Appendix B

RETAIL MARKET ANALYSIS

ONE PASEO MIXED USE PROJECT

RETAIL MARKET ANALYSIS

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TABLE OF CONTENTS

INDEX OF FIGURES & TABLES

Figure/Table **Page**

1.0 Executive Summary

Kilroy Realty Corporation ("Developer" or "Kilroy") has submitted a proposal to the City of San Diego ("City" or "San Diego") to develop a 24-acre mixed-use development called One Paseo ("Project" or "One Paseo") at the southwest corner of Del Mar Heights Road and El Camino Real in the City. Kosmont Companies ("Kosmont" or "Consultant") was retained to prepare a Retail Market Analysis ("Analysis") for the Project's retail components.

As proposed, the Project's retail component is expected to include apparel, general merchandise, home furnishing and appliance, and a variety of eating and dining establishments. More specifically, the commercial retail components of the Project are expected to total approximately 220,000 square feet wherein approximately 130,000 square feet of the proposed Project's retail would be comprised of General Merchandise, Apparel, Home Furnishings / Appliances, Other ("GAFO") retailers with 60,000 square feet made up of Eating and Drinking places and the remaining 30,000 square feet as Food (grocery) users.

The Analysis evaluates the existing and projected demand for the various retail components within a ten mile radius of the proposed Project ("Trade Area"). Within the Trade Area, a primary market area ("PMA") and a secondary market area ("SMA") are identified as follows: the PMA consists of the area within a 0-4 mile radius of the Project and the SMA is comprised of an area within a 4-10 mile radius of the Project (exclusive of the PMA). These boundaries were established using industry standard radii measures, certain geographic boundaries such as the Interstate 5 / 805 interchange as well as Kosmont's experience with consumer retail shopping patterns. The existing and projected retail demand was then compared to the actual volume of sales, thereby establishing a net retail demand. The net retail demand was compared to the retail supply that would be created should the Project be developed.

It is Kosmont's conclusion that based on the existing and projected retail supply and demand it is unlikely for the Project to have a significant negative impact on the existing retail establishments within the PMA or the overall Trade Area. Kosmont estimates that should the proposed Project be developed in conjunction with other currently-planned retail projects in the Trade Area, the PMA will be underserved and maintain a net demand for additional retail square footage. When net demand exists, market conditions are generally favorable for retail businesses, and as a result retailers will not be forced to close for reasons related to insufficient demand caused by the Project. Should existing businesses close, it would likely occur on an intermittent/site-specific basis, and primarily for reasons unique to those businesses. Further, as market conditions remain favorable based on the net demand for additional retail square footage, it is unlikely the Project will cause significant business closures and long-term vacancies, which would cause property owners to cease maintaining their properties and leave decaying, unoccupied shells.

2.0 Introduction

2.1 Purpose

Kosmont Companies ("Kosmont" or "Consultant") was retained to undertake a Retail Market Analysis ("Analysis") for the retail component of a 24-acre mixed-use development known as One Paseo ("Project" or "One Paseo") in the Carmel Valley community planning area of the City of San Diego ("City") at the intersection of Del Mar Heights Road and El Camino Real.

The purpose of the Analysis is to examine existing retail market conditions and trends and evaluate the potential for future retail product to be constructed (including the proposed One Paseo Project). For purposes of this Analysis prepared for the Project, Kosmont established the following criteria to determine if the Project's market impacts would be significant enough to create a lasting physical change in a market area:

- Diversion of sales from existing retail facilities are severe enough to result in a chain reaction of business closures and subsequent long-term vacancies;
- The business closures are significant enough in scale (i.e., in terms of the total square footage affected and/or the loss of key "anchor" tenants) to affect the viability of existing shopping centers or districts; and
- Would such impacted shopping centers or districts deteriorate and lead to a decline in the associated or nearby real estate.

2.2 Sources of Information

The Analysis utilizes information from the following sources:

- Cities of San Diego, Encinitas, Del Mar, Solana Beach, Carlsbad and San Diego County
- Urban Land Institute, Dollars and Cents of Shopping Centers / The SCORE 2008
- ESRI – Demographic and market data for the area surrounding the Project
- Bureau of Labor Statistics, 2008 Consumer Expenditure Report
- Eureka Group, California Retail Survey 2010
- Cassidy Turley BRE Commercial
- Kilroy Realty Corporation
- Colliers International
- Marcus & Millichap
- US Census, 2010

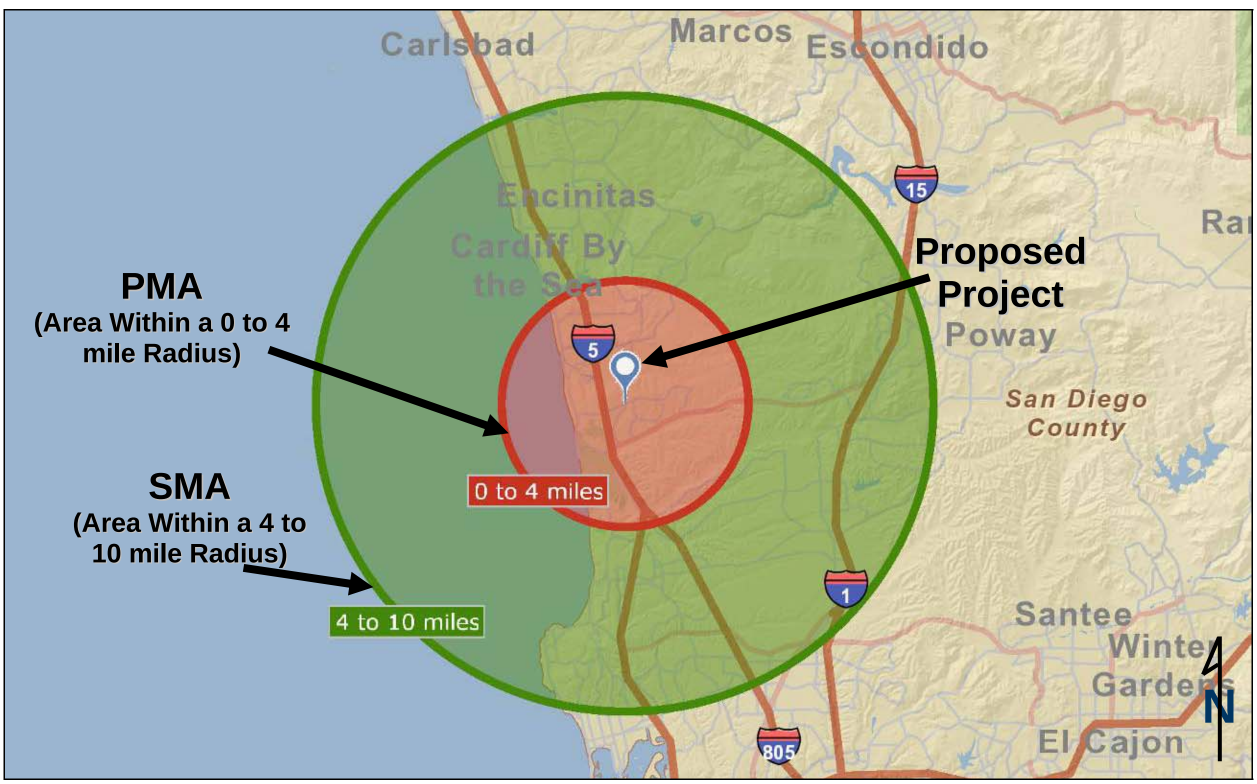
2.3 Summary of Methodology

For this Analysis a primary market area ("PMA") and a secondary market area ("SMA") were established based on industry standard radii measures in conjunction with certain geographic boundaries and market specific factors. The PMA consists of the area within a 0-4 mile radius from the Project, delineated based on the location and concentration of retail installations to the north as well as the Interstate 5 / 805 interchange which functions as a natural boundary. Additionally, 0-4 mile PMA considers the travel patterns along State Route 56, which serves as a primary transportation corridor to the Project from the east. The SMA consists of the area within a 4-10 mile radius of the Project (exclusive of the PMA) and was established based on the I-15 as an approximate eastern boundary, yet extended slightly beyond based on the location of existing retail projects to the east and north of the SMA. The total area encompassed by both the PMA and SMA is called the "Trade Area".

The Analysis includes the following steps:

1. Estimate the potential demand for apparel, general merchandise, home furnishings and appliances, other retail stores and eating and dining establishments based on existing and projected demand based on demographic data within the PMA and SMA;
2. Compare the potential demand to the historical actual sales volume of the applicable retail stores and eating/dining establishments in the PMA and SMA;
3. Evaluate the potential demand for the applicable retail stores and eating/dining establishments based on projected demographics relative to existing sales volume and potential sales volume of the proposed Project and planned/expected retail projects within the PMA and SMA.

Figure 1: Map of Primary & Secondary Market Areas



Source: ESRI; Kosmont Companies, 2011

The PMA and SMA include all of or portions of the following geographic areas:

PMA
- City of San Diego
- Unincorporated San Diego County
- Del Mar
- Solana Beach

SMA
- City of San Diego
- Unincorporated San Diego County
- Carlsbad
- Encinitas

2.4 Retail Classification

The Analysis categorizes retail into three generally accepted primary groups and corresponding subcategories as follows:

1. "Shopper Goods"
   a. Subcategories include "Apparel", "General Merchandise", "Home Furnishings / Appliances", and "Other". Collectively the Shopper Goods are commonly referred to as "GAFO" (General Merchandise, Apparel, Home Furnishings / Appliances, Other), and will be commonly referred to as such in this Analysis[1]. GAFO is a term commonly utilized in retail analysis to denote the abovementioned retail categories.
2. "Convenience Goods"
   a. The second primary category, Convenience Goods, is comprised of "Food (Supermarket/Liquor)" and "Eating and Drinking" categories.
3. "Heavy Commercial Goods".
   a. The third primary category, Heavy Commercial Goods is comprised of "Building/Hardware/Farm", "Auto Dealers and Parts", and "Service Station" categories. [2]

[1] The GAFO retail square footage ("SF") of the proposed Project is expected to consist of major retailers whose merchandise mix includes elements of each of the GAFO components and as such, the square footage of these major retailers will be evaluated as GAFO rather than on the individual components of GAFO.

[2] For reference, depending on the type of retailers included in the Project, Building/Hardware/Farm is often grouped into the GAFO category as many modern building and hardware stores sell GAFO merchandise in addition to strictly building and hardware products. The retail uses described above are for illustrative and analytical purposes. Please consult the Project description section of the EIR for a more detailed description of the retail uses proposed for the Project.

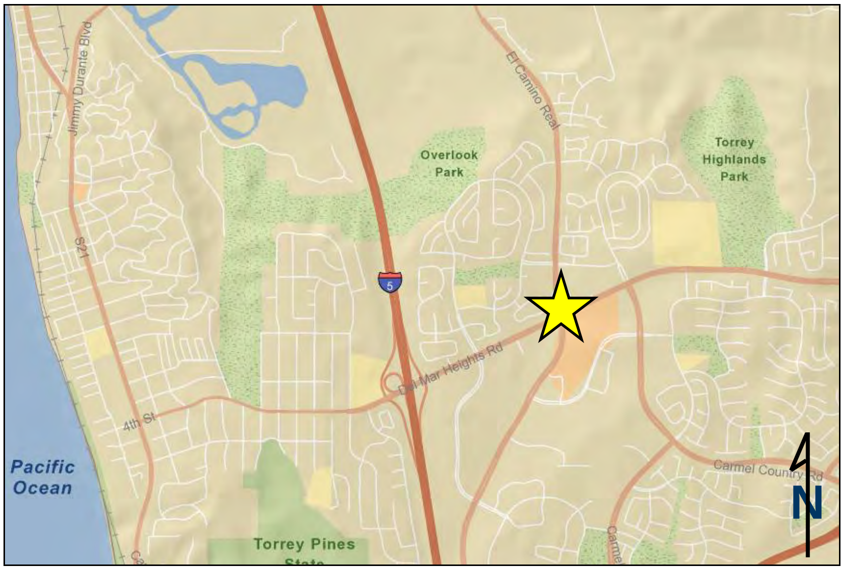
3.0 Project Description

3.1 Location

The Project is located in the Carmel Valley community planning area of the City of San Diego which is located along the western edge of San Diego County. Communities bordering the Project's location include unincorporated San Diego County and the incorporated cities of Solana Beach, Del Mar, Carlsbad and Encinitas. The Project's 24-acre site is located in the northwestern region of the City. The Interstate 5 Freeway ("I-5") is approximately 0.5 miles west of the Project and State Route 56 is approximately 1.0 miles south of the Project.

The Site is currently unimproved and lies within an urbanized area of the City consisting primarily of commercial retail, office and residential uses. The Site is bounded by residential uses to the north and northwest, commercial retail to the east and south east, commercial office to the south and west.

Figure 2: One Paseo Project Location Map ( )



Source: ESRI, 2011; Kosmont Companies, 2011

3.2 Project Components

As proposed, the mixed-use Project is anticipated to include a 220,000 square foot retail component with apparel, general merchandise, home furnishing and appliance, and a variety of eating and dining establishments. Approximately 130,000 square feet of the proposed retail would be medium-box GAFO retailers. Approximately 60,000 square feet will be made up of Eating and Drinking places and remaining 30,000 square feet as Food (grocery) users.

3.3 Project Phasing & Timing

The Project's retail component is expected to be built in three phases with phase one commencing in 2013 (approximately 100,000 square feet), phase 2 commencing in 2014 (approximately 66,000 square feet) and phase 3 commencing in 2015 (approximately 54,000 square feet). Stabilization is estimated to occur between 2014 and 2016.

4.0 Existing & Projected Retail Conditions

4.1 Existing Retail Conditions in the PMA

To examine existing conditions in the PMA, Kosmont analyzed data from the San Diego County Assessor's Office, data gathered from ESRI and from local real estate brokers and augmented these efforts by performing a windshield survey. From this research, Kosmont determined that there is currently approximately 1.90 million square feet of retail space within the PMA. This includes square footage dedicated to each of the primary retail categories (Shopper Goods, Convenience Goods and Heavy Commercial Goods). Based on information provided by Cassidy Turley BRE Commercial, the vacancy rate of core retail space in the Central San Diego County[3] area has fluctuated between a low of 0.9% during the 2005 and a high of 4.2% during 2009. Since 2005 the vacancy rate of core retail has increased steadily with a spike in 2009 and slight decline in 2010. A vacancy rate of 5% is considered stable for core retail and therefore the market appears healthy at this time as the current vacancy rate is below industry accepted conditions for levels of vacancy.

Table 1: Core Commercial Vacancy Rates

Central San Diego County Retail Vacancy Rates					
2005	2006	2007	2008	2009	2010
0.9%	1.0%	1.7%	2.0%	4.2%	4.1%

Source: Cassidy Turley BRE Commercial, 2010

4.2 Existing Retail Conditions within the Trade Area

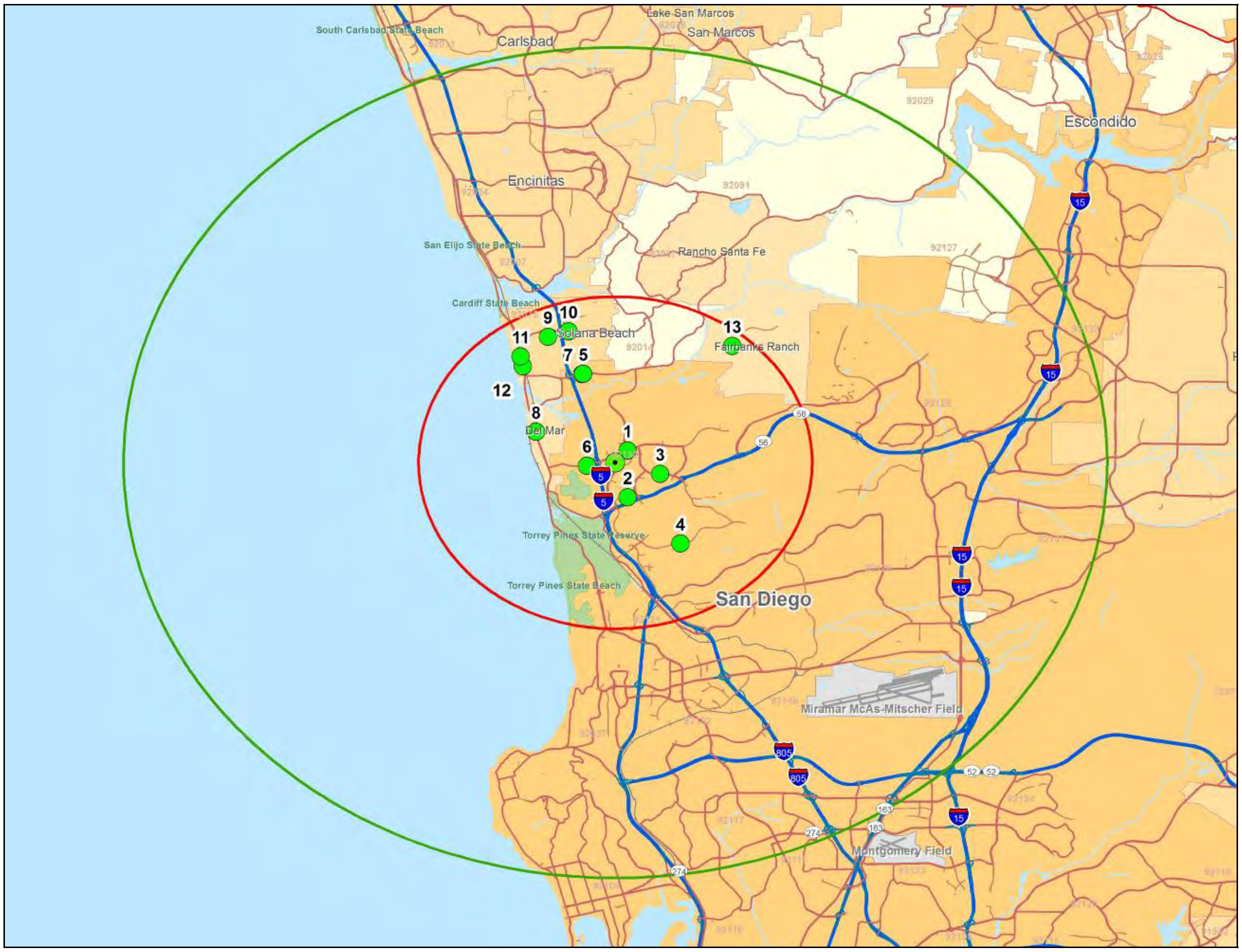
In order to evaluate existing retail conditions in the Trade Area, Kosmont analyzed over 100 retail centers within the Trade Area, representing an estimated 14.00 million square feet[4] of retail space (1.90 million in the PMA and 12.10 million in the SMA). These retail centers range in total size from a few thousand square feet up to 1.5 million square feet and include centers similar in scale to the proposed Project as well as neighborhood and community centers which are smaller than the proposed Project.

Vacancy Rates
Within the PMA, approximately 63,270 square feet of the 1.90 million square feet was vacant (a vacancy rate of 3.33%). Within the SMA, approximately 515,460 square feet of the 12.10 million square feet was vacant (a vacancy rate of 4.26%). These estimates generally confirm vacancy data as published a number of retail brokerage research reports for the area surrounding the Project.

[3] Central San Diego County is a geographic definition established by Cassidy Turley BRE Commercial which is where the One Paseo Project is located.

[4] Square footage is based on published figures from center operators/industry sources, broker data, and estimates by Kosmont based on aerial images (as needed).

Figure 3: Map of Existing Retail Centers within the PMA [5]

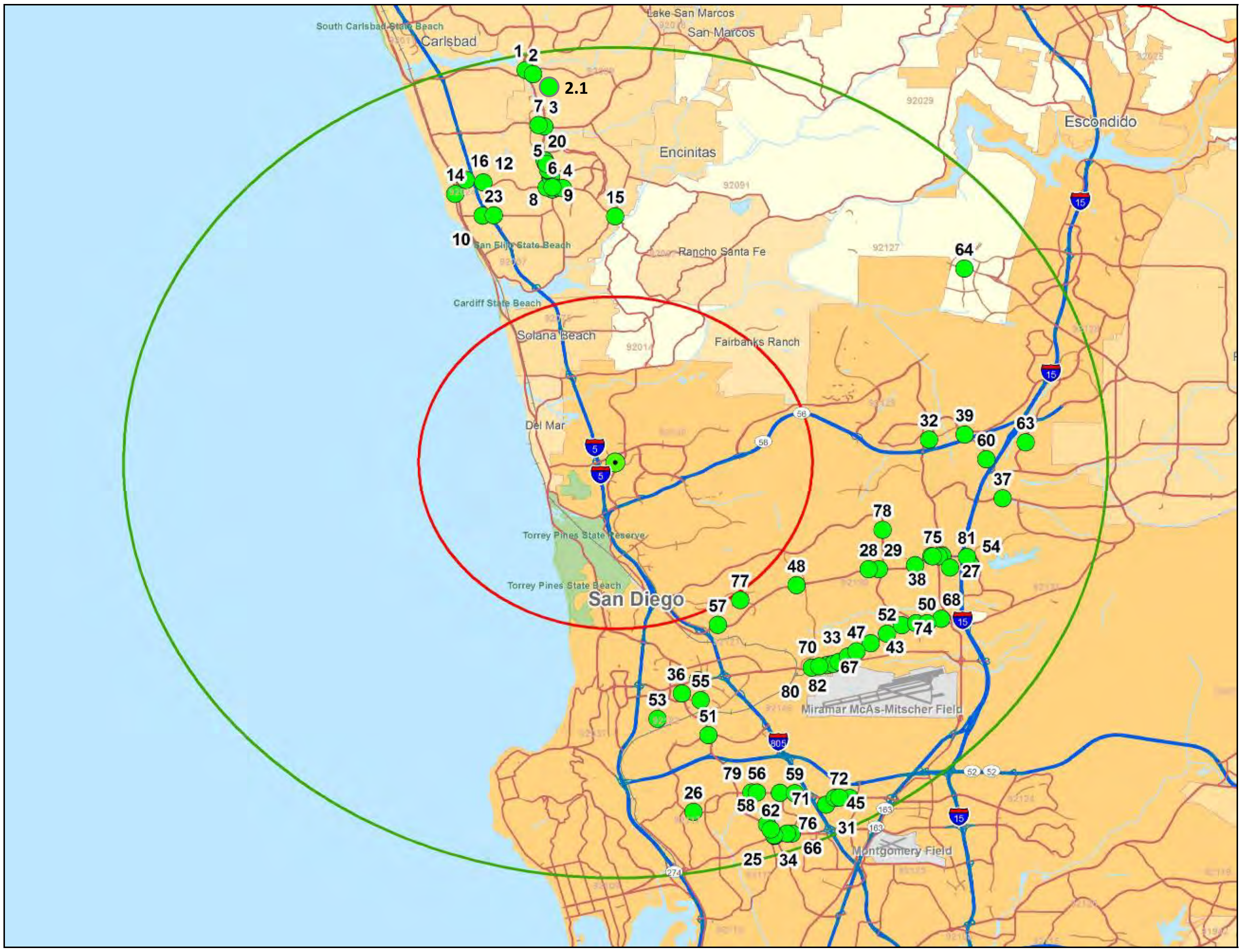


Source: Kosmont Companies, 2011

A corresponding list of existing projects in the PMA can be found in Appendix 4.2.1.

[5] The PMA and SMA boundary radii appear as ovals due to the projection methodology in the software program (ArcGIS) used to create the maps in this analysis as related to the earth's curved surface. Despite the oval appearance, the PMA and SMA boundaries are in fact circular radii around the Project.

Figure 4: Map of Existing Retail Centers within the SMA



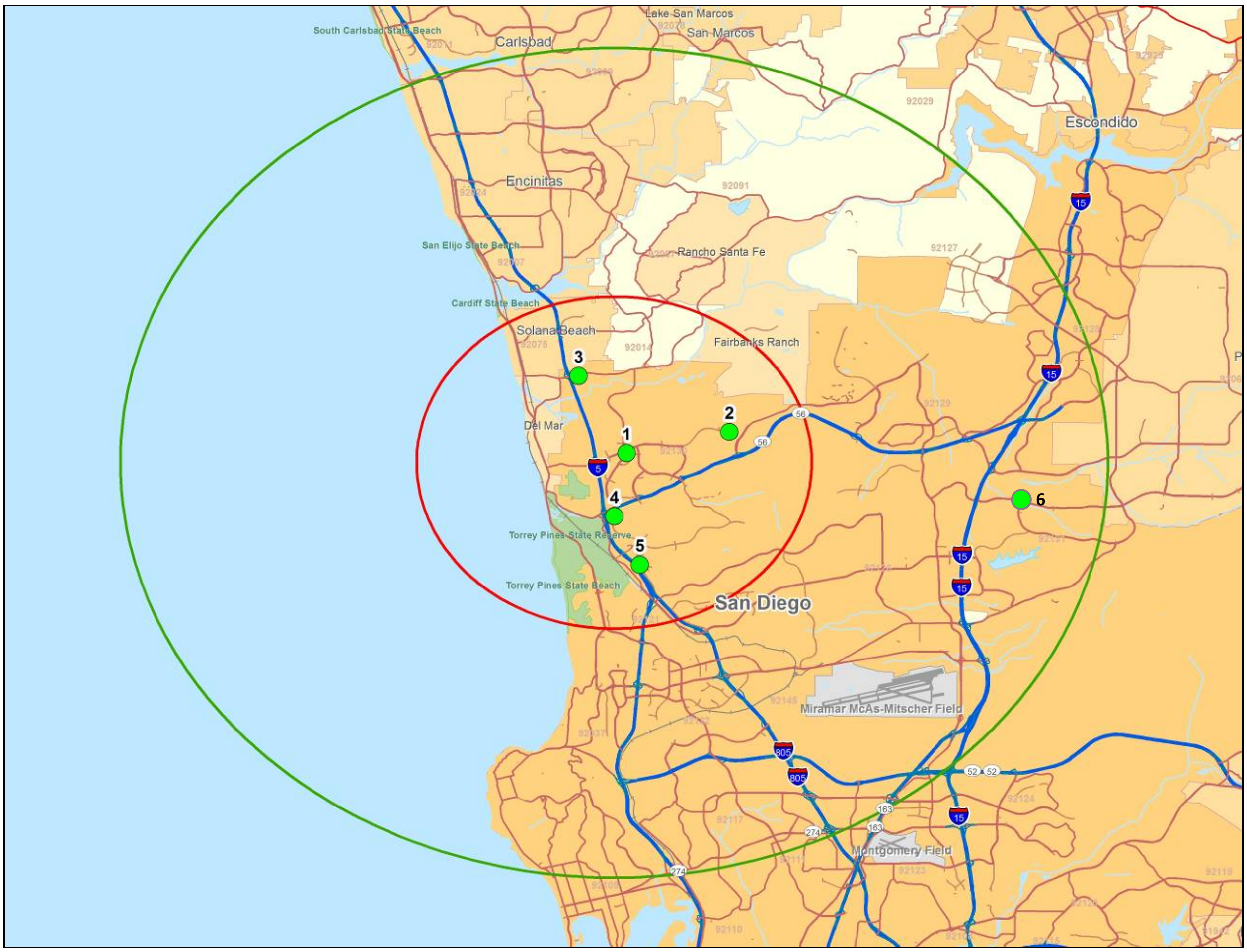
Source: Kosmont Companies, 2011

A corresponding list of existing projects in the SMA can be found in Appendix 4.2.2.

4.3 Proposed Retail Developments within the Trade Area

As part of the Analysis, Kosmont surveyed cities and parts of San Diego county to estimate potential future significant retail projects within the Trade Area. Kosmont made direct inquiries with officials in each jurisdiction's planning department to determine the planned commercial retail projects stabilizing between 2014 and 2016. Research indicates that in addition to the One Paseo Project, there could be up six (6) major projects representing approximately 800,000 square feet of retail space developed within the Trade Area within this time period.

Figure 5: Map of Proposed Retail Centers within the Trade Area



Source: Kosmont Companies, 2011

A corresponding list of proposed projects in the Trade Area can be found in Appendix 4.3.1.

5.0 Retail Demand Analysis Summary

Kosmont analyzed the potential for the development of the Project to cause significant negative impacts by studying the existing and projected retail supply and demand. The Analysis includes an evaluation of the type and amount of square footage in the proposed Project relative to the expected demand within the PMA, and the type and amount of square footage of other currently proposed projects within the Trade Area during the approximate timeframe of the Project's development.

5.1 Project Impact on Retail Demand - GAFO Component

It is anticipated that the construction of the Project will result in the creation of approximately 220,000 square feet of retail development within the Trade Area. Of the Project's total retail area, an estimated 130,000 square feet would be for GAFO retail. Based on Kosmont's analysis there is adequate GAFO retail demand to support the creation of the Project's retail square footage.

Table 2: Expected Net Supportable GAFO Retail Space

Expected Net Supportable Retail Space (Square Feet)							
Retail Category	**2009**	**2010**	**2013**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):							
Apparel	-233,480	-165,991	119,980	223,870	244,482	265,646	332,747
General Merchandise	184,650	270,785	289,175	277,586	298,529	320,018	388,083
Home Furnishings/Appliances	-57,711	-34,244	71,972	128,651	138,931	149,481	182,908
Other	510,593	648,501	487,799	451,996	490,355	529,730	654,523
Subtotal	404,051	719,050	968,925	1,082,103	1,172,296	1,264,875	1,558,261

Source: California State Board of Equalization, 2000-09; ESRI, 2011; Kosmont, 2011. An expanded version of this Table, including additional data points, is provided in Appendix 5.1.1.

It is anticipated that construction of the Project's retail components will be completed in 2015 with the first year of fully stabilized operation in 2016. As shown in Table 2, in 2016 it is projected that the PMA will be able to support a net additional 1.17 million square feet of GAFO retail square footage.

5.2 Project Impact on Retail Demand - Eating and Drinking Component

Of the Project's up to 220,000 square feet of retail, an estimated 60,000 square feet is planned for Eating and Drinking retail establishments. Based on the analysis of retail demand (see Section 6 - Retail Demand Analysis Methodology), there is adequate Eating and Drinking retail demand to support the Project's installation of additional retail square footage.

Table 3: Expected Net Supportable Eating and Drinking Retail Space

Expected Net Supportable Retail Space (Square Feet)							
Retail Category	**2009**	**2010**	**2013**	**2015**	**2016**	**2017**	**2020**
Eating and Drinking	-392,760	-278,153	71,754	350,162	392,365	435,491	572,271

Source: California State Board of Equalization, 2000-09; ESRI, 2010; Kosmont, 2011. An expanded version of this Table, including additional data points, is provided in Appendix 5.2.1.

Upon stabilization in 2016, it is projected that the Trade Area will be able to support a net additional 392,365 square feet of Eating and Drinking retail square footage.

5.3 Cumulative Impact of Projects Planned in the Trade Area

As part of the Analysis, Kosmont analyzed the characteristics and proposed opening dates of six (6) proposed retail projects within the Trade Area. To determine the likely impact of these additional projects on the retail demand at the Project location, the square footage of each of the proposed projects was multiplied by the expected capture rate based on the proposed project's location within either the PMA or SMA. In general, proposed projects within the PMA are assumed to have a much higher capture rate than those in the SMA.

Table 4: PMA & SMA Expected Capture Rates

PMA & SMA Expected Capture Rates		
Retail Category	**PMA**	**SMA**
Shopper Goods (GAFO):		
Apparel	65%	10%
General Merchandise	65%	10%
Home Furnishings/Appliances	65%	10%
Other	65%	10%
Convenience Goods:		
Food (Supermarkets/Liquor)	75%	5%
Eating and Drinking	65%	10%
Heavy Commercial Goods:		
Building/Hardware/Farm	65%	10%
Auto Dealers and Parts	25%	5%
Service Stations	65%	5%

Source: Kosmont Companies, 2011

Multiplying the proposed product square footage by the expected capture rate allows for the evaluation of the proposed projects as if they were being built at the Project location. Thus by adjusting the proposed square footage based on the expected capture rate it is possible to compare the expected retail demand at the Project location to the potential retail supply regardless of its location. A summary of the results of this Analysis follow in Tables 5 through 8. These tables are calculated by multiplying the proposed retail project square footage type by the capture rate, and are organized by year of anticipated opening.

Tables 5 through 8 support the conclusion that based on the cumulative demand of the proposed Project and the additional proposed projects within the Trade Area, there remains a net surplus demand in each of the retail categories the Project includes over the period analyzed. Should all GAFO projects proposed within the SMA and PMA be developed, in 2016 there will be a net additional demand for 675,622 GAFO square feet. Should all restaurant projects proposed within the SMA and PMA be developed, in 2016 there will be a net additional demand for 218,235 square feet of Eating and Drinking retail and net additional demand for 113,043 square feet of Food (grocery).

Supportable Food square footage and supply is shown in Table 8 as some tenants of the Project may include limited square footage allocated to Food sales.

Table 5: Total Retail Square Footage Proposed within the Trade Area

	2014	2015	2016	2017	2018
Total w/o Project	115,831	229,434	171,640	0	0
Project	58,473	46,097	41,431	0	0
Total w/ Project	174,303	275,530	213,071	0	0
Cumulative w/ Project	174,303	449,833	662,904	662,904	662,904

Source: Kosmont Companies, 2011

Table 6: Total GAFO Square Footage Proposed within the Trade Area

	2014	2015	2016	2017	2018
Total w/o Project	74,981	139,750	107,250	0	0
Project	39,423	22,750	22,328	0	0
Total w/ Project	114,403	162,500	129,578	0	0
Net Supportable SF	968,925	994,230	1,082,103	1,172,296	1,264,875
Cumulative SF	114,403	276,903	406,481	406,481	406,481
Surplus Supportable SF	854,522	717,327	675,622	765,815	858,394

Source: Kosmont Companies, 2011

Table 7: Total Eating and Drinking Square Footage Proposed within the Trade Area

	2014	2015	2016	2017	2018
Total w/o Project	2,600	37,937	52,390	0	0
Project	7,800	12,097	19,104	0	0
Total w/ Project	10,400	50,034	71,494	0	0
Net Supportable SF	71,754	308,865	350,162	392,365	435,491
Cumulative SF	10,400	60,434	131,927	131,927	131,927
Surplus Supportable SF	61,354	248,432	218,235	260,438	303,564

Source: Kosmont Companies, 2011

Table 8: Total Food Square Footage Proposed within the Trade Area

	2014	2015	2016	2017	2018
Total w/o Project	38,250	51,746	12,000	0	0
Project	11,250	11,250	0	0	0
Total w/ Project	49,500	62,996	12,000	0	0
Net Supportable SF	219,207	208,618	237,540	267,117	297,363
Cumulative SF	49,500	112,496	124,496	124,496	124,496
Surplus Supportable SF	169,707	96,122	113,043	142,621	172,867

Source: Kosmont Companies, 2011

After considering the impact of the proposed projects within the Trade Area, due to the residual surplus demand for GAFO, Food, and Eating and Drinking retail square footage, Kosmont concludes it is not probable that the Project will have an adverse economic impact on the existing GAFO, Food, or Eating and Drinking retail establishments within the Trade Area.

5.4 Potential for Adverse Impacts

Based on the Analysis herein, it is Kosmont's conclusion that it is unlikely that the Project will have an adverse impact on the existing GAFO, Food, or Eating and Drinking retail establishments within the Trade Area. Further, based on Kosmont's evaluation of the existing and projected retail market, there will in fact be a net demand for these types of retail uses. Additionally, although it is understood the Project's retail will be phased, even if the Project is approved in 2012 and fully built-out in 2013, the Analysis demonstrates there is sufficient net market demand to absorb the entire Project without adverse economic impacts to the Trade Area.

When net demand exists, market conditions are generally favorable for retail businesses, and as a result retailers will not be forced to close for reasons related to insufficient demand caused by the Project. Should existing businesses close, it would likely occur on an intermittent/site-specific basis, and primarily for reasons unique to those businesses. Further, as market conditions remain favorable based on the net demand for additional retail square footage, it is unlikely the Project will cause significant business closures and long-term vacancies, which would cause property owners to cease maintaining their properties and leave decaying, unoccupied shells.

6.0 Retail Demand Analysis Methodology

Retail demand and the resulting potential impact on the Trade Area is based on the number of existing and projected households, the income levels of those households, the percent of income traditionally spend by households of said income levels, the percent of expenditures on retail goods of the various categories, and the level of existing sales. The data related to projected demand rely on information acquired from various jurisdictions as to projects that have currently submitted planning review applications. Additional projects may be proposed during the projected Analysis timeframe horizon subject to market conditions which can fluctuate. The level of retail projects in the pipeline may reflect current recessionary conditions and the number of applications for additional retail could accelerate in future years in response to improving market and general economic conditions.

6.1 Households

The historic and projected number of households within the PMA and SMA is based on data provided by ESRI, a commercially recognized third-party demographic data provider. These data include the historic number of households in 2000 and estimated and projected figures for 2010 and 2015. Kosmont analyzed these data to project household counts for interim and future periods based on the compound annual growth rate ("CAGR") between and beyond the data points provided by ESRI. This estimate represents a CAGR of approximately 2.1% in the PMA and 1.18% in the SMA between 2010 and 2015. Projections beyond 2015 were created by utilizing historical CAGRs between the 1990 and 2010 census. This methodology results in a CAGR of 1.43% in the PMA and 0.897% in the SMA between 2016 and 2020. Approximately 15% of the total trade area households are in the PMA and 85% are in the SMA.

Table 9: PMA & SMA Historic & Projected Households

PMA & SMA Historic & Projected Households							
Area	**2000**	**2005**	**2010**	**2015**	**2016**	**2017**	**2020**
PMA	23,876	26,429	28,981	31,167	31,610	32,060	33,448
SMA	146,519	155,335	164,150	171,751	173,285	174,832	179,558
Total	**170,395**	**181,764**	**193,131**	**202,918**	**204,895**	**206,892**	**213,006**
CAGR Base Yr.		2000	2005	2013	2013	2013	2013
CAGR PMA		2.052%	1.861%	1.433%	1.430%	1.428%	1.426%
CAGR SMA		1.175%	1.110%	0.897%	0.896%	0.895%	0.894%

Source: ESRI, 2011, Kosmont Companies, 2011. An expanded version of this Table, including additional data points is provided in Appendix 6.1.1.

6.2 Household Income

The historic and projected average household income within the PMA and SMA are based on data provided by ESRI which is comprised of actual figures from the 2010 census and projections for 2010 and 2015. Based on ESRI's projections, the CAGR between 2000 and 2010 is an estimated 1.15% within the PMA, and 1.53% in the SMA. For the period of 2015 to 2020, the estimated CAGR is 1.64% in the PMA and 1.0% in the SMA. Historic and projected average household income for additional years is provided in Table 10.

Table 10: PMA & SMA Historic & Projected Average Household Income

PMA & SMA Historic & Projected Average Household Income (US Constant $)							
Area	**2000**	**2005**	**2010**	**2015**	**2016**	**2017**	**2020**
PMA	129,046	136,670	144,745	156,982	159,551	162,162	170,254
SMA	86,408	93,202	100,530	105,620	106,669	107,728	110,968
Average	**92,382**	**99,522**	**107,165**	**113,509**	**114,827**	**116,163**	**120,278**
CAGR Base Yr.		2000	2005	2013	2013	2013	2013
CAGR PMA		1.15%	1.15%	1.64%	1.64%	1.64%	1.64%
CAGR SMA		1.53%	1.53%	0.99%	0.99%	0.99%	0.99%

Source: ESRI, 2011, Kosmont Companies, 2011. An expanded version of this Table, including additional data points is provided in Appendix 6.2.1.

6.3 Total Income

In order to determine the historic and projected total income of households within the PMA and SMA the historic and projected number of households was multiplied by the historic and projected average household income for each year analyzed. For reference of scale the total income in the PMA in 2000 was $3.0 billion and the total income in the SMA in 2000 was $12.6 billion (total of $15.7 billion). Data for additional years is provided in Table 11 below.

Table 11: PMA & SMA Historic & Projected Total Income

PMA & SMA Historic & Projected Total Income (US Constant $000's)							
Area	**2000**	**2005**	**2010**	**2015**	**2016**	**2017**	**2020**
PMA	3,081,102	3,611,990	4,194,854	4,892,658	5,043,470	5,198,930	5,694,657
SMA	12,660,414	14,477,536	16,502,039	18,140,405	18,484,100	18,834,307	19,925,243
Total Income:	**15,741,516**	**18,089,526**	**20,696,893**	**23,033,063**	**23,527,570**	**24,033,237**	**25,619,901**

Source: ESRI, 2011, Kosmont Companies, 2011. An expanded version of this table, including additional data points is provided in Appendix 6.3.1.

6.4 Percentage of Income Spent on Retail Goods

Households will spend a certain percentage of their total income on retail goods. This percentage varies by region and by income level. Households within Carmel Valley and the PMA, maintain some of the highest income levels within San Diego County and spend a considerable amount on retail purchases. Through analysis of consumer expenditures documented by the U.S. Department of Labor and the U.S. Bureau of Labor Statistics, and historical income levels from Census data, Kosmont estimates that 30.95% of total income within the PMA and SMA is available for the purchase of retail goods as well as approximately 15% of purchases which will be made by visitor and business spending.

6.5 Expected Retail Sales

By multiplying the total income for the PMA and SMA by the percent of income spent on retail goods it is possible to calculate the expected quantity of retail sales within the PMA and SMA. For reference and scale based on this methodology, it is estimated that approximately $1.4 billion was spent on retail sales within the PMA in 2000 and $6.3 billion was spent on retail sales within the SMA in 2000. Expected retail sales for additional years are in Table 12 below.

Table 12: PMA & SMA Historic & Projected Expected Retail Sales

PMA & SMA Historic & Projected Expected Retail Sales (US Constant $000's)							
Area	**2000**	**2005**	**2010**	**2015**	**2016**	**2017**	**2020**
PMA	1,415,767	1,659,709	1,927,535	2,248,176	2,317,474	2,388,908	3,068,631
SMA	6,299,822	7,204,022	8,211,415	9,026,666	9,197,688	9,371,951	6,926,015
Total Expected Sales	**7,715,588**	**8,863,731**	**10,138,950**	**11,274,842**	**11,515,162**	**11,760,859**	**9,994,646**

Source: ESRI, 2011, Kosmont Companies, 2011, California State Board of Equalization, 2010. An expanded version of this table, including additional data points is provided in Appendix 6.5.1.

6.6 Sales by Retail Store Type

The next step in the Analysis is to distribute the expected taxable sales amongst the various categories of retail stores[6]. This is performed by considering the historic distribution for both the PMA and the SMA. Figures for the PMA are reported by the California State Board of Equalization ("CSBE"). As the Trade Area is based on radii from a certain point rather than municipal boundaries, information is not directly available from CSBE for the distribution of retail sales exclusive to the PMA and SMA. In order to estimate these actual sales, Kosmont determined which jurisdictions fell within the PMA and SMA boundaries and aggregated total actual sales from CSBE from those areas. To extrapolate sales figures to the PMA and SMA boundaries, Kosmont estimated the amount of land area from each municipality within the PMA and SMA and pro-rated CSBE's total actual sales figures accordingly. For example, if actual sales reported for the City of San Diego were $1.2 billion for a given retail category and year, to estimate the amount of sales within the PMA from City of San Diego, it was determined that approximately 7.37% of San Diego's land area was within the PMA and accordingly, $1.2 billion was multiplied by this percentage to determine their pro rata contribution of sales to the PMA. The percentage of each jurisdiction's land area attributed to the PMA and SMA is summarized as follows:

Jurisdiction	**PMA**	**SMA**
County of San Diego	0.13%	0.77%
City of San Diego	7.37%	26.51%
City of Solana Beach	100%	0%
City of Del Mar	100%	0%
City of Carlsbad	0%	18.28%
City of Encinitas	0%	100%

[6] Adjusted to account for non-taxable sales (i.e. grocery and drug users)

The data from CSBE are broken down into the following categories: “Apparel Stores”, “General Merchandise Stores”, “Food Stores”, “Eating and Drinking Places”, “Home Furnishing and Appliances”, “Building Material and Farm Implements”, “Auto Dealers and Auto Suppliers”, “Service Stations”, and “Other Retail Stores”. In some retail categories and years, information was unavailable from the CSBE’s Annual Taxable Sales report since inclusion of the information could result in the disclosure of confidential information. To augment this data, Kosmont took averages of available years before and after to estimate actual sales data.

Table 13: Percent of Total Retail Sales by Store Type - PMA

Percent of Total Retail Sales by Store Type							PMA Avg
Retail Stores	**2000**	**2005**	**2006**	**2007**	**2008**	**2009**	'05 - '09
Apparel Stores	5.0%	4.9%	5.1%	5.3%	6.1%	8.9%	6.1%
General Merchandise Stores	11.2%	9.7%	9.8%	9.9%	9.3%	8.6%	9.5%
Food Stores	14.4%	18.4%	18.5%	19.2%	19.3%	17.6%	18.6%
Eating and Drinking Places	15.0%	14.4%	14.8%	15.5%	16.4%	19.8%	16.2%
Home Furnishings and Appliances	4.9%	4.2%	3.8%	3.7%	4.1%	5.7%	4.3%
Bldg. Material and Farm Implements	6.4%	6.4%	6.4%	5.2%	4.5%	4.7%	5.4%
Auto Dealers and Auto Supplies	11.7%	11.5%	10.9%	11.3%	10.2%	10.2%	10.8%
Service Stations	7.0%	7.5%	8.0%	8.3%	9.4%	8.2%	8.3%
Other Retail Stores	24.5%	22.8%	22.8%	21.5%	20.7%	16.3%	20.8%
Retail Stores Totals	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	100.0%

Source: California State Board of Equalization, 2000-2009; Kosmont Companies, 2011.

The projected distribution of sales between 2009 and 2020 in the SMA is based on the average historical distribution of sales in 2000 and between 2005 and 2009 as shown below in Table 14.

Table 14: Percent of Total Retail Sales by Store Type – SMA

Percent of Total Retail Sales by Store Type							SMA Avg
Retail Stores	**2000**	**2005**	**2006**	**2007**	**2008**	**2009**	'05 - '09
Apparel Stores	4.0%	4.7%	4.9%	5.1%	6.1%	8.1%	5.8%
General Merchandise Stores	12.2%	11.5%	11.6%	12.0%	11.3%	9.7%	11.2%
Food Stores	17.0%	15.7%	16.0%	16.6%	16.7%	19.5%	16.9%
Eating and Drinking Places	12.0%	12.2%	12.7%	13.6%	14.7%	15.6%	13.7%
Home Furnishings and Appliances	4.7%	4.6%	4.3%	4.0%	4.5%	6.1%	4.7%
Bldg. Material and Farm Implements	6.9%	7.4%	7.3%	6.0%	5.2%	5.1%	6.2%
Auto Dealers and Auto Supplies	14.6%	14.2%	12.8%	13.1%	11.4%	11.0%	12.5%
Service Stations	6.5%	7.6%	8.3%	8.8%	10.5%	8.7%	8.8%
Other Retail Stores	22.2%	22.2%	22.2%	20.8%	19.6%	16.2%	20.2%
Retail Stores Totals	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	100.0%

Source: California State Board of Equalization, 2000-2009; Kosmont Companies, 2011.

6.7 Expected Retail Sales by Retail Category

In order to calculate the expected retail sales by the retail categories identified above, the total expected retail sales for each market area was multiplied by the average percentage of total retail sales by store type for each respective market area. The result is the expected retail sales volume by retail category. Below, Table 15 illustrates the expected retail sales by retail category for the PMA through 2020 and Table 16 illustrates the expected retail sales for the SMA.

Table 15: Historic & Projected Expected Retail Sales by Retail Category - PMA

Historic & Projected Expected Retail Sales by Retail Category - PMA (US Constant $000's)							
Retail Category	**2000**	**2005**	**2010**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):							
Apparel	70,263	81,641	101,964	201,165	207,366	213,757	234,140
General Merchandise	158,601	161,436	191,779	192,663	198,601	204,723	224,244
Home Furnishings/Appliances	69,446	70,322	71,582	128,462	132,422	136,504	149,520
Other	346,962	379,214	414,907	366,080	377,364	388,996	426,087
Subtotal	**645,272**	**692,612**	**780,232**	**888,370**	**915,753**	**943,980**	**1,033,990**
Convenience Goods:							
Food (Supermarkets/Liquor)	203,327	305,607	369,363	395,991	408,197	420,779	460,901
Eating and Drinking	212,368	238,879	298,082	444,024	457,711	471,819	516,808
Subtotal	**415,695**	**544,485**	**667,445**	**840,015**	**865,908**	**892,599**	**977,710**
Heavy Commercial Goods:							
Building/Hardware/Farm	90,048	106,907	100,531	105,134	108,375	111,715	122,368
Auto Dealers and Parts	166,066	191,130	218,521	230,369	237,470	244,790	268,131
Service Stations	98,686	124,574	160,807	184,288	189,969	195,824	214,496
Subtotal	**354,800**	**422,612**	**479,859**	**519,792**	**535,814**	**552,330**	**604,995**
Total Potential Retail Sales	**1,415,767**	**1,659,709**	**1,927,535**	**2,248,176**	**2,317,474**	**2,388,908**	**2,616,695**

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont Companies, 2011. An expanded version of this Table, including additional data points is provided in Appendix 6.7.1.

Table 16: Historic & Projected Expected Retail Sales by Retail Category - SMA

Historic & Projected Expected Retail Sales by Retail Category - SMA (US Constant $000's)							
Retail Category	**2000**	**2005**	**2010**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):							
Apparel	250,871	335,473	418,583	734,823	748,745	762,931	807,122
General Merchandise	767,279	830,597	982,436	874,895	891,471	908,362	960,976
Home Furnishings/Appliances	294,959	329,595	326,728	546,649	557,006	567,559	600,433
Other	1,399,241	1,599,447	1,710,605	1,458,033	1,485,657	1,513,805	1,601,489
Subtotal	**2,712,350**	**3,095,111**	**3,438,353**	**3,614,399**	**3,682,879**	**3,752,656**	**3,970,021**
Convenience Goods:							
Food (Supermarkets/Liquor)	1,071,901	1,128,551	1,366,521	1,763,577	1,796,991	1,831,037	1,937,096
Eating and Drinking	754,183	880,838	1,114,996	1,409,071	1,435,767	1,462,970	1,547,709
Subtotal	**1,826,083**	**2,009,389**	**2,481,516**	**3,172,648**	**3,232,758**	**3,294,007**	**3,484,805**
Heavy Commercial Goods:							
Building/Hardware/Farm	431,649	532,481	491,296	459,371	468,074	476,942	504,568
Auto Dealers and Parts	917,470	1,020,990	1,076,993	995,503	1,014,365	1,033,583	1,093,451
Service Stations	412,270	546,052	723,257	784,744	799,612	814,762	861,956
Subtotal	**1,761,389**	**2,099,522**	**2,291,546**	**2,239,619**	**2,282,051**	**2,325,288**	**2,459,975**
Total Potential Retail Sales	**6,299,822**	**7,204,022**	**8,211,415**	**9,026,666**	**9,197,688**	**9,371,951**	**9,914,801**

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont Companies, 2011. An expanded version of this Table, including additional data points is provided in Appendix 6.7.2.

