nighttime.*

- *The maximum noise (L_{max}) generated from the operation of the parking structure (i.e., a car alarm) exceed the average ambient noise level (L_{eq}) by 10 dBA.*

(b) Off-Site Transportation (auto traffic)

As previously discussed, with respect to the community noise assessment, changes in noise levels of less than 3 dBA, in urban settings, are generally not discernable to most people, while changes greater than 5 dBA are readily noticeable and would be considered a significant increase. Therefore, the significance threshold for off-site transportation noise source is based on human perceptibility to changes in noise levels (increases), with consideration of existing ambient noise conditions, and the noise and land use compatibility guidelines (Table IV.G-4). A threshold of 5 dBA is used where existing ambient noise conditions fall within the acceptable noise environment. Generally, the dividing line for acceptable noise is between "*conditionally acceptable*" and "*normally unacceptable*" as described in Table IV.G-4. Where the existing ambient noise level is already above the acceptable noise zone, a more conservative 3 dBA threshold is used. Therefore, the proposed project would have a significant impact on noise levels from off-site transportation sources if one of the two following criteria is exceed:

- *The proposed project would cause ambient noise levels to increase by 5 dBA CNEL or more and the resulting noise falls on a land use within an area categorized as either "normally acceptable" or "conditionally acceptable" (see* Table IV.G-4 *for description of these categories); or*

- *The proposed project would cause ambient noise levels to increase by 3 dBA CNEL or more and the resulting noise falls on a land use within an area categorized as either "normally unacceptable" or "clearly unacceptable."*

(4) Operation Ground-Borne Vibration

As described above, the minimum vibration velocity of 0.001 g's (0 – 30 Hz) and 0.003 g's (30 – 100 Hz) would be 0.002 inches per second (RMS). The operation of any device that creates a ground-borne vibration at or beyond the property boundary of the source if on private property, or at 150 feet from the source if on a public space or public right-of-way, is considered significant if the following future event were to occur:

- *Project operational related ground-borne vibration levels exceed 0.002 inches per second (RMS) at the nearest vibration sensitive receptor.*

c. Project Features

Project design features (PDF) are aspects of the project proposed for incorporation as part of the conditions of approval for the project. The following project design features are listed and considered in the analyses as they may serve to reduce potential noise impacts associated with the project.

- **PDF G-1 – Project Construction Schedule and Hours:** It is anticipated that construction will commence with Phase One, the office tower located west of Golden Shore at Ocean Boulevard, in mid-2011. Phase Two will encompass the balance of the site west of Golden Shore and Phase Three will be east of Golden Shore. It is anticipated that all construction will not be completed prior to 2018. Construction activities would be phased and include demolition of the existing structures, grading and excavation activities, building construction, and building finishes and interior work. Construction is expected to require soil excavation and export of approximately 12,000 to 15,000 cubic yards. Exterior construction activities would occur between the hours of 7:00 A.M. and 7:00 P.M., Monday through Friday (including weekday federal holidays), and 9:00 A.M. and 6:00 P.M. on Saturday.

- **PDF G-2 – Construction Equipment Noise Features:** Project construction contractor(s) would equip all construction equipment, fixed or mobile, with properly operating and maintained noise mufflers, consistent with manufacturers' standards.

- **PDF G-3 – Noise Mitigation Features implemented during Project Operations:**

  (a) All outdoor mechanical and electrical equipment to be mounted on the proposed buildings would be designed to meet the requirements of LBMC, Section 8.80.200.

  (b) All outdoor loading dock and trash/recycling areas would be fully or partially enclosed such that the line-of-sight between these noise sources and any adjacent noise sensitive land use would be obstructed.

d. Analysis of Project Impacts

(1) Construction Period

(a) On-site Construction Noise

Noise impacts from construction activities are generally a function of the noise generated by construction equipment, the equipment location, the sensitivity of nearby land uses, intervening structures and topography, and, the timing and duration of the noise-generating activities. Construction activities at the project site would include four stages: (1) demolition; (2) site grading; (3) foundation; and (4) building construction. Each stage involves the use of different kinds of construction equipment and, therefore, has its own distinct noise characteristics. Demolition typically involves the use of concrete saws, cranes, compressors, and loaders. Site grading typically involves the use of earth moving equipment, such as loaders, graders, excavators, water trucks, and backhoes. Construction of building foundation typically involves the use of concrete mixer trucks, backhoe, pumps, water trucks, pile drivers (sonic), forklifts and other equipment. Building construction typically involves the use of concrete mixer trucks, forklifts, generators, welders, and cranes. The proposed project would be constructed using typical construction techniques, no blasting or impact pile driving would be used.

Construction of each phase is expected to occur sequentially (non-overlapping) with one phase complete before the next begins. It is anticipated that construction will commence with Phase One, the office tower located west of Golden Shore at Ocean Boulevard, beginning in mid-2011. Phase Two will encompass the balance of the site west of Golden Shore and Phase Three will be east of Golden Shore. It is anticipated that all construction will not be completed prior to 2018. Construction activities would be phased and include demolition of the existing structures, grading and excavation activities, building construction, and building finishes and

interior work. Construction is expected to require soil excavation and export of approximately 12,000 to 15,000 cubic yards.

Project construction would require the use of mobile heavy equipment with high noise level characteristics. Individual pieces of construction equipment that would be used for project construction produce maximum noise levels of 74 dBA to 96 dBA at a reference distance of 50 feet from the noise source, as shown in Table IV.G-9 on page IV.G-24. Shoring will be performed using sonic pile driving system.

These maximum noise levels would occur when equipment is operating under full power conditions or during "impact" activities, such as jack hammering or sawing. However, equipment used on construction sites often operates under less than full power conditions, or partial power. To more accurately characterize construction-period noise levels, the average (Hourly L_{eq}) noise level associated with each construction stage is calculated based on the quantity, type, and usage factors for each type of equipment that would be used during each construction stage and are typically attributable to multiple pieces of equipment operating simultaneously.

Construction noise levels were estimated based on an industry standard sound attenuation rate of 6 dB per doubling of distance for point sources (e.g., construction equipment). Within the analysis, all construction equipment was conservatively assumed to operate simultaneously and to be located at the construction area nearest to the affected receptors. These assumptions represent the worst-case noise scenario as construction activities would generally be spread out across the entire site and not just concentrated in areas nearest to the affected receptors. Furthermore, it would not be common for all construction equipment to operate simultaneously. A summary of the construction noise impacts at the nearby sensitive receptors is provided in Table IV.G-10 on page IV.G-25. Detailed noise calculations for construction activities are provided in Appendix D of this Draft EIR. As shown therein, noise from construction would cause the ambient noise level to exceed the 5-dBA significance threshold at the nearest sensitive receptors R2 and R6 during various durations of the construction period. Construction noise levels at the sensitive receptors R4 and R5 would be consistent with the existing ambient noise levels. Therefore, construction-period noise impacts at the RV Park (R2) and hotel (R6) would be significant without incorporation of mitigation measures.

(b) Ground-Borne Vibration during Construction

Construction activities can generate varying degrees of ground vibration, depending on the construction procedures and the construction equipment used. The operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site

Table IV.G-9

Construction Equipment Noise Levels

Equipment	Estimated Usage Factor, %	Typical Noise Level at 50 feet from Equipment, dBA (L_{max})
Air Compressor	40	78
Concrete Mixer Truck	40	79
Concrete Saw	20	90
Crane	16	81
Forklift	10	75
Pile Driver (sonic)	20	96
Generator	50	81
Graders	40	85
Excavator	40	81
Other Equipment	50	85
Pump	50	81
Rubber tired Loaders	50	79
Tractors/Loaders/Backhoes	50	80
Water Trucks	10	80
Welders	40	74

Source: FHWA Roadway Construction Noise Model, 2005.

often varies depending on soil type, ground strata, and construction characteristics of the receptor buildings. The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, to slight damage at the highest levels. Ground-borne vibrations from construction activities rarely reach the levels that damage structures. The FTA has published standard vibration velocities for construction equipment operations. The peak particle velocities for construction equipment pieces anticipated to be used during project construction are listed in Table IV.G-11 on page IV.G-26.

The proposed project would generate ground-borne construction vibration during site clearing and grading activities or large bulldozer operation. Based on the vibration data provided in Table IV.G-11, vibration velocities from the operation of project construction equipment would range from approximately 0.001 to 0.043 inches per second RMS at 25 feet from the source of activity. The nearest off-site residential structure is the hotel building located on Ocean Boulevard, which is located approximately 200 feet north foot print of the project building, would be exposed to vibration velocities ranging from approximately up to 0.002 inches per second RMS. This value would not exceed the 0.002 inches per second (RMS) perception threshold. Therefore, vibration impacts during construction would be less than significant.

Table IV.G-10

Summary of Worst-Case Noise Impacts Assuming Overlap of Phases 1, 2, 3 [a]

Construction Phase[d]	Daytime Ambient Sound Level (L_{eq})[c]	Construction-Period Noise Level (L_{eq}) by Quarter [b]																												
		Year 1			Year 2				Year 3				Year 4				Year 5				Year 6				Year 7				Year 8	
		Q1	Q2	Q3	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
Phase 1																														
Phase 2																														
Phase 3																														
Sensitive Receptor Location [e] (nearest residential Properties)																														
R2	63	**75**	**68**	**72**	67	67	67	67	67	67	67	**78**	**73**	**73**	**73**	**73**	**73**	**73**	**73**	**73**	**73**	65	59	63	63	63	63	63	63	63
R4	62	47	47	51	45	45	45	45	45	45	45	51	45	45	45	45	45	45	45	45	45	49	53	47	47	47	47	47	47	47
R5	65	58	57	61	56	56	56	56	56	56	56	59	54	54	54	54	54	54	54	54	54	53	55	50	50	50	50	50	50	50
R6	70	**77**	**77**	**81**	73	73	73	73	73	73	73	67	62	62	62	62	62	62	62	62	62	**76**	**78**	73	73	73	73	73	73	73

[a] *All construction equipment were assumed to operate simultaneously and were assumed to be located at the construction area nearest to the affected receptors.*

[b] *Numbers in Bold faces represent an increase of 5 dBA or more over the existing daytime ambient noise level.*

[c] *Based on measured data, see Table IV.G-5 on page IV.G-13.*

[d] *Phase 1 – Construction of the office tower located west of Golden Shore.*
Phase 2 – The balance of the site west of Golden Shore.
Phase 3 – Construction of east of Golden Shore.

[e] *R1 and R3 are within the project site. Therefore, no calculation was made at these receptors.*

Source: PCR Services Corporation, 2009; Calculation worksheets provided in Appendix D of this Draft EIR.

Table IV.G-11

Typical Vibration Velocities for Potential Project Construction Equipment

Equipment	Reference Vibration Velocity Levels at 25 ft, inch/second	
	PPV[a]	RMS[b]
Pile Driver (sonic)	0.170	0.043
Large bulldozer	0.089	0.022
Caisson drilling	0.089	0.022
Loaded trucks	0.076	0.019
Jackhammer	0.035	0.009
Small bulldozer	0.003	0.001

[a] *FTA's "Transit Noise and Vibration Impact Assessment", Table 12-2.*
[b] *A conversion factor of 4 is used to convert the PPV level to RMS level, per FTA's "Transit Noise and Vibration Impact Assessment", Page 12-8.*

Source: USDOT Federal Transit Administration, 1995; PCR Services Corporation 2009.

(2) Operation

This section provides a discussion of potential operational noise impacts, following completion of project construction, on nearby noise-sensitive receptors. Specific operational noise sources considered herein include mechanical equipment/point sources (i.e., HVAC equipment), landscaping areas, pool area, parking areas, and loading dock and refuse collection areas.

(a) Stationary Point-Source Noise

This section considers potential noise impacts to nearby noise-sensitive receptors due to specific stationary noise sources associated with the operation of the proposed project. Such potential noise sources for the project include:

- Outdoor mounted mechanical and electrical equipment (e.g., HVAC equipment and emergency generator);
- Loading dock and refuse collection areas;
- Parking areas and facilities;
- Outdoor open space areas
- Rooftop helipads.

The primary difference between the Residential Option and the two Hotel Options (A and B) is reflected in a single building that would either consist entirely of residential units or a mixed-use tower with residential units and 400 hotel rooms. The difference between the two Hotel Options is reflected in the mixed-use residential/hotel tower within Parcel 2 of the western portion of the project site, which would be the southern tower with 27 stories (15 hotel levels and 12 residential levels) under Hotel Option A, or the northern tower with 36 stories (15 hotel levels and 21 residential levels) under Hotel Option B. As stationary noise sources would be the same under both the Residential Option and Hotel Options (A and B), a discussion of each of these noise sources is provided below applicable to all project options, followed by a discussion of the potential composite noise level increase (due to multiple noise sources) at each sensitive receptor location.

(i) Mechanical and Electrical Equipment

Mechanical and electrical equipment (e.g., parking structure air vents and building heating ventilation and air conditioning, HVAC, equipment) would be designed to comply with the City's Noise Ordinance requirement, Section 8.80.200.N. The project mechanical design documentation will include measures required to minimize HVAC/mechanical noise levels not to exceed 55 dBA at any point on neighboring property line. Therefore, noise impact from project mechanical and electrical equipment would be less than significant.

(ii) Loading Dock and Refuse Collection Areas

The loading dock area and refuse collection areas would be located at Level P1 of the West parcel entry off Seaside Way where it runs under Golden Shore, and at Level L1 of the East parcel entry off Seaside Way where the podium bridges over the road. Additional loading and delivery is possible within the plaza and along Golden Shore where lane reductions are expected. The loading dock area and refuse collection areas would not have any unobstructed openings that face toward any noise-sensitive receptor locations.

Loading dock and refuse service-related activities such as truck movements/idling and loading/unloading operations would generate noise levels that have a potential to adversely impact adjacent land uses during long-term project operations. Based on measured noise levels, delivery trucks (at loading dock) and trash compactors would generate noise levels of approximately 71 dBA (L_{eq}) and 66 dBA (L_{eq}) at 50 feet distance, respectively.

By design, the loading dock area and refuse collection areas would be located away from the hotel uses and would not have any unobstructed openings that face toward any noise-sensitive receptor locations. The nearest noise sensitive receptor R6 (hotel uses north of the project site along Ocean Boulevard) is approximately 250 feet from the project's nearest loading

dock/refuse collection area (planned to be located within the office tower at the northern portion of the project site). Accounting for distance attenuation (6 dBA per doubling of distance, minimum 14 dBA distance loss) and barrier-insertion loss (minimum 15 dBA insertion loss), loading dock/refuse collection noise would be 42 dBA (L_{eq}) and 37 dBA (L_{eq}) at the nearest noise sensitive receptor R6, respectively. Therefore, noise level increases would not exceed the 60 dBA daytime significance threshold at the closest or any other off-site noise-sensitive receptor location. In addition, loading dock and refuse collection related activities would not occur between the hours of 10:00 P.M. and 7:00 A.M. As such, impacts would be less than significant.

(iii) Parking Areas and Facilities Noise Levels

Residential Option

Development in the western portion of the site includes parking spaces located in three above grade and four below grade levels. A driveway to the plaza level, accessed via Golden Shore, would provide access to limited guest parking in front of the lobby of the southern residential tower as well as to the parking structure, terminating in a roundabout near the northern residential tower. The plaza would sit atop the roof (deck) of the central portion of the parking structure, above three levels of parking (the lower four levels of which would be subterranean, while the fifth level would be above grade). Development east of Golden Shore within Parcel 3 would provide a total of 1,040 parking spaces within a parking structure with four below-grade and four above-grade levels.

Hotel Option A and Option B

Under Hotel Option A and Option B, development west of Golden Shore within Parcels 1 and 2 includes 3,430 parking spaces located in three above-grade and four below-grade levels. The parking structure design and associated vehicular access would largely mimic that described for the Residential Option. A driveway to the plaza level, entered via Golden Shore, would provide access to limited guest parking in front of the mixed-use residential/hotel tower lobby, as well as to the podium parking structure, terminating in a roundabout near the residential tower. The plaza would sit atop the roof (deck) of the central portion of the parking structure, above five levels of parking (the lower four levels of which would be subterranean, with the fifth level above grade). The development within Parcel 3 would include a nine-level parking structure, with four below-grade levels and five above-grade levels, with vehicle access via Golden Shore and Seaside Way. The upper three levels of parking would form a bridge over Seaside Way.

For Residential Option and Hotel Options, the above grade structured parking facilities with openings toward to the hotel and RV Park uses (R6 and R2, respectively) would be located

on southern portions of Parcel 2 and northern portions of Parcel 3. Various noise events would occur periodically from the parking facilities. Such periodic events would include activation of car alarms, sounding of car horns, slamming of car doors, engine revs, and tire squeals. Automobile movements would comprise the most continuous noise source and would generate a noise level of approximately 65 dBA at a distance of 25 feet. Car alarm and horn noise events generate sound levels as high as 83 dBA at a reference distance of 25 feet.

The nearest off-site hotel uses (R6) and RV Park uses (R2) are approximately 200 feet from the proposed parking structures. Based on a noise level source strength of 83 dBA at a reference distance of 25 feet, and accounting for barrier-insertion loss for project planned parapet wall at the perimeter of the proposed parking structure (minimum 10 dBA insertion loss) and distance attenuation (minimum 18 dBA loss for 200 feet distance), parking related noise would be reduced to 55 dBA (L_{max}) at R6 and R2. The estimated noise levels would not exceed the current L_{eq} nighttime ambient levels of 55 dBA by 10 dBA at the noise sensitive receptor locations (R2 and R6). Therefore, the parking facilities and related car alarm and horn noise impacts would be less than significant at the noise-sensitive uses.

(iv) Outdoor Open Space Areas

Residential Option

Development in the western portion of the site includes landscaping and recreational areas on the roof (deck) of the podium parking structure. Adjacent to Shoreline Drive, an outer ring of the parking structure would be located on the plaza level, and would include embedded townhouse residential units. Also on this level, a broad landscaped deck would be provided on a section of the parking structure roof along the southwest edge of the parcel, where the clubhouse and an outdoor swimming pool would be located. Similar to the western site development, two-story townhomes would be located on top at the podium. The development east of Golden Shore would also provide 81,347 square feet of landscaped open space, including landscaping on the roof (deck) of the parking structure. The deck of the parking structure/bridge would be developed with a swimming pool and landscaped open space to serve the proposed residential uses.

Hotel Option A and Option B

Under Hotel Option A and Option B, the development west of Golden Shore would incorporate a clubhouse and pool amenity area between the residential tower and the mixed-use residential/hotel tower within Parcel 2. The development of the eastern portion of the project site under Hotel Option A and Option B would be similar to that of the Residential Option. As is the

case with the Residential Option, two-story townhome units would be located on the podium deck, along with a clubhouse, landscaping, swimming pool, and recreational amenities.

The West Phase development would provide an open plaza for the proposed project including Residential Option and Hotel Option A and Option B, which would be located between the three towers, as well as provide pedestrian and vehicular access to the buildings. In addition, there would also be outdoor open space area on the residential/hotel that would include swimming pool areas. The open plaza and pool areas of the West Phase development would be shielded from the noise sensitive receptors, R2 and R6, by the proposed buildings. In addition, the pool area of the West Phase is located on the podium level and would not have direct line-of-sight to the RV Park. Therefore, outdoor noise from the open plaza and pool areas would be effectively mitigated through project design and building layout and thus, would not result in a significant impact.

As discussed above, the proposed buildings surrounding the pool area would act as a noise barrier for pool uses for Residential Option and Hotel Option A and Option B. No pool areas would have direct line-of-sight to Shoreline Drive, Ocean Boulevard, and Golden Shore, and the buildings would be of sufficient height to attenuate roadway-related noise to well below 70 dBA, CNEL for pool uses. As such, potential impacts to the pool areas would be less than significant.

(v) Rooftop Helipad Noise Levels

The proposed project would include one or more buildings that would require an emergency helipad pursuant to LBMC requirements.[9] As such, these helipads would be used for emergency purposes only. Due to the infrequent emergency nature of such a use, potential noise impacts associated with helipad uses would be less than significant.

(vi) Composite Noise Level Impacts from Proposed Project Operations

An evaluation of noise from all the project's noise sources (i.e., composite noise level) was conducted to conservatively ascertain the potential maximum project-related noise level increase that may occur at the noise-sensitive receptor locations included in this analysis. The overall sound environment at the areas surrounding the project is comprised of contributions from each individual noise source associated with the typical daily operation of the proposed project. Primary noise sources associated with the project would include traffic on nearby

[9] *City of Long Beach Municipal Code Section 18.48.150 requires that each high-rise building shall have an emergency helicopter landing facility located on the roof of the building in an area approved by the Fire Department.*

roadways, on-site mechanical equipment, on-site parking areas and facilities, and on-site loading dock/refuse collection areas.

Based on a review of the noise-sensitive receptors and the project's noise sources, the only noise-sensitive locations wherein composite noise impacts could occur are Golden Shore RV Park (R2) on Golden Shore and hotel use (R6) on Ocean Boulevard. Due to a combination of distance and the presence of intervening structures that would serve as noise barriers, the only project noise source that could potentially affect these off-site noise-sensitive locations is roadway noise.

As previously mentioned, the loading docks and refuse collections would be located at Level P1 of the West parcel entry off Seaside Way where it runs under Golden Shore, and at Level L1 of the East parcel entry off Seaside Way where the podium bridges over the road. Additional loading and delivery is possible within the plaza and along Golden Shore where lane reductions are expected. The proposed loading dock and refuse collect areas would not have any unobstructed openings that face toward any noise-sensitive receptor location. Therefore, noise associated with the loading docks and refuse collection transference to the outside would not increase the overall ambient noise levels.

The mechanical related noise levels are expected to be below the existing ambient noise levels, which would have a contribution of less than 1.0 dBA to the composite noise level. The parking related noise would not exceed the ambient noise at the hotel and RV Park uses (Location R6 and R2).

Overall, relative to the existing ambient noise environment, the proposed project would not increase the ambient sound level at the nearest noise-sensitive receptors (R2 and R6) under the Residential Option and Hotel Options. As such, the composite noise level impact due to the proposed project would be less than significant.

(b) Site Compatibility (Proposed On-site Noise Sensitive Uses)

The project would locate new noise sensitive uses on the site, including residential units and hotel uses. As indicated by the noise measurement data presented in Table IV.G-5 on page IV.G-13, the proposed residential and hotel uses would be exposed to noise levels, which exceed the City's land use compatibility standard of 65 dBA CNEL for residential and hotel uses. Therefore, noise insulation features should be included in the design of the residential and hotel buildings, to achieve the interior noise limits of 45 dBA CNEL. Incorporation of Mitigation Measure G-6 described below would reduce noise levels to 45 dBA CNEL at the interior of the residential units and hotel rooms, and thus, would reduce potential impacts associated with the introduction of residential and hotel uses to a less than significant level.

(c) Off-Site Roadway (Mobile) Noise

Traffic attributed to operation of the proposed project would increase traffic over the total future daily traffic traveling along the major thoroughfares within the project vicinity. This increase in roadway traffic volumes was analyzed to determine if any traffic-related noise impacts would result from project development.

Based on the traffic study prepared for the project and provided in Appendix F of this EIR, the proposed project would generate a maximum of 8,761 net daily trips (worst-case conditions under Hotel Option B). Table IV.G-12 on page IV.G-33 provides the calculated CNEL for the analyzed roadway segments for the following scenarios: existing conditions; future conditions without development of the proposed project; future conditions with the development of the proposed project.

As shown in Table IV.G-12, the maximum calculated increase in project-related traffic noise levels would be 1.8 dBA, which would occur along Seaside Way, west of Chestnut Place. The noise increases at all other analyzed roadway segments would be less. The estimated noise increase due to project-related traffic is below the conservative 3 dBA CNEL significance threshold. Therefore, off-site roadway noise level increases would be less than significant and no mitigation measures are required.

(3) Operational Vibration

The proposed project would include typical residential and commercial-grade stationary mechanical and electrical equipment such as air handling units, condenser units, exhaust fans, and electrical emergency power generators, which would produce vibration. In addition, the primary sources of on-site transient vibration would include vehicle circulation within the proposed surface parking areas and multi-level parking facilities, refuse/delivery truck activity, and loading dock/refuse collection area activity. Ground-borne vibration generated by each of the above-mentioned activities would be similar to the existing vibration generated by existing sources (i.e., traffic on adjacent roadways) in the project area. The potential vibration impacts from all proposed project sources at the closest structure locations would be less than the significance threshold 0.002 inches per second RMS for perceptibility. As such, vibration impacts associated with operation of the project would be below the significance threshold and impacts would be less than significant.

Table IV.G-12

Off-Site Traffic Noise Analysis

Roadway Segment/ Cross Section	Adjacent Land Use	Calculated Traffic Noise Levels at 25 feet from Roadway, CNEL (dBA) [a]				
		Existing (A)	Future No Project[b] (B)	Future with Project[c] (C)	Project Increment [d] (C – B)	Cumulative Increment [e] (C – A)
Golden Shore						
North of Ocean Boulevard	Hotel	64.6	65.5	65.9	0.4	1.3
Between Ocean Boulevard and Seaside Way	Project Site	63.8	64.4	65.4	1.0	1.6
Between Seaside Way and I-710 SB Off-Ramp	Project Site	61.9	62.6	63.4	0.8	1.5
Between I-710 SB Off-Ramp and EB Shoreline Drive	RV Park	61.5	62.0	62.5	0.5	1.0
Ocean Boulevard						
West of Golden Shore	Project Site	71.6	72.1	72.2	0.1	0.6
Between Golden Shore and Magnolia Avenue	Project Site / Hotel	68.6	69.2	69.4	0.2	0.8
Between Magnolia Avenue and Chestnut Place	Multi-Family Residential / Commercial	68.6	69.4	69.4	0.0	0.8
Between Chestnut Place and Pacific Avenue	Multi-Family Residential / Commercial	68.6	69.4	69.5	0.1	0.9
Magnolia Avenue						
Between 3rd Street and 5th Street	Single-and Multi-Family Residential	61.5	62.7	63.2	0.5	1.7
Between 5th Street and 6th Street	Single-and Multi-Family Residential	62.0	63.1	63.6	0.5	1.6
North of 6th Street	Single-and Multi-Family Residential	62.2	63.3	63.6	0.3	1.4
Chestnut Place						
Between Seaside Way and Ocean Boulevard	Multi-Family Residential / Commercial	56.8	58.1	59.2	1.1	2.4
Seaside Way						
West of Chestnut Place	Multi-Family Residential /	58.0	58.5	60.3	1.8	2.3

Table IV.G-12 (Continued)

Off-Site Traffic Noise Analysis

Roadway Segment/ Cross Section	Adjacent Land Use	Calculated Traffic Noise Levels at 25 feet from Roadway, CNEL (dBA) [a] Existing (A)	Future No Project[b] (B)	Future with Project[c] (C)	Project Increment [d] (C – B)	Cumulative Increment [e] (C – A)
	Commercial					
Alamitos Avenue						
Between Ocean Boulevard and Broadway	Multi-Family Residential / Commercial	65.3	65.4	66.4	1.0	1.1
Between Broadway and 4th Street	Multi-Family Residential / Commercial	66.5	66.0	67.5	1.5	1.0
North of 4th Street	Multi-Family Residential / Commercial	66.3	67.0	67.3	0.3	1.0

[a] *Exterior 24-hour CNEL noise levels.*
[b] *Include future growth plus related (cumulative) projects identified in the traffic study .*
[c] *Include future growth plus related (cumulative) projects and proposed project traffic.*
[d] *Increase due to Project-related traffic only at project build-out.*
[e] *Increase due to future growth, related (cumulative) projects, and project traffic.*

Source: PCR Services Corporation, 2009.

4. CUMULATIVE IMPACTS

As discussed in Section III. Basis for Cumulative Analysis of this Draft EIR, there are 19 related projects identified in the vicinity of the proposed project. Of the 19 related projects, the closest related project is Related Project No. 18, New Long Beach Court House, located approximately 850 feet northeast of the project site; and Related Project No. 1, 107 DU apartments, located approximately 1,000 feet east of the project site at 440 W. Ocean Boulevard. The two other related projects, situated approximately 1,200 feet and 1,400 feet from the project site, include Related Project No. 10 – 246 DU High-rise condominiums at 25 S. Chestnut Place, and Related Project No. 13 – 291 DU apartments and 15,580 SF commercial at 421 W. Broadway, respectively. All other related projects are a minimum of 2,000 feet away from the project site. The potential for noise impacts to occur are specific to the location of each related project as well as the cumulative traffic on the surrounding roadway network.

a. Construction-Period Noise

Noise from construction of the proposed project and related projects would be localized, thereby potentially affecting areas immediately within 500 feet from each construction site. Since the timing of the construction activities for the related projects cannot be defined and are beyond the control of the City and the project applicant, quantitative analysis that assumes multiple, concurrent construction projects would be speculative. However, if construction activities for Related Projects No. 1 and No. 18 were to occur concurrently with the project, the two related projects could contribute to cumulative impacts on the noise-sensitive receptors closest to these related projects (the multifamily residential uses along 3rd Street and School – R5 and the multi-family residential uses along Seaside Way – R4). However, distance attenuation (more than 1,000 feet away) and intervening structures between the related projects and the multi-family residential uses (R4), would preclude a cumulative impact on these noise-sensitive uses. Related Project No. 18 is approximately 850 feet northeast of the project site. There are noise sensitive receptors (i.e., multi-family residential uses and school located on 3rd Street) located near to the Related Project No. 18 site, which could be impacted from both projects' construction activities. Since Related Project No. 18 abuts the multi-family residential and school uses, construction activities from Related Project No. 18 would likely increase the ambient noise at the multi-family and school uses by more than 5 dBA (significance threshold). Therefore, if the proposed project were to occur concurrently with Related Project No. 18, the proposed project could contribute to the cumulative construction noise impacts on the noise sensitive receptors that are located along 3rd Street. However, those noise levels would be intermittent, temporary, and would comply with time restrictions and other relevant provisions of the LBMC. Noise associated with construction activities would be reduced through proposed mitigation measures for each individual project including the mitigation measures recommended herein for the proposed project and compliance with the City's noise ordinances. However, even with proposed mitigation measures, if Related Project No. 18 was to be constructed concurrently with the proposed project, significant and unavoidable cumulative construction noise impacts could result at the nearby noise sensitive receptors (multi-family residential and school uses – R5).

Due to the rapid attenuation characteristics of ground-borne vibration and distance of the related projects to the proposed project, there is no potential for a cumulative construction-period impact with respect to ground-borne vibration.

b. Operational-Period Noise

The project site and surrounding area have been developed with uses that have previously generated, and will continue to generate, noise from a number of community noise sources including vehicle travel, mechanical equipment (e.g., HVAC systems), and lawn maintenance activities. Each of the identified related projects that have been identified within the general

project vicinity would also generate stationary-source and mobile-source noise due to ongoing day-to-day operations. All related projects are of a residential, retail, commercial, or institutional nature, and these uses are not typically associated with excessive exterior noise. Due to LBMC provisions that limit stationary-source noise from items such as rooftop mechanical equipment and emergency generators, noise levels would be less than significant at the property line for each related project. For this reason, on-site noise produced by any related project would not be additive to project-related noise levels. As the project's composite stationary-source impacts would be less than significant, composite stationary-source noise impacts attributable to cumulative development would be less than significant.

All related projects are of a residential, retail, or commercial nature, and these uses are not typically associated with excessive exterior noise; however, each project would produce traffic volumes that would generate roadway noise. As discussed previously, traffic volumes from the proposed project and related projects, combined with ambient growth traffic, were evaluated and presented in Table IV.G-12. Cumulative traffic volumes would result in a maximum increase of 2.4 dBA CNEL along the segment of Chestnut Place, between Seaside Way and Ocean Boulevard. As this noise level increase would be below the more conservative 3 dBA CNEL significance threshold, roadway noise impacts due to cumulative traffic volumes would be less than significant.

5. MITIGATION MEASURES

a. Construction

As noise associated with on-site construction activity would have the potential to result in a significant impact, the following measures are recommended to minimize construction-related noise impacts:

Mitigation Measure G-1: Effective temporary noise barriers, when they are feasible, shall be used to block the line-of-site between the construction equipment and the off-site noise-sensitive receptors during project construction, as follows:

a) Provide a temporary noise barrier along the north boundary of the project site to reduce construction noise at the Hilton Hotel (R6).

b) Provide a noise barrier along the southwestern boundary of the project site to block line-of-sight to the RV park use (R2).

c) The exact height and extent of the sound barrier wall shall be defined during the project engineering design phases by a qualified acoustical engineer based on achieving 10 dBA minimum noise reduction.

Mitigation Measure G-2: Engine idling from construction equipment such as bulldozers and haul trucks shall be limited. Idling of haul trucks shall be limited to five (5) minutes at any given location as established by the California Air Resources Board.

Mitigation Measure G-3: Construction activities shall be scheduled so as to avoid operating several pieces of heavy equipment simultaneously, which causes high noise levels.

Mitigation Measure G-4: Noise-generating construction equipment operated at the project site shall be equipped with effective noise control devices, i.e., mufflers, lagging, and/or motor enclosures. All equipment shall be properly maintained to assure that no additional noise, due to worn or improperly maintained parts, would be generated.

b. Operations

To reduce noise impacts on the future residents of the proposed residential tower and occupants of the hotel, the following mitigation measures are recommended:

Mitigation Measure G-5: The Applicant shall retain the services of a qualified acoustical engineer with expertise in design of building sound isolations, who shall submit a signed report to the City during plan check for review and approval, indicating that the proposed building design for the residential towers and the hotel building achieves an interior sound environment of 45 dBA (CNEL), as required by City's building code.

Mitigation Measure G-6: The Applicant shall retain services of a qualified acoustical consulting engineer experienced in mechanical noise analysis to provide an acoustical report to the City during plan check for review and approval indicating that the project mechanical design meets the City's noise ordinance. All mitigation measures and estimated performance developed by the applicant retained acoustical engineer shall be identified in the acoustic report.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

a. Construction

The temporary sound barrier prescribed in Mitigation Measure G-1 can achieve a noise reduction of 10 dBA or more in areas where the line-of-sight between construction-period noise sources and off-site noise receptor locations is obstructed. Therefore, the maximum construction-period L_{eq} would be reduced from 78 dBA to approximately 68 dBA at the RV Park use (R2) and from 81 dBA to approximately 71 dBA at the hotel use (R6). Noise level reductions attributable to Mitigation Measures G-2 through G-4 and project design features (e.g., use of noise mufflers and on-site storage of construction equipment) are not easily quantifiable, but implementation of such measures would further reduce the noise level impact associated with construction activities to the extent practicable. Implementation of the prescribed mitigation measures would reduce the project construction noise impacts at the off-site noise sensitive receptors R6 to less than significant levels during the construction period. However, construction noise levels would still exceed the 5-dBA significance criterion at the RV Park use (R2) with implementation of the prescribed mitigation measures. Construction noise impacts would be significant and unavoidable at the RV Park use (R2).

Construction-related groundborne vibration would not exceed established thresholds at adjacent uses, and therefore impacts in this regard would be less than significant.

b. Operations

Project development would not result in significant noise impacts to off-site receptors during long-term project operations. With implementation of Mitigation Measure G-5, on-site residents and hotel uses would not be exposed to inappropriately high noise levels from off-site activity (i.e., vehicle traffic on Shoreline Drive, Ocean Boulevard, and Golden Shore). Mitigation Measure G-6 would ensure the noise levels of mechanical equipment would meet the requirements of the City's noise ordinance. Therefore, impacts would be reduced to less than significant levels under the Residential Option and Hotel Options. Additionally, impacts related to noise off-site noise effects from mobile sources and operational vibration would remain less than significant at the project and cumulative levels.

As such, given the above significant unavoidable impact related to construction noise, if the City of Long Beach approves the proposed project, the City shall be required to cite their findings in accordance with Section 15091 of the CEQA *Guidelines* and prepare a Statement of Overriding Considerations in accordance with Section 15093 of the CEQA *Guidelines*.

IV. ENVIRONMENTAL IMPACT ANALYSIS
H. POPULATION AND HOUSING

1. INTRODUCTION

This section addresses the potential population and housing effects of the project in the context of the local area (City of Long Beach), the Gateway Cities Council of Governments (COG) subregion, and the Southern California Association of Governments regional area of the project. The analysis evaluates the project's population, housing, and employment effects in relation to adopted growth forecasts and relevant policies and programs.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

(1) Regional Level

The project site is located within the jurisdiction of the Southern California Association of Governments (SCAG). SCAG is a Joint Powers Agency established under California Government Code Section 6502 et. seq., pursuant to Federal and State law. SCAG serves as the Council of Governments, a Regional Transportation Planning Agency, and the Metropolitan Planning Organization (MPO) for Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial counties. SCAG's mandated responsibilities include developing plans and policies with respect to the region's population growth, transportation programs, air quality, housing, and economic development. Specifically, SCAG is responsible for preparing the Regional Comprehensive Plan (RCP), Regional Transportation Plan (RTP), and Regional Housing Needs Assessment (RHNA), in coordination with other State and local agencies. These documents include population, employment, and housing projections for the region and 14 subregions. As previously described, the project site is located within the Gateway Cities COG subregion.

(a) Regional Comprehensive Plan and Guide

SCAG prepared the Regional Comprehensive Plan and Guide (RCPG) in conjunction with its constituent members and other regional planning agencies. Adopted in May 1995 and revised in April 2001, the RCPG is intended to serve as a framework to guide decision-making throughout the region with respect to the growth and changes that can be anticipated by the year

2015 and beyond. The goals, objectives, and policies in the RCPG are utilized for measuring consistency of local plans against regional objectives. However, the authority and responsibility for land use and other critical planning decisions rest with the individual city and county governments. Notwithstanding, the RCPG proposes a strategy for local governments to address issues related to future growth and to provide a means for assessing the potential impact of projects within the context of the region.

The RCPG includes five core chapters that respond directly to the Federal and State requirements placed on SCAG. These chapters including; Growth Management, Regional Mobility, Air Quality, Water Quality, and Hazardous Waste Management, form the basis for the certification of local plans. Ancillary, or non-mandated, chapters within the RCPG include; Economy, Housing, Human Resources and Services, Finance, Open Space and Conservation, Water Resources, Energy, and Integrated Waste Management, which reflect other regional plans but do not contain actions or policies required of local governments.

The three chapters of the RCPG particularly relevant to the issue of population, housing, and employment are the Growth Management, Housing, and Economy chapters. The Growth Management Chapter of the RCPG, adopted in June 1994, is a mandated section that presents population, housing, and employment forecasts, which establishes the socio-economic parameters for growth and development in the region. These forecasts serve as the baseline data for chapters of the RCPG, such as the Regional Mobility and Air Quality Chapters.[1] The Growth Management Chapter also addresses issues related to growth and land use by providing guiding principles for development that support the overall goals of the RCPG.

The Housing Chapter of the RCPG, adopted in September 1994, is not mandated and does not establish any specific requirements for local governments. Nonetheless, SCAG is responsible for assisting cities and counties in fulfilling their statutory obligations to prepare and regularly update the housing elements of their general plans. Accordingly, the Housing Chapter of the RCPG provides a broad picture of housing issues affecting the region to assist local governments in meeting their statutory requirements. By providing a regional framework for local housing strategies that are responsive to market area needs and State mandates, the Housing Chapter is a major tool for coordinating local housing development strategies within southern California. It also includes a set of goals associated with increasing the supply of housing in the region, particularly for affordable to low- and moderate-income households. Applicable policies are provided below and further discussed in Section IV.F., Land Use, of this EIR. The Regional Housing Needs Assessment (RHNA), further discussed below, provides more recent data regarding housing needs.

[1] *The 2004 Regional Transportation Plan provides updated population, housing, and employment projections.*

Policy 3.01: The population, housing, and jobs forecasts, which are adopted by SCAG's Regional Council and that reflect local plans and policies shall be used by SCAG in all phases of implementation and review.

Policy 3.04: Encourage local jurisdictions' efforts to achieve a balance between the types of jobs they seek to attract and housing prices

Policy 3.11: Support provisions and incentives created by local jurisdictions to attract housing growth in job-rich subregions and job growth in housing-rich subregions.

Policy 3.17: Support and encourage settlement patterns, which contain a range of urban densities.

Policy 3.24: Encourage efforts of local jurisdictions in the implementation of programs that increase the supply and quality of housing and provide affordable housing as evaluated in the RHNA.

Finally, the Economy Chapter of the RCPG, a non-mandated section, assesses the region's economy, the trends that brought it to its current state, and projected changes in the future. The Economy Chapter discusses strengths and weaknesses of the region's economy, where opportunities lie in the future (i.e., types of jobs anticipated for the SCAG region in the future), and strategies to enhance the region's competitiveness in the national and world economy. No formal policies are included.

(b) Regional Transportation Plan

On May 8, 2008, the Regional Council of SCAG adopted the 2008 Regional Transportation Plan: Making the Connections (RTP). The RTP contains a set of baseline socioeconomic projections that is used as the basis for SCAG's transportation planning. The projections include total population, households, and employment at the regional, county, subregional, jurisdictional, census tract, and transportation analysis zone levels that is anticipated over the next 25 years. The 2008 RTP uses 2003 as the base year with projections for the years 2005, 2010, 2015, 2020, 2025, 2030, and 2035. The RTP identifies the amount of expected growth in the region and provides the expected distribution of that growth. The distribution of the population assumed in the RTP, reflects the goals of SCAG to maximize mobility and accessibility, ensure safety and reliability, preserve our transportation system, maximize productivity of our system, protect the environment, and encourage land-use and growth patterns that complement our transportation system.

(c) Regional Housing Needs Assessment

A RHNA, most recently adopted and approved by the SCAG Regional Council on July 12, 2007, includes an assessment of regional housing needs for very low-income, low-income, moderate-income, and above moderate-income groups for the planning period from January 2006 through June 2014.[2] The RHNA is used by local communities to address land use planning, prioritize local resource allocation, and decide how to address identified existing and future housing needs resulting from population, employment, and household growth. According to the RHNA, the City would require a total of 9,583 dwelling units; of which 2,321 dwelling units would be required for very low-income households, 1,485 dwelling units would be required for low-income households, 1,634 dwelling units would be required for moderate-income households, and 4,143 dwelling units would be required for above moderate-income households. The Gateway Cities COG would require a total of 22,433 dwelling units; of which 5,510 would be very low-income housing, 3,476 low-income, 3,798 moderate-income, and 9,649 above moderate-income housing. The SCAG regional area would require 165,457 very low-income dwelling units, 113,649 low-income dwelling units, 126,715 moderate-income dwelling units, and 293,547 above moderate-income dwelling units, for a total of 699,368 dwelling units.

(2) Subregional Level

As previously described, the project site is located within the Gateway Cities COG subregion, which encompasses 27 cities within Los Angeles County. The Gateway Cities COG includes the cities of Artesia, Avalon, Bell, Bellflower, Bell Gardens, Cerritos, Commerce, Compton, Cudahy, Downey, Hawaiian Gardens, Huntington Park, La Habra Heights, La Mirada, Lakewood, Long Beach, Lynwood, Maywood, Montebello, Norwalk, Paramount, Pico Rivera, Port of Long Beach, Santa Fe Springs, Signal Hill, South Gate, Vernon, Whittier, and unincorporated areas of Los Angeles County within the Gateway Cities COG. The Gateway Cities COG assists SCAG in the review of regionally significant development within southeast Los Angeles County and prepares growth projections in population, households, and employment. SCAG adopts regional growth projections based on the figures developed by Gateway Cities COG for SCAG's transportation and air quality elements, and other regional programs.

[2] *Southern California Association of Governments, website: http://www.scag.ca.gov/Housing/pdfs/rhna/RHNA_FinalAllocationPlan071207.pdf, accessed July 2009.*

(3) City Level

(a) City of Long Beach General Plan

The City of Long Beach General Plan (General Plan) is a comprehensive, long-range, and internally consistent plan that sets forth goals, objectives, and programs to meet the existing and future development needs of the City. The General Plan includes a range of State-mandated elements including Land Use, Conservation, Housing, Open Space, Air Quality, Transportation, Seismic Safety, Local Coastal Program, Noise, and Public Safety. The Housing Element of the General Plan, adopted in 2009, offers a comprehensive analysis of housing needs, including current population, employment, and housing stock characteristics. In addition, the Housing Element identifies market and governmental constraints and opportunities, as well as available housing resources. The Housing Element also acts as the City's housing plan. The housing plan presents the City's goals, policies, and programs to address housing needs in the City. As stated in the Housing Element, the following goals and policies are applicable to the proposed project:

Goal 4: Provide Increased Opportunities for the Construction of High Quality Housing

Policy 4.1 Provide adequate sites, zoned at the appropriate densities and development standards, to facilitate the housing production and affordability goals set forth in the 2008-2014 RHNA.

Policy 4.2 Encourage a balance of rental and homeownership opportunities, including high quality apartments, townhomes, condominiums, and single-family homes to accommodate the housing needs of all socioeconomic segments of the community, including large families.

Policy 4.3 Encourage new high quality rental and ownership housing through the implementation of design review guidelines, and architectural and green building standards.

Policy 4.5 Encourage residential development along transit corridors, in the downtown and close to employment, transportation and activity centers; and encourage infill and mixed-use developments in designated districts.

Goal 5: Mitigate Government Constraints to Housing Investment and Affordability

Policy 5.3 Utilize Planned Developments (PD), form-based zoning and other planning tools to allow flexible residential development standards in designated areas.

Goal: Provide Increased Opportunities for Home Ownership

Policy 6.1 Provide favorable home purchasing opportunities, with an emphasis on providing affordable options for low and moderate-income households.

Policy 6.2 Utilize home ownership assistance programs as a mechanism to expand affordable housing opportunities and accommodate large families.

Policy 6.3 Pursue participation in other home ownership programs available in the private market and/or other public agencies.

Goal: Ensure Fair and Equal Housing Opportunity

Policy 7.1 Provide fair housing services to Long Beach residents and property owners, and ensure that residents and property owners are aware of their rights and responsibilities.

b. Existing Conditions

(1) On-Site Conditions

The approximately 5.87 acre project site is currently designated as Downtown Shoreline Planned Development District (PD-6), Subarea 1. The existing project site is occupied with 294,003 square feet of retail and office uses and 920 surface parking spaces.

(2) Demographic Analysis of the Areas

As previously described, the project site is located within the regional area of SCAG, the subregional area of Gateway Cities COG, and the local area of the City of Long Beach demographic areas. Table IV.H-1 on page IV.H-7 discusses the population, employment, and housing for the local, subregion, and regional areas for the year 2009 based on SCAG growth forecasts.

As shown in Table IV.H-1 and according to the SCAG forecast, for 2009 the City of Long Beach has an estimated population of approximately 492,682 residents, approximately 175,164 dwelling units, and 184,919 employees.[3] The Gateway Cities COG subregional area has

[3] *The population and housing numbers for the City of Long Beach are per State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009, which are considered the most accurate annual counts.*

Table IV.H-1

Total 2009 Population, Housing, and Employment [a]

	Total Population	Total Housing	Total Employment
Local Area			
City of Long Beach	492,682[c]	175,164[c]	184,919
Subregional Area			
Gateway Cities COG	2,134,034	617,722[b]	759,496
Regional Area			
SCAG	19,164,032	6,306,175[b]	8,233,079

[a] *2009 data as calculated by subtracting the SCAG 2005 projections from SCAG 2010 projections and dividing the total by a factor of 5 to find the average yearly growth between 2009 and 2010. The total was then added to the SCAG 2005 projections accordingly.*

b The number of dwelling units was determined by multiplying the number of households provided by SCAG by the vacancy rate for the local, subregional, and regional areas. The vacancy rate of 4.98 percent was obtained from the State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California.

c State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.

Source: PCR Services Corporation, July 2009.

a residential population of approximately 2,134,034 persons, approximately 617,722 dwelling units, and approximately 759,496 employees. The SCAG regional area has a total residential population of 19,164,032 persons, approximately 6,306,175 dwelling units, and approximately 8,233,079 employees.

c. Projections and Trends

The 2008 RTP provides data on projected population, housing, and employment at various geographical levels within the SCAG region. The following analysis will provide an overview of the projections and trends anticipated for population, housing, and employment in relation to the project, as provided by SCAG. As the project under all three options would consist of residential, office, commercial, and potentially hotel uses, the projections of the population growth are analyzed up to the year 2030 for a broader, long range analysis. SCAG projection data for population, employment, and housing are shown in Table IV.H-2 on page IV.H-8. In correlation with each trend, population, housing and employment within the City are anticipated to increase through the year 2030. Job/housing ratio projections are provided in Table IV.H-3 on page IV.H-8.