6.8 Expected Capture Rate of Retail Demand

The next portion of the Analysis projects the percentage of each of the retail sales categories that will likely be captured by retail outlets within the PMA and SMA.

Capture rates were formulated based on several varying factors, including the base of existing retailers in the market by category, competitiveness of existing retailers, size of existing retail base, projected location of new households and current retail patterns of existing households based on interviews with commercial real estate brokers. For new developments, including planned retail projects, the capture rates also take into consideration the anticipated mix and nature of the planned retailers and the degree to which they may present retailers new to the Trade Area.

A capture rate of 65% for a particular retail category within the PMA assumes that 65% of retail demand for that retail category for individuals within the PMA will be satisfied within the PMA. A capture rate of 65% for a particular retail category within the PMA also assumes that individuals within the PMA will spend 35% of their total expenditures for that retail category at retail stores outside of the PMA. The balance of the expected capture rate not expected to be captured in the PMA or SMA is assumed to flow to other markets. The assumed percentage of sales captured for each retail category for the PMA and SMA are illustrated below in Table 17.

Table 17: PMA & SMA Expected Capture Rates

PMA & SMA Expected Capture Rates		
Retail Category	**PMA**	**SMA**
Shopper Goods (GAFO):		
Apparel	65%	10%
General Merchandise	65%	10%
Home Furnishings/Appliances	65%	10%
Other	65%	10%
Convenience Goods:		
Food (Supermarkets/Liquor)	75%	5%
Eating and Drinking	65%	10%
Heavy Commercial Goods:		
Building/Hardware/Farm	65%	10%
Auto Dealers and Parts	25%	5%
Service Stations	65%	5%

Source: Kosmont Companies, 2011

As shown in Table 17 above, it is assumed that approximately 65% of PMA retail demand for Shopper Goods and Eating and Drinking will be accommodated within the PMA, and that approximated 10% of the SMA demand for the same retail categories will be accommodated within the PMA. These assumptions dictate that approximately 35% of PMA demand for Shopper Goods and Eating and Drinking will be accommodated outside of the PMA, and approximately 90% of the SMA demand for the same retail categories will be accommodated outside of the Trade Area.

6.9 Expected Sales Capture

In order to calculate the expected capture of sales within the PMA the expected sales for each retail category of each market area is multiplied by the expected capture rates for each retail category and market area. The results of the calculation are shown below for the PMA, SMA, and PMA & SMA combined in Tables 18 through 20, respectively.

Table 18: Expected Sales Capture – PMA

Expected Sales Capture - PMA (US Constant $000's)						
Retail Category	**2009**	**2010**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):						
Apparel	57,131	66,276	130,757	134,788	138,942	152,191
General Merchandise	108,518	124,657	125,231	129,091	133,070	145,759
Home Furnishings/Appliances	41,830	46,528	83,500	86,074	88,727	97,188
Other	253,734	269,689	237,952	245,286	252,847	276,957
Subtotal	461,213	507,151	577,440	595,239	613,587	672,094
Convenience Goods:						
Food (Supermarkets/Liquor)	152,495	229,205	279,441	288,112	296,993	325,312
Eating and Drinking	138,039	155,271	271,558	279,986	288,616	316,136
Subtotal	290,534	384,476	550,999	568,098	585,609	641,448
Heavy Commercial Goods:						
Building/Hardware/Farm	58,531	69,490	64,298	66,294	68,337	74,853
Auto Dealers and Parts	41,516	47,783	54,189	55,870	57,592	63,084
Service Stations	64,146	80,973	112,708	116,205	119,787	131,209
Subtotal	164,194	198,245	231,195	238,369	245,717	269,146
Total Potential Retail Sales	915,940	1,089,872	1,359,634	1,401,706	1,444,913	1,582,688

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont Companies, 2011. An expanded version of this Table, including additional data points is provided in Appendix 6.9.1.

Table 19: Expected Sales Capture – SMA

Expected Sales Capture - SMA (US Constant $000's)						
Retail Category	**2009**	**2010**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):						
Apparel	25,087	33,547	70,769	72,116	73,482	77,739
General Merchandise	76,728	83,060	84,259	85,863	87,490	92,557
Home Furnishings/Appliances	29,496	32,959	52,647	53,648	54,665	57,831
Other	139,924	159,945	140,420	143,092	145,803	154,249
Subtotal	271,235	309,511	348,096	354,719	361,440	382,376
Convenience Goods:						
Food (Supermarkets/Liquor)	53,595	56,428	84,923	86,539	88,179	93,286
Eating and Drinking	75,418	88,084	135,705	138,287	140,907	149,069
Subtotal	129,013	144,511	220,628	224,826	229,086	242,355
Heavy Commercial Goods:						
Building/Hardware/Farm	43,165	53,248	44,241	45,083	45,937	48,598
Auto Dealers and Parts	45,873	51,049	47,938	48,850	49,775	52,658
Service Stations	20,614	27,303	37,789	38,508	39,237	41,510
Subtotal	109,652	131,600	129,967	132,440	134,949	142,766
Total Potential Retail Sales	509,900	585,623	698,691	711,986	725,475	767,497

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont Companies, 2011. An expanded version of this Table, including additional data points is provided in Appendix 6.9.2.

Table 20: Expected Sales Capture – PMA & SMA

Expected Sales Capture - PMA & SMA (US Constant $000's)						
Retail Category	**2009**	**2010**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):						
Apparel	82,218	99,824	201,527	206,904	212,425	229,929
General Merchandise	185,246	207,716	209,490	214,954	220,560	238,316
Home Furnishings/Appliances	71,325	79,488	136,147	139,723	143,392	155,019
Other	393,658	429,634	378,372	388,379	398,650	431,205
Subtotal	732,448	816,662	925,536	949,959	975,027	1,054,469
Convenience Goods:						
Food (Supermarkets/Liquor)	206,090	285,632	364,364	374,652	385,172	418,598
Eating and Drinking	213,457	243,355	407,263	418,273	429,523	465,205
Subtotal	419,548	528,987	771,627	792,924	814,695	883,803
Heavy Commercial Goods:						
Building/Hardware/Farm	101,696	122,738	108,539	111,377	114,274	123,451
Auto Dealers and Parts	87,390	98,832	102,126	104,720	107,367	115,742
Service Stations	84,760	108,276	150,496	154,713	159,025	172,719
Subtotal	273,845	329,846	361,162	370,809	380,666	411,912
Total Potential Retail Sales	1,425,840	1,675,495	2,058,325	2,113,692	2,170,388	2,350,185

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont Companies, 2011. An expanded version of this Table, including additional data points is provided in Appendix 6.9.3.

6.10 Retail Sales Leakage Analysis

Sales leakage is a phenomenon related primarily to the retail industry wherein a defined geographic area may lack certain retail categories of shopping amenities as reflected by number of outlets and corresponding gross leaseable area (“GLA”) per category (e.g. durable goods), sufficient to retain its residents’ spending dollars. Sales leakage is calculated as the amount of total “sales” within a defined geographic area minus the amount of “spending” by residents from that same area. “Sales” is defined by the total dollar amount which has been transacted annually within a geographic area (by both residents and non-residents) and “spending” is defined by total annual dollar purchases made by residents of and within that same geographic area.

Leakage occurs if residents’ buying activity “leaks” to outside areas, typically indicating that the trade area is underserved in certain retail sales categories. By comparison, an area that is not leaking sales is likely attracting outside sales dollars. For example, if in a city, overall resident spending in the Grocery sector reached $1,000 per household and sales within the city are tolled at $250 per household, this would imply that as much as $750 per household is leaking to outside areas providing outlets in that category. Alternatively, if household spending on groceries was lower, at $500 and sales from the same resident pool were higher at $1,000, then the difference of $500 is being attracted from outside areas to the city.

The leakage analysis compares the expected retail sales volume based on the combined expected sales capture to the actual sales volume of the PMA. The most recent data for comparison available from the CSBE is for 2009, and as such, the leakage analysis was performed for that year as shown in Table 21.

Table 21: Expected Demand vs. Actual Sales (Leakage Analysis)

Expected Demand vs. Actual Sales (Leakage Analysis) - (US Constant $000's)				
Retail Category	**Expected 2009 Demand**	**2009 Actual Sales**	**Expected Minus Actual**	**Percent Actual/Expected**
Shopper Goods (GAFO):				
Apparel	82,218	143,126	-60,908	174%
General Merchandise	185,246	137,077	48,170	74%
Home Furnishings/Appliances	71,325	91,399	-20,073	128%
Other	393,658	260,460	133,198	66%
Subtotal	732,448	632,061	100,386	86%
Convenience Goods:				
Food (Supermarkets/Liquor)	206,090	281,741	-75,651	137%
Eating and Drinking	213,457	315,916	-102,459	148%
Subtotal	419,548	597,658	-178,110	142%
Heavy Commercial Goods:				
Building/Hardware/Farm	101,696	74,801	26,895	74%
Auto Dealers and Parts	87,390	163,904	-76,514	188%
Service Stations	84,760	131,118	-46,359	155%
Subtotal	273,845	369,824	-95,978	135%
Total Potential Retail Sales	1,425,840	1,599,543	-173,702	112%

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont Companies, 2011.

6.11 Net Retail Demand

The net retail demand within the PMA is the difference between the expected demand and actual sales. To project future years the expected demand for future years is compared to the actual sales volume for 2009. The expected net retail demand for 2009 through 2020 is shown in Table 22.

Table 22: Expected Net Retail Demand

Expected Net Retail Demand (US Constant $000's)						
Retail Category	**2009**	**2010**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):						
Apparel	(60,908)	(43,302)	58,401	63,778	69,299	86,804
General Merchandise	48,170	70,640	72,414	77,877	83,483	101,239
Home Furnishings/Appliances	(20,073)	(11,911)	44,748	48,324	51,993	63,620
Other	133,198	169,174	117,912	127,919	138,190	170,745
Subtotal	100,386	184,601	293,475	317,897	342,966	422,408
Convenience Goods:						
Food (Supermarkets/Liquor)	(75,651)	3,891	82,623	92,910	103,431	136,857
Eating and Drinking	(102,459)	(72,562)	91,347	102,356	113,606	149,288
Subtotal	(178,110)	(68,671)	173,969	195,266	217,037	286,145
Heavy Commercial Goods:						
Building/Hardware/Farm	26,895	47,937	33,738	36,575	39,473	48,650
Auto Dealers and Parts	(76,514)	(65,072)	(61,778)	(59,184)	(56,537)	(48,162)
Service Stations	(46,359)	(22,842)	19,378	23,595	27,906	41,601
Subtotal	(95,978)	(39,978)	(8,662)	986	10,843	42,089
Total Potential Retail Sales	(173,702)	75,952	458,782	514,149	570,845	750,642

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont Companies, 2011. An expanded version of this Table, including additional data points is provided in Appendix 6.11.1.

6.12 Net Supportable Retail Square Footage

The final step in this portion of the Analysis is to determine the amount of retail square footage supportable by the expected net retail demand for each category. In order to calculate the supportable square footage, the average sales per square foot must be determined. Estimates of sales per square foot for each retail category utilized in this analysis are based on data from Dollars and Cents of Shopping Centers/The SCORE 2008 in addition to market data and Kosmont's review of retail sales data levels from various industry sources and/or projects. These estimates are listed in Table 23.

Table 23: Expected Sales per Square Foot

Expected Sales Per Square Foot	
Retail Category	**Sales/SF**
Shopper Goods (GAFO):	
Apparel	**$300**
General Merchandise	**$300**
Home Furnishings/Appliances	**$400**
Other	**$300**
Convenience Goods:	
Food (Supermarkets/Liquor)	**$400**
Eating and Drinking	**$300**
Heavy Commercial Goods:	
Building/Hardware/Farm	**$300**
Auto Dealers and Parts	**$600**
Service Stations	**$1,200**

Source: Dollars and Cents of Shopping Centers/The SCORE, 2008; Kosmont Companies, 2011

The expected net (additional incremental) supportable retail space is then calculated by dividing the expected net retail demand by the expected sales per square foot. For the purposes of this Analysis it is assumed that expected sales per square foot will not escalate with time. This assumption is sound as the household income is also assumed to be constant as discussed in Section 6.2: Household Income. Finally, the figures below include a 5% increase in square footage as a vacancy factor, and a 10% increase for ancillary/support space. The expected net supportable retail space is shown in Table 24.

Table 24: Net Supportable Retail Space

Expected Net Supportable Retail Space (Square Feet)						
Retail Category	**2009**	**2010**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):						
Apparel	-233,480	-165,991	223,870	244,482	265,646	332,747
General Merchandise	184,650	270,785	277,586	298,529	320,018	388,083
Home Furnishings/Appliances	-57,711	-34,244	128,651	138,931	149,481	182,908
Other	510,593	648,501	451,996	490,355	529,730	654,523
Subtotal	404,051	719,050	1,082,103	1,172,296	1,264,875	1,558,261
Convenience Goods:						
Food (Supermarkets/Liquor)	-217,497	11,187	237,540	267,117	297,363	393,464
Eating and Drinking	-392,760	-278,153	350,162	392,365	435,491	572,271
Subtotal	-610,257	-266,966	587,702	659,482	732,854	965,735
Heavy Commercial Goods:						
Building/Hardware/Farm	103,096	183,757	129,330	140,205	151,313	186,491
Auto Dealers and Parts	-146,652	-124,722	-118,408	-113,437	-108,362	-92,311
Service Stations	-44,427	-21,891	18,571	22,612	26,744	39,868
Subtotal	-87,983	37,144	29,492	49,380	69,695	134,048
Net Supportable Retail SF	-294,190	489,229	1,699,297	1,881,158	2,067,423	2,658,044

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont Companies, 2011. An expanded version of this Table, including additional data points is provided in Appendix 6.12.1.

6.13 Conclusion

Based on the foregoing Analysis, Kosmont concludes that should the proposed Project be developed, there is sufficient retail demand within the Trade Area to support the Project without having an adverse economic impact on the existing retail establishments within the Trade Area.

7.0 Definitions & Assumptions

Compound Annual Growth Rate: ("CAGR") The year-over-year growth rate over a specified period of time.

Household (or Consumer Unit): A Household is a consumer unit defined as either (1) all members of a particular household who are related by blood, marriage, adoption, or other legal arrangements; (2) a person living alone or sharing a household with others or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent; or (3) two or more persons living together who pool their income to make joint expenditure decisions. Financial independence is determined by the three major expense categories: housing, food, and other living expenses. To be considered financially independent, a respondent must provide at least two of the three major expense categories.

Household Growth: The growth in number of households as projected by available technical/professional or government data.

Household Income: Household income is the sum of money income received in the calendar year by all household members 15 years old and over, including household members not related to the householder, people living alone, and other nonfamily household members. Included in the total are amounts reported separately for wage or salary income; net self-employment income; interest, dividends, or net rental or royalty income or income from estates and trusts; Social Security or Railroad Retirement income; Supplemental Security Income (SSI); public assistance or welfare payments; retirement, survivor, or disability pensions; and all other income.

Sales Leakage: Sales leakage is calculated as the amount of total "sales" within a defined geographic area minus the amount of "spending" by residents from that same area. "Sales" is defined by the total dollar amount which has been transacted annually within a geographic area (by both residents and non-residents) and "spending" is defined by total dollar purchases made by residents of and within that same geographic area.

Trade Area: The Trade Area is defined by a ten mile radius around the Project. This Trade Area is broken up into two Market Areas: the Primary Market Area ("PMA") and Secondary Market Area ("SMA"). The PMA is defined as a 0-4 mile radius from the Project. The SMA is defined as a 4-10 mile radius from the Project (exclusive of the PMA).

Appendices

Appendix 4.2.1

	Existing Retail Centers within the PMA					
	Project Name	Location	Description	Square Feet	Primary Retail Types	Vacancy Rate
	City of San Diego (PMA)					
1	Del Mar Highlands Town Center	3433 Del Mar Heights Rd	Community Center: Ralphs, Ultra Star Cinemas, Rite Aid, Barnes & Noble	269,606	GAFO, Food, Eating and Drinking	5.56%
2	Piazza Carmel	3804 Valley Centre Dr	Neighborhood Center: Vons, Ace Hardware	215,096	GAFO, Food, Eating and Drinking, Building/Hardware	1.05%
3	Carmel Country Plaza	12750 Carmel Country Rd	Neighborhood Center	93,754	GAFO, Eating and Drinking	0.00%
4	Torrey Hills Marketplace	4639 Carmel Mountain Rd	Neighborhood Center: Vons	85,834	Food, Eating and Drinking	2.33%
	Del Mar (PMA)					
5	Del Mar Center	2707 Via De La Valle	Neighborhood Center: Albertsons, PETCO, Dunn-Edwards Paints, Pier 1 Imports	164,034	GAFO, Food, Eating and Drinking, Building/Hardware	2.73%
6	Del Mar Heights Village	2602 Del Mar Heights Rd	Neighborhood Center: Vons, CVS Pharmacy	161,590	GAFO, Food, Eating and Drinking	0.00%
7	Flower Hill Promenade	2610 Via De La Valle	Neighborhood Center: UltraStar Cinemas	108,020	GAFO, Food, Eating and Drinking	5.95%
8	Del Mar Plaza	1555 Camino Del Mar	Neighborhood Center: Harvest Ranch Market	74,631	GAFO, Food, Eating and Drinking	9.53%
	Solana Beach (PMA)					
9	Solana Beach Town Centre	622 San Rodolfo Dr	Community Center: Dixieline ProBuild, Marshalls, Discount Tire Company, Inc., CVS Pharmacy, Henry's Farmers Market	256,728	GAFO, Food, Eating and Drinking, Building/Hardware	1.99%
10	Lomas Santa Fe Plaza & Gardens	911 Lomas Santa Fe Dr	Community Center: Vons, Ross Dress for Less, We-R-Fabrics, Inc.	239,422	GAFO, Eating and Drinking	4.60%
11	BeachWalk Shopping Center	437 S Highway 101	Strip Center	53,636	GAFO, Eating and Drinking	8.74%
12	Mercado Del Sol	731 S Hwy 101	Neighborhood Center	39,745	GAFO, Food, Eating and Drinking	0.00%
	Unincorporated San Diego County (PMA)					
13	Del Rayo Village	16089 San Dieguito Rd	Neighborhood Center	69,422	GAFO, Eating and Drinking	0.00%

Source: Kosmont Companies; Colliers International, 2011

Appendix 4.2.2

	Existing Retail Centers within the SMA					
	Project Name	Location	Description	Square Feet	Primary Retail Types	Vacancy Rate
	Carlsbad (SMA)					
1	La Costa Towne Center	7720 El Camino Real	Neighborhood Center	195,844	GAFO, Food, Eating and Drinking	6.64%
2	La Costa Plaza	1980 La Costa Ave	Neighborhood Center: Albertsons	80,739	Food, Eating and Drinking	0.00%
2.1	The Forum at Carlsbad	1901 Calle Barcelona	Lifestyle Center	264,586	GAFO, Food, Eating and Drinking	N/A
	Encinitas (SMA)					
3	Encinitas Ranch Town Center	1006 N El Camino Real	Power Center: Target, Stater Bros., Sports Authority, Best Buy, Office Depot, Ross Dress for Less, PetSmart, Barnes & Noble	795,033	GAFO, Food, Eating and Drinking	4.72%
4	El Camino Commons	141 S El Camino Real	Community Center: 99 Cents Only Store, Kelly Paper	252,083	GAFO, Food, Eating and Drinking	1.64%
5	Camino Village Plaza	256 El Camino Real	Community Center: Vons, HomeGoods, Pep Boys	238,363	GAFO, Food, Eating and Drinking, Building/Hardware	1.17%
6	Encinitas Village	105 N El Camino Real	Community Center: Ralphs, CVS Pharmacy, Trader Joe's	183,675	GAFO, Food, Eating and Drinking	20.82%
7	The Plaza Encinitas Ranch	1550 Leucadia Blvd	Power Center	177,995	GAFO, Food, Eating and Drinking	0.00%
8	El Camino Promenade	204 N El Camino Real	Community Center: Golf Galaxy, BevMo! Staples, Dollar Tree	140,594	GAFO, Food	2.31%
9	Encinitas Marketplace	118 N El Camino Real	Neighborhood Center	135,455	GAFO, Eating and Drinking	5.11%
10	Santa Fe Plaza	415 Santa Fe Dr	Neighborhood Center: Rite Aid	103,875	GAFO, Eating and Drinking	3.99%
11	No Name	331 El Camino Real	Community Center: Michaels	96,043	GAFO, Eating and Drinking	N.A
12	Encinitas Town & Country Shopping Center	407 Encinitas Blvd	Neighborhood Center: CVS Pharmacy	88,977	GAFO, Eating and Drinking	0.00%
13	Henry's Marketplace Center	1271 Encinitas Blvd	Neighborhood Center: Henry's Farmers Market	88,734	GAFO, Food	5.75%
14	The Lumberyard	701 S Coast Hwy 101	Neighborhood Center: Billabong Store	81,398	GAFO, Eating and Drinking	7.21%
15	Rancho Santa Fe Plaza	162 S Rancho Santa Fe Rd	Neighborhood Center	70,629	GAFO	1.51%
16	Big Bear Encinitas Center	154 Encinitas Blvd	Neighborhood Center: PETCO, Smart & Final	55,672	GAFO	0.00%

(Continued)

17	Encinitas Village Square I & II	1500 Encinitas Blvd	Neighborhood Center	47,263	GAFO, Eating and Drinking	15.93%
18	251-277 N El Camino Real	247 N El Camino Real	Neighborhood Center	45,139	GAFO, Eating and Drinking	2.44%
19	Camino Encinitas Plaza	318 N El Camino Real	Theme/Festival Center	44,099	GAFO, Eating and Drinking	0.00%
20	Little Oaks Plaza	362 N El Camino Real	Neighborhood Center	35,250	GAFO, Eating and Drinking	3.67%
21	Encinitas Village Square I	1446 Encinitas Blvd	Neighborhood Center	31,479	GAFO, Eating and Drinking	8.10%
22	El Camino Square	191 N El Camino Real	Strip Center	28,999	GAFO, Eating and Drinking	7.10%
23	No Name	538 Santa Fe Dr	Strip Center	25,000	GAFO, Eating and Drinking	0.00%
	City of San Diego (SMA)					
24	Westfield UTC	4545 La Jolla Village Dr	Super Regional Mall: Macy's, Nordstrom, Sears, Crate & Barrel	1,500,190	GAFO, Food, Eating and Drinking	0.00%
25	Genesee Plaza	4203 Genesee Ave	Community Center:Home Depot, Marshalls, Ralphs, Walgreens	523,260	GAFO, Food, Eating and Drinking, Building/Hardware	0.95%
26	Clairemont Town Square	3802 Clairemont Mesa Blvd	Power Center: Burlington Coat Factory, Pacific Theatres, Ace Hardware, Vons, PETCO, CVS Pharmacy, T.J. Maxx, Michaels	513,906	GAFO, Food, Eating and Drinking, Building/Hardware	10.56%
27	Mira Mesa Market Center	10604 Westview Pky	Power Center: Home Depot, Regal Cinemas, Ross Dress for Less, Barnes & Noble, Old Navy, Longs Drugs	487,959	GAFO, Food, Eating and Drinking, Building/Hardware	0.00%
28	Mira Mesa Mall	8110 Mira Mesa Blvd	Power Center: Kohl's, Vons, CVS Pharmacy, Bed Bath & Beyond, Marshalls, PETCO	410,326	GAFO, Food, Eating and Drinking	2.59%
29	Mira Mesa Shopping Center West	8251 Mira Mesa Blvd	Community Center: Big 5 Sporting Goods, Babies "R" Us, Kragen Auto Parts, Smart & Final, Target	309,151	GAFO, Food, Eating and Drinking, Building/Hardware	0.00%
30	4S Commons	10525 4S Commons Dr.	Community Center: Ralphs, CVS Pharmacy, Cost Plus World Market, Blockbuster	273,201	GAFO, Food, Eating and Drinking	3.99%
31	McGrath Court Retail Ctr	4840 Shawline St	Community Center: Walmart	226,321	GAFO, Food, Eating and Drinking	2.60%

(Continued)

32	Rancho Penasquitos Town Centre	13161 Black Mountain Rd	Community Center: Vons, Rite Aid	198,587	GAFO, Food, Eating and Drinking	3.24%
33	Metroplex Shopping Center	7310 Miramar Rd	Theme/Festival Center	190,823	GAFO, Food, Eating and Drinking	2.37%
34	Balboa Mesa Shopping Center	5401 Balboa Ave	Community Center: Kohl's, Vons, Longs Drugs, CVS Pharmacy	190,785	GAFO, Food, Eating and Drinking, Building/Hardware	0.94%
35	Mesa Town Center	8915 Mira Mesa Blvd	Community Center: Seafood City, Rite Aid	188,803	GAFO, Food, Eating and Drinking	8.08%
36	Costa Verde Center	8510 Genesee Ave	Community Center: Bristol Farms, Barnes & Noble	178,619	GAFO, Food, Eating and Drinking	8.52%
37	Scripps Ranch Marketplace	10531 Scripps Poway Pky	Neighborhood Center: Vons, Sav-on Pharmacy, CVS Pharmacy	175,989	GAFO, Food, Eating and Drinking	1.70%
38	Oak Tree Plaza	9313 Mira Mesa Blvd	Neighborhood Center: Big Lots	174,939	GAFO, Food, Eating and Drinking	0.00%
39	Plaza Rancho Penasquitos	9821 Carmel Mountain Rd	Neighborhood Center: Stater Bros., 24 Hour Fitness	167,441	GAFO, Food, Eating and Drinking	6.30%
40	Carmel Mountain Center	11875 Carmel Mountain Rd	Community Center: Ralphs, Rite Aid, Trader Joe's	165,990	GAFO, Food, Eating and Drinking	1.81%
41	Bernardo Heights Center	15731 Bernardo Heights Pkwy	Neighborhood Center: Henry's Farmers Market, Beauty Kliniek, Tuesday Morning	151,515	GAFO, Food, Eating and Drinking	2.86%
42	Home Depot	12185 Carmel Mountain Rd	Neighborhood Center: Home Depot	145,860	Building/Hardware	2.19%
43	Miramar Furniture Market	8990 Miramar Rd	Community Center: Plummers, Copenhagen Interiors, Comfort Furniture Galleries	130,980	GAFO, Food, Eating and Drinking, Building/Hardware	18.45%
44	Sears Essentials	7655 Clairemont Mesa Blvd	Neighborhood Center: Sears Essentials	121,464	GAFO	0.00%
45	Independence Square	7305 Clairemont Mesa Blvd	Neighborhood Center: Ethan Allen, Saddleback Furniture	118,327	GAFO, Building/Hardware	7.05%
46	Mira Mesa Shopping Center	9400 Mira Mesa Blvd	Neighborhood Center: Ralphs	114,936	GAFO, Food, Eating and Drinking, Building/Hardware	8.87%
47	Miramar Home Fair	7550 Miramar Rd	Neighborhood Center	112,417	GAFO, Food, Eating and Drinking, Building/Hardware	42.23%
48	Plaza Sorrento	6705 Mira Mesa Blvd	Neighborhood Center: Fresh & Easy Neighborhood Market, BevMo!	106,522	Food, Eating and Drinking	0.00%
49	Highland Village	7895 Highland Village Place	Neighborhood Center: Albertsons	89,990	Food, Eating and Drinking	6.38%

(Continued)

50	Miramar Square	9212 Miramar Rd	Neighborhood Center: Decor Furniture	83,734	Building/Hardware	11.40%
51	Von's Center	3883 Governor Dr	Neighborhood Center: Vons, Rite Aid	78,235	GAFO, Food	0.00%
52	Miramar Plaza	8220 Miramar Rd	Neighborhood Center	75,188	GAFO	0.00%
53	La Jolla Colony	7708 Regents Rd	Neighborhood Center: Vons	72,669	GAFO, Food	0.00%
54	SR Ranch Shopping Center	9838 Hibert St	Neighborhood Center: Trader Joe's	71,241	Food	14.08%
55	Renaissance Towne Center	8895 Towne Centre Dr	Neighborhood Center: Longs Drugs, CVS Pharmacy	67,553	GAFO, Food	0.00%
56	Diane Shopping Center	4760 Clairemont Mesa Blvd	Neighborhood Center	62,132	GAFO	11.27%
57	Sorrento Court	9420 Scranton Rd	Neighborhood Center: Staples	59,485	GAFO	2.66%
58	Balboa Plaza	4411 Genesee Ave	Neighborhood Center: Henry's Farmers Market, Pep Boys	57,723	Food, Building/Hardware	0.00%
59	Madison Square Shopping Center	5487 Clairemont Mesa Blvd	Strip Center	52,188	GAFO, Eating and Drinking	2.30%
60	Penasquitos Point	12788 Rancho Penasquitos Blvd	Neighborhood Center	50,404	GAFO, Eating and Drinking	0.00%
61	Black Mountain Village	9152 Mira Mesa Blvd	Neighborhood Center	49,080	GAFO, Eating and Drinking	1.63%
62	Liberty Park Plaza	4310 Genesee Ave	Strip Center	48,616	GAFO, Eating and Drinking	21.66%
63	Sabre Springs Marketplace	126008 Sabre Springs Pky	Neighborhood Center	44,915	GAFO, Eating and Drinking	0.00%
64	4S Ranch Village	16611 Dove Canyon Rd	Neighborhood Center	44,893	GAFO, Eating and Drinking	2.60%
65	Miramar Crossings	7030 Miramar Rd	Neighborhood Center	42,475	GAFO, Eating and Drinking	21.37%
66	Balboa Crest	6133 Balboa	Strip Center	40,481	GAFO, Eating and Drinking	3.51%
67	Miramar Empire Plaza	7920 Miramar Rd	Neighborhood Center	40,000	GAFO, Eating and Drinking	14.90%
68	Little India Center	9474 Black Mountain Rd	Strip Center	38,175	GAFO, Eating and Drinking	20.69%
69	Miramar Galleria	7122 Miramar Rd	Strip Center	37,209	GAFO, Eating and Drinking	7.26%
70	Miramar Center	6904 Miramar Rd	Strip Center	36,601	GAFO, Eating and Drinking	0.00%
71	Clairemont Mesa Center	5145 Clairemont Mesa Blvd	Strip Center: Smart & Final	34,006	GAFO, Food, Eating and Drinking	0.00%
72	Crossroads Center	7404 Clairemont Mesa Blvd	Neighborhood Center	33,802	GAFO, Eating and Drinking	5.64%

(Continued)

73	Miramar Plaza	7092 Miramar Rd	Strip Center	33,176	GAFO, Eating and Drinking	16.51%
74	The Northgate Plaza	8650 Miramar Rd	Strip Center	32,319	GAFO, Eating and Drinking	0.00%
75	Mira Mesa Commercial Cntr	9175 Mira Mesa Blvd	Strip Center	32,263	GAFO, Eating and Drinking	0.00%
76	Balboa Mesa Center	5939 Balboa Ave	Strip Center	31,376	GAFO, Eating and Drinking	13.48%
77	Sorrento Mesa Crossroads	10066 Pacific Heights Blvd	Strip Center	28,166	GAFO, Eating and Drinking	6.80%
78	Camino Village Shopping	11255 Camino Ruiz	Strip Center	27,511	GAFO, Eating and Drinking	10.47%
79	Diane Village	4676 Clairemont Mesa Blvd	Strip Center	26,444	GAFO, Eating and Drinking	14.49%
80	Miracrest Plaza	6780 Miramar Rd	Strip Center	26,272	GAFO, Eating and Drinking	0.00%
81	No Name	9801 Mira Mesa Blvd	Strip Center	25,796	GAFO, Eating and Drinking	3.49%
82	7180-7190 Miramar Road	7180 Miramar Rd	Strip Center	25,317	GAFO, Eating and Drinking	15.74%

Source: Kosmont Companies; Colliers International, 2011

Appendix 4.2.3

	Existing Retail Centers within the Trade Area (Evaluated) [LESS THAN 25,000 SQ FT]					
	Project Name	Location	Description	Square Feet	Primary Retail Types	Vacancy Rate
	City of San Diego (PMA)					
1	Torrey Corners Shopping Ctr.	11120 E. Ocean Air Dr.	Strip Center	18,345	Shop retail	6.54%
2	Sorrento Valley Plaza Center	10920 Roselle St.	Strip Center	10,636	Shop retail	7.47%
	Del Mar (PMA)					
	None Identified					
	Solana Beach (PMA)					
3	No Name	146 S. Cedros Ave.	Strip Center	16,900	Shop retail	0.00%
4	Solana Beach Plaza	120 Lomas Santa Fe Dr.	Strip Center	12,478	Shop retail	0.00%
5	No Name	342 Cedros Ave.	Strip Center	5,869	Shop retail	0.00%
6	No Name	137 Lomas Santa Fe Dr.	Strip Center	5,015	Shop retail	18.00%
	Unincorporated San Diego County (PMA)					
	None Identified					

Source: Kosmont Companies; Colliers International, 2011

Appendix 4.2.4

	Existing Retail Centers within the Trade Area (Evaluated) [LESS THAN 25,000 SQ FT]					
	Project Name	Location	Description	Square Feet	Primary Retail Types	Vacancy Rate
	Carlsbad (SMA)					
1	None Identified					
	Encinitas (SMA)					
2	Mountain Vista Plaza	229 N El Camino Real	Strip Center	18,777	Shop Retail	11.64%
3	Moonlight Plaza	345 S Coast Highway 101	Strip Center	15,440	Shop Retail	0.00%
4	No Name	1465 Encinitas Blvd	Strip Center	15,165	Shop Retail	0.00%
5	Hacienda Plaza	2146 Encinitas Blvd	Strip Center	11,115	Shop Retail	0.00%
6	No Name	315 1st St	Strip Center	9,732	Shop Retail	0.00%
7	No Name	580 Santa Fe Dr	Strip Center	8,337	Shop Retail	0.00%
8	No Name	102 Leucadia Blvd	Strip Center	7,251	Shop Retail	0.00%
9	No Name	574 Santa Fe Dr	Strip Center	4,822	Shop Retail	0.00%
10	No Name	466 N Coast Hwy 101	Strip Center	3,726	Shop Retail	0.00%
11	The Small Mall	603 S Coast Highway 101	Strip Center	2,507	Shop Retail	0.00%
	City of San Diego (SMA)					
12	No Name	4445 Clairemont Mesa Blvd	Strip Center	23,825	Shop Retail	0.00%
13	Bayview Plaza	4384 Moraga	Strip Center	23,640	Shop Retail	0.00%
14	Aventine Restaurant Row	8960 University Center Ln	Strip Center	23,000	Shop Retail	0.00%
15			Strip Center	22,318	Shop Retail	2.82%
16	Scripps Mesa Village	9906 Mira Mesa Blvd	Strip Center	21,929	Shop Retail	30.74%
17	Scripps Gateway	12036 Scripps Highland Dr	Strip Center	21,701	Shop Retail	0.00%
18	No Name	10200 Scripps Poway Pky	Strip Center	21,148	Shop Retail	0.00%
19	Via Miramar Center	9522 Miramar Rd	Strip Center	19,636	Shop Retail	0.00%
20	No Name	7475 Clairemont Mesa Blvd	Strip Center	18,000	Shop Retail	25.00%
21	No Name	2910 Damon Ave	Strip Center	17,768	Shop Retail	0.00%
22	Miramar Village West	7140 Miramar Rd	Strip Center	15,599	Shop Retail	12.26%
23	Garfield Plaza	4217 Balboa Ave	Strip Center	15,285	Shop Retail	23.39%
24	Camino Ruiz Plaza	11229 Camino Ruiz	Strip Center	13,956	Shop Retail	0.00%

(Continued)

25	Eucalyptus Square	9821 Carroll Canyon Rd	Strip Center	13,812	Shop Retail	5.24%
26	Bay Ho Shopping Center	4011 Avati Dr	Strip Center	11,734	Shop Retail	0.00%
27	Scripps Hill Center	9969 Mira Mesa Blvd	Strip Center	10,912	Shop Retail	0.00%
28	Town Center	6906 Miramar Rd	Strip Center	10,100	Shop Retail	26.73%
29	No Name	9550 Black Mountain Rd	Strip Center	9,970	Shop Retail	0.00%
30	No Name	930 Turquoise St	Strip Center	6,708	Shop Retail	0.00%
31	No Name	4089 Genesee Ave	Strip Center	6,200	Shop Retail	0.00%
32	Via Miramar Center	9465 Black Mountain Rd	Strip Center	5,271	Shop Retail	0.00%
33	No Name	841 Turquoise St	Strip Center	5,236	Shop Retail	0.00%
34	Clairemont Plaza	4504 Clairemont Mesa Blvd	Strip Center	4,800	Shop Retail	30.00%
35	Village Center North	12010 Scripps Summit Ct	Strip Center	3,770	Shop Retail	0.00%

Source: Kosmont Companies; Colliers International, 2011

Appendix 4.3.1 [7]

	Proposed Projects within the Trade Area					
	Project Name	**Location**	**Description**	**Expected Open Year**	**Square Feet**	**Primary Retail Types**
	PMA					
1	Del Mar Highlands Town Center Expansion	3433 Del Mar Heights Rd	Existing Community Center with Ralphs, Ultra Star Cinemas, Rite Aid, Barnes & Noble. Expansion is planned with exterior renovation on existing retail buildings and new planned retail.	2013-2015	275,000	GAFO, Food, Eating and Drinking
2	Pacific Highlands Ranch Village	Corner of Del Mar Heights Road and Village Center Loop	Neighborhood Center expected to be developed by Pardee Homes as part of the larger Pacific Highlands Ranch residential development.	2013-2014	195,000	GAFO, Food, Eating and Drinking, Building/Hardware
3	Flower Hill Promenade Expansion	12750 Carmel Country Rd	Existing Neighborhood Center. Plans are to add approximately 61,000 square feet of new retail including a 35,000 square foot Whole Foods Market.	2013	61,000	GAFO, Eating and Drinking
4	Torrey Reserve Phase IV	El Camino Real approximately 1.3 miles south of Carmel Valley Road	Multi-use development with commercial office, retail, restaurant and bank.	2013-2014	19,965	GAFO, Food and Eating and Drinking
5	Torrey Hills Residential/Retail	Ocean Air Drive at Calle Mar De Mariposa. East of the I-5 Freeway, just south of Carmel Mountain Road	Proposed 484 residential condominium units and approximately 4,000 square feet of commercial retail space.	2013	4,000	GAFO
	SMA					
6	Sudbury Watermark Scripps	Approximately the I-15 freeway and Scripps Poway Parkway.	Multi-use development with commercial office, retail, restaurant and hotel	2013-2014	235,000	GAFO, Food and Eating and Drinking

Source: Kosmont Companies; City of San Diego, City of Encinitas, City of Carlsbad, City of Solana Beach, City of Del Mar and San Diego County, 2011

[7] As of the date of this Analysis, Del Mar Highlands Town Center has developed approximately 275,000 square feet of retail product. While there are no stated plans for additional development or significant expansion, Del Mar Highlands is entitled for up to 550,000 square feet of retail under its original approvals through the City of San Diego. The Analysis assumes the Project will be built out to its fullest between 2013 and 2016.

Appendix 5.1.1

Expected Net Supportable Retail Space (Square Feet)											
Retail Category	**Sales/SF**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):											
Apparel	**$300 PSF**	-233,480	-165,991	-110,361	69,130	119,980	203,795	223,870	244,482	265,646	332,747
General Merchandise	**$300 PSF**	184,650	270,785	262,869	289,134	289,175	257,174	277,586	298,529	320,018	388,083
Home Furnishings/Appliances	**$400 PSF**	-57,711	-34,244	-17,197	50,194	71,972	118,634	128,651	138,931	149,481	182,908
Other	**$300 PSF**	510,593	648,501	655,820	489,536	487,799	414,627	451,996	490,355	529,730	654,523
Subtotal		404,051	719,050	791,132	897,994	968,925	994,230	1,082,103	1,172,296	1,264,875	1,558,261

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont, 2011

Appendix 5.2.1

Expected Net Supportable Retail Space (Square Feet)											
Retail Category	**Sales/SF**	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Eating and Drinking	**$300 PSF**	-392,760	-278,153	-222,186	-40,878	71,754	308,865	350,162	392,365	435,491	572,271
Subtotal		-610,257	-266,966	-177,640	141,992	290,961	517,483	587,702	659,482	732,854	965,735

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont, 2011

Appendix 6.1.1

PMA & SMA Historic & Projected Households								
Area	**2000**	**2005**	**2009**	**2010**	**2015**	**2016**	**2017**	**2020**
PMA	23,876	26,429	26,939	28,981	31,167	31,610	32,060	33,448
SMA	146,519	155,335	157,098	164,150	171,751	173,285	174,832	179,558
Total	**170,395**	**181,764**	**184,037**	**193,131**	**202,918**	**204,895**	**206,892**	**213,006**
CAGR Base Yr.		2000	2005	2005	2013	2013	2013	2013
CAGR PMA		2.052%	0.479%	1.861%	1.433%	1.430%	1.428%	1.426%
CAGR SMA		1.175%	0.283%	1.110%	0.897%	0.896%	0.895%	0.894%

Source: ESRI, 2010; Kosmont Companies, 2011

Appendix 6.2.1

PMA & SMA Historic & Projected Average Household Income (US Constant $)							
Area	2000	2005	2010	2015	2016	2017	2020
PMA	129,046	136,670	144,745	156,982	159,551	162,162	170,254
SMA	86,408	93,202	100,530	105,620	106,669	107,728	110,968
Average	**92,382**	**99,522**	**107,165**	**113,509**	**114,827**	**116,163**	**120,278**

CAGR Base Yr.	2000	2005	2013	2013	2013	2013	
CAGR PMA	1.15%	1.15%	1.64%	1.64%	1.64%	1.64%	
CAGR SMA	1.53%	1.53%	0.99%	0.99%	0.99%	0.99%	

Source: ESRI, 2010; Kosmont Companies 2011

Appendix 6.3.1

PMA & SMA Historic & Projected Total Income (US Constant $000's)							
Area	2000	2005	2010	2015	2016	2017	2020
PMA	3,081,102	3,611,990	4,194,854	4,892,658	5,043,470	5,198,930	5,694,657
SMA	12,660,414	14,477,536	16,502,039	18,140,405	18,484,100	18,834,307	19,925,243
Total Income:	**15,741,516**	**18,089,526**	**20,696,893**	**23,033,063**	**23,527,570**	**24,033,237**	**25,619,901**

Source: ESRI, 2010; Kosmont Companies 2011

Appendix 6.5.1

PMA & SMA Historic & Projected Expected Retail Sales (US Constant $000's)							
Area	2000	2005	2010	2015	2016	2017	2020
PMA	1,415,767	1,659,709	1,927,535	2,248,176	2,317,474	2,388,908	3,068,631
SMA	6,299,822	7,204,022	8,211,415	9,026,666	9,197,688	9,371,951	6,926,015
Total Expected Sales	**7,715,588**	**8,863,731**	**10,138,950**	**11,274,842**	**11,515,162**	**11,760,859**	**9,994,646**

Source: ESRI, 2010; Kosmont Companies 2011

Appendix 6.7.1

Historic & Projected Expected Retail Sales by Retail Category - PMA (US Constant $000's)								
Retail Category	2000	2005	2009	2010	2015	2016	2017	2020
Shopper Goods (GAFO):								
Apparel	70,263	81,641	87,893	101,964	201,165	207,366	213,757	234,140
General Merchandise	158,601	161,436	166,951	191,779	192,663	198,601	204,723	224,244
Home Furnishings/Appliances	69,446	70,322	64,353	71,582	128,462	132,422	136,504	149,520
Other	346,962	379,214	390,360	414,907	366,080	377,364	388,996	426,087
Subtotal	**645,272**	**692,612**	**709,558**	**780,232**	**888,370**	**915,753**	**943,980**	**1,033,990**
Convenience Goods:								
Food (Supermarkets/Liquor)	203,327	305,607	317,397	369,363	395,991	408,197	420,779	460,901
Eating and Drinking	212,368	238,879	252,668	298,082	444,024	457,711	471,819	516,808
Subtotal	**415,695**	**544,485**	**570,065**	**667,445**	**840,015**	**865,908**	**892,599**	**977,710**
Heavy Commercial Goods:								
Building/Hardware/Farm	90,048	106,907	109,636	100,531	105,134	108,375	111,715	122,368
Auto Dealers and Parts	166,066	191,130	186,293	218,521	230,369	237,470	244,790	268,131
Service Stations	98,686	124,574	136,208	160,807	184,288	189,969	195,824	214,496
Subtotal	**354,800**	**422,612**	**432,137**	**479,859**	**519,792**	**535,814**	**552,330**	**604,995**
Total Potential Retail Sales	**1,415,767**	**1,659,709**	**1,711,759**	**1,927,535**	**2,248,176**	**2,317,474**	**2,388,908**	**2,616,695**

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont, 2011

Appendix 6.7.2

Historic & Projected Expected Retail Sales by Retail Category - SMA (US Constant $000's)							
Retail Category	2000	2005	2010	2015	2016	2017	2020
Shopper Goods (GAFO):							
Apparel	250,871	335,473	418,583	734,823	748,745	762,931	807,122
General Merchandise	767,279	830,597	982,436	874,895	891,471	908,362	960,976
Home Furnishings/Appliances	294,959	329,595	326,728	546,649	557,006	567,559	600,433
Other	1,399,241	1,599,447	1,710,605	1,458,033	1,485,657	1,513,805	1,601,489
Subtotal	**2,712,350**	**3,095,111**	**3,438,353**	**3,614,399**	**3,682,879**	**3,752,656**	**3,970,021**
Convenience Goods:							
Food (Supermarkets/Liquor)	1,071,901	1,128,551	1,366,521	1,763,577	1,796,991	1,831,037	1,937,096
Eating and Drinking	754,183	880,838	1,114,996	1,409,071	1,435,767	1,462,970	1,547,709
Subtotal	**1,826,083**	**2,009,389**	**2,481,516**	**3,172,648**	**3,232,758**	**3,294,007**	**3,484,805**
Heavy Commercial Goods:							
Building/Hardware/Farm	431,649	532,481	491,296	459,371	468,074	476,942	504,568
Auto Dealers and Parts	917,470	1,020,990	1,076,993	995,503	1,014,365	1,033,583	1,093,451
Service Stations	412,270	546,052	723,257	784,744	799,612	814,762	861,956
Subtotal	**1,761,389**	**2,099,522**	**2,291,546**	**2,239,619**	**2,282,051**	**2,325,288**	**2,459,975**
Total Potential Retail Sales	**6,299,822**	**7,204,022**	**8,211,415**	**9,026,666**	**9,197,688**	**9,371,951**	**9,914,801**

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont, 2011

Appendix 6.9.1

Expected Sales Capture - PMA (US Constant $000's)										
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):										
Apparel	57,131	66,276	78,405	119,301	123,029	126,847	130,757	134,788	138,942	152,191
General Merchandise	108,518	124,657	119,583	114,259	117,830	121,486	125,231	129,091	133,070	145,759
Home Furnishings/Appliances	41,830	46,528	53,470	76,185	78,566	81,004	83,500	86,074	88,727	97,188
Other	253,734	269,689	267,468	217,105	223,889	230,836	237,952	245,286	252,847	276,957
Subtotal	461,213	507,151	518,925	526,850	543,313	560,173	577,440	595,239	613,587	672,094
Convenience Goods:										
Food (Supermarkets/Liquor)	152,495	229,205	238,048	277,022	288,300	270,973	279,441	288,112	296,993	325,312
Eating and Drinking	138,039	155,271	164,234	193,753	211,897	263,330	271,558	279,986	288,616	316,136
Subtotal	290,534	384,476	402,282	470,775	500,197	534,303	550,999	568,098	585,609	641,448
Heavy Commercial Goods:										
Building/Hardware/Farm	58,531	69,490	71,263	65,345	58,003	62,350	64,298	66,294	68,337	74,853
Auto Dealers and Parts	41,516	47,783	46,573	54,630	50,868	52,547	54,189	55,870	57,592	63,084
Service Stations	64,146	80,973	88,535	104,524	121,668	109,293	112,708	116,205	119,787	131,209
Subtotal	164,194	198,245	206,371	224,500	230,539	224,189	231,195	238,369	245,717	269,146
Total Potential Retail Sales	915,940	1,089,872	1,127,578	1,222,125	1,274,049	1,318,666	1,359,634	1,401,706	1,444,913	1,582,688

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont, 2011

Appendix 6.9.2

Expected Sales Capture - SMA (US Constant $000's)										
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):										
Apparel	25,087	33,547	35,931	41,858	51,396	69,442	70,769	72,116	73,482	77,739
General Merchandise	76,728	83,060	86,068	98,244	94,684	82,679	84,259	85,863	87,490	92,557
Home Furnishings/Appliances	29,496	32,959	31,948	32,673	37,867	51,659	52,647	53,648	54,665	57,831
Other	139,924	159,945	164,075	171,060	163,823	137,787	140,420	143,092	145,803	154,249
Subtotal	271,235	309,511	318,023	343,835	347,770	341,568	348,096	354,719	361,440	382,376
Convenience Goods:										
Food (Supermarkets/Liquor)	53,595	56,428	59,188	68,326	69,687	83,331	84,923	86,539	88,179	93,286
Eating and Drinking	75,418	88,084	93,721	111,500	122,738	133,160	135,705	138,287	140,907	149,069
Subtotal	129,013	144,511	152,909	179,826	192,425	216,491	220,628	224,826	229,086	242,355
Heavy Commercial Goods:										
Building/Hardware/Farm	43,165	53,248	54,098	49,130	43,721	43,411	44,241	45,083	45,937	48,598
Auto Dealers and Parts	45,873	51,049	47,380	53,850	47,545	47,039	47,938	48,850	49,775	52,658
Service Stations	20,614	27,303	30,529	36,163	44,141	37,080	37,789	38,508	39,237	41,510
Subtotal	109,652	131,600	132,007	139,142	135,406	127,530	129,967	132,440	134,949	142,766
Total Potential Retail Sales	509,900	585,623	602,939	662,803	675,601	685,589	698,691	711,986	725,475	767,497

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont, 2011

Appendix 6.9.3

Expected Sales Capture - PMA & SMA (US Constant $000's)										
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):										
Apparel	82,218	99,824	114,336	161,160	174,425	196,290	201,527	206,904	212,425	229,929
General Merchandise	185,246	207,716	205,651	212,503	212,514	204,166	209,490	214,954	220,560	238,316
Home Furnishings/Appliances	71,325	79,488	85,417	108,858	116,433	132,663	136,147	139,723	143,392	155,019
Other	393,658	429,634	431,544	388,165	387,712	368,624	378,372	388,379	398,650	431,205
Subtotal	732,448	816,662	836,948	870,685	891,083	901,742	925,536	949,959	975,027	1,054,469
Convenience Goods:										
Food (Supermarkets/Liquor)	206,090	285,632	297,236	345,348	357,987	354,304	364,364	374,652	385,172	418,598
Eating and Drinking	213,457	243,355	257,955	305,253	334,635	396,490	407,263	418,273	429,523	465,205
Subtotal	419,548	528,987	555,191	650,601	692,622	750,794	771,627	792,924	814,695	883,803
Heavy Commercial Goods:										
Building/Hardware/Farm	101,696	122,738	125,362	114,475	101,723	105,762	108,539	111,377	114,274	123,451
Auto Dealers and Parts	87,390	98,832	93,953	108,480	98,413	99,585	102,126	104,720	107,367	115,742
Service Stations	84,760	108,276	119,064	140,687	165,808	146,373	150,496	154,713	159,025	172,719
Subtotal	273,845	329,846	338,378	363,642	365,945	351,719	361,162	370,809	380,666	411,912
Total Potential Retail Sales	1,425,840	1,675,495	1,730,517	1,884,928	1,949,650	2,004,255	2,058,325	2,113,692	2,170,388	2,350,185

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont, 2011

Appendix 6.11.1

Expected Net Retail Demand (US Constant $000's)										
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):										
Apparel	(60,908)	(43,302)	(28,790)	18,034	31,299	53,164	58,401	63,778	69,299	86,804
General Merchandise	48,170	70,640	68,575	75,426	75,437	67,089	72,414	77,877	83,483	101,239
Home Furnishings/Appliances	(20,073)	(11,911)	(5,981)	17,459	25,034	41,264	44,748	48,324	51,993	63,620
Other	133,198	169,174	171,084	127,705	127,252	108,164	117,912	127,919	138,190	170,745
Subtotal	100,386	184,601	204,887	238,624	259,022	269,680	293,475	317,897	342,966	422,408
Convenience Goods:										
Food (Supermarkets/Liquor)	(75,651)	3,891	15,494	63,607	76,246	72,563	82,623	92,910	103,431	136,857
Eating and Drinking	(102,459)	(72,562)	(57,962)	(10,664)	18,718	80,574	91,347	102,356	113,606	149,288
Subtotal	(178,110)	(68,671)	(42,467)	52,943	94,964	153,136	173,969	195,266	217,037	286,145
Heavy Commercial Goods:										
Building/Hardware/Farm	26,895	47,937	50,560	39,673	26,922	30,960	33,738	36,575	39,473	48,650
Auto Dealers and Parts	(76,514)	(65,072)	(69,951)	(55,424)	(65,491)	(64,319)	(61,778)	(59,184)	(56,537)	(48,162)
Service Stations	(46,359)	(22,842)	(12,054)	9,569	34,690	15,254	19,378	23,595	27,906	41,601
Subtotal	(95,978)	(39,978)	(31,445)	(6,182)	(3,879)	(18,104)	(8,662)	986	10,843	42,089
Total Potential Retail Sales	(173,702)	75,952	130,974	285,385	350,107	404,712	458,782	514,149	570,845	750,642

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont, 2011

Appendix 6.12.1

Expected Net Supportable Retail Space (Square Feet)										
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Eating and Drinking	-392,760	-278,153	-222,186	-40,878	71,754	308,865	350,162	392,365	435,491	572,271
Subtotal	-610,257	-266,966	-177,640	141,992	290,961	517,483	587,702	659,482	732,854	965,735
Heavy Commercial Goods:										
Building/Hardware/Farm	103,096	183,757	193,814	152,081	103,200	118,681	129,330	140,205	151,313	186,491
Auto Dealers and Parts	-146,652	-124,722	-134,073	-106,230	-125,524	-123,278	-118,408	-113,437	-108,362	-92,311
Service Stations	-44,427	-21,891	-11,552	9,170	33,245	14,619	18,571	22,612	26,744	39,868
Subtotal	-87,983	37,144	48,189	55,022	10,921	10,022	29,492	49,380	69,695	134,048
Net Supportable Retail SF	-294,190	489,229	661,682	1,095,008	1,270,807	1,521,735	1,699,297	1,881,158	2,067,423	2,658,044

Source: California State Board of Equalization, 2000-2009; ESRI, 2011; Kosmont, 2011

Appendix B.1

ADDENDUM TO RETAIL MARKET ANALYSIS

kosmont companies

February 28, 2013

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City of San Diego
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Re: Addendum to February 2012 Retail Market Analysis Conducted for the One Paseo Project

In February of 2012 Kosmont Companies ("Kosmont") prepared a Retail Market Analysis ("RMA") (hereafter referred to as the "original RMA") included as part of the Draft Environmental Impact Report ("EIR") for the proposed One Paseo project ("proposed development"). This addendum is intended to address comments received during the public review period for the Draft EIR.

In addition, this addendum updates information in the original RMA to reflect modifications made to the development analyzed in the original RMA. In response to comments received during the public review period for the Draft EIR, Kilroy Realty Corporation reduced the density and intensity of the proposed development. For comparison purposes, the new plan is referred to as the "Revised Project" while the plan analyzed in the Draft EIR and the original RMA is referred to as the "Originally Proposed Project." The land use components of the Revised Project are illustrated in Table A. To distinguish tables unique to this addendum from those in the original RMA, the new tables are referenced by letters rather than numbers.

Table A. Revised Project

	Commercial Retail[1] (Square Feet)		**Commercial Office[3] (Square Feet)**		
Block	**Retail**	**Cinema[2]**	**Corporate Office**	**Professional Office[4]**	**Multi-family Residential (Dwelling Units)**
A	47,535	---	---	---	165
B	38,000	---	---	---	337
C	12,611	---	---	---	106
D	70,100	48,000	221,000	21,000	
E	30,254		242,000		
Total	**198,500**	**48,000**	**463,000**	**21,000**	**608**

[1] All areas are considered gross leasable because all retail space may be leasable.
[2] Cinema consists of up to 1,200 seats with 400 seats in Phase 1 & 2 and 1,200 seats in Phase 3.
[3] Gross Leasable Area (excludes parking structures in conformance with City of San Diego LDC Sections 113.0234 and 142.0560). Density transfers permitted in accordance with procedures described in the Precise Plan.
[4] Professional Office (located on Main Street).

A comparison of the land uses associated with the Revised Project with the Originally Proposed Project is illustrated in Table B. As Table B indicates, the most substantial changes associated with the Revised Project include elimination of the originally proposed hotel, a 14 percent reduction in the amount of office space, and 10 percent reduction in the amount of retail. Overall the total square footage of the development would decrease by 22 percent from 1,857,440 to 1,454,069, resulting in a 22 percent reduction in the FAR from 1.8 to 1.4. The number of residential units would be unchanged.

Table B. Land Use Comparison of the Originally Proposed Project with Revised Project

	Commercial Retail[1] (Square Feet)		Commercial Office[3] (Square Feet)		Hotel (Square Feet)	Multi-Family Residential (Dwelling Units)		Total	
Project	**Retail**	**Cinema[2]**	**Corporate**	**Professional**		**Units**	**Square Feet**	**Square Feet**	**FAR**
Originally Proposed Project	220,000	50,000	535,600	21,840	100,000	608	930,000	1,857,440	1.8
Revised Project	198,500	48,000	471,000	21,840	0	608	714,729	1,454,069	1.4
Net Change with Revised Project	**-21,500**	**-2,000**	**-64,600**	**0**	**-100,000**	**0**	**-206,431**	**-403,371**	**-0.4**

1 Gross Floor Area calculations per Land Development Code.
2 Gross square feet
3 Cinema of up to 1,200 seats.
4 Professional Office (located on Main Street).

Based on the additional analysis that follows, the conclusions of the RMA remain unchanged. The initial and follow-on review and analysis for both the Originally Proposed Project and Revised Project conclude that based on the existing and projected retail supply and demand, development of the Originally Proposed Project or the Revised Project is not expected to have a significant economic impact on the existing retail establishments within the trade area ("Trade Area"). For reference, updates in this document are generally presented in the same order as in the original RMA, and the table numbering provided in the RMA is preserved. Additionally, this document serves as a supplement to the RMA, and as such, the RMA should be referred to for additional information and discussions of methodology.

For the sake of reference, the original RMA utilized a land area based proration to estimate consumer expenditure patterns, while this addendum utilizes a household population-based proration. This updated methodology is incorporated in this addendum, as discussed on page 7 herein, and in Section 6.6 on page 16 of the original RMA. Given the nature of the RMA model, updates to a single table often flow through multiple subsequent tables, and consequently there are a number of tables updated in this addendum. The tables contained in the original RMA which are affected by this addendum are as follows: Tables 5 through 16, 18 through 22, 24, and Appendix 4.3.1.

Summary tables of the net supportable retail square footage from the February 2012 RMA, as well as updated tables based on sales of \$300, \$500, and \$700 per square foot (typical, across applicable retail categories as discussed herein) follow in Tables C, D, E, and F.

TABLE C. Net Supportable Retail Square-Footage - February 2012 RMA

	2015	2016	2017	2020
Supportable Retail Square-Footage*	1,669,805	1,831,778	1,997,729	2,523,996
Effective Retail Square-Footage Proposed*	449,833	662,904	662,904	662,904
Net Supportable Retail Square-Footage*	1,219,972	1,168,873	1,334,825	1,861,092

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2012

TABLE D. Net Supportable Retail Square-Footage - $300 Per Square Foot

	2015	2016	2017	2020
Supportable Retail Square-Footage*	3,343,927	3,380,794	3,417,882	3,530,479
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	2,771,306	2,808,174	2,845,261	2,957,859

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2012

TABLE E. Net Supportable Retail Square-Footage - $500 Per Square Foot

	2015	2016	2017	2020
Supportable Retail Square-Footage*	2,006,356	2,028,476	2,050,729	2,118,288
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	1,433,736	1,455,856	1,478,109	1,545,667

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2012

TABLE F. Net Supportable Retail Square-Footage - $700 Per Square Foot

	2015	2016	2017	2020
Supportable Retail Square-Footage*	1,433,111	1,448,912	1,464,806	1,513,063
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	860,491	876,291	892,186	940,442

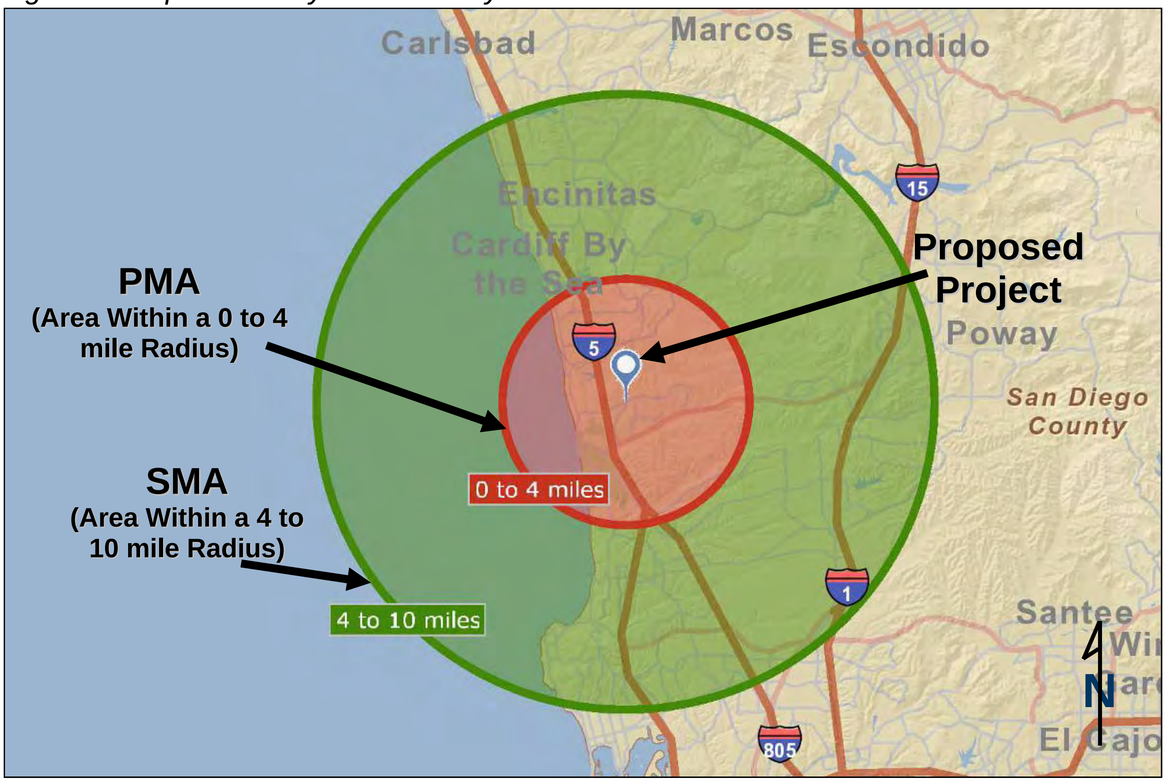
**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2012

Trade Area (Part of Section 2.3 of the RMA)

The Trade Area was established based on industry standards for the retail component of the proposed development, and remains unchanged in this update. The proposed development is prototypical of a lifestyle center, which is generally defined as a retail development between 150,000 - 500,000 square feet that includes upscale national-chain specialty stores with dining and entertainment in an outdoor setting. Pursuant to the International Council of Shopping Centers publication "U.S. Shopping-Center Classification and Characteristics" (April 2012), an 8- to 12-mile radius trade area is typically ascribed to lifestyle centers.

In the RMA, the Trade Area was established as the area within ten miles of the proposed development, and was subdivided into a Primary Market Area ("PMA") and Secondary Market Area ("SMA"). The PMA is the area within four-miles of the proposed development, and the SMA the area between four and ten-miles of the proposed development, as depicted in Figure 1 below. The RMA evaluates impacts to retail establishments within the entire Trade Area. The evaluation of surplus retail capacity is focused on impacts within the PMA; the area within four miles of the proposed development.

Figure 1: Map of Primary & Secondary Market Areas



Project Components (Section 3.2 of the RMA)

The Originally Proposed Project included a total of approximately 220,000 square feet of retail uses, including approximately 130,000 square feet of "General Merchandise, Apparel, Home Furnishings / Appliances, and Other" ("GAFO") retailers, 60,000 square feet of "Eating and Drinking" places and 30,000 square feet of "Food" (grocery) uses. The Revised Project reduces the total amount of retail by 21,500 square feet. It is estimated that this reduction will be comprised of a 15,500 square foot reduction in GAFO square-footage, and a 6,000 square foot reduction in Eating and Drinking retail.

Proposed Retail Developments within the Trade Area (Section 4.3 of the RMA)

The RMA included an evaluation of 137 existing, and six proposed retail centers within the Trade Area. Based on information received since the completion of the RMA, three updates have been made to the list of proposed retail centers. First, the University Town Center expansion was originally deemed complete in the RMA, but is now considered a cumulative proposed project, and included as such in this update. Second, a potential development of 50,000 square feet of retail at the corner of Carmel Valley Road and

Carmel Mountain Road was added as a cumulative proposed project. Third, the proposed square-footage of the Del Mar Highlands Town Center Expansion has been reduced from 275,000 square feet to 152,250 square feet based on current entitlement information. Based on these changes, Appendix 4.3.1 of the RMA was updated as follows below.

Appendix 4.3.1 (Updated)

	Proposed Projects within the Trade Area					
	Project Name	**Location**	**Description**	**Expected Open Year**	**Square Feet**	**Primary Retail Types**
	PMA					
1	Del Mar Highlands Town Center Expansion	3433 Del Mar Heights Rd	Existing Community Center with Ralphs, Ultra Star Cinemas, Rite Aid, Barnes & Noble. Expansion is planned with exterior renovation on existing retail buildings and new planned retail.	2013-2015	152,250	GAFO, Food, Eating and Drinking
2	Pacific Highlands Ranch Village	Corner of Del Mar Heights Road and Village Center Loop	Neighborhood Center expected to be developed by Pardee Homes as part of the larger Pacific Highlands Ranch residential development.	2013-2014	195,000	GAFO, Food, Eating and Drinking, Building/Hardware
3	Flower Hill Promenade Expansion	12750 Carmel Country Rd	Existing Neighborhood Center. Plans are to add approximately 43,750 square feet of new retail including a 35,000 square foot Whole Foods Market.	2013	43,750	GAFO, Eating and Drinking
4	Torrey Reserve Phase IV	El Camino Real approximately 1.3 miles south of Carmel Valley Road	Multi-use development with commercial office, retail, restaurant and bank.	2013-2014	19,965	GAFO, Food and Eating and Drinking
5	Torrey Hills Residential/Retail	Ocean Air Drive at Calle Mar De Mariposa. East of the I-5 Freeway, just south of Carmel Mountain Road	Proposed 484 residential condominium units and approximately 4,000 square feet of commercial retail space.	2013	4,000	GAFO
6	Carmel Valley & Carmel Mountain Road	NW Corner of Camel Valley & Carmel Mountain Road	Potential GAFO, grocery development, size and uses are estimates	2013	50,000	Food, GAFO, Eating and Drinking
	SMA					
7	Sudbury Watermark Scripps	Approximately the I-15 freeway and Scripps Poway Parkway.	Multi-use development with commercial office, retail, restaurant and hotel	2013-2014	235,000	GAFO, Food and Eating and Drinking
8	Westfield University Town Center Expansion	4545 La Jolla Village Dr	ArcLight, 24 Hour Fitness, Restaurants, Retail	2013-2014	750,000	GAFO, Eating and Drinking

Source: Kosmont Companies; City of San Diego, City of Encinitas, City of Carlsbad, City of Solana Beach, City of Del Mar, and San Diego County, 2011

Households (Section 6.1 of the RMA)

The historic and projected number of households within the PMA and SMA are based on data provided by ESRI, a commercially recognized third-party demographic data provider. This update includes data from the 2010 census that shows a slight decrease from prior projections for 2010, which also yields lower projections of household population growth through 2020. Table 9 of the RMA was updated as follows below.

Table 9: PMA & SMA Historic & Projected Households (Updated)

PMA & SMA Historic & Projected Households													
Area	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
PMA	23,876	27,007	30,549	30,676	30,867	31,059	31,252	31,446	31,642	31,839	32,037	32,236	32,437
SMA	146,519	156,061	166,225	166,692	167,598	168,509	169,424	170,345	171,271	172,202	173,138	174,079	175,025
Total	**170,395**	**183,068**	**196,774**	**197,368**	**198,465**	**199,568**	**200,676**	**201,792**	**202,913**	**204,041**	**205,174**	**206,315**	**207,461**
CAGR Period		2000-10	2000-10	2010-11	2011-16	2011-16	2011-16	2011-16	2011-16	2011-16	2011-16	2011-16	2011-16
CAGR PMA		2.50%	2.50%	0.42%	0.62%	0.62%	0.62%	0.62%	0.62%	0.62%	0.62%	0.62%	0.62%
CAGR SMA		1.27%	1.27%	0.28%	0.54%	0.54%	0.54%	0.54%	0.54%	0.54%	0.54%	0.54%	0.54%

Source: ESRI, 2012, Kosmont Companies, 2012

Household Income (Section 6.2 of the RMA)

The historic and projected average household income within the PMA and SMA are also based on data provided by ESRI, and include data from the 2010 census. Current data shows an overall increase in household income relative to the data included the RMA. Table 10 of the RMA was updated as follows below.

Table 10: PMA & SMA Historic & Projected Average Household Income (Updated)

PMA & SMA Historic & Projected Average Household Income											
Area	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
PMA	129,046	139,488	150,776	142,282	148,104	154,165	160,474	167,040	173,876	180,991	204,132
SMA	86,408	95,124	104,719	103,777	107,063	110,453	113,950	117,559	121,281	125,121	137,387
Average	**92,382**	**101,669**	**111,869**	**109,762**	**113,446**	**117,256**	**121,196**	**125,270**	**129,483**	**133,839**	**147,823**
CAGR Base Yr.		2000-10	2000-10	2010-11	2011-16	2011-16	2011-16	2011-16	2011-16	2011-16	2011-16
CAGR PMA		1.57%	1.57%	-5.63%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%	4.09%
CAGR SMA		1.94%	1.94%	-0.90%	3.17%	3.17%	3.17%	3.17%	3.17%	3.17%	3.17%

Source: ESRI, 2012, Kosmont Companies, 2012

Total Income (Section 6.3 of the RMA)

In order to determine the historic and projected total income of households within the PMA and SMA, the historic and projected number of households was multiplied by the historic and projected average household income. In order to account for the potential impacts of inflation on the volume of sales expected per square foot of retail, incomes were held constant as of their 2012 values. Thus, growth in total income beyond the current year was tied to population growth. Table 11 of the RMA was updated as follows below.

Table 11: PMA & SMA Historic & Projected Total Income (Updated)

PMA & SMA Historic & Projected Total Income (US Constant $000's)													
Area	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
PMA	3,081,102	3,767,191	4,606,056	4,364,643	4,571,510	4,599,946	4,628,558	4,657,349	4,686,319	4,715,469	4,744,800	4,774,314	4,804,011
SMA	12,660,414	14,845,159	17,406,916	17,298,796	17,943,535	18,041,051	18,139,096	18,237,675	18,336,789	18,436,441	18,536,635	18,637,374	18,738,660
Total Income:	**15,741,516**	**18,612,351**	**22,012,972**	**21,663,438**	**22,515,045**	**22,640,997**	**22,767,655**	**22,895,024**	**23,023,107**	**23,151,910**	**23,281,435**	**23,411,688**	**23,542,671**

Source: ESRI, 2012, Kosmont Companies, 2012

Percentage of Income Spent on Retail Goods (Section 6.4 of the RMA)

Households will spend a certain percentage of their total income on retail goods. This percentage varies by region and by income level. Through analysis of consumer expenditures documented by the U.S. Department of Labor and the U.S. Bureau of Labor Statistics, as well as historical income levels from Census data, Kosmont estimated that households within the PMA spend approximately 31.22% of total income on retail goods, and households within the SMA spend approximately 33.38% of total income on retail goods. Finally, it was estimated that 15% of additional purchases will be comprised of visitor and business spending.

Expected Retail Sales (Section 6.5 of the RMA)

Multiplying the total income for the PMA and SMA by the percent of income spent on retail goods yields the expected volume of retail sales within the PMA and SMA. The results of this calculation are shown in the update to Table 12 of the RMA below.

Table 12: PMA & SMA Historic & Projected Expected Retail Sales (Updated)

PMA & SMA Historic & Projected Expected Retail Sales (US Constant $000's)													
Area	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
PMA	1,424,085	1,741,196	2,128,919	2,017,338	2,112,952	2,126,095	2,139,320	2,152,627	2,166,017	2,179,490	2,193,047	2,206,688	2,220,414
SMA	6,125,108	7,182,088	8,421,466	8,369,157	8,681,082	8,728,260	8,775,695	8,823,387	8,871,338	8,919,550	8,968,024	9,016,762	9,065,764
Total Expected	**7,549,194**	**8,923,284**	**10,550,385**	**10,386,495**	**10,794,034**	**10,854,355**	**10,915,014**	**10,976,014**	**11,037,355**	**11,099,040**	**11,161,071**	**11,223,449**	**11,286,178**

Source: ESRI, 2012, Kosmont Companies, 2012

Sales by Retail Store Type (Section 6.6 of the RMA)

The next step in the analysis was to distribute the expected taxable sales through the various categories of retail stores. This was performed by considering the historic distribution for both the PMA and the SMA, as reported by the California State Board of Equalization ("CSBE"). As the Trade Area was based on radii from a certain point rather than municipal boundaries, information was not directly available from CSBE for the distribution of retail sales exclusive to the PMA and SMA. In order to estimate these actual sales, Kosmont determined which jurisdictions fell within the PMA and SMA boundaries and aggregated total actual sales from CSBE from those areas. To extrapolate sales figures for the PMA and SMA, Kosmont evaluated the number of households from each municipality within the PMA and SMA and pro-rated CSBE's total actual sales figures. For reference, the RMA previously utilized a land area based proration rather than the household population-based proration included in this update. The percentage of household population attributed to the PMA and SMA is summarized Table G.

Table G: Percentage of Population by Jurisdiction

Jurisdiction	PMA	SMA
County of San Diego	0.2%	0.8%
City of San Diego	4.4%	24.7%
City of Solana Beach	99.2%	0.0%
City of Del Mar	100.0%	0.0%
City of Carlsbad	0.0%	22.9%
City of Encinitas	0.0%	100.0%

The data from CSBE is broken down into the following categories: "Apparel Stores", "General Merchandise Stores", "Food Stores", "Eating and Drinking Places", "Home Furnishing and Appliances", "Building Material and Farm Implements", "Auto Dealers and Auto Suppliers", "Service Stations", and "Other Retail Stores". In some retail categories and years, information was not available from the CSBE's Annual Taxable Sales report (inclusion of the data could result in the disclosure of confidential information on a given retail location). To augment this data, Kosmont took averages of prior and subsequent available years to estimate actual sales data. Table 13 and 14 of the RMA were updated as follows below.

Table 13: Percent of Total Retail Sales by Store Type - PMA (Updated)

Percent of Total Retail Sales by Store Type								PMA Avg	PMA Avg
Retail Stores	**2000**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	'05 - '10	'09-10
Apparel Stores	4.7%	5.4%	5.6%	5.8%	7.2%	9.6%	10.0%	7.3%	9.8%
General Merchandise Stores	14.4%	13.7%	13.7%	14.0%	13.0%	10.5%	10.4%	12.5%	10.4%
Food Stores	15.2%	14.4%	14.7%	15.4%	15.2%	17.7%	17.0%	15.7%	17.3%
Eating and Drinking Places	14.0%	14.4%	14.9%	15.9%	17.1%	18.3%	18.0%	16.4%	18.2%
Home Furnishings and Appliances	4.9%	4.7%	4.3%	4.0%	4.8%	7.0%	7.0%	5.3%	7.0%
Bldg. Material and Farm Implements	7.6%	8.8%	8.7%	6.8%	5.6%	5.1%	5.0%	6.7%	5.1%
Auto Dealers and Auto Supplies	14.1%	14.2%	13.2%	13.8%	12.0%	11.6%	11.8%	12.8%	11.7%
Service Stations	7.8%	8.8%	9.5%	10.1%	11.9%	9.5%	10.4%	10.0%	10.0%
Other Retail Stores	17.3%	15.5%	15.4%	14.2%	13.2%	10.8%	10.3%	13.2%	10.5%
Retail Stores Totals	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	100.0%	100.0%

Source: California State Board of Equalization, 2000-2010; Kosmont Companies, 2012.

Table 14: Percent of Total Retail Sales by Store Type - SMA (Updated)

Percent of Total Retail Sales by Store Type								SMA Avg	SMA Avg
Retail Stores	**2000**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	'05 - '10	'09-10
Apparel Stores	4.4%	5.3%	5.5%	5.7%	6.9%	9.0%	9.4%	7.0%	9.2%
General Merchandise Stores	13.4%	12.8%	12.9%	13.2%	12.5%	10.5%	10.5%	12.1%	10.5%
Food Stores	16.0%	14.9%	15.2%	15.7%	15.7%	18.4%	17.7%	16.3%	18.1%
Eating and Drinking Places	13.0%	13.5%	13.9%	14.9%	16.1%	17.0%	16.9%	15.4%	17.0%
Home Furnishings and Appliances	5.1%	5.1%	4.8%	4.4%	5.0%	6.6%	6.5%	5.4%	6.6%
Bldg. Material and Farm Implements	7.5%	8.1%	8.0%	6.6%	5.8%	5.6%	5.4%	6.6%	5.5%
Auto Dealers and Auto Supplies	16.5%	16.2%	14.6%	14.9%	12.9%	12.5%	13.0%	14.0%	12.7%
Service Stations	7.1%	8.4%	9.1%	9.7%	11.6%	9.5%	10.5%	9.8%	10.0%
Other Retail Stores	17.0%	15.9%	15.9%	14.7%	13.6%	10.8%	10.2%	13.5%	10.5%
Retail Stores Totals	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**	100.0%	100.0%

Source: California State Board of Equalization, 2000-2010; Kosmont Companies, 2012.

Expected Retail Sales by Retail Category (Section 6.7 of the RMA)

To calculate the expected retail sales within the retail categories identified above, the total expected retail sales for each market area were multiplied by the average percentage of total retail sales by store type for each respective market area between 2009 and 2010. The result is the expected retail sales volume by retail category, as shown in the updates to Tables 15 and 16 of the RMA below.

Table 15: Historic & Projected Expected Retail Sales by Retail Category - PMA (Updated)

Historic & Projected Expected Retail Sales by Retail Category - PMA (US Constant $000's)													
Retail Category	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):													
Apparel	66,639	94,406	212,341	197,857	207,235	208,524	209,821	211,126	212,439	213,761	215,090	216,428	217,774
General Merchandise	205,093	238,854	221,465	210,760	220,750	222,123	223,504	224,895	226,294	227,701	229,118	230,543	231,977
Home Furnishings/Appliances	70,174	81,520	149,278	140,993	147,676	148,595	149,519	150,449	151,385	152,326	153,274	154,227	155,187
Other	246,345	270,437	218,571	212,338	222,402	223,785	225,177	226,578	227,987	229,405	230,832	232,268	233,713
Subtotal	**588,251**	**685,217**	**801,656**	**761,949**	**798,062**	**803,026**	**808,021**	**813,047**	**818,104**	**823,193**	**828,314**	**833,466**	**838,650**
Convenience Goods:													
Food (Supermarkets/Liquor)	216,057	250,976	362,152	349,918	366,502	368,782	371,076	373,384	375,707	378,044	380,395	382,761	385,142
Eating and Drinking	200,006	250,703	384,139	366,219	383,576	385,962	388,363	390,779	393,209	395,655	398,116	400,593	403,084
Subtotal	**416,063**	**501,678**	**746,291**	**716,137**	**750,079**	**754,744**	**759,439**	**764,163**	**768,916**	**773,699**	**778,512**	**783,354**	**788,227**
Heavy Commercial Goods:													
Building/Hardware/Farm	107,533	153,452	107,494	102,425	107,280	107,947	108,618	109,294	109,974	110,658	111,346	112,039	112,736
Auto Dealers and Parts	201,198	247,517	251,375	236,016	247,203	248,740	250,288	251,844	253,411	254,987	256,573	258,169	259,775
Service Stations	111,039	153,331	222,103	200,811	210,329	211,637	212,954	214,278	215,611	216,952	218,302	219,660	221,026
Subtotal	**419,771**	**554,300**	**580,972**	**539,253**	**564,811**	**568,324**	**571,860**	**575,417**	**578,996**	**582,597**	**586,221**	**589,868**	**593,537**
Total Potential Retail Sales	**1,424,085**	**1,741,196**	**2,128,919**	**2,017,338**	**2,112,952**	**2,126,095**	**2,139,320**	**2,152,627**	**2,166,017**	**2,179,490**	**2,193,047**	**2,206,688**	**2,220,414**

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2012

Table 16: Historic & Projected Expected Retail Sales by Retail Category - SMA (Updated)

Historic & Projected Expected Retail Sales by Retail Category - SMA (US Constant $000's)													
Retail Category	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):													
Apparel	270,282	377,467	790,836	771,655	800,415	804,765	809,138	813,536	817,957	822,402	826,872	831,365	835,883
General Merchandise	819,567	919,140	882,671	878,994	911,755	916,710	921,692	926,701	931,737	936,800	941,891	947,010	952,157
Home Furnishings/Appliances	313,100	364,163	550,285	549,476	569,955	573,053	576,167	579,298	582,446	585,612	588,794	591,994	595,211
Other	1,039,654	1,138,622	855,550	876,349	909,011	913,952	918,919	923,912	928,934	933,982	939,058	944,161	949,292
Subtotal	**2,442,602**	**2,799,393**	**3,079,341**	**3,076,474**	**3,191,136**	**3,208,479**	**3,225,916**	**3,243,447**	**3,261,074**	**3,278,796**	**3,296,615**	**3,314,531**	**3,332,544**
Convenience Goods:													
Food (Supermarkets/Liquor)	978,687	1,067,362	1,489,825	1,511,302	1,567,630	1,576,149	1,584,715	1,593,327	1,601,986	1,610,692	1,619,446	1,628,247	1,637,096
Eating and Drinking	797,237	966,735	1,419,289	1,418,613	1,471,486	1,479,483	1,487,523	1,495,607	1,503,735	1,511,907	1,520,124	1,528,385	1,536,691
Subtotal	**1,775,925**	**2,034,098**	**2,909,114**	**2,929,915**	**3,039,115**	**3,055,632**	**3,072,238**	**3,088,934**	**3,105,721**	**3,122,599**	**3,139,569**	**3,156,632**	**3,173,787**
Heavy Commercial Goods:													
Building/Hardware/Farm	457,015	582,780	450,812	456,933	473,963	476,539	479,129	481,733	484,351	486,983	489,630	492,291	494,966
Auto Dealers and Parts	1,013,526	1,164,346	1,094,023	1,064,928	1,104,618	1,110,621	1,116,657	1,122,726	1,128,827	1,134,962	1,141,130	1,147,332	1,153,567
Service Stations	436,040	601,472	888,176	840,908	872,249	876,989	881,755	886,547	891,365	896,209	901,080	905,977	910,901
Subtotal	**1,906,581**	**2,348,597**	**2,433,011**	**2,362,768**	**2,450,831**	**2,464,150**	**2,477,541**	**2,491,006**	**2,504,543**	**2,518,155**	**2,531,840**	**2,545,599**	**2,559,433**
Total Potential Retail Sales	**6,125,108**	**7,182,088**	**8,421,466**	**8,369,157**	**8,681,082**	**8,728,260**	**8,775,695**	**8,823,387**	**8,871,338**	**8,919,550**	**8,968,024**	**9,016,762**	**9,065,764**

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2012

Expected Capture Rate of Retail Demand (Section 6.8 of the RMA)

No changes to the expected capture rates were required or made as part of this update; the original Table 17 of the RMA follows.

Table 17: PMA & SMA Expected Capture Rates

PMA & SMA Expected Capture Rates		
Retail Category	**PMA**	**SMA**
Shopper Goods (GAFO):		
Apparel	65%	10%
General Merchandise	65%	10%
Home Furnishings/Appliances	65%	10%
Other	65%	10%
Convenience Goods:		
Food (Supermarkets/Liquor)	75%	5%
Eating and Drinking	65%	10%
Heavy Commercial Goods:		
Building/Hardware/Farm	65%	10%
Auto Dealers and Parts	25%	5%
Service Stations	65%	5%

Source: Kosmont Companies, 2011

Expected Sales Capture (Section 6.9 of the RMA)

In order to calculate the expected capture of sales within the PMA, the expected sales for each retail category, for each market area, was multiplied by the expected capture rates for each retail category and market area. The results of the calculation for the PMA, SMA, and overall Trade Area were provided in Tables 18 through 20 of the RMA and the updated tables are shown below.

Table 18: Expected Sales Capture – PMA (Updated)

Expected Sales Capture - PMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	128,050	138,022	128,607	134,702	135,540	136,383	137,232	138,085	138,944	139,809	140,678	141,553
General Merchandise	139,347	143,953	136,994	143,487	144,380	145,278	146,182	147,091	148,006	148,926	149,853	150,785
Home Furnishings/Appliances	92,519	97,031	91,646	95,989	96,586	97,187	97,792	98,400	99,012	99,628	100,248	100,871
Other	143,230	142,071	138,020	144,561	145,460	146,365	147,276	148,192	149,113	150,041	150,974	151,913
Subtotal	503,146	521,076	495,267	518,740	521,967	525,214	528,481	531,768	535,076	538,404	541,753	545,123
Convenience Goods:												
Food (Supermarkets/Liquor)	270,933	271,614	262,438	274,877	276,587	278,307	280,038	281,780	283,533	285,296	287,071	288,857
Eating and Drinking	242,556	249,690	238,042	249,325	250,875	252,436	254,006	255,586	257,176	258,776	260,385	262,005
Subtotal	513,489	521,304	500,481	524,201	527,462	530,743	534,044	537,366	540,709	544,072	547,456	550,862
Heavy Commercial Goods:												
Building/Hardware/Farm	67,803	69,871	66,576	69,732	70,166	70,602	71,041	71,483	71,928	72,375	72,825	73,278
Auto Dealers and Parts	59,209	62,844	59,004	61,801	62,185	62,572	62,961	63,353	63,747	64,143	64,542	64,944
Service Stations	125,849	144,367	130,527	136,714	137,564	138,420	139,281	140,147	141,019	141,896	142,779	143,667
Subtotal	252,861	277,082	256,108	268,246	269,915	271,594	273,283	274,983	276,693	278,414	280,146	281,889
Total Potential Retail Sales	1,269,497	1,319,463	1,251,855	1,311,188	1,319,344	1,327,550	1,335,808	1,344,117	1,352,478	1,360,890	1,369,355	1,377,873

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2012

Table 19: Expected Sales Capture – SMA (Updated)

Expected Sales Capture - SMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	73,784	79,084	77,165	80,041	80,476	80,914	81,354	81,796	82,240	82,687	83,137	83,588
General Merchandise	85,807	88,267	87,899	91,175	91,671	92,169	92,670	93,174	93,680	94,189	94,701	95,216
Home Furnishings/Appliances	53,784	55,028	54,948	56,996	57,305	57,617	57,930	58,245	58,561	58,879	59,199	59,521
Other	87,917	85,555	87,635	90,901	91,395	91,892	92,391	92,893	93,398	93,906	94,416	94,929
Subtotal	301,292	307,934	307,647	319,114	320,848	322,592	324,345	326,107	327,880	329,662	331,453	333,254
Convenience Goods:												
Food (Supermarkets/Liquor)	75,112	74,491	75,565	78,381	78,807	79,236	79,666	80,099	80,535	80,972	81,412	81,855
Eating and Drinking	138,993	141,929	141,861	147,149	147,948	148,752	149,561	150,373	151,191	152,012	152,838	153,669
Subtotal	214,105	216,420	217,426	225,530	226,756	227,988	229,227	230,473	231,725	232,985	234,251	235,524
Heavy Commercial Goods:												
Building/Hardware/Farm	45,383	45,081	45,693	47,396	47,654	47,913	48,173	48,435	48,698	48,963	49,229	49,497
Auto Dealers and Parts	50,786	54,701	53,246	55,231	55,531	55,833	56,136	56,441	56,748	57,057	57,367	57,678
Service Stations	38,927	44,409	42,045	43,612	43,849	44,088	44,327	44,568	44,810	45,054	45,299	45,545
Subtotal	135,096	144,191	140,985	146,240	147,034	147,834	148,637	149,445	150,257	151,073	151,894	152,720
Total Potential Retail Sales	650,493	668,545	666,059	690,883	694,638	698,413	702,209	706,025	709,862	713,720	717,598	721,498

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2012

Table 20: Expected Sales Capture – PMA & SMA (Updated)

Expected Sales Capture - PMA & SMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	201,834	217,105	205,772	214,744	216,017	217,297	218,585	219,881	221,185	222,496	223,815	225,142
General Merchandise	225,154	232,220	224,894	234,663	236,051	237,447	238,852	240,265	241,686	243,116	244,554	246,001
Home Furnishings/Appliances	146,303	152,059	146,593	152,985	153,892	154,804	155,722	156,645	157,573	158,507	159,447	160,392
Other	231,147	227,626	225,654	235,462	236,855	238,257	239,667	241,085	242,512	243,947	245,390	246,843
Subtotal	804,438	829,011	802,914	837,854	842,815	847,805	852,825	857,875	862,955	868,065	873,206	878,377
Convenience Goods:												
Food (Supermarkets/Liquor)	346,045	346,105	338,003	353,258	355,394	357,543	359,705	361,879	364,067	366,269	368,483	370,711
Eating and Drinking	381,549	391,619	379,904	396,473	398,824	401,188	403,567	405,960	408,367	410,788	413,224	415,674
Subtotal	727,594	737,724	717,907	749,731	754,218	758,731	763,271	767,839	772,434	777,057	781,707	786,385
Heavy Commercial Goods:												
Building/Hardware/Farm	113,186	114,952	112,270	117,128	117,819	118,515	119,214	119,918	120,626	121,338	122,054	122,775
Auto Dealers and Parts	109,995	117,545	112,250	117,032	117,716	118,405	119,097	119,794	120,495	121,200	121,909	122,622
Service Stations	164,776	188,776	172,573	180,326	181,414	182,508	183,608	184,715	185,829	186,950	188,078	189,212
Subtotal	387,957	421,273	397,093	414,486	416,949	419,427	421,920	424,428	426,950	429,488	432,041	434,609
Total Potential Retail Sales	1,919,990	1,988,008	1,917,914	2,002,071	2,013,982	2,025,963	2,038,017	2,050,142	2,062,340	2,074,610	2,086,954	2,099,371

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2012

Retail Sales Leakage Analysis (Section 6.10 of the RMA)

As discussed in the RMA, sales leakage is a circumstance wherein a defined geographic area may lack certain categories of shopping amenities, as reflected by number of outlets and corresponding gross leasable area ("GLA") per category (e.g. Apparel), sufficient to retain its residents' spending dollars.

Leakage occurs when residents' buying activity "leaks" to outside areas, which typically indicates that a trade area is under-served in certain retail sales categories. By comparison, an area that has a negative sales leakage is likely attracting outside sales dollars. As an example of jurisdiction leakage, if within a city, overall resident spending in the Food sector was $500 per household and by comparison, sales within that city total

$250 per household, this would imply that $250 per household was leaking to other areas providing that Food retail.

The leakage analysis herein compares the expected retail sales volume to the actual sales volume of the PMA. The most recent data for comparison available from the CSBE is for 2010, and as such, the leakage analysis was performed for that year as shown in Table 21 of the RMA, and as updated below.

Table 21: Expected Demand vs. Actual Sales (Leakage Analysis, Updated)

Expected Demand vs. Actual Sales (Leakage Analysis) - (US Constant $000's)				
Retail Category	**Expected 2010 Demand**	**2010 Actual Sales**	**Expected Minus Actual**	**Percent Actual/Expected**
Shopper Goods (GAFO):				
Apparel	217,105	102,027	115,078	47%
General Merchandise	232,220	106,411	125,808	46%
Home Furnishings/Appliances	152,059	71,726	80,333	47%
Other	227,626	105,021	122,606	46%
Subtotal	829,011	385,185	443,825	46%
Convenience Goods:				
Food (Supermarkets/Liquor)	346,105	174,009	172,096	50%
Eating and Drinking	391,619	184,574	207,046	47%
Subtotal	737,724	358,583	379,141	49%
Heavy Commercial Goods:				
Building/Hardware/Farm	114,952	51,650	63,303	45%
Auto Dealers and Parts	117,545	120,782	-3,238	103%
Service Stations	188,776	106,718	82,058	57%
Subtotal	421,273	279,150	142,124	66%
Total Potential Retail Sales	1,988,008	1,022,918	965,090	51%

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2012.

Net Retail Demand (Section 6.11 of the RMA)

The net retail demand within the PMA is the difference between the expected demand and actual sales. To project future demand, the expected demand for future years was compared to the actual sales volume for 2010. The expected net retail demand for 2010 through 2020 is shown in Table 22 of the RMA as updated below.

Table 22: Expected Net Retail Demand (Updated)

Expected Net Retail Demand (US Constant $000's)											
Retail Category	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):											
Apparel	115,078	103,745	112,717	113,990	115,270	116,558	117,854	119,157	120,469	121,788	123,115
General Merchandise	125,808	118,482	128,251	129,640	131,036	132,440	133,853	135,275	136,704	138,143	139,589
Home Furnishings/Appliances	80,333	74,867	81,259	82,166	83,078	83,995	84,919	85,847	86,781	87,721	88,666
Other	122,606	120,634	130,442	131,835	133,236	134,646	136,064	137,491	138,926	140,370	141,822
Subtotal	443,825	417,729	452,669	457,630	462,620	467,640	472,690	477,770	482,880	488,021	493,192
Convenience Goods:											
Food (Supermarkets/Liquor)	172,096	163,994	179,249	181,385	183,534	185,695	187,870	190,058	192,260	194,474	196,702
Eating and Drinking	207,046	195,330	211,899	214,250	216,615	218,993	221,386	223,793	226,214	228,650	231,100
Subtotal	379,141	359,324	391,149	395,635	400,148	404,689	409,256	413,851	418,474	423,124	427,803
Heavy Commercial Goods:											
Building/Hardware/Farm	63,303	60,620	65,479	66,170	66,865	67,565	68,269	68,976	69,688	70,405	71,125
Auto Dealers and Parts	(3,238)	(8,532)	(3,751)	(3,066)	(2,378)	(1,685)	(988)	(288)	417	1,126	1,840
Service Stations	82,058	65,855	73,609	74,696	75,790	76,890	77,998	79,112	80,232	81,360	82,494
Subtotal	142,124	117,943	135,336	137,800	140,278	142,770	145,278	147,801	150,338	152,891	155,459
Total Potential Retail Sales	965,090	894,996	979,154	991,064	1,003,046	1,015,099	1,027,224	1,039,422	1,051,692	1,064,036	1,076,454

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2012.

Net Supportable Retail Square Footage (Section 6.12 of the RMA)

The next step in the analysis is to compare the supportable retail square footage to the expected net retail demand for each category. In order to calculate the supportable square footage, an average volume of sales per square foot required to support retail must be considered. Estimates of sales per square foot for each retail category utilized in this analysis were based on data from the International Council of Shopping Centers, the Urban Land Institute, and HdL Companies, applicable market data, and Kosmont's review of retail sales data from various industry sources and projects. Based on these sources, Kosmont finds that levels of $300 to $500 per square-foot are typically required to support ongoing retail operations.

Some of the comments to the DEIR suggested that sales of $500 to $700 per square-foot across most retail categories are more suitable to the Trade Area. Elevated or higher sales per square-foot figures at an existing retail establishment is typically indicative of additional market demand for retail. The question evaluated in a RMA is not whether the introduction of additional retail will increase competition, but rather whether it is likely that the introduction of additional retail will over-saturate an existing specified trade area. Regardless, the RMA model was updated to illustrate the impact on the conclusions of the RMA given even highly elevated average sales per square-foot figures. The tables that follow below update Table 24 of the RMA, and show the expected net supportable retail space at varying levels of average sales per square-foot.

Table 24.1: Net Supportable Retail Space (Updated, at $300 PSF)

Expected Net Supportable Retail Space (Square Feet)								
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):								
Apparel	**$300 PSF**	418,135	441,133	436,961	446,807	451,774	456,770	471,939
General Merchandise	**$300 PSF**	476,160	482,266	496,951	507,688	513,104	518,552	535,092
Home Furnishings/Appliances	**$300 PSF**	303,926	307,943	314,968	321,983	325,521	329,081	339,887
Other	**$300 PSF**	488,352	469,989	505,367	516,143	521,580	527,048	543,650
Subtotal		1,686,573	1,701,330	1,754,247	1,792,621	1,811,979	1,831,452	1,890,569
Convenience Goods:								
Food (Supermarkets/Liquor)	**$300 PSF**	674,504	659,701	695,309	711,832	720,169	728,557	754,026
Eating and Drinking	**$300 PSF**	789,090	793,675	821,292	839,474	848,646	857,873	885,885
Subtotal		1,463,594	1,453,375	1,516,601	1,551,306	1,568,815	1,586,430	1,639,910
Heavy Commercial Goods:								
Building/Hardware/Farm	**$300 PSF**	245,609	242,661	253,651	258,999	261,696	264,410	272,647
Auto Dealers and Parts	**$600 PSF**	-2,906	-6,205	-5,877	-3,230	-1,894	-551	3,526
Service Stations	**$1,200 PSF**	70,548	78,639	71,584	73,687	74,748	75,815	79,057
Subtotal		313,251	315,095	319,358	329,456	334,550	339,674	355,230
Net Supportable Retail SF		3,463,418	3,469,801	3,590,206	3,673,383	3,715,344	3,757,556	3,885,709

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2012.

Table 24.2: Net Supportable Retail Space (Updated, at $500 PSF)

Expected Net Supportable Retail Space (Square Feet)								
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):								
Apparel	**$500 PSF**	250,881	264,680	262,177	268,084	271,064	274,062	283,163
General Merchandise	**$500 PSF**	285,696	289,359	298,171	304,613	307,862	311,131	321,055
Home Furnishings/Appliances	**$500 PSF**	182,356	184,766	188,981	193,190	195,313	197,448	203,932
Other	**$500 PSF**	293,011	281,993	303,220	309,686	312,948	316,229	326,190
Subtotal		1,011,944	1,020,798	1,052,548	1,075,572	1,087,187	1,098,871	1,134,341
Convenience Goods:								
Food (Supermarkets/Liquor)	**$500 PSF**	404,702	395,821	417,185	427,099	432,102	437,134	452,415
Eating and Drinking	**$500 PSF**	473,454	476,205	492,775	503,684	509,188	514,724	531,531
Subtotal		878,157	872,025	909,960	930,784	941,289	951,858	983,946
Heavy Commercial Goods:								
Building/Hardware/Farm	**$500 PSF**	147,366	145,597	152,191	155,399	157,018	158,646	163,588
Auto Dealers and Parts	**$600 PSF**	-2,906	-6,205	-5,877	-3,230	-1,894	-551	3,526
Service Stations	**$1,200 PSF**	70,548	78,639	71,584	73,687	74,748	75,815	79,057
Subtotal		215,007	218,030	217,897	225,856	229,871	233,910	246,171
Net Supportable Retail SF		2,105,108	2,110,854	2,180,406	2,232,212	2,258,348	2,284,639	2,364,459

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2012.