Table IV.H-2

Population, Housing, and Employment Projections

Geographic Zone	2009	Projected 2010	Projected 2020	Projected 2030	2009-2030 Growth	2009-2030 Percentage Change
Population						
Local Area	492,682	503,251	531,854	559,598	66,916	13.6
Subregional Area	2,134,034	2,143,976	2,236,253	2,323,440	189,406	8.9
Regional Area	19,164,032	19,418,349	21,468,934	23,255,378	4,091,346	21.3
Housing						
Local Area	175,164	178,192	190,431	200,067	24,903	14.2
Subregional Area	617,722	620,461	654,930	681,067	63,345	10.3
Regional Area	6,306,175	6,390,115	7,180,979	7,820,468	1,514,293	24.0
Employment						
Local Area	184,919	185,938	192,573	198,860	13,941	7.5
Subregional Area	759,496	762,987	785,715	807,251	47,755	6.3
Regional Area	8,233,079	8,349,454	9,183,026	9,913,372	1,680,293	20.4

Source: PCR Services Corporation, July 2009.

Table IV.H-3

Job/Housing Ratio Projections [a]

Geographic Zone	2009	Projected 2010	Projected 2020	Projected 2030
Local Area	1.06	1.04	1.01	0.99
Subregional Area	1.23	1.23	1.20	1.19
Regional Area	1.31	1.31	1.28	1.27

[a] *Job/Housing Ratio is calculated by dividing employment by the housing forecasted number.*

Source: PCR Services Corporation, July 2009.

(1) Population

According to SCAG's regional forecast, the population will increase in all geographic zones between 2009 and 2030. In the City, the percentage growth is an approximate 13.6 percent increase between the years 2009 and 2030. During the same time period, the population growth in the subregional area of Gateway Cities COG is forecasted to have a percentage increase of 8.9 percent, and an approximate percentage increase of 21.3 percent for the regional area of SCAG. It should be noted that the project site is currently developed with retail and

office uses and has no residential units, which would contribute to the City's permanent population.

(2) Housing

The SCAG housing forecasts indicate that the housing growth in the City is projected to increase by approximately 14.2 percent between the years of 2009 and 2030. During the same time period, the housing growth for the subregional area of Gateway Cities COG is forecasted to be approximately 10.3 percent. The housing forecast for the regional area of SCAG is estimated to increase by 24.0 percent. As noted above, the project site is currently developed with retail and office uses and does not contain any residential units.

(3) Employment

According to SCAG, the City would have an employment percent increase of approximately 7.5 percent between the years of 2009 and 2030. Employment in the subregional area of Gateway Cities COG is projected to increase by 6.3 percent while the regional area of SCAG is projected to increase 20.4 percent during the same time period. The increase of employment to the City, Gateway Cities COG, and SCAG regions is the result of a continually growing population in the County of Los Angeles. It is estimated that the existing 294,003 square feet of retail and office uses on the project site provides a total of approximately 694 employment positions.[4]

(4) Job/Housing Ratio

A jobs-housing balance is the distribution of employment relative to the distribution of workers within a given geographic area. A job/housing ratio of 1:1 indicates that there is a job for every one household. As such, for ratios below 1.0, areas are considered to be "housing-rich," with a job deficit and housing surplus. For ratios above 1.0, those areas are considered to be "job-rich," or have a job surplus and a housing deficit. As identified by SCAG, the ideal average job/housing ratio in the SCAG region would be 1.25.

As estimated for the year 2009, the City has a job/housing ratio of 1.06, the subregional area has a ratio of 1.23, and the regional area of SCAG has a ratio of 1.31. Within the local area, the job/housing ratio for the projected year 2010 is expected to decrease to 1.04, and would

[4] *Employee population was calculated based on the 2001 Natelson Employee Density Report generation factor of 2.36 employees per 1,000 square feet.*

continue to decrease to 1.01 and 0.99 in 2020 and 2030, respectively. This can be attributed to new development that would generate more residential uses within the City, thus decreasing the jobs/housing ratio. The subregional area's job/housing ratio is also expected to decrease through the projected years of 2010, 2020, and 2030 with job/housing ratios of 1.23, 1.20, and 1.19, respectively. Similarly, the job/housing ratio for the SCAG regional area for the projected years 2010, 2020, and 2030 is also expected to decrease starting at a ratio of 1.31, and decreasing to 1.28, and 1.27, respectively. The SCAG regional area would be close to meeting the SCAG's ideal average job/housing ratio of 1.25. While the subregional and regional areas would incur a decreasing amount of housing in proportion to the number of jobs, they would continue to remain job-rich areas. However, as indicated in Table IV.H-3, by 2030, they City would become housing-rich, indicating a lack of jobs in the area.

3. PROJECT IMPACTS

a. Methodology

The population and housing analysis consists of a comparison of the project's proposed development and estimated population, housing, and employment to the expected forecasted SCAG projections for the years 2009 through 2030 for the three geographic areas. The analysis addresses impacts at the local (City of Long Beach), subregional (Gateway Cities COG), and regional (SCAG) areas. The analysis also evaluates the project's estimated population, housing, and employment and its compatibility with SCAG projections and related policies applicable to the project area.

b. Thresholds of Significance

Appendix G of the CEQA Guidelines provides a checklist of questions to assist in determining whether a proposed project would have a significant impact related to various environmental issues including population and housing. Based on the following issue areas identified in Appendix G of the CEQA Guidelines, a significant impact to population and housing would occur if the project would:

- Induce substantial population growth in an area, either directly (e.g. by proposing new homes and businesses) or indirectly (e.g. through extension of roads or other infrastructure);

- Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere; or

- Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere.

c. Project Design Features

Residential Option

Under the Residential Option, the project would develop approximately 1,370 condominium units, 340,000 square feet of office space, and 28,000 square feet of retail uses.[5]

Hotel Options (A and B)

Under the Hotel Options, development would include 1,110 condominium units, a 400-room hotel including 27,000 square feet of conference/banquet facilities, approximately 340,000 square feet of office space (similar to the amount of office space proposed under the Residential Option), and 27,000 square feet of retail uses.[6]

d. Analysis of Project Impacts

(1) Construction

Residential Option, Hotel Option A, and Hotel Option B

Construction of the project would generate construction workers during the demolition, grading and excavation, and building construction and finishing phases. However, individual construction projects would not necessarily generate new employment within the region. Rather, construction workers move from project to project and are somewhat mobile. To the extent that future project supports and contributes to the pool of construction workers, its impacts would be considered beneficial. Since construction activities related to the proposed project would not exceed expected growth nor alter the location, distribution, density, or growth rate of construction employment through the local, subregional, and regional area, construction-related employment impacts would be less than significant. Furthermore, it is not expected that construction impacts would displace substantial numbers of existing housing as the project site mainly consists of general commercial uses. As construction would be relegated to the project

[5] *It should be noted that the proposed project would include the demolition of 11,860 square feet of existing retail and 282,143 square feet office uses. However, in order to provide a more conservative analysis, we are assuming full project impacts as opposed to a net increase in retail and office uses.*

[6] *Ibid.*

site, it is not expected that any person would be displaced within the vicinity of the site from project development. As such, displacement impacts on existing housing and the residential population would be less than significant under the Residential Option and both Hotel Options.

(2) Operation

(a) Population Growth

Residential Option

The project under the Residential Option would develop 1,370 condominiums, 340,000 square feet of office use, and 28,000 square feet of retail use. Therefore, as illustrated in Table IV.H-4 on page IV.H-13, based upon a household size of 2.9 persons per dwelling unit, the project would result in a direct population increase of 3,973 persons.[7] The addition of 340,000 square feet of office use and 28,000 square feet of retail use would result in an increase of approximately 838 employment positions.[8] It is assumed that approximately one-quarter of those employees would relocate to the area, resulting in a household increase of approximately 209.5 households. Based upon the household size of 2.9 persons per household, the additional 209.5 households would result in an indirect increase of approximately 608 persons to the City's population. Therefore, under the Residential Option, the project would result in a total population increase of 4,582 persons (this is assuming 2.36 employees per 1,000 square feet of retail space and 2.27 employees per 1,000 square feet of office space).

The residential population increase to the City associated with the project is compared to the expected population increase for the years between 2009 and 2030 in the local, subregional, and regional areas. Table IV.H-5 on page IV.H-14 shows the project's percent growth in relation to the three geographic areas under the Residential Option. Under the Residential Option, the project's residential increase of 4,581 residents to the City would represent a total of 6.8 percent, 2.4 percent, and 0.1 percent of the population growth projected by SCAG for the local, subregional, and regional areas, respectively, between the years of 2009 and 2030.

As shown in Table IV.H-5, these percent increases are well within the forecasted growth set forth by SCAG. In addition, as the project population growth would not substantially alter the location or growth rate of the population projected and forecasted for the City, the Gateway Cities COG subregion, and SCAG region, the proposed project under the Residential Option would not result in a significant population impact.

---

[7] *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.*

[8] *Employee generation factors for commercial and banquet hall uses were obtained from the Natelson Company, Inc., Employment Density Study, prepared for SCAG.*

Table IV.H-4

Proposed Project Development

	Land Use	Net Intensity (in sq ft)	Total Employees [a, d]	Total Residents [b, c, d]
Residential Option				
	Residential	1,370 du	-	3,973
	Office	340,000	772	560
	Retail	28,000	66	48
Total			**838**	**4,581**
Hotel Options (A and B)				
	Residential	1,110 du	-	3,219
	Retail	27,000	64	46
	Office	340,000	772	559
	Hotel	400 room	440	319
	Banquet Hall	27,000	64	46
Total			**1,339**	**4,190**

[a] *Employee generation factors for commercial and banquet hall uses were obtained from the Natelson Company, Inc., Employment Density Study, prepared for SCAG. The employee generation factor for hotel uses was obtained from the 2003 SCAG employment population projections*

[b] *Indirect residents refers to the families that would relocate to the area for employment. It is assumed that one-quarter of the employees would relocate and therefore, the number of households that would relocate is multiplied by 2.90 persons per household.*

[c] *The generation factor for Direct Residents (2.90 persons per household) was obtained from the State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.*

[d] *Totals may not add up due to rounding.*

Source: PCR Services Corporation, July 2009.

Hotel Options (A and B)

The Hotel Options would develop 1,110 condominiums, 340,000 square feet of office use, 27,000 square feet of retail use, and a 400 room hotel including a 27,000 square banquet room. As illustrated in Table IV.H-4, the Hotel Options would result in a direct population increase of 3,219 persons. In addition, the Hotel Options would result in a total employment increase of approximately 1,339 employment positions.[9] Subsequently, the indirect population increase from the Hotel Options would total 971 persons.[10] Therefore, under the Hotel Options, the project would result in a total population increase of 4,190 persons.

[9] *This is assuming 2.36 employees per 1,000 square feet of retail space, 2.27 employees per 1,000 square feet of office space, and 1.1 employees per hotel room.*

[10] *Totals may not add up due to rounding.*

Table IV.H-5

Proposed Project Population, Housing, and Employment Impacts Between the Years of 2009 and 2030

	Population Increase [a]	Percent of Growth [b]	Housing Increase [a]	Percent of Growth [b]	Employment Increase [a]	Percent of Growth [b]
Residential Option	**4,581**		**1,370**		**838**	
Local Area	66,916	6.8	24,903	5.5	13,941	6.0
Subregional Area	189,406	2.4	63,345	2.2	47,755	1.8
Regional Area	4,091,346	0.1	1,514,293	0.1	1,680,293	0.04
Hotel Options A and B	**4,190**		**1,110**		**1,339**	
Local Area	66,916	6.3	24,903	4.5	13,941	9.6
Subregional Area	189,406	2.2	63,345	1.8	47,755	2.8
Regional Area	4,091,346	0.1	1,514,293	0.1	1,680,293	0.1

[a] *The local, subregional, and regional area numbers represent the 2008-2030 growth projections as provided in* Table IV.H-2 on page IV.H-8.

[b] *Percent growth calculated by dividing the project's net new development by the existing value 2008-2030 growth projections.*

Source: PCR Services Corporation, June 2009

As shown in Table IV.H-5, the Hotel Options' percent growth in relation to the three geographic areas under the Hotel Options represents a total of 6.3 percent, 2.2 percent, and 0.1 percent of the population growth projected by SCAG for the local, subregional, and regional areas, respectively, between the years of 2009 and 2030. Similar to the Residential Option, these percent increases are well within the forecasted growth set forth by SCAG. In addition, as the project population growth would not substantially alter the location or growth rate of the population projected and forecasted for the City, the Gateway Cities COG subregion, and SCAG region, the Hotel Options would not result in a significant population impact.

(b) Housing Growth

Residential Option

The proposed project under the Residential Option would result in the development of 1,370 residential units. As presented in Table IV.G-5, the project under the Residential Option would represent 5.5 percent, 2.2 percent, and 0.1 percent of the household growth projected by SCAG for the local, subregional, and regional areas between the years of 2009 and 2030, respectively. Table IV.G-5 shows that the addition of new housing units are well within the SCAG housing growth projections for the City of Long Beach, Gateway Cities COG subregion, and the SCAG region. By creating new housing units within the project area, the Residential Option would support applicable housing policies of SCAG's RCPG, which includes providing for a better balance of employment and housing in the project area, and would also help meet the

needs of the growing population in the City. However, it should be noted that while the City is projected to become housing-rich by the year 2030, the subregional and regional areas would continue to be job-rich and therefore, would benefit from the additional housing provided by the project.

Furthermore, the development of new retail and office uses to the project area would also increase the amount of indirect residents that may potentially move to the area due to employment and would also increase the need for housing units in the area. As previously described, it is estimated that 25 percent of new employment to the area would generate an indirect population of 608 residents under the Residential Option. The growth of indirect residents has been accounted for as part of the population, employment, and housing growth estimate resulting in a conservative analysis. Thus, the estimated Residential Option housing would be adequate to meet the growth of the direct and indirect residents. Lastly, the project site is located in an urban area already served by existing infrastructure and an established transportation system, in which the proposed mix of uses would provide a balance of jobs and housing, and would cluster development so as to create an activity center and provide for the efficient provision of infrastructure.

In summary, new housing proposed by the project is well within official SCAG forecasted estimates up to the year 2030 and the addition of new housing to the area is considered a beneficial impact pursuant to regional and housing policy. In addition, the maximum potential indirect housing demand would also be adequately available. As such, impacts to housing growth would be less than significant as a result of the proposed development under the Residential Option.

Hotel Options (A and B)

The Hotel Options would result in the development of 1,110 residential units, which would represent 4.5 percent, 1.8 percent, and 0.1 percent of the household growth projected by SCAG for the local, subregional, and regional areas between the years of 2009 and 2030, respectively. Therefore, the addition of new housing units are well within the SCAG housing growth projections for the City of Long Beach, Gateway Cities COG subregion, and the SCAG region. By creating new housing units within the project area, the Hotel Options would support applicable housing policies of SCAG's RCPG, which includes providing for a better balance of employment and housing in the project area, and would also help meet the needs of the growing population in the City.

Compared to the Residential Option, the Hotel Options would develop 260 fewer residential units and a greater amount of employment positions to improve the jobs/housing ratio for the City. As such, the development of a greater amount of employment positions would also increase the amount of indirect residents that may potentially move to the area and would also increase the need for housing units in the area. Thus, the estimated Hotel Options housing would

be adequate to meet not only the growth of the direct and indirect residents as a result of development of the Hotel Option, but to assist the City in improving the job/housing ratio. Lastly, the project site is located in an urban area already served by existing infrastructure and an established transportation system, in which the proposed mix of uses would provide a balance of jobs and housing, and would cluster development so as to create an activity center and provide for the efficient provision of infrastructure. As such, impacts to housing growth would be less than significant as a result of the proposed development under the Hotel Options.

(c) Employment Growth

Residential Option

The Residential Option would generate new job opportunities to the City that would increase the amount of employment within the project area. As previously stated, under the Residential Option, the project would result in an increase of 838 employment positions.[11] As shown in Table IV.G-5, this would represent 6.0 percent, 1.8 percent, and 0.04 percent of the projected SCAG employment growth estimated between the years 2009 and 2030. Based on the above analysis, the increase of employees associated with the Residential Option would be within the SCAG forecasted employment growth projections and would provide new employment to the City. As such, impacts associated with employment growth would be less than significant as a result of development of the Residential Option.

Hotel Options

As previously described, the Hotel Options would result in a greater amount of employment positions than the Residential Option with a total increase of 1,339 employment positions.[12] As shown in Table IV.G-5, this would represent 9.6 percent, 2.8 percent, and 0.1 percent of the projected SCAG employment growth estimated between the years 2009 and 2030. This increase would further assist the City in providing a balanced jobs/housing ratio. As such, impacts associated with employment growth would be less than significant as a result of development of the Hotel Options.

[11] *The number of employees was estimated by using the employee generation rate of 2.36 per 1,000 square feet of commercial uses.*

[12] *The number of employees was estimated by using the employee generation rate of 2.36 per 1,000 square feet of commercial uses.*

(3) Consistency with Regulatory Environment

(a) Regional Level

Residential Option, Hotel Option A, and Hotel Option B

The goals, policies, and objectives in the various plans described above address two aims that are applicable to the proposed project. The first aim is to support housing and employment needs at the local, subregional, and regional levels. The intent is to meet all future needs in a manner that is consistent with expected projections. The second aim is to broaden the extent of housing and employment opportunities to a broad array of populations. The following discussion addresses the project's relationship to these two aims.

The RTP projections, pursuant to RCPG Policy 3.01, are the policies used by SCAG in all phases of implementation and review. The SCAG RCPG policies described above include two policies that encourage and support the development of additional housing. RCPG Policy 3.17 requires the project to "support and encourage settlement patterns which contain a range of urban densities" and Policy 3.24 requires the project to "encourage efforts of local jurisdictions in the implementation of programs that increase the supply and quality of housing and provide affordable housing as evaluated in the Regional Housing Needs Assessment."

As the project under the Residential Option, Hotel Option A, and Hotel Option B would not exceed forecasted housing projections, the project's net increase of residential units would make a contribution to the creation of needed housing stock and would thus, support SCAG policies and projections. Furthermore, the housing projections and needs identified in the RTP and the RHNA both identify considerable amounts of new housing that is needed in order to meet the growing population needs of the three demographic areas analyzed. The proposed project under the Residential Option and both Hotel Options would add 1,370 residential units or 1,110 residential units, respectively, to the general housing supply and would contribute to housing availability and opportunity in the area. According to the RHNA, the SCAG regional area would require 165,457 very low-income dwelling units, 113,649 low-income dwelling units, 126,715 moderate-income dwelling units, and 293,547 above moderate-income dwelling units, for a total of 699,368 dwelling units. All options of the project would add new residential uses to an area currently developed with retail and office uses and would not adversely affect the existing housing supply. Therefore, the proposed project's overall contribution to the housing stock would be beneficial and its development would not have adverse affects on the existing or future availability of housing for other sectors.

The project would also be consistent with Policies 3.04 and 3.11 as the project would provide a balance of new employment opportunities and housing opportunities that would help

the local, subregional, and regional efforts for a balanced job/housing ratio. With the addition of both employment opportunities and housing opportunities, the project would be within the job/housing ratio forecasts projections through the year 2030, as shown in Table IV.H-3. As such, the project would be consistent with applicable SCAG policies regarding population, housing, and employment, and therefore, impacts would be less than significant under the Residential Option, Hotel Option A, and Hotel Option B.

(b) Local Level

Residential Option, Hotel Option A, and Hotel Option B

Development of the maximum potential residential units as proposed by the project under the Residential Option or the Hotel Options would support the goals and policies of the Housing Element of the City of Long Beach General Plan. The project developed under either options would provide for increased opportunities for the construction of high quality new housing. Specifically, as previously stated, the project would support the RHNA goals and would develop residential uses along transit corridors, in the downtown, and close to employment, transportation, and activity centers. The project would represent an infill and mixed-use development subject to design review guidelines and architectural standards. In addition, the project would include a range of dwelling units ranging from one- to three-bedroom units that would accommodate the housing needs of various socioeconomic segments of the community, including large families. As such, the project would also be consistent with the goal of providing increased opportunities for homeownership. Finally, the project would ensure fair and equal housing opportunities by providing fair housing services to Long Beach residents and compliance with laws prohibiting discrimination in the building, financing, selling or renting of housing. As such, the project would be consistent with applicable policies regarding population, housing, and employment, and therefore, impacts would be less than significant under the Residential Option, Hotel Option A, and Hotel Option B.

4. CUMULATIVE IMPACTS

a. Residential Option

Table IV.H-6 on page IV.H-19, provides a list of the related projects located within the project vicinity and also within the local, subregional, and regional areas. The SCAG RTP forecasted population, employment, and household growth is provided in Table IV.H-2. All of the related projects are located within the local, subregional, and regional areas of the project. The cumulative population and housing projections for the local, subregional and regional level are presented in Table IV.H-7 on page IV.H-20.

Table IV.H-6

Cumulative Water Demand

Map No. [a]	Land Use	Units	Generation Factor	Residents	Indirect Residents[c]	Employees
1	Apartments	107 d.u.	2.9 residents/d.u.	310	--	--
2	Hotel	82 rooms	1.1 employees/room	--	65	90
3	Apartments	64 d.u.	2.9 residents /d.u.	186	--	--
	Commercial	15 k.s.f.	2.36 employees/k.s.f.	--	25	35
4	Apartments	375 d.u.	2.9 residents /d.u.	1,088	--	--
	Commercial	26 k.s.f.	2.36 employees/k.s.f.	--	44	61
5	Condominiums	216 d.u.	2.9 residents /d.u.	626	--	--
6	Condominiums	358 d.u.	2.9 residents /d.u.	1,038	--	--
	Commercial	13.561 k.s.f.	2.36 employees/k.s.f.	--	23	32
7	Condominiums	51 d.u.	2.9 residents /d.u.	148	--	--
	Hotel	47 rooms	1.1 employees/room	--	39	52
8	Condominiums	56 d.u.	2.9 residents /d.u.	162	--	--
9	Hotel	178 rooms	1.1 employees/room	--	1	2
10	Condominiums	246 d.u.	2.9 residents /d.u.	713	--	--
11	Apartments	18 d.u.	2.9 residents /d.u.	52	--	--
	Commercial	15 k.s.f.	2.36 employees/k.s.f.	--	25	35
12	Hotel	138 rooms	1.1 employees/room	--	110	152
13	Apartments	291 d.u.	2.9 residents/d.u.	844	--	--
	Commercial	15.58 k.s.f.	2.36 employees/k.s.f.	--	27	37
14	Single-Family Residential	82 d.u.	2.9 residents/d.u.	238	--	--
	Commercial	7 k.s.f.	2.36 employees/k.s.f.	--	12	17
15	Hotel	165 rooms	1.1 employees/room	--	132	182
16	Hotel	191 rooms	1.1 employees/room	--	152	210
17	Senior Apartments[b]	152 d.u.	2.0 residents/d.u.	304	--	--
	Commercial	79.543 k.s.f.	2.36 employees/k.s.f.	--	136	188
18	Courtroom	450 k.s.f.	2.27 employees/k.s.f.	--	741	1,022
	Office	75 k.s.f.	2.27 employees/k.s.f.	--	123	170
	Retail	20 k.s.f.	2.36 employees/k.s.f.	--	34	47
Related Projects Total				**5,709**	**1,689**	**2,332**
Residential Option				**3,973**	**608**	**838**
Related Projects + Residential Option Total				***9,682***	***2,297***	***3,170***
Hotel Options				**3,219**	**971**	**1,339**
Related Projects + Residential Option Total				***8,928***	***2,660***	***3,671***

[a] *Corresponds with Map Nos. on Figure III-1 in Section III, Environmental Setting, of this Draft EIR.*
[b] *Assumes that senior housing has two residents per unit.*
[c] *Indirect residents is one-quarter of the employees multiplied by 2.9 persons per household.*

Source: PCR Services Corporation, 2009.

The related projects in conjunction with the Residential Option would generate a total residential population of approximately 11,978 residents by creating a total of 3,386 new

Table IV.H-7

Cumulative Project Population, Housing, and Employment Impacts Between the Years of 2009 and 2030

	Population Increase [a,b]	Percent Growth	Housing [a]	Percent Growth	Employment [a]	Percent Growth
Related Projects	*7,398*		*2,016*		*2,332*	
Local Area	66,916	11.1	24,903	8.1	13,941	16.7
Subregional Area	189,406	3.9	63,345	3.2	47,755	4.9
Regional Area	4,091,346	0.2	1,514,293	0.1	1,680,293	0.1
Cumulative Projects						
Related Projects + Residential Option	*11,978*		*3,386*		*3,170*	
Local Area	66,916	17.9	24,903	13.6	13,941	22.7
Subregional Area	189,406	6.3	63,345	5.3	47,755	6.6
Regional Area	4,091,346	0.3	1,514,293	0.2	1,680,293	0.2
Related Projects + Hotel Option A and B	*11,588*		*3,126*		*3,671*	
Local Area	66,916	17.3	24,903	12.6	13,941	26.3
Subregional Area	189,406	6.1	63,345	4.9	47,755	7.7
Regional Area	4,091,346	0.3	1,514,293	0.2	1,680,293	0.2

[a] *The local, subregional, and regional area numbers represent the 2009-2030 growth projections as provided in* Table IV.H-2 on page IV.H-8.

[b] *Population increase includes both direct and indirect residents.*

Source: PCR Services Corporation, December2008.

residential dwelling units to the City and 3,170 employment positions. As shown in Table IV.H-7, the increase of residents to the City would contribute 17.9 percent, 6.3 percent, and 0.3 percent to the projected 2009-2030 residential growth for the local, subregional, and regional areas, respectively. The increase of dwelling units to the City would contribute 13.6 percent, 5.3 percent, and 0.2 percent to the projected 2009-2030 housing growth for the local, subregional, and regional areas, respectively. The increase of employees to the City would contribute 22.7 percent, 6.6 percent, and 0.2 percent of the projected employment growth estimated between the years of 2009 and 2030 within the local, subregional, and regional areas, respectively.

As illustrated in Table IV.H-7, the cumulative projects would be within the SCAG RTP forecasted population, employment, and household projections. In addition, the increase in residential units would support the direct and indirect population growth. Finally, the increase in residential units would assist the subregional and regional employment and housing ratio. As such, cumulative impacts to population, employment, and housing with implementation of the Residential Option would be less than significant.

Hotel Options (A and B)

The related projects in conjunction with the Hotel Options would generate a total residential population of approximately 11,588 residents by creating a total of 3,126 new residential dwelling units to the City and 3,671 employment positions. As shown in Table IV.H-7, the increase of residents to the City would contribute 17.3 percent, 6.1 percent, and 0.3 percent to the projected 2009-2030 residential growth for the local, subregional, and regional areas, respectively. The increase of dwelling units to the City would contribute 12.6 percent, 4.9 percent, and 0.2 percent to the projected 2009-2030 housing growth for the local, subregional, and regional areas, respectively. The increase of employees to the City would contribute 26.3 percent, 7.7 percent, and 0.2 percent of the projected employment growth estimated between the years of 2009 and 2030 within the local, subregional, and regional areas, respectively.

Similar to the Residential Option, the Hotel Options would be within the SCAG RTP forecasted population, employment, and household projections. However, the amount of residential units compared to the Residential Option would be decreased with an increase in employment positions. Therefore, the Hotel Option would assist with balancing the City's employment and housing ratio compared to the subregional and regional level. Regardless, since the cumulative growth in population, employment, and housing is within the SCAG RTP projections, implementation of the Hotel Options would result in a less than significant cumulative impact.

5. MITIGATION MEASURES

a. Residential Option, Hotel Option A, and Hotel Option B

No mitigation measures would be necessary for project-specific impacts, as impacts on population and housing would be less than significant.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

a. Residential Option, Hotel Option A, and Hotel Option B

Development of the Residential Option, Hotel Option A, and Hotel Option B would result in less than significant impacts in regards to population, employment, and housing without mitigation. As such, impacts would be less than significant under the Residential Option, Hotel Option A, and Hotel Option B.

IV. ENVIRONMENTAL IMPACT ANALYSIS
I. PUBLIC SERVICES
1. FIRE PROTECTION

1. INTRODUCTION

This section analyzes the proposed project's impacts relative to the fire protection and emergency medical services provided by the Long Beach Fire Department (LBFD). The analysis addresses fire protection facilities, services, and response times, emergency access, and fire-flow. The analysis is based on information provided by the LBFD and is incorporated in Appendix E of this Draft EIR.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

(1) State of California

The California Code of Regulations (CCR) Title 24 (California Building Code [CBC]) is a compilation of building standards, including fire safety standards for residential and commercial buildings. CBC standards are based on building standards that have been adopted by state agencies without change from a national model code; building standards based on a national model code that have been changed to address particular California conditions; and building standards, authorized by the California legislature, not covered by the national model code. Typical fire safety requirements of the CBC include the installation of sprinklers in all high-rise buildings, the establishment of fire resistance standards for fire doors, building materials, and particular types of construction, and the clearance of debris and vegetation within a prescribed distance from occupied structures in wildfire hazard areas. The CBC applies to all occupancies in California, except where more stringent standards have been adopted by local agencies. Chapter 18.48 of the Long Beach Municipal Code (LBMC) includes several CBC fire safety regulations that have been amended and incorporated into the LBMC. This includes the use of fire-resistant building materials, fire suppression systems, and other fire safety elements related to the design and construction of buildings.

(2) City of Long Beach General Plan

The Public Safety Element of the Long Beach General Plan, which was adopted in 1975 and reprinted in 2004, provides a comprehensive, long-range strategy for accommodating long-term growth within the City regarding fire protection services. The Public Safety Element works to ensure that new infrastructure abides by all applicable building code requirements and regulations for the design, construction, and provision of development projects. Basic requirements for new development would address high-rise structures, open stairwells, dense development, and pre-fire preparation.

(3) City of Long Beach Municipal Code

Title 18 (Building and Construction Code) of the LBMC includes Chapter 18.23 (Fire Facilities Impact Fees) and Chapter 18.48 (Fire Code). Chapter 18.23 imposes a fire facilities impact fee on residential and nonresidential development for the purpose of assuring that the impacts created by new development pay its fair share of the costs required to support needed fire facilities and related costs necessary to accommodate such development. The fee is imposed for every dwelling unit of a residential development and per gross square feet of floor area for nonresidential development. The fire facilities impact fee is to be paid prior to receipt of the certificate of occupancy and is utilized for the acquisition of new property, the construction of new facilities, and the purchasing of new equipment.

As detailed in Chapter 18.48 of LBMC, the Long Beach Fire Code (Fire Code) incorporates the California Fire Code, 2007 Edition (California Code of Regulations, Title 24, Part 9), which incorporates International Fire Code, 2006 Edition. The Fire Code regulates and governs the safeguarding of life and property from fire and explosion hazards arising from the storage, handling, and use of hazardous substances, materials, and devices, and from conditions hazardous to life or property in the occupancy of buildings.[1]

Chapter 1 of the Fire Code establishes that the Fire Chief is authorized to make and enforce such rules and regulations for the prevention and control of fires, fire hazards and hazardous materials incidents as may be necessary from time to time. Chapter 1 also amends the scope of work of the California Fire Code by adding the maintenance of fire protection and elimination of fire hazards on vessels moored, anchored, or berthed in waters under the jurisdiction of the City and/or within the boundaries of the Port of Long Beach.

[1] *City of Los Beach Municipal Code, Title 18, Chapter 18.48, Section 18.48.010.*

Chapter 2 of the Fire Code includes definitions, specifically that high-rises are to be defined as, "every building of any type of construction or occupancy having floors used for human occupancy located more than seventy-five (75) feet above the lowest floor level having building access (see California Building Code, Section 403.1.2) or the lowest level of Fire Department vehicle access, whichever is more restrictive, except buildings used as hospitals as defined in section 1250 of the California Health and Safety Code." It also contains additional definitions relevant to the City, including boat yard, safety container, and small vessel.

Chapter 3 of the Fire Code prohibits the accumulation of waste, open burnings, and only allows for recreational fires with a permit from the Fire Chief. Chapter 3 also includes requirements for safety posts, which are to be a minimum of four feet tall and painted yellow. Chapter 5 includes additional requirements for access. Specifically, it requires a minimum width of 26 feet and 15 vertical feet for fire access roads and a minimum turning radii of 28 feet, in addition to requirements for address numbers and key box maintenance. Finally, Chapter 5 concludes with specific requirements for emergency landing helicopter facilities on high-rise buildings. It includes requirements for approaches, landings, roof perimeter fencing, wind device, standpipe, markings, and communication systems.

Chapter 9 establishes regulations for fire protection systems and equipment. It requires that all new commercial, industrial and non-residential buildings that require two or more exits or that are greater than 3,000 square feet be protected by an automatic sprinkler system along with all new single-family residences greater than 4,000 square feet and multi-family residential units. It also includes requirements for outdoor systems, minimum water pressure for standpipe outlets, requirements for evacuation plans for buildings over three stories, control panels, and that all boats and marinas are equipped with a standpipe system.

Chapter 10 of the Fire Code discusses the requirements regarding access. It requires protection of means of egress for the fire department vehicles, along with requirements for roof access. Specifically, for buildings four stories or taller, that one stairway extends to the roof unless the roof has a slope steeper than 33 percent.

b. Existing Conditions

(1) Fire Protection Facilities and Services

The LBFD provides fire protection, fire prevention, and emergency services to the entire City of Long Beach. The LBFD has more than 581 uniformed and civilian personnel, which serves a population of approximately 492,682 residents over an area of approximately 55 square

miles, including seven miles of beaches and 22 square miles of waterways.[2] In 2007, the LBFD responded to more than 57,122 emergency calls ranging from fire, medical, non-fire, hazmat, lifeguard/marine safety, and urban search and rescue related incidents.[3] The LBFD currently consists of 23 fire stations (including two fire boat stations in the port area, one urban search and rescue station located in the harbor area, and one airport fire station), eight lifeguard facilities (41 seasonal stations), a training center, emergency communications and operations center, and fire department headquarters. On any given day, there are approximately 137 full-time firefighters working 24-hour shifts.

As shown in Figure IV.I-1 on page IV.I-5, Fire Station No.1 would serve the project site. The location, distance from the project site, staffing, and equipment for all of the fire stations that would be available to serve the project site are summarized in Table IV.I-1 on page IV.I-6. As shown in Table IV.I-1, Fire Station No. 1 at 100 Magnolia Avenue is located approximately 0.3 miles northeast of the project site. Fire Station No. 1 would likely be the first to respond to the project site in the event of an emergency and would thus, be designated the "first-in" station. The Fire Station No. 1 service area is bounded by 7th Street to the north, Alamitos Avenue to the east, the Pacific Ocean to the south, and the Los Angeles River to the west.

"Second call" stations are fire stations that support the "first-in" station. As shown in Table IV.I-1, Fire Station No. 20 would be designated as "second call" stations to support Fire Station No. 1 in the event of an emergency at the project site. Fire Station No. 20 is located at 1900 W. Pier D Street, approximately 1.3 street miles west of the project site.

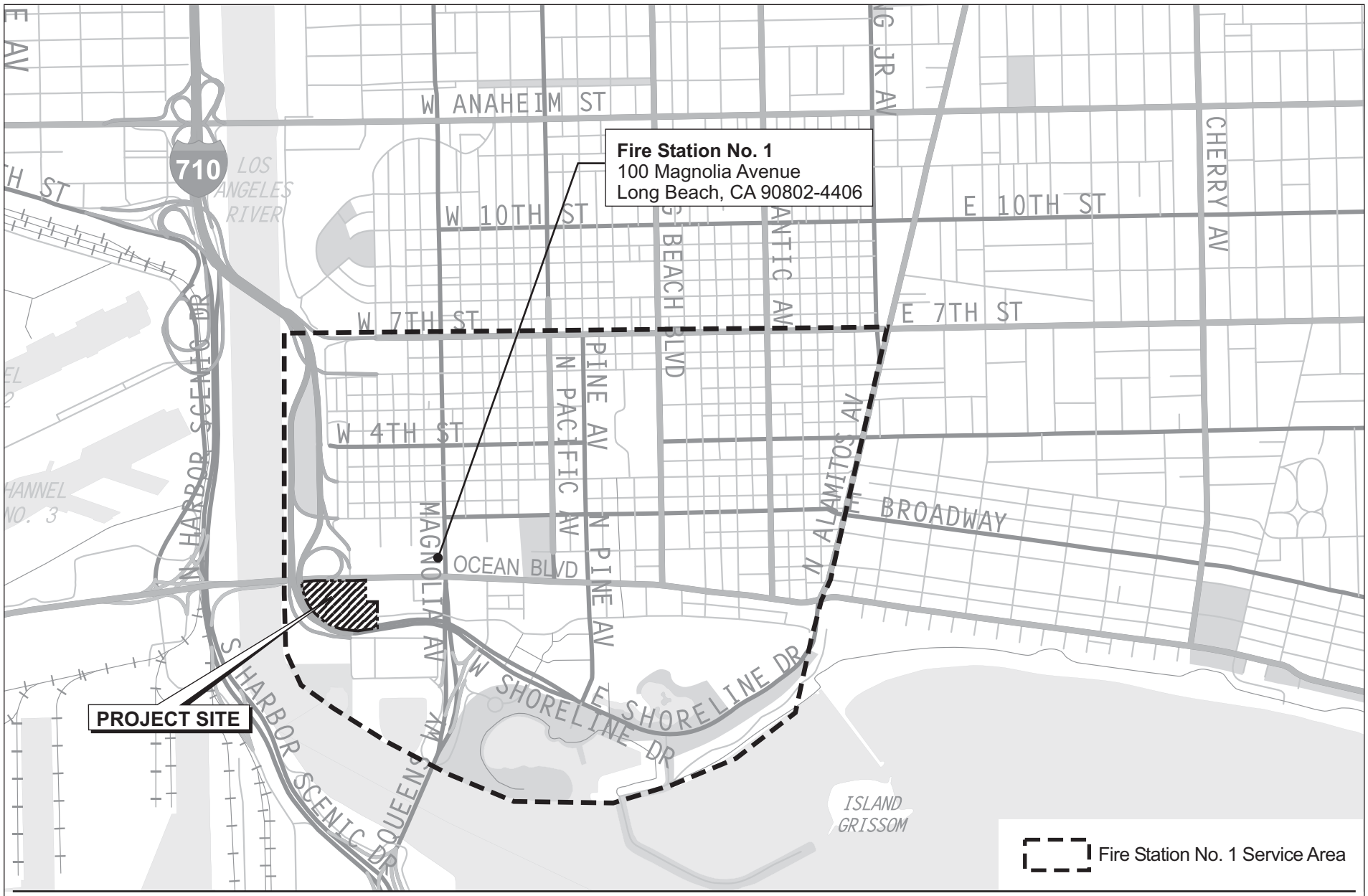
(2) Emergency Response

The LBFD establishes a median response time for emergency calls at five minutes. As previously described, Fire Station No. 1 is located approximately 0.3 miles from the project area and is estimated to arrive at the project site within one minute. In addition, six other fire stations are in the vicinity that would be available to serve the project site, ranging in distance from two to seven miles with response times ranging from three to 17 minutes. However, response times may vary depending on the location of the fire engine responding to the incident. During an emergency, calls received by the dispatch center are transmitted to the engine company that has jurisdiction over the incident location. In the event that the jurisdictional engine company is not available, the next closest available unit will respond to the call. Depending on the incident type,

---

[2] *City of Long Beach Fire Department, http://www.longbeach.gov, accessed July 2009. Population estimates per State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.*

[3] *The most recent year that total statistics are available.*



PCR

0 .5 Miles

Source: PCR Services Corporation, 2009.

Figure IV.I-1
Long Beach Fire Station Serving the Project Site

Table IV.I-1

Fire Stations Located in the Vicinity of the Project Site

Station No./Location	Distance From Project Site	Approximate Response Time To Project Site[a]	24-Hour Staffing	Equipment
Fire Station No. 1 100 Magnolia Street	0.3 miles	1 minute	13	Engine 1, Engine 101, Truck 1, Rescue 1
Fire Station No. 2 1645 E. 3rd Street	2 miles	5 minutes	4	Engine 2, Rescue 2
Fire Station No. 3 1222 Daisy Avenue	1.3 miles	6 minutes	8	Engine 3, BLS 3
Fire Station No. 6 330 Windsor Way	1.8 miles	3 minutes	5	Engine 6, USAR 6
Fire Station No. 7 2295 Elm Avenue	3.4 miles	10 minutes	4	Engine 7, Truck 7
Fire Station No. 10 1417 Peterson Avenue	2.7 miles	7 minutes	1	Engine 10, Rescue 10, BC1
Fire Station No. 22 6340 Atherton Street	7 miles	17 minutes	1	Engine 22, BC2

[a] *All drive times are for Code 2 emergencies. Code 3 emergencies would cut the drive time in half.*

Source: Battalion Chief, OPS/BLS Don Hulse, Long Beach Fire Department, July 3, 2009.

several units may be dispatched relative to the level of service required for the specific incident type.

(3) Emergency Access

Emergency access to the project site is currently provided via the surrounding roadways including Shoreline Drive, Ocean Boulevard, and Golden Shore. While the City does not have designated evacuation routes, the project site is conveniently located to regional transportation routes including the I-710 Freeway with access to the 405 Freeway.[4]

(4) Fire-Flow

Fire flow is the quantity of water available or needed for fire protection in a given area and is normally measured in gallons per minute (gpm), as well as the duration of flow. Fire flow requirements are based on building types and floor area and range from 1,250 to 8,000 gpm at 20 pounds per square inch (psi). The majority of the City's water supply comes from 28 active

[4] *City of Long Beach Department of Planning, Public Safety Element of the General Plan, page 97, May 1975, reprint 2004.*

groundwater wells (approximately 38 percent) and imported water purchased from the Metropolitan Water District of Southern California (MWD) (approximately 42 percent). The remaining six percent of the water supply is tertiary treated reclaimed water from the Sanitation Districts of Los Angeles County Long Beach Reclamation Plant.[5]

3. PROJECT IMPACTS

a. Methodology

Potential impacts related to fire protection were evaluated based on the ability of existing and planned LBFD staffing, equipment, and facilities to meet the additional demand for fire protection and emergency medical services resulting from development of the proposed project and whether it conflicts with the emergency response plan. The LBFD evaluates service impacts of new development by assessing the net addition to the building stock (new construction minus demolition), the types of uses proposed, the types of structures proposed, as well as the adequacy of response times and fire flow requirements. The effects of revised circulation patterns, within and around the project site, if any, on fire and emergency medical services have also been considered.

b. Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, a project could have a significant impact on the environment with regard to fire protection if a project would result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives of the fire department.

c. Project Design Features

Residential Option, Hotel Option A, and Hotel Option B

Development of the Residential Option would include a total of four buildings, which would be developed ranging in height from 311 feet to 460 feet. Hotel Option A would also include four buildings ranging in height from 311 feet to 495 feet and Hotel Option B would

[5] *Long Beach Water Department, Frequently Asked Questions, http://www.lbwater.org/information/faq.html, accessed June 23, 2009.*

include four buildings that would range in height from 300 feet to 495 feet. Thus, the buildings under all three development options would exceed the 75-foot threshold set by Chapter 5 of the Fire Code, requiring that the project include safety measures described in Chapter 18.48. In accordance with Chapter 5 of the Fire Code, a rooftop emergency helicopter landing facility or heliport would be provided for the high-rise buildings, in a location approved by the Fire Chief and there would be at least one stairwell providing access to the roof in compliance with Chapter 10 of the Fire Code.

The proposed project would provide emergency vehicle access to the project site subject to the approval of the LBFD. Emergency access to the site would be available on Ocean Boulevard and Shoreline Drive. Under all three options, emergency access would be available through Golden Shore to both the east and west portions of the project site.

d. Analysis of Project Impacts

(1) Construction

(a) Residential Option, Hotel Option A, and Hotel Option B

Construction activities may temporarily increase the existing demand on fire protection and emergency medical services and may cause the occasional exposure of combustible materials, such as wood, plastics, sawdust, coverings and coatings, to heat sources including machinery and equipment sparking, exposed electrical lines, welding activities, chemical reactions in combustible materials and coatings, and lighted cigarettes. However, in compliance with Occupational Safety and Health Administration (OSHA) and Fire and Building Code requirements, construction managers and personnel would be trained in emergency response. Fire suppression equipment specific to construction would be maintained on-site. Additionally, project construction would comply with applicable existing codes and ordinances. Therefore, construction impacts on fire protection and emergency medical services would be less than significant under the Residential Option, Hotel Option A, and Hotel Option B.

Construction-related traffic on adjacent streets could potentially affect emergency access to the project site and neighboring uses. However, construction staging and all temporary facilities (temporary offices, trash bins, toilets, cranes, pumps, etc) would occur on-site. As such, construction is anticipated to only require the closure of the sidewalks (no traffic lane closures) on Ocean Boulevard and Shoreline Drive. Nonetheless, construction activities could increase response times for emergency vehicles to local businesses and/or residences on Ocean Boulevard and Shoreline Drive, due to travel time delays. Therefore, throughout the duration of construction, traffic management personnel (flag persons) and appropriate detour signage would be employed as necessary to ensure emergency access is maintained to the project site and that

traffic flow is maintained on street right-of-ways. The project contractor would coordinate with the City to obtain an approved traffic control plan to accommodate the flow of vehicular and pedestrian traffic in the area. Additionally, the project would be required to comply with Section 14.08.220 of the LBMC, which requires that safe crossings be maintained for vehicles and pedestrian traffic at all street intersections and crosswalks. Therefore, with compliance with the regulations of the LBMC, emergency access would be maintained and traffic impacts from construction activity would be reduced to a less than significant level.

(2) Fire Protection Services and Facilities

(a) Residential Option

As discussed in Section IV.G, Population and Housing, of this Draft EIR, the project under the Residential Option would generate a total of approximately 4,580 residents including a residential growth of 3,973 residents and an indirect growth of 607 new residents generated in response to an increase of job opportunities to the City.[6] The project under the Residential Option would also generate approximately 838 employees. Thus, the residential population of the City would be increased to approximately 497,262 residents, which would be a 0.9 percent increase of the City's population.

As a result, an increased demand for fire protection services, equipment and facilities is anticipated due to City population growth. As previously stated, Fire Station No. 1 is the closest fire station located within the project vicinity and would be "first in" during an emergency. Fire Station No. 20 would provide additional assistance to Fire Station No. 1, as stated above. While this increase to the residential population would result in a greater demand for fire protection services, is not considered to be of significant impact.

In addition, proposed development would be required to pay fees pursuant to the Fire Facilities Impact Fee as amended in Chapter 18.23 of the LBMC. The payment of the fire facilities fee would attempt to ensure that fire facilities and services satisfy City standards and be available concurrent with new development needs within the City. The collection of the fees would be used to finance the construction of additional fire facilities or improvements to current facilities. Furthermore, the City would also generate annually recurring revenues through applicable City taxes such as sales tax, property tax, utility taxes, from the proposed retail, office, and residential uses.

[6] *An assumption that 25 percent of employees generated by commercial development would contribute to the residential population due to job relocation.*

Finally, the project would also be required to implement applicable building code requirements pursuant to the CBC as well as the Uniform Fire Code (UFC) as amended in Chapter 18.48 of the LBMC, requiring that fire protection devices be installed and utilized, which would decrease the demand for fire services. Therefore, impacts to fire protection services and facilities would be less than significant under the Residential Option.

(b) Hotel Options (A and B)

As discussed in Section IV.G, Population and Housing, of this Draft EIR, the Hotel Options would generate a total of approximately 4,190 residents including a residential growth of 3,219 residents and an indirect growth of 971 new residents generated in response to an increase of job opportunities to the City.[7] The project under the Hotel Options would also generate approximately 1,339 employees. Thus, the residential population of the City would be increased to approximately 496,872 residents, which would be a 0.9 percent increase of the City's population. While this increase to the residential population would result in a greater demand for fire protection services, is not considered to be of significant impact.

In addition, proposed development would be required to pay fees pursuant to the Fire Facilities Impact Fee as amended in Chapter 18.23 of the LBMC and the City would also generate annually recurring revenues through applicable City taxes such as sales tax, property tax, utility taxes, from the retail, office, hotel, and residential uses. The project would also be required to implement applicable building code requirements pursuant to the CBC as well as the UFC, requiring that fire protection devices be installed and utilized, which would decrease the demand for fire services. Therefore, impacts to fire protection services and facilities would be less than significant under the Hotel Options.