Table 24.3: Net Supportable Retail Space (Updated, at $700 PSF)

		Expected Net Supportable Retail Space (Square Feet)						
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):								
Apparel	**$700 PSF**	179,201	189,057	187,269	191,489	193,617	195,759	202,260
General Merchandise	**$700 PSF**	204,069	206,685	212,979	217,581	219,902	222,237	229,325
Home Furnishings/Appliances	**$700 PSF**	130,254	131,976	134,986	137,993	139,509	141,035	145,666
Other	**$700 PSF**	209,294	201,424	216,586	221,204	223,534	225,878	232,993
Subtotal		722,817	729,142	751,820	768,266	776,562	784,908	810,244
Convenience Goods:								
Food (Supermarkets/Liquor)	**$700 PSF**	289,073	282,729	297,990	305,071	308,644	312,239	323,154
Eating and Drinking	**$700 PSF**	338,182	340,146	351,982	359,774	363,705	367,660	379,665
Subtotal		627,255	622,875	649,972	664,845	672,349	679,898	702,819
Heavy Commercial Goods:								
Building/Hardware/Farm	**$700 PSF**	105,261	103,998	108,708	110,999	112,156	113,318	116,849
Auto Dealers and Parts	**$600 PSF**	-2,906	-6,205	-5,877	-3,230	-1,894	-551	3,526
Service Stations	**$1,200 PSF**	70,548	78,639	71,584	73,687	74,748	75,815	79,057
Subtotal		172,903	176,431	174,414	181,456	185,009	188,583	199,432
Net Supportable Retail SF		1,522,974	1,528,448	1,576,206	1,614,568	1,633,921	1,653,389	1,712,494

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2012.

Cumulative Impact of Projects Planned in the Trade Area (Section 5.3 of the RMA)

As part of the analysis, Kosmont analyzed the characteristics and potential opening dates of the eight proposed retail projects within the Trade Area. In order to determine the likely impact of these additional projects on the retail demand at the proposed development location, the square-footage of each of the other eight projects was multiplied by its expected capture rate (see Table 17 above) based on whether the proposed development was located in the PMA or SMA. The result produces the effective total retail square footage proposed within the Trade Area as it relates to the PMA. Based on the projects listed in updated Appendix 4.3.1 above, the assumed capture rates, and Revised Project square-footage, Tables 5 through 8 of the RMA are updated based on sales per square foot of $300, $500, and $700, as provided below:

Table 5: Total Retail Square-Footage Proposed within the PMA (Updated, Any $/PSF)

	2013	**2014**	**2015**	**2016**	**2017**
Total w/o One Paseo	142,406	168,477	63,238	0	0
One Paseo	65,000	87,500	46,000	0	0
Total w/ One Paseo	207,406	255,977	109,238	0	0
Cumulative w/ Project	207,406	463,383	572,621	572,621	572,621

Source: Kosmont Companies, 2012

Table 6: GAFO Retail

Table 6.1: Total GAFO Square-Footage Proposed/Supportable within the PMA (Updated, $300 PSF)

	2013	2014	2015	2016	2017
Total w/o One Paseo	93,706	89,788	21,288	0	0
One Paseo	30,000	55,000	29,500	0	0
Total w/ One Paseo	123,706	144,788	50,788	0	0
Net Supportable SF	1,754,247	1,773,377	1,792,621	1,811,979	1,831,452
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	1,630,541	1,504,884	1,473,340	1,492,698	1,512,171

Source: Kosmont Companies, 2012

Table 6.2: Total GAFO Square-Footage Proposed/Supportable within the PMA (Updated, $500 PSF)

	2013	2014	2015	2016	2017
Total w/o One Paseo	93,706	89,788	21,288	0	0
One Paseo	30,000	55,000	29,500	0	0
Total w/ One Paseo	123,706	144,788	50,788	0	0
Net Supportable SF	1,052,548	1,064,026	1,075,572	1,087,187	1,098,871
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	928,842	795,533	756,292	767,906	779,590

Source: Kosmont Companies, 2012

Table 6.3: Total GAFO Square-Footage Proposed/Supportable within the PMA (Updated, $700 PSF)

	2013	2014	2015	2016	2017
Total w/o One Paseo	93,706	89,788	21,288	0	0
One Paseo	30,000	55,000	29,500	0	0
Total w/ One Paseo	123,706	144,788	50,788	0	0
Net Supportable SF	751,820	760,019	768,266	776,562	784,908
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	628,114	491,525	448,985	457,282	465,627

Source: Kosmont Companies, 2012

Table 7: Eating and Drinking Retail

Table 7.1: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA (Updated, $300/PSF)

	2013	2014	2015	2016	2017
Total w/o One Paseo	18,450	31,444	34,450	0	0
One Paseo	15,000	22,500	16,500	0	0
Total w/ One Paseo	33,450	53,944	50,950	0	0
Net Supportable SF	821,292	830,356	839,474	848,646	857,873
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	787,842	742,962	701,130	710,303	719,529

Source: Kosmont Companies, 2012

Table 7.2: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA (Updated, $500/PSF)

	2013	2014	2015	2016	2017
Total w/o One Paseo	18,450	31,444	34,450	0	0
One Paseo	15,000	22,500	16,500	0	0
Total w/ One Paseo	33,450	53,944	50,950	0	0
Net Supportable SF	492,775	498,213	503,684	509,188	514,724
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	459,325	410,820	365,341	370,844	376,380

Source: Kosmont Companies, 2012

Table 7.3: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA (Updated, $700/PSF)

	2013	2014	2015	2016	2017
Total w/o One Paseo	18,450	31,444	34,450	0	0
One Paseo	15,000	22,500	16,500	0	0
Total w/ One Paseo	33,450	53,944	50,950	0	0
Net Supportable SF	351,982	355,867	359,774	363,705	367,660
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	318,532	268,473	221,431	225,362	229,316

Source: Kosmont Companies, 2012

Table 8: Food Retail

Table 8.1: Total Food Square-Footage Proposed/Supportable within the PMA (Updated, $300/PSF)

	2013	2014	2015	2016	2017
Total w/o One Paseo	30,250	47,246	7,500	0	0
One Paseo	20,000	10,000	0	0	0
Total w/ One Paseo	50,250	57,246	7,500	0	0
Net Supportable SF	695,309	703,546	711,832	720,169	728,557
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	645,059	596,049	596,836	605,173	613,561

Source: Kosmont Companies, 2012

Table 8.2: Total Food Square-Footage Proposed/Supportable within the PMA (Updated, $500/PSF)

	2013	2014	2015	2016	2017
Total w/o One Paseo	30,250	47,246	7,500	0	0
One Paseo	20,000	10,000	0	0	0
Total w/ One Paseo	50,250	57,246	7,500	0	0
Net Supportable SF	417,185	422,127	427,099	432,102	437,134
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	366,935	314,631	312,103	317,105	322,138

Source: Kosmont Companies, 2012

Table 8.3: Total Food Square-Footage Proposed/Supportable within the PMA (Updated, $700 PSF)

	2013	2014	2015	2016	2017
Total w/o One Paseo	30,250	47,246	7,500	0	0
One Paseo	20,000	10,000	0	0	0
Total w/ One Paseo	50,250	57,246	7,500	0	0
Net Supportable SF	297,990	301,520	305,071	308,644	312,239
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	247,740	194,023	190,075	193,648	197,242

Source: Kosmont Companies, 2012

Conclusion

Based on the updated analysis above, Kosmont's conclusion from the initial RMA remains unchanged: the Project is not expected to have an adverse impact on the existing GAFO, Food, or Eating and Drinking retail establishments. Further, based on Kosmont's evaluation of existing and projected retail market, positive net demand for these types of retail uses is projected even at elevated sales of $700 per square-foot. Additionally, although it is understood the proposed development's retail will be phased, should it be fully built-out in 2013, the analysis demonstrates there would be sufficient net market demand to absorb the entire proposed retail development without adverse economic impacts.

When net demand exists, market conditions are generally favorable for retail businesses, and as a result, retailers will not be forced to close for reasons related to insufficient demand caused by the proposed development. Should existing businesses close, it would likely occur on an intermittent/site-specific basis, and primarily for operating or demand factors primarily unique to those businesses. Further, as market conditions remain favorable based on the net demand for additional retail square footage, it is unlikely that the proposed development will cause significant business closures and long-term vacancies, causing property owners to cease maintaining their properties and leave decaying, unoccupied shells.

Kosmont is available to discuss its findings and conclusions at your convenience.

Very Truly Yours,

Larry Kosmont
President & CEO

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Appendix B.2

VISITOR AND BUSINESS SPENDING MEMORANDUM

kosmont
companies

January 6, 2014

Toni Dillon
Economic Research Coordinator
City of San Diego
1222 1st Avenue, Third Floor
San Diego, CA 92101

Re: Economic Research Review PTS# 193036; Visitor & Business Spending

In February of 2012 Kosmont Companies ("Kosmont") prepared a Retail Market Analysis ("RMA") (hereafter referred to as the "original RMA") included as part of the Draft Environmental Impact Report ("DEIR") for the proposed One Paseo project ("proposed development"). In response to comments received during the public review period for the DEIR, Kilroy Realty Corporation reduced the density and intensity of the proposed development. In January of 2013 Kosmont submitted an addendum to the original RMA to address the reduced development envelope and address comments received during the public review period for the DEIR. In December of 2013, Kosmont received the City of San Diego's ("City") Memorandum (dated November 25, 2013, "Memorandum") requesting additional information about the calculation of visitor and business spending within the RMA model. This letter is provided to respond to the questions therein.

In the Memorandum the City requested additional information related to the calculation of the visitor and business retail demand within the trade area ("Trade Area") as defined in the original RMA. The Memorandum suggests that there was an order of operation error in the RMA model, however the method of calculation was and remains intentional. In the RMA model a factor is applied to gross household income to estimate potential additional visitor and business demand, in essence, utilizing total area income as a proxy / correlation for visitor and business purchasing power and demand. This method is preferred by Kosmont as it serves to isolate business and visitor spending from the impact of differentiated household expenditure ratios that occur for differing household incomes.

Through an evaluation of the economic profile of the Trade Area, including atypically high visitor rates and expenditure patterns, proximity to major tourism drivers, regional transportation networks, and both existing and proposed commercial office space, a 15% factor was tested and ultimately utilized. While Kosmont does not propose nor support modifying this factor, a sensitivity analysis of the impact of modifications to this factor is included herein. The tables and figures which follow illustrate the impact to the RMA model should the visitor and business factor be reduced from 15% to 10%, 5% and 0% (i.e. completely eliminating any potential visitor or business spending). Additionally, in consideration of previous comments to the DEIR pertaining to required sales volumes per square foot, also provided are impacts to the RMA model given retail sales volumes of $300, $500, and $700 per square foot under the four visitor and business factors evaluated (15%, 10%, 5%, and 0%). Kosmont's conclusion remains unchanged: even under elevated required sales volumes of $700 per square foot, and with no allowance for visitor or businesses spending, a net demand for additional retail square footage would remain.

When net demand exists, market conditions are generally favorable for retail businesses, and as a result, retailers will not be forced to close for reasons related to insufficient demand caused by the proposed development. Should existing businesses close, it would likely occur on an intermittent/site-specific basis, and primarily for operating or demand factors predominantly unique to those businesses. Further, as market conditions remain favorable based on the net demand for additional retail square footage, it is unlikely that the proposed development will cause significant business closures and long-term vacancies, whereby causing property owners to cease maintaining their properties and to leave decaying, unoccupied shells.

Kosmont is available to discuss its findings and conclusions at your convenience. Tables follow below.

Very Truly Yours,

Larry Kosmont, CRE
President & CEO

Note: Table numbers for the tables and iterations thereof which follow are preserved from the original RMA (i.e. Table 6 in the original RMA is numbered as Table 6 in this letter), and additional sub-tables provided herein evaluating alternative assumptions are numbered as subsets (i.e. alternative tables to original RMA table 6 are labeled 6-1 or 6-1A, etc.). Only tables impacted by changes to the visitor and business factors ("V&B Factor") are included herein. Finally, this document serves as a supplement to the RMA, and addendum to the RMA, and as such, both should be referred to for additional information and discussions of methodology.

Summary tables of the net supportable retail square footage (including proposed projects within the Trade Area) from the RMA model based on sales of $300, $500, and $700 per square foot (typical, across applicable retail categories as discussed herein), and V & B Factor of 15%, 10%, 5%, and 0% follow in Tables A-1 - A-4, B-1 - B-4, and C-1 - C-4. These summary tables are for reference only, and were not included in the RMA.

TABLE A-1. Net Supportable Retail Square-Footage
($300 PSF, 15% V&B Factor)

	2015	2016	2017	2020
Supportable Retail Square-Footage*	3,343,927	3,380,794	3,417,882	3,530,479
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	2,771,306	2,808,174	2,845,261	2,957,859

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2013

TABLE A-2. Net Supportable Retail Square-Footage
($300 PSF, 10% V&B Factor)

	2015	2016	2017	2020
Supportable Retail Square-Footage*	2,684,007	2,716,942	2,750,074	2,850,660
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	2,111,387	2,144,322	2,177,453	2,278,040

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2013

TABLE A-3. Net Supportable Retail Square-Footage
($300 PSF, 5% V&B Factor)

	2015	2016	2017	2020
Supportable Retail Square-Footage*	2,024,088	2,053,090	2,082,265	2,170,841
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	1,451,467	1,480,469	1,509,645	1,598,221

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2013

TABLE A-4. Net Supportable Retail Square-Footage
($300 PSF, 0% V&B Factor)

	2015	2016	2017	2020
Supportable Retail Square-Footage*	1,364,168	1,389,238	1,414,457	1,491,022
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	791,548	816,617	841,837	918,402

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2013

TABLE B-1. Net Supportable Retail Square-Footage
($500 PSF, 15% V&B Factor)

	2015	2016	2017	2020
Supportable Retail Square-Footage*	2,006,356	2,028,476	2,050,729	2,118,288
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	1,433,736	1,455,856	1,478,109	1,545,667

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2013

TABLE B-2. Net Supportable Retail Square-Footage
($500 PSF, 10% V&B Factor)

	2015	2016	2017	2020
Supportable Retail Square-Footage*	1,610,404	1,630,165	1,650,044	1,710,396
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	1,037,784	1,057,545	1,077,424	1,137,776

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2013

TABLE B-3. Net Supportable Retail Square-Footage
($500 PSF, 5% V&B Factor)

	2015	2016	2017	2020
Supportable Retail Square-Footage*	1,214,453	1,231,854	1,249,359	1,302,505
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	641,832	659,233	676,739	729,884

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2013

TABLE B-4. Net Supportable Retail Square-Footage
($500 PSF, 0% V&B Factor)

	2015	2016	2017	2020
Supportable Retail Square-Footage*	818,501	833,543	848,674	894,613
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	245,880	260,922	276,054	321,993

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2013

TABLE C-1. Net Supportable Retail Square-Footage
($700 PSF, 15% V&B Factor)

	2015	2016	2017	2020
Supportable Retail Square-Footage*	1,433,111	1,448,912	1,464,806	1,513,063
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	860,491	876,291	892,186	940,442

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2013

TABLE C-2. Net Supportable Retail Square-Footage
($700 PSF, 10% V&B Factor)

	2015	2016	2017	2020
Supportable Retail Square-Footage*	1,150,289	1,164,404	1,178,603	1,221,712
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	577,668	591,783	605,982	649,091

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2013

TABLE C-3. Net Supportable Retail Square-Footage

($700 PSF, 5% V&B Factor)

	2015	2016	2017	2020
Supportable Retail Square-Footage*	867,466	879,896	892,399	930,361
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	294,846	307,275	319,779	357,740

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2013

TABLE C-4. Net Supportable Retail Square-Footage
($700 PSF, 0% V&B Factor)

	2015	2016	2017	2020
Supportable Retail Square-Footage*	584,643	595,388	606,196	639,010
Effective Retail Square-Footage Proposed*	572,621	572,621	572,621	572,621
Net Supportable Retail Square-Footage*	12,023	22,767	33,575	66,389

**GAFO, Eating and Drinking, and Food; categories discussed in detail herein*
Source: Kosmont Companies, 2013

Table 6: GAFO Retail

Table 6-1A: Total GAFO Square-Footage Proposed/Supportable within the PMA
($300 PSF, 15% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o One Paseo	93,706	89,788	21,288	0	0
One Paseo	30,000	55,000	29,500	0	0
Total w/ One Paseo	123,706	144,788	50,788	0	0
Net Supportable SF	1,754,247	1,773,377	1,792,621	1,811,979	1,831,452
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	1,630,541	1,504,884	1,473,340	1,492,698	1,512,171

Source: Kosmont Companies, 2013

Table 6-1B: Total GAFO Square-Footage Proposed/Supportable within the PMA
($500 PSF, 15% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	93,706	89,788	21,288	0	0
Project	30,000	55,000	29,500	0	0
Total w/ Project	123,706	144,788	50,788	0	0
Net Supportable SF	1,052,548	1,064,026	1,075,572	1,087,187	1,098,871
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	928,842	795,533	756,292	767,906	779,590

Source: Kosmont Companies, 2013

Table 6-1C: Total GAFO Square-Footage Proposed/Supportable within the PMA ($700 PSF, 15% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	93,706	89,788	21,288	0	0
Project	30,000	55,000	29,500	0	0
Total w/ Project	123,706	144,788	50,788	0	0
Net Supportable SF	751,820	760,019	768,266	776,562	784,908
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	628,114	491,525	448,985	457,282	465,627

Source: Kosmont Companies, 2013

Table 6-2A: Total GAFO Square-Footage Proposed/Supportable within the PMA ($300 PSF, 10% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	93,706	89,788	21,288	0	0
Project	30,000	55,000	29,500	0	0
Total w/ Project	123,706	144,788	50,788	0	0
Net Supportable SF	1,410,686	1,427,779	1,444,973	1,462,270	1,479,669
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	1,286,980	1,159,285	1,125,692	1,142,989	1,160,388

Source: Kosmont Companies, 2013

Table 6-2B: Total GAFO Square-Footage Proposed/Supportable within the PMA ($500 PSF, 10% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	93,706	89,788	21,288	0	0
Project	30,000	55,000	29,500	0	0
Total w/ Project	123,706	144,788	50,788	0	0
Net Supportable SF	846,412	856,667	866,984	877,362	887,801
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	722,706	588,174	547,703	558,081	568,521

Source: Kosmont Companies, 2013

Table 6-2C: Total GAFO Square-Footage Proposed/Supportable within the PMA ($700 PSF, 10% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	93,706	89,788	21,288	0	0
Project	30,000	55,000	29,500	0	0
Total w/ Project	123,706	144,788	50,788	0	0
Net Supportable SF	604,580	611,905	619,274	626,687	634,144
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	480,874	343,412	299,993	307,406	314,863

Source: Kosmont Companies, 2013

Table 6-3A: Total GAFO Square-Footage Proposed/Supportable within the PMA ($300 PSF, 5% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	93,706	89,788	21,288	0	0
Project	30,000	55,000	29,500	0	0
Total w/ Project	123,706	144,788	50,788	0	0
Net Supportable SF	1,067,125	1,082,180	1,097,326	1,112,561	1,127,886
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	943,419	813,687	778,045	793,280	808,606

Source: Kosmont Companies, 2013

Table 6-3B: Total GAFO Square-Footage Proposed/Supportable within the PMA ($500 PSF, 5% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	93,706	89,788	21,288	0	0
Project	30,000	55,000	29,500	0	0
Total w/ Project	123,706	144,788	50,788	0	0
Net Supportable SF	640,275	649,308	658,395	667,536	676,732
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	516,569	380,815	339,115	348,256	357,451

Source: Kosmont Companies, 2013

Table 6-3C: Total GAFO Square-Footage Proposed/Supportable within the PMA ($700 PSF, 5% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	93,706	89,788	21,288	0	0
Project	30,000	55,000	29,500	0	0
Total w/ Project	123,706	144,788	50,788	0	0
Net Supportable SF	457,339	463,792	470,282	476,812	483,380
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	333,633	195,298	151,002	157,531	164,099

Source: Kosmont Companies, 2013

Table 6-4A: Total GAFO Square-Footage Proposed/Supportable within the PMA ($300 PSF, 0% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	93,706	89,788	21,288	0	0
Project	30,000	55,000	29,500	0	0
Total w/ Project	123,706	144,788	50,788	0	0
Net Supportable SF	723,564	736,582	749,678	762,852	776,104
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	599,858	468,089	430,397	443,571	456,823

Source: Kosmont Companies, 2013

Table 6-4B: Total GAFO Square-Footage Proposed/Supportable within the PMA ($500 PSF, 0% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	93,706	89,788	21,288	0	0
Project	30,000	55,000	29,500	0	0
Total w/ Project	123,706	144,788	50,788	0	0
Net Supportable SF	434,138	441,949	449,807	457,711	465,662
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	310,433	173,456	130,526	138,430	146,381

Source: Kosmont Companies, 2013

Table 6-4C: Total GAFO Square-Footage Proposed/Supportable within the PMA ($700 PSF, 0% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	93,706	89,788	21,288	0	0
Project	30,000	55,000	29,500	0	0
Total w/ Project	123,706	144,788	50,788	0	0
Net Supportable SF	310,099	315,678	321,291	326,936	332,616
Cumulative SF	123,706	268,493	319,281	319,281	319,281
Surplus Supportable SF	186,393	47,185	2,010	7,656	13,335

Source: Kosmont Companies, 2013

Table 7: Eating and Drinking Retail

Table 7-1A: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA ($300/PSF, 15% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o One Paseo	18,450	31,444	34,450	0	0
One Paseo	15,000	22,500	16,500	0	0
Total w/ One Paseo	33,450	53,944	50,950	0	0
Net Supportable SF	821,292	830,356	839,474	848,646	857,873
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	787,842	742,962	701,130	710,303	719,529

Source: Kosmont Companies, 2013

Table 7-1B: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA ($500/PSF, 15% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o One Paseo	18,450	31,444	34,450	0	0
One Paseo	15,000	22,500	16,500	0	0
Total w/ One Paseo	33,450	53,944	50,950	0	0
Net Supportable SF	492,775	498,213	503,684	509,188	514,724
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	459,325	410,820	365,341	370,844	376,380

Source: Kosmont Companies, 2013

Table 7-1C: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA ($700/PSF, 15% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o One Paseo	18,450	31,444	34,450	0	0
One Paseo	15,000	22,500	16,500	0	0
Total w/ One Paseo	33,450	53,944	50,950	0	0
Net Supportable SF	351,982	355,867	359,774	363,705	367,660
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	318,532	268,473	221,431	225,362	229,316

Source: Kosmont Companies, 2013

Table 7-2A: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA ($300/PSF, 10% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	18,450	31,444	34,450	0	0
Project	15,000	22,500	16,500	0	0
Total w/ Project	33,450	53,944	50,950	0	0
Net Supportable SF	658,645	666,744	674,890	683,085	691,329
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	625,195	579,350	536,547	544,742	552,986

Source: Kosmont Companies, 2013

Table 7-2B: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA ($500/PSF, 10% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	18,450	31,444	34,450	0	0
Project	15,000	22,500	16,500	0	0
Total w/ Project	33,450	53,944	50,950	0	0
Net Supportable SF	395,187	400,046	404,934	409,851	414,798
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	361,737	312,653	266,591	271,508	276,454

Source: Kosmont Companies, 2013

Table 7-2C: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA ($700/PSF, 10% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	18,450	31,444	34,450	0	0
Project	15,000	22,500	16,500	0	0
Total w/ Project	33,450	53,944	50,950	0	0
Net Supportable SF	282,277	285,747	289,239	292,751	296,284
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	248,827	198,354	150,895	154,407	157,940

Source: Kosmont Companies, 2013

Table 7-3A: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA ($300/PSF, 5% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	18,450	31,444	34,450	0	0
Project	15,000	22,500	16,500	0	0
Total w/ Project	33,450	53,944	50,950	0	0
Net Supportable SF	495,999	503,132	510,307	517,525	524,786
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	462,549	415,738	371,963	379,181	386,442

Source: Kosmont Companies, 2013

Table 7-3B: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA ($500/PSF, 5% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	18,450	31,444	34,450	0	0
Project	15,000	22,500	16,500	0	0
Total w/ Project	33,450	53,944	50,950	0	0
Net Supportable SF	297,599	301,879	306,184	310,515	314,871
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	264,149	214,485	167,841	172,171	176,528

Source: Kosmont Companies, 2013

Table 7-3C: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA ($700/PSF, 5% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	18,450	31,444	34,450	0	0
Project	15,000	22,500	16,500	0	0
Total w/ Project	33,450	53,944	50,950	0	0
Net Supportable SF	212,571	215,628	218,703	221,796	224,908
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	179,121	128,234	80,359	83,453	86,565

Source: Kosmont Companies, 2013

Table 7-4A: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA ($300/PSF, 0% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	18,450	31,444	34,450	0	0
Project	15,000	22,500	16,500	0	0
Total w/ Project	33,450	53,944	50,950	0	0
Net Supportable SF	333,352	339,520	345,723	351,964	358,242
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	299,902	252,126	207,380	213,621	219,898

Source: Kosmont Companies, 2013

Table 7-4B: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA ($500/PSF, 0% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	18,450	31,444	34,450	0	0
Project	15,000	22,500	16,500	0	0
Total w/ Project	33,450	53,944	50,950	0	0
Net Supportable SF	200,011	203,712	207,434	211,178	214,945
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	166,561	116,318	69,090	72,835	76,602

Source: Kosmont Companies, 2013

Table 7-4C: Total Eating and Drinking Square-Footage Proposed/Supportable within the PMA ($700/PSF, 0% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	18,450	31,444	34,450	0	0
Project	15,000	22,500	16,500	0	0
Total w/ Project	33,450	53,944	50,950	0	0
Net Supportable SF	142,865	145,508	148,167	150,842	153,532
Cumulative SF	33,450	87,394	138,344	138,344	138,344
Surplus Supportable SF	109,415	58,115	9,824	12,498	15,189

Source: Kosmont Companies, 2013

Table 8: Food Retail

Table 8-1A: Total Food Square-Footage Proposed/Supportable within the PMA ($300/PSF, 15% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o One Paseo	30,250	47,246	7,500	0	0
One Paseo	20,000	10,000	0	0	0
Total w/ One Paseo	50,250	57,246	7,500	0	0
Net Supportable SF	695,309	703,546	711,832	720,169	728,557
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	645,059	596,049	596,836	605,173	613,561

Source: Kosmont Companies, 2013

Table 8-1B: Total Food Square-Footage Proposed/Supportable within the PMA ($500/PSF, 15% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o One Paseo	30,250	47,246	7,500	0	0
One Paseo	20,000	10,000	0	0	0
Total w/ One Paseo	50,250	57,246	7,500	0	0
Net Supportable SF	417,185	422,127	427,099	432,102	437,134
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	366,935	314,631	312,103	317,105	322,138

Source: Kosmont Companies, 2013

Table 8-1C: Total Food Square-Footage Proposed/Supportable within the PMA ($700 PSF, 15% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o One Paseo	30,250	47,246	7,500	0	0
One Paseo	20,000	10,000	0	0	0
Total w/ One Paseo	50,250	57,246	7,500	0	0
Net Supportable SF	297,990	301,520	305,071	308,644	312,239
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	247,740	194,023	190,075	193,648	197,242

Source: Kosmont Companies, 2013

Table 8-2A: Total Food Square-Footage Proposed/Supportable within the PMA ($300/PSF, 10% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	30,250	47,246	7,500	0	0
Project	20,000	10,000	0	0	0
Total w/ Project	50,250	57,246	7,500	0	0
Net Supportable SF	549,392	556,746	564,144	571,587	579,075
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	499,142	449,249	449,148	456,591	464,079

Source: Kosmont Companies, 2013

Table 8-2B: Total Food Square-Footage Proposed/Supportable within the PMA ($500/PSF, 10% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	30,250	47,246	7,500	0	0
Project	20,000	10,000	0	0	0
Total w/ Project	50,250	57,246	7,500	0	0
Net Supportable SF	329,635	334,047	338,486	342,952	347,445
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	279,385	226,551	223,490	227,956	232,449

Source: Kosmont Companies, 2013

Table 8-2C: Total Food Square-Footage Proposed/Supportable within the PMA ($700 PSF, 10% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	30,250	47,246	7,500	0	0
Project	20,000	10,000	0	0	0
Total w/ Project	50,250	57,246	7,500	0	0
Net Supportable SF	235,454	238,605	241,776	244,966	248,175
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	185,204	131,109	126,780	129,970	133,179

Source: Kosmont Companies, 2013

Table 8-3A: Total Food Square-Footage Proposed/Supportable within the PMA ($300/PSF, 5% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	30,250	47,246	7,500	0	0
Project	20,000	10,000	0	0	0
Total w/ Project	50,250	57,246	7,500	0	0
Net Supportable SF	403,475	409,946	416,455	423,005	429,593
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	353,225	302,449	301,459	308,008	314,597

Source: Kosmont Companies, 2013

Table 8-3B: Total Food Square-Footage Proposed/Supportable within the PMA ($500/PSF, 5% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	30,250	47,246	7,500	0	0
Project	20,000	10,000	0	0	0
Total w/ Project	50,250	57,246	7,500	0	0
Net Supportable SF	242,085	245,967	249,873	253,803	257,756
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	191,835	138,471	134,877	138,806	142,760

Source: Kosmont Companies, 2013

Table 8-3C: Total Food Square-Footage Proposed/Supportable within the PMA ($700 PSF, 5% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	30,250	47,246	7,500	0	0
Project	20,000	10,000	0	0	0
Total w/ Project	50,250	57,246	7,500	0	0
Net Supportable SF	172,918	175,691	178,481	181,288	184,111
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	122,668	68,195	63,485	66,291	69,115

Source: Kosmont Companies, 2013

Table 8-4A: Total Food Square-Footage Proposed/Supportable within the PMA ($300/PSF, 0% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	30,250	47,246	7,500	0	0
Project	20,000	10,000	0	0	0
Total w/ Project	50,250	57,246	7,500	0	0
Net Supportable SF	257,558	263,146	268,767	274,422	280,112
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	207,308	155,649	153,771	159,426	165,116

Source: Kosmont Companies, 2013

Table 8-4B: Total Food Square-Footage Proposed/Supportable within the PMA ($500/PSF, 0% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	30,250	47,246	7,500	0	0
Project	20,000	10,000	0	0	0
Total w/ Project	50,250	57,246	7,500	0	0
Net Supportable SF	154,535	157,887	161,260	164,653	168,067
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	104,285	50,391	46,264	49,657	53,071

Source: Kosmont Companies, 2013

Table 8-4C: Total Food Square-Footage Proposed/Supportable within the PMA ($700 PSF, 0% V&B Factor)

	2013	2014	2015	2016	2017
Total w/o Project	30,250	47,246	7,500	0	0
Project	20,000	10,000	0	0	0
Total w/ Project	50,250	57,246	7,500	0	0
Net Supportable SF	110,382	112,777	115,186	117,609	120,048
Cumulative SF	50,250	107,496	114,996	114,996	114,996
Surplus Supportable SF	60,132	5,280	190	2,613	5,052

Source: Kosmont Companies, 2013

TABLE 15: Historic & Projected Expected Retail Sales by Retail Category - PMA

Table 15-1: Historic & Projected Expected Retail Sales by Retail Category - PMA (15% V&B Factor)

Historic & Projected Expected Retail Sales by Retail Category - PMA (US Constant $000's)													
Retail Category	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):													
Apparel	66,639	94,406	212,341	197,857	207,235	208,524	209,821	211,126	212,439	213,761	215,090	216,428	217,774
General Merchandise	205,093	238,854	221,465	210,760	220,750	222,123	223,504	224,895	226,294	227,701	229,118	230,543	231,977
Home Furnishings/Appliances	70,174	81,520	149,278	140,993	147,676	148,595	149,519	150,449	151,385	152,326	153,274	154,227	155,187
Other	246,345	270,437	218,571	212,338	222,402	223,785	225,177	226,578	227,987	229,405	230,832	232,268	233,713
Subtotal	**588,251**	**685,217**	**801,656**	**761,949**	**798,062**	**803,026**	**808,021**	**813,047**	**818,104**	**823,193**	**828,314**	**833,466**	**838,650**
Convenience Goods:													
Food (Supermarkets/Liquor)	216,057	250,976	362,152	349,918	366,502	368,782	371,076	373,384	375,707	378,044	380,395	382,761	385,142
Eating and Drinking	200,006	250,703	384,139	366,219	383,576	385,962	388,363	390,779	393,209	395,655	398,116	400,593	403,084
Subtotal	**416,063**	**501,678**	**746,291**	**716,137**	**750,079**	**754,744**	**759,439**	**764,163**	**768,916**	**773,699**	**778,512**	**783,354**	**788,227**
Heavy Commercial Goods:													
Building/Hardware/Farm	107,533	153,452	107,494	102,425	107,280	107,947	108,618	109,294	109,974	110,658	111,346	112,039	112,736
Auto Dealers and Parts	201,198	247,517	251,375	236,016	247,203	248,740	250,288	251,844	253,411	254,987	256,573	258,169	259,775
Service Stations	111,039	153,331	222,103	200,811	210,329	211,637	212,954	214,278	215,611	216,952	218,302	219,660	221,026
Subtotal	**419,771**	**554,300**	**580,972**	**539,253**	**564,811**	**568,324**	**571,860**	**575,417**	**578,996**	**582,597**	**586,221**	**589,868**	**593,537**
Total Potential Retail Sales	**1,424,085**	**1,741,196**	**2,128,919**	**2,017,338**	**2,112,952**	**2,126,095**	**2,139,320**	**2,152,627**	**2,166,017**	**2,179,490**	**2,193,047**	**2,206,688**	**2,220,414**

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 15-2: Historic & Projected Expected Retail Sales by Retail Category - PMA (10% V&B Factor)

Historic & Projected Expected Retail Sales by Retail Category - PMA (US Constant $000's)													
Retail Category	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):													
Apparel	59,430	84,193	189,370	176,453	184,816	185,966	187,123	188,287	189,458	190,636	191,822	193,015	194,216
General Merchandise	182,907	213,016	197,508	187,961	196,869	198,094	199,326	200,566	201,814	203,069	204,332	205,603	206,882
Home Furnishings/Appliances	62,583	72,701	133,129	125,741	131,701	132,520	133,344	134,174	135,008	135,848	136,693	137,543	138,399
Other	219,696	241,181	194,927	189,367	198,343	199,576	200,818	202,067	203,324	204,589	205,861	207,142	208,430
Subtotal	**524,615**	**611,092**	**714,934**	**679,522**	**711,729**	**716,156**	**720,611**	**725,093**	**729,603**	**734,142**	**738,708**	**743,303**	**747,927**
Convenience Goods:													
Food (Supermarkets/Liquor)	192,685	223,826	322,975	312,064	326,855	328,888	330,934	332,992	335,063	337,148	339,245	341,355	343,478
Eating and Drinking	178,370	223,582	342,583	326,602	342,082	344,209	346,351	348,505	350,673	352,854	355,049	357,257	359,479
Subtotal	**371,054**	**447,408**	**665,558**	**638,666**	**668,936**	**673,097**	**677,284**	**681,497**	**685,736**	**690,002**	**694,294**	**698,612**	**702,958**
Heavy Commercial Goods:													
Building/Hardware/Farm	95,901	136,852	95,866	91,345	95,674	96,269	96,868	97,471	98,077	98,687	99,301	99,919	100,540
Auto Dealers and Parts	179,433	220,741	224,182	210,485	220,461	221,832	223,212	224,600	225,997	227,403	228,818	230,241	231,673
Service Stations	99,027	136,744	198,076	179,088	187,576	188,743	189,917	191,098	192,287	193,483	194,686	195,897	197,116
Subtotal	**374,361**	**494,337**	**518,124**	**480,917**	**503,711**	**506,844**	**509,997**	**513,169**	**516,361**	**519,573**	**522,805**	**526,057**	**529,329**
Total Potential Retail Sales	**1,270,030**	**1,552,836**	**1,898,616**	**1,799,106**	**1,884,376**	**1,896,098**	**1,907,892**	**1,919,759**	**1,931,701**	**1,943,716**	**1,955,807**	**1,967,972**	**1,980,213**

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 15-3: Historic & Projected Expected Retail Sales by Retail Category - PMA (5% V&B Factor)

Historic & Projected Expected Retail Sales by Retail Category - PMA (US Constant $000's)													
Retail Category	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):													
Apparel	52,221	73,981	166,400	155,049	162,398	163,408	164,425	165,447	166,476	167,512	168,554	169,602	170,657
General Merchandise	160,720	187,177	173,550	165,161	172,989	174,065	175,148	176,237	177,333	178,437	179,546	180,663	181,787
Home Furnishings/Appliances	54,992	63,882	116,981	110,489	115,725	116,445	117,169	117,898	118,632	119,370	120,112	120,859	121,611
Other	193,047	211,926	171,282	166,397	174,284	175,368	176,459	177,556	178,661	179,772	180,890	182,015	183,147
Subtotal	**460,979**	**536,966**	**628,212**	**597,096**	**625,396**	**629,286**	**633,200**	**637,139**	**641,102**	**645,090**	**649,103**	**653,140**	**657,203**
Convenience Goods:													
Food (Supermarkets/Liquor)	169,312	196,675	283,798	274,211	287,207	288,994	290,791	292,600	294,420	296,252	298,094	299,948	301,814
Eating and Drinking	156,733	196,462	301,028	286,985	300,587	302,457	304,338	306,231	308,136	310,053	311,981	313,922	315,875
Subtotal	**326,045**	**393,137**	**584,826**	**561,196**	**587,794**	**591,450**	**595,129**	**598,831**	**602,556**	**606,304**	**610,076**	**613,870**	**617,689**
Heavy Commercial Goods:													
Building/Hardware/Farm	84,268	120,252	84,237	80,265	84,069	84,592	85,118	85,648	86,180	86,716	87,256	87,799	88,345
Auto Dealers and Parts	157,668	193,965	196,988	184,953	193,719	194,924	196,136	197,356	198,584	199,819	201,062	202,313	203,571
Service Stations	87,015	120,157	174,050	157,364	164,823	165,848	166,880	167,918	168,962	170,013	171,071	172,135	173,205
Subtotal	**328,951**	**434,374**	**455,275**	**422,582**	**442,611**	**445,364**	**448,134**	**450,921**	**453,726**	**456,549**	**459,388**	**462,246**	**465,121**
Total Potential Retail Sales	**1,115,975**	**1,364,477**	**1,668,313**	**1,580,874**	**1,655,801**	**1,666,100**	**1,676,464**	**1,686,892**	**1,697,385**	**1,707,943**	**1,718,567**	**1,729,256**	**1,740,013**

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 15-4: Historic & Projected Expected Retail Sales by Retail Category - PMA (0% V&B Factor)

Historic & Projected Expected Retail Sales by Retail Category - PMA (US Constant $000's)													
Retail Category	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):													
Apparel	45,012	63,768	143,429	133,645	139,980	140,850	141,727	142,608	143,495	144,388	145,286	146,190	147,099
General Merchandise	138,533	161,338	149,592	142,361	149,109	150,036	150,969	151,909	152,853	153,804	154,761	155,724	156,692
Home Furnishings/Appliances	47,400	55,064	100,832	95,236	99,750	100,370	100,995	101,623	102,255	102,891	103,531	104,175	104,823
Other	166,398	182,671	147,637	143,427	150,225	151,159	152,099	153,045	153,997	154,955	155,919	156,889	157,865
Subtotal	**397,343**	**462,840**	**541,491**	**514,670**	**539,063**	**542,416**	**545,790**	**549,185**	**552,601**	**556,038**	**559,497**	**562,977**	**566,479**
Convenience Goods:													
Food (Supermarkets/Liquor)	145,939	169,525	244,621	236,357	247,560	249,099	250,649	252,208	253,777	255,355	256,944	258,542	260,150
Eating and Drinking	135,097	169,341	259,472	247,368	259,092	260,704	262,326	263,957	265,599	267,251	268,914	270,586	272,270
Subtotal	**281,036**	**338,866**	**504,093**	**483,725**	**506,652**	**509,804**	**512,975**	**516,165**	**519,376**	**522,607**	**525,857**	**529,128**	**532,420**
Heavy Commercial Goods:													
Building/Hardware/Farm	72,635	103,651	72,609	69,185	72,464	72,914	73,368	73,824	74,284	74,746	75,211	75,678	76,149
Auto Dealers and Parts	135,903	167,189	169,795	159,421	166,977	168,015	169,061	170,112	171,170	172,235	173,306	174,384	175,469
Service Stations	75,003	103,570	150,023	135,641	142,070	142,953	143,843	144,737	145,638	146,544	147,455	148,372	149,295
Subtotal	**283,541**	**374,410**	**392,427**	**364,246**	**381,510**	**383,883**	**386,271**	**388,674**	**391,092**	**393,524**	**395,972**	**398,435**	**400,913**
Total Potential Retail Sales	**961,920**	**1,176,117**	**1,438,011**	**1,362,641**	**1,427,225**	**1,436,103**	**1,445,036**	**1,454,024**	**1,463,069**	**1,472,169**	**1,481,327**	**1,490,541**	**1,499,812**

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

TABLE 16: Historic & Projected Expected Retail Sales by Retail Category - SMA

Table 16-1: Historic & Projected Expected Retail Sales by Retail Category - SMA (15% V&B Factor)

Historic & Projected Expected Retail Sales by Retail Category - SMA (US Constant $000's)													
Retail Category	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):													
Apparel	270,282	377,467	790,836	771,655	800,415	804,765	809,138	813,536	817,957	822,402	826,872	831,365	835,883
General Merchandise	819,567	919,140	882,671	878,994	911,755	916,710	921,692	926,701	931,737	936,800	941,891	947,010	952,157
Home Furnishings/Appliances	313,100	364,163	550,285	549,476	569,955	573,053	576,167	579,298	582,446	585,612	588,794	591,994	595,211
Other	1,039,654	1,138,622	855,550	876,349	909,011	913,952	918,919	923,912	928,934	933,982	939,058	944,161	949,292
Subtotal	**2,442,602**	**2,799,393**	**3,079,341**	**3,076,474**	**3,191,136**	**3,208,479**	**3,225,916**	**3,243,447**	**3,261,074**	**3,278,796**	**3,296,615**	**3,314,531**	**3,332,544**
Convenience Goods:													
Food (Supermarkets/Liquor)	978,687	1,067,362	1,489,825	1,511,302	1,567,630	1,576,149	1,584,715	1,593,327	1,601,986	1,610,692	1,619,446	1,628,247	1,637,096
Eating and Drinking	797,237	966,735	1,419,289	1,418,613	1,471,486	1,479,483	1,487,523	1,495,607	1,503,735	1,511,907	1,520,124	1,528,385	1,536,691
Subtotal	**1,775,925**	**2,034,098**	**2,909,114**	**2,929,915**	**3,039,115**	**3,055,632**	**3,072,238**	**3,088,934**	**3,105,721**	**3,122,599**	**3,139,569**	**3,156,632**	**3,173,787**
Heavy Commercial Goods:													
Building/Hardware/Farm	457,015	582,780	450,812	456,933	473,963	476,539	479,129	481,733	484,351	486,983	489,630	492,291	494,966
Auto Dealers and Parts	1,013,526	1,164,346	1,094,023	1,064,928	1,104,618	1,110,621	1,116,657	1,122,726	1,128,827	1,134,962	1,141,130	1,147,332	1,153,567
Service Stations	436,040	601,472	888,176	840,908	872,249	876,989	881,755	886,547	891,365	896,209	901,080	905,977	910,901
Subtotal	**1,906,581**	**2,348,597**	**2,433,011**	**2,362,768**	**2,450,831**	**2,464,150**	**2,477,541**	**2,491,006**	**2,504,543**	**2,518,155**	**2,531,840**	**2,545,599**	**2,559,433**
Total Potential Retail Sales	**6,125,108**	**7,182,088**	**8,421,466**	**8,369,157**	**8,681,082**	**8,728,260**	**8,775,695**	**8,823,387**	**8,871,338**	**8,919,550**	**8,968,024**	**9,016,762**	**9,065,764**

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 16-2: Historic & Projected Expected Retail Sales by Retail Category - SMA (10% V&B Factor)

Historic & Projected Expected Retail Sales by Retail Category - SMA (US Constant $000's)													
Retail Category	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):													
Apparel	242,349	338,457	709,104	691,905	717,693	721,594	725,515	729,458	733,422	737,408	741,416	745,445	749,496
General Merchandise	734,866	824,149	791,448	788,151	817,526	821,969	826,436	830,927	835,443	839,983	844,548	849,138	853,753
Home Furnishings/Appliances	280,742	326,527	493,414	492,688	511,051	513,829	516,621	519,429	522,252	525,090	527,943	530,813	533,697
Other	932,207	1,020,947	767,130	785,780	815,067	819,496	823,950	828,427	832,930	837,456	842,007	846,583	851,184
Subtotal	**2,190,163**	**2,510,080**	**2,761,096**	**2,758,525**	**2,861,337**	**2,876,887**	**2,892,522**	**2,908,242**	**2,924,047**	**2,939,938**	**2,955,915**	**2,971,979**	**2,988,131**
Convenience Goods:													
Food (Supermarkets/Liquor)	877,541	957,052	1,335,854	1,355,112	1,405,618	1,413,257	1,420,937	1,428,659	1,436,423	1,444,230	1,452,078	1,459,970	1,467,904
Eating and Drinking	714,844	866,825	1,272,608	1,272,001	1,319,410	1,326,580	1,333,790	1,341,038	1,348,326	1,355,654	1,363,021	1,370,429	1,377,876
Subtotal	**1,592,385**	**1,823,877**	**2,608,462**	**2,627,113**	**2,725,027**	**2,739,837**	**2,754,727**	**2,769,697**	**2,784,750**	**2,799,883**	**2,815,100**	**2,830,399**	**2,845,781**
Heavy Commercial Goods:													
Building/Hardware/Farm	409,783	522,550	404,221	409,710	424,980	427,290	429,612	431,946	434,294	436,654	439,027	441,413	443,812
Auto Dealers and Parts	908,780	1,044,012	980,957	954,869	990,458	995,840	1,001,252	1,006,694	1,012,165	1,017,665	1,023,196	1,028,757	1,034,347
Service Stations	390,976	539,311	796,384	754,001	782,103	786,354	790,627	794,924	799,244	803,588	807,955	812,346	816,760
Subtotal	**1,709,539**	**2,105,873**	**2,181,563**	**2,118,580**	**2,197,541**	**2,209,484**	**2,221,491**	**2,233,564**	**2,245,703**	**2,257,907**	**2,270,178**	**2,282,515**	**2,294,920**
Total Potential Retail Sales	**5,492,087**	**6,439,830**	**7,551,120**	**7,504,218**	**7,783,906**	**7,826,208**	**7,868,740**	**7,911,503**	**7,954,499**	**7,997,728**	**8,041,192**	**8,084,893**	**8,128,831**

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 16-3: Historic & Projected Expected Retail Sales by Retail Category - SMA (5% V&B Factor)

Historic & Projected Expected Retail Sales by Retail Category - SMA (US Constant $000's)													
Retail Category	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):													
Apparel	214,415	299,446	627,373	612,156	634,972	638,422	641,892	645,380	648,888	652,414	655,960	659,525	663,109
General Merchandise	650,165	729,157	700,225	697,308	723,298	727,228	731,181	735,154	739,150	743,167	747,205	751,266	755,349
Home Furnishings/Appliances	248,383	288,892	436,542	435,901	452,147	454,604	457,075	459,559	462,057	464,568	467,092	469,631	472,183
Other	824,760	903,273	678,710	695,211	721,122	725,041	728,981	732,943	736,926	740,931	744,957	749,006	753,076
Subtotal	**1,937,724**	**2,220,767**	**2,442,851**	**2,440,576**	**2,531,538**	**2,545,296**	**2,559,129**	**2,573,036**	**2,587,020**	**2,601,079**	**2,615,215**	**2,629,427**	**2,643,717**
Convenience Goods:													
Food (Supermarkets/Liquor)	776,396	846,742	1,181,883	1,198,921	1,243,605	1,250,364	1,257,159	1,263,991	1,270,861	1,277,767	1,284,711	1,291,693	1,298,713
Eating and Drinking	632,451	766,914	1,125,927	1,125,390	1,167,334	1,173,678	1,180,056	1,186,470	1,192,917	1,199,400	1,205,919	1,212,472	1,219,062
Subtotal	**1,408,846**	**1,613,656**	**2,307,809**	**2,324,311**	**2,410,939**	**2,424,042**	**2,437,216**	**2,450,461**	**2,463,778**	**2,477,168**	**2,490,630**	**2,504,165**	**2,517,774**
Heavy Commercial Goods:													
Building/Hardware/Farm	362,552	462,321	357,630	362,486	375,997	378,040	380,094	382,160	384,237	386,325	388,425	390,536	392,658
Auto Dealers and Parts	804,033	923,679	867,892	844,810	876,297	881,059	885,848	890,662	895,502	900,369	905,262	910,182	915,128
Service Stations	345,912	477,150	704,593	667,095	691,958	695,718	699,499	703,301	707,123	710,966	714,829	718,714	722,620
Subtotal	**1,512,497**	**1,863,149**	**1,930,115**	**1,874,391**	**1,944,251**	**1,954,818**	**1,965,441**	**1,976,122**	**1,986,862**	**1,997,660**	**2,008,516**	**2,019,431**	**2,030,406**
Total Potential Retail Sales	**4,859,067**	**5,697,572**	**6,680,774**	**6,639,278**	**6,886,729**	**6,924,155**	**6,961,785**	**6,999,619**	**7,037,659**	**7,075,906**	**7,114,361**	**7,153,024**	**7,191,898**

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 16-4: Historic & Projected Expected Retail Sales by Retail Category - SMA (0% V&B Factor)