(3) Emergency Response

(a) Residential Option, Hotel Option A, and Hotel Option B

As previously mentioned above, the LBFD has established a suggested response time of five minutes for all emergency incidents. Fire Station No. 1 is located approximately 0.3 miles southwest of the project site and has an estimated response time of one minute. As a result, Fire Station No. 1 would be able to meet the suggested five-minute response time goal established by the LBFD. In addition, as previously described, there are six additional fire stations within the vicinity of the project site that would be able to serve the project site, of which two of the fire

[7] *An assumption that 25 percent of employees generated by commercial development would contribute to the residential population due to job relocation.*

stations (Fire Station No. 2 and Fire Station No. 6) would be able to meet the response time goal of five minutes. Furthermore, all of the engine companies would not necessarily be responding from their respective fire stations and thus, varying the average response time. As construction would be relegated to the project area, it is not expected that emergency response plans or evacuation plans will be affected. Therefore, the payment of applicable fees would ensure that emergency response to the project site and the City is adequate, resulting in less than significant impacts in this regard for all three options.

(4) Emergency Access

(a) Residential Option, Hotel Option A, and Hotel Option B

Project-related increase in traffic on surrounding roadways could have an impact on fire protection and emergency medical services if the response capabilities of the LBFD are impeded. As discussed in Section IV.I, Traffic and Circulation of this Draft EIR, the proposed project would not result in significant impacts to the surrounding intersections, with the incorporation of mitigation measures. The Applicant has coordinated with the LBFD to ensure site design provides adequate access for emergency vehicles and equipment to the project site, subject to the approval of the Fire Chief. As previously described, the project would provide adequate emergency access via Golden Shore to both the east and west portions of the project site. Therefore, the Residential Option, Hotel Option A, and Hotel Option B would have a less than significant impact on emergency access. Mitigation Measure H.1-3 is also recommended to ensure impacts to emergency access remain below a level of significance.

(5) Fire-Flow

(a) Residential Option, Hotel Option A, and Hotel Option B

Fire flow requirements for the residential and commercial uses of the project require 1,000 gpm at 20 psi of residual water pressure, and 1,500 gpm at 20 psi, respectively. In order to comply with the fire flow requirements of the LBFD, the project under all three options would be required to implement the minimum requirements for fire flow. Furthermore, prior to the issuance of building permits, the approval of the LBFD is required, which would ensure that development is constructed pursuant to UBC and CFC requirements. Adequate fire flow is an integral part of the project's design and fire flow and water supply are anticipated to be sufficient and accounted for (refer to Section IV.J.1, Water Supply of this Draft EIR). Hence, with the payment of fees pursuant to Chapter 18.23 of the Fire Code and the implementation of applicable building code requirements in accordance with the UBC and CFC, impacts to fire flow and utilities would be less than significant.

(6) Consistency with Regulatory Environment

(a) State of California

Residential Option, Hotel Option A, and Hotel Option B

The project would conform to all CBC regulations and ordinances to ensure that fire safety standards are met for buildings within the project area. Fire safety requirements of the CBC would include the installation of fire sprinklers in commercial and residential buildings, standards fire resistant doors, building materials, and particular types of construction; and the clearance of debris and vegetation within a prescribed distance from occupied structures. Hence, the CBC applies to all occupied structures in California including the proposed project. As such, the project would comply with State of California fire standards and impacts would be less than significant in this regard for all three options.

(b) City of Long Beach General Plan

Residential Option, Hotel Option A, and Hotel Option B

The project would be consistent with City of Long Beach General Plan as future development within the project site would be required to pay the "Fire Facilities Impact Fee" as discussed in Chapter 18.23 of the LBMC. Payment of the fees would ensure that adequate fire protection services and facilities are provided to the City. The project site would be subject to LBFD approval in accordance with the UBC and the CFC. The CFC would require development to install fire protection systems, automatic sprinkler systems, smoke detection systems, and any other applicable fire safety requirements and impacts would be less than significant in this regard for all three options.

(c) City of Long Beach Municipal Code

Residential Option, Hotel Option A, and Hotel Option B

The project and proposed development within the project site would be reviewed by the City to ensure that the project is in compliance with Chapter 18.48 of the LBMC and impacts would be less than significant in this regard for all three options.

4. CUMULATIVE IMPACTS

a. Residential Option

Section III of this Draft EIR identifies 18 related projects that are anticipated to be developed within the vicinity of the project site. For purposes of this cumulative analysis on fire protection and emergency medical services, only those related projects located within Fire Station No. 1's "first-in" district are considered.[8] Of the 18 related projects identified in Section III, 13 are located within Fire Station No. 1's "first-in" district as listed in Table IV.I-2 on page IV.I-14. These related projects would cumulatively generate, in conjunction with the proposed project, the need for additional fire protection and emergency medical services. The related projects include various residential, commercial/retail, hotel, and office uses.

As shown in Table IV.I-2, the related projects located within Fire Station No. 1 "first-in" district could potentially increase residential and non-residential population by 8,409 persons. The Residential Option in conjunction with the related projects could generate an increase in the residential and non-residential populations of 13,827 persons.

Although a cumulative increase in LBFD fire protection services would occur, cumulative project impacts on fire protection and emergency medical services would be reduced through regulatory compliance, similar to the proposed project. All related projects would comply with Chapter 18.23 of the LBMC. Additionally, "second call" stations would help support Fire Station No. 1 in the event an emergency were to occur. It should also be noted that the project, as well as related projects would generate revenue to the City's general fund in the form of net new property tax, direct (i.e., from on-site commercial uses) and indirect (i.e., from household spending) sales tax, utility user's tax, gross receipts tax, real estate transfer tax on residential initial sales and annual resales, and other miscellaneous household-related taxes (e.g., parking fines). This revenue could be used to fund LBFD expenditures as necessary to offset cumulative impacts to LBFD fire protection facilities and services. Therefore, cumulative impacts on fire protection and emergency medical services would be less than significant under the Residential Option.

b. Hotel Options (A and B)

As shown in Table IV.I-2, the related projects located within Fire Station No. 1 "first-in" district could potentially increase residential and non-residential population by 8,409 persons. The Hotel Options in conjunction with the related projects could generate an increase in the

Table IV.I-2

Related Projects Within Fire Station No. 1 Service Area[e]

Map No. [a]	Location	Land Use	Residential and Non-Residential Population [b, c]
1	432-440 W. Ocean Blvd.	107 apartments	310
2	110 W. Ocean Blvd.	82 hotel rooms	164
4	301 Pine Ave.	375 apartments; 26,000 s.f. commercial	1,165
5	150 W. Ocean Blvd	216 condominiums	626
6	777 E. Ocean Blvd.	358 condominiums; 13,561 s.f. commercial	1,078
10	25 S. Chestnut Place	246 condominiums	713
11	433 Pine Ave.	18 apartments; 15,000 s.f. commercial	99
12	285 Bay Street	140 hotel rooms	280
13	421 W. Broadway	291 apartments; 15,580 s.f. commercial	843
14	350 Long Beach Blvd.	82 single-family residences; 7,000 s.f. commercial	259
15	201 The Promenade	165 hotel rooms	330
16	155 Long Beach Blvd.	191 hotel rooms	382
17	New Long Beach Court House	450,000 s.f. courtrooms; 75,000 s.f. office; 20,000 s.f. retail	2,160
		Related Projects Total	**8,409**
		Residential Option Total[d]	**5,418**
		Hotel Options Total[d]	**5,529**
		Cumulative Total with Residential Option	**13,827**
		Cumulative Total with Hotel Options	**13,938**

[a] *Corresponds with Map Nos. on Figure III-1 in Section III of this Draft EIR.*

[b] *For related projects with residential uses, the residential population was determined by multiplying the number of residential units by 2.898 persons per household per the California Department of Finance.*

[c] *For related projects with non-residential uses, the non-residential population was determined based on the following generation factors as indicated in the City of L.A. CEQA Thresholds Guide (2006): 4 persons per 1,000 square feet of office space, 3 persons per 1,000 square feet of retail space, or 2 persons per hotel room.*

[d] *These totals include the direct and indirect population and employees associated with the three options.*

[e] *The Fire Station No. 1 service area is bounded by 7th Street to the north, Alamitos Avenue to the east, the Pacific Ocean to the south, and the Los Angeles River to the west..*

Source: PCR Service Corporation, July 2009.

residential and non-residential populations of 13,938 persons. Similar to the Residential Options, the Hotel Options would be required to comply with Chapter 18.23 of the LBMC. Additionally, "second call" stations would help support Fire Station No. 1 and the project, as well as related projects would generate revenue to the City's general fund in the form of net new

[8] *As previously described, Fire Station No. 1 service area is bounded to the north by 7th Street, to the east by Alamitos Avenue, to the south by the Pacific Ocean, and to the west by the Los Angeles River.*

property tax, direct and indirect sales tax, utility user's tax, gross receipts tax, real estate transfer tax on residential initial sales and annual resales, and other miscellaneous household-related taxes. This revenue could be used to fund LBFD expenditures as necessary to offset cumulative impacts to LBFD fire protection facilities and services. Therefore, cumulative impacts on fire protection and emergency medical services would be less than significant under the Hotel Options.

5. MITIGATION MEASURES

Implementation of the following mitigation measures would ensure that impacts related to fire protection remain less than significant under the Residential Option, Hotel Option A, or Hotel Option B.

a. Residential Option, Hotel Option A, and Hotel Option B

Mitigation Measure H.1-1: Prior to the issuance of a building permit, the Applicant shall consult with the Long Beach Fire Department and incorporate fire prevention and suppression features and other life-saving equipment (e.g., defibrillators) appropriate to the design of the project.

Mitigation Measure H.1-2: The project shall comply with all applicable State and local codes and ordinances, unless otherwise approved.

Mitigation Measure H.1-3: Prior to the issuance of building permits, project building plans including a plot plan and floor plan of the buildings shall be submitted for approval by the Long Beach Fire Department. The plot plan shall include the following minimum design features: location and grade of access roads and fire lanes, roadway widths, distance of buildings from an edge of a roadway of an improved street, access road, or designated fire lane, turning areas, and fire hydrants.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

a. Residential Option, Hotel Option A, and Hotel Option B

In compliance with the LBMC Fire Code, the General Plan Public Safety Element, and all other applicable ordinances and requirements, the proposed project would not result in any significant impacts on fire protection and emergency medical services. Implementation of the recommended mitigation measures would further ensure that the project's impacts on the delivery of fire protection and emergency medical services to the project site remain less than significant. Thus, no significant unavoidable impacts with regard to fire protection services are anticipated.

1. INTRODUCTION

This section addresses impacts on police protection services that would occur due to increased population, traffic, and construction activities associated with the proposed project. The analysis is based in part on information provided by the Long Beach Police Department (LBPD) regarding police protection facilities, services, and response times. The focus of the analysis is on LBPD facilities that currently serve the project site and potential impacts to police protection services. Written correspondence from the LBPD is incorporated by reference throughout this section and is included in Appendix E of this Draft EIR.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

(1) General Plan

The Public Safety Element of the Long Beach General Plan addresses crime prevention by first detailing the needs for rules and regulations within a civilized society and that crime prevention involves more than just police. The Public Safety Element continues to explain how crime prevention can be supplemented through physical planning. The Public Safety Element concludes that, "Physical design can be accomplished in such a manner that it contributes to the creation of public spaces that serve to deter, rather than encourage crime. Specific areas of consideration should include but not be limited to the following:

- Public access to parks and other urban uses should be designed in such a manner that surveillance is enhanced. On-street parking, foyers, and similar enclaves should be minimized.

- In multi-family structures, design provision should be made to allow mutual surveillance. Common areas and entranceways should be well lighted and in open view.

- Improved street lighting and pedestrian path illumination should be provided in public areas.

- Abandoned and vacant buildings should be demolished to reduce availability to potential violators.

- Parking garages should be located in close proximity to activity centers."

(2) Municipal Code

Chapter 2.15 of the Long Beach Municipal Code (LBMC) identifies the permissible activities of the LBPD including providing police reports, fees for fingerprinting, and training policies and standards consistent with Chapter 1 of the Penal Code. Chapter 2.15 also establishes the Reserve Corps under leadership of the chief of police and that membership in the Reserve Corps is open to both men and women. Section 2.15.080 limits the use of the California Law Enforcement Telecommunications System (CLETS) to only the chief of police.

Chapter 10.04 (Administration) of the LBMC establishes the police department's role in the administrative duties of the City. Specifically, Section 10.04.030 provides the police department with the ability, "to enforce all street traffic laws of this city, and all of the state vehicle laws applicable to street traffic in this city." In addition, the public services department, planning and building department, and parking control checkers are required to coordinate with the police department to issue notices for state Vehicle Code violations.

Chapter 18.22 of the LBMC designates the implications for Police Facilities Impact Fees. The enactment of Government Code Sections 66001 through 66009 has authorized the City to enact development impact fees. A police facilities impact fee is imposed on residential and nonresidential development for the purpose of assuring that the impacts created by said development pay its fair share of the costs required to support needed police facilities and related costs necessary to accommodate such development.

b. Existing Conditions

(1) Police Protection Facilities and Services

The LBPD provides local police services to the City of Long Beach. The LBPD currently serves a residential population of approximately 492,682 within a service radius of 55

square miles.[1] As of 2009, the LBPD has a budgeted staff of approximately 1,000 officers plus support staff. The LBPD is divided into four separate bureaus, the Investigation Bureau, Support Bureau, Patrol Bureau, and the Administration Bureau. The Investigation Bureau includes the Detective Division, Gang and Violent Crimes Division, Youth Services Division, and the Forensic Sciences Service Division. The Support Bureau oversees the Jail Division, Emergency Operations Division, and the Training Division. The Administration Bureau includes the Fiscal Division, Records and Technology Division, Personnel Division and the Community Relations Division.

The Patrol Bureau is the department's largest bureau encompassing over 40 percent of the organization's budget and more than 50 percent of its personnel. The bureau's focus is to support the department's vision through community policing accomplished by police officers and civilians. The Patrol Bureau includes four geographical divisions (North, East, South, and West) and the Field Support Division. The Field Support Division is the largest and most diverse division in the Patrol Bureau, consisting of over 200 sworn and civilian personnel. The Field Support Division is organized into the Traffic Section and the Special Enforcement Section, which includes the Motorcycle Unit, DUI Team, Accident Investigation/Fleet Safety Detail, Special Events Section, Reserve Unit, School Crossing Guard Detail, Special Weapons and Tactics Team, Negotiations Team, Marine Patrol Unit, Air Support Unit, and K-9 Unit. The Patrol Bureau also offers Neighborhood Storefronts, which are community police centers staffed by both department personnel and volunteers. The "storefronts" are places where area residents can obtain crime prevention information and ask specific questions regarding available police services. Assistance in setting up neighborhood watch organizations is also available at these locations. The nearest Neighborhood Storefront to the project site is located at the 7th Street Police Center located at 7th Street and Alamitos Avenue, approximately 1.5 miles northeast of the project site.

As previously described, the LBPD currently comprises of four Police Divisions (North, South, East, and West) that patrol approximately 55 square miles within the City of Long Beach. The project site is located in the South Division of the LBPD. The South Division's jurisdiction extends from Cherry Avenue and the Los Angeles River from east to west, and from Anaheim Street to the Pacific Ocean from north to south. The South Division police station is located at 400 West Broadway and performs three core functions: rapid response to emergency calls for service, rapid identification and response to emerging crime trends, and working together with the community to solve persistent neighborhood problems. Currently, 143 sworn officers staff the South Division police station. Even though the South Division is the smallest geographical division in the city, it receives the second highest calls for service demand averaging almost

[1] *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.*

45,000 calls a year. Regardless, the South Division's response time to emergency calls for service is less than five minutes from the initial call to the police unit's arriving on scene with an average response time of 3.7 minutes. Figure IV.I-2 on page IV.I-20 illustrates the South Division police station in relation to the project site.

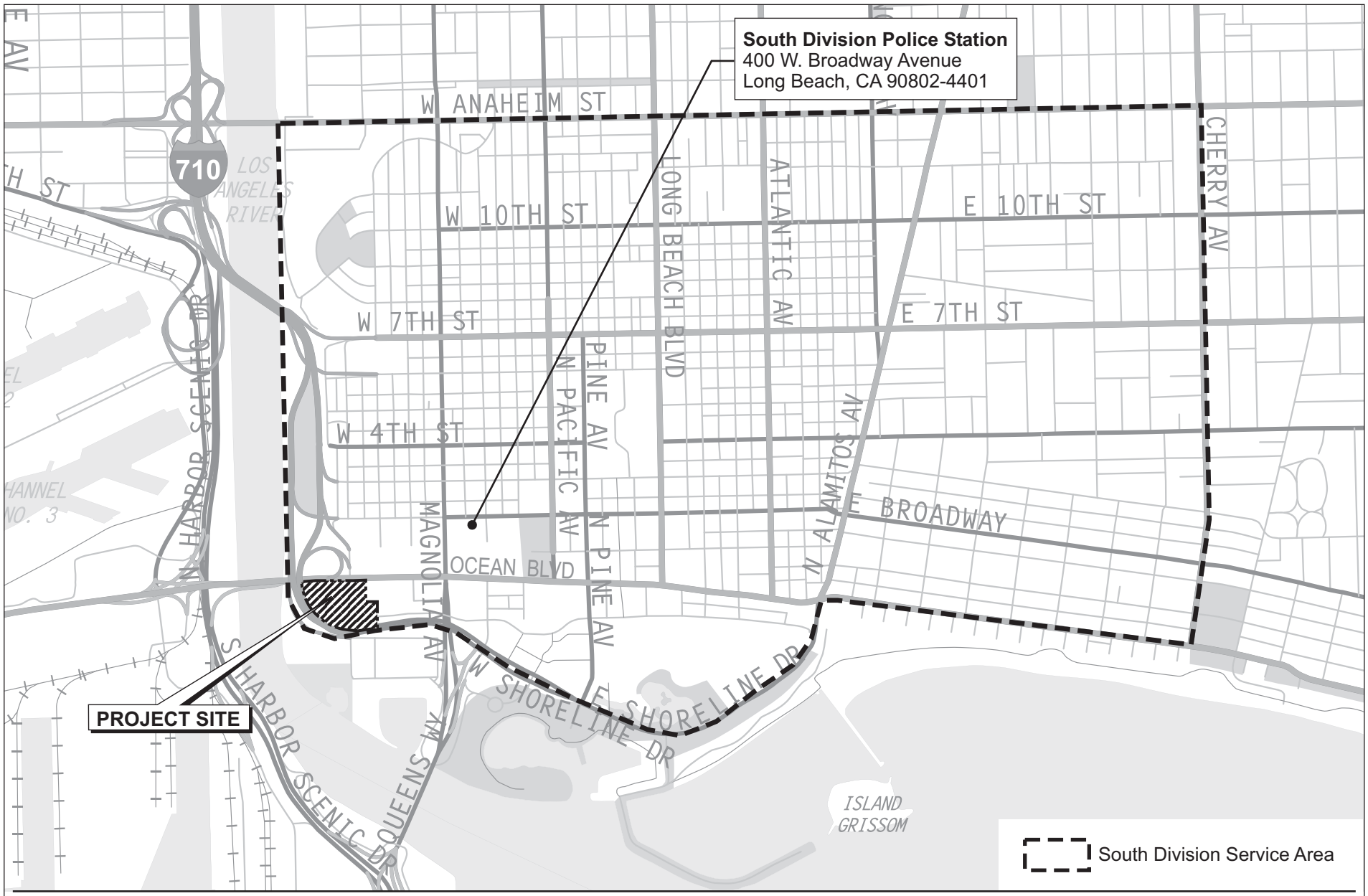
Table IV.I-3 on page IV.I-21, provides statistics for the South Division and Citywide service areas in terms of residential population, sworn personnel, officer to resident ratio, crime rates, and crimes per capita. As illustrated in Table IV.I-3, the officer to resident ratio for the City is one officer per 499 residents Based on this station's residential service population of approximately 80,000 residents, the ratio of officer per resident is approximately one officer per 559 residents. In addition, based on the South Divisions population and 6,224 crimes during 2008, the crime to resident ratio is approximately 1 crime per 13 residents. In comparison, the Citywide ratio is approximately one officer per 499 residents and one crime per 17 residents.

It should also be noted that the LBPD is part of the Los Angeles County Law Enforcement Mutual Aid Organization, which is overseen by the Los Angeles County Sheriff's Department. In the event that mutual aid is required, the Emergency Operations Bureau of the Los Angeles County Sheriff's Department is notified and in turn, notification of other cities in predetermined response groups occurs. The California State University Police, Long Beach Community College Police, Veteran's Hospital Police, and the United States Coast Guard are also available for mutual aid, if needed.

(2) Emergency Response

The LBPD has an established police response time goal of less than five minutes for priority calls. The emergency response system used by the LBPD routes all emergency calls to the public safety dispatch center which has dispatchers on duty for 24 hours a day, seven days a week. All 911 calls are routed to the dispatch center based on the geographical location of the call's origin and are entered into the Computer Aided Dispatch (CADD) system which categorizes the calls based on priority types and dispatcher input. The CADD system also coordinates the call and police unit locations through a mapping system that maintains and enhances response times to the emergency call. For medical calls, first aid procedures that may be necessary before police or fire services are also provided for the callers. As previously states, the South Division has an average response time of 3.7 minutes for priority calls.[2]

[2] *Emergency calls are categorized by emergency or potentially life threatening incident: Priority 1 calls are potentially life threatening emergencies, Priority 2 calls are urgent but not life threatening, and Priority 3 calls are routine calls.*



Source: PCR Services Corporation, 2009.

Figure IV.I-2
Location of the South Division Police Station

Table IV.I-3

Population, Officer, Crime, and Response Time Comparison for 2008

Service Area	Population	Sworn Officers	Officer/Resident Ratio	Crimes	Crimes/Resident Ratio
South Division	80,000	143	1/559	6,224[a]	0.078
Citywide	492,682[b]	987	1/499	28,871[c]	0.059

[a] *City of Long Beach Police Department,* M*onthly crime statistics for all of the reporting districts within the South Division,. http://www.longbeach.gov/civica/filebank/blobdload.asp?BlobID=21673, accessed August 2009.*

[b] *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.*

[c] *City of Long Beach Police Department, Year End Statistics for 2008, http://www.longbeach.gov/civica/filebank/blobdload.asp?BlobID=21673, accessed June 2009.*

Source: PCR Services Corporation, 2009.

3. PROJECT IMPACTS

a. Methodology

Potential impacts related to police protection were evaluated based on the adequacy of existing and planned LBPD staffing, equipment, and facilities to meet the additional demand for police protection resulting from development of the proposed project. The following factors were taken into consideration in performing the impact analysis: effects of the project on response times, calls for service, and levels of service; the need for additional officers, associated equipment, and facility space; and potential internal security measures provided as part of the proposed project.

b. Thresholds of Significance

Appendix G of the CEQA Guidelines provides a checklist of questions to assist in determining whether a proposed project would have a significant impact related to various environmental issues including police protection. Based in part on the police protection questions identified in Appendix G of the CEQA Guidelines, a significant impact to police protection would occur if:

- The proposed project substantially reduces the existing level of police protection services within the area surrounding the project site;

- The proposed project results in a substantial increase in emergency response times within the area surrounding the project site;

- The project will result in inadequate emergency access; or

- The project will result in substantial adverse physical impacts associated with the provision of new or physically altered facilities, or the need for new or physically altered facilities, the construction of which would cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for police services.

c. Project Design Features

(1) Residential Option

The Residential Option would include 1,370 residential units, 340,000 square feet of office space, and 28,000 square feet of retail area. The Residential Option would include the provision of private security personnel, as well as security lighting, cameras, and gates. The project design features would serve to create a safe environment for residents and patrons of the commercial uses.

(2) Hotel Options (A and B)

Both Hotel Options would include 1,110 residential units, a 400-room hotel, a 27,000 square foot hotel banquet room/restaurant, 340,000 square feet of office space, and 27,000 square feet of retail area. Both Hotel Options would also include the provision of private security personnel, as well as security lighting, cameras, and gates. The project design features would serve to create a safe environment for residents and patrons of the commercial uses.

d. Analysis of Project Impacts

(1) Construction

(a) Residential Option, Hotel Option A, and Hotel Option B

Construction-related traffic on adjacent streets could potentially affect emergency access to the project site and neighboring uses. Construction activities may involve temporary lane closures for utility construction, crane erection, or the foundation mat slab pour (generally only one lane would be temporarily closed so through access on all roadways serving the project site

would be maintained). Other implications of construction-related traffic include increased travel time due to flagging or stopping of traffic to accommodate trucks entering and exiting the project site during construction (i.e., for the movement of construction equipment and hauling of excavated materials). As such, construction activities could increase response time for emergency vehicles to local businesses and/or residences due to travel time delays. However, the LBPD would be notified of the times of day and locations of all temporary lane closures, and such closures would be coordinated so that they do not occur during peak traffic periods, to the extent feasible. Additionally, the project would be required to comply with Section 14.08.220 of the LBMC, which requires that safe crossings be maintained for vehicles and pedestrian traffic at all street intersections and crosswalks. Therefore, with compliance with the regulations of the LBMC, emergency access would be maintained and traffic impacts from construction activity would be reduced to a less than significant level.

(2) Police Protection Services and Facilities

(a) Residential Option

As discussed above, the project site is served by the South Division Police Station, which consists of approximately 143 sworn officers, approximately 80,000 civilians, and reported 6,224 crimes in 2008. By dividing the number of annual crimes by the residential population of the City, a generation factor of 0.078 annual crimes per capita was derived. The project would generate approximately 4,581 new residents.[3] Based on the generation factor of 0.078 crimes per capita, the residential component of the proposed project could potentially result in 357 additional crimes per year. The increase in the residential population could potentially generate 357 crimes per year, which is an increase of less than 5.7 percent of the crimes reported in the South Division in 2008.

Under the Residential Option, current police protection services, personnel, and facilities would be strained due to the increased residential population within the City. Furthermore, additional sworn officers would be required to maintain one officer per 559 residents. However, implementation of the project would generate funding for police protection services through property and sales tax revenue generated by the proposed retail, office, and residential uses. These funds would be used for the development of needed facilities, personnel, or equipment. In addition, in order to reduce the impact on police services, adequate security and lighting measures would be adopted by the proposed project to ensure public safety. This may include the implementation of security cameras, fences, adequately lit streets with security lighting, and well-lit walkways to minimize crimes and the need for police services. Finally, the project

[3] *Refer to Section IV.G, Population, Housing, and Employment, of this Draft EIR.*

would be required to comply with Chapter 18.22 of the LBMC, requiring payment of the police facilities impact fee on residential and nonresidential development for the purpose of assuring that the impacts created by new development pay its fair share of the costs required to support needed police facilities and related costs necessary to accommodate such development. As such, impacts to police services under the Residential Option would be less than significant.

(b) Hotel Options (A and B)

Under the Hotel Options, the project would generate approximately 4,190 new residents.[4] Based on the generation factor of 0.078 crimes per capita, the residential component of the proposed project could potentially result in 327 additional crimes per year. The increase in the residential population could potentially generate 327 crimes per year, which is an increase of less than 5.3 percent of the crimes reported in the South Division in 2008.

Similar to the Residential Option, current police protection services, personnel, and facilities would be strained due to the increased residential population within the City under both Hotel Options. Furthermore, additional sworn officers would be required to maintain one officer per 559 residents. Regardless, implementation of the project would generate funding for police protection services through property and sales tax revenue generated by the proposed hotel, retail, office, and residential uses. The Hotel Options would also include the implementation of security cameras, fences, adequately lit streets with security lighting, and well-lit walkways to minimize crimes and the need for police services. Finally, the project under the Hotel Options would also be required to comply with Chapter 18.22 of the LBMC, requiring payment of the police facilities impact fee on residential and nonresidential development. Therefore, impacts to police services under the Hotel Options would be less than significant.

(3) Emergency Response

(a) Residential Option, Hotel Option A, and Hotel Option B

The development of the proposed project under all three options would increase the residential population. While the project would increase the need for police protection services, the South Division has an average response time of 3.7 minutes, which is faster than the LBPD's goal of five minutes. In addition, the LBPD estimates that it would take less than five minutes to reach the project site since it is only 0.32 miles from the project site. Finally, emergency vehicles using sirens can typically maneuver through traffic even during congested conditions and may also utilize alternate routes to reduce response times despite increased traffic during

[4] *Ibid.*

peak periods. Thus, impacts to emergency response to emergency calls would be less than significant for emergency response under all three options.

(4) Consistency with Regulatory Environment

(a) General Plan

(i) Residential Option, Hotel Option A, and Hotel Option B

As previously described, the Public Safety Element focuses on the importance of physical planning in regards to crime prevention. Under all three options, the project would provide public access to the plaza parks and retail and office uses, which would be designed in such a manner that surveillance is enhanced. In addition, the residential towers would be designed to allow mutual surveillance with well lighted common areas and entranceways that would be in open view. The project would ensure that street lighting and pedestrian path illumination would be provided in all the public areas. Finally, the parking garages would be located on-site within subterranean and aboveground structures within the buildings, and therefore, would be in close proximity to the retail, office, hotel, and residential uses. As such, the Residential Option, Hotel Option A, and Hotel Option B would be consistent with the Public Safety Element of the General Plan and impacts would be less than significant in this regard.

(5) Municipal Code

(a) Residential Option, Hotel Option A, and Hotel Option B

While the LBMC includes Chapter 2.15, which describes the duties of the Police Department and Chapter 10.04, which describes the administrative duties of the Police Department, these are requirements of the city and therefore, not applicable to the proposed project. In addition, as described above, the project under all three options would be required to comply with Chapter 18.22 of the LBMC, requiring payment of the Police Facilities Impact Fees for residential and nonresidential development. Payment of these fees would ensure that the impacts created by the proposed project pay its fair share of the costs required to support needed police facilities and related costs necessary to accommodate such development. As such, impacts would be less than significant under all three options, in this regard.

4. CUMULATIVE IMPACTS

a. Residential Option

Section III of this Draft EIR identifies 19 related projects that are anticipated to be developed within the vicinity of the project site. For purposes of this cumulative analysis on police protection services, only those related projects located within the South Division service area are considered. Of the 19 related projects identified in Section III, Environmental Setting, 18 are located within the South Division service area as listed in Table IV.I-4 on page IV.I-27. These related projects would cumulatively generate, in conjunction with the Residential Option, the need for additional police protection services. The related projects include various residential, commercial/retail, hotel, and office uses. The Residential Option, in conjunction with related projects, could therefore generate 1,237 additional crimes/calls per year. Thus, the projected total of crimes per year in the South Division would increase from 6,224 to 7,461. This represents a 20 percent increase in annual crimes. Similar to the Residential Option, all related projects would be reviewed by the LBPD to ensure that sufficient security measures are implemented to reduce potential impacts to police protection services. Furthermore, the need for additional police protection services associated with cumulative growth would be addressed through the City's annual budgeting process and capital improvement programs, should the City determine that service improvements, including new or expanded facilities, are necessary. Therefore, cumulative impacts regarding police protection services would be less than significant under the Residential Option.

b. Hotel Options

As previously described, of the 19 related projects, 18 are located within the South Division service area as listed in Table IV.I-4. These related projects would cumulatively generate, in conjunction with the Hotel Options, the need for additional police protection services. The related projects include various residential, commercial/retail, hotel, and office uses. The Hotel Options, in conjunction with related projects, could therefore generate 1,246 additional crimes/calls per year. Thus, the projected total of crimes per year in the South Division would increase from 6,224 to 7,470. This represents a 20 percent increase in annual crimes. Similar to the Hotel Options, all related projects would be reviewed by the LBPD to ensure that sufficient security measures are implemented to reduce potential impacts to police protection services. Furthermore, the need for additional police protection services associated with cumulative growth would be addressed through the City's annual budgeting process and capital improvement programs, should the City determine that service improvements, including new or expanded facilities, are necessary. Therefore, cumulative impacts regarding police protection services would be less than significant under the Hotel Options.

Table IV.I-4

Related Projects Within the South Division's Service Area

Map No. [a]	Location	Land Use	Residential and Non-Residential Population [b, c]
1	432-440 W. Ocean Blvd.	107 apartments	310
2	110 W. Ocean Blvd.	82 hotel rooms	164
3	1598 Long Beach Boulevard	64 apartments; 15,000 s.f. commercial	230
4	301 Pine Ave.	375 apartments; 26,000 s.f. commercial	1,165
5	150 W. Ocean Blvd	216 condominiums	626
6	777 E. Ocean Blvd.	358 condominiums; 13,561 s.f. commercial	1,078
7	1628-1724 W. Ocean Blvd.	51 condominiums; 47 hotel rooms	242
8	2010 Ocean Blvd.	56 condominiums	162
10	25 S. Chestnut Place	246 condominiums	713
11	433 Pine Ave.	18 apartments; 15,000 s.f. commercial	99
12	285 Bay Street	138 hotel rooms	276
13	421 W. Broadway	291 apartments; 15,580 s.f. commercial	843
14	350 Long Beach Blvd.	82 single-family residences; 7,000 s.f. commercial	259
15	201 The Promenade	165 hotel rooms	330
16	155 Long Beach Blvd.	191 hotel rooms	382
17	1235 Long Beach Blvd.	79,543 s.f. retail; 152 senior apartments;[d] 210 condominiums	1,150
18	New Long Beach Court House	450,000 s.f. courtrooms; 75,000 s.f. office; 20,000 s.f. retail	2,160
19	Hotel Sierra	125 hotel rooms	250
		Related Projects Total	**10,439**
		Residential Option Total	**5,419**
		Hotel Options Total	**5,529**
		Cumulative Total with Residential Option	**15,858**
		Cumulative Total with Hotel Options	**15,968**

[a] *Corresponds with Map Nos. on Figure III-1 in Section III of this Draft EIR.*

[b] *For related projects with residential uses, the residential population was determined by multiplying the number of residential units by 2.898 persons per household per the California Department of Finance.*

[c] *For related projects with non-residential uses, the non-residential population was determined based on the following generation factors as indicated in the City of L.A. CEQA Thresholds Guide (2006): 4 persons per 1,000 square feet of office space, 3 persons per 1,000 square feet of retail space, or 2 persons per hotel room.*

[d] *For senior apartments, only 2.0 persons per household were assumed.*

Source: PCR Service Corporation, 2009.

5. MITIGATION MEASURES

a. Residential Option, Hotel Option A, and Hotel Option B

With incorporation of LBMC requirements and project design features, impacts to police protection services during construction of the proposed project would be less than significant. However, to ensure implementation of the project's construction design features, requiring preparation of a Construction Staging and Traffic Management Plan, would further ensure impacts regarding emergency access remain below a level of significance. With regard to operation, with incorporation of the project's design features, project operation would not result in any impacts that would significantly affect the capacity of the LBPD to serve the project.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

a. Residential Option, Hotel Option A, and Hotel Option B

The project would result in less than significant impacts to police protection services with the implementation of LBMC requirements and project design features.

IV. ENVIRONMENTAL IMPACT ANALYSIS
I. PUBLIC SERVICES
3. SCHOOLS

1. INTRODUCTION

This section evaluates potential impacts on existing school facilities operated by the Long Beach Unified School District (LBUSD) from implementation of the project. The analysis is based in part on information provided by the LBUSD Facilities Services Department and Planning Branch and the Developer Fee Office. The written correspondence received from LBUSD regarding the project is incorporated by reference throughout this section and is included in Appendix E of this Draft EIR.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

(1) California Education Code

Educational services for the project are subject to the rules and regulations of the California Education Code and governance of the State Board of Education. The State also provides funding through a combination of sales and income taxes. In addition, pursuant to Proposition 13, the State is also responsible for the allocation of educational funds that are acquired from property taxes.

(2) Senate Bill 50

Senate Bill 50 (SB 50), enacted in 1998, is a program for funding school facilities largely based on matching funds. The approval of Proposition 1A in 1998 authorized funds for SB 50 in the amount of $9.2 billion, including grants for new school construction and modernization of existing schools. The new construction grant provides funding on a 50/50 State and local match basis. The modernization grant provides funding on a 60/40 basis. Districts that are unable to

provide some, or all, of the local match requirement and are able to meet the financial hardship provisions may be eligible for additional State funding.[1]

SB 50 allows LBUSD to levy a fee, charge, dedication, or other requirement against any development project within its boundaries, for the purpose of funding the construction or reconstruction of school facilities. The LBUSD collects the maximum school facility fees at a rate of $2.97 per square feet for residential additions over 500 square feet, $3.39 per square feet for new residential construction, and $0.47 per square feet for commercial/industrial development. Pursuant to Government Code Section 65995, resulting from passage of SB 50, the payment of these fees by a developer serves to mitigate all potential impacts on school facilities that may result from implementation of a project to a less than significant level.

b. Existing Conditions

(1) Long Beach Unified School District

The LBUSD provides educational services to an approximately 129-square mile area, which includes the Cities of Long Beach, Signal Hill, and Avalon (Catalina Island), and portions of the City of Lakewood and unincorporated areas within the County of Los Angeles. LBUSD is ranked as the 29th largest school district on a national scale. Currently, LBUSD is comprised of 92 schools, including 61 elementary schools (grades Kindergarten through 5th), 16 middle schools (grades 6th through 8th), nine high schools (grades 9th through 12th), one Kindergarten through 12th grade school, and a total of five alternative, continuation, and community day schools. LBUSD also has five charter schools located within the district.[2] The LBUSD has a school of choice policy, which allows students to attend any school within the LBUSD boundary, as long as there is available space at their school of choice. According to the California Basic Education Data System (CBEDS) data provided by the California Department of Education, LBUSD's enrollment for the current 2008-09 school year is 87,499 students, including students in nonpublic, nonsectarian schools. Of these students, 38,802 or 44 percent were elementary students, 20,419 or 23 percent were middle school students, and 28,241 or 32 percent were high school students.[3]

LBUSD is currently faced with aging classrooms, overcrowding in the local high schools, and the need to bring the LBUSD school buildings up to earthquake standards. In order to

---

[1] *State of California, Office of Public School Construction, School Facility Program Handbook, February 2006.*

[2] *Long Beach Unified School District, "District Profile for Long Beach Unified" Fiscal Year 2007-08, http://www.ed-data.k12.ca.us.*

[3] *This total is 33 students short of the 87,499 total enrollment due to students who have subsequently dropped out.*

address these conditions, Measure K, approved in November 2008 authorized LBUSD to issue general obligation bonds in an amount up to 1.2 billion dollars for school construction and renovation. As 80 percent of the LBUSD school buildings were built prior to 1971, funds from Measure K would be used for earthquake and handicap retrofitting; repairing restrooms, plumbing, roofs, and fire safety systems; removing lead paints and asbestos; upgrading vocational classrooms, technology/energy efficiency; expanding supervised after-school programs; and acquiring, repairing, constructing, equipping sites, facilities and joint-use buildings.

As shown in Figure IV.I-3 on page IV.I-32, the project site would be served by Cesar Chavez Elementary School (Chavez Elementary School), Washington Middle School, and Juan Rodriquez Cabrillo High School (Cabrillo High School). These schools are located in the Cabrillo Planning Area as the LBUSD is divided to align with the six comprehensive high school attendance boundaries. All elementary, middle, and high schools of the LBUSD provide Resource Specialist Program (RSP) services for identified students who require additional support in reading, written expression, and/or math. Students may receive this help in a separate class taught by the RSP teacher or within the general education classroom setting with collaboration provided by the RSP teacher. Students who need more intense intervention may attend a Special Day Class (SDC). There are currently no plans for new school facilities or expansion projects within the Cabrillo Planning Area. Table IV.I-5 on page IV.I-33 lists the schools that would serve the project area, their respective locations, distances from the project site, current capacity and enrollments, and available seating capacity.

(a) Chavez Elementary School

Chavez Elementary School is designated for Kindergarten through 5th grade and is located at 730 West 3rd Street, approximately 0.37 miles north of the project site. Chavez Elementary School has a current enrollment capacity of 678 students and has a current enrollment of 562 students for the 2008-2009 school year.[4] The school currently operates on a traditional single-track calendar in which the school year begins in early September and ends in mid-June.

[4] *California Department of Education, Educational Demographics Unit, http://dq.cde.ca.gov/dataquest/SchEnr.asp?TheName=chavez&cSelect=CHAVEZ%5E%28CESAR%29%5EELEME—LONG%5EBEACH%5EUNIF--1964725-0107458&cChoice=SchEnrEth&cYear=2008-09&cLevel=School&cTopic=Enrollment&myTimeFrame=S&submit1=Submit, accessed June 17, 2009.*

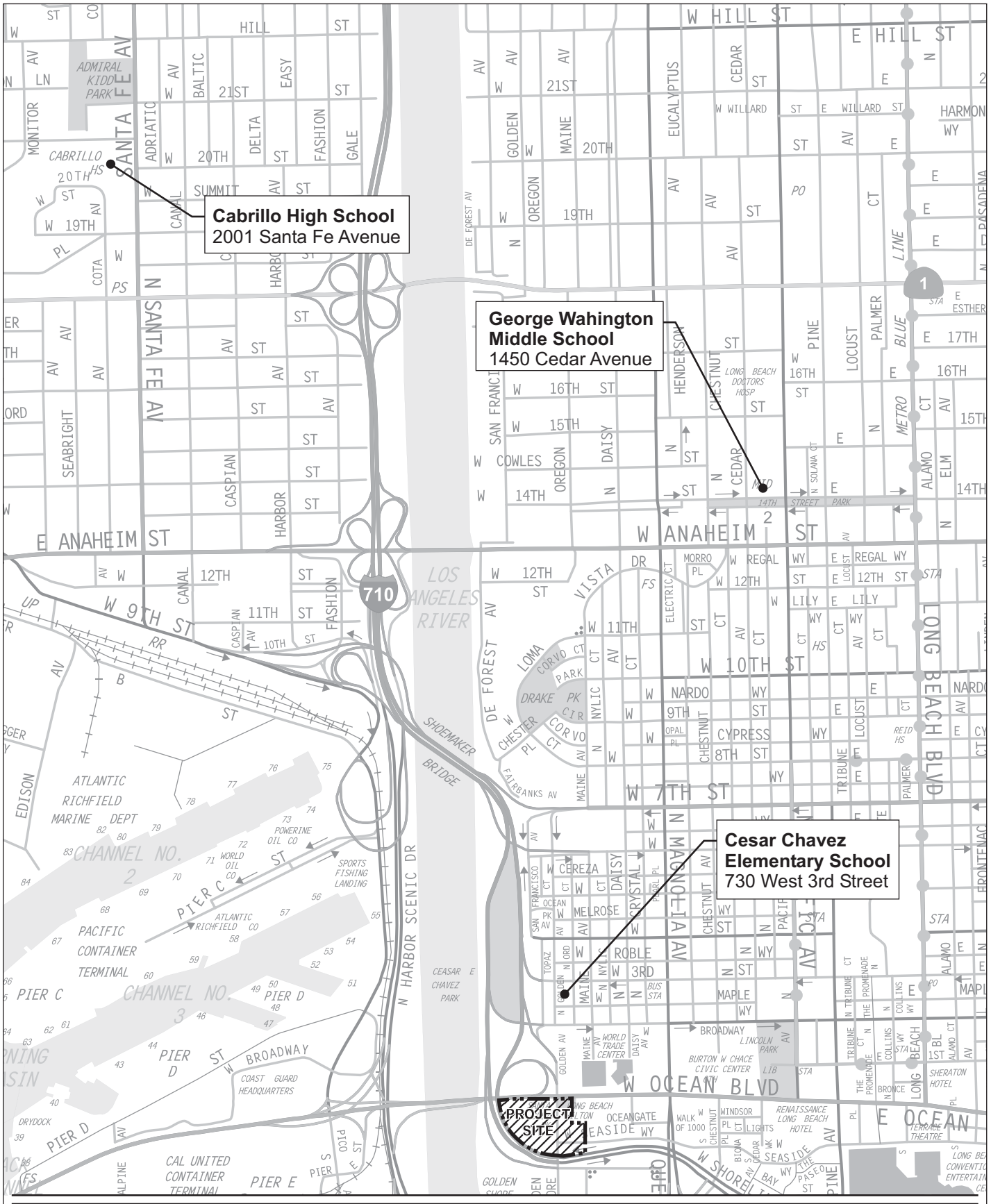


Figure IV.I-3
LBUSD Schools Serving the Project Site

Source: PCR Services Corporation, 2009.

Table IV.I-5

Current Capacity and Enrollment of LBUSD Schools Serving the Project Area

School	Current Calendar	Current Capacity [a]	2008-2009 Enrollment[d]	Available Capacity [b]	Overcrowded?[c]
Chavez Elementary School 730 West 3rd Street	Traditional	678	562	70	No
Washington Middle School 1450 Cedar Avenue	Traditional	1,102	969	159	No
Cabrillo High School 2001 Santa Fe Avenue	Traditional	3,769	3,575	122	No

[a] *The maximum number of students the school can serve while operating on its current calendar.*
[b] *Current capacity minus 2008-2009 enrollment.*
[c] *A school is considered to be overcrowded if 1) it currently operates on a multi-track calendar, 2) there is currently a capacity shortage, or 3) there is currently a capacity overage of less than or equal to a 'safety margin' of 30 seats.*
[d] *Enrollment numbers updated per CBED.*

Source: LBUSD Business Department, Facilities Development & Planning Branch, January 2009.

(b) Washington Middle School

Washington Middle School is designated for 6th through 8th grade and is located at 1450 Cedar Avenue, approximately 2.7 miles northeast of the project site. Washington Middle School has a current enrollment capacity of 1,102 students and has a current enrollment of 969 students for the 2008-2009 school year. The school currently operates on a traditional single-track calendar in which the school year begins in early September and ends in mid-June.

(c) Cabrillo High School

Cabrillo High School is designated for 9th through 12th grade and is located at 2001 Santa Fe Avenue, approximately 2.6 miles northwest of the project site. Cabrillo High School has a current enrollment capacity of 3,769 students and has a current enrollment of 3,579 students for the 2008-2009 school year. There are 15 portables classrooms located on campus, which serve as temporary classrooms until renovations for permanent buildings are made. The school currently operates on a traditional single-track calendar in which the school year begins in early September and ends in mid-June.

3. PROJECT IMPACTS

a. Methodology

The analysis of operational impacts to schools is based in part on the ability of existing LBUSD school facilities to accommodate the potential increase in students generated from development of the project. The analysis estimates the number of students that would be generated by the proposed project using LBUSD student generation rates, and focuses on whether LBUSD facilities expected to serve the project would have sufficient available capacity to accommodate these students. The analysis addresses all levels of educational facilities operated by LBUSD (i.e., elementary, middle, and high schools).

The anticipated number of new students was calculated using student generation rates issued by the LBUSD. Generation rates have been established for a variety of uses including residential, retail, offices, and hotels/motels. LBUSD student generation rates for the proposed uses are shown in Table IV.I-6 on page IV.I-35. Once calculated, the number of project-generated students was compared to LBUSD's projected available capacity at each school that serves the project site to identify the extent to which students could be accommodated within these facilities. This conclusion is supported by the general practice that students attending public schools attend the schools in the district where their residence is located, which is LBUSD for future residents of the proposed project. Project-generated students that attend public schools in other school districts (e.g., Culver City Unified School District) would be required to obtain an inter-district transfer permit issued by both the school within which the student is enrolled, as well as the school of interest. Furthermore, approvals for inter-district transfers are subject to a determination that the incoming transfer students could be accommodated without creating an impact on its existing facilities.

b. Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, a project could have a significant impact on the environment with regard to schools if a project would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for school services.

Table IV.I-6

LBUSD Student Generation Rates

Land Use	Elementary School	Middle School	High School
Single-family Residental[a]	0.0948	0.0271	0.0658
Multi-family Residential[a]	0.1850	0.0866	0.0118
Retail and Services[b]	0.0089	0.0048	0.0062
Office[b]	0.0140	0.0075	0.0096
Hotel[c]	0.0045	0.0024	0.0031

[a] *Per the* School Facilities Needs Analysis, *July 31, 2008. Generation factors are per dwelling unit.*
[b] *Per the* Commercial and Industrial Development School Fee Justification Study, *March 21, 2008. Generation factors are per 1,000 square feet.*
[b] *Per the* Commercial and Industrial Development School Fee Justification Study, *March 21, 2008. Generation factors are based on the number of hotel rooms.*

Source: Personal communication with Susan Ahn, Project Manager LBUSD, June 18, 2009.

c. Analysis of Project Impacts

(1) Residential Option

Project development under the Residential Option would include the development of 1,370 condominium units, 28,000 square feet of retail use, and 340,000 square feet of office uses. As illustrated in Table IV.I-7 on page IV.I-36, the project under the Residential Option would generate approximately 258 new elementary school students, 122 new middle school students, and 19 new high school students for a total of 399 new students in the LBUSD.

As previously discussed, the students generated by the project would be expected to attend Chavez Elementary School, Washington Middle School, and Cabrillo High School. The project is anticipated to be completed no sooner than the year 2018 and thus, the projected school enrollment analysis will analyze potential project impacts affecting the 2017-2018 school year. Table IV.I-8 on page IV.I-38, provides the 2017-218 projection for the schools serving the project area including the projected project-generated students under the Residential Option. According to the student projections for the 2017-2018 school year, student enrollment at Chavez Elementary School is projected to have an excess of up to approximately 39 seats. Washington Middle School would have an excess of up to 472 seats while Cabrillo High School would have an excess of up to 1,096 seats. Development under the Residential Option would generate approximately 258 elementary students and result in a shortage of up to approximately 219 seats at Chavez Elementary School. Under the Residential Option, the project would generate approximately 122 middle school students and 19 high school students, which would result in a remaining capacity of up to approximately 350 seats and 1,077 seats, respectively.

Table IV.I-7

Estimated Number of Project-Generated Students under the Residential Option, Hotel Option A, and Hotel Option B

Land Use	Proposed Net Units/ Square Footage	No. of Students Generated [a]		
		Elementary School (K-5)	Middle School (6-8)	High School (9-12)
Residential Option				
Residential Use	1,370 du	253	119	16
Retail	28,000 sq ft	0	0	0
Office	340,000 sq ft	5	3	3
Total		**258**	**122**	**19**
Hotel Options (A and B)				
Residential Use	1,110 du	205	96	13
Retail	27,000 sq ft	0	0	0
Office	340,000 sq ft	5	3	3
Hotel	400 rm	2	1	1
Banquet Hall	27,000 sq ft	0	0	0
Total		**212**	**100**	**17**

[a] *Per Generation Rates provided in Table H.3-2.*

Source: PCR Services Corporation, June 2009.

Thus, development of the Residential Option would not result in significant impacts to Washington Middle School or Cabrillo High School. However, a shortage of seats is anticipated at Chavez Elementary School as the school would be operating above-capacity by 219 seats.

However, as the LBUSD maintains a school of choice policy that allows students to attend any school with available seats within the LBUSD boundary it is not expected that all students would attend Chavez Elementary School, or in this case the Washington Middle School or Cabrillo High School. Furthermore, the project would be subject to school developer fees to help build new schools or fund renovation projects for extra seating at existing schools in an effort to reduce overcrowding.

Thus, pursuant to Section 65995 of the California Government Code and SB 50, with the payment of required developer impact fees, project-related impacts on the LBUSD facilities would be reduced to a less than significant level. Compliance with SB 50 is considered full and complete mitigation.

(2) Hotel Options (A and B)

Project development under the Hotel Options would include the net development of 1,110 condominium units, 27,000 square feet of retail use, 340,000 square feet of office uses, a 27,000 square foot banquet room, and a 400 room hotel. As illustrated in Table IV.I-7, the project under the Hotel Options would generate approximately 212 new elementary school students, 100 new middle school students, and 17 new high school students for a total of 329 new students in the LBUSD. As illustrated in Table IV.I-8, development under the Hotel Options would result in a shortage of up to 173 seats at Chavez Elementary School, an excess of up to 372 seats at Washington Middle School, and an excess of 1,079 seats at Cabrillo High School. Thus, similar to the Residential Option, development of the Hotel Options would not result in significant impacts to Washington Middle School or Cabrillo High School. However, a shortage of 212 seats is anticipated at Chavez Elementary School.

As previously described, the LBUSD maintains a school of choice policy that allows students to attend any school with available seats within the District Boundary and the project would be subject to school developer fees to help build new schools or fund renovation projects for extra seating at existing schools in an effort to reduce overcrowding. Therefore, pursuant to Section 65995 of the California Government Code and SB 50, with the payment of required developer impact fees, project-related impacts on the LBUSD facilities would be reduced to a less than significant level.

(3) Consistency with Regulatory Applications

(a) Residential Option, Hotel Option A, and Hotel Option B

The proposed project would be required to comply with SB 50, which requires payment of fees to mitigate the project's impacts on LBUSD. Pursuant to Section 65995 of the California Government Code, the payment of developer fees in accordance with SB 50 is deemed to provide full and complete mitigation for any impact to school facilities. Therefore, with payment of the required SB 50 fees, project impacts to schools would be less than significant.

4. CUMULATIVE IMPACTS

a. Residential Option

Of the 18 related projects identified in Section III of this Draft EIR, a total of 14 are located in the LBUSD school boundaries serving the project site and therefore, are included in

Table IV.I-8

LBUSD Projected Capacity and Enrollment for the 2017-2018 School Year

School	Projected Capacity	Projected Enrollment	Project Generated Students [a]	Projected Enrollment with Project	Projected Overage/ (Shortage)	Project Impact
Residential Option						
Chavez Elementary	678	639	258	897	(219)	**Yes**
Washington Middle School	1,102	630	122	752	350	No
Cabrillo High School	3,769	2,673	19	2,692	1,077	No
Hotel Options (A&B)						
Chavez Elementary	678	639	212	851	(173)	**Yes**
Washington Middle School	1,102	630	100	730	372	No
Cabrillo High School	3,769	2,673	17	2,690	1,079	No

[a] *Per Table IV.I-7, above.*

Source: LBUSD Business Department, Facilities Development & Planning Branch, January 2009.

this cumulative analysis as listed in Table IV.I-9 on page IV.I-39.[5] The related projects located within the attendance boundaries that do not constitute a use that would generate students within a public school (i.e., senior apartments) were excluded from the analysis. These related projects would cumulatively generate, in conjunction with the Residential Option, new students at Chavez Elementary School, Washington Middle School, and Cabrillo High School. The related projects include various residential, commercial/retail, hotel, and office uses. Similar to the Residential Option, the number of students anticipated to be generated by related projects was estimated based on the type of development proposed.

As shown in Table IV.I-9, related projects could potentially generate 261 elementary school students, 147 middle school students, and 16 high school students. The Residential Option, in conjunction with related projects, could therefore generate 519 elementary school students, 269 middle school students, and 35 high school students. As shown in Table IV.I-10 on page IV.I-40, projected enrollment is expected to exceed the projected capacity for Chavez Elementary School. Regardless, as previously discussed, the LBUSD maintains a school of choice policy that allows students to attend any school with available seats within the District Boundary and the project would be subject to school developer fees to help build new schools or fund renovation projects for extra seating at existing schools in an effort to reduce overcrowding.

[5] *The related projects not served by the LBUSD were determined using the LBUSD School Finder website: http://www.lbusd.k12.ca.us/Schools/school_finder.cfm, accessed July 24, 2009.*

Table IV.I-9

Related Projects Within the LBUSD

Map No. [a]	Location	Land Use	Number of Students Generated [e]		
			Chavez Elementary School [b, c, d]	Washington Middle School [b, c, d]	Cabrillo High School [b, c, d]
1	432-440 W. Ocean Blvd.	107 apartments	20	9	1
2	110 W. Ocean Blvd.	82 hotel rooms	0	0	--
3	1598 Long Beach Blvd.	64 apartments; 15,000 s.f. commercial	--	6	--
4	301 Pine Ave.	375 apartments; 26,000 s.f. commercial	69	32	--
5	150 W. Ocean Blvd	216 condominiums	40	19	--
6	777 E. Ocean Blvd.	358 condominiums; 13,561 s.f. commercial	66	31	4
7	1628-1724 W. Ocean Blvd.	51 condominiums; 47 hotel rooms	--	--	1
8	2010 Ocean Blvd.	56 condominiums	--	--	1
11	433 Pine Ave.	18 apartments; 15,000 s.f. commercial	3	2	--
13	421 W. Broadway	291 apartments; 15,580 s.f. commercial	54	25	4
14	350 Long Beach Blvd.	82 single-family residences; 7,000 s.f. commercial	--	--	--
16	155 Long Beach Blvd.	191 hotel rooms	1	0	--
17	1235 Long Beach Blvd.	79,543 s.f. retail; 152 senior apartments;[f] 210 condominiums	--	19	--
18	Long Beach Court House	450,000 s.f. courtrooms; 75,000 s.f. office; 20,000 s.f. retail	8	4	5
		Related Projects Total	**261**	**147**	**16**
		Residential Option Total	**258**	**122**	**19**
		Hotel Options Total	**212**	**100**	**17**
		Cumulative Total with Residential Option	**519**	**269**	**35**
		Cumulative Total with Hotel Options	**473**	**247**	**33**

[a] *Corresponds with Figure III-1 in Section III of this Draft EIR.*

[b] *Calculated by multiplying each of the proposed uses by its respective student generation rate issued by LBUSD. LBUSD has established student generation rates for residential (single-family detached, single-family attached, and multi-family), retail and services, offices, research and development, industrial/warehouse/manufacturing, hospitals, hotels/motels, and parking structures.*

[c] *Please note that the attendance boundaries are not the same for all three levels of schools. A related project may be located within the attendance boundaries of the elementary school, but not within the attendance boundaries of the high school. This was taken into consideration when conducting the calculations presented.*

[d] *In some instances the number of students generated is <1 and therefore shown as 0.*

[e] *The – symbol indicates projects that are not within either the elementary, middle, or high school boundaries that serve the project site.*

[f] *As described above, senior housing was not included in the calculation for student generation.*

Source: PCR Service Corporation, July 2009.

Table IV.I-10

2017-2018 LBUSD Enrollment and Capacity with Residential Option and Hotel Options and Related Project Students

School	Projected Capacity	Projected Enrollment	Projected Seating Overage/ (Shortage)	Total of Proposed Project and Related Projects Generated Students	Enrollment with Proposed Project and Related Projects Students	Projected Seating Overage/ (Shortage)	Cumulative Impacts?
Residential Option							
Chavez Elementary School	678	639	39	519	1,158	(480)	Yes
Washington Middle School	1,102	630	472	269	899	203	No
Cabrillo High School	3,769	2,673	1,096	35	2,708	1,061	No
Hotel Options							
Chavez Elementary School	678	639	39	473	1,112	(434)	Yes
Washington Middle School	1,102	630	472	247	877	225	No
Cabrillo High School	3,769	2,673	1,096	33	2,706	1,063	No

Source: LBUSD Facilities Services Division, LBUSD Schools Enrollments and Capacities Report, 2008.

Therefore, pursuant to Section 65995 of the California Government Code and SB 50, with the payment of required developer impact fees, cumulative impacts on the LBUSD facilities would be reduced to a less than significant level under the Residential Option.

b. Hotel Options

As shown in Table IV.I-9, the Hotel Options, in conjunction with related projects, could generate 473 elementary school students, 247 middle school students, and 33 high school students. As shown in Table IV.I-10, projected enrollment is expected to exceed the projected capacity for Chavez Elementary School. Regardless, as previously discussed, the LBUSD maintains a school of choice policy that allows students to attend any school with available seats within the District Boundary and the project would be subject to school developer fees to help build new schools or fund renovation projects for extra seating at existing schools in an effort to reduce overcrowding. Therefore, pursuant to Section 65995 of the California Government Code and SB 50, with the payment of required developer impact fees, cumulative impacts on the LBUSD facilities would be reduced to a less than significant level under the Hotel Options.

5. MITIGATION MEASURES

a. Residential Option, Hotel Option A, and Hotel Option B

Operation of the proposed project (the Residential Option and both Hotel Options) would result in potentially significant impacts to Chavez Elementary School. Subsequently, the project would also contribute to a cumulative impact to both of these schools with related projects under the Residential Option, Hotel Option A, and Hotel Option B. However, as discussed above, payment of developer fees under the provisions of SB 50 would constitute full mitigation for significant impacts associated with the project and for cumulative development. Therefore, with payment of these fees, no mitigation measures would be required.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

a. Residential Option, Hotel Option A, and Hotel Option B

The Residential Option and both Hotel Options would result in a potentially significant impact to schools since the students generated by all three options would result in an exceedance of the available capacity at Chavez Elementary School. In addition, all three options would contribute to a cumulative impact to schools since Chavez Elementary School would operate over capacity with the proposed project in conjunction with the related projects. However, the payment of the developer fees under the provisions of SB 50 would constitute full mitigation for impacts to school facilities. Therefore, through payment of fees, project and cumulative impacts to LBUSD schools serving the project site would be mitigated to a less than significant level.

IV. ENVIRONMENTAL IMPACT ANALYSIS
I. PUBLIC SERVICES
4. PARKS AND RECREATION

1. INTRODUCTION

This section describes the parks and recreational facilities that would serve the project's future residents and analyzes the potential impacts related to these services that would occur as a result of implementation of the proposed project. The analysis also evaluates the project's provisions for open space compared to applicable City goals and regulatory requirements. The analysis based on information provided by the City of Long Beach Parks, Recreation and Marine Department is incorporated by reference throughout this section and is included in Appendix E of this Draft EIR.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

(1) State Level

(a) Quimby Act

Section 66477 of the California Government Code, known as the Quimby Act, was enacted in an effort to promote the availability of park and open space areas in response to California's rapid urbanization and decrease in the number of parks and recreational facilities. The Quimby Act also authorizes cities and counties to enact ordinances requiring the dedication of land, or the payment of fees for park and/or recreational facilities in lieu thereof, or both, by developers of residential subdivisions as a condition to the approval of a tentative map or parcel map. Thus, pursuant to the Quimby Act, Long Beach Municipal Code (LBMC) Section 17.12 was authorized and is discussed below.

Under the Quimby Act, dedications of land are not to exceed three acres of parkland per 1,000 persons residing within a subdivision, and in-lieu fee payments shall not exceed the proportionate amount necessary to provide three acres of parkland per 1,000 persons, unless the amount of existing neighborhood and community parkland exceeds that limit. As the parkland standard is not exceeded in the project area (discussed below), the maximum exaction for the project under the Quimby Act is three acres of parkland per 1,000 persons.

(b) Park Impact Mitigation Fee Act (AB 1600)

Section 66000 et seq. of the California Government Code, known as the Mitigation Fee Act of AB 1600, was enacted in 1988 and establishes rules for the imposition and ongoing administration of impact fee programs. AB 1600 requires the City to do the following prior to adopting park impact fees: (1) identify the purpose of the fee, (2) identify the use of fee revenues, (3) determine a reasonable relationship between the fee's use and the type of development paying the fee, (4) determine a reasonable relationship between the need for the fee and the type of development paying the fee, and (5) determine a reasonable relationship between the amount of the fee and the cost of the facility attributable to development paying the fee.

(2) Local Level

Within the City's General Plan, the Open Space and Recreation Element (Recreation Element) establishes policies and standards related to parks, recreation facilities, and open space areas in the City. The Recreation Element provides citywide goals, objectives, and recommendations concerning parks and recreation facilities. Park and open space requirements pursuant to the Quimby Act are also set forth in Sections 21.31.230 and 18.18 of the LBMC. The following provides information regarding both the Recreation Element and applicable LBMC standards and requirements.

(a) City of Long Beach General Plan

The Recreation Element of the Long Beach General Plan was updated and adopted in October 2002. Serving as a comprehensive plan for the creation and preservation of open space and recreational facilities within the City of Long Beach, the Recreation Element addresses four primary open space considerations that influence the goals, objectives, policies, and implementation programs defined within the plan. These include the preservation of natural resources; the managed production of resources; public health and safety; and outdoor recreation/recreational facilities.[1] The Recreation Element acknowledges that due to the rapid population increase during the 1970s and 1980s that the ratio of recreational/open space to residents declined from 7.0 acres per 1,000 residents to 5.6 acres to 1,000 residents. The Recreation Element discusses how nation-wide, the average is 7.2 acres per 1,000 residents for cities of similar density and yet, the other cities do not have the extensive water recreation resources that Long Beach does and the importance of preserving the recreation and open space since tourism is an important part of the cities economy. Therefore, the Recreation Element establishes a goal of eight acres per 1,000 residents.

[1] *City of Long Beach Planning Department, Long Beach Open Space and Recreation Element of the General Plan, adopted October 2002, reprinted 2005.*

In order to accomplish the City's goal of eight acres of recreation and open space per 1,000 residents, the Recreation Element discusses the ability of the City to collect in-lieu or impact funds, which can be used for park renovation, acquisition and development. However, acknowledging that the majority of the increase in residents is due to an increase in household size and not necessarily an increase in the amount of residential units, it the parks and recreational facilities requires dedicated annual funding so that capital improvements can be better planned and budgeted. Finally, the Recreation Element identifies four overarching policies for the preservation of open space, including;

1. Open space for the preservation of natural resources;
2. Open space for the managed production of natural resources;
3. Open space for public health and safety; and
4. Open space for outdoor recreation and recreation facilities.

The relevant goals/objectives from the Recreation Element relevant to the proposed project are described below.

- Goal 2.1- Maintain a sufficient quantity and quality of open space in Long Beach to produce and manage natural resources.
- Goal 3- Provide for and maintain sufficient open space for adequate protection of lives and property against natural and man-made safety hazards.
- Goal 4.2- Achieve a ratio of 8.0 acres of publicly owned recreation open space per 1,000 residents
- Goal 4.4- Add recreation open space and recreation facilities in the areas of the City that are most underserved.
- Goal 4.5- Make all recreation resources environmentally-friendly and socially and economically sustainable.
- Goal 4.6- Increase recreation resources and supplement publicly owned recreation resources with privately owned recreation resources.
- Goal 4.10- Provide access to recreation resources for all individuals in the community.

As described in Section II. Project Description, of this Draft EIR, the project site is designated as Long Beach Downtown Shoreline Planned Development (PD-6), Subarea 1. According to the Downtown Shoreline Planned Development Plan, all development within Subarea 1 must occur in accordance with specific agreements and permits, including Ordinance C-7828, which requires the dedication of land for Santa Cruz Park along the southern edge of Ocean Boulevard.

(b) Department of Parks, Recreation and Marine 2010 Strategic Plan

The City of Long Beach Parks, Recreation and Marine Department 2010 Strategic Plan (Strategic Plan) was adopted in 2003 to establish goals, strategies and implementation timetables to provide adequate recreational and open space areas to meet the City's growing population. The Strategic Plan is used to direct the Department's recreational programming, park and facility development and improvement, and administrative decisions up to 2010. The Strategic Plan established six overarching goals to address how the city would maintain adequate recreational and open space areas with increasing population.

Goal 1, which is to ensure open space parks and recreational facilities meet community needs, addresses the lack of park space compared to cities of similar size and density (refer to discussion above) and how the access to city parks and number of residents served is uneven. Goal 2 ensures city parks and recreational facilities provide a positive experience and image. This goal focuses on improving the safety and condition of the city's park and recreational facilities. Goal 3 works to ensure that recreational programming, leisure opportunities, and community services meet the diverse needs and interests of residents and visitors by establishing lifetime use opportunities and connecting the community through program services. This goal also focuses on preserving cultural, historical, and environmental resources. Goal 4 works to ensure beaches and waterways are accessible and provide a positive experience and image by improving water quality and the cleanliness of beaches along with improving access to the City's beaches and their facilities, amenities, and concessions. Goal 5, which works to ensure marinas are fiscally sound and meet boat owner and community needs includes strategies such as, establishing and maintaining financial stability of the marinas through the use of fees, improving the quality of the marinas and their amenities, and improve the safety of the marinas for residents and visitors. Finally, Goal 6 facilitates and encourages productive service to the community through the department's management philosophy, structure, culture, and employees by valuing the contribution of staff, building mutual respect between managers and staff, and improving the motivation and morale of staff.

(c) City of Long Beach Municipal Code

Table 31-2A of Chapter 21.31.205 of the LBMC establishes the minimum amount of open space required for new residential development. In general, lower density residential developments are required to provide a certain percentage of the lot area per unit for open space ranging from two to 23 percent. For the higher density residential developments, the LBMC requires a certain amount of square footage per residential uses ranging from 150 square feet to 200 square feet per residential unit. It also allows indoor open space to be counted towards the common open space requirements.

Chapter 21.31.230 allows any open space wider than 18 feet, to include the pathways to be considered as usable open space. In addition, it requires three to four foot screens around all open space areas. Open space areas have to be a minimum of eight feet wide and eight feet long for high density residential development and that all developments with 21 or more units include a minimum 300 square foot recreation room "furnished with recreational facilities, a swimming pool, or such other recreational amenities as play equipment or other facilities directed to a specific demographic section of the housing market." Finally, adequate planter top area for seating not less than 18 inches and not more than 24 inches in height, or equivalent bench seating, is required to be provided.

Chapter 18.18 (Park and Recreation Facilities Fee) imposes a park impact fee on new residential development to assure City parkland and recreational facility standards are met with respect to additional needs created by the proposed development. The purpose of this fee is to fund parkland acquisition and recreation improvements incurred by the City. As of 2009, the park impact fee is $3,260 for each new multi-family unit. Section 18.18.100 of the LBMC permits the Long Beach City Council to approve credits toward meeting the park fee as a result of the provision of parkland or the development of recreational improvements by the applicant.

b. Existing Conditions

The City of Long Beach Parks, Recreation and Marine Department (Parks Department) is responsible for providing community services and recreational opportunities throughout the City. The Parks Department currently maintains and operates a total of 152 parks with 25 community centers, two major tennis centers, one of the busiest municipal golf systems in the country with five courses, the largest municipally operated marina system in the nation with 3,800 boat slips and six miles of beaches. More than 3,066 acres within the City's approximately 55 square miles are developed for recreation.[2] Different types of parks have been developed within the City

[2] *Long Beach Parks, Recreation and Marine website, http://www.ci.long-beach.ca.us/park/about/default.asp. Accessed June 2009.*

including mini, neighborhood, community, regional (including six linear miles of beach), and greenway parks. These park types are further described below:

- **Mini Parks** are special parks facilities of less than two acres. They serve residents within a 1/8 mile radius and may include landscaping, irrigation, walking paths, seating areas and picnic tables, sand boxes/tot lots, playground equipment, play court, sculpture/art, drinking fountains and trash receptacles. Building coverage in mini parks is limited to one percent of the total park area.

- **Neighborhood Parks** average approximately eight acres and serve residents within a ¼ to ½ mile radius. A neighborhood park consists of all the uses described by mini parks, with the addition of restroom buildings, recreation fields, courts and rinks, water features, libraries, day care centers, community centers, and parking and drive aisles. Building coverage in neighborhood parks is limited to seven percent of the total park area.

- **Community Parks** average 35 acres in size and serve neighborhoods within a one mile radius. Community parks focus on community recreation including sport fields and preserving open spaces. Community parks permit all of the uses allowed in neighborhood parks with the addition of swimming pools. Building coverage in community parks is limited to ten percent of the total park area.

- **Regional Parks** are a minimum of 175 acres in size and serve communities within a ½ hour drive time. Regional parks permit all uses allowed in community parks with building coverage limited to only two percent of the total park area.

- **Greenway Parks** are often a largely undeveloped green space, usually a remnant or odd shaped piece of land left over from development. Greenways connect recreation opportunities throughout a community whereby building coverage is limited to one percent of the total park area.

In addition to parks, the City has a number of specialty recreational facilities. These include a riverfront campground, two historic ranchos, the Long Beach Museum of Art, two marine biological preserves, two special events parks, parks at Colorado Lagoon, Shoreline, Santa Cruz, Victory, and the El Dorado Nature Center Park and trail. The City also manages water recreation areas, including five public boat launches, the Alamitos Bay, Marine Stadium, and five public golf courses.

Currently, the City of Long Beach has a population of approximately 492,682 residents.[3] As stated in the Strategic Plan, the Parks Department has established a citywide goal of providing at least eight acres of parkland per 1,000 residents. Based on the existing population and amount of available park space, the City has a parkland ratio of approximately 6.2 acres per 1,000 residents.[4] It is estimated that approximately 875 acres of parkland would be needed to meet the target goal with the current population.

The closest parks and recreational facilities to the project site are listed in Table IV.I-11 on page IV.I-49, which includes the location, park size, and available recreational facilities and illustrated in Figure IV.I-4 on page IV.I-50. As presented in Table IV.I-11, 16 parks and recreational facilities totaling over 111 acres are located within the vicinity of the project site.

It should be noted that the Parks Department is also working to add 1,000 new acres of recreational open space in order to provide at least eight acres of park space per 1,000 residents. Since 2002, approximately 31 acres have been developed with the addition of 14 parks in west Long Beach and 12 in residential neighborhoods that previously had no parks. Ten additional park projects of more than 150 acres are currently in acquisition or construction, and an additional 800 acres have been identified for possible acquisition.[5]

3. PROJECT IMPACTS

a. Methodology

The analysis of parks and recreation impacts is based on a comparison of the project's provision of recreation and open space areas to the standards set forth by the Quimby Act and the General Plan. To be consistent with the standards set forth in the aforementioned regulatory guidance documents, the analysis of impacts is based on the acreage of open space available per 1,000 project residents.

[3] *State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.*

[4] *City of Long Beach Planning Department, Long Beach Open Space and Recreation Element of the General Plan, adopted October 2002, reprinted 2005.*

[5] *Ibid*

Table IV.I-11

Parks and Recreational Facilities Within the Vicinity of the Project Site

Map No.[a]	Park	Location	Park Size (acres)	Amenities
1	**Amphitheater on the Promenade**	Promenade/Ocean Blvd.	0.5	Benches
2	**Cesar E. Chavez**	401 Golden Ave.	24.4	Benches, Community Center, Green Space, Picnic Tables, Playground
3	**Downtown Marina Mole**	Pacific-Ocean Blvd.	1.7	Boat facilities, community center, fishing, green space,
4	**East Village Arts**	150 Elm St.	0.1	Green space
5	**Golden Shore Marine Reserve**	Golden Avenue	6.4	Coastal viewing, green space
6	**Golden Shore RV**	101 golden Avenue	5.1	Coastal viewing, picnic tables
7	**Lincoln Park**	PCH and Broadway	4.5	Boat facilities, community center, green space
8	**L.B. Aquarium of the Pacific**	Harbor Esplanade	4.7	Coastal viewing, community center, picnic tables
9	**Marina Green Park**	Shoreline Drive – Pine/Linden	11.0	Coastal viewing, green space
10	**Queen Mary Events**	Queensway	4.0	Coastal viewing, green space
11	**Rainbow Harbor Esplanade**	Pine-Shoreline	7.2	Community center, benches, green space
12	**Rainbow Lagoon**	Pine-Shoreline	13.0	Boat facilities, green space
13	**Santa Cruz Park**	Cedar-Golden/Aquarium	2.0	Green space
14	**Shoreline Aquatic**	Aquarium Way	11.0	Benches, boat facilities, coastal viewing, fishing, green space, picnic tables, sand lots
15	**South Shore Launch Ramp**	Queensway	6.0	Benches, boat facilities, green space, picnic tables
16	**Victory Park**	Ocean-Alamitos Ave/710	9.6	Benches, coastal viewing, green space,
	Total		*111.2*	

[a] *The map numbers correspond with Figure IV.I.4-1 on page IV.I-44.*

Source: PCR Services Corporation, July 2009.

b. Thresholds of Significance

Appendix G of the CEQA Guidelines provides a checklist of questions to assist in determining whether a proposed project would have a significant impact related to various environmental issues including parks and recreation. Based on following issue areas, a significant impact to park and recreational services would occur if:

PCR

Not to scale

Source: City of Long Beach General Plan, 2002.

Figure IV.I-4
Parks and Recreational Facilities within the Project Vicinity

- The project increases the use of existing neighborhood and community parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated.

- The project includes recreational facilities or requires the construction or expansion of recreational facilities which might have an adverse physical effect on the environment.

Based on these factors, the proposed project would have a significant impact on recreation and park services if the project generates a demand for park or recreational facilities that cannot be adequately accommodated by existing or planned facilities and services.

c. Project Design Features

(1) Residential Option

As described in Section II. Project Description, of this Draft EIR, the Residential Option would include approximately 242,716 square feet of open space and recreational amenities. The Residential Option would include approximately 133,756 square feet dedicated to individual units as balconies and the remaining 115,538 square feet of open space would be provided within the plaza area and within the podium decks that would include hard and soft landscaping and residential amenities including pools and clubhouses. Finally, the buildings would be setback approximately 80 feet from Ocean Boulevard, in order to extend Santa Cruz Park to the south side of the roadway, in compliance with Ordinance C-7828.

(2) Hotel Option A

Similar to the Residential Option, Hotel Option A would include extensive open space and recreational facilities for the public and residents. The open space and recreational facilities would be included within the landscaped plaza and the soft and hard landscaped areas on the podium level. In addition, pools, clubhouses and other residential amenities would be included within each of the residential towers. In total, Hotel Option A would include 233,672 square feet of open space and recreational amenities, including 66,600 square feet for the residential balconies and 167,072 square feet of open space within the plaza and podium decks inclusive of the pools and clubhouses. Hotel Option A would also provide an 80-foot setback for all of the buildings along Ocean Boulevard, in order to provide the extension of Santa Cruz Park to the southern side of the roadway, in compliance with Ordinance C-7828.

(3) Hotel Option B

Hotel Option B would also provide the same open space and recreational facilities within the landscaped plaza and the podium decks with pools and clubhouses. In total, Hotel Option B would include 232,951 square feet of open space and recreational amenities, including the same 66,600 square feet for the residential balconies and 166,351 square feet of open space within the plaza and podium decks inclusive of the pools and clubhouses. Hotel Option B would also provide an 80-foot setback for all of the buildings along Ocean Boulevard, in order to provide the extension of Santa Cruz Park to the southern side of the roadway, in compliance with Ordinance C-7828.

d. Analysis of Project Impacts

(1) Park and Recreational Facilities and Services

(a) Residential Option

As stated above, the project area would be served by 16 parks and recreational facilities that include approximately 111 acres. According to the goals established by the Strategic Plan, the City strives to establish eight acres of parkland per 1,000 residents. As previously discussed, the City currently has 3,066 acres of developed parkland and offers approximately 6.2 acres of parkland per 1,000 residents. Consequently, this would not meet the City goal of establishing eight acres per 1,000 residents. An additional 1.8 acres of parkland per 1,000 residents or approximately 875 acres would be necessary to provide eight acres for every 1,000 residents.

The project under the Residential Option would generate a residential population of approximately 3,973 residents including an indirect residential population of 607 residents due to the increase of job opportunities and employees to the City. This would be a net increase of 4,580 residents. The new residents would be adequately served by the existing 111 acres of open space and recreational facilities within the vicinity of the project site. In addition, as illustrated in Figure IV.I-5 on page IV.I-53, the City plans on adding approximately 39 additional acres in open space recreational areas within the project vicinity.[6] Finally, the project itself would provide approximately 5.6 acres (242,716 square feet) of open space and recreational amenities. Therefore, the project residents would be served with a total of 156 acres of existing and proposed open space recreational facilities.

[6] *Long Beach Department of Park, Recreation, and Marine 2001 Maps of Parks, Facilities, and Service Areas, Strategic Plan, April 2003.*

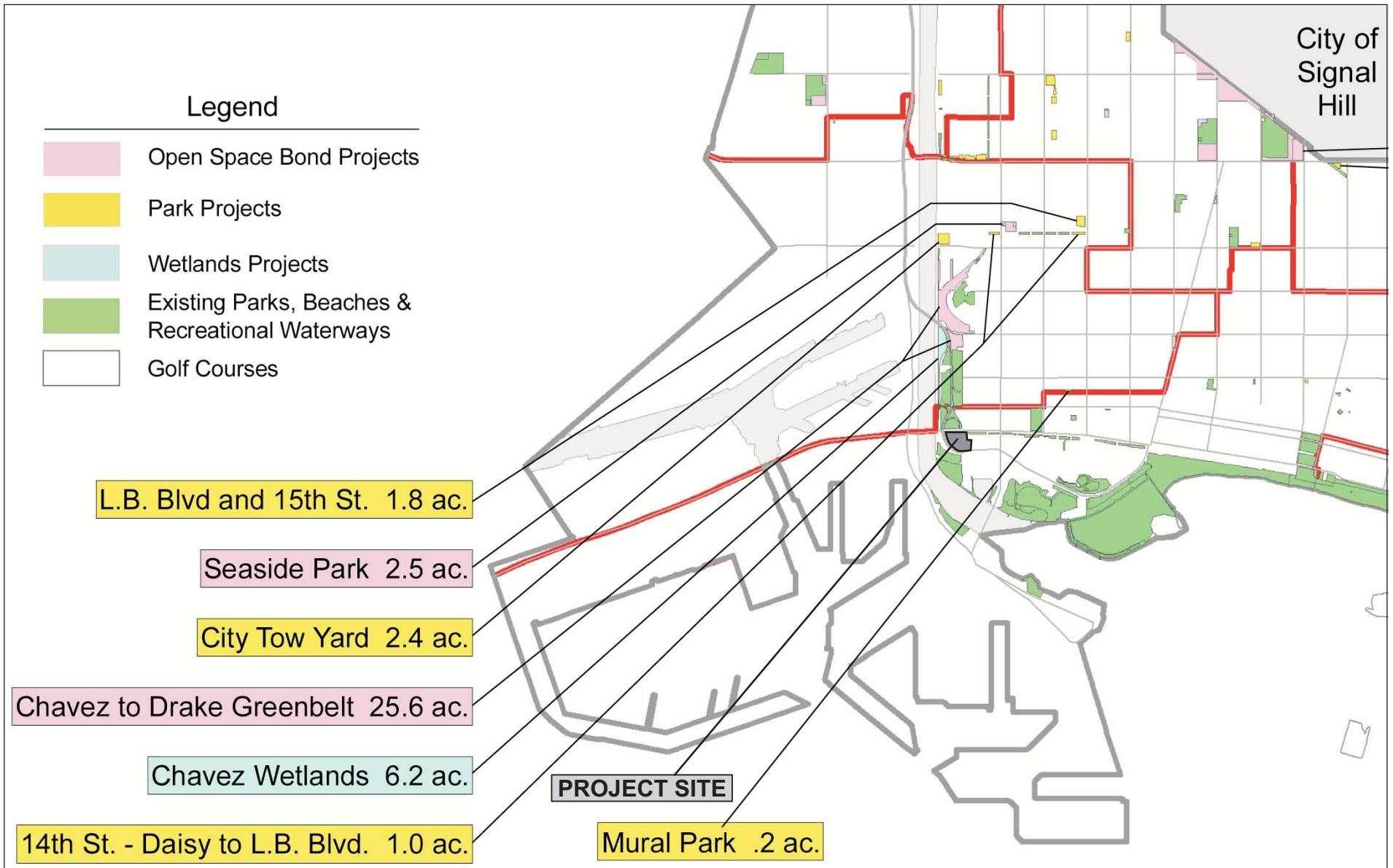


Figure IV.I-5
Proposed Parks in the Project Vicinity

Regardless, the increase in the City residential population of 492,682 to 497,262 with implementation of the Residential Option would further reduce the Strategic Plan's goal of eight acres per 1,000 residents. As a result, an additional 37 acres of parkland would be needed to meet the Park Department's goal. However, development of the Residential Option would still meet the three acres per 1,000 residents requirement set forth by the Quimby Act. Nonetheless, the project would still be required to dedicate park land/recreational facilities or pay requisite in-lieu fees commensurate with project-related demands, in order to meet the City's overall park provision goals. As such, project impacts under the Residential Option would be less than significant given compliance with AB 1600 City requirements for park dedication and/or fees.

(b) Hotel Options (A and B)

Under Hotel Option A and B, the project would generate a total residential population of approximately 3,219 residents including an indirect residential growth of 971 residents in response to the increase of employment and jobs created within the project area and to the City. This would increase the City residential service population to 496,872. As previously described, the residents would be adequately served by the existing open space and recreational facilities within the project site vicinity. In addition, Hotel Option A would provide approximately 5.4 acres (233,672 square feet) of open space and recreational amenities and Hotel Option B would provide approximately 5.3 acres (232,951 square feet) of open space/recreational amenities for the public and City residents. With the proposed increase of approximately 39 additional acres as proposed by the Strategic Plan, the residents would be adequately served with approximately 155 acres of open space recreational area under either Hotel Option.

Regardless, the increase of City residents would require an additional 34 acres of open space and recreational facilities to accommodate the additional 4,190 residents. However, the project would be required to dedicate park land or recreational fees to meet project-related demands, which would serve to mitigate any adverse impacts related to provision of parks and recreational facilities.

In summary, under Hotel Option A and Hotel Option B, the project demand for parks and recreational facility services would be increased. While the project does not include an increase of parkland acreage to the City, the project would include approximately five acres of open space and recreational amenities along with providing developer fees that help build new parks or fund playground amenities for park patrons. Specifically, in compliance with AB 1600 and subsequent to the City's decision upon the imposition of park impact fees, the project would be required to do one of the following according to the Quimby Act: pay in lieu fees directed towards parks and recreation, develop and dedicate parkland, or a combination of both that would provide an equivalent to a total of three acres per 1,000 residents. In addition, funding for additional maintenance would be collected through property and sales tax revenue generated by planned commercial and residential uses. Given compliance with applicable requirements and

provision of adequate parks and recreational facilities, impacts related to park and recreational facilities would be less than significant level under the Hotel Options.

(2) Consistency with Regulatory Environment

(a) Quimby Act

Residential Option, Hotel Option A, and Hotel Option B

Pursuant to the Quimby Act, the project would do one of the following: develop additional recreational and park amenities within the proposed site; pay in-lieu fees to improve existing facilities in the park area; or provide a combination such that the project would provide a total of three acres per 1,000 residents. Since the proposed project would provide more than three acres of parkland per 1,000 residents, it is expected that additional improvements would be made to meet the City goal of eights acres per 1,000 residents.

(b) Park Impact Mitigation Fee Act (AB 1600)

Residential Option, Hotel Option A, and Hotel Option B

As addressed in AB 1600, parkland impacts would be reduced with the imposition and administration of impact fee programs. Prior to adoption of a park impact fee, the City must identify the purpose of the fee, identify the use of fee revenues, determine a reasonable relationship between the fee's use and the type of development paying the fee, determine a reasonable relationship between the need for the fee and the type of development paying the fee, and determine a reasonable relationship between the amount of the fee and the cost of the facility attributable to development paying the fee.

(c) City of Long Beach General Plan

Residential Option, Hotel Option A, and Hotel Option B

The project would be consistent with the goals and policies described in the Open Space and Recreation Element of the Long Beach General Plan. The City focuses on the preservation of natural resources, the managed production of resources, public health and safety, and outdoor recreation/recreational facilities.

Specifically, the project would provide for a sufficient amount of open space under the Residential Option, Hotel Option A, or Hotel Option B by providing approximately 242,716 square feet of open space, 233,672 square feet of open space, or 232,951 square feet of open

space, respectively. The open space areas would provide for the adequate protection of lives and property against safety hazards and would be environmentally-friendly and socially and economically sustainable. Further, the amount of open space the three alternatives would provide and the payment of the Quimby fees would further assist the City in providing eight acres of recreation open space per 1,000 residents. Finally, all three options would comply with Ordinance C-7828, by providing an 80-foot setback along Ocean Boulevard, in order to extend Santa Cruz Park to the southern side of the roadway. As such, the proposed project would comply with all applicable goals, policies, and objectives established by the General Plan.

(d) Department of Parks, Recreation and Marine 2010 Strategic Plan

Residential Option, Hotel Option A, and Hotel Option B

As previously described, the Strategic Plan includes goals, strategies and implementation timetables to provide adequate recreational and open space areas to meet the City's growing population. The project would meet the Strategic Plan's goals by providing open space parks and recreational facilities that meet the needs of the community. The open space and recreational facilities would provide a positive image and experience for visitors and residents and would meet the diverse needs and interests of residents. The project would provide a positive experience and image by improving the development on the site and maintaining access to the beaches. Finally, the increase in tax revenue from the project would help to ensure marinas are fiscally sound and meet the community's needs. Therefore, development of the Residential Option, Hotel Option A, or Hotel Option B would be consistent with the goals of the Strategic Plan and impacts would be less than significant in this regard.

(e) City of Long Beach Municipal Code

Residential Option, Hotel Option A, and Hotel Option B

As described above, the LBMC requires from 150 to 200 square feet of open space per residential unit for high-density residential development. Under the Residential Option, the project would develop 1,370 residential units, thereby requiring from 205,500 square feet to 274,000 square feet of open space. While development on the project site must occur in accordance with specific agreements and permits applicable to the PD-6 designation, the Residential Option would provide 242,716 square feet of open space recreational area, which would be consistent with the LBMC requirements for high-density residential development. Similarly, Hotel Option A and Hotel Option B would both develop 1,110 residential units, which would require approximately 166,500 to 222,000 square feet of open space recreational area. Hotel Option A and Hotel Option B would provide 233,672 square feet and 232,951 square feet of open space recreational area, respectively, and thus, would also comply with the LBMC

requirements. The project would also comply with Chapter 21.31.230 of the LBMC, which requires a minimum 300 square foot recreation room since all three options would include a 3,300 square foot clubhouse with appropriate recreational amenities. Finally, the proposed project would be consistent with Chapter 18.18, Park and Recreation Facilities Fee, which imposes a park fee on new residential development to assure City parkland and recreational facility standards are met. The fee would help fund parkland acquisition and recreation improvements incurred by the City.

4. CUMULATIVE IMPACTS

a. Residential Option

Section III of this Draft EIR identifies 18 related projects that are anticipated to be developed within the vicinity of the project site. For purposes of this cumulative analysis on parks and recreation, only those related projects that propose residential uses are considered. Of the 18 related projects identified in Section III, 12 projects have proposed residential uses and are included in this cumulative analysis as listed in Table IV.I-12 on page IV.I-58. These related projects would cumulatively generate, in conjunction with the Residential Option, the need for additional parks and recreation facilities. The resident population is based on the average household size of 2.898 residents per residential unit. As shown in Table IV.I-12, related projects could potentially generate 5,705 residents. Assuming the Residential Option generates a net new residential population of 4,580, the Residential Option in conjunction with related projects could therefore generate 10,285 residents. However, all related projects with residential uses would be required to comply with the requirements of the Quimby Act and provide payment of the City's park and recreation fee. As such, potential cumulative impacts to parks and recreational facilities would be reduced to a less than significant level under the Residential Option.

b. Hotel Options

As shown in Table IV.I-12, related projects could potentially generate 5,705 residents. Assuming the Hotel Options generates a net new residential population of 4,190, the Hotel Options in conjunction with related projects could therefore generate 9,895 residents. However, all related projects with residential uses would be required to comply with the requirements of the Quimby Act and provide payment of the City's park and recreation fee. As such, potential cumulative impacts to parks and recreational facilities would be reduced to a less than significant level under the Hotel Options.

Table IV.I-12

Cumulative Projects Impacting the City's Parks and Recreational Facilities

Map No. [a]	Location	Land Use	Residential Population [b]
1	432-440 W. Ocean Blvd.	107 apartments	310
3	1598 Long Beach Blvd.	64 apartments	185
4	301 Pine Ave.	375 apartments	1,087
5	150 W. Ocean Blvd	216 condominiums	626
6	777 E. Ocean Blvd.	358 condominiums	1,037
7	1628 Ocean Blvd.	51 condominiums	148
8	2010 Ocean Blvd.	56 condominiums	162
10	25 S. Chestnut Place	246 condominiums	713
11	433 Pine Ave.	18 apartments	52
13	421 W. Broadway	291 apartments	843
14	350 Long Beach Blvd.	82 single-family residences	238
17	1235 Long Beach Blvd.	152 senior apartments	304
		Related Projects Total	**5,705**
		Residential Option Total	**4,580**
		Hotel Options Total	**4,190**
		Cumulative Total with Residential Option	**10,285**
		Cumulative Total with Hotel Options	**9,895**

[a] *Corresponds with Map Nos. on Figure III-1 in Section III of this Draft EIR.*

[b] *For related projects with residential uses, the residential population was determined by multiplying the number of residential units by 2.898 persons per household per the California Department of Finance. For senior housing, 2.0 persons per household was utilized.*

Source: PCR Service Corporation, 2009.

5. MITIGATION MEASURES

a. Residential Option, Hotel Option A, and Hotel Option B

Compliance with the Quimby Act, General Plan, Strategic Plan, and the LBMC, which would provide for the ultimate provision of parks and recreational facilities to meet project-related demands would reduce impacts to less than significant. As such, no mitigation measures are required.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Residential Option, Hotel Option A, and Hotel Option B

Compliance with State and City requirements for dedication of parks/recreational facilities and/or payment of in lieu fees would reduce impacts related to parks and recreation to less than significant.

IV. ENVIRONMENTAL IMPACT ANALYSIS
I. PUBLIC SERVICES
5. LIBRARIES

1. INTRODUCTION

This section describes existing library facilities and service provided by the Long Beach Public Library (LBPL), and provides an analysis of potential impacts on these facilities and services that would occur as a result of the proposed project. The analysis addresses available library capacity and whether it is sufficient to accommodate the population growth generated by the proposed project. The analysis is based in part on information provided by LBPL, which is incorporated by reference throughout this section and is included in Appendix E of this Draft EIR and information obtained from the LBPL website.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

According to LBPL's mission statement, the LBPL is committed to meeting the information needs of our culturally diverse and dynamic population by: (1) providing quality library service through a staff that is responsive, expert, and takes pride in service; (2) offering a wide selection of resources and materials representing all points of view; and (3) supporting lifelong learning, intellectual curiosity, and free and equal access to information. The LBPL provides the following library service standards and/or goals for analyzing the project's potential impacts from development on the local library services:

- Engage youth and families in productive social and economic activities;
- Ensure all neighborhood libraries are safe and welcoming community centers;
- Respond effectively to the educational, informational and cultural needs of the City's diverse population with up-to-date print, multimedia, and virtual resources, services, and programs; and
- Support economic, educational, and employment opportunities.

b. Existing Conditions

The LBPL system provides library services to the City of Long Beach. LBPL consists of the Main Library and 11 branch libraries, with a multimedia inventory of over 490,000 items and 70 computer workstations with access to the internet and electronic databases.[1] The LBPL includes a collection of books, movies, music, and magazines, totaling over 50,000 items. The LBPL includes a collection of children, teen, and adult books; movies; music; magazines; a Long Beach History Archives; more than 25 international languages books, tapes, and CDs; Special Collections that include sheet music, genealogy, art books, auto manuals, and Federal and State government documents; specialized online databases for history, biographies, magazine articles, genealogy, business, etc.; and newspapers. The LBPL system has a total of 252 personnel working on any given day, except Sundays.

LBPL has identified the Main Library as the primary library facility that would serve the proposed project. The Main Library is located at 101 Pacific Avenue in downtown Long Beach, adjoining the Long Beach City Hall and is located approximately 0.5 miles northeast of the project site, as shown in Figure IV.I-6 on page IV.I-62.[2] This 132,000-square foot branch was constructed in 1977 and is considered the resource library for all of Long Beach and serves as a State and Federal Depository. As such, the Main Library essentially serves the entire City population of 492,682 residents however; the population within a one mile radius of the Main Branch Library is approximately 51,613 residents.[3] The Main Library also serves six different schools within the LBUSD, is open to the public 45 hours per week, and has 50 to 80 employees and volunteers working on any given day, except Sundays. The Main Library includes a Family Learning Center that provides homework assistance for students in grades kindergarten through 12th grade, and facilities for Family and Pre-school Storytime Programs and a Children's Film Program. The library also offers public computer access, wireless internet and in-library laptop computer loans. During the 2007-2008 fiscal year (FY), approximately 500,000 items were circulated from the Main Library, 130,000 reference questions answered, and 134,000 computers sessions were activated. It should be noted that currently, there are no improvements or library expansions planned, funded, and/or scheduled for the Main Library.[4]

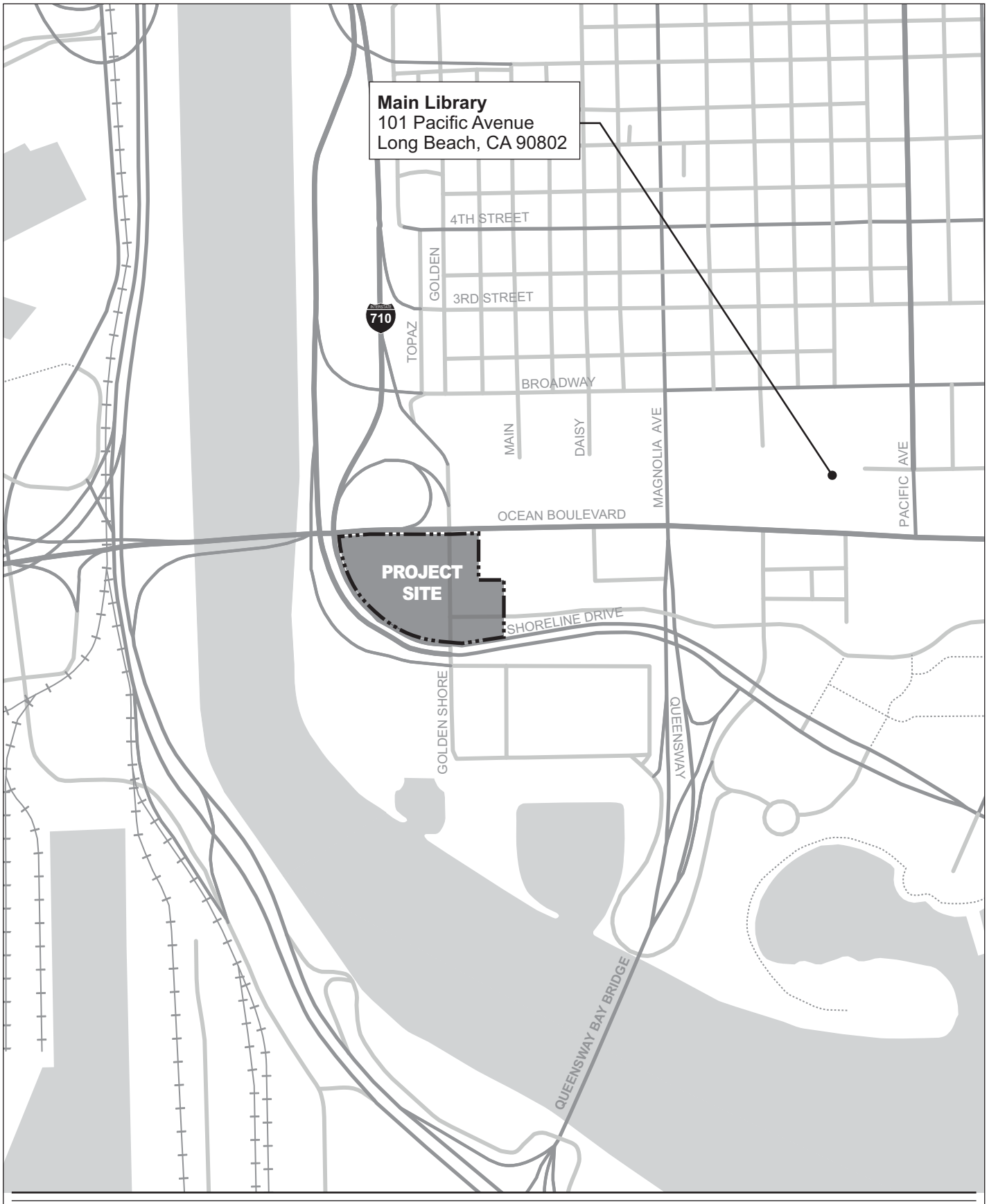
---

1 *Per written communication with Glenda William, Acting Director of Library Services, January 13, 2009.*

2 *The Main Library receives selected materials from the state and federal governments including the Code of Federal Regulations, other laws and regulations, and other documents from various governmental departments. Library patrons have access to these resources via the neighborhood libraries.*

3 *This population is based upon the assigned census tracts within a one mile radius of the Main Library upon which population is determined, including; 575801, 575802,576300, 575901, 575902, 576200, 576000, 576100, 575600, 576601, and 576501.*

4 *Per written communication with Glenda Williams, Acting Director of Library Services, January 13, 2009.*



PCR

Source: PCR Services Corporation, 2009.