Historic & Projected Expected Retail Sales by Retail Category - SMA (US Constant $000's)													
Retail Category	**2000**	**2005**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):													
Apparel	186,482	260,435	545,641	532,407	552,250	555,251	558,269	561,303	564,353	567,420	570,504	573,604	576,722
General Merchandise	565,464	634,165	609,003	606,466	629,069	632,488	635,925	639,381	642,856	646,350	649,862	653,394	656,945
Home Furnishings/Appliances	216,025	251,256	379,671	379,113	393,243	395,380	397,529	399,689	401,862	404,046	406,241	408,449	410,669
Other	717,314	785,598	590,290	604,641	627,177	630,585	634,012	637,458	640,922	644,405	647,907	651,428	654,968
Subtotal	**1,685,284**	**1,931,454**	**2,124,605**	**2,122,627**	**2,201,739**	**2,213,704**	**2,225,735**	**2,237,831**	**2,249,993**	**2,262,220**	**2,274,515**	**2,286,876**	**2,299,304**
Convenience Goods:													
Food (Supermarkets/Liquor)	675,250	736,431	1,027,911	1,042,730	1,081,593	1,087,471	1,093,381	1,099,323	1,105,298	1,111,304	1,117,344	1,123,416	1,129,522
Eating and Drinking	550,057	667,004	979,245	978,778	1,015,258	1,020,776	1,026,323	1,031,901	1,037,509	1,043,147	1,048,816	1,054,516	1,060,247
Subtotal	**1,225,307**	**1,403,435**	**2,007,157**	**2,021,508**	**2,096,851**	**2,108,247**	**2,119,704**	**2,131,224**	**2,142,806**	**2,154,452**	**2,166,160**	**2,177,932**	**2,189,768**
Heavy Commercial Goods:													
Building/Hardware/Farm	315,320	402,091	311,040	315,263	327,013	328,790	330,577	332,374	334,180	335,996	337,822	339,658	341,504
Auto Dealers and Parts	699,287	803,345	754,826	734,752	762,136	766,278	770,443	774,630	778,840	783,072	787,328	791,607	795,909
Service Stations	300,848	414,988	612,801	580,188	601,812	605,083	608,371	611,677	615,001	618,344	621,704	625,083	628,480
Subtotal	**1,315,454**	**1,620,425**	**1,678,667**	**1,630,203**	**1,690,962**	**1,700,151**	**1,709,391**	**1,718,681**	**1,728,021**	**1,737,412**	**1,746,854**	**1,756,348**	**1,765,893**
Total Potential Retail Sales	**4,226,046**	**4,955,314**	**5,810,428**	**5,774,338**	**5,989,552**	**6,022,103**	**6,054,830**	**6,087,736**	**6,120,820**	**6,154,084**	**6,187,529**	**6,221,155**	**6,254,965**

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 18: Expected Sales Capture - PMA

Table 18-1: Expected Sales Capture – PMA (15% V&B Factor)

Expected Sales Capture - PMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	128,050	138,022	128,607	134,702	135,540	136,383	137,232	138,085	138,944	139,809	140,678	141,553
General Merchandise	139,347	143,953	136,994	143,487	144,380	145,278	146,182	147,091	148,006	148,926	149,853	150,785
Home Furnishings/Appliances	92,519	97,031	91,646	95,989	96,586	97,187	97,792	98,400	99,012	99,628	100,248	100,871
Other	143,230	142,071	138,020	144,561	145,460	146,365	147,276	148,192	149,113	150,041	150,974	151,913
Subtotal	503,146	521,076	495,267	518,740	521,967	525,214	528,481	531,768	535,076	538,404	541,753	545,123
Convenience Goods:												
Food (Supermarkets/Liquor)	270,933	271,614	262,438	274,877	276,587	278,307	280,038	281,780	283,533	285,296	287,071	288,857
Eating and Drinking	242,556	249,690	238,042	249,325	250,875	252,436	254,006	255,586	257,176	258,776	260,385	262,005
Subtotal	513,489	521,304	500,481	524,201	527,462	530,743	534,044	537,366	540,709	544,072	547,456	550,862
Heavy Commercial Goods:												
Building/Hardware/Farm	67,803	69,871	66,576	69,732	70,166	70,602	71,041	71,483	71,928	72,375	72,825	73,278
Auto Dealers and Parts	59,209	62,844	59,004	61,801	62,185	62,572	62,961	63,353	63,747	64,143	64,542	64,944
Service Stations	125,849	144,367	130,527	136,714	137,564	138,420	139,281	140,147	141,019	141,896	142,779	143,667
Subtotal	252,861	277,082	256,108	268,246	269,915	271,594	273,283	274,983	276,693	278,414	280,146	281,889
Total Potential Retail Sales	1,269,497	1,319,463	1,251,855	1,311,188	1,319,344	1,327,550	1,335,808	1,344,117	1,352,478	1,360,890	1,369,355	1,377,873

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 18-2: Expected Sales Capture – PMA (10% V&B Factor)

Expected Sales Capture - PMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	114,198	123,091	114,695	120,131	120,878	121,630	122,386	123,148	123,914	124,684	125,460	126,240
General Merchandise	124,273	128,380	122,174	127,965	128,761	129,562	130,368	131,179	131,995	132,816	133,642	134,473
Home Furnishings/Appliances	82,511	86,534	81,732	85,605	86,138	86,674	87,213	87,755	88,301	88,850	89,403	89,959
Other	127,735	126,702	123,089	128,923	129,725	130,532	131,344	132,161	132,983	133,810	134,642	135,480
Subtotal	448,717	464,707	441,689	462,624	465,501	468,397	471,311	474,242	477,192	480,160	483,147	486,152
Convenience Goods:												
Food (Supermarkets/Liquor)	241,624	242,231	234,048	245,141	246,666	248,200	249,744	251,298	252,861	254,434	256,016	257,609
Eating and Drinking	216,317	222,679	212,291	222,353	223,736	225,128	226,528	227,937	229,355	230,782	232,217	233,662
Subtotal	457,941	464,910	446,339	467,494	470,402	473,328	476,272	479,235	482,216	485,215	488,233	491,270
Heavy Commercial Goods:												
Building/Hardware/Farm	60,468	62,313	59,374	62,188	62,575	62,964	63,356	63,750	64,147	64,546	64,947	65,351
Auto Dealers and Parts	52,804	56,045	52,621	55,115	55,458	55,803	56,150	56,499	56,851	57,204	57,560	57,918
Service Stations	112,235	128,750	116,407	121,924	122,683	123,446	124,214	124,986	125,764	126,546	127,333	128,125
Subtotal	225,507	247,108	228,402	239,228	240,716	242,213	243,720	245,236	246,761	248,296	249,841	251,395
Total Potential Retail Sales	1,132,165	1,176,725	1,116,431	1,169,346	1,176,619	1,183,938	1,191,303	1,198,713	1,206,169	1,213,672	1,221,221	1,228,817

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 18-3: Expected Sales Capture – PMA (Updated)
(5% V&B Factor)

Expected Sales Capture - PMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	100,345	108,160	100,782	105,559	106,215	106,876	107,541	108,210	108,883	109,560	110,242	110,927
General Merchandise	109,199	112,807	107,355	112,443	113,142	113,846	114,554	115,267	115,984	116,705	117,431	118,162
Home Furnishings/Appliances	72,502	76,038	71,818	75,221	75,689	76,160	76,634	77,111	77,590	78,073	78,558	79,047
Other	112,241	111,333	108,158	113,284	113,989	114,698	115,412	116,129	116,852	117,579	118,310	119,046
Subtotal	394,287	408,338	388,112	406,507	409,036	411,580	414,140	416,716	419,309	421,917	424,541	427,182
Convenience Goods:												
Food (Supermarkets/Liquor)	212,315	212,848	205,658	215,405	216,745	218,093	219,450	220,815	222,189	223,571	224,961	226,361
Eating and Drinking	190,077	195,668	186,540	195,382	196,597	197,820	199,050	200,288	201,534	202,788	204,049	205,318
Subtotal	402,393	408,516	392,198	410,787	413,342	415,913	418,500	421,103	423,723	426,359	429,011	431,679
Heavy Commercial Goods:												
Building/Hardware/Farm	53,133	54,754	52,172	54,645	54,985	55,327	55,671	56,017	56,366	56,716	57,069	57,424
Auto Dealers and Parts	46,399	49,247	46,238	48,430	48,731	49,034	49,339	49,646	49,955	50,266	50,578	50,893
Service Stations	98,621	113,132	102,287	107,135	107,801	108,472	109,146	109,825	110,509	111,196	111,888	112,584
Subtotal	198,153	217,134	200,697	210,209	211,517	212,833	214,156	215,489	216,829	218,178	219,535	220,900
Total Potential Retail Sales	994,833	1,033,988	981,008	1,027,504	1,033,895	1,040,326	1,046,797	1,053,308	1,059,860	1,066,453	1,073,086	1,079,761

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 18-4: Expected Sales Capture – PMA (Updated)
(0% V&B Factor)

Expected Sales Capture - PMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	86,493	93,229	86,870	90,987	91,553	92,122	92,695	93,272	93,852	94,436	95,023	95,614
General Merchandise	94,124	97,235	92,535	96,921	97,524	98,130	98,741	99,355	99,973	100,595	101,220	101,850
Home Furnishings/Appliances	62,493	65,541	61,903	64,837	65,241	65,647	66,055	66,466	66,879	67,295	67,714	68,135
Other	96,747	95,964	93,227	97,646	98,253	98,865	99,479	100,098	100,721	101,347	101,978	102,612
Subtotal	339,858	351,969	334,535	350,391	352,570	354,764	356,970	359,191	361,425	363,673	365,935	368,211
Convenience Goods:												
Food (Supermarkets/Liquor)	183,006	183,466	177,268	185,670	186,825	187,987	189,156	190,333	191,517	192,708	193,906	195,113
Eating and Drinking	163,838	168,657	160,789	168,410	169,458	170,512	171,572	172,640	173,713	174,794	175,881	176,975
Subtotal	346,844	352,123	338,057	354,080	356,282	358,498	360,728	362,972	365,230	367,502	369,788	372,088
Heavy Commercial Goods:												
Building/Hardware/Farm	45,799	47,196	44,970	47,101	47,394	47,689	47,986	48,284	48,585	48,887	49,191	49,497
Auto Dealers and Parts	39,994	42,449	39,855	41,744	42,004	42,265	42,528	42,793	43,059	43,327	43,596	43,867
Service Stations	85,007	97,515	88,167	92,345	92,920	93,498	94,079	94,665	95,253	95,846	96,442	97,042
Subtotal	170,799	187,159	172,992	181,191	182,318	183,452	184,593	185,741	186,897	188,059	189,229	190,406
Total Potential Retail Sales	857,501	891,251	845,584	885,662	891,171	896,714	902,292	907,904	913,552	919,234	924,952	930,705

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 19: Expected Sales Capture - SMA

Table 19-1: Expected Sales Capture – SMA (15% V&B Factor)

Expected Sales Capture - SMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	73,784	79,084	77,165	80,041	80,476	80,914	81,354	81,796	82,240	82,687	83,137	83,588
General Merchandise	85,807	88,267	87,899	91,175	91,671	92,169	92,670	93,174	93,680	94,189	94,701	95,216
Home Furnishings/Appliances	53,784	55,028	54,948	56,996	57,305	57,617	57,930	58,245	58,561	58,879	59,199	59,521
Other	87,917	85,555	87,635	90,901	91,395	91,892	92,391	92,893	93,398	93,906	94,416	94,929
Subtotal	301,292	307,934	307,647	319,114	320,848	322,592	324,345	326,107	327,880	329,662	331,453	333,254
Convenience Goods:												
Food (Supermarkets/Liquor)	75,112	74,491	75,565	78,381	78,807	79,236	79,666	80,099	80,535	80,972	81,412	81,855
Eating and Drinking	138,993	141,929	141,861	147,149	147,948	148,752	149,561	150,373	151,191	152,012	152,838	153,669
Subtotal	214,105	216,420	217,426	225,530	226,756	227,988	229,227	230,473	231,725	232,985	234,251	235,524
Heavy Commercial Goods:												
Building/Hardware/Farm	45,383	45,081	45,693	47,396	47,654	47,913	48,173	48,435	48,698	48,963	49,229	49,497
Auto Dealers and Parts	50,786	54,701	53,246	55,231	55,531	55,833	56,136	56,441	56,748	57,057	57,367	57,678
Service Stations	38,927	44,409	42,045	43,612	43,849	44,088	44,327	44,568	44,810	45,054	45,299	45,545
Subtotal	135,096	144,191	140,985	146,240	147,034	147,834	148,637	149,445	150,257	151,073	151,894	152,720
Total Potential Retail Sales	650,493	668,545	666,059	690,883	694,638	698,413	702,209	706,025	709,862	713,720	717,598	721,498

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 19-2: Expected Sales Capture – SMA (10% V&B Factor)

Expected Sales Capture - SMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	66,159	70,910	69,191	71,769	72,159	72,552	72,946	73,342	73,741	74,142	74,544	74,950
General Merchandise	76,939	79,145	78,815	81,753	82,197	82,644	83,093	83,544	83,998	84,455	84,914	85,375
Home Furnishings/Appliances	48,225	49,341	49,269	51,105	51,383	51,662	51,943	52,225	52,509	52,794	53,081	53,370
Other	78,831	76,713	78,578	81,507	81,950	82,395	82,843	83,293	83,746	84,201	84,658	85,118
Subtotal	270,154	276,110	275,852	286,134	287,689	289,252	290,824	292,405	293,994	295,591	297,198	298,813
Convenience Goods:												
Food (Supermarkets/Liquor)	67,349	66,793	67,756	70,281	70,663	71,047	71,433	71,821	72,211	72,604	72,998	73,395
Eating and Drinking	124,628	127,261	127,200	131,941	132,658	133,379	134,104	134,833	135,565	136,302	137,043	137,788
Subtotal	191,978	194,053	194,956	202,222	203,321	204,426	205,537	206,654	207,777	208,906	210,041	211,183
Heavy Commercial Goods:												
Building/Hardware/Farm	40,693	40,422	40,971	42,498	42,729	42,961	43,195	43,429	43,665	43,903	44,141	44,381
Auto Dealers and Parts	45,537	49,048	47,743	49,523	49,792	50,063	50,335	50,608	50,883	51,160	51,438	51,717
Service Stations	34,904	39,819	37,700	39,105	39,318	39,531	39,746	39,962	40,179	40,398	40,617	40,838
Subtotal	121,134	129,289	126,414	131,126	131,839	132,555	133,276	134,000	134,728	135,460	136,196	136,937
Total Potential Retail Sales	583,265	599,452	597,223	619,482	622,848	626,233	629,636	633,058	636,499	639,958	643,436	646,932

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 19-3: Expected Sales Capture – SMA
(5% V&B Factor)

Expected Sales Capture - SMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	58,533	62,737	61,216	63,497	63,842	64,189	64,538	64,889	65,241	65,596	65,952	66,311
General Merchandise	68,071	70,023	69,731	72,330	72,723	73,118	73,515	73,915	74,317	74,721	75,127	75,535
Home Furnishings/Appliances	42,667	43,654	43,590	45,215	45,460	45,708	45,956	46,206	46,457	46,709	46,963	47,218
Other	69,745	67,871	69,521	72,112	72,504	72,898	73,294	73,693	74,093	74,496	74,901	75,308
Subtotal	239,016	244,285	244,058	253,154	254,530	255,913	257,304	258,702	260,108	261,521	262,943	264,372
Convenience Goods:												
Food (Supermarkets/Liquor)	59,587	59,094	59,946	62,180	62,518	62,858	63,200	63,543	63,888	64,236	64,585	64,936
Eating and Drinking	110,264	112,593	112,539	116,733	117,368	118,006	118,647	119,292	119,940	120,592	121,247	121,906
Subtotal	169,850	171,687	172,485	178,914	179,886	180,864	181,847	182,835	183,828	184,827	185,832	186,842
Heavy Commercial Goods:												
Building/Hardware/Farm	36,003	35,763	36,249	37,600	37,804	38,009	38,216	38,424	38,633	38,842	39,054	39,266
Auto Dealers and Parts	40,289	43,395	42,241	43,815	44,053	44,292	44,533	44,775	45,018	45,263	45,509	45,756
Service Stations	30,881	35,230	33,355	34,598	34,786	34,975	35,165	35,356	35,548	35,741	35,936	36,131
Subtotal	107,172	114,387	111,844	116,012	116,643	117,277	117,914	118,555	119,199	119,847	120,498	121,153
Total Potential Retail Sales	516,038	530,359	528,386	548,080	551,058	554,053	557,064	560,092	563,136	566,196	569,273	572,367

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 19-4: Expected Sales Capture – SMA
(0% V&B Factor)

Expected Sales Capture - SMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	50,908	54,564	53,241	55,225	55,525	55,827	56,130	56,435	56,742	57,050	57,360	57,672
General Merchandise	59,203	60,900	60,647	62,907	63,249	63,593	63,938	64,286	64,635	64,986	65,339	65,694
Home Furnishings/Appliances	37,108	37,967	37,911	39,324	39,538	39,753	39,969	40,186	40,405	40,624	40,845	41,067
Other	60,659	59,029	60,464	62,718	63,059	63,401	63,746	64,092	64,441	64,791	65,143	65,497
Subtotal	207,878	212,461	212,263	220,174	221,370	222,574	223,783	224,999	226,222	227,451	228,688	229,930
Convenience Goods:												
Food (Supermarkets/Liquor)	51,824	51,396	52,136	54,080	54,374	54,669	54,966	55,265	55,565	55,867	56,171	56,476
Eating and Drinking	95,899	97,925	97,878	101,526	102,078	102,632	103,190	103,751	104,315	104,882	105,452	106,025
Subtotal	147,723	149,320	150,014	155,605	156,451	157,301	158,156	159,016	159,880	160,749	161,622	162,501
Heavy Commercial Goods:												
Building/Hardware/Farm	31,312	31,104	31,526	32,701	32,879	33,058	33,237	33,418	33,600	33,782	33,966	34,150
Auto Dealers and Parts	35,040	37,741	36,738	38,107	38,314	38,522	38,731	38,942	39,154	39,366	39,580	39,795
Service Stations	26,858	30,640	29,009	30,091	30,254	30,419	30,584	30,750	30,917	31,085	31,254	31,424
Subtotal	93,210	99,485	97,273	100,899	101,447	101,998	102,553	103,110	103,670	104,234	104,800	105,370
Total Potential Retail Sales	448,810	461,266	459,550	476,678	479,269	481,873	484,492	487,125	489,772	492,434	495,110	497,801

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 20-1: Expected Sales Capture – PMA & SMA (15% V&B Factor)

Expected Sales Capture - PMA & SMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	201,834	217,105	205,772	214,744	216,017	217,297	218,585	219,881	221,185	222,496	223,815	225,142
General Merchandise	225,154	232,220	224,894	234,663	236,051	237,447	238,852	240,265	241,686	243,116	244,554	246,001
Home Furnishings/Appliances	146,303	152,059	146,593	152,985	153,892	154,804	155,722	156,645	157,573	158,507	159,447	160,392
Other	231,147	227,626	225,654	235,462	236,855	238,257	239,667	241,085	242,512	243,947	245,390	246,843
Subtotal	804,438	829,011	802,914	837,854	842,815	847,805	852,825	857,875	862,955	868,065	873,206	878,377
Convenience Goods:												
Food (Supermarkets/Liquor)	346,045	346,105	338,003	353,258	355,394	357,543	359,705	361,879	364,067	366,269	368,483	370,711
Eating and Drinking	381,549	391,619	379,904	396,473	398,824	401,188	403,567	405,960	408,367	410,788	413,224	415,674
Subtotal	727,594	737,724	717,907	749,731	754,218	758,731	763,271	767,839	772,434	777,057	781,707	786,385
Heavy Commercial Goods:												
Building/Hardware/Farm	113,186	114,952	112,270	117,128	117,819	118,515	119,214	119,918	120,626	121,338	122,054	122,775
Auto Dealers and Parts	109,995	117,545	112,250	117,032	117,716	118,405	119,097	119,794	120,495	121,200	121,909	122,622
Service Stations	164,776	188,776	172,573	180,326	181,414	182,508	183,608	184,715	185,829	186,950	188,078	189,212
Subtotal	387,957	421,273	397,093	414,486	416,949	419,427	421,920	424,428	426,950	429,488	432,041	434,609
Total Potential Retail Sales	1,919,990	1,988,008	1,917,914	2,002,071	2,013,982	2,025,963	2,038,017	2,050,142	2,062,340	2,074,610	2,086,954	2,099,371

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 20-1: Expected Sales Capture – PMA & SMA (10% V&B Factor)

Expected Sales Capture - PMA & SMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	180,356	194,001	183,885	191,900	193,037	194,181	195,332	196,490	197,654	198,826	200,004	201,190
General Merchandise	201,212	207,525	200,990	209,718	210,958	212,206	213,461	214,723	215,993	217,271	218,556	219,849
Home Furnishings/Appliances	130,736	135,875	131,000	136,711	137,521	138,336	139,156	139,980	140,810	141,645	142,484	143,329
Other	206,566	203,415	201,667	210,429	211,674	212,927	214,186	215,453	216,728	218,011	219,300	220,598
Subtotal	718,870	740,817	717,542	748,758	753,190	757,649	762,135	766,647	771,186	775,752	780,345	784,965
Convenience Goods:												
Food (Supermarkets/Liquor)	308,973	309,024	301,804	315,422	317,329	319,247	321,177	323,119	325,072	327,037	329,015	331,004
Eating and Drinking	340,945	349,940	339,491	354,294	356,394	358,507	360,632	362,770	364,920	367,084	369,260	371,449
Subtotal	649,919	658,964	641,295	669,716	673,723	677,754	681,809	685,889	689,993	694,121	698,275	702,453
Heavy Commercial Goods:												
Building/Hardware/Farm	101,161	102,735	100,345	104,686	105,304	105,926	106,551	107,179	107,812	108,448	109,088	109,732
Auto Dealers and Parts	98,341	105,093	100,365	104,638	105,250	105,866	106,485	107,108	107,734	108,364	108,998	109,636
Service Stations	147,139	168,569	154,107	161,029	162,000	162,977	163,960	164,948	165,943	166,944	167,950	168,963
Subtotal	346,641	376,397	354,817	370,354	372,554	374,768	376,995	379,236	381,489	383,756	386,037	388,331
Total Potential Retail Sales	1,715,430	1,776,178	1,713,654	1,788,827	1,799,468	1,810,171	1,820,939	1,831,771	1,842,668	1,853,629	1,864,657	1,875,750

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 20-1: Expected Sales Capture – PMA & SMA (5% V&B Factor)

Expected Sales Capture - PMA & SMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	158,878	170,897	161,998	169,056	170,058	171,065	172,079	173,098	174,124	175,156	176,194	177,238
General Merchandise	177,270	182,830	177,086	184,773	185,865	186,964	188,070	189,182	190,300	191,426	192,558	193,696
Home Furnishings/Appliances	115,169	119,692	115,408	120,436	121,150	121,868	122,590	123,316	124,047	124,782	125,522	126,265
Other	181,986	179,204	177,679	185,397	186,493	187,596	188,706	189,822	190,945	192,074	193,211	194,354
Subtotal	633,303	652,623	632,170	659,661	663,566	667,493	671,444	675,418	679,416	683,438	687,484	691,554
Convenience Goods:												
Food (Supermarkets/Liquor)	271,902	271,942	265,604	277,586	279,263	280,951	282,650	284,358	286,077	287,806	289,546	291,296
Eating and Drinking	300,341	308,261	299,079	312,115	313,965	315,825	317,697	319,580	321,474	323,380	325,296	327,225
Subtotal	572,243	580,203	564,683	589,701	593,228	596,777	600,347	603,938	607,551	611,186	614,842	618,521
Heavy Commercial Goods:												
Building/Hardware/Farm	89,136	90,517	88,421	92,245	92,789	93,336	93,887	94,441	94,998	95,559	96,123	96,690
Auto Dealers and Parts	86,687	92,642	88,479	92,245	92,784	93,326	93,872	94,421	94,973	95,529	96,087	96,649
Service Stations	129,502	148,362	135,642	141,733	142,587	143,447	144,312	145,182	146,057	146,937	147,823	148,715
Subtotal	305,325	331,521	312,541	326,222	328,160	330,109	332,071	334,043	336,028	338,025	340,033	342,054
Total Potential Retail Sales	1,510,871	1,564,347	1,509,394	1,575,584	1,584,954	1,594,379	1,603,861	1,613,400	1,622,996	1,632,649	1,642,359	1,652,128

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 20-1: Expected Sales Capture – PMA & SMA (0% V&B Factor)

Expected Sales Capture - PMA & SMA (US Constant $000's)												
Retail Category	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):												
Apparel	137,401	147,793	140,110	146,212	147,078	147,949	148,826	149,707	150,594	151,486	152,384	153,286
General Merchandise	153,327	158,135	153,181	159,828	160,772	161,723	162,679	163,640	164,608	165,581	166,560	167,544
Home Furnishings/Appliances	99,602	103,508	99,815	104,162	104,779	105,399	106,024	106,652	107,284	107,919	108,559	109,202
Other	157,406	154,993	153,691	160,364	161,312	162,266	163,225	164,190	165,161	166,138	167,121	168,109
Subtotal	547,735	564,429	546,798	570,565	573,941	577,337	580,753	584,190	587,647	591,125	594,623	598,142
Convenience Goods:												
Food (Supermarkets/Liquor)	234,830	234,861	229,404	239,749	241,198	242,656	244,122	245,598	247,082	248,575	250,077	251,589
Eating and Drinking	259,737	266,582	258,667	269,936	271,535	273,144	274,762	276,390	278,028	279,676	281,333	283,000
Subtotal	494,567	501,443	488,072	509,685	512,733	515,800	518,885	521,988	525,110	528,251	531,410	534,589
Heavy Commercial Goods:												
Building/Hardware/Farm	77,111	78,300	76,496	79,803	80,273	80,747	81,223	81,702	82,184	82,669	83,157	83,647
Auto Dealers and Parts	75,034	80,190	76,593	79,851	80,318	80,787	81,260	81,735	82,212	82,693	83,176	83,663
Service Stations	111,864	128,155	117,176	122,436	123,174	123,916	124,663	125,415	126,171	126,931	127,696	128,466
Subtotal	264,009	286,645	270,265	282,090	283,765	285,450	287,146	288,851	290,567	292,293	294,029	295,776
Total Potential Retail Sales	1,306,311	1,352,517	1,305,135	1,362,340	1,370,439	1,378,587	1,386,784	1,395,029	1,403,324	1,411,668	1,420,062	1,428,506

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 21: Expected Sales Capture - SMA

Table 21-1: Expected Demand vs. Actual Sales (Leakage Analysis) (15% V&B Factor)

Expected Demand vs. Actual Sales (Leakage Analysis) - (US Constant $000's)				
Retail Category	**Expected 2010 Demand**	**2010 Actual Sales**	**Expected Minus Actual**	**Percent Actual/Expected**
Shopper Goods (GAFO):				
Apparel	217,105	102,027	115,078	47%
General Merchandise	232,220	106,411	125,808	46%
Home Furnishings/Appliances	152,059	71,726	80,333	47%
Other	227,626	105,021	122,606	46%
Subtotal	829,011	385,185	443,825	46%
Convenience Goods:				
Food (Supermarkets/Liquor)	346,105	174,009	172,096	50%
Eating and Drinking	391,619	184,574	207,046	47%
Subtotal	737,724	358,583	379,141	49%
Heavy Commercial Goods:				
Building/Hardware/Farm	114,952	51,650	63,303	45%
Auto Dealers and Parts	117,545	120,782	-3,238	103%
Service Stations	188,776	106,718	82,058	57%
Subtotal	421,273	279,150	142,124	66%
Total Potential Retail Sales	1,988,008	1,022,918	965,090	51%

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 21-2: Expected Demand vs. Actual Sales (Leakage Analysis) (10% V&B Factor)

Expected Demand vs. Actual Sales (Leakage Analysis) - (US Constant $000's)				
Retail Category	**Expected 2010 Demand**	**2010 Actual Sales**	**Expected Minus Actual**	**Percent Actual/Expected**
Shopper Goods (GAFO):				
Apparel	194,001	102,027	91,974	53%
General Merchandise	207,525	106,411	101,114	51%
Home Furnishings/Appliances	135,875	71,726	64,149	53%
Other	203,415	105,021	98,395	52%
Subtotal	740,817	385,185	355,632	52%
Convenience Goods:				
Food (Supermarkets/Liquor)	309,024	174,009	135,015	56%
Eating and Drinking	349,940	184,574	165,366	53%
Subtotal	658,964	358,583	300,381	54%
Heavy Commercial Goods:				
Building/Hardware/Farm	102,735	51,650	51,085	50%
Auto Dealers and Parts	105,093	120,782	-15,689	115%
Service Stations	168,569	106,718	61,851	63%
Subtotal	376,397	279,150	97,247	74%
Total Potential Retail Sales	1,776,178	1,022,918	753,260	58%

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 21-3: Expected Demand vs. Actual Sales (Leakage Analysis) (5% V&B Factor)

Expected Demand vs. Actual Sales (Leakage Analysis) - (US Constant $000's)				
Retail Category	**Expected 2010 Demand**	**2010 Actual Sales**	**Expected Minus Actual**	**Percent Actual/Expected**
Shopper Goods (GAFO):				
Apparel	170,897	102,027	68,870	60%
General Merchandise	182,830	106,411	76,419	58%
Home Furnishings/Appliances	119,692	71,726	47,966	60%
Other	179,204	105,021	74,184	59%
Subtotal	652,623	385,185	267,438	59%
Convenience Goods:				
Food (Supermarkets/Liquor)	271,942	174,009	97,933	64%
Eating and Drinking	308,261	184,574	123,687	60%
Subtotal	580,203	358,583	221,620	62%
Heavy Commercial Goods:				
Building/Hardware/Farm	90,517	51,650	38,868	57%
Auto Dealers and Parts	92,642	120,782	-28,141	130%
Service Stations	148,362	106,718	41,644	72%
Subtotal	331,521	279,150	52,371	84%
Total Potential Retail Sales	1,564,347	1,022,918	541,430	65%

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 21-4: Expected Demand vs. Actual Sales (Leakage Analysis) (0% V&B Factor)

Expected Demand vs. Actual Sales (Leakage Analysis) - (US Constant $000's)				
Retail Category	**Expected 2010 Demand**	**2010 Actual Sales**	**Expected Minus Actual**	**Percent Actual/Expected**
Shopper Goods (GAFO):				
Apparel	147,793	102,027	45,766	69%
General Merchandise	158,135	106,411	51,724	67%
Home Furnishings/Appliances	103,508	71,726	31,782	69%
Other	154,993	105,021	49,973	68%
Subtotal	564,429	385,185	179,244	68%
Convenience Goods:				
Food (Supermarkets/Liquor)	234,861	174,009	60,852	74%
Eating and Drinking	266,582	184,574	82,008	69%
Subtotal	501,443	358,583	142,860	72%
Heavy Commercial Goods:				
Building/Hardware/Farm	78,300	51,650	26,650	66%
Auto Dealers and Parts	80,190	120,782	-40,592	151%
Service Stations	128,155	106,718	21,437	83%
Subtotal	286,645	279,150	7,495	97%
Total Potential Retail Sales	1,352,517	1,022,918	329,599	76%

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 22: Expected Net Retail Demand

Table 22-1: Expected Net Retail Demand (15% V&B Factor)

Expected Net Retail Demand (US Constant $000's)											
Retail Category	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):											
Apparel	115,078	103,745	112,717	113,990	115,270	116,558	117,854	119,157	120,469	121,788	123,115
General Merchandise	125,808	118,482	128,251	129,640	131,036	132,440	133,853	135,275	136,704	138,143	139,589
Home Furnishings/Appliances	80,333	74,867	81,259	82,166	83,078	83,995	84,919	85,847	86,781	87,721	88,666
Other	122,606	120,634	130,442	131,835	133,236	134,646	136,064	137,491	138,926	140,370	141,822
Subtotal	443,825	417,729	452,669	457,630	462,620	467,640	472,690	477,770	482,880	488,021	493,192
Convenience Goods:											
Food (Supermarkets/Liquor)	172,096	163,994	179,249	181,385	183,534	185,695	187,870	190,058	192,260	194,474	196,702
Eating and Drinking	207,046	195,330	211,899	214,250	216,615	218,993	221,386	223,793	226,214	228,650	231,100
Subtotal	379,141	359,324	391,149	395,635	400,148	404,689	409,256	413,851	418,474	423,124	427,803
Heavy Commercial Goods:											
Building/Hardware/Farm	63,303	60,620	65,479	66,170	66,865	67,565	68,269	68,976	69,688	70,405	71,125
Auto Dealers and Parts	(3,238)	(8,532)	(3,751)	(3,066)	(2,378)	(1,685)	(988)	(288)	417	1,126	1,840
Service Stations	82,058	65,855	73,609	74,696	75,790	76,890	77,998	79,112	80,232	81,360	82,494
Subtotal	142,124	117,943	135,336	137,800	140,278	142,770	145,278	147,801	150,338	152,891	155,459
Total Potential Retail Sales	965,090	894,996	979,154	991,064	1,003,046	1,015,099	1,027,224	1,039,422	1,051,692	1,064,036	1,076,454

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 22-2: Expected Net Retail Demand (10% V&B Factor)

Expected Net Retail Demand (US Constant $000's)											
Retail Category	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):											
Apparel	91,974	81,858	89,873	91,010	92,154	93,305	94,463	95,627	96,799	97,977	99,163
General Merchandise	101,114	94,578	103,306	104,547	105,794	107,049	108,312	109,582	110,859	112,144	113,437
Home Furnishings/Appliances	64,149	59,274	64,984	65,795	66,610	67,430	68,254	69,084	69,919	70,758	71,603
Other	98,395	96,646	105,409	106,654	107,906	109,166	110,433	111,708	112,990	114,280	115,577
Subtotal	355,632	332,357	363,572	368,005	372,464	376,950	381,462	386,001	390,567	395,160	399,780
Convenience Goods:											
Food (Supermarkets/Liquor)	135,015	127,795	141,413	143,320	145,238	147,168	149,110	151,063	153,028	155,006	156,995
Eating and Drinking	165,366	154,918	169,720	171,821	173,933	176,058	178,196	180,347	182,510	184,686	186,876
Subtotal	300,381	282,712	311,133	315,140	319,171	323,226	327,306	331,410	335,539	339,692	343,870
Heavy Commercial Goods:											
Building/Hardware/Farm	51,085	48,696	53,037	53,655	54,276	54,901	55,530	56,163	56,799	57,439	58,083
Auto Dealers and Parts	(15,689)	(20,418)	(16,144)	(15,532)	(14,917)	(14,298)	(13,675)	(13,048)	(12,418)	(11,784)	(11,147)
Service Stations	61,851	47,389	54,312	55,283	56,259	57,242	58,231	59,225	60,226	61,233	62,246
Subtotal	97,247	75,667	91,204	93,405	95,619	97,846	100,086	102,340	104,607	106,887	109,182
Total Potential Retail Sales	753,260	690,736	765,910	776,550	787,254	798,021	808,853	819,750	830,712	841,739	852,832

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 22-3: Expected Net Retail Demand (5% V&B Factor)

Expected Net Retail Demand (US Constant $000's)											
Retail Category	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):											
Apparel	68,870	59,971	67,029	68,030	69,038	70,052	71,071	72,097	73,129	74,167	75,211
General Merchandise	76,419	70,674	78,361	79,454	80,553	81,658	82,770	83,889	85,014	86,146	87,285
Home Furnishings/Appliances	47,966	43,682	48,710	49,424	50,141	50,864	51,590	52,321	53,056	53,795	54,539
Other	74,184	72,658	80,376	81,472	82,575	83,685	84,801	85,924	87,054	88,190	89,333
Subtotal	267,438	246,985	274,476	278,380	282,308	286,259	290,233	294,231	298,253	302,299	306,368
Convenience Goods:											
Food (Supermarkets/Liquor)	97,933	91,595	103,577	105,254	106,942	108,641	110,349	112,068	113,797	115,537	117,287
Eating and Drinking	123,687	114,506	127,541	129,391	131,252	133,124	135,006	136,901	138,806	140,723	142,651
Subtotal	221,620	206,101	231,118	234,645	238,194	241,764	245,355	248,968	252,603	256,260	259,938
Heavy Commercial Goods:											
Building/Hardware/Farm	38,868	36,771	40,595	41,139	41,687	42,237	42,791	43,349	43,909	44,473	45,040
Auto Dealers and Parts	(28,141)	(32,304)	(28,538)	(27,999)	(27,456)	(26,910)	(26,361)	(25,809)	(25,254)	(24,695)	(24,133)
Service Stations	41,644	28,924	35,015	35,869	36,729	37,594	38,464	39,339	40,220	41,106	41,997
Subtotal	52,371	33,391	47,072	49,010	50,960	52,921	54,894	56,879	58,875	60,883	62,904
Total Potential Retail Sales	541,430	486,477	552,666	562,036	571,462	580,944	590,483	600,078	609,731	619,442	629,210

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 22-4: Expected Net Retail Demand (0% V&B Factor)

Expected Net Retail Demand (US Constant $000's)											
Retail Category	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Shopper Goods (GAFO):											
Apparel	45,766	38,083	44,185	45,051	45,922	46,798	47,680	48,567	49,459	50,357	51,259
General Merchandise	51,724	46,770	53,416	54,361	55,311	56,267	57,229	58,196	59,170	60,148	61,133
Home Furnishings/Appliances	31,782	28,089	32,436	33,053	33,673	34,298	34,926	35,558	36,193	36,833	37,476
Other	49,973	48,671	55,343	56,291	57,245	58,205	59,170	60,141	61,117	62,100	63,088
Subtotal	179,244	161,613	185,380	188,756	192,152	195,568	199,005	202,462	205,939	209,438	212,957
Convenience Goods:											
Food (Supermarkets/Liquor)	60,852	55,395	65,740	67,189	68,647	70,113	71,588	73,073	74,566	76,068	77,580
Eating and Drinking	82,008	74,093	85,362	86,961	88,570	90,189	91,817	93,454	95,102	96,759	98,426
Subtotal	142,860	129,489	151,102	154,151	157,217	160,302	163,405	166,527	169,668	172,827	176,006
Heavy Commercial Goods:											
Building/Hardware/Farm	26,650	24,847	28,153	28,624	29,097	29,574	30,053	30,535	31,020	31,507	31,998
Auto Dealers and Parts	(40,592)	(44,190)	(40,931)	(40,465)	(39,995)	(39,523)	(39,048)	(38,570)	(38,089)	(37,606)	(37,120)
Service Stations	21,437	10,458	15,718	16,456	17,199	17,946	18,697	19,453	20,213	20,979	21,748
Subtotal	7,495	(8,885)	2,940	4,615	6,301	7,996	9,702	11,417	13,143	14,880	16,626
Total Potential Retail Sales	329,599	282,217	339,422	347,522	355,670	363,866	372,112	380,406	388,751	397,145	405,589

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 24: Net Supportable Retail Space

Table 24-1A: Net Supportable Retail Space
($300 PSF, 15% V&B Factor)

Expected Net Supportable Retail Space (Square Feet)								
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):								
Apparel	**$300 PSF**	418,135	441,133	436,961	446,807	451,774	456,770	471,939
General Merchandise	**$300 PSF**	476,160	482,266	496,951	507,688	513,104	518,552	535,092
Home Furnishings/Appliances	**$300 PSF**	303,926	307,943	314,968	321,983	325,521	329,081	339,887
Other	**$300 PSF**	488,352	469,989	505,367	516,143	521,580	527,048	543,650
Subtotal		1,686,573	1,701,330	1,754,247	1,792,621	1,811,979	1,831,452	1,890,569
Convenience Goods:								
Food (Supermarkets/Liquor)	**$300 PSF**	674,504	659,701	695,309	711,832	720,169	728,557	754,026
Eating and Drinking	**$300 PSF**	789,090	793,675	821,292	839,474	848,646	857,873	885,885
Subtotal		1,463,594	1,453,375	1,516,601	1,551,306	1,568,815	1,586,430	1,639,910
Heavy Commercial Goods:								
Building/Hardware/Farm	**$300 PSF**	245,609	242,661	253,651	258,999	261,696	264,410	272,647
Auto Dealers and Parts	**$600 PSF**	-2,906	-6,205	-5,877	-3,230	-1,894	-551	3,526
Service Stations	**$1,200 PSF**	70,548	78,639	71,584	73,687	74,748	75,815	79,057
Subtotal		313,251	315,095	319,358	329,456	334,550	339,674	355,230
Net Supportable Retail SF		3,463,418	3,469,801	3,590,206	3,673,383	3,715,344	3,757,556	3,885,709

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 24-1B: Net Supportable Retail Space
($500 PSF, 15% V&B Factor)

Expected Net Supportable Retail Space (Square Feet)									
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):									
Apparel	**$500 PSF**	250,881	264,680	262,177	265,122	268,084	271,064	274,062	283,163
General Merchandise	**$500 PSF**	285,696	289,359	298,171	301,382	304,613	307,862	311,131	321,055
Home Furnishings/Appliances	**$500 PSF**	182,356	184,766	188,981	191,079	193,190	195,313	197,448	203,932
Other	**$500 PSF**	293,011	281,993	303,220	306,443	309,686	312,948	316,229	326,190
Subtotal		1,011,944	1,020,798	1,052,548	1,064,026	1,075,572	1,087,187	1,098,871	1,134,341
Convenience Goods:									
Food (Supermarkets/Liquor)	**$500 PSF**	404,702	395,821	417,185	422,127	427,099	432,102	437,134	452,415
Eating and Drinking	**$500 PSF**	473,454	476,205	492,775	498,213	503,684	509,188	514,724	531,531
Subtotal		878,157	872,025	909,960	920,341	930,784	941,289	951,858	983,946
Heavy Commercial Goods:									
Building/Hardware/Farm	**$500 PSF**	147,366	145,597	152,191	153,790	155,399	157,018	158,646	163,588
Auto Dealers and Parts	**$600 PSF**	-2,906	-6,205	-5,877	-4,557	-3,230	-1,894	-551	3,526
Service Stations	**$1,200 PSF**	70,548	78,639	71,584	72,632	73,687	74,748	75,815	79,057
Subtotal		215,007	218,030	217,897	221,865	225,856	229,871	233,910	246,171
Net Supportable Retail SF		2,105,108	2,110,854	2,180,406	2,206,232	2,232,212	2,258,348	2,284,639	2,364,459

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

*Table 24-1C: Net Supportable Retail Space
($700 PSF, 15% V&B Factor)*

Expected Net Supportable Retail Space (Square Feet)									
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):									
Apparel	**$700 PSF**	179,201	189,057	187,269	189,373	191,489	193,617	195,759	202,260
General Merchandise	**$700 PSF**	204,069	206,685	212,979	215,273	217,581	219,902	222,237	229,325
Home Furnishings/Appliances	**$700 PSF**	130,254	131,976	134,986	136,485	137,993	139,509	141,035	145,666
Other	**$700 PSF**	209,294	201,424	216,586	218,888	221,204	223,534	225,878	232,993
Subtotal		722,817	729,142	751,820	760,019	768,266	776,562	784,908	810,244
Convenience Goods:									
Food (Supermarkets/Liquor)	**$700 PSF**	289,073	282,729	297,990	301,520	305,071	308,644	312,239	323,154
Eating and Drinking	**$700 PSF**	338,182	340,146	351,982	355,867	359,774	363,705	367,660	379,665
Subtotal		627,255	622,875	649,972	657,386	664,845	672,349	679,898	702,819
Heavy Commercial Goods:									
Building/Hardware/Farm	**$700 PSF**	105,261	103,998	108,708	109,850	110,999	112,156	113,318	116,849
Auto Dealers and Parts	**$600 PSF**	-2,906	-6,205	-5,877	-4,557	-3,230	-1,894	-551	3,526
Service Stations	**$1,200 PSF**	70,548	78,639	71,584	72,632	73,687	74,748	75,815	79,057
Subtotal		172,903	176,431	174,414	177,925	181,456	185,009	188,583	199,432
Net Supportable Retail SF		1,522,974	1,528,448	1,576,206	1,595,330	1,614,568	1,633,921	1,653,389	1,712,494

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

*Table 24-2A: Net Supportable Retail Space
($300 PSF, 10% V&B Factor)*

Expected Net Supportable Retail Space (Square Feet)									
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):									
Apparel	**$300 PSF**	335,804	352,567	348,872	353,258	357,669	362,107	366,571	380,124
General Merchandise	**$300 PSF**	384,381	387,602	400,762	405,545	410,356	415,195	420,064	434,843
Home Furnishings/Appliances	**$300 PSF**	244,253	245,906	252,213	255,337	258,480	261,641	264,822	274,477
Other	**$300 PSF**	394,127	377,180	408,839	413,639	418,468	423,326	428,212	443,046
Subtotal		1,358,564	1,363,255	1,410,686	1,427,779	1,444,973	1,462,270	1,479,669	1,532,491
Convenience Goods:									
Food (Supermarkets/Liquor)	**$300 PSF**	532,395	517,556	549,392	556,746	564,144	571,587	579,075	601,813
Eating and Drinking	**$300 PSF**	633,442	633,904	658,645	666,744	674,890	683,085	691,329	716,356
Subtotal		1,165,837	1,151,460	1,208,037	1,223,489	1,239,034	1,254,672	1,270,404	1,318,170
Heavy Commercial Goods:									
Building/Hardware/Farm	**$300 PSF**	199,513	195,827	205,676	208,058	210,454	212,865	215,290	222,651
Auto Dealers and Parts	**$600 PSF**	-25,243	-30,071	-29,770	-28,591	-27,404	-26,210	-25,009	-21,365
Service Stations	**$1,200 PSF**	53,645	59,274	52,979	53,915	54,857	55,805	56,758	59,652
Subtotal		227,916	225,030	228,885	233,383	237,908	242,459	247,038	260,938
Net Supportable Retail SF		2,752,317	2,739,745	2,847,608	2,884,651	2,921,915	2,959,401	2,997,112	3,111,598

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 24-2B: Net Supportable Retail Space ($500 PSF, 10% V&B Factor)

Expected Net Supportable Retail Space (Square Feet)									
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):									
Apparel	**$500 PSF**	201,483	211,540	209,323	211,955	214,602	217,264	219,943	228,075
General Merchandise	**$500 PSF**	230,628	232,561	240,457	243,327	246,214	249,117	252,038	260,906
Home Furnishings/Appliances	**$500 PSF**	146,552	147,543	151,328	153,202	155,088	156,985	158,893	164,686
Other	**$500 PSF**	236,476	226,308	245,303	248,183	251,081	253,995	256,927	265,828
Subtotal		815,139	817,953	846,412	856,667	866,984	877,362	887,801	919,494
Convenience Goods:									
Food (Supermarkets/Liquor)	**$500 PSF**	319,437	310,534	329,635	334,047	338,486	342,952	347,445	361,088
Eating and Drinking	**$500 PSF**	380,065	380,343	395,187	400,046	404,934	409,851	414,798	429,814
Subtotal		699,502	690,876	724,822	734,094	743,420	752,803	762,243	790,902
Heavy Commercial Goods:									
Building/Hardware/Farm	**$500 PSF**	119,708	117,496	123,405	124,835	126,273	127,719	129,174	133,590
Auto Dealers and Parts	**$600 PSF**	-25,243	-30,071	-29,770	-28,591	-27,404	-26,210	-25,009	-21,365
Service Stations	**$1,200 PSF**	53,645	59,274	52,979	53,915	54,857	55,805	56,758	59,652
Subtotal		148,111	146,699	146,614	150,160	153,726	157,313	160,922	171,878
Net Supportable Retail SF		1,662,751	1,655,528	1,717,848	1,740,920	1,764,130	1,787,479	1,810,966	1,882,274

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 24-2C: Net Supportable Retail Space ($700 PSF, 10% V&B Factor)

Expected Net Supportable Retail Space (Square Feet)									
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):									
Apparel	**$700 PSF**	143,916	151,100	149,517	151,396	153,287	155,189	157,102	162,910
General Merchandise	**$700 PSF**	164,735	166,115	171,755	173,805	175,867	177,941	180,027	186,361
Home Furnishings/Appliances	**$700 PSF**	104,680	105,388	108,091	109,430	110,777	112,132	113,495	117,633
Other	**$700 PSF**	168,912	161,648	175,217	177,274	179,343	181,425	183,519	189,877
Subtotal		582,242	584,252	604,580	611,905	619,274	626,687	634,144	656,782
Convenience Goods:									
Food (Supermarkets/Liquor)	**$700 PSF**	228,169	221,810	235,454	238,605	241,776	244,966	248,175	257,920
Eating and Drinking	**$700 PSF**	271,475	271,673	282,277	285,747	289,239	292,751	296,284	307,010
Subtotal		499,644	493,483	517,730	524,353	531,015	537,717	544,459	564,930
Heavy Commercial Goods:									
Building/Hardware/Farm	**$700 PSF**	85,506	83,926	88,147	89,168	90,195	91,228	92,267	95,422
Auto Dealers and Parts	**$600 PSF**	-25,243	-30,071	-29,770	-28,591	-27,404	-26,210	-25,009	-21,365
Service Stations	**$1,200 PSF**	53,645	59,274	52,979	53,915	54,857	55,805	56,758	59,652
Subtotal		113,908	113,129	111,356	114,492	117,648	120,822	124,015	133,709
Net Supportable Retail SF		1,195,795	1,190,864	1,233,666	1,250,750	1,267,937	1,285,226	1,302,618	1,355,421

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 24-3A: Net Supportable Retail Space
($300 PSF, 5% V&B Factor)

Expected Net Supportable Retail Space (Square Feet)									
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):									
Apparel	**$300 PSF**	253,473	264,001	260,784	264,646	268,532	272,440	276,372	288,309
General Merchandise	**$300 PSF**	292,602	292,939	304,573	308,786	313,024	317,287	321,575	334,593
Home Furnishings/Appliances	**$300 PSF**	184,579	183,868	189,457	192,209	194,977	197,762	200,563	209,067
Other	**$300 PSF**	299,902	284,371	312,311	316,539	320,793	325,072	329,376	342,442
Subtotal		1,030,556	1,025,179	1,067,125	1,082,180	1,097,326	1,112,561	1,127,886	1,174,412
Convenience Goods:									
Food (Supermarkets/Liquor)	**$300 PSF**	390,287	375,411	403,475	409,946	416,455	423,005	429,593	449,601
Eating and Drinking	**$300 PSF**	477,793	474,134	495,999	503,132	510,307	517,525	524,786	546,828
Subtotal		868,080	849,545	899,474	913,077	926,762	940,529	954,379	996,429
Heavy Commercial Goods:									
Building/Hardware/Farm	**$300 PSF**	153,417	148,993	157,700	159,799	161,910	164,034	166,170	172,654
Auto Dealers and Parts	**$600 PSF**	-47,579	-53,936	-53,664	-52,624	-51,578	-50,526	-49,468	-46,255
Service Stations	**$1,200 PSF**	36,743	39,909	34,375	35,199	36,027	36,861	37,700	40,247
Subtotal		142,581	134,965	138,411	142,374	146,359	150,369	154,402	166,646
Net Supportable Retail SF		2,041,216	2,009,689	2,105,010	2,137,631	2,170,447	2,203,459	2,236,667	2,337,487

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 24-3B: Net Supportable Retail Space
($500 PSF, 5% V&B Factor)