Figure IV.I-6
Location of the Main Libray

3. PROJECT IMPACTS

a. Methodology

Potential project impacts on library services and facilities are determined based on identifying the primary service library or libraries that serve the project site, forecasting the number of residents generated by the project, identifying the population within the library's service area at the time of project buildout, combining the project's resident population with the forecasted service area population, and comparing the combined population to the service population for the library as determined by LBPL.

b. Thresholds of Significance

In accordance with Appendix G to the State CEQA Guidelines, a project could have a significant impact on the environment with regard to libraries if a project would result in substantial adverse physical impacts associated with the provision of new or physically altered library facilities, or need for new or physically altered library facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable performance objectives of the library department.

c. Analysis of Project Impacts

LBPL has identified the Main Library as the primary library facility that would serve the proposed project. LBPL bases the service population for a branch upon census tracts that are assigned to that branch. As previously described, the Main Library serves as the reference library for the entire City's population of 492,682 residents, but serves a local population of 51,613 residents based upon the census tracts located within a one-mile radius of the library. Based upon population projections for the entire City and the census tracts assigned to the Main Library, by the Year 2018 (buildout of the project), the Main Library would serve a total population of 525,807 residents or 52,511 local residents.[5]

[5] *Population projections were determined using SCAG RTP population projections from Years 2010 through 2020, determining the annual growth rate, and then adding three years of growth to the projected 2015 populations.*

(1) Library Facilities and Services

(a) Residential Option

The 1,370 residential units under the Residential Option would generate a direct population increase of approximately 3,973 new residents.[6,7] Therefore, by 2018, the Main Library would serve a total population of 529,780 residents or a local population of 56,484 residents. Thus, the Residential Option's demand for library services would represent a 0.7 percent total population increase or a 7.0 percent local population increase in the demand for library services at the Main Library. As such, the resulting population increase would result in the following impacts to the Main Library:[8]

- Increased numbers of adults and youth at library programs;
- Increased number of library visits per day/month/year;
- Increased circulation, increased demand for resources, increased numbers of requests for instruction and assistance, increased numbers of answers provided;
- Increased demand for public computers; and
- Increased opportunities for partnering with business organizations.

Nonetheless, residents of the project would not be limited to solely utilizing the Main Library. As described in Table IV.I-13 on page IV.I-65, other libraries in the vicinity of the project site includes the Alamitos Neighborhood Library, Burnett Hill Neighborhood Library, Bret Harte Neighborhood Library, and the Mark Twain Neighborhood Library, which would also be available for use by residents. School libraries would also be available to serve students that are generated by the project. Furthermore, the project would generate revenue to the City's general fund in the form of net new property tax, direct (i.e., from on-site commercial uses) and indirect (i.e., from household spending) sales tax, utility user's tax, gross receipts tax, real estate transfer tax on residential initial sales and annual resales, and other miscellaneous household-related taxes (e.g., parking fines). Therefore, there are other libraries servicing the area and the

---

[6] *The number of residents was determined by multiplying the number of residential units by 2.9 persons per household. State of California, Department of Finance, E-5 Population and Housing Estimates for Cities, Counties and the State, 2001-2009, with 2000 Benchmark. Sacramento, California, May 2009.*

[7] *It should be noted that this analysis only includes direct population increases and does not account for indirect since non-residential uses are not considered generators for library use.*

[8] *Per written communication with Glenda Williams, Acting Director of Library Services, January 13, 2009.*

Table IV.I-13

Neighborhood Libraries Serving the Project Site

Library	Address	Distance from Project Site
Alamitos Neighborhood Library	1836 East 3rd Street	2.0 miles east
Burnett Hill Neighborhood Library	560 East Hill Street	2.9 miles northeast
Bret Harte Neighborhood Library	1595 West Willow Street	3.4 miles northwest
Mark Twain Neighborhood Library	1401 East Anaheim Street	2.3 miles northeast

Source: PCR Services Corporation, 2009.

project would generate revenues for the City's general fund, which would serve to offset the project's incremental impact on library services. Therefore, impacts related to library services would be less than significant.

(b) Hotel Options

The 1,110 residential units under the Hotel Options would generate a direct population increase of approximately 3,219 new residents. Therefore, by 2018, the Main Library would serve a total population of 529,026 residents or a local population of 55,730 residents. Thus, the Residential Option's demand for library services would represent a 0.6 percent total population increase or a 6.0 percent local population increase in the demand for library services at the Main Library. As such, the resulting population increase would result in the same impacts to the Main Library as listed under the Residential Option. In addition, similar to the Residential Option, the Hotel Options would also be served by nearby neighborhood libraries and would provide additional income to the City through fees and taxes, to help offset impacts to the library. Therefore, impacts under the Hotel Options to library services would be less than significant.

(2) Consistency with Regulatory Applications

(a) Residential Option, Hotel Option A, and Hotel Option B

As described above, the LBPL lists four policies and/or goals in order to assess the project's impact on library services. The first goal is engaging youth and families in productive social and economic activities. The project would provide for additional funding to the City through fees and taxes that could be utilized to assist in the funding of these social and economic activities. However, as also described above, the LBPL indicates that the project would increase numbers of adults and youth at library programs for which the LBPL would have insufficient staffing to accommodate the increased numbers. The proposed project would not interfere with the goal of providing safe and welcoming community centers at the neighborhood libraries and

the additional fee/tax revenue would also support providing additional materials and supporting economic, educational, and employment opportunities. Therefore, under the project would be consistent with the policies and goals of the LBPL, resulting in less than significant impacts under all three options.

4. CUMULATIVE IMPACTS

a. Residential Option

Of the 19 related projects identified in Section III of this Draft EIR, all are located within the City of Long Beach and therefore, within the general service area of the Main Library as this a regional facility. The 12 residential projects would create a total of 2,016 residential units with an estimated population of approximately 5,705 residents (refer to Table IV.H.4-2 on page IV.H-52). For the purpose of this cumulative impact analysis, only residential projects have been considered. When including the Residential Option's estimated net total of 3,973 residents, a cumulative total of approximately 9,678 new residents would be generated within the general service area of the Main Library. However, it is unlikely that all residents would attend only the Main Library as there are numerous branch libraries throughout the cumulative project locations including the Alamitos Neighborhood Library, Burnett Hill Neighborhood Library, Bret Harte Neighborhood Library, and the Mark Twain Neighborhood Library. Furthermore, it is expected that each related project would be reviewed on a project-by-project basis and would be expected to coordinate with the LBPL. In addition, related projects could also generate revenue to the City's general fund in the form of property taxes, sales taxes, etc. This revenue could be used to fund LBPL expenditures as necessary to offset cumulative impacts on library services. Therefore, cumulative impacts to libraries would be less than significant under the Residential Option.

b. Hotel Options

When including the Hotel Options' estimated net total of 3,219 residents, a cumulative total of approximately 8,924 new residents would be generated within the general service area of the Main Library. Similar to the Residential Option, it is unlikely that all residents of the Hotel Options would attend only the Main Library but would also attend the four additional libraries within the vicinity of the project site. Furthermore, it is expected that each related project would be reviewed on a project-by-project basis and would be expected to coordinate with the LBPL. In addition, related projects could also generate revenue to the City's general fund in the form of property taxes, sales taxes, etc. This revenue could be used to fund LBPL expenditures as necessary to offset cumulative impacts on library services. Therefore, cumulative impacts to libraries would be less than significant under the Hotel Options.

5. MITIGATION MEASURES

a. Residential Option, Hotel Option A, and Hotel Option B

Impacts to library services would be less than significant under all three options and therefore, no mitigation measures are required.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

a. Residential Option, Hotel Option A, and Hotel Option B

Development of the Residential Option or the Hotel Options would result in less than significant impacts without requiring mitigation measures.

IV. ENVIRONMENTAL IMPACT ANALYSIS
J. TRAFFIC AND PARKING

1. INTRODUCTION

This section describes the traffic conditions on the existing street network serving the project site and evaluates the impact of traffic generated by the project on future roadway conditions. For the purposes of evaluating traffic impacts of the project, the analysis presented in this section is based on the development proposed for the project site under Hotel Option B, which was determined to result in the greatest traffic generation and associated impacts. As such, the discussion of traffic impacts in this section is considered conservative for the project's Residential Option and Hotel Option A, which would result in incrementally reduced traffic-related impacts. The evaluation of impacts presented in this section is based on the analysis, conclusions, and recommendations contained in the Traffic Impact Analysis ("Traffic Study") prepared by Linscott, Law & Greenspan, Engineers in September 2009. The Traffic Study, which is contained in Appendix F of this EIR, was developed in consultation with the City of Long Beach.

2. ENVIRONMENTAL SETTING

a. Existing Conditions

(1) Existing Roadway System

Regional access to the project site is provided by the Long Beach (I-710) Freeway, which is a north-south regional highway located west of the project site. The Long Beach (I-710) Freeway begins at Queensway Bay in Long Beach and extends north to Valley Boulevard in Alhambra. The 1-710 Freeway generally provides four travel lanes in each direction. Freeway access to the project site is provided via on and off-ramps with Golden Shore.

The network of roadways that surround the project site include Golden Shore, Magnolia Avenue, Pacific Avenue, Long Beach Boulevard, Atlantic Avenue, Alamitos Avenue, 7th Street, 6th Street, 3rd Street, Broadway, Ocean Boulevard, and Seaside Way, and Shoreline Drive. The following discussion provides a brief synopsis of these key area streets. The descriptions are based on an inventory of existing roadway conditions.

Golden Shore is a four-lane divided roadway that extends primarily in the north-south direction, through the project site. Parking is not permitted on either side of this roadway within the vicinity of the project site. The posted speed limit on Golden Shore is 30 miles per hour. The intersection of Golden Shore at Ocean Boulevard is controlled by a traffic signal, while the intersections of Golden Shore at Seaside Way, Golden Shore at Shoreline Drive Off-Ramp, and Golden Shore at Shoreline Drive On-Ramp are stop-controlled.

Magnolia Avenue is a two-lane divided roadway that extends in the north-south direction, east of the project site. Parking is permitted on both sides of this roadway within the vicinity of the project site. The posted speed limit on Magnolia Avenue is 25 miles per hour. The intersections of Magnolia Avenue at 7th Street, Magnolia Avenue at 6th Street, Magnolia Avenue at 3rd Street, Magnolia Avenue at Broadway, and Magnolia Avenue at Ocean Boulevard are all controlled by traffic signals, while the intersection of Magnolia Avenue at 5th Street is stop-controlled.

Pacific Avenue is a four-lane divided roadway that extends in the north-south direction, east of the project site. Parking is generally not permitted on either side of this roadway within the vicinity of the project site. The intersections of Pacific Avenue at 7th Street, Pacific Avenue at Broadway, and Pacific Avenue at Ocean Boulevard are controlled by traffic signals.

Long Beach Boulevard is a four-lane divided roadway that extends in the north-south direction, east of the project site. Parking is generally not permitted on either side of this roadway within the vicinity of the project site. The posted speed limit on Atlantic Avenue is 30 miles per hour. The intersections of Long Beach Boulevard at 7th Street and Long Beach Boulevard at Ocean Boulevard are both controlled by traffic signals.

Atlantic Avenue is a four-lane divided roadway that extends in the north-south direction, east of the project site. Parking is permitted on both sides of this roadway within the vicinity of the project site. The posted speed limit on Atlantic Avenue is 30 miles per hour. The intersections of Atlantic Avenue at 7th Street and Atlantic Avenue at Ocean Boulevard are both controlled by traffic signals.

Alamitos Avenue is a four-lane divided roadway that extends in the north-south direction, east of the project site. Parking is generally permitted on both sides of this roadway within the vicinity of the project site. The intersections of Alamitos Avenue at 7th Street, Alamitos Avenue at 4th Street, Alamitos Avenue at Broadway, and Alamitos Avenue at Ocean Boulevard are all controlled by traffic signals.

7th Street is generally a one-way roadway that consists of three lanes flowing in the west direction, north of the project site. East of Martin Luther King Jr. Avenue, 7th Street is a four-

lane roadway with traffic flowing in both directions. Parking is generally permitted on both sides of this roadway within the vicinity of the project site. The posted speed limit on 7th Street is 30 miles per hour. The intersections of 7th Street at Pine Avenue and 7th Street at Martin Luther King Jr. Avenue are controlled by traffic signals.

6th Street is a one-way roadway that consists of three lanes flowing in the east direction, north of the project site. Parking is permitted on both sides of this roadway within the vicinity of the project site. West of Long Beach Boulevard, the posted speed limit is 30 miles per hour. East of Long Beach Boulevard, the posted speed limit is 25 miles per hour.

3rd Street is a one-way roadway that consists of three lanes flowing in the west direction, north of the project site. East of Alamitos Avenue, 3rd Street is a two-lane divided roadway with traffic flowing in both directions. Parking is generally permitted on both sides of this roadway within the vicinity of the project site. The posted speed limit on 3rd Street is 30 miles per hour.

Broadway is a one-way roadway that consists of three lanes flowing in the east direction, north of the project site. East of Alamitos Avenue, Broadway is a two-lane divided roadway with traffic flowing in both directions. Parking is generally permitted on both sides of this roadway within the vicinity of the project site. The posted speed limit on Broadway is 30 miles per hour. The intersection of Broadway at Pine Avenue is controlled by a traffic signal.

Ocean Boulevard is primarily a six-lane divided roadway that extends in the east-west direction, bordering the project site directly to the north. West of Golden Shore, Ocean Boulevard is a four-lane divided roadway. Parking is generally permitted on both sides of this roadway within the vicinity of the project site. East of Golden Shore, the posted speed limit on Ocean Boulevard is 30 miles per hour. West of Golden Shore, the posted speed limit on Ocean Boulevard is 45 miles per hour. The intersections of Ocean Boulevard at Chestnut Place and Ocean Boulevard at Pine Avenue are controlled by traffic signals.

Seaside Way is a four-lane divided roadway that extends in the east-west direction, through the project site. West of Magnolia Avenue, parking is not permitted on either side of this roadway within the vicinity of the project site. East of Magnolia Avenue, parking is permitted on both sides of the roadway within the vicinity of the project site. The intersection of Seaside Way at Chestnut Place is stop-controlled, while the intersection of Seaside Way at Pine Avenue is controlled by a traffic signal.

Shoreline Drive is a six-lane divided roadway that extends in the east-west direction, bordering the project site directly to the south. Parking is generally not permitted on either side of this roadway within the vicinity of the project site. The posted speed limit on Shoreline Drive

is 40 miles per hour. The intersections of Shoreline Drive at Chestnut Place and Shoreline Drive at Pine Avenue are controlled by traffic signals.

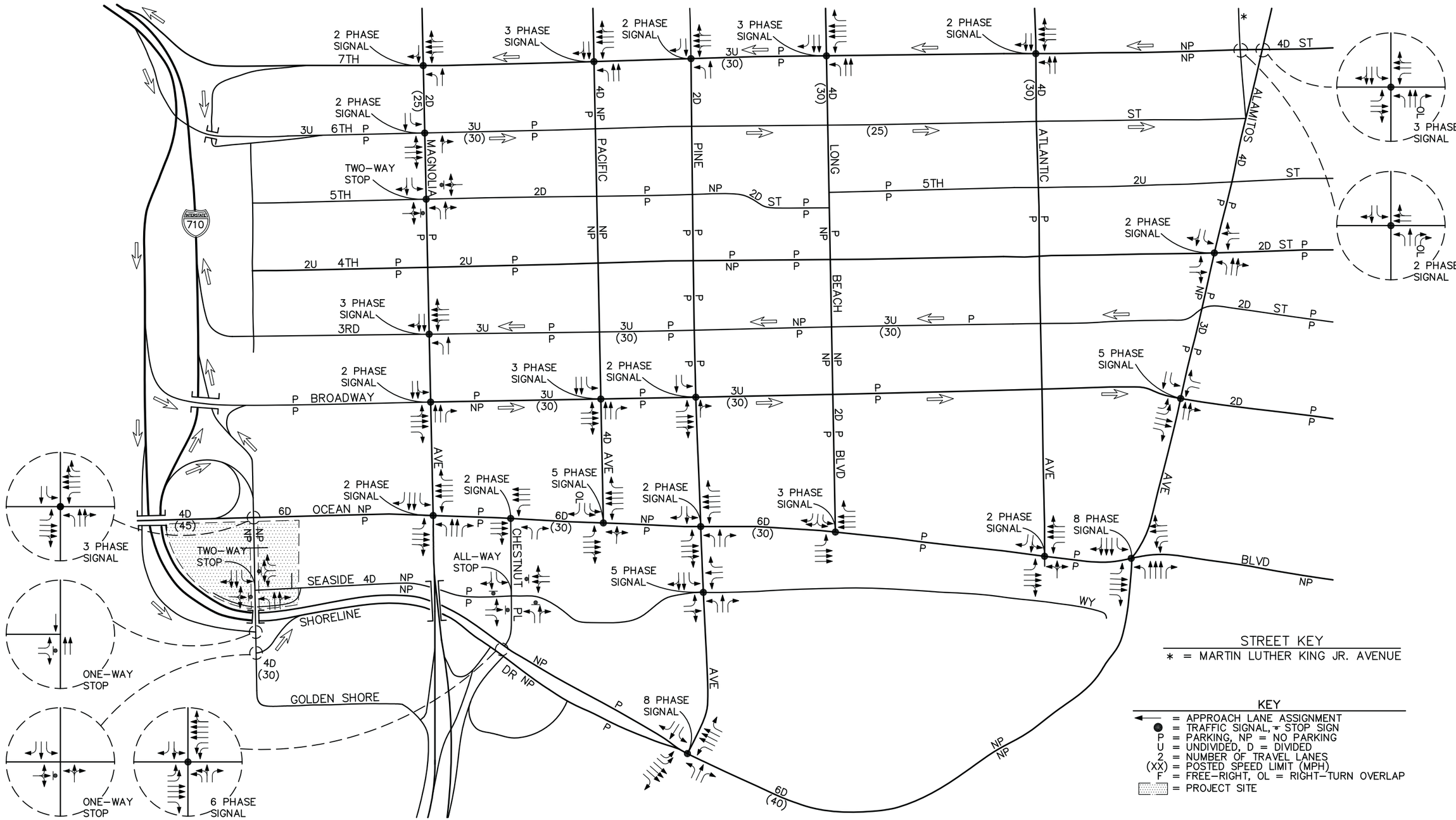
Figure IV.J-1 on page IV.J-5 presents an inventory of the existing roadway conditions for the arterials and intersections evaluated in this section. The number of travel lanes and intersection controls for the key area intersections are also identified in Figure IV.J-1.

(2) Existing Area Traffic Volumes

Manual vehicular turning movement counts were conducted in June 2008 by National Data and Surveying Services at 30 study locations during the weekday morning and evening peak commuter periods to determine the existing A.M. peak hour and P.M. peak hour traffic volumes. The 30 study intersections include the following:

1. Magnolia Avenue at 7th Street
2. Pacific Avenue at 7th Street
3. Pine Avenue at 7th Street
4. Long Beach Boulevard at 7th Street
5. Atlantic Avenue at 7th Street
6. Martin Luther King Jr. Ave at 7th St
7. Alamitos Avenue at 7th Street
8. Magnolia Avenue at 6th Street
9. Magnolia Avenue at 5th Street
10. Alamitos Avenue at 4th Street
11. Magnolia Avenue at 3rd Street
12. Magnolia Avenue at Broadway
13. Pacific Avenue at Broadway
14. Pine Avenue at Broadway
15. Alamitos Avenue at Broadway
16. Golden Avenue\Golden Shore at Ocean Boulevard
17. Magnolia Avenue at Ocean Boulevard
18. Chestnut Place at Ocean Boulevard
19. Pacific Avenue at Ocean Boulevard
20. Pine Avenue at Ocean Boulevard
21. Long Beach Boulevard at Ocean Boulevard
22. Atlantic Avenue at Ocean Boulevard
23. Alamitos Ave/Shoreline Drive at Ocean Boulevard
24. Golden Shore at Seaside Way
25. Chestnut Place at Seaside Way
26. Pine Avenue at Seaside Way
27. Golden Shore at I-710 Southbound Off-Ramp
28. Golden Shore at Eastbound Shoreline Dr On-Ramp
29. Chestnut Place at Shoreline Drive
30. Pine Avenue at Shoreline Drive

Figures 3-2 and 3-3 in the project's Traffic Study (included as Appendix F of this EIR) depict the existing A.M. and P.M. peak hour traffic volumes at the key study intersections, respectively. Appendix A of the Traffic Study contains the detailed manual turning movement count sheets for the 30 key study intersections evaluated in this report.



STREET KEY

* = MARTIN LUTHER KING JR. AVENUE

KEY

- ← = APPROACH LANE ASSIGNMENT
- ● = TRAFFIC SIGNAL, ▾ STOP SIGN
- P = PARKING, NP = NO PARKING
- U = UNDIVIDED, D = DIVIDED
- 2 = NUMBER OF TRAVEL LANES
- (XX) = POSTED SPEED LIMIT (MPH)
- F = FREE-RIGHT, OL = RIGHT-TURN OVERLAP
- ▭ = PROJECT SITE

PCR

No scale

Source: Linscott Law & Greenspan, 2009.

Figure IV.J-1
Study Area Intersections and Intersection Controls

(3) Existing Level of Service Results

Table IV.J-1 on page IV.J-7 summarizes the existing peak hour service level calculations for the 30 key study intersections based on existing traffic volumes and current street geometrics. Review of Table IV.J-1 indicates that, based on the Intersection Capacity Utilization (ICU) or Highway Capacity Manual (HCM) method of analysis (described below under Subsection 3.a., Methodology) and the City's Level of Service (LOS) criteria, one (1) of the thirty (30) key study intersections currently operate at an unacceptable LOS E or F during the A.M. and/or P.M. peak hours. The remaining key study intersections currently operate at acceptable LOS D or better during the A.M. and P.M. peak hours. The intersection operating at an adverse level of service is:

	A.M. Peak Hour	P.M. Peak Hour
Key Intersection	**ICU/HCM LOS**	**ICU/HCM LOS**
23. Alamitos Avenue/Shoreline Drive at Ocean Boulevard	1.120 F	1.062 F

Appendix B in the project's Traffic Study (included as Appendix F to this EIR) presents the peak hour LOS calculation worksheets for the key study intersections.

(4) Future (2020) Baseline Traffic Conditions

(a) Ambient Traffic Growth

Cumulative traffic growth estimates were calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future related projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at one percent (1%) per year. Applied to existing Year 2008 traffic volumes results in a twelve percent (12%) increase of growth in existing volumes to horizon year 2020.

(b) Related Projects Traffic Characteristics

In order to make a realistic estimate of future on-street conditions (prior to or without implementation of the proposed project), the status of other known development projects (related projects) in the area was researched. With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impact of all ongoing development. Based on LLG's research, there are nineteen (19) related projects within a two-mile radius of the project that are located in the City of Long Beach. These projects have either been built, but not yet fully occupied, or are being processed for approval and have been included as part of the cumulative setting. Table IV.J-2 on page IV.J-8 provides the location and a brief description for each of the nineteen (19) related projects.

Table IV.J-1

Existing Peak Hour Levels of Service

	Key Intersection	Time Period	Control Type	ICU/Delay	LOS
1.	Magnolia Avenue at 7th Street	A.M.	2∅ Traffic	0.679	B
		P.M.	Signal	0.576	A
2.	Pacific Avenue at 7th Street	A.M.	3∅ Traffic	0.651	B
		P.M.	Signal	0.513	A
3.	Pine Avenue at 7th Street	A.M.	2∅ Traffic	0.551	A
		P.M.	Signal	0.452	A
4.	Long Beach Boulevard at 7th Street	A.M.	3∅ Traffic	0.714	C
		P.M.	Signal	0.531	A
5.	Atlantic Avenue at 7th Street	A.M.	2∅ Traffic	0.675	B
		P.M.	Signal	0.476	A
6.	Martin Luther King Jr. Avenue at 7th Street	A.M.	2∅ Traffic	0.298	A
		P.M.	Signal	0.474	A
7.	Alamitos Avenue at 7th Street	A.M.	3∅ Traffic	0.872	D
		P.M.	Signal	0.735	C
8.	Magnolia Avenue at 6th Street	A.M.	2∅ Traffic	0.477	A
		P.M.	Signal	0.705	C
9.	Magnolia Avenue at 5th Street	A.M.	Two-Way	12.7 s/v	B
		P.M.	Stop	17.2 s/v	C
10.	Alamitos Avenue at 4th Street	A.M.	2∅ Traffic	0.707	C
		P.M.	Signal	0.888	D
11.	Magnolia Avenue at 3rd Street	A.M.	3∅ Traffic	0.602	B
		P.M.	Signal	0.545	A
12.	Magnolia Avenue at Broadway	A.M.	2∅ Traffic	0.471	A
		P.M.	Signal	0.462	A
13.	Pacific Avenue at Broadway	A.M.	3∅ Traffic	0.485	A
		P.M.	Signal	0.654	B
14.	Pine Avenue at Broadway	A.M.	2∅ Traffic	0.395	A
		P.M.	Signal	0.672	B
15.	Alamitos Avenue at Broadway	A.M.	5∅ Traffic	0.774	C
		P.M.	Signal	0.747	C

Source: Linscott, Law & Greenspan, Engineers, 2009

Figure III-1 in Section III, Basis for Cumulative Analysis, of this EIR graphically illustrates the location of the related projects. These related projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

The A.M. and P.M. peak hour traffic volumes associated with the nineteen (19) related projects are presented in Figures 6-2 and 6-3, respectively, in the project Traffic Study (included as Appendix F in this EIR).

Table IV.J-2

Location and Description of Related Projects

No.	Location/Address	Description
1.	432-440 W. Ocean Boulevard	107 DU apartments
2.	110 W. Ocean Boulevard	82 hotel rooms
3.	1598 Long Beach Boulevard	64 DU apartments and 15,000 SF commercial
4.	301 Pine Avenue	375 DU apartments and 26,000 SF commercial
5.	150 W. Ocean Boulevard	216 DU condominiums
6.	777 E. Ocean Boulevard	358 DU high-rise condominiums and 13,561 SF commercial
7.	1628-1724 Ocean Boulevard	51 DU condominiums and 47 hotel rooms
8.	2010 Ocean Boulevard	56 DU condominiums
9.	600 Queensway Drive	178 hotel rooms
10.	25 S. Chestnut Place	246 DU high-rise condominiums
11.	433 Pine Avenue	18 DU apartments and 15,000 SF of commercial
12.	285 Bay Street	138 hotel rooms
13.	421 W. Broadway	291 DU apartments and 15,580 SF commercial
14.	350 Long Beach Boulevard	82 DU single family detached housing and 7,000 SF commercial
15.	201 The Promenade	165 hotel rooms
16.	155 Long Beach Boulevard	191 hotel rooms
17.	1235 Long Beach Boulevard	79,543 SF of Retail floor/Restaurant floor area, 152 DU Senior Apartments and 210 Condominiums.
18.	New Long Beach Court House	370,000 SF courtrooms for the Superior Court, 80,000 SF for the County, 75,000 SF commercial offices, and 20,000 SF retail.
19.	Hotel Sierra	125 hotel rooms

Source: Linscott, Law & Greenspan, Engineers, 2009

Table IV.J-3 on page IV.J-9 presents the development totals and resultant trip generation for the related projects. As shown in Table IV.J-3, the related projects are expected to generate a combined total of 29,432 daily trips on a "typical" weekday, with 2,036 trips (862 inbound and 1,174 outbound) forecast during the A.M. peak hour, and 2,591 trips (1,408 inbound and 1,183 outbound) during the P.M. peak hour.

(c) Future (2020) Traffic Volumes

Figures 6-4 and 6-5 in the project Traffic Study (included as Appendix F in this EIR) present future A.M. and P.M. peak hour cumulative traffic volumes at the key study intersections for the horizon year (Year 2020). It should be noted that the cumulative traffic volumes represent the accumulation of existing traffic, ambient growth traffic (calculated at one percent per year), and the nineteen (19) related projects' traffic volumes.

Table IV.J-3

Related Projects Traffic Generation Forecast

Related Projects Description	Daily 2-Way	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour Total
1. Apartments (107 DU)	712	11	44	55	43	24	67
2. Hotel (82 rooms)	731	32	23	55	28	30	58
3. Apartments (64 DU) & Commercial (15,000 SF)	1,070	15	32	47	53	43	96
4. Apartments (375 DU) & Commercial (26,000 SF)	3,610	54	164	218	198	132	330
5. Condominiums (216 DU)	1,255	15	80	95	76	37	113
6. High-Rise Condominiums (358 DU) & Commercial (13,561 SF)	2,078	29	105	134	111	76	187
7. Condominiums (51 DU) & Hotel (47 rooms)	715	22	32	54	34	26	60
8. Condominiums (56 DU)	325	4	21	25	20	10	30
9. Hotel (178 rooms)	1,588	69	50	119	61	64	125
10. High-Rise Condominiums (246 DU)	1,028	15	69	84	59	34	93
11. Apartments (18 DU) & Commercial (15,000 SF)	764	11	13	24	34	33	67
12. Hotel (138 rooms)	1,231	54	39	93	47	50	97
13. Apartments (291 DU) & Commercial (15,580 SF)	2,604	39	125	164	145	94	239
14. Single Family Detached (82 DU) & Commercial (7,000 SF)	1,086	20	49	69	65	43	108
15. Hotel (165 rooms)	1,472	64	46	110	56	59	115
16. Hotel (191 rooms)	1,704	74	53	127	65	69	134
17. Retail floor/Restaurant floor area (79,543 SF), Senior Apartments (152 DU), and Condominiums (210 DU) [a]	4,424	129	168	297	210	147	357
18. New Long Beach Court House [b]	1,920	156	26	182	60	167	227
19. Hotel Sierra	1,115	49	35	84	43	45	88
Total Related Projects Trip Generation Potential	**29,432**	**862**	**1,174**	**2,036**	**1,408**	**1,183**	**2,591**

[a] *Source: Traffic Impact Analysis for 1235 Long Beach Boulevard Mixed-Used Project, prepared by LLG, October 16, 2008.*
[b] *Source: Traffic Impact Analysis for New Long Beach Court House, prepared by LLG, December 8, 2008.*

Source: Trip Generation, 8th Edition, Institute of Transportation Engineers (ITE) [Washington, D.C. (2008)]; Traffic Impact Analysis for 1235 Long Beach Boulevard Mixed-Used Project, prepared by LLG, October 16, 2008; Traffic Impact Analysis for New Long Beach Court House, prepared by LLG, December 8, 2008.

(d) Future (2020) Peak Hour Intersection Capacity Analysis

Table IV.J-10 on pages IV.J-28 through IV.J-33 summarizes the peak hour Level of Service results at the 30 key study intersections for the Year 2020 study horizon year. The first column (1) of ICU/LOS and HCM/LOS values in Table IV.J-10 presents a summary of existing A.M. and P.M. peak hour traffic conditions (which are also presented in Table IV.J-1). The second column (2) lists future Year 2020 cumulative traffic conditions (existing plus ambient growth traffic plus related projects traffic) based on existing intersection geometry (but without any traffic generated by the proposed project).

An analysis of Year 2020 cumulative baseline traffic conditions (without proposed project traffic) indicates that four (4) intersections operate at adverse levels of service for Year 2020 based on the ICU/HCM methodologies and the City's LOS standards. These intersections, reported below, are forecast to operate at LOS E or LOS F during the peak hour indicated:

	A.M. Peak Hour		P.M. Peak Hour	
Key Intersection	**ICU/HCM**	**LOS**	**ICU/HCM**	**LOS**
7. Alamitos Avenue at 7th Street	0.972	E	--	--
10. Alamitos Avenue at 4th Street	--	--	0.998	E
17. Magnolia Avenue at Ocean Boulevard	0.920	E	--	--
23. Alamitos Ave./Shoreline Dr. at Ocean Blvd.	1.262	F	1.193	F

The remaining key study intersections are expected to operate at acceptable service levels (LOS D or better) during the weekday A.M. and P.M. peak commute hours.

b. Existing Transit Service

The Los Angeles County Metropolitan Transportation Authority (MTA), Long Beach Transit (LBT), and the Orange County Transportation Authority (OCTA) provide public transit services in the vicinity of the project site. In the surrounding area, the Metro Blue Line, Metro Local Line No. 232, Metro Express Line No. 577X, OCTA Route No. 60, Los Angeles Department of Transportation (LADOT) Commuter Express 142 serve the Long Beach Transit Mall; LBT Route No. 1 currently serves Easy Avenue; LBT No. 7 serves Orange Avenue; LBT Nos. 21, 22, and 23 serve Cherry/Downey Avenue; LBT Nos. 45 and 46 serve Anaheim Street; LBT Nos. 51 and 52 serve Long Beach Boulevard; while LBT Route Nos. 61, 62, 63, and 66 serve Atlantic Avenue. LBT Route No. 81 currently serves 10th Street; LBT Route Nos. 91, 92, 93, 94, and 96 serve 7th Street; LBT Route Nos. 111 and 112 serve Broadway; LBT Route Nos. 171, 172, 173 and 174 serve Pacific Coast Highway; LBT Route Nos. 181 and 182 serve 4th Street; LBT Route Nos. 191, 192, 193 serve Santa Fe Avenue; LBT Passport Routes A and D serve Ocean Boulevard; LBT Passport Route B serves Downtown Long Beach's East Village and West Gateway attractions; and LBT Passport Route C serves Pine Avenue. A brief description of the transit services is as follows:

Metro Blue Line:

- The Metro Blue Line runs from 7th Street in downtown L.A., through the communities of Vernon, Huntington Park, South Gate, Watts, Compton, Carson, ending in downtown Long Beach.

- The route traverses the study area on Long Beach Boulevard, 7th Street, Pacific Avenue, and Ocean Boulevard and operates throughout the day, Monday through Sunday.

- During the weekday A.M. peak hour, in the northbound/southbound directions, the Metro Blue Line provides headways of 6 buses in the northbound direction and five buses in the southbound direction. During the weekday P.M. peak hour, in the northbound/southbound directions, the Metro Blue Line provides headways of five buses in the northbound direction and six buses in the southbound direction.

Metro Local Line 232:

- The Metro Local Line 232 runs from downtown Long Beach Transit Station to LAX City Bus Center.

- The route traverses the study area on Long Beach Boulevard, 7th Street, Pacific Avenue, and Ocean Boulevard and operates throughout the day, Monday through Sunday.

- During the weekday A.M. and P.M. peak hour, in the northbound direction, the Metro Line 232 provides headways of three buses. During the weekday A.M. and P.M. peak hour, in the southbound direction, the Metro Line 232 provides headways of three buses during the A.M. peak hour and four buses in the P.M. peak hour.

Metro Express Line 577X:

- The Metro Local Line 232 runs from downtown Long Beach Transit Station to El Monte Transit Center.

- The route traverses the study area on Long Beach Boulevard, 7th Street, Pacific Avenue, Ocean Boulevard and Long Beach Boulevard and operates throughout the day, Monday through Friday.

- During the weekday A.M. and P.M. peak hour, in the northbound/southbound directions, the Metro Blue Line provides headways of one bus in each direction.

OCTA Route 60:

- The OCTA Route 60 runs from Larwin Square in Tustin to 1st Street and Elm Avenue in downtown Long Beach.

- The route traverses the study area on 7th Street, Pacific Avenue, and Ocean Boulevard and operates throughout the day, Monday through Sunday.

- During the weekday A.M. peak hour, in the eastbound/westbound directions, the OCTA Route 60 provides headways of four buses in the eastbound direction and

three buses in the westbound direction. During the weekday P.M. peak hour, in the northbound/southbound directions, the Metro Blue Line provides headways of three buses in the northbound direction and four buses in the southbound direction.

LADOT Commuter Express 142:

- The LADOT Commuter Express 142 runs from Port O'Call and Sampson Way in San Pedro to downtown Long Beach Transit Mall Station.
- The route traverses the study area on Ocean Boulevard, Long Beach Boulevard and Pacific Avenue and operates throughout the day, Monday through Sunday.
- During the weekday A.M. and P.M. peak hour, in the eastbound/westbound directions, LADOT Commuter Express 142 provides headways of two buses in each direction.

Route 1:

- The route extends from the Long Beach Transit Mall Station to Wardlow Station.
- The route traverses the study area on Long Beach Boulevard, Pacific Avenue and 6th Street and operates throughout the day, Monday through Sunday.
- During the weekday A.M. and P.M. peak hour, in the northbound/southbound directions, Route 1 provides headways of three buses in each direction.

Route 7:

- The route extends from the Long Beach Transit Mall Station to Orange Avenue and Rosecrans in City of Norwalk.
- The route traverses the study area on Atlantic Avenue, 7th Street, Long Beach Boulevard, 6th Street, and Pacific Avenue and operates throughout the day, Monday through Sunday.
- During the weekday A.M. and P.M. peak hour, in the northbound/southbound directions, Route 7 provides headways of three buses in each direction.

Routes 21, 22, and 23:

- Routes 21 provide services from Long Beach Transit Mall Station to Garfield Avenue at Alondra Boulevard. Route 22 provides services from downtown Long Beach

Transit Mall Station to Downey Avenue at Alondra Boulevard. Route 23 provides services from Long Beach Transit Mall Station to Cherry Avenue at Carson Street.

- The route traverses the study area on Long Beach Boulevard, Ocean Boulevard, and Pacific Avenue. Route 21 and 22 operates throughout the day, Monday through Sunday. On weekdays, route 23 northbound only provides bus service between the hours 8:05 P.M. to 12:55 A.M. and southbound only provides bus service between the hours 9:00 P.M. to 12:21 P.M..

- During the weekday A.M. and P.M. peak hour, in the northbound/southbound directions, Routes 21 and 22 provide headways of two buses in each direction.

Route 46:

- Route 46 provides services from downtown Long Beach Transit Mall Station to Pacific Coast Highway at Anaheim Street.

- Route 46 traverses the study area on Long Beach Boulevard, Pacific Avenue, and Broadway and operates throughout the day, Monday through Sunday.

- During the weekday A.M. and P.M. peak hour, in the eastbound/westbound directions, Routes 46 provide headways of four buses in each direction.

Routes 51 and 52:

- The routes extend from downtown Long Beach Transit Mall Station to Artesia Transit Station.

- The route traverses the study area on Long Beach Boulevard, Pacific Avenue, and 7th Street. Route 51 operates throughout the day, Monday through Sunday. On weekdays, Route 52 northbound only provides bus service between the hours 10:05 P.M. to 12:11 A.M., and southbound only provides bus service between the hours 10:47 P.M. to 12:25AM.

- During the weekday A.M. and P.M. peak hour, in the northbound/southbound directions, Route 51 provides headways of four buses in each direction.

Routes 61, 62, 63 and 66:

- Routes 61, 62, 63, and 66 provide service between the downtown Long Beach Transit Mall Station and Artesia Transit Station.

- Within the study area, Routes 61, 62, 63 and 66 traverse the study area on Atlantic Avenue, 7th Street, Long Beach Boulevard, Pacific Avenue, and 6th Street. Routes 61 and 62 operate throughout the day, Monday through Sunday. On weekdays, Route 63 northbound only provides bus service between the hours 10:05 P.M. to 1:10 A.M., and southbound only provides bus service from 10:48 P.M. to 12:25AM. On weekdays, Route 66 northbound only provides bus service till 5:17 P.M., southbound only provides service till 5:10 P.M., and does not service on weekends.

- During the A.M. and P.M. peak hour, in the northbound and southbound directions, Routes 61 and 62 provides headways of two buses in each direction. During the A.M. and P.M. peak hour Route 66 provide headways of four buses and two buses, respectively, in each direction.

Route 81:

- The route extends from the Long Beach Transit Mall Station to Studebaker Road at Atherton Street.

- The route traverses the study area on Pacific Avenue, Long Beach Boulevard and 3rd Street and operates throughout the day, Monday through Friday.

- During the weekday A.M. and P.M. peak hour, in the eastbound/westbound directions, Route 81 provides headways of two buses in each direction.

Routes 91, 92, 93 and 94:

- Routes 91 and 93 provide service between the downtown Long Beach Transit Mall Station and Bellflower Boulevard at Harvard Street. Route 92 provides service from the Long Beach Transit Mall Station to Woodruff Avenue at Alondra Boulevard. Route 94 provides service from the Long Beach Boulevard Transit Station to Bellflower Boulevard at Stearns Street.

- Within the study area, Routes 91, 92, 93 and 94 traverse the study area on 7th Street, Pacific Avenue, Long Beach Boulevard, and 6th Street. Route 91 operates throughout the day, Monday through Sunday and Routes 92 and 93 operates throughout the day, Monday through Friday. On weekdays, Route 94 eastbound only provides bus service between the hours 5:25 P.M. to 9:05 P.M., and westbound only provides bus service from 6:24 P.M. to 9:00 P.M..

- During the A.M. and P.M. peak hour, in the eastbound/westbound directions, Routes 91, 92, 93 provides headways of one bus in each direction.

Route 96:

- The route extends from the Long Beach Transit Mall Station to Los Altos Market Center.

- The route traverses the study area on 7th Street, Pacific Avenue, Long Beach Boulevard, and 6th Street and operates throughout the day, Monday through Friday, eastbound only from 6:33 A.M. to 9:09 P.M. and westbound from 1:00 P.M. to 5:14 P.M..

- During the weekday A.M. peak hour, in the eastbound direction, Route 96 provides headways of six buses. During the weekday P.M. peak hour, in the westbound direction, Route 96 provides headways of five buses.

Routes 111 and 112:

- The route extends from the Long Beach Transit Mall Station to Downey Avenue at South Street.

- The route traverses the study area on Alamitos Avenue, Pacific Avenue, and Broadway and operates throughout the day, Monday through Sunday.

- During the weekday A.M. and P.M. peak hour, in the northbound/southbound directions, Routes 111 and 112 provides headways of two buses in each direction.

Routes 172, 173 and 174:

- Routes 172, 173 and 174 provide service between the downtown Long Beach Transit Mall Station and Norwalk Metro Green Line Metro Station.

- Within the study area, Routes 172, 173 and 174 traverse the study area on Pacific Avenue, Long Beach Boulevard, and 7th Street. Routes 172 and 173 operate throughout the day, Monday through Sunday. On weekdays, Route 174 northbound only provides bus service between the hours 10:05 P.M. and 12:50 A.M., and southbound only provides bus service from 5:42 A.M. to 6:05 A.M. and from 12:05 A.M. to 12:25 A.M..

- During the A.M., P.M. and Saturday peak hour, in the northbound and southbound directions, Routes 172 and 173 provides headways of two buses in each direction.

Routes 181 and 182:

- The route extends from the Colorado Lagoon and Wardlow Transit Station.

- Route 181 traverses the study area on Magnolia Avenue, Broadway, Pacific Avenue, Long Beach Boulevard, 4th Street, and 3rd Street and operates throughout the day, Monday through Sunday. Route 182 traverses the study area on 4th Street, Long Beach Boulevard, Pacific Avenue, and 3rd Street and operates throughout the day, Monday through Sunday.

- During the weekday A.M. and P.M. peak hour, in the eastbound and westbound directions, routes 181 and 182 provide headways of two buses in each direction.

Routes 191, 192 and 193:

- Route 191 provides service between Long Beach Transit Mall and Bloomfield Street at Del Amo Boulevard. Route 192 provides service between Long Beach Transit Mall and Los Cerritos Center. Route 193 provides service from the downtown Long Beach Transit Mall Station to Del Amo Station.

- Within the study area, Routes 191, 192 and 193 traverse the study area on Magnolia Avenue, Pacific Avenue, and 3rd Street. Routes 191 and 192 operate throughout the day, Monday through Sunday. On weekdays, Route 193 northbound only provides bus service between the hours 10:05 P.M. and 1:06 A.M., and southbound only provides bus service from 11:50 P.M. to 12:25 A.M..

- During the A.M. and P.M. peak hour in the northbound/southbound directions, Routes 191 and 192 provides headways of two buses in each direction.

Passports Routes A, B, C and D:

- Route A provides free ride service between Alamitos Bay Landing and Catalina Landing. Route B runs from Pine Avenue at 1st Street through downtown Long Beach's East Village, West Gateway and hotspots. Route C provides service between Pine Avenue, downtown Long Beach and Queen Mary. Route D provides service between Los Altos Market Center and Catalina Landing.

- Within the study area, Routes A and D traverse the study area on Ocean Boulevard and Golden Shore and operate throughout the day, Monday through Sunday. Route B traverses the study area on 7th Street, Ocean Boulevard, Pine Avenue, 3rd Street, 6th Street, 4th Street, and Atlantic Avenue. Route C traverses the study area on Long Beach Boulevard, 5th Street, Pine Avenue, Shoreline Drive, and 7th Street. On

weekdays, Route B's Daily East Village Tour only operates from 10:00 A.M. to 6:55 P.M. and Route B's Daily West Gateway Tour only operates from 9:40 A.M. to 7:15 P.M.. Route C operates throughout the day, Monday through Sunday.

- During the A.M. and P.M. peak hour in the eastbound/westbound directions, Routes A and D provides headways of two buses in each direction. During the P.M. peak hour the Route B's Daily East Village Tour provides headways of one bus and the Route B's Daily West Gateway Tour provides headways of two buses. During A.M. peak hour in the southbound/northbound directions, Route C provides headways of four buses in each direction. During P.M. peak hour in the southbound/northbound directions, Route C provides headways of six buses in each direction.

3. ANALYSIS OF PROJECT IMPACTS

a. Methodology

The methodology by which impacts to intersections are evaluated involves several steps, including the identification of the existing traffic conditions, the determination of future baseline conditions (without the proposed project's traffic), the calculation of proposed project traffic, the assumed distribution of the project traffic, and the comparison of project-related traffic with future traffic conditions.

Normally CEQA guidelines direct the comparison of existing conditions to existing plus project conditions; however for traffic analyses ambient traffic growth and cumulative study area projects are added to existing conditions to demonstrate future baseline conditions. It is these future baseline conditions that are used to compare Without Project and With Project scenarios to determine the significance of project-related impacts.