Expected Net Supportable Retail Space (Square Feet)									
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):									
Apparel	**$500 PSF**	152,084	158,401	156,470	158,788	161,119	163,464	165,823	172,986
General Merchandise	**$500 PSF**	175,561	175,763	182,744	185,272	187,814	190,372	192,945	200,756
Home Furnishings/Appliances	**$500 PSF**	110,747	110,321	113,674	115,325	116,986	118,657	120,338	125,440
Other	**$500 PSF**	179,941	170,622	187,386	189,924	192,476	195,043	197,625	205,465
Subtotal		618,333	615,107	640,275	649,308	658,395	667,536	676,732	704,647
Convenience Goods:									
Food (Supermarkets/Liquor)	**$500 PSF**	234,172	225,247	242,085	245,967	249,873	253,803	257,756	269,761
Eating and Drinking	**$500 PSF**	286,676	284,480	297,599	301,879	306,184	310,515	314,871	328,097
Subtotal		520,848	509,727	539,684	547,846	556,057	564,318	572,627	597,858
Heavy Commercial Goods:									
Building/Hardware/Farm	**$500 PSF**	92,050	89,396	94,620	95,879	97,146	98,420	99,702	103,593
Auto Dealers and Parts	**$600 PSF**	-47,579	-53,936	-53,664	-52,624	-51,578	-50,526	-49,468	-46,255
Service Stations	**$1,200 PSF**	36,743	39,909	34,375	35,199	36,027	36,861	37,700	40,247
Subtotal		81,214	75,368	75,331	78,454	81,595	84,755	87,934	97,584
Net Supportable Retail SF		1,220,395	1,200,203	1,255,290	1,275,609	1,296,048	1,316,609	1,337,293	1,400,089

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 24-3C: Net Supportable Retail Space
($700 PSF, 5% V&B Factor)

Expected Net Supportable Retail Space (Square Feet)									
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):									
Apparel	**$700 PSF**	108,631	113,143	111,764	113,420	115,085	116,760	118,445	123,561
General Merchandise	**$700 PSF**	125,401	125,545	130,531	132,337	134,153	135,980	137,818	143,397
Home Furnishings/Appliances	**$700 PSF**	79,105	78,801	81,196	82,375	83,562	84,755	85,956	89,600
Other	**$700 PSF**	128,529	121,873	133,847	135,660	137,483	139,316	141,161	146,761
Subtotal		441,667	439,362	457,339	463,792	470,282	476,812	483,380	503,319
Convenience Goods:									
Food (Supermarkets/Liquor)	**$700 PSF**	167,266	160,891	172,918	175,691	178,481	181,288	184,111	192,686
Eating and Drinking	**$700 PSF**	204,768	203,200	212,571	215,628	218,703	221,796	224,908	234,355
Subtotal		372,034	364,091	385,489	391,319	397,184	403,084	409,020	427,041
Heavy Commercial Goods:									
Building/Hardware/Farm	**$700 PSF**	65,750	63,854	67,586	68,485	69,390	70,300	71,216	73,995
Auto Dealers and Parts	**$600 PSF**	-47,579	-53,936	-53,664	-52,624	-51,578	-50,526	-49,468	-46,255
Service Stations	**$1,200 PSF**	36,743	39,909	34,375	35,199	36,027	36,861	37,700	40,247
Subtotal		54,914	49,827	48,297	51,060	53,839	56,635	59,448	67,986
Net Supportable Retail SF		868,615	853,280	891,125	906,170	921,306	936,531	951,847	998,347

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 24-4A: Net Supportable Retail Space
($300 PSF, 0% V&B Factor)

Expected Net Supportable Retail Space (Square Feet)									
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):									
Apparel	**$300 PSF**	171,142	175,436	172,695	176,035	179,394	182,774	186,174	196,494
General Merchandise	**$300 PSF**	200,823	198,275	208,384	212,027	215,692	219,378	223,086	234,344
Home Furnishings/Appliances	**$300 PSF**	124,905	121,831	126,702	129,081	131,475	133,882	136,304	143,657
Other	**$300 PSF**	205,677	191,562	215,783	219,439	223,117	226,817	230,539	241,838
Subtotal		702,547	687,103	723,564	736,582	749,678	762,852	776,104	816,334
Convenience Goods:									
Food (Supermarkets/Liquor)	**$300 PSF**	248,178	233,266	257,558	263,146	268,767	274,422	280,112	297,388
Eating and Drinking	**$300 PSF**	322,144	314,364	333,352	339,520	345,723	351,964	358,242	377,300
Subtotal		570,322	547,630	590,911	602,665	614,490	626,386	638,354	674,689
Heavy Commercial Goods:									
Building/Hardware/Farm	**$300 PSF**	107,321	102,158	109,725	111,540	113,366	115,202	117,050	122,658
Auto Dealers and Parts	**$600 PSF**	-69,915	-77,802	-77,557	-76,657	-75,752	-74,842	-73,926	-71,146
Service Stations	**$1,200 PSF**	19,841	20,544	15,771	16,482	17,198	17,918	18,642	20,842
Subtotal		57,246	44,900	47,938	51,364	54,811	58,278	61,766	72,354
Net Supportable Retail SF		1,330,115	1,279,634	1,362,412	1,390,612	1,418,979	1,447,516	1,476,223	1,563,376

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 24-4B: Net Supportable Retail Space
($500 PSF, 0% V&B Factor)

Expected Net Supportable Retail Space (Square Feet)									
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):									
Apparel	**$500 PSF**	102,685	105,261	103,617	105,621	107,637	109,664	111,704	117,897
General Merchandise	**$500 PSF**	120,494	118,965	125,030	127,216	129,415	131,627	133,852	140,606
Home Furnishings/Appliances	**$500 PSF**	74,943	73,098	76,021	77,449	78,885	80,329	81,783	86,194
Other	**$500 PSF**	123,406	114,937	129,470	131,664	133,870	136,090	138,324	145,103
Subtotal		421,528	412,262	434,138	441,949	449,807	457,711	465,662	489,800
Convenience Goods:									
Food (Supermarkets/Liquor)	**$500 PSF**	148,907	139,960	154,535	157,887	161,260	164,653	168,067	178,433
Eating and Drinking	**$500 PSF**	193,286	188,618	200,011	203,712	207,434	211,178	214,945	226,380
Subtotal		342,193	328,578	354,546	361,599	368,694	375,832	383,012	404,813
Heavy Commercial Goods:									
Building/Hardware/Farm	**$500 PSF**	64,392	61,295	65,835	66,924	68,019	69,121	70,230	73,595
Auto Dealers and Parts	**$600 PSF**	-69,915	-77,802	-77,557	-76,657	-75,752	-74,842	-73,926	-71,146
Service Stations	**$1,200 PSF**	19,841	20,544	15,771	16,482	17,198	17,918	18,642	20,842
Subtotal		14,318	4,037	4,048	6,749	9,465	12,197	14,946	23,291
Net Supportable Retail SF		778,039	744,877	792,733	810,297	827,966	845,740	863,620	917,904

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Table 24-4C: Net Supportable Retail Space
($700 PSF, 0% V&B Factor)

Expected Net Supportable Retail Space (Square Feet)									
Retail Category	**Sales/SF**	**2009**	**2010**	**2013**	**2014**	**2015**	**2016**	**2017**	**2020**
Shopper Goods (GAFO):									
Apparel	**$700 PSF**	73,347	75,187	74,012	75,443	76,883	78,332	79,789	84,212
General Merchandise	**$700 PSF**	86,067	84,975	89,307	90,869	92,439	94,019	95,608	100,433
Home Furnishings/Appliances	**$700 PSF**	53,531	52,213	54,301	55,320	56,346	57,378	58,416	61,567
Other	**$700 PSF**	88,147	82,098	92,478	94,045	95,622	97,207	98,803	103,645
Subtotal		301,091	294,473	310,099	315,678	321,291	326,936	332,616	349,857
Convenience Goods:									
Food (Supermarkets/Liquor)	**$700 PSF**	106,362	99,971	110,382	112,777	115,186	117,609	120,048	127,452
Eating and Drinking	**$700 PSF**	138,062	134,727	142,865	145,508	148,167	150,842	153,532	161,700
Subtotal		244,424	234,699	253,247	258,285	263,353	268,451	273,580	289,152
Heavy Commercial Goods:									
Building/Hardware/Farm	**$700 PSF**	45,995	43,782	47,025	47,803	48,585	49,372	50,164	52,568
Auto Dealers and Parts	**$600 PSF**	-69,915	-77,802	-77,557	-76,657	-75,752	-74,842	-73,926	-71,146
Service Stations	**$1,200 PSF**	19,841	20,544	15,771	16,482	17,198	17,918	18,642	20,842
Subtotal		-4,080	-13,476	-14,762	-12,373	-9,969	-7,552	-5,120	2,264
Net Supportable Retail SF		541,435	515,696	548,584	561,591	574,674	587,836	601,076	641,273

Source: California State Board of Equalization, 2009-2010; ESRI, 2012; Kosmont Companies, 2013

Appendix B.3

RETAIL CRITICAL MASS MEMORANDUM FOR REDUCED PROJECT ALTERNATIVES

THE LONDON GROUP
Realty Advisors

February 5, 2014

Mr. Robert C. Little
Vice President of Development
Kilroy Realty Corporation
3611 Valley Centre Drive, Suite 350
San Diego, CA 92130

Via email: rlittle@kilroyrealty.com

RE: RETAIL MARKET ANALYSIS AND RETAIL CRITICAL MASS ASSOCIATED WITH A REDUCED PROJECT ALTERNATIVE

The London Group Realty Advisors has conducted research and analysis as it relates to the "Reduced Main Street" and "Reduced Mixed-Use" alternatives in the Recirculated Draft EIR for One Paseo. The purpose of this report is to address the differences in the retail component of the Reduced Main Street and Reduced Mixed-Use alternatives.

BACKGROUND & CONCLUSION

Background

We have reviewed the Kosmont Companies retail market analysis and conducted an independent review and analysis of the retail dynamics and opportunities in the market. Our May 2013 report concluded that $542 million, or 74%, of annual retail expenditures by Primary Market Area ("PMA") residents are leaving the market in the form of "outflow leakage". In fact, our analysis demonstrates retail support for an additional 1.4 million square feet of space in the PMA. After accounting for future retail projects in the PMA, there is still market support for 1.1 million square feet of retail.

Although our study differs in some respects with that of the Kosmont Companies, the report conclusions are the same: *The local retail market is severely undersupplied, which is reflected by the current exodus of retail expenditures and shopping trips by residents who live in the local market.*

Conclusions

Due to the severe undersupply of retail options, Carmel Valley residents will be required to leave the local market, now and in the future, to shop at other destinations outside of the PMA to satisfy their shopping needs. Filling the retail gap through the development of One Paseo represents an opportunity to retain retail expenditures in the Carmel Valley community[1].

However, successfully capturing the expenditures depends on the quality, type, and scale of the retail component of One Paseo. In essence it must achieve a critical mass, design and atmosphere to be successful. As this report demonstrates, the Reduced Main Street alternative of 246,500 square feet achieves this objective. The scaled-down Reduced Mixed-Use alternative of 140,000 square feet does not.

The Reduced Mixed-Use alternative necessitates the removal of the essential elements important for retailer success and that are supportive of retailing critical mass:

- 140,000 square feet is too small to attract specialty retail tenants that are not present in the PMA today.
- 140,000 square feet is too small to accommodate co-tenancy requirements and required space locations of multiple tenants.
- A reduced center would result in a significantly lower number of customers because this would eliminate the "atmosphere" that has been designed to ensure that the retailing activities are attractive to shoppers. This will inevitably lead to struggling tenants, a higher rate of turnover and a fundamental shift in the desirable tenant-mix to lower quality tenants that would not satisfy the identified retail gaps in the PMA.
- At 140,000 square feet, the Reduced Mixed-Use alternative is directly competitive with existing neighborhood centers (e.g. Del Mar Heights Village, Torrey Hills Marketplace and Piazza Carmel).

The success of One Paseo is defined by the scale of the composite of each of the land use components. While this report directly studies the retail component, the office and residential densities are necessary to 'activate' the main street retail. These uses serve as a built-in customer base achieved through vertical design and integration of the uses.

The Reduced Main Street alternative is designed to achieve a true village center in Carmel Valley's most strategic location. The design is a celebration of the avowed "City of Villages" policy that has long been adopted as the keystone for the future growth of the City of San Diego. In fact, this is the first opportunity within the suburban neighborhoods of the City to demonstrate contemporary revitalization, while still maintaining the core lifestyle long in place in Carmel Valley.

[1] While beyond the scope of our research, it should be recognized that any reduction of shopping trips leaving the community will reduce vehicle miles traveled.

One Paseo is consistent with the General Plan of the City, which embraces growth through sustainable/walkable design, mixed use, pedestrian friendly activity centers, rather than further green field expansion. Development should be walkable and characterized by inviting accessible and attractive streets, public parks and plazas that bring a community together. The City of Villages strategy is focused on achieving better linkage between homes, jobs and services in the community.

In summary, the Reduced Main Street alternative embodies the goals and policies of the General Plan through integrated and vertical design with sufficient critical mass to create a dynamic retailing experience, while providing built-in demand to activate and support its retail tenants. In essence, the Reduced Main Street alternative is the "village" of the future as envisioned in the General Plan.

A dynamic retailing experience in a village design setting is not accomplished in the Reduced Mixed-Use alternative. Even if an additional 10,000 square feet is added to total 150,000 square feet, it ultimately loses the atmosphere, intensity, synergy and community elements that the Reduced Main Street alternative delivers.

RESEARCH & ANALYSIS

Agglomeration and Gravitation

There is a phenomenon in retail called "agglomeration" - a reference to the propensity of stores preferring to be located in proximity to others. These stores co-locate because to do so maximizes the choices and offerings to customers in one location, essentially reducing the number of trips a customer needs to make to fulfill their shopping needs. By forming agglomerations, shopping centers and their retail tenants become a shopping *destination*, or retail "hub," reducing consumer shopping trips. Miller, Reardon and McCorkle (1999) term this phenomenon "symbiosis."

Regardless of whether these agglomerations or retail hubs are intentionally planned, both consumers and retailers benefit from the synergy of co-locating (Ghosh, 1986).

Reilly (1931) and Huff (1964) suggest that shopping choices among retail centers is determined by the centers' ability to attract shoppers. This increases as the size of the center increases, but decreases with the distance from a customer's home. Similarly, Christaller (1966) demonstrated a "Central Place Theory," which suggests that shoppers choose the closest retail center to home unless the type of product desired is not available.

Both agglomeration and gravitation pertain to One Paseo. On the gravitational side, it is not surprising that the PMA is severely underserved. There is significant expenditure leakage in the market that is "gravitating" to retail destinations where customers can more effectively complete their multi-purpose shopping trips. As such, they are willing to drive out of the market area to accomplish this – thus increasing traffic and decreasing taxable revenue to the City.

A compelling opportunity exists to create a retail agglomeration at this strategic location of El Camino Real and Del Mar Heights Road in combination with the existing Del Mar Highlands shopping center. Strategically, One Paseo is a key commercial property adjacent to the Del Mar Heights office corridor to the west and south, residential to the north, and existing retail to the east. This property is envisioned to economically tie together the neighborhood. One Paseo also has the impact of encouraging walking and biking by residents and workers in the vicinity.

However, the scale of the center must be large enough and designed to attract a sufficient amount of foot traffic that will make tenants want to locate in the center. Retail tenants are very particular to location. As Fox, Postrel and McLaughlin (2007) observe, location is everything – unlike a bad pricing or promotional decision, a poor location adversely affects retailer performance for several years.

Shopping Center Environment & Atmosphere

In the past decade, retail developers have moved towards maximizing the customer experience at the shopping center. Most recently built retail centers of consequence are lifestyle centers that feature a walkability or main street component to maximize their attraction to shoppers.

The following table details the shopping centers that have been built in the past ten years in California which include a tenant mix that is similar to that envisioned in the Reduced Main Street alternative that includes 246,500 square feet.

As demonstrated in the table, these specialty retail tenants are located in centers that feature outdoor environments and entertainment components. The centers also typically include a large gathering or public space. Most often the centers are also designed around a main street theme to maximize the shopper experience. All of these design and thematic elements are crucial to the development and success of the centers. It is also important to note that the median size of these centers is 295,843 square feet, nearly double the size of the Reduced Mixed Use alternative.

Shopping Centers with Better-Quality, Specialty Retail Tenants
Similar Mix of Tenants Proposed for One Paseo (Reduced Main Street Alternative)
Built in Last 10 Years in CA

				Center	Design/Theme				
Center Name	**Year Built**	**Center Type**	**Center City**	**RBA/GLA**	**Outdoor**	**Entertainment**	**Public Space**	**Main Street**	**Representative Tenants**
The Forum at Carlsbad	2004	Lifestyle Center	Carlsbad	264,586	YES				Jimbo's, Sur La Table, Anthropologie, Apple, H&M, Loft, Bed Bath & Beyond, Z Gallerie, Urban Outfitters
The Shops at Dos Lagos	2006	Lifestyle Center	Corona	290,138	YES	YES	YES		Dos Lagos Stadium 15 Theatres,Trader Joe's, Anthropololgie, Bebe, Brighton Collectibiles, Loft, Sur La Table
The Americana at Brand	2008	Lifestyle Center	Glendale	590,416	YES	YES	YES	YES	Anthropologie, Apple, Armani Exchange, Barneys NY, Lululemon Athletica
Anaheim Gardenwalk	2008	Lifestyle Center	Anaheim	450,000	YES	YES			UltraLuxe Cinemas, White House Black Market, Bowling Lounge
The Shoppes at Chino Hills	2008	Lifestyle Center	Chino Hills	295,843	YES	YES	YES	YES	Trader Joe's, H&M, Victoria's Secret, P.F. Chang's, Banana Republic
Fountains at Roseville	2008	Lifestyle Center	Roseville	306,478	YES	YES	YES	YES	Whole Foods, Anthropologie, White House Black Market, Sur La Table, Z Gallerie
The Streets of Brentwood	2008	Lifestyle Center	Brentwood	328,229	YES	YES	YES	YES	REI, AMC 14, Banana Republic, Tilly's, Victoria's Secret
Atlantic Times Square	2010	Community Center	Monterey Park	208,828	YES	YES		YES	AMC, 24 Hour Fitness, (numerous restaurants)
Palladio at Broadstone	2010	Lifestyle Center	Folsom	501,009	YES	YES	YES	YES	Palladio 16 Theatre,Whole Foods,H & M, White House Black Market
The Collection at RiverPark	2011	Community Center	Oxnard	258,456	YES	YES	YES		Whole Foods, Target, Century Theaters, REI, H&M
Runway Playa Vista (Future)	2014	Lifestyle Center	Playa Vista	200,000	YES	YES	YES	YES	Whole Foods, cinemark, Hopdoddy Burger Bar, Sol Cocina
No. of Centers	**11**	**Median Center Size (S.F.):**		**295,843**					

Source: CoStar, The London Group Realty Advisors

As Teller and Reutterer (2008) conclude, environmental factors are of significant important to a center and the "atmosphere" (e.g. orientation and ambience) affects the overall attractiveness of a center. This is consistent with the findings of previous research and studies (Arentze and

Timmermans, 2001; Bearden, 1977; Bloch et al., 1994; Hoffman and Turley, 2002; Ruiz et al., 2003).

In addition, Teller and Reutterer (2008) also demonstrate that both the tenant mix and atmosphere of a project exert major impacts on a center compared to parking and accessibility. In other words, shoppers are drawn to retail establishments that offer them an enjoyable experience with the shops and tenant mix that meet their needs.

Such a project does not exist in Carmel Valley, a market dominated by shopping centers with parking lot frontage, strip configurations and generally dated or poor design quality. Conversely, the One Paseo project, designed with a main street component and seeded with a demand base of residential and office to activate the project, would be the first of its kind and keep retail shopping trips local.

The density achieved by offering the appropriate amount of retail, office and residential together is critical to the success of One Paseo. By combining the proposed retail element of One Paseo at 246,500 square feet with the commercial office and residential elements, prospective tenants are being offered "built in" market demand. The main street concept will activate the public space and pedestrian elements of the project. This will, in turn, attract the highest quality retail, entertainment and restaurant venues, all of which have been identified as unmet demand in the PMA.

Critical Mass

Strategic Importance

Critical mass is required to achieve the best *mix* of tenants. It is also important to maximize the "gravitation" of a center by attracting customers. The Reduced Main Street alternative of 246,500 square feet, combined with a "main street" design, is necessary to deliver the highest quality space and customer counts for tenants.

High quality specialty retailer tenants in the U.S. prefer to cluster together. It's common that terms are negotiated with co-tenancy requirements. For example, Ann Taylor or Lululemon Athletica might stipulate that they will not open a new store in a proposed development unless Williams Sonoma or Pottery Barn will be their co-tenants. This is why many of today's lifestyle centers offer 200,000 to 300,000 square feet or more of retail and entertainment space, often with a very similar merchandise mix and tenant roster. Assuming 150,000 square feet could be designed into the Reduced Mixed-Use alternative, this amount is below the lower-end range for recently developed lifestyle centers as indicated in the table in the preceding section. One Paseo will require size and critical mass with a cohesive and excellent design theme to be competitive in the marketplace and attract a collection of specialty merchants to the Carmel Valley community.

The following table demonstrates various specialty retailers and the shopping center sizes (e.g. critical mass) in which they are located in Southern California. The shopping center sizes include lifestyle centers as well as older existing shopping centers. While these tenants also locate in regional shopping malls larger than one million square feet, we have focused on the centers that are 500,000 square feet or smaller and 300,000 square feet or smaller. Generally, these specialty tenants want to locate in a retail establishment with a critical mass that ranges from 150,000 to 300,000 square feet.

National Chain Specialty Tenants
By Size of Shopping Center in Southern CA

	In Centers 500,000 SF Or Smaller		In Centers 300,000 SF Or Smaller	
	Av. Size (S.F.)	# Centers	Av. Size (S.F.)	# Centers
Apple	281,600	5	233,250	4
Anthropologie	314,833	6	227,667	3
White House Black Market	290,878	11	155,326	5
Sur La Table	315,600	5	186,000	2
H&M	337,581	7	242,000	3
Urban Outfitters	300,250	4	242,000	3
Z Gallerie	307,500	2	265,000	1
Banana Republic	269,758	12	171,716	7

Source: The London Group Realty Advisors, Directory of Major Malls

It should be noted that centers smaller than 200,000 square feet are already part of an integrated mixed-use environment with dynamic retail, or are located in high-traffic areas that are tourist destinations. As such, these centers are smaller in nature because other attributes, such as an existing mixed-use environment or a tourist destination, substitutes for critical mass. For example, Corona Del Mar Plaza (107,000 square feet) is located near Fashion Island in Newport Beach. Del Mar Plaza (74,631 square feet) is located along a highly active retail and dining corridor near the beach. Similarly, Waterside Marina (130,000 square feet) in Marina del Rey is located on the marina. These centers can be economically viable at a smaller scale due to the surrounding attributes and demand generators.

It is important to maintain this critical mass because downsizing the retail would jeopardize the success and long-term viability of the center. A lack of critical mass, as represented in the Reduced Mixed-Use alternative, will result in a smaller center than is not viable and cannot be built. From a policy perspective, it makes no sense to build a smaller retail center across the street from a larger established center (e.g. Del Mar Highlands). If built as a smaller retail center, it will no doubt assume a tertiary and non-complimentary position relative to Del Mar Highlands across the street. One Paseo would become a local center where residents would shop only because it is convenient. As such, there would be no beneficial synergy between it and Del Mar Highlands. One Paseo would not be of sufficient breadth to serve as an "attractor," rather, it would be a convenience stop. Everyone would be a loser: the Carmel Valley consumer, One Paseo and Del Mar Highlands.

Reduction in Critical Mass

A reduced center would result in a significantly different tenant mix and lower number of customers. This will inevitably lead to struggling tenants, a higher rate of turnover and a fundamental shift in the desirable tenant-mix to lower quality tenants. As a result, Carmel Valley residents would continue to travel outside the area for specific shopping needs and the retail 'gap' will persist. As Fox et al (2007) determined, choosing the right location for a retail business is everything. A center must include all of the attributes to be relevant and competitive in the market while maximizing the customer counts at the center.

Most critical to the community of Carmel Valley, the Reduced Mixed-Use alternative is directly competitive with existing neighborhood centers (e.g. Del Mar Heights Village, Torrey Hills Marketplace and Piazza Carmel). One Paseo would be a small neighborhood center with no central theme. As such, it would compete for tenants with these other neighborhood centers.

The following table demonstrates the types of tenants that locate in entertainment/lifestyle centers compared to the tenant mix of traditional suburban neighborhood centers:

Entertainment/Lifestyle Centers and Traditional Suburban Neighborhood Centers
Representative Tenant Mix

Entertainment/Lifestyle Centers

Anchor Tenants

Theater/Cineplex	REI
Jimbo's	Urban Outfitters
Trader Joe's	H&M
Whole Foods	Z Gallerie
	West Elm

Inline Tenants

Apple	Armani Exchange
Victoria's Secret	Lululemon Athletica
Anthropologie	Bebe
Bowling Lounge	Banana Republic
Sur La Table	Loft
Calvin Kline	White House | Black Market
Cole Hahn	J. Crew
Lacoste	True Religion
Barney's New York	Sephora
XXI Forever	MAC Cosmetics
Talbots	Tumi
Hollister Co.	J. Jill

Restaurants

P.F. Chang's	RA Sushi
McCormick & Schmick's	Yardhouse
Cheesecake Factory	Zocalo
CA Pizza Kitchen	

Traditional Suburban Neighborhood Centers

Anchor Tenants

VONS	Rite Aid
Ralphs	Walgreens
Albertsons	Gas Station/Car Wash
Stater Bros.	Wells Fargo
CVS	BofA

Inline Tenants

FedEx	Starbucks
Postal Annex	Men's Wearhouse
Radio Shack	Dentistry
Supercuts	Orthodontics
Verizon Wireless	Massage
AT&T	Dry Cleaners
Golden Spoon	Hair/Beauty Salon
Baskin Robins	Sleep Train
Glamour Nails	

Restaurants

El Pollo Loco	Domino's Pizza
McDonald's	Panda Express
Taco Bell	Rubio's
Einstein Bros.	Jack in the Box
La Salsa	Subway
Souplantation	Chipotle
Coco's	Sammy's Pizza

Source: The London Group Realty Advisors

As demonstrated in the table, a small neighborhood center is a stark contrast to the Reduced Main Street alternative that achieves a critical mass and delivers an atmosphere that optimizes the tenant mix to best serve the community. The Reduced Main Street alternative enables One Paseo to introduce new products and specialty tenants to the market. This complements and expands the opportunities of each of the existing local neighborhood centers. The Reduced Main Street alternative does not draw customers away from these existing centers. Rather, it returns the Carmel Valley customer to Carmel Valley, expanding the customer base for every center.

Tenant Performance Increases with Critical Mass

The phenomenon of retail critical mass is demonstrated in the sales volume of tenants and the achievable rents of centers. The table on the following page details the annual sales volume on a per square foot basis and the total annual rent by size of shopping center for various retail categories.

The table may be summarized in these bullets, all of which suggest that the larger the center the higher the sales volume:

- Retailers perform better as the size of the center increases. This is due to the "gravitation" and scale of a center to attract more customers to the property.
- The average increase in annual sales volumes is **21% higher** in Super Community/Community centers than Neighborhood centers.
- The average increase in annual sales volumes is **54% higher** in Regional centers than Super Community/Community centers.
- The average increase in annual sales volumes is **11% higher** in Super Regional centers than Regional centers.

Annual Sale Volumes and Rent by Center Type for Various Retail Categories

Clothing and Accessories		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	3,697	$366.18	$30.00
Regional	500,000	3,955	$347.11	$28.29
Super Community/Community	180,000	4,598	$232.68	$16.25
Neighborhood	60,000	4,000	$155.59	$11.48

Home Furnishings		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	3,626	$370.03	$33.38
Regional	500,000	8,606	$325.57	$19.58
Super Community/Community	180,000	6,730	$209.28	$16.00
Neighborhood	60,000	4,214	n/a	n/a

Food Service		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	771	$628.27	$63.52
Regional	500,000	1,069	$568.97	$43.76
Super Community/Community	180,000	2,400	$314.12	$21.29
Neighborhood	60,000	1,799	$266.65	$18.85

Home Appliances/Music		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	3,119	$371.82	$30.00
Regional	500,000	3,453	$414.66	$28.00
Super Community/Community	180,000	2,648	$302.20	$16.00
Neighborhood	60,000	2,400	n/a	n/a

Personal Services		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	1,188	$302.17	$35.95
Regional	500,000	1,460	$262.55	$23.29
Super Community/Community	180,000	1,500	$176.87	$18.06
Neighborhood	60,000	1,400	$162.50	$17.19

Hobby/Special Interest		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	2,217	$395.04	$34.91
Regional	500,000	2,176	$384.05	$27.96
Super Community/Community	180,000	3,190	$219.85	$16.00
Neighborhood	60,000	1,700	$199.45	$16.08

Other Retail		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	1,184	$496.64	$49.44
Regional	500,000	1,684	$401.25	$30.17
Super Community/Community	180,000	2,000	$247.53	$17.30
Neighborhood	60,000	2,050	$217.25	$14.56

Gifts/Specialty		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	2,511	$287.22	$31.00
Regional	500,000	4,000	$206.32	$16.00
Super Community/Community	180,000	4,468	$170.42	$15.55
Neighborhood	60,000	4,000	$127.08	$15.21

General Merchandise		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	137,000	$168.71	$0.00
Regional	500,000	114,000	$137.95	$3.06
Super Community/Community	180,000	20,020	$149.50	$6.63
Neighborhood	60,000	8,000	$102.97	$6.54

Jewelry		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	1,318	$958.99	$85.45
Regional	500,000	1,241	$902.40	$71.22
Super Community/Community	180,000	1,610	$303.37	$18.16
Neighborhood	60,000	1,494	$317.37	$18.67

Food		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	1,007	$431.81	$55.00
Regional	500,000	1,072	$462.27	$36.92
Super Community/Community	180,000	39,378	$412.21	$10.49
Neighborhood	60,000	32,020	$430.05	$9.80

Entertainment/Community		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	19,624	$94.11	$18.10
Regional	500,000	26,340	$77.46	$8.77
Super Community/Community	180,000	4,200	$76.61	$12.34
Neighborhood	60,000	3,000	n/a	n/a

Shoes		GLA (SF)	Sales per SF	Total Rent per SF
Center Type	*Typical Size**	*Median*	*Median*	*Median*
Super Regional	1,000,000	2,264	$359.63	$35.00
Regional	500,000	2,716	$344.36	$31.82
Super Community/Community	180,000	3,306	$192.73	$16.00
Neighborhood	60,000	2,950	$141.51	$12.47

*As defined by ULI's "Dollars & Cents of Shopping Centers/The SCORE 2008"

Source: Dollars & Cents of Shopping Centers/The Score 2008

Retail Expenditure Gaps

Our report dated May 2013 demonstrated that approximately $542 million annual is leaving the market in the form of outflow leakage. The following table demonstrates the expenditure 'gap' that translates into an opportunity to developed additional retail square footage. The single largest category of additional retail square footage that is supportable by PMA expenditures is Eating/Drinking Establishments (314,865 square feet) followed by Food Stores (278,093 square feet), Home Furnishings (221,864 square feet) and Other Retail Stores (188,182 square feet) to highlight the top categories.

2013 EXPENDITURE 'GAP' & SUPPORTABLE S.F.
Primary Market Area

Retail Category	Total $	Av. $/S.F.*	Supportable Retail S.F.
Apparel	$74,488,156	$477	156,200
Home Furnishings	$96,625,303	$436	221,864
Other Retail Stores	$62,476,804	$332	188,182
Miscellaneous Retail Stores	$6,155,305	$253	24,352
Subtotal	*$239,745,569*	*$378*	*634,038*
GAFO TOTAL	$239,745,569	$378	634,038
Motion Picture Theaters	$3,529,668	$128	27,501
Eating/Drinking Establishments	$125,018,004	$397	314,865
Food Stores	$124,738,896	$449	278,093
Other Community-Oriented Stores	$48,921,517	$391	125,195
Subtotal	*$302,208,085*	*$400*	*755,838*
TOTAL NEIGHBORHOOD & COMMUNITY TARGETED EXPENDITURES	**$541,953,654**	**$391**	**1,387,111**

*$/S.F. based on the sales volume of the specific retail category achieved in the PMA competitive set.

This analysis represents the 'gap' in retail choices that are available to the PMA residents. Currently, and in the future, PMA residents will be required to leave the local market to shop at other destinations outside of the PMA boundary where their specific retail needs can be met.

Should you have any questions regarding this analysis, please contact us.

Sincerely,

Gary H. London | Nathan Moeder

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Appendix D

SHARED PARKING ANALYSIS

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December 16, 2011

Renee Mezo
City of San Diego Development Services
1222 First Avenue, MS 501
San Diego, CA 92101 - 4155

Re: One Paseo – San Diego, California
Shared Parking Analysis - Final
Walker Project No. 37-8142.00

Dear Ms. Mezo:

Walker Parking Consultants ("Walker") is pleased to submit a Shared Parking Analysis for One Paseo ("Project") in the Carmel Valley Community Planning Area of the City of San Diego. This report reflects clarifications and changes made to our prior report in response to City staff comments provided on July 22, 2011. Per City staff's request in that latest set of comments, the report has been reorganized to provide a more linear approach in communicating the process of conducting a shared parking analysis. The report begins with the project background and explanation for the findings, which are followed by highlights of the report on page 5. The goal of the format below is to lead staff through the study approach in a more intuitive manner. Overall, the report is organized as follows:

I. Project Understanding and Purpose of Analysis
II. Report Highlights
III. Urban Land Institute (ULI) Shared Parking Analysis
IV. Evaluation of City of San Diego Parking Regulations
V. Conclusions and Recommendations

Various items are also included within the Attachments after the body of the report including several pages from *Shared Parking, 2nd Edition, 2005,* the landmark study and model on which much of the data in this report is based. The inclusion of these pages was requested by staff.

I. PROJECT UNDERSTANDING AND PURPOSE OF ANALYSIS

Kilroy Realty ("Applicant") is proposing to develop the One Paseo mixed-use plan which will ultimately contain approximately 806,000 square feet ("SF") of office, retail, specialty grocery, restaurant and cinema ("commercial uses") as well as a 608 residential units and a 150- room hotel. The mix of land uses planned for the site lends itself to the use of shared parking. As an example of shared parking, the peak times in activity for businesses such as an office and a cinema are essentially the opposite of one another as is their demand for parking.

For mixed-use development, not sharing parking and building separate parking facilities for each use is simply a waste of space and resources that could be used to enhance the project and add amenities. It means that unused parking, which serves no purpose, will be built. Large areas of empty parking spaces also tend to create "dead" zones that sap energy from a destination as well as security issues resulting from a lack of constant use by the public. Resources that are allocated to unnecessary parking facilities could be re-allocated to project amenities with implementation of a shared parking approach. "Rightsizing" the parking supply is important, not only in terms of building enough parking but also not building too much as well.

Both the City and Applicant wish to determine the appropriate number of parking spaces that should be built for the completed Project site and at the end of its first phase of development. The objective is to properly serve future residents, tenants and customers but not overbuild parking spaces that will realistically sit empty for months at a time. In order to do so, a Shared Parking Model has been prepared which projects parking demand based on a number of factors (proposed program data, site conditions, market demand, current information from the Urban Land Institute, and focused parking studies of specific land uses). A number of firms in the parking industry including Walker conducted research and gathered data develop the Shared Parking Model as part of the Urban Land Institute's most recent research on parking demand. The effort was coordinated by the Urban Land Institute and published in *Shared Parking, 2nd Edition, 2005*.

Within this report, a second, adjusted ULI model was created based on one significant change requested by the Applicant to make the analysis more conservative: (the office parking employee demand ratio was increased beyond the ULI, 2nd Edition standard to 3.2 spaces per 1,000 sf to satisfy the Applicant's desired goal of providing 3.2 spaces per 1,000 SF GLA for marketing and leasing purposes. In addition, in both the ULI model and the adjusted model an additional conservative adjustment was to dedicate or reserve residents' parking rather than share it with other uses, although doing so is permitted within the ULI Model and City of San Diego's Land Development Code (LDC).

Finally, within this report the number of spaces for the Project to comply with the shared parking section of the City's Land Development Code (LDC), Section 142.0545 has been calculated.

PROJECT LOCATION AND DESCRIPTION

One Paseo will be constructed southwest of the corner of the intersection of Del Mar Heights Rd and El Camino Real in the Carmel Valley area of San Diego, CA (indicated in Figure 1). Walker has performed a Shared Parking Analysis for the proposed development in order to accurately assess the future parking demand for the site, which incorporates retail, residential, office and hotel uses. The development summary provided in Figure 2 includes multi-phased development of the planned parking supply, which totals 4,089 spaces for the built out campus and 2,230 spaces for Phase I of the development.

Figure 1: Proposed One Paseo Location

Source: Google Earth Professional, 2011.

Figure 2: Proposed One Paseo Site Plan and Development Summary

	Commercial Retail (Sq. Ft.*)		Commercial Office (Sq. Ft.*)		Hotel (No. of Rooms)	Residential (MF Units)	Total*
Phase/Block	**Retail**	**Cinema ****	**Corporate Office**	**Professional Office*****			
Phase 1							
Block D	61,190	–	270,000	21,000	–	–	352,190
Block E	39,460	–	245,000	–	–	–	284,460
Phase 1 Total	*100,650*	–	*515,000*	*21,000*	–	–	*636,650*
Phase 2							
Block A	65,610	–	–	–	–	194	65,610 +194 MF units
Phase 2 Total	*65,610*	–	–	–	–	*194*	*65,610* *+194 MF units*
Phase 3							
Block B	38,940	–	–	–	150	181	38,940 +150 hotel rooms +181 MF units
Block C	14,800	–	–	–	–	233	14,800 + 233 MF units
Block D	–	50,000	–	–	–	–	50,000
Phase 3 Total	*53,740*	*50,000*	–	–	–	*414*	*103,740* *+418 MF units*
Total*	**220,000**	**50,000**	**515,000**	**21,000**	**150**	**608**	**806,000** **+150 hotel rooms** **+608 MF units**

*Gross Leasable Area (excludes parking structures covered in Gross Floor Area calculations). Density transfers permitted in accordance with procedures described in the Precise Plan.
**Cinema consists of up to 1,200 seats.
***Professional Office (located on Main Street).

Source: Kilroy Realty, 2011.

II. HIGHLIGHTS OF THE SHARED PARKING REPORT

The highlights of this analysis are presented in Table H1, which shows the peak demand for parking spaces using each of the three scenarios that were studied. The peak demand occurs on a weekday afternoon in December. Table H2 summarizes the peak demand on weekends, which is significantly lower than the weekday peak. Our key findings include the following:

- The peak parking demand projection for One Paseo is 3,882 spaces which would occur on a weekday in December and, given the planned supply of 4,089 spaces, results in a surplus at peak of 207 parking spaces within the parking system.[1] Looked at another way, it is our opinion that the Applicant is overbuilding parking spaces for One Paseo by more than 5%; the projection of the number of spaces needed already includes considerations of the need for a cushion to allow drivers to find available spaces and cars to properly circulate. This additional 5% is superfluous, based on the Urban Land Institute's Shared Parking Model.
- Parking demand in the evenings and on weekends will be dramatically lower than that projected for the middle of the business day, with a projected peak of 2,671 spaces. The result is a parking space surplus during periods of peak weekend parking demand that is more than 1,000 spaces for both Phase I of the Project and Build-out of the entire site.
- The weekday peak demand for the entire Project will likely occur infrequently, during one month of the year, and for approximately one hour during the day. The peak demand for the next busiest month is projected to be 3,752 spaces, 130 spaces lower than the December peak and occurring in June.
- Upon lease-up of the Phase I component of the site, a peak parking demand of 2,063 spaces is projected on a weekday in December during the 2:00 p.m hour. A weekend peak parking demand is projected for Phase I of 645 spaces. The number of spaces that will be provided in Phase I is 2,230, which results in more than 1,500 available spaces on weekends.
- The need for 4,027 spaces is projected if the Applicant wishes to meet a goal of 3.2 parking spaces per 1,000 SF GLA of office use, which the Applicant is considering for leasing and marketing purposes. It also assumes no shared parking for residential spaces. We note that this number is distinct from and above the actual parking demand number that is projected using the ULI Shared Parking Model.
- Using the City of San Diego's Shared Parking Code regulations would result in the need for 4,511 spaces for weekdays. It should be noted that, given the code's reliance on decades-old data and an incomplete methodology, Walker does not recommend that this number of spaces be constructed. After a careful review, Walker attributes the code regulations being higher than the ULI projections to several factors including some higher base ratios than those used in the ULI Model as well as the lack of a seasonal adjustment

[1] The total parking supply of 4,089 spaces does not include an additional 90 surface spaces which the Applicant has shown will be available.

within the City's calculations, which can play an important role in shared parking demand calculations. As a result, the peak demand for each land use for each month become stacked upon one another rather than sharing parking in a complementary manner. A comparison of the factors used in the City's code (LDC) and the ULI Shared Parking Model are shown in Attachment B to the report.

Table H1: Summary of Peak Parking Demand and Requirements for All Scenarios – Weekday

Number of Parking Spaces per:	Phase I				Full Site		
	Demand	Planned Supply	Difference[2]		Demand	Planned Supply	Difference[2]
Walker/ULI Shared Parking Model	2,063	2,230	167		3,882	4,089	207
Shared Parking Model with Leasing Goals for Office Ratio (3.2/Ksf GLA)	2,214	2,230	16		4,027	4,089	62
City of San Diego Shared Parking Requirement[1]	2,410	2,230	(180)		4,511	4,089	(422)

1 Per Article 2, Section142.0545 of the City of San Diego Land Development Code.
2 The standard industry terminology for the difference between demand and supply is "adequacy," characterized as either a parking "surplus" or "deficit." However, we do not use this terminology in this case as two of these scenarios are comparisons only and do not reflect actual parking demand projections.
Source: Walker Parking Consultants, 2011.

As noted above, the overall peaks in expected parking demand are driven by the high demand for office (employee) parking. This results in a significant parking surplus on weekends. We show the peak demand numbers for weekends in Table H2.

Table H2: Summary of Peak Parking Demand and Requirements for All Scenarios – Weekend

Number of Parking Spaces per:	Phase I				Full Site		
	Demand	Planned Supply	Difference[2]		Demand	Planned Supply	Difference[2]
Walker/ULI Shared Parking Model	645	2,230	1,585		2,671	4,089	1,418
Shared Parking Model with Leasing Goals for Office Ratio (3.2/Ksf GLA)	658	2,230	1,572		2,671	4,089	1,418
City of San Diego Shared Parking Requirement[1 & 2]	856	2,230	1,374		3,052	4,089	1,037

1 Per Article 2, Section142.0545 of the City of San Diego Land Development Code.
2 The standard industry terminology for the difference between demand and supply is "adequacy," characterized as either a parking "surplus" or "deficit." However, we do not use this terminology in this case as two of these scenarios are comparisons only and do not reflect actual parking demand projections.
Source: Walker Parking Consultants, 2011.

Each of the projections assumes shared parking among the different land uses on the site, as well as a shared pool of office parking. The implementation of a parking management plan is recommended in order to efficiently distribute parking demand throughout the site, as is described later in this letter report.

For the purpose of meeting parking demand during the peak periods of the year without oversupplying parking spaces, it is recommended that the Applicant build to the projections of the ULI Model. Walker recognizes that the models for both marketing and leasing purposes as well as the City's shared parking requirement project a need for a higher number of spaces than the ULI Model projects for parking demand. However, based on ULI and Walker research, and the resulting model, One Paseo will not experience a need for more than the 3,882 spaces for other than highly unusual and unforeseen occasions.[2] In addition, with regard to the parking demand projections contained within this document, the following should be noted:

- The assumptions used in our model are conservative. Very little patronage of the businesses on site by the office employees and residents is assumed when in fact such patronage is likely to occur and result in fewer customers of these businesses requiring parking spaces. For example, during the peak hour it is projected that there will be more than 1,500 employee vehicles on the site, yet it is assumed that during the peak demand for parking, only five percent of these employees on site (19 of 376 drivers) will be customers at the site's retail locations. Similar "non-captive" ratios are used in the model.
- Virtually no commuting to the site other than by single occupancy vehicle was assumed.
- Spikes in the demand for retail parking, such as "Black Friday" or the days before Christmas are likely to occur when office parking demand is low and parking spaces typically used by office employees will be available to accommodate the parking demand generated by retail/food uses.
- If implemented, the parking management policies and technology that we recommend for such a large parking supply will likely reduce the number of spaces needed as such measures lead parkers more quickly to available spaces and therefore tend to result in a need for fewer spaces.
- Although it is a shared parking system, parking supply within the site is well distributed relative to where the demand for parking on the site will be generated. During the overall peak for the site (midday on a weekday), roughly 90% of the parking demand for each block can be accommodated within the block itself. When the demand for parking on Blocks A – C increase in the evenings and on weekends, more than 80% of the parking demand generated on these blocks can be accommodated within the individual blocks. Because the employee component of parking demand for retail or restaurant space typically represents roughly 20% of that demand, parking can be managed such that the employees will park in designated areas on the adjacent blocks.

[2] This is one reason that an effective supply factor is built in to the recommended number of spaces (as is described in the section entitled "Shared Parking at One Paseo – Assumptions." The effective supply factor, a cushion of additional spaces, is provided in part to accommodate unexpected increases in parking demand although under these conditions the parking system may not operate at a level of service comparable to a busy or peak period. Per parking industry standards, a parking system is never "sized" for unusual or unforeseen events as the result would be parking spaces that remain vacant for all but a few hours each year.

III. URBAN LAND INSTITUTE SHARED PARKING ANALYSIS

The principles supporting this analysis stem from the concept of shared parking, an accepted practice widely used in mixed use developments and commercial districts. The Urban Land Institute first published *Shared Parking* in 1983, upon which the LDC Shared Parking is based. This publication explains the concept of shared parking and describes the use of a model to forecast peak parking conditions for mixed-use developments, and/or urban settings. Walker contributed to that original publication along with a number of firms, organizations and individuals in the parking field. Walker then led the team that researched and wrote *Shared Parking, 2nd Edition*, published in 2005. As previously noted, the City's Land Development Code section on shared parking is based on an incomplete version of the model that is nearly three decades old.

ULI SHARED PARKING METHODOLOGY

Shared parking is the use of a parking area to serve two or more individual land uses without conflict or encroachment. The ability to share parking spaces is the result of two conditions:

1. Variations in the accumulation of vehicles by hour, by day, or by season at the individual land uses, and
2. Relationships among the land uses that result in visiting multiple land uses on the same auto trip.

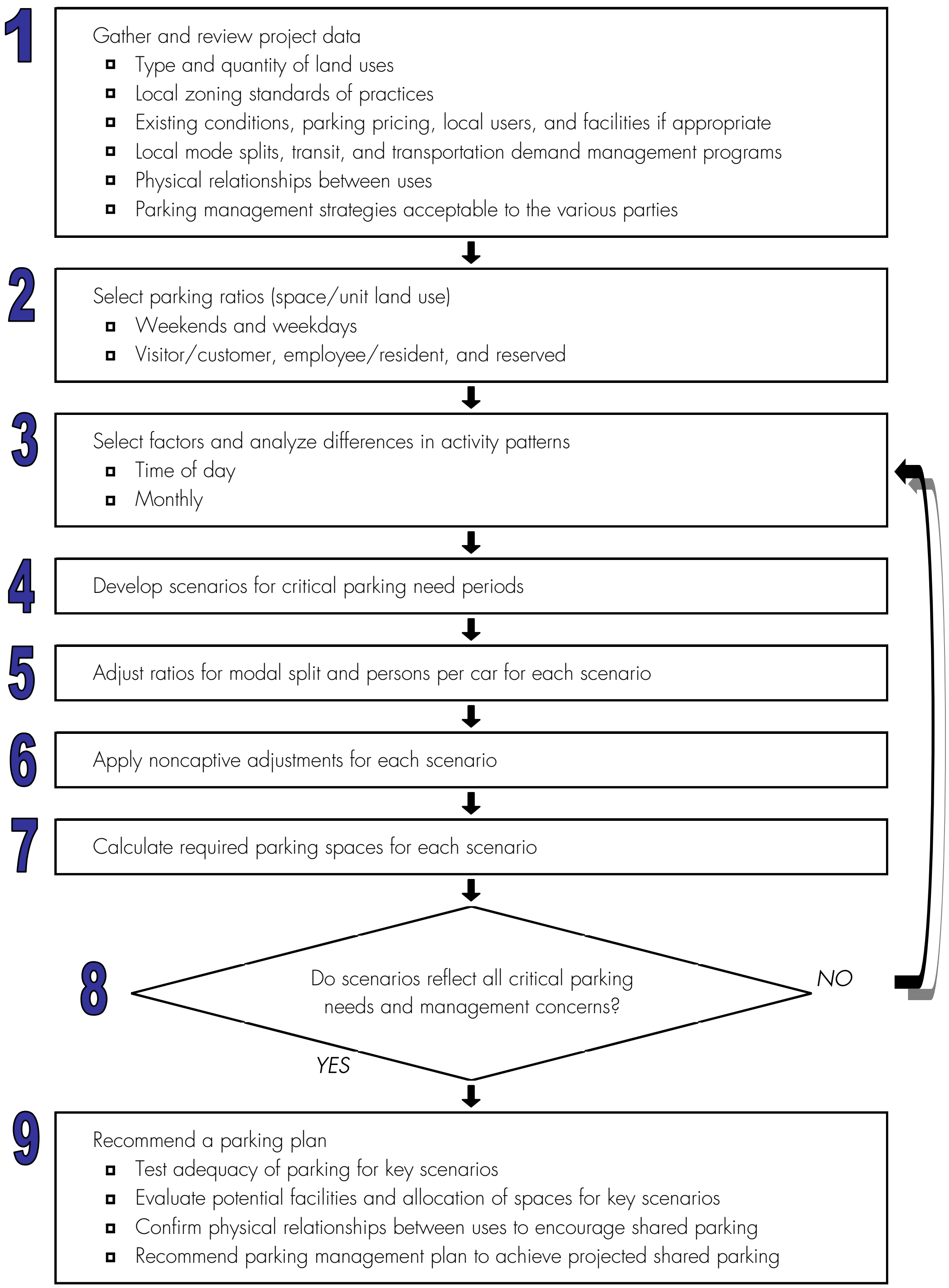
The key goal of a shared parking analysis is to find the balance between providing adequate parking to support a development from a commercial and operational standpoint while minimizing the negative aspects of excessive land area or resources devoted to parking. In general, a shared parking analysis considers the types, quantities and user groups of land uses for a development, as well as site- and market-specific characteristics. The ultimate goal of a shared parking analysis is to find the peak period, or design day condition; according to ULI's *Shared Parking, 2nd Edition*, "A design day or design hour is one that recurs frequently enough to justify providing spaces for that level of parking activity."