(1) Intersection Capacity Utilization (ICU) Method of Analysis

In conformance with the City of Long Beach and Los Angeles County Congestion Management Program (CMP) requirements, existing A.M. and P.M. peak hour operating conditions for the key signalized study intersections were evaluated using the Intersection Capacity Utilization (ICU) method. The ICU technique is intended for signalized intersection analysis and estimates the volume to capacity (V/C) relationship for an intersection based on the individual V/C ratios for key conflicting traffic movements. The ICU numerical value represents the percent signal (green) time, and thus capacity, required by existing and/or future traffic. It should be noted that the ICU methodology assumes uniform traffic distribution per intersection approach lane and optimal signal timing.

The ICU value translates to a Level of Service (LOS) estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding ICU value range and are shown in Table IV.J-4 on page IV.J-19. The ICU value is the sum of the critical V/C ratios at an intersection; it is not intended to be indicative of the LOS of each of the individual turning movements.

In the City of Long Beach, LOS D is the minimum acceptable condition that should be maintained during the peak commute hours, or the current LOS if the existing LOS is worse than LOS D (i.e. LOS E of F).

Per LA County CMP requirements, the ICU calculations use a lane capacity of 1,600 vehicles per hour (vph) for left-turn, through, and right-turn lanes, and dual left turn capacity of 2,880 vph. Clearance intervals are based on the number of phases in the intersection and whether the left turning movements are all fully protected or whether some of them are permitted with other left-turn movements being protected. Table IV.J-5 on page IV.J-20 shows the clearance intervals used in the analysis of the key study intersections within the City of Long Beach.

(2) Highway Capacity Manual (HCM) Method of Analysis (Unsignalized Intersections)

The 2000 Highway Capacity Manual (HCM) unsignalized methodology for stop-controlled intersections was utilized for the analysis of the unsignalized intersections. This methodology estimates the average control delay for each of the subject movements and determines the LOS for each movement. For all-way stop controlled intersections, the overall average control delay measured in seconds per vehicle, and level of service is then calculated for the entire intersection. For one-way and two-way stop-controlled (minor street stop-controlled) intersections, this methodology estimates the worst-side street delay, measured in seconds per vehicle and determines the level of service for that approach. The HCM control delay value translates to a LOS estimate, which is a relative measure of the intersection performance. The six qualitative categories of Level of Service have been defined along with the corresponding HCM control delay value range, as shown in Table IV.J-6 on page IV.J-20.

(3) Traffic Forecasting Methodology

In order to estimate the traffic impact characteristics of the proposed project, a multi-step process has been utilized. The first step is traffic generation, which estimates the total arriving and departing traffic on a peak hour and daily basis. The traffic generation potential is forecast by applying the appropriate vehicle trip generation equations or rates to the project development tabulation.

Table IV.J-4

Level of Service Criteria for Signalized Intersections

Level of Service (LOS)	Intersection Capacity Utilization Value (V/C)	Level of Service Description
A	≤ 0.600	EXCELLENT. No vehicle waits longer than one red light, and no approach phase is fully used.
B	0.601 – 0.700	VERY GOOD. An occasional approach phase is fully utilized; many drivers begin to feel somewhat restricted within groups of vehicles.
C	0.701 – 0.800	GOOD. Occasionally drivers may have to wait through more than one red light; backups may develop behind turning vehicles.
D	0.801 – 0.900	FAIR. Delays may be substantial during portions of the rush hours, but enough lower volume periods occur to permit clearing of developing lines, preventing excessive backups.
E	0.901 – 1.000	POOR. Represents the most vehicles intersection approaches can accommodate; may be long lines of waiting vehicles through several signal cycles.
F	> 1.000	FAILURE. Backups from nearby locations or on cross streets may restrict or prevent movement of vehicles out of the intersection approaches. Potentially very long delays with continuously increasing queue lengths.

Sources: Linscott, Law & Greenspan, Engineers, 2009

The second step of the forecasting process is traffic distribution, which identifies the origins and destinations of inbound and outbound project traffic. These origins and destinations are typically based on demographics and existing/expected future travel patterns in the study area.

The third step is traffic assignment, which involves the allocation of project traffic to study area streets and intersections. Traffic assignment is typically based on minimization of travel time, which may or may not involve the shortest route, depending on prevailing operating conditions and travel speeds. Traffic distribution patterns are indicated by general percentage orientation, while traffic assignment allocates specific volume forecasts to individual roadway links and intersection turning movements throughout the study area.

Table IV.J-5

City of Long Beach Clearance Intervals

Number of Signal Phases	Left-turn Phasing Type	Clearance Interval (percent)
2	Permitted	10%
3	Protected and Permitted	12%
3	Fully Protected	15%
4	Protected and Permitted	14%
4	Fully Protected	18%

Source: Linscott, Law & Greenspan, Engineers, 2009

Table IV.J-6

Level of Service Criteria for Unsignalized Intersections

Level of Service (LOS)	Highway Capacity Manual Delay Value (sec/veh)	Level of Service Description
A	≤ 30.0	Little or no delay
B	> 30.0 and ≤ 15.0	Short traffic delays
C	> 15.0 and ≤ 25.0	Average traffic delays
D	> 25.0 and ≤ 35.0	Long traffic delays
E	> 35.0 and ≤ 50.0	Very long traffic delays
F	> 50.0	Severe congestion

Source: Linscott, Law & Greenspan, Engineers, 2009

With the forecasting process complete and project traffic assignments developed, the impact of the project is isolated by comparing operational LOS conditions at selected key intersections using expected future traffic volumes with and without forecast project traffic. The need for site-specific and/or cumulative local area traffic improvements can then be evaluated.

(4) Traffic Impact Criteria and Thresholds

The relative impact of the added project traffic volumes generated by the Golden Shore Master Plan project during the A.M. and P.M. peak hours was evaluated based on analysis of future operating conditions at the thirty (30) key study intersections, without, then with, the

proposed project. The previously discussed capacity analysis procedures were utilized to investigate the future volume-to-capacity relationships and service level characteristics at each study intersection. The significance of the potential impacts of the project at each key intersection was then evaluated using the City's LOS standards and traffic impact criteria defined below.

(5) LOS Standards and Impact Criteria

Within the City of Long Beach, impacts to local and regional transportation systems are considered significant if:

- An unacceptable peak hour Level of Service (LOS) (i.e. LOS E or F) at any of the key intersections is projected. The City of Long Beach considers LOS D (ICU = 0.801 - 0.900) to be the minimum acceptable LOS for all intersections. For the City of Long Beach, the current LOS, if worse than LOS D (i.e. LOS E or F), should also be maintained; and

- The project increases traffic demand at the study intersection by two percent (2%) of capacity (ICU increase ≥ 0.020), causing or worsening LOS E or F (ICU > 0.901). At unsignalized intersections, a "significant" adverse traffic impact is defined as a project that: adds two percent (2%) or more traffic delay (seconds per vehicle) at an intersection operating LOS E or F.

(6) Los Angeles County Congestion Management Program (CMP) Criteria

The Congestion Management Program (CMP) was created statewide as a result of Proposition 111 and has been implemented locally by the Los Angeles County Metropolitan Transportation Authority (LACMTA). The CMP for Los Angeles County requires that the traffic impact of individual development projects of potential regional significance be analyzed. A specific system of arterial roadways plus all freeways comprise the CMP system.

As required by the 2004 CMP for Los Angeles County, a review has been made of designated monitoring locations on the CMP highway system for potential impact analysis.

Per CMP TIA criteria, the geographic area examined in the TIA must include the following, at a minimum:

- All CMP arterial monitoring intersections, including freeway on and off-ramp intersections, where the project will add 50 or more trips during either the A.M. or P.M. weekday peak hours.

- Mainline freeway-monitoring stations where the project will add 150 or more trips, in either direction, during the A.M. or P.M. weekday peak hours.

(7) Cumulative Project Traffic

Cumulative traffic growth estimates have been calculated using an ambient growth factor. The ambient traffic growth factor is intended to include unknown and future related projects in the study area, as well as account for regular growth in traffic volumes due to the development of projects outside the study area. The future growth in traffic volumes has been calculated at one percent per year. Application to existing Year 2008 traffic volumes results in a twelve-percent increase of growth in existing volumes to horizon year 2020.

In order to make a realistic estimate of future on-street conditions prior to implementation of the proposed project, the status of other known development projects (related projects) in the area has been researched. With this information, the potential impact of the proposed project can be evaluated within the context of the cumulative impact of all ongoing development. Based on our research, there are nineteen (19) related projects within a two-mile radius of the project that are located in the City of Long Beach. These projects have either been built, but not yet fully occupied, or are being processed for approval and have been included as part of the cumulative setting. Table IV.J-2, above, provides the location and a brief description for each of the nineteen (19) related projects.

Figure III-1 in Section III, Basis for Cumulative Analysis, graphically illustrates the location of the related projects. These related projects are expected to generate vehicular traffic, which may affect the operating conditions of the key study intersections.

Table IV.J-7 on page IV.J-23 presents the development totals and resultant trip generation for the related projects. As shown in Table IV.J-7, the related projects are expected to generate a combined total of 29,432 daily trips on a "typical" weekday, with 2,036 trips (862 inbound and 1,174 outbound) forecast during the A.M. peak hour, and 2,591 trips (1,408 inbound and 1,183 outbound) during the P.M. peak hour.

b. Thresholds of Significance

Appendix G of the CEQA *Guidelines* contains the Initial Study Environmental Checklist form, which includes questions related to transportation and circulation. The issues presented in the Initial Study Environmental Checklist have been utilized as thresholds of significance in this section. Accordingly, a project may create a significant environmental impact if it would:

Table IV.J-7

Related Projects Traffic Generation Forecast

Related Projects Description	Daily 2-Way	A.M. Peak Hour In	A.M. Peak Hour Out	A.M. Peak Hour Total	P.M. Peak Hour In	P.M. Peak Hour Out	P.M. Peak Hour Total
1. Apartments (107 DU)	712	11	44	55	43	24	67
2. Hotel (82 rooms)	731	32	23	55	28	30	58
3. Apartments (64 DU) & Commercial (15,000 SF)	1,070	15	32	47	53	43	96
4. Apartments (375 DU) & Commercial (26,000 SF)	3,610	54	164	218	198	132	330
5. Condominiums (216 DU)	1,255	15	80	95	76	37	113
6. High-Rise Condominiums (358 DU) & Commercial (13,561 SF)	2,078	29	105	134	111	76	187
7. Condominiums (51 DU) & Hotel (47 rooms)	715	22	32	54	34	26	60
8. Condominiums (56 DU)	325	4	21	25	20	10	30
9. Hotel (178 rooms)	1,588	69	50	119	61	64	125
10. High-Rise Condominiums (246 DU)	1,028	15	69	84	59	34	93
11. Apartments (18 DU) & Commercial (15,000 SF)	764	11	13	24	34	33	67
12. Hotel (138 rooms)	1,231	54	39	93	47	50	97
13. Apartments (291 DU) & Commercial (15,580 SF)	2,604	39	125	164	145	94	239
14. Single Family Detached (82 DU) & Commercial (7,000 SF)	1,086	20	49	69	65	43	108
15. Hotel (165 rooms)	1,472	64	46	110	56	59	115
16. Hotel (191 rooms)	1,704	74	53	127	65	69	134
17. Retail floor/Restaurant floor area (79,543 SF), Senior Apartments (152 DU), and Condominiums (210 DU) [a]	4,424	129	168	297	210	147	357
18. New Long Beach Court House [b]	1,920	156	26	182	60	167	227
19. Hotel Sierra	1,115	49	35	84	43	45	88
Total Related Projects Trip Generation Potential	**29,432**	**862**	**1,174**	**2,036**	**1,408**	**1,183**	**2,591**

[a] *Traffic Impact Analysis for 1235 Long Beach Boulevard Mixed-Used Project, prepared by LLG, October 16, 2008.*
[b] *Traffic Impact Analysis for New Long Beach Court House, prepared by LLG, December 8, 2008.*

Source: Linscott, Law & Greenspan, Engineers, 2009

- Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections);

- Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks (Refer to Section VI, *Other Environmental Considerations*);

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment) (Refer to Section VI, *Other Environmental Considerations*);

- Result in inadequate emergency access;

- Result in inadequate parking capacity;

- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks).

The specific traffic impact assessment guidelines used in this analysis are described in detail in the discussion above under Methodology. Based on these standards, the effects of the proposed project have been categorized as either a "less than significant impact" or a "potentially significant impact." Mitigation measures are recommended for potentially significant impacts. If a potentially significant impact cannot be reduced to a less than significant level through the application of mitigation, it is categorized as a significant unavoidable impact.

c. Project Impacts

(1) Project Traffic Generation

Traffic generation is expressed in vehicle trip ends, defined as one-way vehicular movements, either entering or exiting the generating land use. Generation equations and/or rates used in the traffic forecasting procedure are found in the 8th Edition of Trip Generation, published by the Institute of Transportation Engineers (ITE) [Washington D.C., 2008].

Table IV.J-8 on page IV.J-25 summarizes the trip generation equations and rates used in forecasting the vehicular trips generated by the proposed project and the existing land uses. Table IV.J-9 on page IV.J-26 summarizes the project's trip generation forecast for a typical weekday.

Review of Table IV.J-8 shows that based on the proposed project description, the trip generation potential of the existing and proposed uses of the Golden Shore Master Plan will be estimated using trip rates/equations from ITE Land Use 232: High-Rise Residential Condominium/Townhouse, ITE Land Use 310: Hotel and ITE Land Use 710: General Office Building.

Table IV.J-8

Project Traffic Generation Equations and Rates

ITE Land Use Code	Time Period	Rates/Equations	Percent Entering	Percent Exiting
232: High-Rise Residential Condominium/Townhouse (TE/DU)	Daily	T = 3.77 (X) + 223.66	50%	50%
	A.M. Peak	T = 0.29 (X) + 28.86	19%	81%
	P.M. Peak	T = 0.34 (X) + 15.47	62%	38%
310: Hotel (TE/Occupied Room)	Daily	T = 8.92 (X)	50%	50%
	A.M. Peak	T = 0.67 (X)	58%	42%
	P.M. Peak	T = 0.70 (X)	49%	51%
710:General Office Building (TE/1000 SF)	Daily	LN (T) = 0.77 LN (X) + 3.65	50%	50%
	A.M. Peak	LN (T) = 0.80 LN (X) + 1.55	88%	12%
	P.M. Peak	T = 1.12 (X) + 78.81	17%	83%

TE/DU = Trip ends per dwelling unit
TE/1,000 SF = Trip ends per 1,000 square feet of development

Source: Linscott, Law & Greenspan, Engineers, 2009

Review of Table IV.J-9 shows that the proposed Golden Shore Master Plan project, prior to adjustment for existing land uses, is forecast to generate 12,349 daily trips, with 1,242 trips (752 inbound, 490 outbound) produced in the A.M. peak hour and 1,258 trips (487 inbound, 771 outbound) produced in the P.M. peak hour on a "typical" weekday.

With the application of trip generation credits applied for the existing development on the site, the proposed project is forecast to generate 8,761 net daily trips, with 731 net trips (302 inbound, 429 outbound) produced in the A.M. peak hour and 772 net trips (405 inbound, 367 outbound) produced in the P.M. peak hour on a "typical" weekday.

(2) Project Traffic Distribution and Assignment

The general directional traffic distribution patterns for the proposed/existing site are graphically presented in Figure 5-1 through Figure 5-5 in the project's Traffic Study (included as Appendix F of this EIR). Project traffic volumes both entering and exiting the site have been distributed and assigned to the adjacent street system based on the following considerations:

1. The site's proximity to major traffic carriers (i.e. Ocean Boulevard, Golden Shore, etc).

2. Expected localized traffic flow patterns based on adjacent street channelization and presence of traffic signals,

Table IV.J-9

Project Traffic Generation Forecast

Project Description	Daily 2-Way	A.M. Peak Hour Enter	A.M. Peak Hour Exit	A.M. Peak Hour Total	P.M. Peak Hour Enter	P.M. Peak Hour Exit	P.M. Peak Hour Total
West Site - Proposed Project Uses:							
• High-Rise Residential Condominiums (574 DU)	2,388	37	158	195	131	80	211
• Hotel (400 Rooms)	3,568	156	112	268	136	144	280
• General Office (279,000 SF)	2,940	375	51	426	67	325	392
West Site Trip Generation	8,896	568	321	889	334	549	883
West Site– Existing Uses							
• Office Building (136,341 SF)	-1,694	-212	-29	-241	-39	-192	-231
Net West Site Trip Generation	**7,202**	**356**	**292**	**648**	**295**	**357**	**652**
East Site - Proposed Project Uses:							
• High-Rise Residential Condominiums (536 DU)	2,244	35	149	184	123	75	198
• General Office (88,000 SF)	1,209	149	20	169	30	147	177
East Site Trip Generation	3,453	184	169	353	153	222	375
East Site– Existing Uses							
• Office Building (157,662 SF)	-1,894	-238	-32	-270	-43	-212	-255
Net East Site Trip Generation	**1,559**	**-54**	**137**	**83**	**110**	**10**	**120**
Total Project Trip Generation	**12,349**	**752**	**490**	**1,242**	**487**	**771**	**1,258**
Less Existing Trip Generation	**-3,588**	**-450**	**-61**	**-511**	**-82**	**-404**	**-486**
Total Net Project Trip Generation	**8,761**	**302**	**429**	**731**	**405**	**367**	**772**

Source: Linscott, Law & Greenspan, Engineers, 2009

3. Existing intersection traffic volumes at the project driveways,

4. Ingress/egress availability at the project site and the location of existing and proposed parking areas, and

5. Input from City staff.

The anticipated A.M. and P.M. peak hour net project traffic volumes associated with the proposed project are presented in Figures 5-6 and 5-7, respectively, in the project's Traffic Study. The traffic volume assignments presented in Figures 5-6 and 5-7 reflect the traffic distribution characteristics shown in Figures 5-1 through 5-5 in combination with the traffic generation forecast presented in Table IV.J-9.

It should be noted that the traffic volumes presented in these figures represent the net traffic volumes after the trip credit for the existing land uses is applied to the proposed project trip generation forecast.

(3) Year 2020 Project-Related Traffic Impacts

Table IV.J-10 on page IV.J-28 summarizes cumulative future Year 2020 traffic levels, which incorporate traffic from ambient growth, related projects, and the proposed project. The third column (3) of Table IV.J-10 presents future forecast traffic conditions with the addition of traffic generated by the proposed project. The fourth column (4) shows the increase in ICU or HCM value due to the added peak hour project trips and indicates whether the traffic associated with the proposed project will have a significant impact based on the LOS standards and the significance impact criteria defined in this report. The fifth column (5) presents the intersection operating conditions based on the total anticipated Year 2020 horizon year traffic volumes and planned and/or recommended intersection improvements included as mitigation below.

Review of Columns 3 and 4 of Table IV.J-10 indicate that traffic associated with the proposed Golden Shore Master Plan project will have a significant impact at five (5) of the thirty (30) study intersections when compared to the LOS standards and the traffic impact significance criteria defined in this analysis. The intersections impacted by the proposed project include:

Key Intersection

7. Alamitos Avenue at 7th Street

10. Alamitos Avenue at 4th Street

15. Alamitos Avenue at Broadway

17. Magnolia Avenue at Ocean Boulevard

20. Pine Avenue at Ocean Boulevard

These intersections are forecast to operate at an adverse service level (i.e., LOS E/F) during the A.M. and/or P.M. peak hours in the Year 2020, with the project. As shown in Column 5 of Table IV.J-10, the implementation of recommended improvements will offset the impact of project traffic as well as future cumulative traffic, and return service levels to acceptable operations.

Although the intersection of Alamitos Avenue/Shoreline Drive at Ocean Boulevard is forecast to operate at LOS F during the A.M. peak hour and P.M. peak hour, the proposed project is expected to add less than 0.020 to the ICU value and hence will not have a significant impact.

Table IV.J-10

Year 2020 Peak Hour Intersection Capacity Analysis

	Key Intersections	Time Period	(1) Existing Traffic Conditions ICU / Delay (s/v)	(1) Existing Traffic Conditions LOS	(2) Year 2020 Cumulative Traffic Conditions ICU / Delay (s/v)	(2) Year 2020 Cumulative Traffic Conditions LOS	(3) Year 2020 Plus Project Traffic Conditions ICU / Delay (s/v)	(3) Year 2020 Plus Project Traffic Conditions LOS	(4) Project Significant Impact[a] Change in ICU / Delay	(4) Project Significant Impact[a] Yes/No	(5) Year 2020 With Recommended Improvements ICU / Delay (s/v)	(5) Year 2020 With Recommended Improvements LOS
1.	Magnolia Avenue at	A.M.	0.679	B	0.783	C	0.800	C	0.017	No	--	--
	7th Street	P.M.	0.576	A	0.686	B	0.708	C	0.022	No	--	--
2.	Pacific Avenue at	A.M.	0.651	B	0.733	C	0.744	C	0.011	No	--	--
	7th Street	P.M.	0.513	A	0.590	A	0.606	B	0.016	No	--	--
3.	Pine Avenue at	A.M.	0.551	A	0.633	B	0.640	B	0.007	No	--	--
	7th Street	P.M.	0.452	A	0.542	A	0.551	A	0.009	No	--	--
4.	Long Beach Boulevard at	A.M.	0.714	C	0.806	D	0.818	D	0.012	No	--	--
	7th Street	P.M.	0.531	A	0.617	B	0.633	B	0.016	No	--	--
5.	Atlantic Avenue at	A.M.	0.675	B	0.760	C	0.773	C	0.013	No	--	--
	7th Street	P.M.	0.476	A	0.546	A	0.562	A	0.016	No	--	--
6.	Martin Luther King Jr. Avenue at	A.M.	0.298	A	0.321	A	0.321	A	0.000	No	--	--
	7th Street	P.M.	0.474	A	0.519	A	0.519	A	0.000	No	--	--

Table IV.J-10 (Continued)

Year 2020 Peak Hour Intersection Capacity Analysis

Key Intersections	Time Period	(1) Existing Traffic Conditions ICU / Delay (s/v)	(1) LOS	(2) Year 2020 Cumulative Traffic Conditions ICU / Delay (s/v)	(2) LOS	(3) Year 2020 Plus Project Traffic Conditions ICU / Delay (s/v)	(3) LOS	(4) Project Significant Impact[a] Change in ICU / Delay	(4) Yes/No	(5) Year 2020 With Recommended Improvements ICU / Delay (s/v)	(5) LOS
7. Alamitos Avenue at	A.M.	0.872	D	**0.972**	**E**	**0.993**	**E**	**0.021**	**Yes**	0.799[b]	C
7th Street	P.M.	0.735	C	0.816	D	0.881	D	0.065	No	0.881[b]	D
8. Magnolia Avenue at	A.M.	0.477	A	0.557	A	0.587	A	0.030	No	--	--
6th Street	P.M.	0.705	C	0.827	D	0.863	D	0.036	No	--	--
9. Magnolia Avenue at	A.M.	12.7 s/v	B	15.3 s/v	C	17.2 s/v	C	1.9 s/v	No	--	--
5th Street	P.M.	17.2 s/v	C	24.4 s/v	C	29.6 s/v	D	5.2 s/v	No	--	--
10. Alamitos Avenue at	A.M.	0.707	C	0.802	D	0.821	D	0.019	No	NF[c]	--
4th Street	P.M.	0.888	D	**0.998**	**E**	**1.021**	**F**	**0.023**	**Yes**	NF[c]	--
11. Magnolia Avenue at	A.M.	0.602	B	0.729	C	0.745	C	0.016	No	--	--
3rd Street	P.M.	0.545	A	0.658	B	0.695	B	0.037	No	--	--
12. Magnolia Avenue at	A.M.	0.471	A	0.563	A	0.579	A	0.016	No	--	--
Broadway	P.M.	0.462	A	0.593	A	0.612	B	0.019	No	--	--
13. Pacific Avenue at	A.M.	0.485	A	0.566	A	0.571	A	0.005	No	--	--
Broadway	P.M.	0.654	B	0.786	C	0.786	C	0.000	No	--	--

Table IV.J-10 (Continued)

Year 2020 Peak Hour Intersection Capacity Analysis

Key Intersections	Time Period	(1) Existing Traffic Conditions ICU / Delay (s/v)	(1) LOS	(2) Year 2020 Cumulative Traffic Conditions ICU / Delay (s/v)	(2) LOS	(3) Year 2020 Plus Project Traffic Conditions ICU / Delay (s/v)	(3) LOS	(4) Project Significant Impact[a] Change in ICU / Delay	(4) Yes/No	(5) Year 2020 With Recommended Improvements ICU / Delay (s/v)	(5) LOS
14. Pine Avenue at	A.M.	0.395	A	0.472	A	0.472	A	0.000	No	--	--
Broadway	P.M.	0.672	B	0.816	D	0.816	D	0.000	No	--	--
15. Alamitos Avenue at	A.M.	0.774	C	0.872	D	**0.910**	**E**	**0.038**	**Yes**	0.741[d]	C
Broadway	P.M.	0.747	C	0.809	D	0.832	D	0.023	No	0.832[d]	D
16. Golden Ave./Golden Shore at	A.M.	0.616	B	0.701	C	0.758	C	0.057	No	--	--
Ocean Boulevard	P.M.	0.759	C	0.832	D	0.898	D	0.066	No	--	--
17. Magnolia Avenue at	A.M.	0.783	C	**0.920**	**E**	**1.001**	**F**	**0.081**	**Yes**	0.900[e]	D
Ocean Boulevard	P.M.	0.722	C	0.835	D	0.880	D	0.045	No	0.839[e]	D
18. Chestnut Place at	A.M.	0.556	A	0.662	B	0.709	C	0.047	No	--	--
Ocean Boulevard	P.M.	0.634	B	0.751	C	0.804	D	0.053	No	--	--
19. Pacific Avenue at	A.M.	0.689	B	0.794	C	0.809	D	0.015	No	--	--
Ocean Boulevard	P.M.	0.632	B	0.720	C	0.732	C	0.012	No	--	--

Table IV.J-10 (Continued)

Year 2020 Peak Hour Intersection Capacity Analysis

Key Intersections	Time Period	(1) Existing Traffic Conditions ICU / Delay (s/v)	(1) LOS	(2) Year 2020 Cumulative Traffic Conditions ICU / Delay (s/v)	(2) LOS	(3) Year 2020 Plus Project Traffic Conditions ICU / Delay (s/v)	(3) LOS	(4) Project Significant Impact[a] Change in ICU / Delay	(4) Yes/No	(5) Year 2020 With Recommended Improvements ICU / Delay (s/v)	(5) LOS
20. Pine Avenue at	A.M.	0.634	B	0.740	C	0.747	C	0.007	No	0.777[f]	C
Ocean Boulevard	P.M.	0.774	C	0.897	D	**0.922**	**E**	**0.025**	**Yes**	0.864[f]	D
21. Long Beach Boulevard at	A.M.	0.718	C	0.851	D	0.877	D	0.026	No	--	--
Ocean Boulevard	P.M.	0.584	A	0.668	B	0.680	B	0.012	No	--	--
22. Atlantic Avenue at	A.M.	0.651	B	0.768	C	0.797	C	0.029	No	--	--
Ocean Boulevard	P.M.	0.598	A	0.688	B	0.705	C	0.017	No	--	--
23. Alamitos Ave/Shoreline Dr at	A.M.	**1.120**	**F**	**1.262**	**F**	**1.267**	**F**	0.005	No	--	--
Ocean Boulevard	P.M.	**1.062**	**F**	**1.193**	**F**	**1.199**	**F**	0.006	No	--	--
24. Golden Shore at	A.M.	13.3 s/v	B	16.9 s/v	C	15.8 s/v	C	0.0[g] s/v	No	--	--
Seaside Way	P.M.	16.2 s/v	C	26.2 s/v	D	17.3 s/v	C	0.0[g] s/v	No	--	--
25. Chestnut Place at	A.M.	8.5 s/v	A	8.7 s/v	A	9.7 s/v	A	1.0 s/v	No	--	--
Seaside Way	P.M.	8.6 s/v	A	8.8 s/v	A	10.1 s/v	B	1.3 s/v	No	--	--

Table IV.J-10 (Continued)

Year 2020 Peak Hour Intersection Capacity Analysis

Key Intersections	Time Period	(1) Existing Traffic Conditions ICU / Delay (s/v)	(1) LOS	(2) Year 2020 Cumulative Traffic Conditions ICU / Delay (s/v)	(2) LOS	(3) Year 2020 Plus Project Traffic Conditions ICU / Delay (s/v)	(3) LOS	(4) Project Significant Impact[a] Change in ICU / Delay	(4) Yes/No	(5) Year 2020 With Recommended Improvements ICU / Delay (s/v)	(5) LOS
26. Pine Avenue at	A.M.	0.263	A	0.290	A	0.290	A	0.000	No	--	--
Seaside Way	P.M.	0.308	A	0.345	A	0.345	A	0.000	No	--	--
27. Golden Shore at	A.M.	11.9 s/v	B	12.9 s/v	B	16.1 s/v	C	3.2 s/v	No	--	--
I-710 SB Off-Ramp	P.M.	9.5 s/v	A	9.7 s/v	A	12.3 s/v	B	2.6 s/v	No	--	--
28. Golden Shore at	A.M.	11.8 s/v	B	12.3 s/v	B	13.8 s/v	B	1.5 s/v	No	--	--
EB Shoreline Drive On-Ramp	P.M.	12.2 s/v	B	12.8 s/v	B	14.9 s/v	B	2.1 s/v	No	--	--
29. Chestnut Place at	A.M.	0.345	A	0.367	A	0.401	A	0.034	No	--	--
Shoreline Drive	P.M.	0.573	A	0.629	B	0.646	B	0.017	No	--	--
30. Pine Avenue at	A.M.	0.355	A	0.402	A	0.415	A	0.013	No	--	--
Shoreline Drive	P.M.	0.486	A	0.525	A	0.541	A	0.016	No	--	--

[a] *Significant project impact is defined as a 0.020 or greater increase in ICU value of a signalized intersection or a 2% or more increase in delay at an unsignalized location where the final LOS is E or F.*

[b] *Represents anticipated LOS with the provision of a 3rd westbound through lane on 7th Street, through the intersection of MLK Jr. Avenue and 7th Street. Implementation of this improvement will require the removal of on-street parking on the both the north and south sides of 7th Street, east and west of Alamitos Boulevard. No further intersection improvements (i.e. intersection widening) at this key intersection are feasible due to physical and right-of-way*

Table IV.J-10 (Continued)

Year 2020 Peak Hour Intersection Capacity Analysis

Key Intersections	Time Period	(1) Existing Traffic Conditions ICU / Delay (s/v)	LOS	(2) Year 2020 Cumulative Traffic Conditions ICU / Delay (s/v)	LOS	(3) Year 2020 Plus Project Traffic Conditions ICU / Delay (s/v)	LOS	(4) Project Significant Impact[a] Change in ICU / Delay	Yes/No	(5) Year 2020 With Recommended Improvements ICU / Delay (s/v)	LOS

constraints.

[c] *NF = none feasible. Intersection Improvements at this key intersection are not feasible due to physical and right-of-way constraints.*

[d] *Represents anticipated LOS with the provision of a 2nd southbound through lane on Alamitos Boulevard. Implementation of this improvement will require the removal of on-street parking on the both the east and west sides of Alamitos Boulevard, north and south of Broadway.*

[e] *Represents anticipated LOS with the installation of protected left-turn phasing on Ocean Blvd and installation of a southbound right-turn overlap phase on Magnolia Ave.*

[f] *Represents anticipated LOS with the restriping of southbound Pine Ave to provide a separate left-turn lane and a shared through/right-turn lane. Implementation of this improvement requires the removal of the "passenger loading/unloading zone" on the east side of Pine Ave, north of Ocean Blvd, and it may potentially impact flow of traffic given existing bus stops are located along this section of Pine Avenue.*

[g] *Theoretical negative project "increase" (that can result with HCM method) reported as 0.0.*

Source: Linscott, Law & Greenspan, Engineers, 2009

As discussed earlier, a significant project impact occurs when the project increases traffic demand at a signalized study intersection by two percent (2%) of capacity (ICU ≥ 0.020), or a two-percent (2%) change in delay at unsignalized intersections where the final LOS is E or F. The remaining key study intersections are forecast to continue to operate at an acceptable LOS with the addition of project-generated traffic in the Year 2020.

Appendix C of the project's Traffic Study contains the Year 2020 traffic conditions level of service calculation worksheets.

(4) Site Circulation and Emergency Access

(a) Site Access

Vehicular access to the proposed Golden Shore Master Plan project will be provided via three driveways. Driveway A at Golden Shore is a proposed full-access driveway located between Ocean Boulevard and Seaside Way that will serve as the primary access to both the western and eastern portions of the project site. Driveway B at Seaside Way will provide secondary access to the eastern side of the site, while Driveway C at Seaside Way will serve as secondary access to the western side of the site.

(b) Year 2020 Project Access Service Level Characteristics

Table IV.J-11 on page IV.J-35 summarizes the Year 2020 peak hour level of service results at the three project driveways. Review of Table IV.J-11, shows that one (1) of the three (3) project driveways, Driveway A at Golden Shore, is forecast to operate at LOS E or F during the A.M. or P.M. peak hours. However, with the implementation of applicable mitigation requiring the installation of a traffic signal, which is warranted on the basis of the peak-hour traffic signal warrant, Driveway A at Golden Shore is forecast to operate at LOS A or B during the A.M. and P.M. peak hours (refer to the Traffic Study, included as Appendix F of this EIR, for a discussion of signal warrants for the proposed project). As such, with implementation of applicable mitigation, project site access will be adequate and impacts would be less than significant in this regard.

(c) Internal Circulation

As detailed site plans are not available for review at this stage of planning, it is anticipated that prior to finalization of the project site plan, the appropriate turning templates (ASSHTO SU-30, WB-50, and fire trucks) will be utilized to confirm that all vehicles can properly access and circulate through the site and that all internal drive aisle widths, project

Table IV.J-11

Year 2020 Cumulative Plus Project Driveway Peak Hour Levels of Service Summary

	Driveway	Time Period	Intersection Control	Year 2020 Cumulative Plus Project Delay (s/v)	Year 2020 Cumulative Plus Project LOS
A.	Golden Shore at Project Driveway A	A.M.	Two-Way Stop	**149.9**	**F**
		P.M.		**396.5**	**F**
	With Traffic Signal	A.M.	Two-Phase Signal	0.542	A
		P.M.		0.679	B
B.	Project Driveway B Seaside Way	A.M.	Two-Way Stop	11.2 s/v	B
		P.M.		11.0 s/v	B
C.	Project Driveway C Seaside Way	A.M.	Two-Way Stop	11.0 s/v	B
		P.M.		8.8 s/v	A

Bold ICU/Delay values indicate adverse service levels based on City LOS standards.
s/v = seconds per vehicle.

Source: Linscott, Law & Greenspan, Engineers, 2009

driveway widths, and parking stall widths satisfy the City's minimum requirements. With adherence to accepted internal circulation standards and requirements, impacts would be less than significant.

(d) Emergency Vehicle Access

Vehicular access for emergency vehicles would be provided throughout development phases within the project site and surrounding area, as required by the City of Long Beach and applicable regulations. Upon submittal of specific development plans for the various project phases, specific project design will be evaluated as part of the plan check process, including review by the Long Beach Fire Department, in order to ensure adequate access is provided for all necessary emergency vehicles. Subject to review and approval of plans relative to adequate vehicular access, the development phases would not restrict or preclude access for emergency vehicles, and therefore it is anticipated that impacts in this regard would be less than significant. Refer to Section IV.I.1, Fire Protection, for a discussion of emergency access impacts relative to Long Beach Fire Department requirements.

(5) Congestion Management Program Compliance Assessment

(a) CMP Freeway Impacts

The closest CMP freeway monitoring location in the project vicinity is the I-710 Freeway north of State Route 1 (PCH), Willow Street (CMP Station 1078). Based on the project's trip generation potential and distribution pattern, the proposed project will not add more than 150 trips during the A.M./P.M. peak hour at this CMP mainline freeway-monitoring location. Therefore, a CMP freeway traffic impact analysis is not required, and impacts to CMP freeway facilities would be less than significant.

(b) CMP Intersection Impacts

The following CMP intersection monitoring locations have been identified in the project vicinity:

CMP Station	Intersection No.	Location
33	23	Alamitos Avenue at Ocean Boulevard
41	7	Alamitos Avenue at 7th Street

As stated previously, the CMP guidelines require that arterial monitoring intersection locations must be examined if the proposed project will add 50 or more trips during either the A.M. or P.M. weekday peak hours (of adjacent street traffic) at CMP monitoring intersections. The proposed Golden Shore Master Plan project will add over 50 trips at the identified CMP intersections during both the A.M. peak hour and P.M. peak hour.

Since the CMP intersections are included as study intersections for this project, the analysis of the intersection of Alamitos Avenue at Ocean Boulevard and Alamitos Avenue at 7th Street is already included in the analysis of project-related impacts. As summarized in Table IV.J-10, the CMP intersection of Alamitos Avenue at 7th Street operates at unacceptable LOS E during the A.M. peak hour. With the implementation of recommended improvements at this location, Alamitos Avenue at 7th Street is expected to operate at acceptable LOS D or better during the A.M. and P.M. peak hours and project's impact therefore would be reduce to less than significant. The CMP intersection of Alamitos Avenue at Ocean Boulevard operates at unacceptable LOS F during the A.M. and P.M. peak hours. However, the project does not significantly impact this intersection as it is expected to add less than 2.0 percent (2%) to the ICU values at this CMP intersection. As such, impacts to the intersection of Alamitos Avenue and 7th Street would be potentially significant, while impacts to the intersection of Alamitos Avenue and Ocean Boulevard would be less than significant.

(6) Transit Impacts

As required by the 2004 Congestion Management Program for Los Angeles County, a review was made of the CMP transit service. As previously discussed, a number of transit services exist in the project area, necessitating the following transit impact review.

The project trip generation, as shown in Table IV.J-10, was adjusted by values set forth in the CMP (i.e., person trips equal 1.4 times vehicle trips, and transit trips equal 3.5 percent of the total person trips) to estimate project-related transit trip generation. Pursuant to the CMP guidelines, the proposed project is forecasted to generate 36 transit trips (15 inbound and 21 outbound) during the A.M. peak hour and 38 transit trips (20 inbound and 18 outbound) during the P.M. peak hour. Over a 24-hour period the proposed project is forecasted to generate 429 daily weekday transits.

It is anticipated that the existing transit service in the project area would be able to accommodate the project generated transit trips. Metro Blue Line, Metro Local Line 232, Metro Express Line 577X, OCTA Route 60, LADOT Commuter Express 142, Long Beach Transit (LBT) Routes Nos. 1, 7, 21, 22, 23, 46, 51, 52, 61, 62, 63, 66, 81, 91, 92, 93, 94, 96, 111, 112, 172, 173, 174, 181, 182, 191, 192 and 193 currently serve the surrounding vicinity. Therefore, given the number of transit trips generated by the project and the existing transit routes in the project vicinity, it is concluded that the existing public transit system would not be significantly impacted by the proposed project.

(7) Parking

(a) City Code Parking Analysis

To determine the number of parking spaces required for the proposed Golden Shore Master Plan project, the City of Long Beach Municipal Code, Chapter 21.41 - *Off-Street Parking and Loading Requirements* was utilized in conjunction with Downtown Shoreline Planned Development District (PD-6) and compared to the proposed project parking supply. The City's Municipal Code specifies the following parking requirements for residential, hotel, and office uses, respectively:

- Residential - Parking shall be required at:
    - 2.0 spaces per unit for 1 or more bedroom units,
    - Guest parking shall be counted as 1 space for every 6 units.
- Hotel/Motel Uses-Parking shall be required at:

  - 0.75 spaces/room, plus
  - 20 spaces per 1000 SF of banquet area.
- Office: 3 spaces per 1000 SF of usable floor area.

Table IV.J-12 on page IV.J-39 summarizes the parking requirements for the proposed Golden Shore Master Plan project. As shown, direct application of the City's parking code to the proposed development in the western portion of the project site results in a parking requirement totaling 2,921 spaces, consisting of 1,244 spaces for the residential component, 840 spaces for the hotel component, and 837 spaces for the office component. With a proposed parking supply of 2,265 parking spaces, the western portion of the proposed project will be deficient by 656 parking spaces when compared to the City of Long Beach parking code requirements.

The proposed uses in the eastern portion of the project site requires a total of 1,426 spaces based on application of the City's parking code, consisting of 1,162 spaces for the residential component and 264 spaces for the office component. With a proposed parking supply of 1,165 spaces, the eastern portion of the proposed project will be 261 spaces short of satisfying the City's code requirements.

However, given the mixed-use nature of the proposed project, especially in the western portion of the site, there is an opportunity to share parking spaces based on the utilization profile of each land use component of the project, as well as the utilization of the banquet facilities of the hotel component. According to the Urban Land Institute's (ULI's) *Shared Parking 2nd Edition* publication, shared parking is defined as parking space that can be used to serve two or more individual land uses without conflict or encroachment. The ULI Shared Parking publication provides hourly parking accumulation rates for residential, hotel, and office uses, as well as other uses to include retail, theater, restaurant, hotel, etc. expressed as a percentage of the peak demand for the day. Therefore, it is anticipated that prior to finalization of detailed project site plans, the project applicant will prepare, and receive City approval of, a shared parking analysis to verify the adequacy of the proposed project parking supply, or ultimately increase the parking supply to meet the City's parking code requirements. With approval of a shared parking plan, or provision of additional parking supply to meet parking code requirements, parking impacts would be less than significant.

(8) Consistency with Applicable Regulations

The proposed project would comply with all applicable regulations relative to traffic and circulation, as future development would be consistent with applicable goals and policies in the City's General Plan and would be carried out in accordance with the development regulations contained in the Long Beach Municipal Code. Furthermore, the project is not expected to result

Table IV.J-12

City Code Parking Requirements

Project Description	Square-feet of Development		City of Long Beach Code Parking Ratio	Spaces Required
West Site				
High-Rise Condominiums				
- 1 bedroom or more	574	DU	2 space per 1 units	1,148
- Guest	574	DU	1 space per 6 units	96
Hotel – Rooms	400	Rooms	0.75 space per room	300
- Banquet Area	27,000	SF	20 spaces per 1,000 SF	540
General Office	279,000	SF	3 spaces per 1,000 GFA	837
			Required Parking Supply for West Site:	**2,921**
			Proposed Parking Supply for West Site:	**2,265**
			Parking Surplus/Deficiency (+/-) for West Site:	**-656**
East Site				
High-Rise Condominiums				
- 1 bedroom or more	536	DU	2 space per 1 units	1,072
- Guest	536	DU	1 space per 6 units	90
General Office	88,000	SF	3 spaces per 1,000 GFA	264
			Required Parking Supply for East Site:	**1,426**
			Proposed Parking Supply for East Site:	**1,165**
			Parking Surplus/Deficiency (+/-) for East Site:	**-261**

Source: Linscott, Law & Greenspan, Engineers, 2009

in conflicts with the Los Angeles County CMP or the Southern California Association of Governments' Regional Transportation Plan. Additionally, future development projects, to the extent required by the City, would include pedestrian and bicycle-related facilities in order to foster alternative transportation modes. Future development of proposed uses is not expected to conflict with policies related to alternative transportation. Refer to Section IV.F, Land Use, in this EIR for a detailed discussion of the proposed project's consistency with applicable plans, policies, and regulations. As discussed in Section IV.E, impacts would be less than significant.

4. MITIGATION MEASURES

For the study intersections where projected traffic volumes are expected to result in unacceptable operating conditions, the proposed project's Traffic Study recommends (identifies) traffic improvement mitigation measures that change the intersection geometry to increase

capacity. These capacity improvements involve roadway widening, re-striping to reconfigure (add lanes) to specific approaches of a key intersection and/or implementation of peak hour turn restrictions. The identified improvements are expected to:

- Mitigate the impact of existing traffic, future non-project (ambient traffic growth and cumulative project) traffic and project traffic, and
- Improve Levels of Service to an acceptable range and/or to pre-project conditions.

a. Recommended Area Traffic Improvements

The results of the level of service analysis based on the ICU/HCM methodology, as summarized in Table IV.J-10, indicates that the proposed project will cumulatively impact five (5) key study intersections. The following improvements are recommended to mitigate the cumulative traffic impacts at the five (5) intersections significantly impacted by project traffic under future conditions. The proposed project can be expected to pay a fair-share of the construction costs to mitigate the proposed project's significant cumulative traffic impacts at the City's discretion.

Mitigation Measure J-1: Intersection No. 7 - Alamitos Avenue at 7th Street – Restripe 7th Street to provide a third westbound through lane on 7th Street, through the intersection of Martin Luther King, Jr. and 7th Street. The implementation of this improvement would require the removal of curbside parking on both sides of 7th Street, east and west of Alamitos Avenue. Given the demand for curbside parking in the area, the loss of parking may not be considered acceptable. Further, the intersection of Alamitos Avenue and 7th Street is physically constrained with existing development located along the street making the expansion of the roadway to add additional lanes difficult. As an alternative, the proposed project's impact at this key intersection could be mitigated by reducing the project's trip generation potential by approximately ten percent (10%).

If recommended roadway improvements are not implemented or the project's trip generation is not reduced, then the project's impact at this key intersection would be considered significant and unavoidable.

Mitigation Measure J-2: Intersection No. 10 - Alamitos Avenue at 4th Street -- No physical mitigation measure is feasible at this location; any additional turn lanes will require widening and additional right-of-way. The intersection of Alamitos Avenue and 4th Street is physically constrained with existing development located along the street making the expansion of the roadway to add additional lanes difficult. As an alternative, the proposed project's impact

at this key intersection could be mitigated by reducing the project's trip generation potential by approximately ten percent (10%).

If the proposed project's trip generation is not reduced, then the project's impact at this key intersection would be considered significant and unavoidable.

Mitigation Measure J-3: Intersection No. 15 - Alamitos Avenue at Broadway -- Restripe Alamitos Avenue to provide a second southbound through lane. The implementation of this improvement may require the removal of curbside parking on both sides of Alamitos Avenue, north and south of Broadway. Given the demand for curbside parking in the area, the loss of parking may not be considered acceptable. Further, the intersection of Alamitos Avenue and Broadway is physically constrained with existing development located along the street making the expansion of the roadway to add additional lanes difficult. It should be noted that the provision of two southbound lanes on Alamitos Avenue is generally consistent with the City's future improvement plans for this key roadway segment. As an alternative, the proposed project's impact at this key intersection could be mitigated by reducing the project's trip generation potential by approximately fifteen percent (15%).

If recommended roadway improvements are not implemented or the project's trip generation is not reduced, then the project's impact at this key intersection would be considered significant and unavoidable.

Mitigation Measure J-4: Intersection No. 17 - Magnolia Avenue at Ocean Boulevard -- Modify existing signal to provide protect left-turn phasing for the eastbound and westbound directions on Ocean Boulevard and install a southbound right-turn overlap phase.

Mitigation Measure J-5: Intersection No. 20 - Pine Avenue at Ocean Boulevard -- Restripe Pine Avenue to provide a separate southbound left-turn lane and a shared through-right lane on Pine Avenue. Implementation of this improvement may require the removal of the passenger loading/unloading zone on the east side of Pine Avenue, north of Ocean Boulevard, and potentially impact the flow of traffic given existing bus stops are located along this section of Pine Avenue, both of which may not be considered acceptable. As an alternative, the proposed project's impact at this key intersection could be mitigated by reducing the project's trip generation potential by approximately fifteen percent (15%).

If recommended roadway improvements are not implemented or the project's trip generation is not reduced, then the project's impact at this key intersection would be considered significant and unavoidable.

As there are no significant impacts at the remaining twenty five (25) key study intersections, no additional traffic mitigation measures are required or recommended.

b. Recommended Project-Specific Improvements

The implementation of the following improvements will mitigate the impact of project traffic and ensure adequate access is provided for the project:

Mitigation Measure J-6: Project Driveway A at Golden Shore -- Install traffic signal, and associated signing and striping modifications, inclusive of crosswalks. The installation of a traffic signal at Rose Avenue and Pacific Coast Highway, and associated signing and striping modifications, is subject to the approval of the City of Long Beach.

c. Project Fair-Share Contribution

Table IV.J-13 on page IV.J-43 presents the peak hour percentage of net traffic impact at the study intersections cumulatively impacted by the proposed project for Year 2020 traffic conditions. These fair share calculations are based on the percentage of project-related trips of near-term (Year 2020) traffic. As indicated above, the proposed project can be expected to contribute a fair-share of the construction costs to mitigate the proposed project's significant cumulative traffic impacts.

Review of Table IV.J-13 shows that the proposed project's percentage of net traffic impact ranges between approximately 13 percent and 30 percent. These percentages represent the project's "fair-share" cost responsibility associated with implementation of the recommended mitigation measures identified above.

d. Development Impact Fee

Based on a total project-related development of 1,110 high-rise residential dwelling units, a 400-room hotel, 367,000 SF of office space and application of the appropriate fees, the proposed Golden Shore Master Plan can be expected to pay up to $2,799,750.00 in

Table IV.J-13

Year 2020 Project Fair Share Contribution

Key Intersections	Impacted Peak Hour	(1) Existing Traffic	(2) Year 2020 Cumulative Traffic	(3) Year 2020 w/Project Traffic	(4) Project Percent Increase
7. Alamitos Avenue at 7th Street	A.M.	3,524	4,030	4,259	31.2%
10. Alamitos Avenue at 4th Street	P.M.	2,765	3,221	3,378	25.6%
15. Alamitos Avenue at Broadway	A.M.	2,172	2,545	2,693	28.4%
17. Magnolia Avenue at Ocean Boulevard	A.M.	3,621	4,387	4,557	18.2%
20. Pine Avenue at Ocean Boulevard	P.M.	3,896	4,686	4,808	13.4%

Source: Linscott, Law & Greenspan, Engineers, 2009

Transportation Improvement Fees. The precise fee, plus any credit for existing development, will be determined by the City upon issuance of project building permits.

5. CUMULATIVE IMPACTS

Inasmuch as the analysis of project-related impacts utilized cumulative growth of one percent per year to establish future traffic conditions to Year 2020, as well as consideration of the 19 known related development project, cumulative traffic impacts have been addressed in the analysis presented above. Accordingly, cumulative impacts to local intersections, with implementation of applicable mitigation measures, would be considered less than significant and the project's contribution to such impacts would not be considerable.

As is the case with the proposed project, each cumulative project would be subject to review and approval of project plans by the City of Long Beach and Long Beach Fire Department to ensure adequate right-of-way for emergency vehicles. Therefore, it is anticipated that cumulative development projects would not result in inadequate emergency access, and cumulative impacts would be less than significant. The project's contribution to this impact would not be cumulatively considerable.

As cumulative development occurs, public transit agencies are expected to respond by expanding their services and facilities to meet growing demands. It is also expected that cumulative development projects would also provide adequate public transit facilities, such as

bus turnouts, shelters, and signage, to the satisfaction of affected transit agencies. Assuming public transportation keeps pace with demand based on market forces, as is expected, cumulative transit impacts would be less than significant, and the proposed project's contribution to this impact would not be cumulatively considerable.

Parking for future development projects under the cumulative growth scenario would be required to either provide off-street parking per the requirements of the Long Beach Municipal Code, or provide parking pursuant to an approved shared parking program. In either case, future development projects would be required to provide parking in sufficient quantity that a parking deficiency does not occur, which would result in parking overflow or otherwise affect the parking availability for nearby land uses. As such, cumulative parking impacts would be less than significant, and the proposed project's contribution to this impact would not be cumulatively considerable.

As is the case with the proposed project, future cumulative development projects will be subject to review with regard to consistency with applicable plans, policies, and regulations. It is anticipated that such project review on a case-by-case basis will preclude the potential for adverse impacts resulting from conflicts with traffic-related regulations. The proposed project's contribution to this impact would not be cumulative considerable, and cumulative impacts would be less than significant in this regard.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

Impacts related to the function of affected local intersections, CMP highway facilities, transit service and facilities, vehicular and emergency access, parking adequacy, and consistency with applicable regulations under the future 2020 scenario are either less than significant or can be reduced to less than significant levels with implementation of applicable mitigation measures. As such, no significant unavoidable impacts would result from project implementation in this regard.

However, recommended improvements to several study area intersections, which are included as mitigation measures, may not be feasible as indicated previously. Should recommended improvements at the intersections of Alamitos Avenue/7th Street, Alamitos Avenue/4th Street, Alamitos Avenue/Broadway, and Pine Avenue/Ocean Boulevard ultimately be deemed infeasible, full implementation of the proposed project would result in significant unavoidable traffic impacts at these locations. As such, if the City of Long Beach approves the proposed project, the City shall be required to cite their findings in accordance with Section 15091 of the CEQA *Guidelines* and prepare a Statement of Overriding Considerations in accordance with Section 15093 of the CEQA *Guidelines*.

IV. ENVIRONMENTAL IMPACT ANALYSIS
K. UTILITIES AND SERVICE SYSTEMS
1. WATER SUPPLY

1. INTRODUCTION

This section provides information describing existing and projected water supplies and related infrastructure. The section provides an analysis of water supply and distribution and addresses whether there would be adequate water supply and infrastructure available to serve the project. The analysis is based on information from the Long Beach Water Department, the Long Beach Water Department 2005 Urban Water Management Plan (UWMP), and the project-specific Water Supply Assessment (WSA) provided by the Long Beach Water Department. The UWMP is incorporated by reference, and the WSA is included in Appendix G of this EIR.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

(1) State Level

(a) California Urban Water Management Plan Act

The California Urban Water Management Planning Act (California Water Code [CWC] Division 6, Part 2.6, Sections 10610-10656) addresses several State policies regarding water conservation and the development of water management plans to ensure the efficient use of available supplies. The California Urban Water Management Planning Act also requires water suppliers to develop water management plans every five years to identify short-term and long-term demand management measures to meet growing water demands during normal, dry, and multiple-dry years. Specifically, municipal water suppliers that serve more than 3,000 customers or provide more than 3,000 acre-feet per year (AFY) of water must adopt a UWMP.

(b) Senate Bill 610 and Senate Bill 221

State legislation addressing water supply, Senate Bill (SB) 610 and SB 221, became effective January 1, 2002. SB 610, codified in CWC § 10910 et seq., describes requirements for both water supply assessments (WSAs) and UWMPs applicable to the California Environmental Quality Act (CEQA) process. SB 610 requires that for projects subject to CEQA, which meet

specific size criteria, the water supplier must prepare a WSA that determines whether the projected water demand associated with a proposed project is included as part of the most recently adopted UWMP. Specifically, a WSA identifies existing water supply entitlements, water rights, or water service contracts held by the public water system, and prior years' water deliveries received by the public water system. In addition, it evaluates water supplies over a 20-year period and considers normal, single-dry, and multiple-dry year conditions. In accordance with SB 610 and Section 10912 of the CWC, projects subject to CEQA requiring submittal of a WSA include the following:

- Residential developments of more than 500 dwelling units;
- Shopping centers or business establishments employing more than 1,000 persons or having more than 500,000 square feet of floor space;
- Commercial office buildings employing more than 1,000 persons or having more than 250,000 square feet of floor space;
- Hotels, motels, or both, having more than 500 rooms;
- Industrial, manufacturing, or processing plants, or industrial parks planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area;
- Mixed-use projects that include one or more of the projects specified in this subdivision; or
- Projects that would demand an amount of water equivalent to or greater than the amount of water required by a 500 dwelling unit project.

The WSA must be approved by the public water system at a regular or special meeting and must be incorporated into the CEQA document. The lead agency must then make certain findings related to water supply based on the WSA.

In addition, under SB 610, a water supplier responsible for the preparation and periodic updating of an UWMP must describe the water supply projects and programs that may be undertaken to meet the total project water use of the service area. If groundwater is identified as a source of water available to the supplier, the following additional information must be included in the UWMP: (1) a groundwater management plan; (2) a description of the groundwater basin(s) to be used and the water use adjudication rights, if any; (3) a description and analysis of groundwater use in the past five years; and (4) a discussion of the sufficiency of the groundwater that is projected to be pumped by the supplier.

SB 221 also addresses water supply in the land use planning process and focuses on new residential subdivisions in non-urban areas. SB 221 requires that written verification from the water service provider be submitted indicating sufficient water supply is available to serve a proposed subdivision, or the local agency shall make a specified finding that sufficient water supplies are or will be available prior to completion of a project. SB 221 applies to residential subdivisions of 500 units or more. In addition, Government Code Section 66473.7(i) exempts "…any residential project proposed for a site that is within an urbanized area and has been previously developed for urban uses; or where the immediate contiguous properties surrounding the residential project site are, or previously have been, developed for urban uses; or housing projects that are exclusively for very low and low-income households."

(c) California Code of Regulations

Title 20, Sections 1605.1(h) and 1605.1(i) of the California Code of Regulations (CCR) establish efficiency standards (i.e., maximum flow rates) for all new federally-regulated plumbing fittings and fixtures, including showerheads and lavatory faucets. The maximum flow rate for showerheads and lavatory faucets are 2.5 gallons per minute (gpm) at 80 pounds per square inch (psi) and 2.2 gpm at 60 psi, respectively. In addition, Section 1605.3(h) establishes State efficiency standards for non-federally regulated plumbing fittings, including commercial pre-rinse spray valves.

(d) Global Warming and Climate Change

Global warming and climate change must be considered in assessing water supply in California. Potential impacts of climate change on California's water resources include changes in water and air temperatures, changes in precipitation patterns, and changes in sea levels that could increase pressure on the Sacramento-San Joaquin River Delta (Delta) levees. The California Department of Water Resources (DWR) has concluded that climate change may have a significant effect on California's future water resources and demand.[1] The DWR also examined the potential impacts of selected climate change scenarios on operations of the State Water Project (SWP) and Central Valley Project (CVP), Delta water quality, flood management and evapotranspiration. Potential issues include a reduction of Sierra snowpack and seasonal water storage; increased rain and less snow impacting supply reliability and hydropower generation; increased variable precipitation and extreme weather events; and rising sea levels.

While climate change is expected to continue, the magnitude and nature of future changes are uncertain. This uncertainty serves to complicate the analysis of future water demand,

[1] *California Department of Water Resources, "Progress on Incorporating Climate Change into Management of California's Water Resources" (July 2006).*

especially where the relationship between climate change and its potential effect on water demand is not well understood.[2] Preliminary modeling conducted by DWR and others indicates average yearly SWP deliveries in 2050 would be reduced by 10.2 percent[3] and that runoff reductions range from a decrease of 11 percent in 2010 to a decrease of 45 percent by approximately 2050.[4] In addition, a survey of recent research on the effects of climate change on the Colorado River by the Potential Impacts of Climate Change on Colorado River reveals that runoff reductions range from a decrease of 11 percent in 2010 to a decrease of 45 percent by approximately 2050. In light of these conclusions, both governmental agencies and non-governmental organizations recommend that water decision-makers operate existing water systems to allow for increased flexibility. Other recommendations include incorporating climate change research into infrastructure design, conjunctively managing surface water and groundwater supplies, and integrating water and land use practices. In this regard, policymakers and water suppliers in California are currently addressing climate change impacts and developing new ways to cope with the types of variability that are outside the design range of existing infrastructure. The Governor's October 2008 Delta Vision Strategic Plan supports the development of additional storage to allow greater system operational flexibility that will benefit water supplies and adapt to a changing climate.

The Metropolitan Water District (MWD) has adopted climate change policy principles that relate to water resources. Most recently, MWD approved criteria to further explain its position on conveyance options for improving the Delta ecosystem, which include addressing projected sea level rise and change in inflows due to climate change. MWD's criteria provide that, "whatever option is chosen, it should provide water supply reliability, improve export water quality, allow flexible pumping operations in a dynamic fishery environment, reduce seismic risks, and reduce climate change risks."[5] MWD has demonstrated a commitment to addressing climate change by evaluating the vulnerability of its water systems to global warming impacts and has developed appropriate response strategies and management tools that account for the impacts of climate change on future water supplies.[6] MWD's 2005 Regional UWMP

---

[2] *DWR, op. cit., page 2-54.*

[3] *State Water Project Table A water deliveries are defined as the schedule of the maximum amount of water that water contractors to the DWR may receive annually from the SWP. There are 29 water contractors who have signed long term contracts with the DWR for a total of 4,173 million acre feet per year. Table A deliveries are not guarantees of annual delivery amounts but are used to allocate individual contractors' portion of the delivery amounts available.*

[4] *USGS, 2008 Briefing to Congress, "Climate Change – Impacts on the Colorado River (June 6, 2008).*

[5] *MWD Report for Metropolitan Water District of Southern California Board Meeting September 11, 2007 Agenda Item 8-4.*

[6] *Report for Metropolitan Water District of Southern California Board Meeting September 11, 2007 Agenda Item 8-4.*

incorporated three basic elements to promote adaptability and flexibility, important in addressing impacts of climate change: (1) conservation, (2) groundwater recharge, and (3) water recycling.

(c) Assembly Bill 3030

Assembly Bill (AB) 3030, the Groundwater Management Act, is Section 10750 et. seq. of the California Water Code. AB 3030 provides local water agencies with procedures to develop a voluntary groundwater management plan to manage their groundwater resources efficiently and safely while protecting the quality of supplies. Once a plan is adopted, the rules and regulations contained therein must also be adopted to implement the program outlined in the plan.

(d) Efficiency Standards – California Code of Regulations and Health and Safety Code

Title 24 of the California Code of Regulations (CCR) contains the California Building Standards, including the California Plumbing Code (Part 5) which promotes water conservation. Title 20 addresses Public Utilities and Energy and includes appliance efficiency standards that promote water conservation. In addition, many State laws require water-efficient plumbing fixtures in structures and are listed below:

- Title 24, CCR, Sections 25352(i) and (j) address pipe insulation requirements, which can reduce water used before hot water reaches equipment or fixtures. Insulation of water-heating systems is also required.

- Title 20, CCR, Section 1604(g) establishes efficiency standards that give the maximum flow rate of all new showerheads, lavatory faucets, sink faucets and tub spout diverters.

- Title 20, CCR, Section 1606 prohibits the sale of fixtures that do not comply with established efficiency regulations.

- California Health and Safety Code, Section 17921.3 requires low-flush toilets and urinals in virtually all buildings.

- California Health and Safety Code, Section 116785 prohibits installation of residential water softening or conditioning appliances unless certain conditions are satisfied and includes the requirement that water conservation devices on fixtures using softened or conditioned water be installed.

(2) Regional

Based on the water supply planning requirements imposed on its member agencies and ultimate customers, such as the requirements to adopt urban water management plans, water supply assessments and written verifications, MWD has adopted a series of official reports on the state of its water supplies. As described below, in the *Report on Metropolitan Water Supplies: A Blueprint for Water Reliability*, MWD has consistently stated that its water supplies are fully reliable to meet the demands of its customers, including LBWD, in all hydrologic conditions through at least 2030. In response to recent developments in the Delta, MWD is also engaged in identifying solutions that, when combined with the rest of its supply portfolio, will ensure a reliable long-term water supply for its member agencies. In the near-term, MWD will continue to rely on the plans and policies outlined in its *Regional Urban Water Management Plan, Water Surplus and Drought Management Plan, Water Supply Allocation Plan,* and *Integrated Resources Plan* to address water supply shortages and interruptions (including potential shut downs of SWP pumps) to meet water demands. These plans are described in detail below.

(a) Report on Metropolitan Water Supplies: A Blueprint for Water Reliability

In March 2003, MWD published the *Report on Metropolitan Water Supplies: A Blueprint for Water Reliability* (Blueprint Report). The objective of the Blueprint Report was to provide member agencies, retail water utilities, cities, and counties within the MWD service area with information that may assist in their preparation of UWMP, water supply assessments, and written verifications. The Blueprint Report stated that the approach taken to evaluate water supplies and demands was consistent with MWD's 2000 Regional UWMP. MWD utilized Southern California Association of Governments' (SCAG) regional growth forecast in calculating regional water demands for its service area, which was the same method used by the LADWLP in its 2005 UWMP. Thus, MWD considered the water demands of LBWD in the Blueprint Report.

The Blueprint Report fully discusses MWD's historical and projected deliveries of Colorado River and SWP water. The conclusion of the Blueprint Report and supplemental information published by MWD, such as its IRP and annual Implementation Reports, is that with its current water supply portfolio and planned actions, MWD will have sufficient water to meet the water demands of its customers for the next 20 years.

By comparing total projected water demands and conservatively estimating water supplies over the next 20 years, MWD has found that if its supply programs were implemented under its IRP "[b]ased on water supplies that are currently available, Metropolitan already has in place the existing capability to [m]eet 100 percent of its member agencies' projected supplemental demands (consumptive and replenishment) over the next 20 years" in average, wet,

multiple dry, and single dry years. In multiple dry years, MWD reports that it will "[m]eet 100 percent of its member agencies' projected supplemental demands (consumptive and replenishment) even under the repeat of the worst multiple year drought event over the next 15 years," while in a single dry year it can "[m]eet 100 percent of its member agencies' projected supplemental demands (consumptive and replenishment) even under the repeat of the worst single year drought event over the next 15 years." MWD's additional reserve supplies will provide a "margin of safety to guard against uncertainties in demand projections and risks in fully implementing all supply programs under development."

(b) 2005 Regional Urban Water Management Plan (RUWMP)

Pursuant to the Urban Water Management Planning Act, MWD prepared the 2005 RUWMP, which addresses the future of MWD's water supplies and demand through the year 2030. Campaigns for voluntary conservation, curtailment of replenishment water and agricultural water delivery are some of the actions outlined in the RUWMP to meet future water demand. If necessary, reduction in municipal and industrial water use and mandatory water allocation could be implemented. The RUWMP incorporates much of the actions and policies provided in MWD's *Water Surplus and Drought Management Plan* and *Integrated Resources Plan.*

(c) Water Surplus and Drought Management Plan (WSDM)

In 1999, MWD incorporated the water shortage contingency analysis that is required as part of any urban water management plan into a separate, more detailed plan, called the WSDM. That plan provides policy guidance to manage MWD's supplies and achieve the goals laid out in the agency's Integrated Resources Plan. The WSDM also "identifies the expected sequence of resource management actions that [MWD] will execute during surpluses and shortages to minimize the probability of severe shortages and eliminate the possibility of extreme shortages and shortages allocations." MWD's 10 year WSDM categorizes its ability to deliver water to its customers by distinguishing between surpluses, shortages, severe shortages and extreme shortages. The WSDM's integration of management actions taken during times of surplus and shortages reflects MWD's belief that these actions are interrelated.

For example, MWD's regional storage facilities, such as Lake Skinner, Lake Mathews and Diamond Valley Lake, along with storage capacity available to MWD in Castaic Lake and Lake Perris, provide MWD with flexibility in managing its supplies. MWD's storage supplies and existing management practices allow MWD to mitigate shortages without having to impact retail municipal and industrial demands, except in severe or extreme shortages. MWD's 2005 RUWMP shows its expected ability to meet demands in single dry years by water supply source. For example, in 2010 MWD expects to have 831,000 AF in potential reserve and replenishment

supplies, primarily through in-basin storage. In 2030, MWD estimates that it will have 716,000 AF in potential reserve and replenishment supplies. Anytime MWD withdraws from storage to meet demands, it is considered to be in a shortage stage. MWD has spent decades building up its storage reserves and groundwater management programs in order to prepare for a seven stages of shortage conditions. "Each [shortage] stage is associated with specific resource management actions designed to (1) avoid an Extreme Shortage to the maximum extent possible and (2) minimize adverse impacts to retail customers if an Extreme Shortage occurs." MWD notes that the "overriding goal of the WSDM Plan is to never reach Shortage Stage 7, an Extreme Shortage."

In an actual shortage, MWD would: (1) draw on storage out of reservoirs; (2) draw on out-of-region storage in the Semitropic and Arvin-Edison groundwater banks; (3) reduce or suspend long-term seasonal and groundwater replenishment deliveries; (4) draw on groundwater storage programs; (5) draw on SWP terminal reservoir storage; (6) reduce Interruptible Agricultural Water Program (IAWP) deliveries; (7) call on water transfer options contracts; (8) purchase additional water; and (8) reduce imported supplies to its members agencies by an allocation method. MWD clarifies that this list is not in any particular order, "although it is clear that the last action [taken] will be the curtailment of firm deliveries to the member agencies."

Additionally, the MWD announced a strategic approach in 2008 regarding its WSDM Plan. MWD's major strategies are as follows:

- Continue conservation campaign;
- Maximize recovery of water from Central Valley storage and banking programs;
- Purchase additional supplies to augment existing supplies; and
- Develop and implement a shortage allocation plan (discussed below).

(d) Water Supply Allocation Plan

While the WSDM included a set of general actions and considerations for MWD staff to address during shortage conditions, it did not include a water supply allocation plan or implementation approach. Therefore, MWD adopted a water supply plan called the Water Supply Allocation Plan in February 2008. This plan includes a formula for determining reductions of water deliveries to member agencies during shortage conditions (i.e., drought conditions or unforeseen cuts in water supplies). The formula was derived for three scenarios of regional water shortage levels (10, 20, and 40 percent shortage) and is based on a methodology that cuts water allocations all across the board (i.e., to all member agencies) with adjustments for the member agency's dependency on MWD's water supplies and the agency's water

conservation savings from programs and devices. The formula also calls for IAWP water reductions of between 30 to 100 percent, depending on the severity of the shortage conditions. The allocation period covers 12 months from July of a given year through the following June. Member agency allocations would be enforced through a penalty rate structure.

Relative to a member agency's preferential water rights, the Water Supply Allocation Plan provides for a discounted penalty rate schedule for member agencies exceeding their allocations under the plan's formula but not exceeding their preferential rights. The Water Supply Allocation Plan would be reviewed and revised in three years following the February 2008 adoption as well as 12 months after a shortage.[7]

(e) Integrated Resources Plan

MWD first adopted its Integrated Resources Plan (IRP) in 1996. The IRP is updated every five years. The most updated IRP, which was adopted in 2004, discussed local water supply initiatives (e.g., local groundwater conjunctive use programs) and established a buffer supply to mitigate against the risks associated with implementation of local and imported water supply programs. The 2004 IRP noted that future water supply reliability depends not only upon actions by MWD to secure reliable imported supplies, but also further development of local projects by local agencies.

On October 10, 2006, MWD released its 2006 Integrated Resources Plan Implementation Report (2006 Implementation Report) to report on progress toward implementing the targets from the 2004 IRP. The 2006 Implementation Report included a summary of each of MWD's water resource development categories: (1) conservation; (2) local resources; (3) Colorado River Aqueduct; (4) SWP supplies; (5) Central Valley storage and transfer programs; (6) in-region groundwater conjunctive use storage; and (7) in-region surface water storage. This recent report concluded that "while changes occur in all resource areas, Metropolitan is able to maintain supply reliability through its diversified water resources portfolio."

MWD supported this conclusion by providing detailed updates for each of its resource categories, restating dry year IRP targets and examining current considerations, changed conditions, implementation strategies and identified programs, implementation challenges and cost information. A brief summary of each of MWD's water resource development categories (other than the Colorado River and SWP supplies, which were discussed in detail previously) is provided below:

---

[7] *In April 2008, the Central Basin Municipal Water District filed a lawsuit to overturn the Water Supply Allocation Plan on the basis that it was unequitable and was not subject to environmental review. The litigation is pending. Despite this litigation, the MWD intends on implementing the plan in 2009.*

- *Conservation*: In 2006, MWD invested $10.6 million in conservation programs and initiatives, including executing a 10-year residential master conservation funding agreement with member agencies, encouraging the use of high-efficiency toilets, strengthening outdoor conservation programs and introducing new Industrial Process Improvement programs. In 2005-2006, MWD programs conserved approximately 762,000 AF, which was an increase of approximately 30,000 AF over the previous fiscal year. MWD's 2010 target for conservation savings is 865,000 AF.

- *Local Resources—Recycling, Groundwater Recovery and Seawater Desalination*: MWD has invested $213 million with its member agencies to develop local resource programs. MWD contributed approximately $24.5 million toward the production of 127,000 AF of local resource production supplies in 2006, which is an increase of 16,000 AF from 2005. MWD's 2010 target for regional water recycling and groundwater recovery is 410,000 AF. Further, three desalination project agreements have been signed.

- *Central Valley Storage and Transfer Programs*: MWD has developed significant water storage and transfer program partnerships in the Central Valley and has witnessed increased cooperation with DWR and federal agencies to facilitate water transfers. MWD continues to pursue transfers with Central Valley parties and has worked to improve existing storage programs with existing SWP storage partners. In 2008, the MWD received approximately 26,629 AF in transfers from Central Valley farmers.[8]

- *In-Region Groundwater Storage*: The 2006 Implementation Report identified that components of MWD's in-region groundwater storage program may not meet its 2010 dry-yield target of 275,000 AF. As of October 2006, groundwater storage had been developed to provide about 135,000 AF. In response, MWD conducted a groundwater basin assessment to explore other groundwater storage opportunities. MWD's recent Groundwater Basin Assessment Study provided new information to focus on meeting this goal. MWD will continue to develop new strategies for groundwater storage.

MWD's 2006 Implementation Report demonstrates that the agency has continued to react aggressively to address challenges facing water resources. By amending existing strategies, MWD has made significant progress in most resource areas toward meeting the IRP targets. For example, in fiscal year 2006-2007, MWD saved approximately 812,000 AF through conservation efforts and is expected to meet its 2010 target. Local resource production is expected to exceed

[8] *Per personal communication with Steve Hirsh, MWD Program Manager for Water Storage and Transfer Programs, October 14, 2009.*

the 2010 target of 426,000 AF based on current production and expansion of existing programs. Existing supplies in Central Valley storage programs are also expected to exceed the 2010 target of 300,000 AF. While in-region groundwater storage programs are currently falling short of MWD's 2010 IRP target, MWD is actively working to find new ways to meet this goal and the success of other programs, such as Central Valley storage, can avoid any negative impacts from failure to meet this single goal. For example, MWD has already exceeded its 2010 goal for dry year surface water storage. While SWP supplies are not projected to meet the 2010 IRP target or longer-term targets, MWD is actively seeking to resolve the risks associated with that supply, as discussed above.

MWD is currently updating the 2004 IRP.[9] The updated IRP will address existing and new challenges such as the continued drought conditions as well as Delta smelt litigation and climate change. As can be seen by these ongoing studies, MWD is continually updating its plans to meet ever-changing challenges to its water supplies.

(3) Local Level

(a) 2005 Urban Water Management Plan

In accordance with State legislation, the Long Beach Water Department (LBWD) updated the UWMP in December 2005 and revised it in May 2007. The LBWD's UWMP, as required by the Urban Water Management Planning Act, assist urban water suppliers with long-term water resources planning and ensures adequate water supplies for existing and future demands.[10] The LBWD's UWMP contains an analysis of past, current, and projected future water supply and demand as they relate to population density, types of water use, water quality, climate, water source availability and reliability, alternative water sources, and potential water shortages. A contingency plan was also developed to increase water supply during water supply interruptions or a drought. Alternative water sources would help provide additional water supplies and water conservation measures would help reduce water demands. The UWMP is required to be updated every five years in order to manage short-term and long-term water demand. As specified by the Urban Water Management Planning Act, failure to provide an UWMP would restrict the use of water supplies during drought seasons.

LBWD's UWMP provides water demand projections in five-year increments through 2030, which are based on demographic data from the Southern California Association of Governments'

[9] *Metropolitan Water District, Integrated Resources Plan, http://www.mwdh2o.com/mwdh2o/pages/yourwater/irp/; Accessed June 9, 2009.*

[10] *State of California Department of Water Resources, Summary of the Status of 2005 Urban Water Management Plans, December 31, 2006.*

(SCAG) 2004 Regional Transportation Plan (RTP), as well as billing data for each major customer class, weather, and conservation. SCAG's growth projections for the City take into consideration the buildout capacity of the General Plan and whether growth is occurring at the anticipated rate.

(b) City of Long Beach Municipal Code

Long Beach has adopted several ordinances in an effort to reduce water consumption. Specifically, Chapter 2.38 of the Long Beach Municipal Code (LBMC) establishes the Sustainable City Commission, whose purpose is,

> *"…to make advisory policy recommendations to the city council on issues relating to the environment, a sustainable city plan, efforts or programs to address environmental issues such as air quality, water quality, resource conservation relating to the protection and integrity of the natural environment, programs to increase education and awareness of the environment, to serve as a forum for community discussion of these environmental issues, and to encourage input and participation from all sectors of the community on issues of sustainability and the environment."*

The commission is made up of eleven members, representing each of the nine councilmanic districts and two members appointed at-large. The commissioners are appointed by the Mayor with approval by the City Council, in which they serve four year terms, but not to exceed two terms. Chapter 3.90 of the LBMC establishes a surcharge to fund the continuous upgrade, improvement, and maintenance of technology for development projects and services. Specifically, fees are imposed regarding potable water, reclaimed water, sewer service, and the emergency water conservation plan adopted by the Long Beach board of water commissioners.

(c) Long Beach Emergency Water Conservation Plan

In June 2007, the Long Beach Board of Water Commissioners adopted Resolution No. WD-1232, which amended and restated the water conservation and water supply shortage plan (Water Conservation Plan). The Water Conservation Plan's objectives include the following:

(a) To prevent water supply shortages through aggressive and effective water management programs such as conjunctive use, water conservation, water education and use of reclaimed water;

(b) To minimize the impact of a water supply shortage on the City's population and economy;

(c) To provide first for public health and fire protection and other essential services, then to provide for the economic health of the City, and then to provide for other uses of water; and

(d) To ensure that water users who conserve water during normal-year hydrology and wet-year hydrology are not disadvantaged by the Plan during shortages.

The Water Conservation Plan attempts to fulfill the above-listed objectives by limiting water usage when a Stage 1 Water Supply Shortage, Stage 2 Water Supply Shortage, or Stage 3 Water Supply Shortage occurs. During a Stage 1 Water Supply Shortage, the following water usages are prohibited: (1) Irrigating landscape with potable water any day other than Monday or Thursday, beginning on the first day of October through the end of the last day of the following March, except for very short periods of time for the expressed purpose of adjusting or repairing the irrigation system; (2) Filling residential swimming pools and spas with potable water; (3) Other prohibited uses as determined by the Board, after notice to customers. In addition, during a Stage 1 Water Supply Shortage, the Water Commission is permitted to increase water rates by up to 10 percent. When a Stage 2 Water Supply Shortage occurs, the following water usages are prohibited: (1) Irrigating landscape with potable water any day other Monday or Thursday, except for very short periods of time for the expressed purpose of adjusting or repairing the irrigation system; (2) Filling residential swimming pools and spas with potable water; (3) Other prohibited uses as determined by the Board, after notice to customers. During a Stage 2 Water Supply Shortage, the Water Commission is permitted to increase water rates by up to 15 percent. Finally, during a Stage 3 Water Supply Shortage, the Water Commission has the sole discretion to impose additional restrictions or prohibitions on the use of water and make additional adjustments to the water rates as deemed necessary. Under the Water Conservation Plan, if customers do not comply with the requirements, the Water Commission is allowed to assess Water Usage Charges based on the amount of failure notices and what stage the water supply shortage is at.

b. Existing Conditions

(1) Water Supply

Water supply projections are shown in Table IV.K-1 on page IV.K-14. As illustrated in Table IV.K-1, the major sources are water purchased wholesale from the MWD, groundwater pumped and treated by the LBWD, recycled water and, possibly beginning as early as 2010, desalinated seawater. The following discusses the reliability of these supplies and their vulnerability to seasonal or climatic shortage. The LBWD is researching the technological, environmental, and financial feasibility of seawater desalination as a source of potable water. If feasible, this source could come into production as early as 2010. If feasible, this would be a

Table IV.K-1

Current and Planned Water Supplies
(AFY)

Source	2005[a]	2010	2015	2020	2025	2030
M&I						
Potable Water						
Wholesale Purchases[b]	43,939	35,658	30,758	31,912	30,488	29,516
Groundwater[c]	25,955	32,684	32,684	32,684	32,684	32,684
Seawater Desalination	--	5,000	10,000	10,000	10,000	10,000
Total Potable Water	69,894	73,342	73,442	74,596	73,172	72,200
Recycled Water	5,210	6,458	8,058	9,604	12,428	14,400
Total M&I	*75,104*	*79,800*	*81,500*	*84,200*	*85,600*	*86,600*
Seawater Barrier						
Potable Water						
Wholesale Purchases[b]	4,672	2,100	2,100			
Recycled Water	525	2,100	2,100	4,200	4,200	4,200
Total Seawater Barrier	*5,197*	*4,200*	*4,200*	*4,200*	*4,200*	*4,200*
Total M&I and Seawater Barrier	**80,301**	**84,000**	**85,700**	**88,400**	**89,800**	**90,800**

[a] *Calendar year estimate based on fiscal year actual.*
[b] *Purchased from MWDSC.*
[c] *LBWD Central Basin Aquifer rights.*

Source: Long Beach Water Department, 2005 Urban Water Management Plan, Table 4-current and Planned Water Supplies-AF/Y, revised 2007.

very reliable supply of water impervious to fluctuations in weather and climate. This supply would be used in-lieu of MWD imported water.

(a) Imported Water

Metropolitan Supply Reliability: In its Draft Regional 2005 Urban Water Management Plan (September 2005), MWD presents its supply availability at the regional level, rather than at the member agency level. With that, LBWD is not able to quantify the availability of imported supply from MWD specifically for LBWD. However, in that draft plan, MWD was able to show that it can maintain 100 percent reliability in meeting direct consumptive demand under the conditions that represent normal, single driest, and multi-dry years through 2030. Inferring from the supply reliability findings stated by MWD, LBWD concludes that MWD is capable of supplying imported water to meet demand projected by LBWD under various hydrologic conditions.

Additionally, the LBWD enjoys preferential rights to an amount of MWD's firm supplies sufficient to meet its need for MWD water.

(b) Groundwater

LBWD has the right to pump 32,684 AFY of groundwater from the Central Basin and 0.7 AFY from the West Coast Basin. LBWD has no wells in the West Coast Basin and therefore, does not pump those water rights. However, the LBWD may sometimes use those rights for the in-lieu replenishment of that basin.

The Central Basin is a groundwater aquifer under 277 square miles in mostly urbanized southern Los Angeles County. The basin was seriously over-drafted by the mid-1900's. The basin was adjudicated in Superior Court in the early 1960's, strictly limiting extractions to apportioned rights, and apportioning the pumping rights to certain parties; the judgment, therefore, provides the framework for groundwater management of this basin.

The annual pumping rights allocated in the judgment exceeds the natural yield of the basin. Therefore, in addition to restricting water production, the judgment charges the Water Replenishment District of Southern California (WRDSC) with the replenishment of the basin. Parties extracting water from the basin pay an assessment to the WRDSC for every AF extracted. This assessment is used by the WRDSC to purchase replenishment water and to fund other programs for the replenishment and protection of the basin.

Table IV.K-2 on page IV.K-16 shows the annual production from the Central Basin and West Coast Basin for the years 2000 through 2004. As indicated in Table IV.K-2, the groundwater production was less than the adjudicated rights of 32,684.7 AFY in each of these years.[11] During this period of time, LBWD worked with the MWD and the WRDSC to replenish the groundwater basin through in-lieu means. This was accomplished by the MDWSC selling surplus wet-year water to the LBWD who, in turn, retired its right to pump its full complement of water rights.

It is not anticipated that production will change as a result of cones of depression, changes in direction and amount of groundwater flow, movement and levels of contaminants, projected average annual recharge, salinity/total dissolved solid (TDS) levels or for other factors exclusive of the ones noted above. The LBWD has a very long history of successfully operating at this level of production in the Central Basin without developing significant cones of depression or changing the direction and amount of groundwater flow. The portion of the basin used by the LBWD is free of contaminants, in large part because that part of the basin is isolated from surface contamination by several layers of impermeable clay. Production is not anticipated to change as a result of average annual recharge because the recharge is managed by the

[11] *Based upon the adjudicated pumping rights of 32,684 AFY for the Central Basin and 0.7 AFY from the West Coast Basin for a total of 32,684.7 AFY.*

Table IV.K-2

Amount of Groundwater Pumped[a]
(AFY)

Basin	2000	2001	2002	2003	2004
Central Basin	24,710	25,342	24,789	27,751	21,173
% of Pumping Rights[b]	*75.6%*	*77.5%*	*75.8%*	*84.9%*	*64.8%*
West Coast Basin	--	--	--	--	--
% of Pumping Rights[b]	*0%*	*0%*	*0%*	*0%*	*0%*
% of Remaining Pumping Rights	**24.3%**	**22.5%**	**24.2%**	**15.1%**	**35.2%**

[a] *From watermaster reports.*
[b] *Based upon the adjudicated pumping rights of 32,684 AFY for the Central Basin and 0.7 AFY from the West Coast Basin for a total of 32,684.7 AFY.*
Source: Long Beach Water Department, 2005 Urban Water Management Plan, Table 4-Current and Planned Water Supplies-AF/Y, revised 2007.

WRDSC for the expressed purpose of maintaining a proper level of recharge and the revenue required to fund this recharge operation will be available because the revenue is generated from a tax on the extraction of the groundwater. Production is not anticipated to be impacted by increased salinity because the source of salinity, namely the Pacific Ocean, is prevented from entering the groundwater basin by an artificial seawater barrier created by the WRDSC's barrier injection program.

The LBWD groundwater supply is extracted from the Central Basin aquifers. As noted above, extractions from this basin are limited by order of the Superior Court and a mechanism, i.e., the WRDSC, has been in place for the last 40 years to ensure that these limited extractions do not exceed the basin's natural and artificial replenishment. The water stored in the Central and West Coast basin has increased since 1962 by 165,700 AF.

There are several programs to keep the basin replenished, these include the following:

- To the extent possible, San Gabriel River stream flows are used for replenishing the groundwater basin. The quantity of water from this source fluctuates with changes in weather patters.

- The Long Beach Judgment ensures that actual or replacement flows within and below the San Gabriel River, used for replenishment of the Central Basin, continue to meet historic averages or that replacement water is provided. On a long-term basis this flow is required, by the judgment, to meet fixed minimum benchmarks.

- Reclaimed water is mixed with other waters and allowed to percolate into the groundwater basin. Because this is a reclaimed water supply, it is very reliable, even during fluctuations in weather patters, including multiple dry years.

- MWD's imported replenishment water is purchased for replenishment in the years MWD has this water available. This source can only be interrupted on a temporary basis by MWD, for a maximum of just two years, according the MWD Board-adopted Water Surplus and Drought Management Plan.

Because sufficient storage is maintained in the Central Basin, because non-MWD sources are available for replenishment, and because extractions from the Central Basin are restricted, groundwater supplies from the aquifer are very reliable, even during multi-year droughts.

As a back-up supply in addition to the above, the LBWD also has the right, under the Central Basin judgment, to extract groundwater it has stored in the aquifers, up to 20 percent of its water rights (20 percent of 32,684 AF), and to extract in emergencies up to another 20 percent. Also, LBWD will extract, when called to, the 13,000 AFY of MWD conjunctive use water stored in the Central Basin aquifers.

(c) Reclaimed Water

LBWD receives reclaimed water from the Long Beach Reclamation Plant. This plant is not owned nor operated by the City of Long Beach. However, LBWD has rights to the tertiary water produced by the plant. The plant produces approximately 22,000 AFY of reclaimed water. The LBWD currently uses approximately 6,000 AFY and expects to increase this amount up to approximately 18,600 AFY by 2030. Because the output of the reclamation plant is basically not impacted by weather or climate change, and because the output of the plant exceeds current and expected demand for reclaimed water, this supply is considered very reliable.

(2) Water Demand

Future water demand projections in five-year increments (from 2005 to 2030) are provided by the UWMP and WSA and are based, in part, on estimated population growth. Table IV.K-3 on page IV.K-18, summarizes the estimated water demand for Long Beach through 2030. According to the LBWD's UWMP, the City's annual water demand is estimated to reach 86,600 AFY by 2030, which is an increase of 11,496 AFY, or 15 percent, from 2005. The 2005 UWMP anticipates adequate water supplies would be available to the service areas under normal, single-dry, and multiple-dry year conditions, as illustrated in Table IV.K-4 on page IV.K-19.

Table IV.K-3

Water Demand Forecast Through 2030[a]
(In AFY)

Water Use Sector	2000	2005[b]	2010[b]	2015	2020	2025	2030
Single-Family	24,268	25,435	27,026	27,601	28,516	28,990	29,329
Multi-Family	25,351	26,570	28,231	28,832	29,788	30,283	30,637
Commercial	11,595	12,153	12,912	13,187	13,624	13,851	14,013
Industrial	3,428	3,593	3,818	3,899	4,028	4,095	4,143
Government	3,898	4,086	4,341	4,433	4,580	4,656	4,711
Landscape	3,118	3,268	3,472	3,546	3,664	3,725	3,768
Total	**71,658**	**75,104**	**79,800**	**81,500**	**84,200**	**85,600**	**86,600**

[a] *Based on normal weather conditions and with projected conservation.*
[b] *2005 water use shows basically no increase over 2000 as a result of the historic rainfall in winter of 2004/2005. 2010 shows a larger increase over 2005 because demand in 2005 was suppressed as a result of the heavy rainfall.*

Source: Long Beach Water Department, 2005 Urban Water Management Plan.

Current water demand for water consists of commercial and retail uses and irrigation of existing landscaped areas located throughout the project site. Table IV.K-5 on page IV.K-20 illustrates the existing water demand in the project area. According to Table IV.K-4, the project area has an existing average water demand of approximately 69,233 mgd or 77.6 AFY.

3. PROJECT IMPACTS

a. Methodology

A comparative analysis of the average water demand associated with the proposed project was conducted to determine if sufficient water supply is available from the LBWD. Water supply and availability data was obtained from the City of Long Beach 2005 UWMP.

b. Thresholds of Significance

Appendix G of the CEQA *Guidelines* provides a checklist of questions to assist in determining whether a proposed project would have a significant impact on water supply. Based on the following issue areas identified in Appendix G of the *CEQA Guidelines*, a significant impact to water supply would occur if:

- The estimated water demand for the proposed project would exceed available water supplies or the capacity of the existing delivery system by a substantial magnitude; or

Table IV.K-4

Projected Water Supply and Demand for Normal Year, Single Dry-Year, and Multiple Dry-Year (AFY)

Supply/Demand	2010	2015	2020	2025	2030
		Normal Year Supply and Demand			
Supply Total	84,000	85,7000	88,400	89,800	90,800
Demand Total	84,000	85,7000	88,400	89,800	90,800
Difference	--	--	--	--	--
		Single Dry-Year Supply and Demand			
Supply Total	84,000	85,7000	88,400	89,800	90,800
Demand Total	84,000	85,7000	88,400	89,800	90,800
Difference	--	--	--	--	--
		Multiple Dry-Year Supply and Demand			
Supply Total	84,000	85,7000	88,400	89,800	90,800
Demand Total	84,000	85,7000	88,400	89,800	90,800
Difference	--	--	--	--	--

Source: Long Beach Water Department, 2005 Urban Water Management Plan.

- The project would require or result in the construction of new water facilities, or expansion of existing facilities, the construction of which could cause significant environmental effects.

c. Project Design Features

Residential Option, Hotel Option A, and Hotel Option B

Development within the project site would include water conservation measures such as ultra low flush toilets, and educational and informational programs, and landscape conversion and audits to help offset increasing water demands over the next 15 years.

d. Analysis of Project Impacts

(1) Construction

(a) Residential Option, Hotel Option A, and Hotel Option B

A short-term demand for water would occur during construction associated with demolition, excavation, grading, and other construction-related activities on-site. As the project would occur in phases over an approximately seven period, construction activities would occur intermittently and would be temporary in nature. The demand for water supplies for construction

Table IV.K-5

Existing Estimated Water Use

Land Use	Quantity	Sewer Generation Factor (gpd/unit)	Water Use (gpd)[a]	Acre-Feet per Year (AFY)[b]
Office	282,143 s.f.	150/1,000 s.f.	52,902	59.3
Retail	11,860 s.f.	80/1,000 s.f.	1,186	1.3
Outdoor Water Use[c]			15,145	17.0
Total			**69,233**	**77.6**

[a] *Water demand generation factors are based on City of Los Angeles Department of Water and Power (LBWD) generation factors for wastewater plus an additional 25 percent to account for evaporation and absorption losses.*

[b] *1 acre foot = 325,851 gallon*

[c] *Estimated to be 28 percent of total retail and office uses.*

Source: Los Angeles Department of Water and Power, Water Resources Division, October 22, 2008.

activities such as soil watering (i.e., for fugitive dust control), demolition and construction activities, clean up, masonry, painting, and other related activities would be temporary and would require minimal water. Therefore, the demand for water is not anticipated to have adverse impacts on the available water supply. Furthermore, the water demand generated by project construction activities would be offset by the reduction in water consumption resulting from the demolition of existing uses. Overall, demolition and construction activities would require minimal water and would not be expected to have any adverse impact on available water supplies or the existing water distribution system. Therefore, impacts associated with short-term construction activities would be less than significant under the Residential Option, Hotel Option A, and Hotel Option B.

(2) Operation

(a) Residential Option

Development of the Residential Option would result in an increase in long-term water demand for operational uses, maintenance, and other activities on the project site. Table IV.K-6 on page IV.K-21 presents the breakdown of proposed types of uses and the corresponding reductions due to existing uses. As shown in Table IV.K-6, the Residential Option water demand is estimated to be approximately 380,184 gpd or 425.9 AFY without accounting for existing site uses. As discussed above, LBWD provided water service to existing uses located on the site, which required approximately 69,233 gpd or 77.6 AFY. Thus, when taking these existing uses into account, the Residential Option would result in a net water demand of approximately 310,951 gpd or 348.3 AFY.

Table IV.K-6

Residential Option Estimated Water Use

Land Use	Quantity	Wastewater Generation Factor (gpd/unit)	Water Use (gpd)[a]	Water Use (AFY)[b]
Office	340,000 s.f.	150/1,000 s.f.	63,750	71.4
Retail	28,000 s.f.	80/1,000 s.f.	2,800	3.1
Residential	1,370 d.u.			
1-Bedroom	548	120/d.u.	82,200	92.0
2-Bedroom	754	160/d.u.	150,800	168.9
3-Bedroom	68	200/d.u.	17,000	19.0
Outdoor Water Use[c]			63,634	71.3
Total			**380,184**	**425.9**
Existing Uses			*69,233*	*77.6*
Net Difference			**310,951**	**348.3**

[a] *Water demand generation factors are based on City of Los Angeles Department of Water and Power (LBWD) generation factors for wastewater plus an additional 25 percent to account for evaporation and absorption losses.*

[b] *1 acre foot = 325,851 gallon*

[c] *Estimated to be 28 percent of total retail and office uses and 18 percent of residential uses.*

Source: Los Angeles Department of Water and Power, Water Resources Division, October 22, 2008.

As concluded in the WSA, the anticipated increase water usage of 348.3 AFY would be within the available and projected water supplies for normal, single-dry, and multiple-dry years through the year 2030 water demand projections of LBWD's 2005 UWMP. Thus, LBWD would be able to meet the water demand of the Residential Option as well as existing and planned future water demands of its service area.

In addition, compliance with State and local laws regarding water conservation measures, including pertinent provisions of Title 20 and Title 24 of the California Code of Regulations and the LBMC, would further reduce the Residential Option's water consumption estimates for the project at full build out, thereby reducing the demand on City supplies. As such, impacts regarding the availability of water to serve the Residential Option would be less than significant.

(b) Hotel Options (A and B)

Development of the Hotel Options would also result in an increase in long-term water demand for operational uses, maintenance, and other activities on the project site. Table IV.K-7 on page IV.K-22 presents the breakdown of proposed types of uses and the corresponding reductions due to existing uses. As shown in Table IV.K-7, the Hotel Options water demand is estimated to be approximately 441,589 gpd or 494.6 AFY without accounting for existing site uses. As discussed above, LBWD provided water service to existing uses located on the site,

Table IV.K-7

Hotel Options Estimated Water Use

Land Use	Quantity	Wastewater Generation Factor (gpd/unit)	Water Use (gpd)[a]	Water Use (AFY)[b]
Office	340,000 s.f.	150/1,000 s.f.	63,750	71.4
Retail	27,000 s.f.	80/1,000 s.f.	2,700	3.0
Residential	1,110 d.u.			
1-Bedroom	443	120/d.u.	66,450	74.4
2-Bedroom	612	160/d.u.	122,150	137.0
3-Bedroom	55	200/d.u.	13,750	15.4
Hotel	400 rooms	130/room	65,000	72.75
Banquet Hall/Restaurant	27,000 s.f.	800/1,000 s.f.	27,000	30.3
Outdoor Water Use[c]			80,789	90.5
Total			**441,589**	**494.6**
Existing Uses			*69,233*	*77.6*
Net Difference			**372,356**	**417.0**

[a] *Water demand generation factors are based on City of Los Angeles Department of Water and Power (LBWD) generation factors for wastewater plus an additional 25 percent to account for evaporation and absorption losses.*

[b] *1 acre foot = 325,851 gallon*

[c] *Estimated to be 28 percent of total retail, office, hotel, and banquet/restaurant uses and 18 percent of residential uses.*

Source: Los Angeles Department of Water and Power, Water Resources Division, October 22, 2008.

which required approximately 69,233 gpd or 77.6 AFY. Thus, when taking these existing uses into account, the Hotel Options would result in a net water demand of approximately 372,356 gpd or 417.0 AFY.