Allowing multiple land uses and entities to share parking spaces has allowed for and led to the creation of many popular developments and districts, resulting in the combination of office, residential, retail, and entertainment districts that rely heavily on shared parking practices in order to be compact, walkable and viable projects. In the same way, mixed-use projects have also benefited from the shared parking principle, which offers multiple benefits to a community, not the least of which is a lesser environmental impact from the reduction in required parking needed to serve commercial developments as well as the ability to create a more desirable mix of uses at one location.

Attachment A includes 13 case studies of shared parking in similarly sized mixed-use projects and the results of a study that validated the success of shared parking policies.

The flow chart below describes in general the logical progression of a shared parking analysis with adjustments made depending on the specific circumstances of the mix of land uses and location under study.

Figure 3: Shared Parking Methodology



Source: Adapted from *Shared Parking 2nd Edition*, 2005.

BASE PARKING RATIOS

To begin a shared parking analysis, the type and quantity of land uses are analyzed. Each land use has a specific metric considered by the parking industry to be a reliable meter of parking demand for that use. For office buildings that metric is square footage (GFA), for hotels that metric is the number of rooms, etc. The parking demand is divided by the quantity for each metric to generate a parking ratio for each land use based on that metric (i.e. for Office the ratio is presented as "spaces per thousand square feet of gross floor area"; for Hotel the ratio is presented as "spaces per room").

This ratio, called the base parking ratio, is the result of industry research of stand-alone "cornfield[3]" sites or on empirical data when available for an existing site. When multiplied by the given quantity for a land use in a proposed development, the base parking ratio is considered to produce the peak parking that land use would require. *Shared Parking, 2nd Edition, 2005* uses the 85th percentile of peak-hour observations for recommended parking ratios, unless otherwise noted (See tables in Attachment D: Select Pages from Shared Parking, 2nd Edition).

For a mixed-use site this calculation (Quantity X Base Parking Ratio) provides the maximum amount of parking needed for the site without consideration to the dynamics of the site and market, and interplay between activity levels for each land use. These adjustments are found in the subsequent steps of a shared parking analysis.

DRIVE RATIO (MODE SPLIT)

The drive ratio represents a reduction in anticipated spaces needed to account for employees and visitors arriving to the site by means other than a single-occupant vehicle (SOV). These other means include mass transit, carpooling/vanpooling, drop offs, bicycling, or walking from locations outside of the development site, etc. A large site, even without transit access will typically experience some reduction in the SOV ratio due to carpooling, drop offs or other ways people find to commute. Walker utilizes market and site specific data sources to generate assumptions for a drive ratio reduction. Market data is generally available from the US Census; Walker obtained a database of various census tracks which provides means of transportation to work data by location of workplace. This data may be used to support reductions in employee parking. Ultimately no reductions in the drive ratio were identified for the site and no adjustments to the Model were made in this category.

In the event that a reduction is limited *Shared Parking, 2nd Edition, 2005* suggests conservatively assuming a 100% drive-alone mode split because to some degree the base parking ratios already account for a small amount of ridesharing, drop-offs, and walking.

NON-CAPTIVE ADJUSTMENT

The non-captive ratio is the second factor modified when tailoring a shared parking model. "Captive market" is borrowed from market researchers to describe people who are already

[3] A "cornfield" development is defined as a site that cannot be easily reached through transit and does not have neighboring land uses where demand from one use would overflow to the adjacent site.

present at certain times of the day. In a shared parking analysis, the term "captive market" reflects the adjustment of parking needs and vehicular trip generation rates due to interaction among land-uses internal to the site. Traditionally, a non-captive adjustment is used to fine-tune the parking requirements for restaurants and retail patronized by employees of adjacent office buildings, or by other persons, generally long-term parkers, already counted as being parked for the day (including residents and their guests).

Generally, non-captive parking considerations for any mixed-use development take into account that some visitors to a specific land use may already be parked or have arrived at the site to visit multiple land uses on the site, such as when an office worker visits a restaurant within the same development. A shared parking analysis assumes some percentage of patrons at one business (restaurant) may be employees of another business (office) located in the same development. This is referred to as the "effects of a captive market," as some of the restaurant's patrons are already parking at the site to work; therefore, they contribute only once to the number of peak hour spaces utilizing the development's parking supply. In other words, with shared parking, the parking demand ratio for individual land uses can be corrected downward in proportion to the captive market support of the neighboring land uses (See discussion in Attachment D: Select Pages from Shared Parking, 2nd Edition).

PRESENCE FACTORS

Presence is the last factor applied to user group parking demand in a shared parking model; it is expressed as a percentage of potential demand modified for time of day and time of year. Considering that parking demand for each land use peaks at different times, generally, shared parking results in fewer parking spaces being recommended than would be the case were the land uses considered separately.

Time of Day Adjustment

The parking demand for any given land use varies throughout the day. Restaurants, for example, typically show peaks around the lunch hour and a larger peak during the evening. The ULI/Walker Shared Parking Model accounts for this variation in demand through adjustment of presence factors in the overall parking demand. These hourly adjustments are based on hourly parking accumulation data with the same source as the base parking ratios. A peak hour parking demand is observed, and a ratio results, but hourly counts were also performed which are presented as a percentage of that peak period and show how the land use generates parking throughout the day.

The model evaluates parking demand for each land use from 6:00 a.m. to 12:00 midnight on weekdays and weekends for every month of the year. An additional analysis of the last week of December is included and considered as the "thirteenth month." Special analysis is required during this unique period due to different parking demand patterns typical of the first three weeks of December (See tables in Attachment D: Select Pages from Shared Parking, 2nd Edition).

Time of Year Adjustment

Seasonality usually has varied effects on the parking generation at mixed-use sites because land uses and quantity mixes vary from one development to the next. Both restaurant and retail parking demand exhibit strong seasonal peaks, so many mixed-use developments with a strong retail component peak based on the combination of these two uses. Unless there is specific market data to support changes, the default planning ratios supplied in the ULI/Walker Shared Parking Model are typically used. An example of time of year adjustments includes the increased business of health clubs in January or greater movie attendance in the "thirteenth month," in the last week of December.(See tables in Attachment D: Select Pages from Shared Parking, 2nd Edition).

ULI SHARED PARKING ANALYSIS – ONE PASEO

Within this section of the report Walker will apply the methodology outlined above to project the peak parking demand for the proposed One Paseo mixed-use development. The parking demand projections are based on ratios, factors and adjustments found in the ULI shared parking model, developed in conjunction with Walker, which were then adjusted to take into account site-specific conditions.

BASE PARKING RATIOS

Base parking ratios are used to determine the parking requirements for a development site as if each component were a free-standing entity. Table 1: Base Parking Demand Ratios for All Phases shows the base parking demand ratios used for this shared parking analysis.

Table 1: Base Parking Demand Ratios for All Phases

	Weekday		Weekend			
Land Use	Visitor	Employee & Resident	Visitor	Employee & Resident	Unit	Source
Retail	2.90	0.70	3.20	0.80	/ksf GLA	1
Food	14.25	2.55	15.00	2.60	/ksf GLA	2
Cinema	0.19	0.01	0.26	0.01	/seat	2,3
Hotel-Business	1.00	0.25	0.90	0.18	/room	2,4
Residential	0.22	1.84	0.22	1.84	/unit	2,3
Office 500k+ sq ft	0.20	2.60	0.02	0.26	/ksf GFA	2
Specialty Grocery	3.50	0.60	3.70	0.50	/ksf GLA	3

Source References:

1. Parking Requirements for Shopping Centers, Second Edition. Washington DC: ULI-The Urban Land Institute, 1999.
2. Parking Generation, Third Edition. Washington DC: Institute of Transportation Engineers, 2004.
3. Internal research and data collection by Walker Parking Consultants and ULI shared parking team members.
4. Gerald Salzman, "Hotel Parking: How Much Is Enough?" Urban Land, January 1988.

The source of the base parking ratios for most land uses come directly from the *Shared Parking, 2nd Edition* publication. The sources for those ratios not specifically identified in the publication are described below.

Food

As noted, the "Food" uses are a blend of two types of restaurants; some of the restaurant space is intended as sit-down and, likely, destination restaurant, while the remainder will include quick serve and family restaurants and be more focused on serving those already visiting the center. For most blocks we assume that food uses will represent 25% of the entire commercial space. Of that 25% of commercial space 60% is assumed to be sit-down restaurant space while the remaining 40% is assumed to be quick-serve or family restaurant space.

Resident

For the purpose of maximizing parking efficiency, Walker generally recommends that the residential parking supply be shared to the extent possible per the code. The Applicant is considering reserving parking spaces for the residents of the Project Parking spaces serving the residents' guests will be shared with the general pool of parking. The parking demand ratios for residents provided by the Applicant based on their research result in a slightly higher parking supply for residents than the LDC requirements.

Table 2 below demonstrates the number of residential spaces that will be supplied and are equivalent to the projected demand for spaces. We also show the ULI model's typical recommended number of residential spaces for this type of project. The slight difference in the ULI- recommended demand versus what is being provided in Block A is likely due to the large number of studio units in this block.

Table 2: Reserved Residential Parking

		Residential Spaces to be Provided (Unshared)		LDC Requirement		
Block	Units	Spaces	Ratio	Spaces	Ratio	Difference
A	194	280	1.5	329	1.70	-49
B	181	362	2.0	339	1.87	23
C	233	466	2.0	422	1.81	44
Total	608	1,108	1.8	1,090	1.79	18

Source: Kilroy Realty, Walker Parking Consultants, 2011.

Specialty Grocery

Walker performed studies at various grocery stores between 2003 and 2007 which included 14 specialty grocers, such as Whole Foods, Inc and 22 standard grocers. The same methodology as ITE and ULI were utilized to develop a base ratio (provided in Table 3), hourly accumulation adjustments (provided in the appendices), and seasonal adjustments (provided in the appendices).

Walker found that specialty groceries like Whole Foods tend to invite smaller purchases and shorter lengths of stay. Ratios actually vary slightly from location to location. but stores within walking distance of employment and residential centers, similar in some respects to the One Paseo development, have substantially lower parking demand due to some "walk up" patrons they receive. The stores Walker surveyed tended to be busiest in the evenings on weekdays and mid-day on Saturdays. The busiest times of the year were right around the start of summer (Memorial Day weekend) and New Year's weekend. It should be noted that these locations all offered some form of specialty wine/beer sales, which were thought to substantially drive presence factors.

Table 3: Grocery Base Ratios

	Weekday		Weekend			Total		
Land Use	Visitor	Employee	Visitor	Employee	Unit	Weekday	Weekend	Source
Specialty Grocery	3.00	0.50	3.25	0.50	/ksf GLA	3.50	3.75	1
Standard Grocery	3.20	0.80	3.70	0.80	/ksf GLA	4.00	4.50	2

Sources
1. Compiled froim field observations at Whole Foods (8 locations in MA & RI), Trader Joes (4 locations in MA), and Wild Oats (2 locations in MA). Field counts taken during the course of Wednesday and Saturday in May & June 2003, May & June 2004, May - August 2005 and May - July 2006.
2. Compiled froim field observations at Shaws (10 locations in MA), Stop & Shop (8 locations in MA), and Market Basket (4 locations in MA). Field counts taken during the course of Friday and Saturday in November 2003, November 2004, November 2005 and November 2006.

Source: Walker Parking Consultants, 2007.

Access to the store will generally be most convenient for people already on the site. As a result a significant amount of activity for the specialty grocer will likely come from the on-site office space during weekday daytimes (especially lunch) and from the on-site residential units in the evenings and weekends;

ADJUSTMENTS FOR SITE SPECIFIC CHARACTERISTICS

The shared parking model utilizes base demand ratios that are largely consistent with the Urban Land Institute provided ratios; it should be noted that the ULI Model and *Shared Parking* publication call for adjustments to the model by the user to take into account site specific conditions where necessary. The ratios can be adjusted by three factors to take into account the specific characteristics of the project under study. These factors are driving ratios, non-captive ratios, and presence factors. Each is discussed in the following paragraphs.

Drive Ratio (Mode Split)

The drive ratio represents a reduction in anticipated spaces to account for carpooling, mass transit use, drop offs, walking from locations outside of the development site, etc. The planned site for One Paseo is outside the San Diego Transit Overlay Zones, and a review of available transit shows no particular concentration of transit service in the area, so no changes are made to the drive ratios.

A review of the mode share data for people working in the census tracts in and around Carmel Valley area suggested a single occupancy vehicle share among commuters of 92%. However, for the purposes of the model as noted previously a 100% drive-alone mode split is conservatively assumed, and therefore there is no reduction for mode split.

Non-captive Ratio

The methodology section previously discussed captive factors. Because the model projects the demand for parking that is generated, the inverse of a captive factor or non-captive ratio is used.

This adjustment accounts for the percentage of parkers who are not already counted as being parked. Typically, a primary land use (retail, office or hotel) comprises the longest parking durations of the vehicles that park at a given development. Because captive market effects typically reduce the parking needs, the factor employed to adjust the parking ratio is actually the percentage of customers who are not considered captive, or the non-captive ratio. By example, if 10% of the patrons of a food court are expected to be employees or customers of other land-uses, the non-captive ratio is 90%.

Based on Shared Parking research and observations, on-site employees will frequent the restaurants due to relative proximity and concomitant convenience. This statistic is incorporated into the ULI Shared Parking Model. Specifically, it is assumed that approximately 50% of the patronage to the quick service restaurants will be from patrons of other areas within the development, or employees of retail and office space patronizing these restaurants.[4]

One Paseo has significant office and residential components. Assuming more than 1,700 people working and living on the site during peak parking conditions[5] compared with the overall parking demand and patronage of businesses, we have conservatively assumed in this analysis that approximately 5% of the patronage of the cinema, retail and non-fast food restaurant uses will be accounted for by other employees and residents of other on-site land. The captive adjustments were based on the methodology outlined and recommended in *Shared Parking* (both 1st and 2nd editions) for evaluating the relative demand generation of land uses on the site that generate captive markets and those that benefit from captive markets. With thousands of cars generated by residences, offices and hotels, captive adjustments of 5% of retail and restaurant demand is extremely conservative based on the large number of people who will work and live on the site; at least 10% to 15% may be justified. Table 4 details the weekday and weekend non-captive factors used in the parking demand analysis of all building phases.

[4] Based on the research and observations of the project team, ULI's *Shared Parking* uses 50% as the default non-captive ratio for fast food uses in mixed-use centers regardless of the size of the mixed-use center. Experience and common sense would suggest an even lower non-captive ratio for larger centers due a larger number of people working, living and visiting, who would only access these restaurants on foot.

[5] We believe this to be a reasonable assumption based on the following considerations. If we assume that A) the 536,000 sf of office space contains 1,500 employees (2.8/ksf), B) the 165,000 sf of commercial space contains 0.7 employees per ksf, and C) in the 608 residential units 0.25 residents per unit (on a weekday) will be home, we can assume a total of 1,765 people who live or work on the site during the peak hour. This figure does not include restaurant employees, which would increase the total number.

Table 4: Non-captive Ratios (All Phases)

	Weekday		Weekend	
Land Use	Daytime	Evening	Daytime	Evening
Retail	95%	0%	0%	0%
Employee	0%	0%	0%	0%
Food[1]	71%	80%	74%	80%
Employee	100%	100%	100%	100%
Cinema	95%	95%	95%	95%
Employee	100%	100%	100%	100%
Hotel-Business	100%	100%	100%	100%
Employee	66%	66%	77%	77%
Residential	100%	100%	100%	100%
Office > 500k sq ft	100%	100%	100%	100%
Employee	100%	100%	100%	100%
Specialty Grocery	90%	90%	90%	90%
Employee	100%	100%	100%	100%

[1] The food land use represents different restaurants ranging from establishments with little non-captive demand to quick service establishments with primarily captive demand. The percentage non-captive for food represents the blended of the two.

Source: Walker Parking Consultants, 2011.

Very little patronage of the businesses on site by the office employees and residents is assumed when in fact such patronage is likely to occur and result in fewer customers of these businesses requiring parking spaces. For example, the ULI Model projects that during the peak hour there will be more than 1,700 employee vehicles on the site, yet we assume that during the peak demand for parking, only five percent of these employees on site (19 of 376 drivers) will be customers at the site's retail locations. Similar "non-captive" ratios are used in the model (See discussion in Attachment D: Select Pages from Shared Parking, 2nd Edition).

Presence Factors

No adjustment was made to the time of day and year presence factors as supplied in the ULI Model. Some land uses, different from those found in a typical shopping center are expected as tenants at One Paseo.

Little published data exist describing parking demand at specialty grocers, such as those that specialize in organic foods such as Whole Foods. As mentioned previously, shopper behavior at these stores tends to be different from a typical grocery store in a variety of ways including smaller overall purchases and the tendency to buy pre-prepared foods. Such variations can and do impact parking demand as a result of shorter stays per visitor (and therefore potentially differences in parking demand). For such use, Walker has collected proprietary information from which we derive presence factors. The hourly presence factors and seasonal adjustments for specialty grocers are presented in the appendices.

Effective Supply

It is an accepted principle in the parking industry that a parking facility or system cannot operate efficiently when it is filled to capacity. Some empty spaces should be available at all times to provide for more efficient circulation, and to ensure that motorists do not spend excessive time looking for the one or two remaining spaces in a large facility or area. This need to search for the last remaining spaces results in frustration, a perception of an inhospitable area, people being late to appointments or deciding not to visit or return to the area.

It is also recognized that if a parking system is planned to meet demand exactly, there will inevitably be parking shortages due to mis-parked vehicles, repairs or other obstructions, and minor construction. Therefore, in evaluating the ability of a parking supply to meet demand, and in planning the size of future parking facilities, we use the "effective" supply rather than the full supply.

The effective supply is the supply that is realistically usable by patrons or employees, usually five to ten percent smaller than the actual "full" supply depending on the space type and whom those spaces are designed to serve. Employees, for example, know the facilities well and tend to park in more or less the same place each day. They also stay for long periods, and thus do not generate as much in-and-out traffic; they therefore spend less time searching for spaces. Visitors generally are unfamiliar with the parking system and generate higher turnover. Consequently, this group often needs a greater circulation cushion. Size of the supply is also a consideration when setting the correct effective supply ratio. For example, if within a supply of 10 spaces one vehicle is mis-parked and takes two spaces, the supply is reduced by 10%; whereas, if within a supply of 100 spaces it would take 10 mis-parked cars to influence the supply the same way. A parking supply needs a smaller percentage cushion as it increases in size.

The ULI/Walker Shared Parking Model projections are for the number of spaces that are necessary to accommodate demand; the effective supply cushion is built in (See discussion in Attachment D: Select Pages from Shared Parking, 2nd Edition). The effective supply cushion varies by land use and user group.

ULI MODEL PARKING DEMAND PROJECTIONS

Utilizing the program data and pairing base parking ratios, the peak demand for One Paseo is calculated assuming that each land use is separate and in a somewhat remote location. Next the peak demand projection is adjusted using non-captive demand and presence factors which include seasonality and time of day. Again, for One Paseo adjustment for mode split is conservatively not assumed. These data are entered into the shared parking model to project weekday and weekend peak parking demand. Peak demand for build-out and Phase I were both projected.

Site Build-out Projected Parking Demand – Weekday Peak

At build-out, the ULI Model projects a peak parking demand of 3,882 spaces on a weekday in December around 2:00 p.m. Peak demand for the next busiest month, as shown in Table 6, is roughly 135 spaces less than the December peak. The largest single source of parking demand is the office employees and visitors, who generate a demand for 1,560, spaces during the period of peak demand. We calculate this demand using the model's projected ratio of 2.8 spaces per 1,000 SF GFA.[6] The reserved residential spaces represent 1,116, spaces of the total peak demand.[7] The retail, food uses and specialty grocery represent a total demand of 1,070 spaces. We break out the demand calculation in detail in the following table.

Table 5: Projected Peak Parking Demand for Build-out – Weekday (Campus Peak Period)

	Quantity	Weekday Base Rate[A]	Units	Stand Alone Use	Month Adj December	Pk Hr Adj 2:00 PM	Non Captive Daytime	Drive Ratio Daytime	Demand December 2:00 PM
Retail	135,000	2.90	/ksf GLA	392	100%	100%	95%	100%	372
Employee		0.70		95	100%	100%	100%	100%	95
Food Uses - Total	55,000	14.25	/ksf GLA	784	Blended Rate				399
Employee		2.56	/ksf GLA	141	Blended Rate				130
Specialty Grocery[B]	30,000	3.5	/ksf GLA	105	95%	63%	90%	100%	57
Employee		0.6	0	18	100%	95%	100%	100%	17
Cinema	1,200	0.19	/seat	228	23%	55%	95%	100%	27
Employee		0.01		12	50%	60%	100%	100%	4
Hotel-Business	150	1.00	/room	150	67%	60%	100%	66%	40
Employee	150	0.25	/room	38	100%	100%	100%	100%	38
Office >500,000 sq ft	557,440	0.20	/ksf GFA	111	100%	100%	100%	100%	111
Employee		2.60		1,449	100%	100%	100%	100%	1,449
Total Residential - Guests	608	0.22	/unit	-	100%	20%	100%	100%	27
Total Residents	608	1.84	/unit	-	100%	100%	100%	100%	1,116
Total Parking Spaces									3,882

[A] Shared Parking, Urban Land Institute, Second Edition, 2005, with the exception of Specialty Grocery Base Ratio, the derivation of which was discussed earlier in the report. In response to City staff inquiries we note that the 2.90 retail base ratio for customers represent default ratios in the ULI Model.

[B] Monthly and hourly adjustments are contained in the Model for all but Specialty Grocery, the adjustments for which were developed as described earlier in the report.

Source: Walker Parking Consultants, 2011.

Because the planned supply for the site at build out is 4,089 spaces, Walker's peak parking demand projection represents a surplus of 207 spaces.

With regard to parking demand patterns and peak demand, it is worth noting how often the peak demand for parking is projected to occur. As the peak demand will occur infrequently, it should be noted that this surplus will be higher for more than 90% of days throughout the year. The peak hour demand of 3,882 spaces is projected to occur on a December weekday at 2:00 PM, the peak observed for that month and the year. An examination of the peak demand for each of the

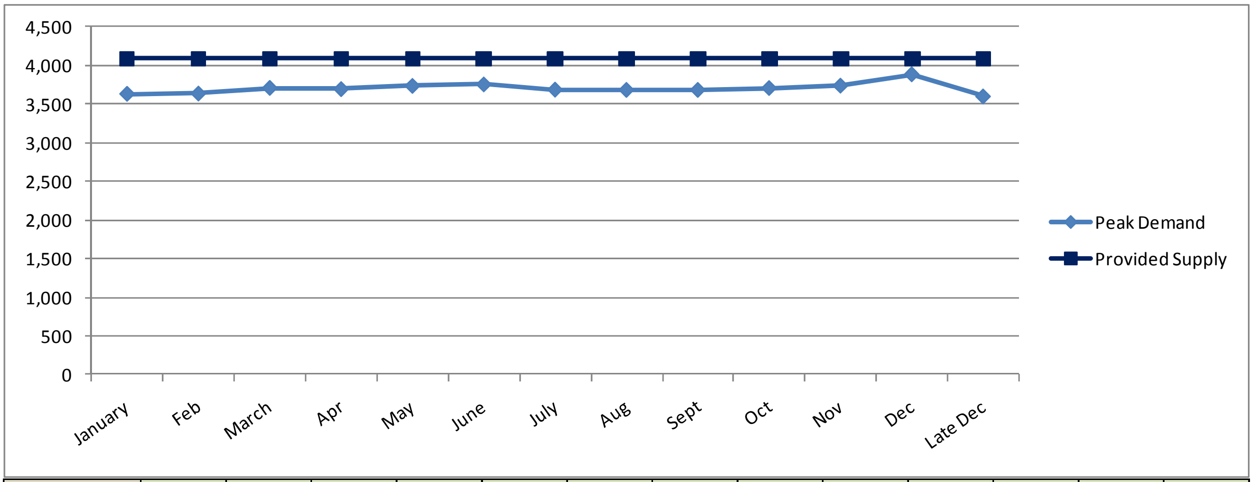
[6] This ratio is based on ULI/Walker research that has determined that large blocks of office space use parking significantly more efficiently than smaller ones, resulting in lower base ratios. Further, higher end office of the type envisioned for the One Paseo Campus also tends to generate a lower demand for parking than other types of office space, a fact that we did not quantify in our model but would tend to result in lower parking demand for office employees at the site.

[7] This does not include the residential guest spaces which we have recommended be included with the shared pool of spaces used by visitors and employees. Because the peak demand for residential guests occurs on nights and weekends, there is little impact on the peak for the overall system.

other 12 months of the year[8] shows that the projected peak for those months does not exceed 3,752 spaces (in June).

As noted in the discussion of effective supply, the demand projection is for the number of spaces needed on the site and includes a small cushion to allow for drivers to find spaces with relative ease and thus facilitate circulation within the system. Parking guidance system technology (PGS) and other parking management measures that assist patrons in finding spaces would facilitate this process further.

Table 6: Projected Peak Demand by Month for Build-out – Weekday



Month	January	Feb	March	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec	Late Dec
Peak Demand	3,631	3,635	3,707	3,692	3,733	3,752	3,685	3,682	3,682	3,706	3,736	**3,882**	3,598
Provided Supply	4,089	4,089	4,089	4,089	4,089	4,089	4,089	4,089	4,089	4,089	4,089	4,089	4,089

Source: The Urban Land Institute's *Shared Parking Model*, *Second Edition* and Walker Parking Consultants, 2011.

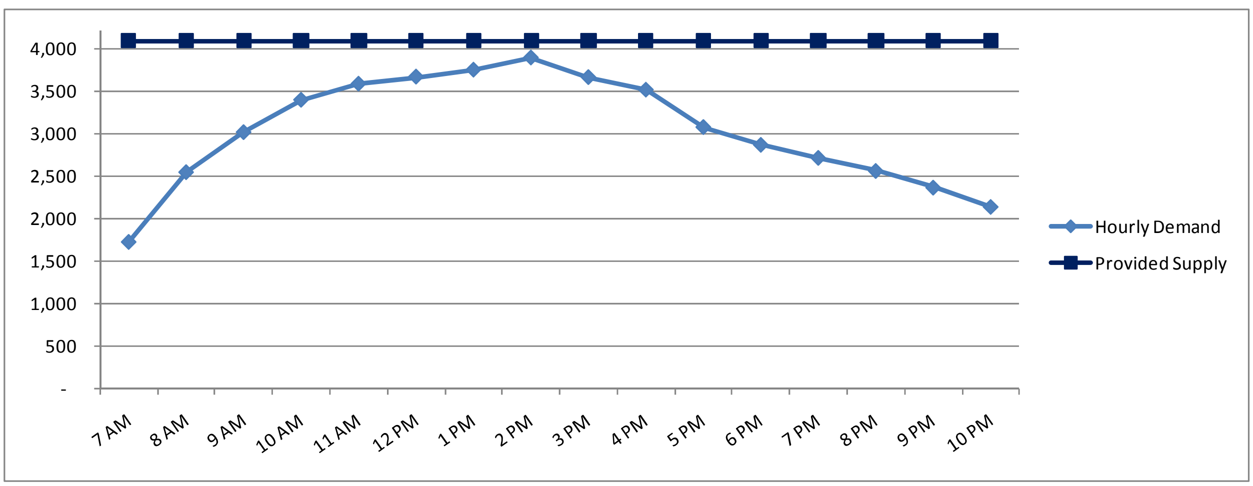
[8] The latter part of December constitutes a "thirteenth" month for Shared Parking, as parking behavior at this time reflects substantially different parking patterns for retail, cinema and office uses than during the earlier part of the month.

Table 7: Projected Accumulation on Peak Day by Hour for Build-out – Weekday

Land Use	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM
Retail	33	94	183	286	369	430	467	467
Food	38	81	117	246	406	588	588	529
Cineplex Weekdays	0	0	0	0	0	13	26	31
Hotel	71	87	81	78	78	74	74	78
Office	436	1109	1444	1560	1499	1321	1354	1560
Grocery	6	28	42	75	81	90	88	74
Residential	1116	1116	1116	1116	1116	1116	1116	1116
Residential - Guests	27	27	27	27	27	27	27	27
Total	**1,727**	**2,542**	**3,010**	**3,388**	**3,576**	**3,659**	**3,740**	**3,882**
Land Use	**3 PM**	**4 PM**	**5 PM**	**6 PM**	**7 PM**	**8 PM**	**9 PM**	**10 PM**
Retail	467	449	407	404	384	341	267	156
Food	353	391	543	685	726	669	631	588
Cineplex Weekdays	32	32	36	36	46	56	56	46
Hotel	78	77	73	65	58	61	64	71
Office	1499	1321	736	368	147	102	43	14
Grocery	81	93	104	108	99	78	51	12
Residential	1116	1116	1116	1116	1116	1116	1116	1116
Residential - Guests	27	27	54	79	133	133	133	133
Total	**3,653**	**3,506**	**3,069**	**2,861**	**2,709**	**2,556**	**2,361**	**2,136**

Source: The Urban Land Institute's *Shared Parking Model*, *Second Edition* and Walker Parking Consultants, 2011.

Figure 4: Projected Accumulation on Peak Day by Hour for Build-out – Weekday



Source: The Urban Land Institute's *Shared Parking Model*, *Second Edition* and Walker Parking Consultants, 2011.

Site Build-out Projected Parking Demand – Weekend Peak

With the demand for office parking drastically reduced on the weekends, even with an increase in parking demand for uses such as cinema and retail, we project a peak demand for parking at the proposed project site of 2,671 spaces. This is nearly 1,200 spaces less than the weekday peak. The parking demand by use during the weekend peak is shown in Table 8.

Table 8: Projected Peak Parking Demand for Build Out – Weekend

	Quantity	Wknd Base Rate	Units	Unadj Demand	Month Adj December	Pk Hr Adj 7:00 PM	Non Captive Evening	Drive Ratio Evening	Demand December 7:00 PM
Retail[A]	135,000	3.20	/ksf GLA	432	100%	75%	100%	100%	324
Employee		0.80		108	100%	80%	100%	100%	86
Food Uses - Total	55,000	15.00	/ksf GLA	825	Blended Rate				585
Employee		2.60	/ksf GLA	143	Blended Rate				139
Specialty Grocery	30,000	3.50	/ksf GLA	111	95%	44%	90%	100%	42
Employee		0.60	0	15	100%	65%	100%	100%	10
Cinema	1,200	0.19	/seat	312	67%	80%	95%	100%	159
Employee		0.01		12	80%	100%	100%	100%	10
Hotel-Business	150	1.00	/room	135	67%	75%	100%	77%	52
Employee	150	0.25	/room	27	100%	55%	100%	100%	15
Office >500,000 sq ft	557,440	0.20	/ksf GFA	11	100%	0%	100%	100%	-
Employee		2.60		145	100%	0%	100%	100%	-
Total Residential - Guests[B]	608	0.22	/unit	-	100%	100%	100%	100%	133
Total Residents[B]		1.84		-	100%	100%	100%	100%	1,116
Total Parking Spaces									2,671

[A] Shared Parking, Urban Land Institute, Second Edition, 2005. In response to City staff inquiries we note that retail base ratios (and adjustments) represent default ratios in the ULI Model.

[B] Residential base rates are blended residential parking demand projections for the units on Blocks A - C combined.

Source: The Urban Land Institute's *Shared Parking Model*, *Second Edition* and Walker Parking Consultants, 2011.

Phase I Projected Parking Demand

Upon lease-up of just the Phase I component of the site, the ULI model projects a peak parking demand of 2,063 spaces on a weekday in December during the 2:00 p.m hour, the same hour as the peak for the overall site. A detailed breakdown is provided in the following table. The largest parking generating land use, the office employees and visitors, will result in a demand for1,560, spaces. On the weekend, with the office space generating little demand for parking, the peak demand for Phase I represents just a fraction of the weekday demand and total planned supply, 645 spaces. The ULI Model projections demonstrate that both the weekday and weekend parking demand would be less than the planned supply of parking for Phase I, which is 2,230 spaces.

Table 9: Projected Peak Parking Demand for Phase I – Weekday

	Quantity	Weekday Base Rate[A]	Units	Unadj Demand	Month Adj December	Pk Hr Adj 2:00 PM	Non Captive Daytime	Drive Ratio Daytime	Demand December 2:00 PM
Retail	75,488	2.90	/ksf GLA	219	100%	100%	95%	100%	208
Employee		0.70		53	100%	100%	100%	100%	53
Fine/Casual Dining	15,100	15.25	/ksf GLA	230	100%	65%	95%	100%	142
Employee		2.75		42	100%	90%	100%	100%	38
Fast Food	10,100	12.75	/ksf GLA	129	100%	90%	35%	100%	40
Employee		2.25		23	100%	95%	100%	100%	22
Food Uses - Total	25,162	14.23	/ksf GLA	358	Blended Rate				182
Employee		2.58	/ksf GLA	65	Blended Rate				60
Office >500,000 sq ft	557,440	0.20	/ksf GFA	111	100%	100%	100%	100%	111
Employee		2.60		1,449	100%	100%	100%	100%	1,449
Subtotal Customer/Guest Spaces				689					501
Subtotal Employee Spaces *				1,567					1,562
Total Parking Spaces									2,063

[A] *Shared Parking*, Urban Land Institute, Second Edition, 2005. Differences in the mix of Food Uses between Phase 1 and build out result in a slightly different base ratio.

Source: The Urban Land Institute's *Shared Parking Model*, *Second Edition* and Walker Parking Consultants, 2011.

SHARED PARKING ANALYSIS – ADDITIONAL SCENARIO

The Applicant has expressed interest in offering its office tenants 3.2 parking spaces per 1,000 SF GLA for marketing and leasing purposes. The base parking ratio for 500,000 or more square feet of office space within the *ULI/Walker Shared Parking Model* is 2.8 spaces per 1,000 SF GFA, a number that has been determined based on extensive research and empirical data. Although Walker has recommended that the 2.8-space base ratio will be sufficient to accommodate the parking needs of its office employees and visitors, the Applicant requested that Walker examine the ability to accommodate parking demand based on the 3.2 spaces/Ksf GLA ratio.

The difference in metric (GFA versus GLA) and increased ratio suggest that an additional 145 parking spaces during the weekday peak be provided.[9] As the 3.2-space ratio would only be needed during the day on weekdays, the demand for parking in the evening and on weekends remains unaffected by this change in provided parking.[10] At the same time evenings and weekends are precisely when a large surplus of parking spaces is available.

[9] The ULI/Walker Shared Parking Model projects office parking demand based on office gfa while the parking requirements for leasing are based on gla. The actual difference between the ULI/Walker model using a 2.8 spaces per office gfa and 3.2 spaces per office gla is therefore 150± spaces.

[10] We note that even when office parking is used or required on the weekends, demand is a fraction of weekday use. The City's LDC Saturday requirement for office space is 0.5 spaces per ksf. The ULI Model shows peak office weekday demand at 2.8 per ksf.

The planned supply of parking is sufficient to accommodate this higher parking ratio for office leasing purposes. The table below shows a continued parking surplus, albeit reduced, from the demand projections produced by the ULI/Walker shared parking model.

Table 10: Effects of Increased Office Parking Ratio

	Phase I				Full Site		
Number of Parking Spaces per:	Demand	Planned Supply	Difference[3]		Demand	Planned Supply	Difference[3]
Shared Parking Model with Leasing Goals for Office Ratio (3.2/Ksf GLA)	2,214	2,230	16		4,027	4,089	62

Source: The Urban Land Institute's *Shared Parking Model*, *Second Edition* and Walker Parking Consultants, 2011.

IV. CITY OF SAN DIEGO PARKING REGULATIONS

The parking regulations for the City of San Diego are found within the Land Development Code Chapter 14, Article 2, Division 5. This section contains specifications related to minimum and maximum parking supply requirements, ability to share parking between different uses, and an allocation of special parking spaces (ADA, Carpool, Motorcycle, and Bicycle). In the following section of the report Walker presents how these regulations are calculated given the program data for One Paseo.

The methodology and tables contained in Section 142.0545 of the LDC are based on ratios and "variations in the number of parking spaces needed (parking demand) over the course of the day for the proposed uses." In fact, the base ratios and time of day (presence) factors are based on the ULI publication Shared Parking, 1st Edition, 1983. While the much of the methodology is the same, Shared 1st Edition is today regarded in the fields of planning and parking as incomplete and out of date. ULI, Walker and firms throughout the parking industry continually update the base ratios and presence factors to incorporate the latest research and access to a greater number of data points.

This growing and improved information has at times resulted in changes to base ratios and time of day factors since the 1983 edition. The foreword from Shared Parking, 2nd Edition, 2005 has been included in Attachment D which specifically summarizes the necessity for the update. The use of more updated ULI information to a great extent accounts for the differences between the LDC and this study's calculation of projected parking space demand. It should be noted that the 2005 edition is a project collaboration between ULI and the International Council of Shopping Centers (ICSC) which helped create and endorses the findings of the latest edition.

KEY DIFFERENCES BETWEEN LDC SHARED PARKING AND ULI SHARED PARKING MODEL

The shared parking section of the LDC is based on the original ULI *Shared Parking 1st Edition,* published in 1983. However differences exist between the LDC's shared parking requirements and a shared parking analysis performed using ULI's *Shared Parking, 2nd Edition, 2005*. These differences result in the variation in parking demand projections recommended in this report from those calculated using the LDC methodology and factors.

A 1995 report by the Institute of Transportation Engineers ("ITE") Technical Council Committee, *Shared Parking Planning Guidelines,* concluded that the *ULI Shared Parking* methodology from the first edition in 1983 was the best approach, but the default values and recommendations needed to be updated. This was the goal of the 2nd Edition; the update was led by Walker Parking Consultants staff. *Shared Parking, 2nd Edition, 2005* is the most up-to-date and accurate source for land-use based parking demand ratios and the most accurate and complete method of determining parking demand generated under shared-use conditions. Part of this completeness depends on the nuances incorporated into the ULI modeling process, which are not included in the Shared Parking Section of the LDC. These nuances are crucial for parking projection accuracy. They include the following factors, which are demonstrated in greater detail in the tables contained in Attachment C:

- Adjustments for "non-captive" ratios within mixed-use developments: The model takes into account the fact that some customers in a mixed-use development are employees in that development (such as office workers or store clerks) who are already parked and therefore do not need parking, an important component in shared parking principles. The size of the non-captive ratio is related to the number of employees on the site and how they would interact with other land uses in the development; therefore these ratios cannot be included automatically and must be determined on a project-by-project basis. The LDC shared parking requirements do not account for non-captive ratios.
- Monthly factors: Peak parking demand may vary considerably over the course of the year for many land uses. Office workers are more likely to be on vacation during some days in December or during the summer, movie theatres tend to be busier during these months, and health clubs experience peak demand in January. The LDC does not account for monthly adjustments that should be made to accurately project parking demand.
- Sliding scales: Extensive observations and research by the *ULI Shared Parking Model* team found that parking demand per square foot of office space varies considerably depending on the amount of office space that exists. This results in large offices generating more than 15% less demand for parking per square foot than small offices. The LDC shared parking requirements do not account for this sliding scale, which is important when projecting parking demand for office space (especially large office space). Walker studies have shown a number of large office complexes in Southern California that are hundreds of parking spaces "overparked," some which actively seek to lease the available space to other uses.

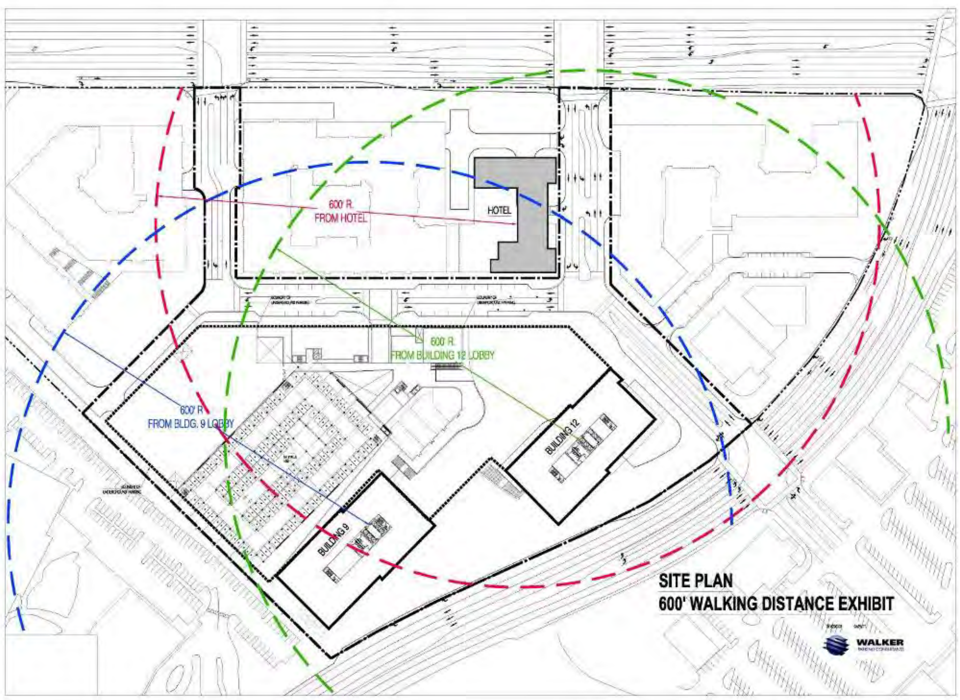
As noted above, the base parking ratios in *Shared Parking, 2nd Edition* (model and publication) have been researched to an unprecedented degree. While not all of the LDC's shared parking base ratios are higher than those in *Shared Parking, 2nd Edition*, a significant number of the ratios are higher, which is enough to result in City requirements for parking that significantly exceed actual demand. Our findings with regard to Shared Parking are based on the ULI research and methodology, and explained in greater detail throughout this report.

MAXIMUM WALKING DISTANCE

The City of San Diego's Land Development Code (LDC) Section 142.0545 allows for shared parking between at least two land uses provided that the parking to be shared is available within 600 feet of the land that is to use the supply of parking.

In response to City staff's specific inquiry regarding the location of the parking supply in relation to the uses within each block, we confirm that this requirement (as with all other relevant requirements in this section) will be met. The figure below contains a site plan which demonstrates that the parking supply that is to be shared among the various blocks is within 600 feet of parking demand generators. The figure illustrates compliance of the full build-out condition; Phase 1 and Phase 2 would therefore necessarily meet this spatial requirement as the area between blocks that share parking supply is even smaller in those phases. We note that most of the sharing of parking between uses for this project actually occurs on a smaller scale, within rather than between blocks, making for walking distances for parking users that would be significantly less than 600 feet.

Figure 5: 600-FT Walking Distance Requirement



Source: Walker Parking Consultants, 2011.

LDC SHARED PARKING RATIOS

The LDC primarily presents shared parking ratios in Table 142-05H and refers to Section 142.0525 for Multiple Dwelling Unit Residential Uses (including both resident and resident guest parking)

RESIDENTIAL PARKING REQUIREMENTS

In section 142.0525 the LDC allows for guest spaces as well as up to 25% of residential spaces to be shared (except at least 1 space shall be assigned to each dwelling unit for the resident). The modeling of the LDC requirement reflects that the residential spaces will be reserved and that guest spaces will be shared. Per the LDC the amount of guest spaces, or common area parking, cannot be reduced to below 15% for a residential development of the proposed size.Parking requirements within the LDC for residential land uses are based on the bedroom count for each dwelling unit, therefore the Applicant provided the following unit breakdown.

Table 11: LDC Residential Parking Requirements

Location	Units	Type of Unit	LDC Resident Ratio	LDC Resident Req't	Effective Ratio	Common Area Parking Req't[1]	
Block A	124	1 BDRM	1.5 /BDRM	186			
	58	2 BDRM	2.0 /BDRM	116			
	12	3 BDRM	2.25 /BDRM	27			
	194			329	1.70 /DU	49	-
Block B	65	1 BDRM	1.5 /BDRM	98			
	80	2 BDRM	2.0 /BDRM	160			
	36	3 BDRM	2.25 /BDRM	81			
	181			339	1.87 /DU	51	-
Block C	94	1 BDRM	1.5 /BDRM	141			
	127	2 BDRM	2.0 /BDRM	254			
	12	3 BDRM	2.25 /BDRM	27			
	233			422	1.81 /DU	63	-
One Paseo	283	1 BDRM	1.5 /BDRM	425			
	265	2 BDRM	2.0 /BDRM	530			
	60	3 BDRM	2.25 /BDRM	135			
	608			1,090	1.79 /DU	164	-

[1] LDC 142.0525(c) The number of common area parking spaces that may be required is 20% of the total off-street parking spaces required. This requirement may, however, be increased or decreased base on consideration by the decision maker. For larger developments, generally in excess of 200 dwelling units, the number of common area parking may be decreased to no less than 15% of the total off-street parking spaces required. Walker assumes that, with more than 600 units, the number will be 15%.

Source: Walker Parking Consultants, 2011.

LDC PARKING REGULATIONS FOR NON- RESIDENTIAL USES

In addition to base ratios and time of day factors differing slightly from the updated publication, the LDC Shared Parking Model lacks seasonal, non-captive and drive share adjustments. Because seasonal adjustments are not included in the code, parking ratios that reflect the high demand for cinema and retail uses, which spike in late December, overlay the office demand that occurs during other times of year (Peaking in October). Although the peak periods for these land uses would likely not occur at the same time, their overlap in the LDC model accentuates the peak period that the LDC model projects. Attachment B of this report contains a table which compares the factors used in the City of San Diego's LDC and the ULI/Walker Model.

LDC Shared Parking Requirement – Full Build-out

Based on the City's shared parking formula, at build-out a total of 4,511 spaces would be necessary (see Table 12 below).

Table 12: LDC Shared Parking Requirement for Build-out – Weekday

	Quantity	Code Reqt Per LDC	Units	Unadj Demand	Pk Hr Adj 12:00 PM	Demand 12:00 PM
Retail	165,000	5.00	/ksf GFA	825	100%	825
Food	55,000	15.00	/ksf GFA	825	100%	825
Cinema - 10 screens[A]	1,200	0.30	/seat	364	30%	109
Hotel-Business	150	1.00	/room	150	70%	105
Office[B]	557,400	3.30	/ksf GFA	1,840	90%	1,656
Residential Block A (reserved)	194	1.28	/ksf GFA	247	100%	247
Residential Block B (reserved)	181	1.40	/ksf GFA	254	100%	254
Residential Block C (reserved)	233	1.36	/ksf GFA	316	100%	316
Guest Block A	194	0.26	/unit	49	40%	20
Residential Block A		0.43		82	40%	33
Guest Block B	181	0.28	/unit	51	40%	20
Residential Block B		0.47		85	40%	34
Guest Block C	233	0.27	/unit	63	40%	25
Residential Block C		0.45		105	40%	42
Subtotal Residential[C]	608	2.06	/unit	1,253		174
Total Parking Spaces						4,511

[A]Based on 10 screens, 1,200 seats are assumed.

[B]Square footage is GFA. GLA is 536,000 SF.

[C] Assumes a total unit mix of 283 1-bdrm, 265 2-bdrm, and 60 3-bdrm units. Residential code reqt reflects blended code reqt.

Source: Walker Parking Consultants, LDC, 2011.

Table 13 shows the hourly accumulation totals by land use based on LDC hourly adjustments for weekdays.

Table 13: LDC Shared Parking Hourly Accumulations for Build-out – Weekday

Use	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM
Retail	0	83	248	413	578	660	825	784	701	660
Food	124	454	660	537	207	537	825	660	454	289
Cineplex Weekdays	0	0	0	0	18	18	109	255	255	255
Hotel	150	143	128	128	120	113	105	105	105	90
Office	92	276	1012	1656	1840	1840	1656	1564	1656	1656
Residential	980	947	915	900	882	882	882	874	882	890
Residential - Guests	272	218	163	136	109	109	109	96	109	122
Total	**1,618**	**2,121**	**3,126**	**3,770**	**3,754**	**4,159**	**4,511**	**4,338**	**4,162**	**3,962**

Use	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	12 AM
Retail	619	660	660	619	495	371	248	124	0
Food	248	372	537	454	454	372	289	124	42
Cineplex Weekdays	255	255	291	364	364	364	364	291	255
Hotel	98	90	98	113	128	135	135	150	150
Office	1564	1012	460	276	92	92	92	0	0
Residential	890	900	923	931	939	956	964	972	980
Residential - Guests	122	136	178	191	204	232	245	258	272
Total	**3,796**	**3,425**	**3,147**	**2,948**	**2,676**	**2,522**	**2,337**	**1,919**	**1,699**

Source: Walker Parking Consultants, LDC, 2011.

The LDC provides separate shared parking regulations for both weekdays and weekend days. For reference, the weekend parking requirement is shown in Table 14. Since office space is a significant component of the land use mix proposed for One Paseo, higher requirements result for weekdays than weekends.

Table 14: LDC Shared Parking Regulation for Build-out – Weekend

	Quantity	Code Reqt Per LDC	Units	Unadj Demand	Pk Hr Adj 1:00 PM	Demand 1:00 PM
Retail	165,000	5.00	/ksf GFA	825	100%	825
Food	55,000	15.00	/ksf GLA	825	100%	537
Cinema - 10 screens[A]	1,200	0.30	/seat	396	70%	277
Hotel-Business	150	1.00	/room	150	50%	75
Office[B]	557,400	0.50	/ksf GFA	279	85%	237
Residential Block A (reserved)	194	1.28	/unit	247	100%	247
Residential Block B (reserved)	181	1.40	/unit	254	100%	254
Residential Block C (reserved)	233	1.36	/unit	316	100%	316
Guest Block A	194	0.26	/unit	49	65%	32
Residential Block A	194	0.43		82	65%	54
Guest Block B	181	0.28	/unit	51	65%	33
Residential Block B	181	0.47		85	65%	55
Guest Block C	233	0.27	/unit	63	65%	41
Residential Block C	233	0.45		105	65%	69
Subtotal Residential[C]	608	2.18	/unit	387		387
Total Parking Spaces						3,052

[A]Based on 10 screens, 1,200 seats are assumed.