As previously described, the anticipated increase water usage of 318.1 AFY would be within the available and projected water supplies for normal, single-dry, and multiple-dry years through the year 2030 water demand projections of LBWD's 2005 UWMP. Thus, LBWD would be able to meet the water demand of the Hotel Options as well as existing and planned future water demands of its service area. The Hotel Options would also be required to comply with State and local laws regarding water conservation measures to further reduce the Hotel Options' water consumption. As such, impacts regarding the availability of water to serve the Hotel Options would be less than significant.

(3) Consistency with Applicable Regulations

(a) Senate Bill 610

(i) Residential Option, Hotel Option A, and Hotel Option B

As previously discussed, based on the requirements of SB 610, the project would require the preparation of a water supply assessment since the project would involve the development of more than 500 residential units within the project area or development that would need to increase water connections by 10 percent or more. As such, a water supply assessment was prepared and completed for the project and is incorporated as Appendix XX of this document. Therefore, impacts under the Residential Option, Hotel Option A, and Hotel Option B would be less than significant in this regard.

(b) Assembly Bill 3030

(i) Residential Option, Hotel Option A, and Hotel Option B

As previously discussed, the project area is currently designated as Long Beach Downtown Shoreline Planned Development (PD-6), Subarea 1. Development on the project site must occur in accordance with specific agreements and permits of the Downtown Shoreline Planned Development Plan, in which amendments to PD-6, Subarea 1 would be required. As a result, the project would include new residential, office, retail, and potential hotel uses, which would replace the impervious areas with new impervious areas. As discussed above, the proposed development would not substantially deplete groundwater supplies or interfere with groundwater recharge and would comply with Assembly Bill 3030. Therefore, impacts under the Residential Option, Hotel Option A, and Hotel Option B would be less than significant in this regard.

(c) Efficiency Standards – California Code of Regulations and Health and Safety Code

(i) Residential Option, Hotel Option A, and Hotel Option B

The future development within the project site would be developed in accordance with all applicable provisions of Title 24 of the CCR, which contains the California Building Standards, including the California Plumbing Code (Part 5) which promotes water conservation. Title 20 addresses Public Utilities and Energy and includes appliance efficiency standards that promote water conservation, which the proposed project would also be required to comply with.

Therefore, impacts under the Residential Option, Hotel Option A, and Hotel Option B would be less than significant in this regard.

(d) 2005 Urban Water Management Plan

(i) Residential Option, Hotel Option A, and Hotel Option B

As discussed above, the projected water demand for the project would fall within the LBWD's projected future water demands in the UWMP. Furthermore, the UWMP indicates that water would be available to meet the water demand of the projected service area anticipated in the UWMP until 2030. Therefore, impacts under the Residential Option, Hotel Option A, and Hotel Option B would be less than significant in this regard.

(e) City of Long Beach Municipal Code

(i) Residential Option, Hotel Option A, and Hotel Option B

The project would be required to comply with Chapter 3.90 of the LBMC, which requires payment of a surcharge to fund the continuous upgrade, improvement, and maintenance of technology for development projects and services. Therefore, impacts under the Residential Option, Hotel Option A, and Hotel Option B would be less than significant in this regard.

4. CUMULATIVE IMPACTS

a. Residential Option

As discussed above, LBWD, as a public water service provider, is required to prepare and periodically update an UWMP to plan and provide for water supplies to serve existing and projected demands. The UWMP prepared by LBWD accounts for existing development within the City, as well as projected growth anticipated to occur through redevelopment of existing uses and development of new uses. Additionally, under the provisions of SB 610, LBWD is required to prepare a comprehensive water supply assessment for every new development "project" (as defined by Section 10912 of the Water Code) within its service area. The types of projects subject to the requirements of SB 610 tend to be larger projects (i.e., residential projects with at least 500 dwelling units, shopping centers employing more than 1,000 persons or having more than 500,000 SF of floor space, commercial office buildings employing more than 1,000 persons or having more than 250,000 SF of floor space, etc.) that may or may not have been included within the growth projections of the UWMP. The water supply assessment for such projects, in conformance with the UWMP, evaluates the quality and reliability of existing and projected

water supplies, as well as alternative sources of water supply and measures to secure alternative sources if needed. In addition, as described above, SB 221 requires that for residential subdivisions with 500 units or more that are in non-urban areas, written verification from the service provider (e.g., DWP) be submitted indicating sufficient water supply is available to serve the proposed subdivision, or the local agency shall make a specified finding that sufficient water supplies are or will be available prior to completion of the project.

Section III of this Draft EIR identifies 18 related projects anticipated to be developed within the project vicinity. The water demand of the related projects is shown in Table IV.K-8 on page IV.K-26. As shown in Table IV.K-8, the related projects would have an average daily water demand of approximately 601,370 gpd or 749.2 AFY. The Residential Option, in conjunction with the related projects, would yield a total average water demand of approximately 912,321 gpd or 1,097.5 AFY. As previously stated above, the LBWD's 2005 UWMP projects yearly water demand would reach 88,400 AFY by 2020.[12] Therefore, development of the Residential Option and related projects would represent approximately 1.2 percent of the anticipated water demand by 2020. As such, the demand for water would fall within LBWD's 2005 UWMP available projected water supplies during normal, a single, and multiple dry years.

Compliance of the Residential Option and related projects with regulatory requirements that promote water conservation such as the LBWD, as well as AB 32, would also assist in assuring that adequate water supply is available on a cumulative basis. Therefore, cumulative impacts due to the water demand of the related projects in combination with the Residential Option would be less than significant.

b. Hotel Options

As shown in Table IV.K-8, the related projects would have an average daily water demand of approximately 601,370 gpd or 749.2 AFY. The Hotel Options, in conjunction with the related projects, would yield a total average water demand of approximately 973,726 gpd or 1,166 AFY. As previously stated above, the LBWD's 2005 UWMP projects yearly water demand would reach 88,400 AFY by 2020.[13] Therefore, development of the Hotel Options and related projects would represent approximately 1.3 percent of the anticipated water demand by 2020. As such, the demand for water would fall within LBWD's 2005 UWMP available projected water supplies during normal, a single, and multiple dry years.

[12] *The year 2020 is used in the analysis assuming that the project will not be built out until at least 2018.*

[13] *Ibid.*

Table IV.K-8

Cumulative Water Demand

Map No. [a]	Land Use	Intensity/ Units[b]	Wastewater Generation Factor (gpd/unit)[c]	Average Daily Water Demand (gpd)[d]	Acre-Feet Per year (AFY)[e]
1	Apartments[b]	107 d.u.	120/d.u.	16,050	18.0
2	Hotel	82 rooms	130/room	13,325	14.9
3	Apartments[b]	64 d.u.	120/d.u.	9,600	10.8
	Commercial	15,000 s.f.	80/1,000 s.f.	1,500	1.7
4	Apartments[b]	375 d.u.	120/d.u.	56,250	63.0
	Commercial	26,000 s.f.	80/1,000 s.f.	2,600	2.9
5	Condominiums[b]	216 d.u.	160/d.u.	43,200	48.4
6	Condominiums[b]	358 d.u.	160/d.u.	71,600	80.2
	Commercial	13,561 s.f.	80/1,000 s.f.	1,356	1.5
7	Condominiums[b]	51 d.u.	160/d.u.	10,200	11.4
	Hotel	47 rooms	130/room	7,638	8.6
8	Condominiums[b]	56 d.u.	160/d.u.	11,200	12.5
9	Hotel	178 rooms	130/room	27,625	30.9
10	Condominiums[b]	246 d.u.	160/d.u.	49,200	55.1
11	Apartments[b]	18 d.u.	120/d.u.	2,700	3.0
	Commercial	15,000 s.f.	80/1,000 s.f.	1,500	1.7
12	Hotel	138 rooms	130/room	22,425	25.1
13	Apartments[b]	291 d.u.	120/d.u.	43,650	48.9
	Commercial	15,580 s.f.	80/1,000 s.f.	1,558	1.7
14	Single-Family Residential[b]	82 d.u.	180/d.u.	18,450	20.7
	Commercial	7,000 s.f.	80/1,000 s.f.	700	0.8
15	Hotel	165 rooms	130/room	26,813	30.0
16	Hotel	191 rooms	130/room	31,038	34.8
17	Senior Apartments[c]	152 d.u.	120/d.u.	22,800	25.5
	Commercial	79,543 s.f.	80/1,000 s.f.	7,954	8.9
18	Courtroom	450,000 s.f.	150/1,000 s.f.	84,375	94.5
	Office	75,000 s.f.	150/1,000 s.f.	14,063	15.8
	Retail	20,000 s.f.	80/1,000 s.f.	2,000	2.2
Related Projects Total				**601,370**	**749.2**
Residential Option				**310,951**	**348.3**
Related Projects + Residential Option Total				***912,321***	***1,097.5***
Hotel Options				**372,356**	**417**
Related Projects + Residential Option Total				***973,726***	***1,166***

[a] *Corresponds with Map Nos. on Figure III-1 in Section III, Environmental Setting, of this Draft EIR.*
[b] *Assumes that the apartment and condominium units have two bedrooms.*
[c] *Assumes that the senior apartments have one bedroom.*
Source: PCR Services Corporation, 2009.

Similar to the Residential Option, the Hotel Options and related projects would be required to comply with the LBWD and AB 32, which would assist in assuring that adequate

water supply is available on a cumulative basis. Therefore, cumulative impacts due to the water demand of the related projects in combination with the Hotel Options would be less than significant.

5. MITIGATION MEASURES

a. Residential Option, Hotel Option A, and Hotel Option B

Impacts related to water supply would be less than significant under all three options. Therefore, no mitigation measures are required for the Residential Option, Hotel Option A, or Hotel Option B.

6. LEVEL OF SIGNIFICANCE AFTER MITIGATION

a. Residential Option, Hotel Option A, and Hotel Option B

The proposed project and future development within the project area would result in less than significant impacts in regards to water supply.

1. INTRODUCTION

This section addresses potential project impacts on existing solid waste facilities and service systems as well as project consistency with solid waste regulations. It provides a description of the solid waste collection services, disposal facilities serving the project site, and regulatory measures intended to minimize the volume of solid waste requiring landfill disposal. Analysis within this section estimates the amount of solid waste that would be generated by the project and forecasts potential resultant impacts on existing solid waste collection and disposal facilities.

2. ENVIRONMENTAL SETTING

a. Regulatory Environment

While solid wastes are collected at the local level by individual jurisdictions and/or private contractors, the disposal of solid waste occurs at County landfills which generally serve multiple jurisdictions across the region. Therefore, the analysis of solid waste needs to be considered within both a regional and local context.

(1) State Regulations

The State of California has enacted three key legislations relating to solid waste. These include Assembly Bill 939 – the California Integrated Waste Management Act of 1989 (Public Resources Code Sections 41000-41460), Senate Bill 1327 – the California Solid Waste Reuse and the Recycling Access Act of 1991 (Public Resources Code Sections 42900-42911), and Senate Bill 1374 – Construction and Demolition Waste Materials Diversion Requirements. Each of these regulations is described below.

(a) Assembly Bill 939 – California Integrated Waste Management Act of 1989

The California Integrated Waste Management Act of 1989 (AB 939) introduced an integrated waste management hierarchy to guide local agencies in the implementation of source

reduction, recycling, composting, and environmentally safe transformation and land disposal.[1] It required each county to establish a task force to coordinate the development of city Source Reduction and Recycling Elements (SRREs) and a countywide siting element. It also required each county to prepare, adopt, and submit an Integrated Waste Management Plan (IWMP) to the California Integrated Waste Management Board (CIWMB), which was established by AB 939 to ensure the monitoring and enforcement of AB 939 mandates. Through source reduction, recycling, and composting activities, AB 939 required each city or county to divert 50 percent of all solid waste by January 1, 2000.

(b) Senate Bill 1327 – California Solid Waste Reuse and the Recycling Access Act of 1991

The California Solid Waste Reuse and Recycling Access Act of 1991, as amended, requires individual development projects to provide adequate storage area for the collection and removal of recyclable materials. The size of these storage areas is to be determined by the appropriate jurisdiction's ordinance. If no such ordinance exists within the jurisdiction, the CIWMB-adopted ordinance shall take effect.

(c) Senate Bill 1374 – Construction and Demolition Waste Materials Diversion Requirements

Senate Bill 1374 (Kuehl) passed in 2002, requires that jurisdictions include in their annual AB 939 report a summary of the progress made in diverting construction and demolition waste. The legislation also requires that the CIWMB complete five items with regard to the diversion of construction and demolition waste: (1) adopt a model ordinance for diverting 50 to 75 percent of all construction and demolition debris from landfills; (2) consult with representatives of the League of California Cities, the California State Association of Counties, private and public waste services and building construction materials industry and construction management personnel during the development of the model ordinance; (3) compile a report on programs, other than the model ordinance, that local governments and general contractors can implement to increase the diversion of construction and demolition debris; (4) post a report on the agency's website for general contractors on methods by which contractors can increase diversion of construction and demolition waste materials; and (5) post on the agency's website a report for local governments with suggestions on programs, in addition to the model ordinance, to increase diversion of construction and demolition waste materials.

[1] *California Integrated Waste Management Board, History of California Solid Waste Law, 1985-1989, accessed online at: http://www.ciwmb.ca.gov/Statutes/Legislation/CalHist/1985to1989.htm, accessed December 2, 2008.*

(2) Regional Plans

(a) Los Angeles County Integrated Waste Management Plan

The *Los Angeles County Integrated Waste Management Plan* (CoIWMP), approved by the CIWMB on June 23, 1999, is a set of planning documents that sets forth a regional approach for the management of solid waste through source reduction, recycling and composting, and environmentally safe transformation and disposal. The CoIWMP recognizes that landfills will remain an integral part of the County's solid waste management system in the foreseeable future and assures that the waste management practices of cities and other jurisdictions in the County are consistent with the solid waste diversion goals of AB 939.

The County continually evaluates landfill needs and capacity through its preparation of the CoIWMP annual reports. Within each annual report, future landfill disposal needs over the next 15-year planning horizon are addressed in part, by determining the available landfill capacity. Landfill capacity is determined by several factors including: (1) the expiration of various landfill permits (e.g., land use permits, waste discharge requirements permits, solid waste facilities permits, and air quality permits); (2) restrictions to accepting waste generated only within a landfill's particular jurisdiction and/or watershed boundary; and (3) operational constraints. The most recent annual report was completed for 2006.

The CoIWMP includes the *Countywide Integrated Waste Management Summary Plan* (Summary Plan), which was approved by the CIWMB on June 23, 1999. Pursuant to AB 939, the Summary Plan describes the actions to be taken to achieve the mandated waste diversion goals of AB 939. The Summary Plan establishes Countywide goals and objectives for integrated waste management; establishes an administrative structure for preparing and managing the Summary Plan; describes the Countywide system of governmental solid waste management infrastructure; describes the current system of solid waste management in County and the cities; summarizes the types of solid waste programs; describes programs that could be consolidated or coordinated Countywide; and analyzes how these Countywide programs are to be financed. The County is currently in the process of updating the Summary Plan to include new revised goals and policies, to promote conversion technologies and the development of facilities to export waste to out-of-County landfills, provide an update on Countywide programs to better assist jurisdictions, and reflect changes in the Countywide solid waste management system.[2] The update of the Summary Plan is anticipated to be complete in 2010.

[2] *Los Angeles County Department of Public Works, Environmental Programs Division, Los Angeles County Integrated Waste Management Plan, 2006 Annual Report, May 2008.*

Also part of the CoIWMP and pursuant to AB 939, the County prepared the *Countywide Siting Element* (Siting Element), which identifies goals, policies, and strategies that provide for the proper planning and siting of solid waste disposal and transformation facilities for the next 15 years. The Siting Element was approved by the CIWMB on June 24, 1998, and provides strategies and establishes siting criteria for evaluating the development of needed disposal and transformation facilities. The County is also currently in the process of updating the Siting Element to reflect the most recent information regarding remaining landfill disposal capacity and the County's current strategy for maintaining adequate disposal capacity. As with the Summary Plan, the update of the Siting Element is anticipated to be complete in 2010.

(3) City of Long Beach Plans and Regulations

(a) City of Long Beach Municipal Code

Chapter 8.60 of the City of Long Beach Municipal Code (LBMC) addresses solid waste, recycling, and litter prevention in the City. Sections 8.60.025 and 8.60.020 establish standards and guidelines surrounding refuse and recycling receptacles for removing and conveying waste, Section 8.60.050 addresses waste requiring special handling (e.g., material likely to become airborne), and Section 8.60.080 discusses permitting surrounding refuse transportation. Chapter 18.97 discusses regulations surrounding the City's construction and demolition recycling program. Section 18.97.020 requires all construction projects issued a building permit after January 1, 2008 and projected to have a valuation greater than $50,000 to divert at least 60 percent of all project-related construction and demolition material.

b. Existing Conditions

(1) Solid Waste Collection

In total, the citizens and businesses of Long Beach generate approximately 585,000 tons of residential, commercial, and industrial waste each year.[3] The City has one of the highest diversion rates of any large city in the United States, with an estimated 69 percent of the City's trash diverted from disposal through recycling, reuse, and waste reduction programs for the year 2006.[4]

[3] *California Integrated Waste Management Board, Jurisdictional Diversion and Disposal Profile, accessed online at: http://www.ciwmb.ca.gov/Profiles/Juris/JurProfile2.asp?RG=C&JURID=267&JUR=Long+Beach, accessed July 10, 2009.*

[4] *Ibid.*

Residents and businesses receive a comprehensive range of refuse disposal and waste management planning services from the Refuse Collection Division of the Environmental Services Bureau. Currently, the Refuse Collection Division provides service to approximately 109,000 residential customers and 5,600 businesses. Automated Refuse Collection occurs weekly by automated refuse trucks, which are equipped with a mechanical arm that lifts and empties a specially-designed refuse cart. As a result of California's waste reduction law, monthly service charges for waste collection are based on the size and number of containers used. A number of items cannot be disposed of through the City's automated collection system. These include rocks, concrete, dirt, hot ashes, heavy items, and debris from construction, remodeling or demolition. However, the City provides Special Collections and Oversized Items service to manage such items. Residential accounts are provided with two free special collections per year, however, fees are assigned for items requiring special handling. After solid waste is collected, it is disposed at either a Class III landfill, which accepts non-hazardous solid waste, or an unclassified (inert) landfill, which accepts construction waste, yard trimmings, and earth-like waste.

(2) Class III Landfills

The County has a total of 13 Class III landfills however; the disposal of solid waste needs to be considered in the context of the regional and local levels since County landfills usually serve multiple jurisdictions.

(a) Regional

Without additional landfill capacity, it is projected that in-County disposal needs may exceed the future remaining permitted capacity. Due to the difficulties in establishing new landfills or expanding existing landfills, solid waste disposal at out-of-county facilities is necessary to meet future disposal needs.[5] Waste-by-rail allows the County to utilize out-of-county disposal facilities by transporting solid waste to remote facilities through use of an existing rail system. A waste-by-rail system consists of materials recovery facilities and transfer stations whereby recyclable materials are collected and remaining non-hazardous wastes are loaded into rail-ready shipping containers. The rail-ready shipping containers are delivered by truck to a local rail yard loading facility, where the containers are loaded onto rail cars and then transported by rail to remote landfills for disposal.

Within California, there are two landfills that are designed and permitted to receive waste via rail: the Mesquite Regional Landfill in Imperial County and the Eagle Mountain Landfill in Riverside County. In August 2000, the County Sanitation Districts of Los Angeles County

[5] *Solid Waste Management in Los Angeles County by Paul Alva, Los Angeles County Department of Public Works, http://ladpw.org/swims/Upload/Solid_Waste_Management_in_LA_County_9417.pdf, accessed December 8, 2008.*

(CSDLAC) entered into purchase agreements for both of these sites. Both sites are located approximately 200 miles east of Los Angeles along the Union Pacific Railroad. The Mesquite Regional Landfill is fully permitted to accept residual solid waste transported from southern California communities by rail. The approved landfill footprint of 2,290 acres will provide capacity for approximately 600 million tons of solid waste and 100 years of operation at a maximum of 20,000 tons per day (tpd).[6] CSDLAC, which completed the purchase of this facility in December 2002, expects the site to be operational by 2009 and ready for waste-by-rail in 2011/2012. Due to pending federal pending litigation, CSDLAC has not closed escrow on the purchase of Eagle Mountain Landfill.[7,8] If it does become operational, the Eagle Mountain Landfill would have a total capacity of 708 million tons allowing the facility to operate for over 100 years at a maximum of 20,000 tpd. Assuming the landfill would be in operation 365 days a year, the permitted amount of waste to be disposed of at this landfill per day would equate to approximately 0.076 million tons per year.

Additionally, in order to meet future disposal needs and address global climate change, the County is actively exploring and seeking the use of conversion technologies. Conversion technologies are an array of emerging technologies capable of converting post-recycling residual solid waste into useful products and chemicals, green fuels like ethanol and biodiesel, and clean, renewable energy. The County has recently launched the Southern California Conversion Technology Demonstration Project, which seeks to promote, evaluate, and establish a demonstration facility for the conversion of solid waste into clean energy.[9] Additionally, the County recently completed its final Phase II Conversion Technology Evaluation Report, which provides a comprehensive study of existing technology suppliers and materials recovery facilities throughout southern California. The County has established a goal of implementing the demonstration project facility by December 2011.

As stated in the CoIWMP *2006 Annual Report*, with the use of waste-by-rail (out-of-county) landfills, expansion of in-county landfills, and conversion technologies for up to 10,000 tpd of solid waste in 2021, the County projects that landfill capacity would be adequate to meet disposal needs for the next 15 years.[10]

---

[6] *Mesquite Regional Landfill, http://mrlf.org/index.php?pid=21; accessed December 8, 2008.*

[7] *Sanitation Districts of Los Angeles County, http://www.lacsd.org/civica/filebank/blobdload.asp?BlobID=2900, accessed December 8, 2008.*

[8] *An oral argument was held with the 9th Circuit Court in December 2007. As of September 2008, there has been no judgment from the 9th Circuit Court.*

[9] *Southern California Conversion Technologies Demonstration Project, http://www.socalconversion.org/projects.html; accessed December 8, 2008.*

[10] *Los Angeles County Integrated Waste Management Plan 2006 Annual Report, http://dpw.lacounty.gov/swims/Upload/2006_CSE_AnnualReport-Final_9783.pdf, accessed December 8, 2008.*

(b) Local

Following collection, refuse within the City is transported either directly to landfills or to landfills following combustion in the Southeast Resource Recovery Facility (SERRF), a publicly owned solid waste management facility. SERRF applies mass burn technology to reduce the volume of solid waste entering landfills by 80 percent, while concurrently generating electricity for operation of the facility as well as purchase by the Southern California Edison Company (SCE) for use by the City and State. SERRF processes an average of 1,290 tons of municipal solid waste per day with a daily capacity for 1,380 tons. It has processed over 3.5 million tons of solid waste since it first opened and has reduced the volume of solid waste entering landfills by over four million cubic yards.[11]

As illustrated in Table IV.K-9 on page IV.K-35, Long Beach is served by a total of 15 Class III landfills. The Class III landfills and waste-to-energy facilities serving Long Beach can process a total of 95,740 tpd of solid waste and have a remaining total capacity of 683 million cubic yards. Based upon a generation rate of 2.5 pounds of solid waste generated per 1,000 square feet of retail space and six pounds of solid waste generated per 1,000 square feet of office space, the project site currently generates approximately 1,723 pounds (approximately 0.86 tons) of solid waste per day.[12] This accounts for approximately 0.0009 percent of the maximum daily capacity of the landfills serving Long Beach.

(3) Unclassified Landfills

Inert wastes such as soil, concrete, asphalt, and other construction and demolition (C&D) debris are disposed of at the County's three unclassified landfills. As shown in Table IV.K-9, unclassified landfills can accommodate up to 7,710 pounds per day of inert waste. As also indicated in Table IV.K-9, the remaining disposal capacity for unclassified landfills that are open to the City is estimated at approximately 37.5 million cubic yards.

[11] *Los Angeles County Sanitation Districts, Southeast Resource Recovery Facility (SERRF) Brochure, accessed online at: http://www.lacsd.org/about/solid_waste_facilities/serrf/brochure.asp, accessed July 10, 2009.*

[12] *Generation factors obtained from the California Integrated Waste Management Board website, http://www.ciwmb.ca.gov/WasteChar/WasteGenRates/default.htm, accessed July 10, 2009.*

Table IV.K-9

Disposal Facilities Utilized by the City of Long Beach in 2008

Landfill	Maximum Daily Capacity (tpd)	Estimated Remaining Capacity[b] (million cubic yards)	Estimated Closure Date
Class III Landfills			
Antelope Valley Public Landfill II	1,800	8.2	2008
Bakersfield Metropolitan Sanitary Landfill	4,500	44.8	2038
Chiquita Canyon Sanitary Landfill	6,000	35.8	2019
El Sobrante Landfill	10,000	155.1	2030
Frank R. Bowerman Sanitary Landfill	8,500	59.4	2022
Kettleman Hills – B18 Nonhaz Codisposal	8,000	6.0	[a]
Lancaster Landfill and Recycling Center	1,700	19.1	2012
Mid-Valley Sanitary Landfill	7,500	35.3	2033
Olinda Alpha Sanitary Landfill	8,000	38.6	2013
Prima Deshecha Sanitary Landfill	4,000	87.4	2067
Puente Hills Landfill	13,200	49.4	2013
San Timoteo Sanitary Landfill	1,000	9.5	2016
Simi Valley Landfill and Recycling Center	3,000	23.2	2033
Sunshine Canyon City/County Landfill	12,100	111.2	2037
Subtotal	*89,300*	*683*	*N/A*
Waste-to-Energy			
Commerce Refuse-to-Energy Facility	1,000	N/A	N/A
Southeast Resource Recovery Facility	2,240	N/A	N/A
Covanta Stanislaus, Inc.	3,200	N/A	N/A
Subtotal	*6,440*	*N/A*	*N/A*
Total	**95,740**	**683**	**N/A**
Unclassified Landfills			
Azusa Land Reclamation Co. Landfill	6,500	34.1	2025
Peck Road Gravel Pit	1,210	3.4	2008
Total	**7,710**	**37.5**	**N/A**

[a] *Information not available.*

[b] *Remaining capacity as of January 2009.*

Source: CIWMB. http://www.ciwmb.ca.gov/Profiles/Juris/JurProfile2.asp?RG=C&JURID=267&JUR=Long+Beach, accessed July 2, 2009.

3. PROJECT IMPACTS

a. Methodology

The environmental impacts of the project with respect to solid waste are determined by comparing the project's net increase in solid waste to the capacity of existing and proposed solid waste facilities. In addition, a discussion of recycling programs and design features that would be implemented by the project is considered in the analysis.

b. Thresholds of Significance

Appendix G of the CEQA Guidelines provides a checklist of questions to assist in determining whether a proposed project would have a significant impact related to various environmental issues including solid waste. Based on the following issue areas identified in Appendix G of the CEQA Guidelines, a significant impact to solid waste services would occur if:

- The project is not served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs
- The project does not comply with federal, state, and local statutes and regulations related to solid waste.

c. Project Design Features

The project would include recycling bins at appropriate locations to promote recycling of paper, metal, glass, and other recyclable material. In addition, in compliance with Section 18.97.020 of the LBMC, all demolition and construction debris would be hauled to a sorting yard where a minimum of 60 percent of the tonnage would be diverted from landfills.

d. Analysis of Project Impacts

(1) Construction

(a) Residential Option

Construction of the Residential Option would require demolition of existing buildings, earthwork, as well as the construction of new buildings on the project site. Each of these activities would generate C&D waste including but not limited to soil, wood, asphalt, concrete,

paper, glass, plastic, metals, and cardboard that would be disposed of in the County's unclassified landfills. Specifically, construction of the Residential Option would require the following:

- Export of approximately 15,000 cubic yards of soil for excavation of the site;
- Demolition of approximately 294,003 square feet of nonresidential uses; and
- Construction of approximately 2,997,412 square feet of new residential uses and 368,000 square feet of non residential uses (340,000 square feet of office and 28,000 square feet of retail).

Therefore, in total, demolition, construction, and renovation required for the Residential Option would result in a total of 48,461 tons of C&D waste, as indicated in Table IV.K-10 on page IV.K-38. As indicated in the Project Design Features discussion above, the project would divert a minimum of 60 percent of the C&D waste away from landfills. Therefore, approximately 29,077 tons of C&D waste would be disposed of at one of the County's unclassified landfills. As such, the Residential Option's estimated solid waste generation during construction would represent approximately 0.08 percent of the estimated remaining capacity at the County's unclassified landfills serving the project site. Therefore, the County's unclassified landfills would have adequate capacity to accommodate project-generated inert waste. Thus, construction impacts under the Residential Option relative to solid waste would be less than significant.

(b) Hotel Options (A and B)

Construction of the Hotel Options would require the following:

- Export of approximately 15,000 cubic yards of soil for excavation of the site;
- Demolition of approximately 294,003 square feet of nonresidential uses; and
- Construction of approximately 2,429,412 square feet of new residential uses and 394,000 square feet of non residential uses (340,000 square feet of office, 27,000 square feet of hotel banquet/restaurant, and 27,000 square feet of retail).

Therefore, in total, demolition, construction, and renovation required for the project would result in a total of 47,267 tons of C&D waste, as indicated in Table IV.K-11 on page IV.K-39. Similar to the Residential Option, the Hotel Options would divert a minimum of 60 percent of the C&D waste away from landfills. Therefore, approximately 28,360 tons of C&D waste would be disposed of at one of the County's unclassified landfills. As such, the project's

Table IV.K-10

Estimated C&D Waste Generation for the Residential Option

Debris Type	Quantity	Generation Factor (lbs/unit) [a]	Waste Generation (tons)
Earthwork			
Soil Export	15,000 cubic yards	2,100 [b]	15,750
Demolition			
Nonresidential	294,003 square feet	173	25,431
Construction			
Residential	2,997,412 square feet	4.38	6,564
Non-residential	368,000 square feet	3.89	716
		TOTAL	**48,461**

[a] *Generation factors provided by the United States Environmental Protection Agency, "Characterization of Building-Related Construction and Demolition Debris in the United States," Table 7 and Tables A-1 through A-5, June 1998.*

[b] *Based on CIWMB Conversion Calculation of 2,100 pounds per cubic yard for earth materials, website: http://www.ciwmb.ca.gov/leatraining/resources/cdi/tools/calculations.htm.*

Source: PCR Services Corporation, 2009.

estimated solid waste generation during construction would represent approximately 0.08 percent of the estimated remaining capacity at the County's unclassified landfills serving the project site. Therefore, the County's unclassified landfills would have adequate capacity to accommodate project -generated inert waste. Thus, construction impacts under the Hotel Options relative to solid waste would be less than significant.

(2) Operation

(a) Residential Option

The project site is currently developed with approximately 294,003 square feet of office and retail uses. As illustrated in Table IV.K-12 on page IV.K-40, development of the Residential Option would result in a net increase of 5,937 pounds per day (or approximately 3.0 tpd) of solid waste or a total of approximately 1,291 tons per year.[13] This represents approximately 0.003 percent of the estimated permitted daily intake for the landfills available to accept solid waste from the project site. In addition, it should be noted that normally approximately 50 percent of total solid waste is recycled in compliance with AB 939. Based on this percentage, the Residential Option is estimated to generate approximately 2,967 pounds per day (or 1.5 tpd) of solid waste.

[13] *Please note that the yearly total includes the daily generated rates for residential and retail uses 365 days a year and office uses for five days a week for 52 weeks.*

Table IV.K-11

Estimated C&D Waste Generation for the Hotel Options

Debris Type	Quantity	Generation Factor (lbs/unit) [a]	Waste Generation (tons)
Earthwork			
Soil Export	15,000 cubic yards	2,100 [b]	15,750
Demolition			
Nonresidential	294,003 square feet	173	25,431
Construction			
Residential	2,429,412 square feet	4.38	5,320
Non-residential	394,000 square feet	3.89	766
		TOTAL	**47,267**

[a] *Generation factors provided by the United States Environmental Protection Agency, "Characterization of Building-Related Construction and Demolition Debris in the United States," Table 7 and Tables A-1 through A-5, June 1998.*

[b] *Based on CIWMB Conversion Calculation of 2,100 pounds per cubic yard for earth materials, website: http://www.ciwmb.ca.gov/leatraining/resources/cdi/tools/calculations.htm.*

Source: PCR Services Corporation, 2009.

As described in the CoIWMP *2006 Annual Report*, future disposal needs over the next 15 year planning horizon would be adequately met through the use of in-County facilities, out-of-County landfills, as well as new conversion technologies.[14] It should also be noted that with each subsequent Annual Report, the 15-year planning horizon is extended by one year, thereby providing sufficient lead time for the County to address any future shortfalls in landfill capacity. Regardless, due to the continuing decline in availability of landfill space, impacts would be potentially significant. Therefore, Mitigation Measures J.2-3 and J.2-4 have been prescribed to ensure compliance with all State, regional, and local ordinances and programs, and to reduce operational impacts to the extent feasible.

(b) Hotel Options (A and B)

As illustrated in Table IV.K-13 on page IV.K-41, development of the Hotel Options would result in a net increase of 5,827 pounds per day (or approximately 2.9 tpd) of solid waste or a total of approximately 1,271 tons per year.[15] This represents approximately 0.003 percent of the estimated permitted daily intake for the landfills available to accept solid waste from the project site. In addition, it should be noted that normally approximately 50 percent of total solid

[14] *Los Angeles County Department of Public Works, Environmental Programs Division, Los Angeles County Integrated Waste Management Plan, 2006 Annual Report, May 2008.*

[15] *Please note that the yearly total includes the daily generated rates for residential, retail, restaurant, and hotel uses 365 days a year and office uses for five days a week for 52 weeks.*

Table IV.K-12

Existing and Proposed Solid Waste Generation for the Residential Option

Land Use	Size	Generation Rate [a]	Total (lbs/day) [b]
Existing			
Retail	11,860 s.f.	2.5 lbs/k.s.f/day	30
Office	282,143 s.f.	6 lbs/k.s.f./day	1,693
		Total	**1,723**
Proposed			
Residential	1,370 units	4 lbs/unit/day	5,480
Office	340,000 s.f.	6 lbs/k.s.f./day	2,040
Retail	28,000 s.f.	5 lbs/k.s.f./day	140
		Total	**7,660**
	Difference between Existing and Proposed (Net Increase)		**5,937**

[a] *Generation factors provided by the LABS, Solid Waste Generation, 1981. Waste generation includes all materials discarded, whether or not they are later recycled or disposed of in a landfill.*

[b] *Total pounds per day have been rounded to the nearest whole number.*

Source: PCR Services Corporation, 2009.

waste is recycled in compliance with AB 939. Based on this percentage, the Hotel Options are estimated to generate approximately 2,914 pounds per day (or 1.5 tpd) of solid waste.[16]

As previously described, future disposal needs over the next 15 year planning horizon would be adequately met through the use of in-County facilities, out-of-County landfills, as well as new conversion technologies.[17] Regardless, due to the continuing decline in availability of landfill space, impacts would be potentially significant. Therefore, Mitigation Measures J.2-3 and J.2-4 have been prescribed to ensure compliance with all State, regional, and local ordinances and programs, and to reduce operational impacts to the extent feasible.

(3) Consistency with Regulatory Environment

(a) Residential Option, Hotel Option A, Hotel Option B

The City of Long Beach has reached the 50 percent diversion rate mandated by AB 939. A maximum estimated 2006 diversion rate of 69 percent was reached by the City through refuse management programs within its source reduction, recycling, composting, special waste

[16] *Totals may not add up due to rounding to the highest digit.*

[17] *Los Angeles County Department of Public Works, Environmental Programs Division, Los Angeles County Integrated Waste Management Plan, 2006 Annual Report, May 2008.*

Table IV.K-13

Existing and Proposed Solid Waste Generation for the Hotel Options

Land Use	Size	Generation Rate [a]	Total (lbs/day) [b]
Existing			
Retail	11,860 s.f.	2.5 lbs/k.s.f/day	30
Office	282,143 s.f.	6 lbs/k.s.f./day	1,693
		Total	**1,723**
Proposed			
Residential	1,110 units	4 lbs/unit/day	4,440
Office	340,000 s.f.	6 lbs/k.s.f./day	2,040
Retail	27,000 s.f.	5 lbs/k.s.f./day	135
Hotel	400 rooms	2 lbs/room/day	800
Hotel Banquet/Restaurant	27,000 s.f.	5 lbs/k.s.f/day	135
		Total	**7,550**
	Difference between Existing and Proposed (Net Increase)		**5,827**

[a] *Generation factors provided by the LABS, Solid Waste Generation, 1981. Waste generation includes all materials discarded, whether or not they are later recycled or disposed of in a landfill.*

[b] *Total pounds per day have been rounded to the nearest whole number.*

Source: PCR Services Corporation, 2009.

materials, transformation, policy incentives, facility recovery, and public education components.[18]

It should also be noted that proposed project would be LEED-certified and thus, would include project features to reduce solid waste generation. Furthermore, the project would include project features to reduce the need for solid waste disposal, including the provision of on-site recycling containers and adequate storage area for such containers. As such, the project under both the Residential Option and the Hotel Options would be consistent with the State of California Solid Waste Reuse and Recycling Access Act of 1991. In addition, the proposed project would participate in waste diversion programs to reduce the need for solid waste disposal. Therefore, the proposed project would not conflict with solid waste regulations, plans, and programs including the solid waste policies and objectives in the County's Summary Plan, Siting Element, as well as the City's General Plan Framework and Municipal Code. Impacts relative to consistency with applicable regulations addressing solid waste would be less than significant.

[18] *California Integrated Waste Management Board, Diversion Rate Measurement Calculation, Long Beach, accessed online at: http://www.ciwmb.ca.gov/lgtools/mars/DRMCnew.asp?VW=In&R1=V1&Ju=267&Yr=2005, accessed December 8, 2008.*

4. CUMULATIVE IMPACTS

a. Residential Option

Section III of this Draft EIR identifies 19 related projects that are anticipated to be developed within the vicinity of the project site. Development of these related projects would generate solid waste during their respective construction periods and on an on-going basis during their operation.

Construction of the Residential Option in conjunction with related projects would generate C&D waste and cumulatively increase the need for waste disposal at the County's unclassified landfills. The Residential Option would generate 29,077 tons of C&D waste, which would constitute approximately 0.08 percent of the estimated remaining capacity at the County's unclassified landfills processing C&D waste from the project site.[19] Thus, the Residential Option's contribution to a cumulative impact on unclassified landfills would not be significant. Additionally, as stated above, the unclassified landfills open to the City have adequate capacity for the next 372 years. As such, future shortage of disposal capacity at unclassified landfills is not expected. Further, related projects would be subject to environmental review on a case-by-case basis and thus, are anticipated to recycle C&D waste to the maximum extent feasible. Based on the above, cumulative solid waste impacts to unclassified landfills due to the Residential Option construction are concluded to be less than significant.

The estimated solid waste generation resulting from operation of related projects is shown in Table IV.K-14 on page IV.K-44. As indicated, the solid waste generation for related projects is forecasted to be 15,879.4 pounds per day (7.9 tpd) or approximately 2,898 tons per year.[20] In conjunction with the Residential Option, the total cumulative solid waste generation would be approximately 4,189 tons of solid waste per year. However, the estimate of solid waste generation from related projects does not take into account solid waste reduction measures that would be implemented and does not discount solid waste generation from existing uses that would be removed as part of related projects.

The 4,189 tons of cumulative solid waste generated per year would represent approximately 0.0006 percent of the estimated remaining capacity (approximately 683 million tons) of the seven Class III landfills (listed in Table IV.K-9 that could potentially accommodate solid waste from the project site. Additional capacity to accommodate the cumulative disposal needs of the Residential Option and related projects is the responsibility of local, county, and State solid waste management agencies and may become available as these agencies develop

[19] *This total is assuming that 60 percent of the C&D waste will be diverted from landfills.*

[20] *Totals may not add up due to rounding.*

Table IV.K-14

Cumulative Solid Waste Generation

Map No. [a]	Land Use	Intensity/ Units [b]	Solid Waste Generation Rate [c, d, e]	Total Solid Waste (lbs/day)
1	Apartments	107 d.u.	4 lbs/day/d.u.	428
2	Hotel	81 rooms	2 lbs/day/room	162
3	Apartments	64 d.u.	4 lbs/day/d.u.	256
	Commercial	15 k.s.f.	5 lbs/day/k.s.f	75
4	Apartments	375 d.u.	4 lbs/day/d.u.	1,500
	Commercial	26 k.s.f.	5 lbs/day/k.s.f	130
5	Condominiums	216 d.u.	4 lbs/day/d.u.	864
6	Condominiums	358 d.u.	4 lbs/day/d.u.	1,432
	Commercial	13.561 k.s.f.	5 lbs/day/k.s.f	67.8
7	Condominiums	51 d.u.	4 lbs/day/d.u	204
	Hotel	47 rooms	2 lbs/day/room	94
8	Condominiums	56 d.u.	4 lbs/day/d.u	224
9	Hotel	178 rooms	2 lbs/day/room	356
10	Condominiums	246 d.u.	4 lbs/day/d.u	984
11	Apartments	18 d.u.	4 lbs/day/d.u	72
	Commercial	15 k.s.f.	5 lbs/day/k.s.f	75
12	Hotel	138 rooms	2 lbs/day/room	276
13	Apartments	291 d.u.	4 lbs/day/d.u.	1,164
	Commercial	15.58 k.s.f.	5 lbs/day/k.s.f	77.9
14	Single-family Residential	82 d.u.	10 lbs/day/d.u.	820
	Commercial	7 k.s.f.	5 lbs/day/k.s.f	35
15	Hotel	165 rooms	2 lbs/day/room	330
16	Hotel	191 rooms	2 lbs/day/room	382
17	Retail/Restaurant	79.543 k.s.f.	5 lbs/day/k.s.f	397.7
	Senior Apartments	152 d.u.	4 lbs/day/d.u.	608
	Condominiums	210 d.u.	4 lbs/day/d.u.	840
18	Courtrooms	450 k.s.f.	7 lbs/day/k.s.f	3,150
	Office	75 k.s.f.	7 lbs/day/k.s.f	525
	Retail	20 k.s.f.	5 lbs/day/k.s.f	100
19	Hotel	125 rooms	2 lbs/day/room	250

Table IV.J.2-14 (Continued)

Cumulative Solid Waste Generation

Map No. [a]	Land Use	Intensity/ Units [b]	Solid Waste Generation Rate [c, d, e]	Total Solid Waste (lbs/day)
Related Projects Total				**15,879.4**
Residential Option				**5,937**
Related Projects + Residential Option				***21,816.4***
Hotel Options				**5,827**
Related Projects + Hotel Options				***21,706.4***

[a] *Related Projects Map No. refers to the related projects locations provided in Figure III-1 in Section III.0 of this Draft EIR.*

[b] *"du'- dwelling units, "s.f."- square feet, "rm" room, "st" students, " emp"- employees, "se" – seats, "vfp" – fuel pumps*

[c] *LABS, "Solid Waste Generation," 1981.*

[d] *CIWMB. Estimate Solid Waste Generation Rates for Service Establishments, Restaurant, Draft IER for North Hills Development, website http://ciwmb.ca.gov/wastechar/wastegenrates/Service.htm, accessed March 2009.*

[e] *CIWMB, Estimated Solid Waste Generation Rates for Service Establishments, Other Services (includes health club), Guide to Solid Waste and Recycling Plans for Development Projects (Santa Barbara County Public Works Department), May 2007, website http://www.ciwmb.ca.gov/wastechar/wastegenrates/Service.htm. accessed March 2009.*

[f] *No generation factor exists in terms of "employees" thus a conservative estimate was made utilizing the solid waste generation rate of 0.007 lbs per employee.*

[g] *No generation factor exists for the "jail use" thus a conservative estimate was made utilizing the solid waste generation rate of 0.007 lbs per square foot.*

[h] *No generation factor exists in terms of "seats" thus a conservative estimate was made utilizing the solid waste generation rate of 0.007 lbs per square foot.*

[i] *The related project's type of use is quantified in terms of stalls and as a hazardous waste emitter, and therefore has a special permit and waste disposal requirements.*

Source: PCR Services Corporation, 2009.

solutions to meet the future disposal needs at a regional level (e.g., expanding existing landfills, transporting waste to other landfills, converting waste to energy, recycling, and waste reduction). Furthermore, similar to the Residential Option, the related projects would be subject to the source reduction and recycling requirements established by the local jurisdiction in accordance with AB 939 (i.e., divert 50 percent of the solid waste generated from landfills through waste reduction, recycling, and composting). As with the Residential Option, future projects would also be required to participate in recycling programs, thus reducing the amount of solid waste to be disposed of at the landfills described above. However, because the precise solutions to meeting the need for landfill capacity are not known and are the responsibility of other agencies, the incremental contribution of the Residential Option, in conjunction with the contributions of related projects, would be cumulatively considerable prior to the implementation of mitigation measures.

b. Hotel Options

Section III of this Draft EIR identifies 18 related projects that are anticipated to be developed within the vicinity of the project site. Development of these related projects would generate solid waste during their respective construction periods and on an on-going basis during their operation.

Construction of the Hotel Options in conjunction with related projects would generate C&D waste and cumulatively increase the need for waste disposal at the County's unclassified landfills. The Hotel Options would generate 28,360 tons of C&D waste, which would constitute approximately 0.08 percent of the estimated remaining capacity at the County's unclassified landfills processing C&D waste from the project site.[21] Thus, the Hotel Options' contribution to a cumulative impact on unclassified landfills would not be significant. Additionally, as stated above, the unclassified landfills open to the City have adequate capacity for the next 372 years. As such, future shortage of disposal capacity at unclassified landfills is not expected. Further, related projects would be subject to environmental review on a case-by-case basis and thus, are anticipated to recycle C&D waste to the maximum extent feasible. Based on the above, cumulative solid waste impacts to unclassified landfills due to the Hotel Options construction are concluded to be less than significant.

As indicated in Table IV.K-14, in conjunction with the Hotel Options, the total cumulative solid waste generation would be approximately 4,169 tons of solid waste per year. The 4,169 tons of cumulative solid waste generated per year would represent approximately 0.0006 percent of the estimated remaining capacity (approximately 683 million tons) of the seven Class III landfills (listed in Table IV.K-9) that could potentially accommodate solid waste from the project site. However, similar to the Hotel Options, the related projects would be subject to the source reduction and recycling requirements established by the local jurisdiction in accordance with AB 939 (i.e., divert 50 percent of the solid waste generated from landfills through waste reduction, recycling, and composting). As with the Hotel Options, future projects would also be required to participate in recycling programs, thus reducing the amount of solid waste to be disposed of at the landfills described above. However, because the precise solutions to meeting the need for landfill capacity are not known and are the responsibility of other agencies, the incremental contribution of the Hotel Options, in conjunction with the contributions of related projects, would be cumulatively considerable prior to the implementation of mitigation measures.

[21] *This total is assuming that 60 percent of the C&D waste will be diverted from landfills.*

5. MITIGATION MEASURES

a. Construction

(1) Residential Option, Hotel Option A, Hotel Option B

Mitigation Measure K.2-1: Prior to the issuance of any demolition or construction permit, the Applicant shall provide a copy of the receipt or contract indicating that the construction contractor shall only contract for waste disposal services with a company that recycles demolition and construction related wastes. The contract specifying recycled waste service shall be presented to the Department of Building and Safety prior to approval of certificate of occupancy.

Mitigation Measure K.2-2: In order to facilitate on-site separation and recycling of construction related wastes, the construction contractor shall provide temporary waste separation bins on-site during demolition and construction.

b. Operational

(1) Residential Option, Hotel Option A, Hotel Option B

Mitigation Measure K.2-3: The proposed project shall include recycling bins at appropriate locations to promote recycling of paper, metal, glass, and other recyclable material. The bins shall be picked up and appropriately recycled as a part of the proposed project's regular trash disposal program.

Mitigation Measure K.2-4: New homeowners/tenants shall be provided with educational materials on the proper management and disposal of household hazardous waste, in accordance with educational materials made available by the County of Los Angeles Department of Public Works.

6. LEVEL OF SIGNIFICANCE OF AFTER MITIGATION

a. Residential Option, Hotel Option A, Hotel Option B

All impacts under the Residential Option, Hotel Option A, and Hotel Option B would be less than significant with the implementation of the recommended mitigation measures.