[B]Square footage is GFA. GLA is 536,000 SF.

[C] Assumes a total unit mix of 283 1-bdrm, 265 2-bdrm, and 60 3-bdrm units. Residential code reqt reflects blended code reqt. Peak hr adjst is for residents only.

Source: Walker Parking Consultants, LDC, 2011.

LDC Shared Parking Requirement – Phase I

Using the LDC shared parking section the shared parking regulation for the Project's Phase I is 2,410 spaces for weekdays. The summary of the results in Table 15 shows the breakdown of the requirement for spaces for each land use. The LDC shared parking requirement for Phase I on weekends of 864 spaces is shown in Table 16.

Table 15: LDC Shared Parking Requirement for Phase I – Weekday

	Quantity	Weekday Base Rate	Units	Unadj Demand	Per SDMC no Month Adj [redacted]	Pk Hr Adj 12:00 PM	Non Captive Daytime	Drive Ratio Daytime	Demand January 12:00 PM
Retail	75,488	5.00	/ksf GLA	377	100%	100%	100%	100%	377
Food	25,163	15.00	/ksf GLA	377	100%	100%	100%	100%	377
Office[1]	557,648	3.30	/ksf GFA	1,840	100%	90%	100%	100%	1,656
Total Parking Spaces									2,410

Source: Walker Parking Consultants, LDC, 2011.

Table 16: LDC Shared Parking Requirement for Phase I – Weekend

	Quantity	Wkday Base Rate	Units	Unadj Demand	Per SDMC no Month Adj [redacted]	Pk Hr Adj 1:00 PM	Non Captive Daytime	Drive Ratio Daytime	Demand December 1:00 PM
Retail	75,488	5.00	/ksf GLA	377	100%	95%	100%	100%	358
Food	25,163	15.00	/ksf GLA	377	100%	100%	100%	100%	377
Office[1]	557,648	3.30	/ksf GFA	279	100%	80%	100%	100%	223
Total Parking Spaces									856

[1]Square footage is GFA. GLA is 536,000 SF.

Source: Walker Parking Consultants, 2011.

CITY OF SAN DIEGO REGULATIONS FOR PARKING FOR OTHER VEHICLES

In addition to requirements for single occupied vehicles, the City Code addresses parking spaces for other types of vehicles, which include carpool vehicles, motorcycles and bicycles. Additionally, the Federal government, through the Americans with Disabilities Act (ADA), requires that a number of spaces within any given supply be set aside for disabled drivers as well.

ADA SPACES

The following table shows the required number of ADA spaces for each of the blocks, their associated parking facilities, and how the spaces will be provided.

Table 17: ADA Spaces by Block

One Paseo			ADA Required		ADA Provided	
Block	Spaces Provided	ADA Req't	Standard ADA spaces	Van stalls	Standard ADA spaces	Van stalls
A	659	2%	12	2	21	4
B	675	2%	12	2	15	3
C	525	2%	9	2	10	4
D E	2230	20+1 for each 100 over	27	6	27	6
	4089		**60**	**12**	**73**	**17**

Source: Walker Parking Consultants, LDC, 2011.

MOTORCYCLE, BICYCLE, AND CARPOOL SPACES

Table 18 shows the number of spaces required per the LDC Section 142.0525 for users of motorcycles, bicycles and carpools, by phase. The total required to be set aside for these users at Build-out are as follows:

- Motorcycle spaces: 136. According to the LDC, these spaces are in addition to the required automobile spaces. Per the LDC, motorcycle spaces shall be at least 3 feet wide and 8 feet long.

- Bicycle spaces: 327, which includes 12 bicycle lockers that would require an accompanying shower facility. 283 of the bicycle spaces are required for the residential units as a result of a requirement of the 0.4 – 0.6 bicycle spaces per single – two bedroom unit.
- Carpool spaces: 162. According to the LDC, these spaces are to be part of and not in addition to the general pool of required spaces.

In some cases the number of spaces indicated as "Provided" may be lower than the code requirement, which is a result of our overall recommendation that the total number of spaces necessary for the development is less than what the LDC requires (which will be shown in subsequent sections). The following caveats and recommendations should be noted:

- To the extent that the code requirements for motorcycle, bicycle and carpool spaces are for stand-alone uses, and they do not take into account the possible efficiencies to be gained from sharing spaces. This suggests that the actual demand for these spaces could be lower than the code requirement as well. A number of the code requirements, particularly for motorcycle spaces, are a function of the code requirement for automobiles; –the ULI model peak parking demand projection for automobile spaces is roughly 20% lower than the calculated code requirement which would then translate to a motorcycle requirement that is roughly 20% than the calculated code requirement as well.
- Motorcycles and the spaces used to park them represent a far more efficient use of space than Single Occupancy Vehicles (SOV) spaces. However, because one can park a motorcycle or bicycle in an SOV space but not vice versa, these spaces cannot be "shared" and, if their usage is not maximized, can result in inefficiencies. These spaces should be provided in locations that otherwise could not be used (such as corners of the parking facilities).
- The provision of parking spaces for carpoolers, bicycle commuters and motorcyclists should result in a slight reduction in demand for automobile spaces. At a minimum, the reduction would be on an, at least, one-to-one basis for motorcycle, carpool and non-residential bicycle spaces. These items are part of a Transportation Demand Management ("TDM") Plan used to reduce the parking demand for Single-Occupant Vehicles.

Table 18: Motorcycle, Bicycle, and Carpool Spaces by Block

					Motorcycle			Bicycle					Carpool	
Phase/Block	Program Summary		Calculated Required Auto Spaces (non-residential)	Dwelling Units	Code Requirement [A,B]	Calculated code req't - MC Spaces	Spaces Provided	Code Requirement [D,E,F,G,H]	Calculated code req't - Bicycle	Lockers w/ Shower Reqt [H]	Calculated Bike Locker Spaces Reqt	Spaces Provided	Code Requirement [I]	Calculated Total Carpool Spaces Req't
PHASE 1														
Block D	Office	352,190 SF	2410	N/A	2% req'd auto	49	44	0.03 /ksf office	Maximum 25 bicycle spaces required and to be provided including racks for 12 spaces and 12 bicycle lockers per SDMC.				0.3 /ksf office	88
	Commerical							0.10 /ksf commercial						
Block E	Office	284,460 SF						0.03 /ksf office					0.3 /ksf office	74
	Commerical							0.10 /ksf commercial						
Phase 1 Total		636,650 SF				49	44		13		12	25		162
Phase 2 Total														
Block A	Residential	194 MF Units		194	0.1 /DU	20	20	0.44 /DU	86	N/A	N/A	86	N/A	N/A
	Commercial	65,610 SF	492		2% req'd auto	10	10	0.10 /ksf commercial	7			7		
Phase 2 Total		65,610 SF +194 MF Units				30	30		93			93		
Phase 3 Total														
Block B	Residential	181 MF Units		181	0.1 /DU	19	19	0.49 /DU	89	N/A	N/A	89	N/A	N/A
	Hotel	150 Hotel Rooms	105		2% req'd auto	3	3	2% req'd auto	3			3		
	Commercial	38,940 SF	300		2% req'd auto	6	6	0.10 /ksf commercial	4			4		
Block C	Residential	233 MF Units		233	0.1 /DU	24	24	0.46 /DU	108	N/A		108	N/A	N/A
	Commercial	14,800 SF	111		2% req'd auto	3	3	0.10 /ksf commercial	2			2		
Block D	Cinema	50,000 SF	109		2% req'd auto	2	2	2% req'd auto	3			3		
Phase 3 Total		103,740 SF +150 Hotel Rooms +414 MF Units				*57*	*57*		209			209		
Total at Buildout														
Total		806,000 SF +150 hotel rooms +608 MF units				136	131		315		12	327		162

[A] San Diego Municipal Code § 142.0525, page 21 (h) - Motorcycle Parking.
[B] SDMC § 142.0525, Table 142-05C, Multiple Dwelling Units, page 8.
[C] SDMC § 142.0525, Motorcycle Parking, page 21 (g).
[D] SDMC § 142.0525, Table 142-05C,Table 142-05F Parking Ratios for Specified Non-Residential Uses - Offices, page 19.
[E] SDMC § 142.0525, Table 142-05D Parking Ratios for Retail Sales, Commercial Services, page 13 - Carmel Valley.
[F] SDMC § 142.0525, Table 142-05C, Multiple Dwelling Units, page 8. Bicycle reqt represents a blended rate based on the size (bedrooms) of units as contained in our earlier section on Code Requirements.
[G] SDMC § 142.0525, Table 142-05F, Visitor Accommodations, page 18.
[H] SDMC § 142.0525, Table 142-05F Parking Ratios for Specified Non-Residential Uses - Theaters - 2% of Auto Minimum, page 18.
[I] SDMC § 142.0525, Table 142-05F, Carpool Minimum, Business and Professional Offices, page 19.

*Gross Leasable Area (excludes parking structures covered in Gross Floor Area calculations). Density transfers permitted in accordance with procedures described in the Precise Plan.
**Cinema consists of up to 10 screens and 1,200 seats.

Source: Walker Parking Consultants, LDC, 2011.

V. CONCLUSIONS AND RECOMMENDATIONS

The planned parking supply for One Paseo is 4,089 spaces (build out) and 2,230 (Phase 1). For the purpose of accommodating parking demand during peak periods without overbuilding spaces that are likely to sit vacant most or all the year, the following supply of parking spaces is recommended based on the projections of the ULI Model:

<u>Built-out Project: 3,882 spaces</u>
<u>Phase I: 2,063 spaces</u>

In addition, the following points should be noted with regard to the parking demand projections that have come from the ULI Shared Parking Model:

- The assumptions used in our model are conservative. Very little patronage of the businesses on site by the office employees and residents is assumed when in fact such patronage is likely to occur and result in fewer customers of these businesses requiring parking spaces. No commuting to the site other than by single occupancy vehicles was assumed. All parking for employees and visitors is assumed to be free.
- Spikes in the demand for retail parking, such as "Black Friday" or the days around the Christmas holidays are likely to occur when office parking demand is low and spaces that typically serve office will be available to accommodate parking for other uses.
- Parking management policies and technology that we recommend for One Paseo's large parking supply will increase the efficiency of the system and reduce the number of spaces needed as such measures lead parkers more quickly to available spaces.

<u>The requirements needed to satisfy both marketing and leasing goals of the Project for increased parking spaces, as well as the City's shared parking code result in a higher number of spaces than that which the ULI Model projects is necessary. However, based on our research and updated model we do not project that One Paseo will experience a need for more than the 3,882 spaces for other than unusual and infrequent circumstances.</u>

<u>It is likely the two higher projected numbers (Applicant Scenario – 4,027 and LDC Calculation – 4,511) will result in an overbuilding of parking spaces that will not result in better service to drivers visiting the site.</u>

DEVELOP A PARKING MANAGEMENT PLAN

Given the size of the parking supply to be provided, the accommodation of parking demand and development of a positive customer service experience for tenants and visitors can best accomplished by <u>establishing effective parking management policies and not just simply adding additional spaces. Additional spaces may still go unused if not properly managed</u>, while the perception of a parking shortage persists; appropriate parking management practices will be necessary whether or not additional spaces are added to the proposed supply.

WALKING DISTANCES

Every trip involving driving and parking begins and ends with a pedestrian trip. Typically the more popular the destination, the greater the walk that is required. Walker has done extensive research on walking distances and how far parkers can reasonably be expected to walk. The question is largely one of level of service. Customers and visitors require a higher level of service and usually should be required to walk less. Employees and other long-term parkers (with the exception of residents) can be provided with a lower level of service and be expected to walk greater distances. A summary of our general findings regarding walking distances is shown in the table below.

Table 19: Walking Distance Level of Service

	LOS A (feet)	LOS B (feet)	LOS C (feet)	LOS D (feet)
Maximum Walking Distance				
Within Parking Facilities				
Surface Lot	350	700	1,050	1,400
Structure	300	600	900	1,200
From Parking to Destination				
Climate Controlled	1,000	2,400	3,800	5,200
Outdoors, covered	500	1,000	1,500	2,000
Outdoors, uncovered	400	800	1,200	1,600

Source: *Parking Structures 3rd Edition*, 2001.

The size of the entire One Paseo site lends itself well to sharing parking but also, as it has been layed out, provides two additional benefits. First, the majority of the parking supply, located within Blocks D and E, is located roughly in the center of the site, minimizing walking distances to the other blocks. The parking supply for D and E is located within 600 feet of the other blocks.

Second, as shown earlier in our report, the parking supply within the site is well distributed according to where the demand for parking on the site will be generated. During the overall peak for the site (midday on a weekday), roughly 90% of the parking demand for each block can be accommodated within that block. When the demand for parking on Blocks A – C increase in the evenings and on weekends, more than 80% of the parking demand generated on these blocks can be accommodated within the individual blocks. Because the employee component of parking demand for retail or restaurant space typically represents roughly 20% of that demand, parking can be managed such that the employees will park on the adjacent blocks.

PARKING MANAGEMENT PLAN

A parking management plan for the site ensures that visitor and short-term spaces are available for those user groups while all spaces throughout the system are efficiently utilized. The Applicant has stated proper policies, signage and wayfinding will be used to efficiently distribute parking demand throughout the available spaces. The plan to do this will include:

- The establishment of a parking management operation on site, either using Campus employees or a parking operator, whose responsibility is to monitor the management of the system, enforce management policies and interact with the public in order to ensure that drivers find parking spaces and have a positive customer experience within the parking system.
- Frequent monitoring of vehicles in customer/short term spaces, particularly during peak hours, to ensure that these spaces are used by the designated parkers and to ensure that customer spaces are always available in these areas. Both "carrot and stick" policies to ensure that parkers park in the appropriate spaces will be required. Enforcement capabilities with attached fines or punishment are necessary. Given the nature of the parking system and its user groups at One Paseo, we discuss the most appropriate enforcement methods in the following section.
- Parking guidance systems, signage and wayfinding technology that indicates where available parking spaces can be found and, ideally, leads drivers directly to those spaces. Such technology is available and has been found to be popular and effective in similar, commercial centers in including Westfield's Century City Shopping Center and The Grove in Southern California. We discuss these systems in a little more detail later in the report.
- If necessary, presence of parking staff in the mornings upon the arrival of employees to block off short-term/customer spaces needed later in the day and to lead employees to designated long-term parking area.
- Frequent monitoring of the garages to ensure that unauthorized vehicles are not left in the garage for long periods of time, taking up space needed for vehicles that are authorized to be in the garage.
- Car sharing through services such as Zipcar, already in use in a number of San Diego locations, allow residents or employees who only occasionally need an extra vehicle for trips off site, the convenience of access to a vehicle when they need it without keeping a vehicle on site all the time, thus reducing parking demand.A valet service may also offer increased efficiency customer service for One Paseo. A valet service can increase the efficiency of the parking operation by moving valet-parked cars to areas more distant from valet area. If necessary, attendants of the parking operation would be available to perform valet and attendant-assist operations.

TANDEM PARKING

Of the total 4,089 parking spaces proposed for One Paseo, the applicant has proposed 206 tandem spaces (103 two-deep parking spaces meeting LDC design standards), which will be dedicated to employee parking. LDC section 142.0555(b) states, "Tandem parking for commercial uses may be approved through a Neighborhood Development Permit provided the tandem parking is limited to the following purposes: (1) Assigned employee parking spaces; (2) Valet parking associated with restaurant use; and (3) Bed and breakfast establishments." Therefore, the use of tandem parking is permitted by the LDC, but if a Neighborhood Development Permit is not approved both spaces would not count toward meeting the minimum parking requirement; instead the two-deep tandem space would only count as one space and not two. Based on our analysis, this still provides a parking surplus; Walker's 2.8 model produces a peak of 3,882 versus a planned supply is 4,089 (103 of those spaces are a "2nd tandem space"). The analysis shows a 207-space surplus, but if 103 of these spaces cannot count per LDC, then a 104-space surplus still results.

The use of tandem parking spaces is a common practice that we recommend as an efficient method for maximizing office employee parking. Tandem parking can be administered utilizing an attendant-assist system of management whereby employees who park in any of the 103 "front" spaces hand their keys upon parking to an attendant who is present. The attendant, a staff member of the parking operation, holds the keys in case a vehicle in one of the "back" spaces needs to exit. Another management system that is available for employee parking applications is the use of a simple "buddy system," whereby the same two employee drivers consistently share a pair of tandem spaces and are therefore able to efficiently communicate with one another on those occasions where the "front" space vehicle needs to be moved. The tandem spaces are located in convenient locations near the elevators, making them an attractive employee parking option, as opposed to spaces located on the opposite end of the garage.

VEHICLE HANGTAGS / ENFORCEMENT

The use of access control equipment is the most effective method for managing and controlling employee parking; however, in a non-paid parking environment, this technology can also limit operational flexibility since the equipment would need to be placed at specific control points within the garage. In addition, installing this equipment internally would result in the loss of spaces to accommodate necessary equipment curb islands. In lieu of access control equipment, employee parkers would be managed through the use of vehicle hang tags. Each employee would be required to submit a parking application, which among other information, would include license plate numbers for primary and secondary vehicles. Every vehicle parked within a designated employee parking area would need to display one of these hang tags. Parking staff would periodically monitor the employee parking area to ensure that every vehicle was in compliance with this policy. An unauthorized vehicle would be issued a warning, the license plate would be recorded, and future violations could result in towing. Likewise, parking staff would also monitor the visitor parking area to ensure that employees are not parking outside of their designated area. This would be accomplished by identifying vehicles parked for long durations and checking corresponding license plates against a database of employee vehicles.

SIGNAGE AND WAYFINDING RECOMMENDATIONS

The applicant should consider the installation of space-counting systems in the garages. These systems typically work by either counting cars as they park, or as cars enter and leave a level. This count of cars is then supported by automated changeable message signs, typically at each level or at the entry, which advise motorists of the number of spaces available at each level. Such a system can also be designed to accommodate all garages on the site in a unified system to guide motorists to available parking.

In addition to external alerts, individual spaces within each structure can be installed to alert drivers to the availability of parking. These systems help to reduce "seeking" within the structure, as drivers traverse the aisles seeking a parking space. Instead drivers can pass an aisle without driving down, allowing the "seeking" to happen outside the aisles.

A similar system was recently installed at Westfield Century City to improve the operation of the parking facility. In order to judge the impact of the system, a study of some of the benefits was conducted by ARUP traffic consultants.[11] Among the system's benefits, the study found that:

- There was a 43% reduction in the average time to park;
- Customers requiring longer than 5 minutes to park was reduced from 15.2% of customers to 3.4%;
- Overall Utilization within the facility was improved.

These improvements also provided a number of other benefits, such as a reduction in fuel consumption, and similar reduction in emissions during parking operations.

ADDITIONAL WAYFINDING RECOMMENDATIONS

In order to avoid the perception that there is inadequate parking and to supplement a proposed possible parking guidance system, Kilroy should consider the installation of dynamic space availability displays. These systems typically work by either counting cars as they park, or as cars enter and leave a level. This count of cars is then supported by automated changeable message signs, typically at each level or at the entry, which advise motorists of the number of spaces available at each level. Such a system can also be designed to accommodate all garages on the site in a unified system to guide motorists to available parking. Such a system would be extremely valuable in addressing possible overflow parking for Blocks A through C.

Based on the ULI shared parking analysis, a parking deficit will be experienced within these blocks during peak periods while significant numbers of spaces remain available in the Block D and E parking facility. Individual space sensors could be used to manage and monitor the visitor spaces in the parking facilities serving Blocks A through C. Once a pre-programmed threshold of visitor spaces has been detected by the space monitoring system, dynamic message signs installed at the exterior of the garages can re-direct all visitor parkers to park across Main Street, in the parking facility serving Blocks D and E which, during peak parking demand periods for Blocks A – C, the ULI model and the Walker analysis project will have abundant parking space availability.

[11] A summary of the study was presented to a meeting of the Institute of Transportation Engineers (ITE) in 2009 and can be found on line at http://www.sfbayite.org/events/Mtg_2009_11-19/Wendy_Tao.pdf.

We look forward to discussing our findings and recommendations with you at your earliest convenience.

WALKER PARKING CONSULTANTS

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ATTACHMENT A

VALIDATION OF
SHARED PARKING MODEL

WALKER PARKING CONSULTANTS

VALIDATION OF SHARED PARKING MODEL FOR PROJECTS SIMILAR TO ONE PASEO

The committee updating Shared Parking conducted a series of 13 case studies to verify that the shared parking model is reasonably accurate. These studies were conducted at a variety of shopping centers in California, Arizona, Ohio, Florida, and Virginia. The centers studied varied in size from 48,566 sf to 1,274,700 sf.

Eight of the thirteen case studies were on shopping centers in southern California. The size of these centers, their respective mix of land uses and the ratio of estimated demand/observed occupancy is shown in the following table. In most cases, the shared parking model estimated the parking demand within a few percent or in the case of the Long Beach Town Centre, over projected the number of spaces necessary. In two cases, the shared parking model under-projected the parking demand; however, in the case of The Block at Orange, the under projection did not occur during a peak month, and the committee believes that "the monthly variation at this center was significantly lower than normal . . . the 'valleys' in the monthly variation of parking demand seem less deep than those commonly seen."

Shared Parking Southern California Case Studies

								Estimated Demand / Observed Occupancy			
		Size			Enter-			Weekday		Weekend	
Case	Name	(ksf)	Retail	Dining	tainment	Office	Other	Day	Evening	Day	Evening
1	Puente Hills Mall	1,190	87%	5%	7%	-	-	-	-	1.11	1.09
2	Fashion Island	1,174	88%	10%	2%	-	-	-	-	0.96	1.06
4	Long Beach Towne Center	832	77%	9%	15%	-	-	-	-	1.44	1.23
5	Covina Town Square	381	61%	10%	29%	-	-	-	-	-	1.06
6	Burbank Empire	614	92%	7%	-	1%	-	-	-	1.04	-
7	Westfield Promenade	546	81%	8%	10%	-	-	-	-	-	1.04
9	Irvine Spectrum, 2002	797	7%	13%	35%	45%	-	1.19	1.30	1.15	0.96
	Irvine Spectrum, 2003	1,274	24%	11%	20%	45%	-	1.19	1.46	0.92	0.82
12	Block at Orange[1]	1,175	40%	20%	20%	32%	3%	0.93	0.82	0.87	0.64
	SDCC	1,764	-	-	-	-	-				

1. Other is Health Club
2. Other includes Hotel (9%), Residential (32%) and Health Club (2%)

Source: Shared Parking, ULI, 2005.

Several of the case studies for centers that were near reasonable transit options were prepared with a uniform mode adjustment of 90%-95%, for all visitors and employees. The Block at Orange, for example, was initially prepared assuming a mode adjustment of 90%.

In planning for the parking demand at any facility, the parking demand ratios are obtained (where available) from data provided by the Institute of Transportation Engineers' Parking Generation (3rd edition, 2004.). Parking Generation provides the Average Peak Period Parking Demand, the 85th Percentile Parking Demand, and the 33rd Percentile Parking Demand. As with traffic, traffic engineers and parking consultants generally consider the 85th percentile demand to represent the target that will best serve communities and developers. As these parking ratios are based on statistical data, there will be some facilities that outperform others, resulting in higher parking demand. The committee responsible for the update to Shared Parking didn't consider the variations in parking demand to invalidate the parking model, but rather "are more indicative of the strength of tenants in a particular marketplace…"

ATTACHMENT B

COMPARISON OF FACTORS USED IN
ULI/WALKER SHARED PARKING MODEL
AND CITY OF SAN DIEGO
LAND DEVELOPMENT CODE

Attachment B Table: Comparison of Factors – ULI / Walker Model and LDC Code

Land Use	Walker/ULI Model		LDC - Shared Parking		% LDC > ULI
Sample peak demand ratios - Weekday					
Office (for 500+ksf)	2.8	/ksf	3.3	/ksf	18%
Retail	3.6	/ksf	5	/ksf	39%
Restaurant	15 - 18	/ksf	15	/ksf	0 to 20%
Cinema	0.2	per seat	0.33	per seat	65%
Hotel - Guest	1.25	/room	1	/room	-20%
Residential incl'ing guest	2.05	/du (blended)	2.18	/du (blended)	6%
Sample time factors - 2:00 PM Wkdy					
Land Use	Walker/ULI Model		LDC - Shared Parking		% LDC > ULI
Office	100%		90%		-10%
Retail	100%		85%		-15%
Restaurant	65% - 90%		55%		-28% to -39%
Cinema	55%		70%		27%
Hotel - Guest	60%		70%		17%
Specialty Grocery	63%		85%		35%
Sample monthly factors - December					
Land Use	Walker/ULI Model		LDC - Shared Parking		% LDC > ULI
Office	100%		100%		0%
Retail	100%		100%		0%
Restaurant	100%		100%		0%
Cinema (Patron)	23%		100%		335%
Cinema (Employee)	50%		100%		100%
Hotel - Guest	67%		100%		49%
Sample Drive and Non-Captive Factors					
Land Use	Walker/ULI Model		LDC - Shared Parking		% LDC > ULI
Retail - Non-Captive	95%		100%		5%
Hotel - Guest - Drive Factor	66%		100%		52%
Specialty Grocery - Non-Captive	90%		100%		11%

Sources by land use:

Office	Data collected by Walker and other *Shared Parking* Team Members consisting of parking professionals nationwide
Retail	Parking Requirements for Shopping Centers, Second Edition. Washington DC: ULI-The Urban Land Institute, 1999
	US Census Bureau Unadjusted Estimates of Retail Sales, 1999-2002
Restaurant	Parking Generation, Third Edition. Washington DC: Institute of Transportation Engineers, 2004
	US Census Bureau Unadjusted Estimates of Retail Sales, 1999-2002
Cinema	Parking Generation, Third Edition. Washington DC: Institute of Transportation Engineers, 2004
Hotel	Parking Generation, Third Edition. Washington DC: Institute of Transportation Engineers, 2004
	Gerald Salzman, "Hotel Parking: How Much Is Enough?" Urban Land, January 1988.
	www.strglobal.com
Specialty Grocery	Compiled by Walker from field observations at Whole Foods, Trader Joes, and Wild Oats stores .

ATTACHMENT C

SELECT PAGES FROM

SHARED PARKING, 2ND EDITION, 2005

Foreword

Since the first edition of this book was published in 1983, the concept of shared parking has become well established as an important element of mixed-use developments, probably beyond the wildest dreams of its authors. That pioneering study demonstrated that when developments with complementary parking patterns were able to use the same parking, less was required. At the time, there was not even a generally accepted source of documented parking needs for individual land uses, so such data were developed as part of the original study. Over the subsequent two decades, shared parking has become a routine part of the design and approval of mixed-use developments. Parking needs have changed as a result of the evolution in mixed-use developments and changes in transportation, requiring a new look at the shared parking parameters advocated in 1983. With this publication, we are pleased both to validate the original study and to provide current data for a more complex mix of different potential land uses.

It is a tribute to the ground-breaking nature and thoroughness of the original shared parking study that it has taken so long to update it, and ULI could not have done it alone. Growing concerns from within and outside the ULI community made this project a priority for the Policy and Practice Committee. The publication of the third edition of *Parking Generation* by the Institute of Transportation Engineers provided a rich source of current parking data for single land uses that served as a foundation for an updated shared parking study. The International Council of Shopping Centers partnered with us to make the study a reality. A national study team of experts was established and a lead consultant selected to direct and manage the work.

This new publication provides up-to-date parking parameters that will be useful now and well in the future for many users, including local governments, developers, shopping center owners, and lenders. These new guidelines should help those users to integrate parking and development in the most responsible way.

Robert T. Dunphy
Project Director

Table 2-1 Land Use Changes between First and Second Editions of *Shared Parking*

Land Use[1] in Second Edition	Land Use in First Edition	Comment
Office (701) <25,000 sq. ft. Office (701) 25,000 to 100,000 sq. ft. Office (701) 100,000 to 500,000 sq. ft. Office (701) >500,000 sq. ft. Data Processing Center Medical/Dental Office (720) Bank with Drive-in (912)	Single category: Office	Per *Parking Generation*, separation is appropriate.
Retail Community Center <400,000 sq. ft. (820) Regional Center 400,000 to 600,000 sq. ft. (820) Super Regional Center >600,000 sq. ft. (820)	Retail (400,000 sq. ft.) Retail (600,000 sq. ft.)[2]	n/a
Fine/Casual Dining (Quality Restaurant, 931; High Turnover with Bar, 932) Family Restaurant (High Turnover with No Bar, 932) Fast Food (ITE Fast Food, 933)	Single category: Restaurant	Unpublished study by team member and *Parking Generation* indicated separation is appropriate.
Cineplex (444) (>10 screens)	Same	First-edition ratio was applicable for 1-5 screens.
Residential, Rented (221, 222, 224) Residential, Owned (230)	Single category: Residential	Per *Parking Generation*, separation is appropriate. Specific time of day and adjustment factors are provided for suburban and transit/CBD oriented locations.
Leisure Hotel (330)—Rooms Business Hotel (312)—Rooms Restaurant/Lounge Conference Center/Banquet (20 to 50 sq. ft./room) Convention (>50 sq. ft./room)	Guest Rooms Restaurant/Lounge Conference Rooms Convention Area	Per published references, separation is appropriate.
Convention Center (455)	Not covered	Common in shared parking situations, especially in central business districts.
Health Club (492)	Not covered	Common in shared parking situations.
Performing Arts Center (441)	Not covered	Common in shared parking situations.
Active Entertainment (400 series)	Not covered	Significant trend in retail development; due to wide variation in specific tenants, default values for parking ratios are not provided.
Nightclub	Not covered	Significant trend in retail development.
Arena	Not covered	Common in shared parking situations.
Baseball Stadium	Not covered	Common in shared parking situations.
Football Stadium	Not covered	Common in shared parking situations.

Notes

[1] The ITE *Parking Generation* land use code is provided in parenthesis.
[2] The text of the first edition of *Shared Parking* recommended that, between 400,000 and 600,000 sq. ft., the ratio should be linearly interpolated from 4.0 to 5.0 spaces per thousand sq. ft., which was consistent with the then-current ULI/ICSC publication on *Parking Requirements for Shopping Centers*. The table summarizing the parking ratios, however, identified retail as noted and thus was not completely clear regarding the ratio to be used between 400,000 and 600,000 sq. ft.

Table 2-2 Summary of Recommended Base Parking Ratios (Spaces per Unit Land Use)

Land Use	Weekday Visitor	Weekday Employee	Weekend Visitor	Weekend Employee	Unit	Source
Community Shopping Center (<400,000 sq. ft.)	2.9	0.7	3.2	0.8	/ksf[1] GLA	1
Regional Shopping Center (400,000 to 600,000 sq. ft.)	Sliding scale between 400,000 and 600,000 sq. ft.				/ksf GLA	1
Super Regional Shopping Center (>600,000 sq. ft.)	3.2	0.8	3.6	0.9	/ksf GLA	1
Fine/Casual Dining	15.25	2.75	17.0	3.0	/ksf GLA	2, 3
Family Restaurant	9.0	1.5	12.75	2.25	/ksf GLA	3
Fast-Food Restaurant	12.75	2.25	12.0	2.0	/ksf GLA	2
Nightclub	15.25	1.25	17.5	1.5	/ksf GLA	3
Active Entertainment	Custom to each tenant					
Cineplex	0.19	0.01	0.26	0.01	/seat	3, 2
Performing Arts Theater	0.3	0.07	0.33	0.07	/seat	2
Arena	0.27	0.03	0.3	0.03	/seat	3
Pro Football Stadium	0.3	0.01	0.3	0.01	/seat	3
Pro Baseball Stadium	0.31	0.01	0.34	0.01	/seat	3
Health Club	6.6	0.4	5.5	0.25	/ksf GFA	3, 4
Convention Center	5.5	0.5	5.5	0.5	/ksf GLA	3
Hotel—Business	1.0	0.25	0.9	0.18	/room	2, 3
Hotel—Leisure	0.9	0.25	1.0	0.18	/room	2, 3
Restaurant/Lounge	10.0	—	10.0	—	/ksf GLA	2, 3, 5
Conference Center/Banquet (20 to 50 sq. ft./guest room)	30.0	—	30.0	—	/ksf GLA	2, 3, 5
Convention Space (>50 sq. ft./guest room)	20.0	—	10.0	—	/ksf GLA	2, 3, 5
Residential, Rental	0.15	1.5[2]	0.15	1.5[2]	/unit	2
Residential, Owned	0.15	1.7[2]	0.15	1.7[2]	/unit	2
Office (<25,000 sq. ft.)	0.3	3.5	0.03	0.35	/ksf GFA	2
Office (25,000 to 100,000 sq. ft.) Sliding scale between					/ksf GFA	2
25,000 sq. ft.:	0.3	3.5	0.03	0.35		
100,000 sq. ft.:	0.25	3.15	0.03	0.32		
Office (100,000 to 500,000 sq. ft.) Sliding scale between					/ksf GFA	2
100,000 sq. ft.:	0.25	3.15	0.03	0.32		
500,000 sq. ft.:	0.2	2.6	0.02	0.26		
Office >500,000 sq. ft.	0.2	2.6	0.02	0.26	/ksf GFA	2
Data Processing Office	0.25	5.75	0.03	0.58	/ksf GFA	2, 3
Medical/Dental Office	3.0	1.5	3.0	1.5	/ksf GFA	2, 3
Bank, Branch with Drive-in	3.0	1.6	3.0	1.6	/ksf GFA	2

Notes
Ratios based on peak parking spaces required with virtually 100% auto use and typical ridesharing for suburban conditions.
[1] /ksf = per thousand sq. ft.
[2] 1.0 spaces reserved for residents' sole use, 24 hours a day, remainder shared with visitors and other uses.

Sources:
1 *Parking Requirements for Shopping Centers*, 2nd ed. (Washington, D.C.: ULI–the Urban Land Institute, 1999)
2 *Parking Generation*, 3rd ed. (Washington, D.C.: Institute of Transportation Engineers, 2004)
3 Data collected by team members
4 John W. Dorsett, "Parking Requirements for Health Clubs," *The Parking Professional*, April 2004
5 Gerald Salzman, "Hotel Parking: How Much Is Enough?" *Urban Land*, January 1988

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Table 2-3 Recommended Monthly Adjustment Factors for Customer/Visitor Parking

Land Use	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Late DEC	Source
Shopping Center	56%	57%	64%	63%	66%	67%	64%	69%	64%	66%	72%	100%	80%	1, 3
Restaurant	85%	86%	95%	92%	96%	95%	98%	99%	91%	96%	93%	100%	95%	1
Fast Food	85%	86%	95%	92%	96%	95%	98%	99%	91%	96%	93%	100%	95%	1
Nightclub	84%	86%	98%	90%	90%	91%	94%	96%	92%	98%	96%	100%	95%	1
Cineplex Weekdays	27%	21%	20%	19%	27%	41%	55%	40%	15%	15%	25%	23%	100%	3
Cineplex Weekends	71%	59%	67%	58%	71%	82%	92%	75%	51%	62%	78%	67%	100%	3
Performing Arts Theater	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	90%	100%	100%	2
Arena	90%	100%	100%	100%	100%	75%	—	—	60%	65%	90%	95%	95%	2
Pro Football Stadium[1]	—	—	—	—	—	—	—	67%	—	—	—	100%	100%	2
Pro Baseball Stadium	—	—	—	100%	100%	100%	100%	100%	100%	100%	—	—	—	2
Health Club	100%	95%	85%	70%	65%	65%	65%	70%	80%	85%	85%	90%	95%	2, 4
Convention Center[2]	75%	100%	90%	55%	60%	50%	45%	75%	80%	85%	100%	60%	—	2
Hotel—Business	71%	85%	91%	90%	92%	100%	98%	92%	93%	93%	81%	67%	50%	5
Hotel—Leisure	90%	100%	100%	100%	90%	90%	100%	100%	75%	75%	75%	50%	100%	5
Restaurant/Lounge	85%	86%	95%	92%	96%	95%	98%	99%	91%	96%	93%	100%	95%	1
Meeting/Banquet (20 to 50 sq. ft./guest room)	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
Convention (>50 sq. ft./guest room)	75%	100%	90%	55%	60%	50%	45%	75%	80%	85%	100%	60%	—	2
Residential	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
Office, Bank	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	80%	2, 6

Notes
December = December 1-24. Late December = December 25-31
[1]Because there is only one weeknight game and no Saturday games per NFL team September through November, and activity patterns are modified at adjacent uses due to the crowds expected, this category is not considered a "design day" for parking planning.
[2]Many convention centers are completely dark between Christmas and New Year's Day.

Sources:
1. U.S. Census Bureau, unadjusted estimates of monthly retail and food service sales, 1999-2002.
2. Data collected by team members.
3. *Parking Generation*, 3rd ed. (Washington, D.C.: Institute of Transportation Engineers, 2004).
4. John W. Dorsett, "Parking Requirements for Health Clubs," *The Parking Professional*, April 2004.
5. Smith Travel Research, www.wastar.com.
6. Parking study conducted by Patton Harris Rust & Associates for the Peterson Companies, 2001.

Table 2-4 Recommended Monthly Adjustment Factors for Employee Parking

Land Use	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Late DEC	Source
Shopping Center	80%	80%	80%	80%	80%	80%	80%	80%	80%	80%	90%	100%	90%	1, 2
Restaurant	95%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	1, 2
Fast Food	95%	95%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	1, 2
Nightclub	90%	90%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	1, 2
Cineplex Weekdays	50%	50%	50%	50%	50%	75%	75%	75%	50%	50%	50%	50%	100%	3, 2
Cineplex Weekends	80%	80%	80%	80%	80%	100%	100%	90%	80%	80%	80%	80%	100%	3, 2
Performing Arts Theater	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
Arena	100%	100%	100%	100%	100%	75%	10%	10%	75%	75%	100%	100%	100%	2
Pro Football Stadium[1]	10%	10%	10%	10%	10%	10%	10%	100%	10%	10%	10%	100%	100%	2
Pro Baseball Stadium	10%	10%	10%	10%	100%	100%	100%	100%	100%	100%	10%	10%	10%	2
Health Club	100%	100%	95%	80%	75%	75%	75%	80%	90%	95%	95%	100%	100%	4, 2
Convention Center	85%	100%	100%	65%	70%	60%	55%	85%	90%	95%	100%	70%	10%	5, 2
Hotel	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
Residential	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
Office, Bank	100%	100%	100%	100%	100%	100%	95%	95%	100%	100%	100%	100%	80%	6

Notes
December = December 1-24, Late December = December 25-31
[1]Because there is only one weeknight game and no Saturday games per NFL team September through November and activity patterns are modified at adjacent uses due to the crowds expected, this category is not considered a "design day" for parking planning.

Sources:
1. U.S. Census Bureau, unadjusted estimates of monthly retail and food service sales, 1999-2002
2. Data adjusted by team members.
3. Parking Generation, 3rd ed. (Washington, D.C.: Institute of Transportation Engineers, 2004)
4. John W. Dorsett, "Parking Requirements for Health Clubs," The Parking Professional, April 2004
5. Smith Travel Research, www.wwstar.com
6. Parking study conducted by Patton Harris Rust & Associates for the Peterson Companies, 2001

Table 2-5 Recommended Time-of-Day Factors for Weekdays

Land Use	User	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.
Shopping Center—Typical	Customer	1%	5%	15%	35%	65%	85%	95%	100%	95%
Peak December	Customer	1%	5%	15%	30%	55%	75%	90%	100%	100%
Late December	Customer	1%	5%	10%	20%	40%	65%	90%	100%	100%
	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%
Fine/Casual Dining	Customer	—	—	—	—	15%	40%	75%	75%	65%
	Employee	—	20%	50%	75%	90%	90%	90%	90%	90%
Family Restaurant	Customer	25%	50%	60%	75%	85%	90%	100%	90%	50%
	Employee	50%	75%	90%	90%	100%	100%	100%	100%	100%
Fast Food	Customer	5%	10%	20%	30%	55%	85%	100%	100%	90%
	Employee	15%	20%	30%	40%	75%	100%	100%	100%	95%
Nightclub	Customer	—	—	—	—	—	—	—	—	—
	Employee	—	—	—	5%	5%	5%	5%	10%	10%
Cineplex—Typical	Customer	—	—	—	—	—	—	20%	45%	55%
Late December	Customer	—	—	—	—	—	—	35%	60%	75%
	Employee	—	—	—	—	—	—	50%	60%	60%
Performing Arts Theater	Customer	—	—	—	1%	1%	1%	1%	1%	1%
No matinee	Employee	—	10%	10%	20%	20%	20%	30%	30%	30%
Arena	Customer	—	—	—	1%	1%	1%	1%	1%	1%
No matinee	Employee	—	10%	10%	20%	20%	20%	30%	30%	30%
Stadium	Customer	—	—	—	1%	1%	1%	5%	5%	5%
8 p.m. start	Employee	—	10%	10%	20%	20%	20%	30%	30%	30%
Health Club	Customer	70%	40%	40%	70%	70%	80%	60%	70%	70%
	Employee	75%	75%	75%	75%	75%	75%	75%	75%	75%
Convention Center	Visitor	—	—	50%	100%	100%	100%	100%	100%	100%
	Employee	5%	30%	33%	33%	100%	100%	100%	100%	100%
Hotel—Business	Guest	95%	90%	80%	70%	60%	60%	55%	55%	60%
Hotel—Leisure	Guest	95%	95%	90%	80%	70%	70%	65%	65%	70%
Restaurant/Lounge	Customer	—	10%	30%	10%	10%	5%	100%	100%	33%
Conference/Banquet	Customer	—	—	30%	60%	60%	60%	65%	65%	65%
Convention	Customer	—	—	50%	100%	100%	100%	100%	100%	100%
	Employee	5%	30%	90%	90%	100%	100%	100%	100%	100%
Residential	Guest	—	10%	20%	20%	20%	20%	20%	20%	20%
Residential	Reserved	100%	100%	100%	100%	100%	100%	100%	100%	100%
Residential	Resident	100%	90%	85%	80%	75%	70%	65%	70%	70%
Office	Visitor	—	1%	20%	60%	100%	45%	35%	45%	100%
Office	Employee	3%	30%	75%	95%	100%	100%	90%	90%	100%
Medical/Dental Office	Visitor	—	—	90%	90%	100%	100%	30%	90%	100%
	Employee	—	—	60%	100%	100%	100%	100%	100%	100%
Bank	Customer	—	—	50%	90%	100%	50%	50%	50%	70%
	Employee	—	—	60%	100%	100%	100%	100%	100%	100%

3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10 p.m.	11 p.m.	Midnight	Source
90%	90%	95%	95%	95%	80%	50%	30%	10%	–	1
100%	95%	85%	80%	75%	65%	50%	30%	10%	–	1
100%	95%	85%	70%	55%	40%	25%	15%	5%	–	1
100%	100%	95%	95%	95%	90%	75%	40%	15%	–	2
40%	50%	75%	95%	100%	100%	100%	95%	75%	25%	2
75%	75%	100%	100%	100%	100%	100%	100%	85%	35%	2
45%	45%	75%	80%	80%	80%	60%	55%	50%	25%	2
75%	75%	95%	95%	95%	95%	80%	65%	65%	35%	2
60%	55%	60%	85%	80%	50%	30%	20%	10%	5%	3
70%	60%	70%	90%	90%	60%	40%	30%	20%	20%	2
–	–	–	25%	50%	75%	100%	100%	100%	100%	2
10%	20%	45%	70%	100%	100%	100%	100%	100%	100%	2
55%	55%	60%	60%	80%	100%	100%	80%	65%	40%	2, 6
60%	80%	80%	70%	80%	100%	100%	85%	70%	55%	2, 6
75%	75%	100%	100%	100%	100%	100%	100%	70%	50%	2
1%	1%	1%	1%	25%	100%	100%	–	–	–	2
30%	30%	30%	100%	100%	100%	100%	30%	10%	5%	2
1%	1%	1%	10%	25%	100%	100%	85%	–	–	2
30%	30%	30%	100%	100%	100%	100%	30%	10%	5%	2
5%	5%	5%	10%	50%	100%	100%	85%	25%	–	2
30%	30%	30%	100%	100%	100%	100%	100%	25%	10%	2
70%	80%	90%	100%	90%	80%	70%	35%	10%	–	2, 4
75%	75%	100%	100%	75%	50%	20%	20%	20%	–	2, 4
100%	100%	100%	50%	30%	30%	10%	–	–	–	2
100%	90%	70%	40%	25%	20%	20%	5%	–	–	2
60%	65%	70%	75%	75%	80%	85%	95%	100%	100%	5
70%	75%	80%	85%	85%	90%	95%	95%	100%	100%	2
10%	10%	30%	55%	60%	70%	67%	60%	40%	30%	5, 3
65%	65%	100%	100%	100%	100%	100%	50%	–	–	2
100%	100%	100%	50%	30%	30%	10%	–	–	–	2
100%	90%	70%	40%	20%	20%	20%	20%	10%	5%	2
20%	20%	40%	60%	100%	100%	100%	100%	80%	50%	2
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
70%	75%	85%	90%	97%	98%	99%	100%	100%	100%	2
45%	15%	10%	5%	2%	1%	–	–	–	–	2
100%	90%	50%	25%	10%	7%	3%	1%	–	–	3
100%	90%	80%	67%	30%	15%	–	–	–	–	2
100%	100%	100%	67%	30%	15%	–	–	–	–	2
50%	80%	100%	–	–	–	–	–	–	–	3
100%	100%	100%	–	–	–	–	–	–	–	2

Sources:
1. Confidential data provided by shopping center managers.
2. Developed by team members.
3. *Parking Generation*, 3rd ed. (Washington, D.C.: Institute of Transportation Engineers, 2004).
4. John W. Dorsett, "Parking Requirements for Health Clubs," *The Parking Professional*, April 2004.
5. Gerald Salzman, "Hotel Parking: How Much Is Enough?" *Urban Land*, January 1988.
6. Parking study conducted by Patton Harris Rust & Associates for the Peterson Companies, 2001.

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Table 2-6 Recommended Time-of-Day Factors for Weekends

Land Use	User	6 a.m.	7 a.m.	8 a.m.	9 a.m.	10 a.m.	11 a.m.	Noon	1 p.m.	2 p.m.
Shopping Center—Typical	Customer	1%	5%	10%	30%	50%	65%	80%	90%	100%
Peak December	Customer	1%	5%	10%	35%	60%	70%	85%	95%	100%
Late December	Customer	1%	5%	10%	20%	40%	60%	80%	95%	100%
	Employee	10%	15%	40%	75%	85%	95%	100%	100%	100%
Fine/Casual Dining	Customer	–	–	–	–	–	15%	50%	55%	45%
	Employee	–	20%	30%	60%	75%	75%	75%	75%	75%
Family Restaurant	Customer	10%	25%	45%	70%	90%	90%	100%	85%	65%
	Employee	50%	75%	90%	90%	100%	100%	100%	100%	100%
Fast Food	Customer	5%	10%	20%	30%	55%	85%	100%	100%	90%
	Employee	15%	20%	30%	40%	75%	100%	100%	100%	95%
Nightclub	Customer	–	–	–	–	–	–	–	–	–
	Employee	–	–	–	5%	5%	5%	5%	10%	10%
Cineplex—Typical	Customer	–	–	–	–	–	–	20%	45%	55%
Late December	Customer	–	–	–	–	–	–	35%	60%	75%
	Employee	–	–	–	–	–	–	50%	60%	60%
Performing Arts Theater	Customer	–	–	–	1%	1%	1%	1%	17%	67%
With matinee	Employee	–	10%	10%	20%	20%	20%	30%	100%	100%
Arena (two shows)	Customer	–	–	–	1%	1%	1%	1%	25%	95%
	Employee	–	10%	10%	20%	20%	20%	30%	100%	100%
Stadium (1 p.m. start; see weekday for evening game)	Customer	–	–	1%	1%	5%	5%	50%	100%	100%
	Employee	–	5%	10%	20%	30%	30%	100%	100%	100%
Health Club	Customer	80%	45%	35%	50%	35%	50%	50%	30%	25%
	Employee	50%	50%	50%	50%	50%	50%	50%	50%	50%
Convention Center	Visitor	–	–	50%	100%	100%	100%	100%	100%	100%
	Employee	5%	30%	33%	33%	100%	100%	100%	100%	100%
Hotel—Business	Guest	95%	90%	80%	70%	60%	60%	55%	55%	60%
Hotel—Leisure	Guest	95%	95%	90%	80%	70%	70%	65%	65%	70%
Restaurant/Lounge	Customer	–	10%	30%	10%	10%	5%	100%	100%	33%
Conference/Banquet	Customer	–	–	30%	60%	60%	60%	65%	65%	65%
Convention	Customer	–	–	50%	100%	100%	100%	100%	100%	100%
	Employee	5%	30%	90%	90%	100%	100%	100%	100%	100%
Residential	Guest	–	20%	20%	20%	20%	20%	20%	20%	20%
Residential	Reserved	100%	100%	100%	100%	100%	100%	100%	100%	100%
Residential	Resident	100%	90%	85%	80%	75%	70%	65%	70%	70%
Office	Visitor	–	20%	60%	80%	90%	100%	90%	80%	60%
Office	Employee	–	20%	60%	80%	90%	100%	90%	80%	60%
Medical/Dental Office	Visitor	–	–	90%	90%	100%	100%	30%	–	–
	Employee	–	–	60%	100%	100%	100%	100%	–	–
Bank	Customer	–	–	25%	40%	75%	100%	90%	–	–
	Employee	–	–	90%	100%	100%	100%	100%	–	–

3 p.m.	4 p.m.	5 p.m.	6 p.m.	7 p.m.	8 p.m.	9 p.m.	10 p.m.	11 p.m.	Midnight	Source
100%	95%	90%	80%	75%	65%	50%	35%	15%	—	1
100%	95%	90%	80%	75%	65%	50%	35%	15%	—	1
100%	95%	85%	70%	60%	50%	30%	20%	10%	—	1
100%	100%	95%	85%	80%	75%	65%	45%	15%	—	2
45%	45%	60%	90%	95%	100%	90%	90%	90%	50%	2
75%	75%	100%	100%	100%	100%	100%	100%	85%	50%	2
40%	45%	60%	70%	70%	65%	30%	25%	15%	10%	2
75%	75%	95%	95%	95%	95%	80%	65%	65%	35%	2
60%	55%	60%	85%	80%	50%	30%	20%	10%	5%	3
70%	60%	70%	90%	90%	60%	40%	30%	20%	20%	2
—	—	—	25%	50%	75%	100%	100%	100%	100%	2
10%	20%	45%	70%	100%	100%	100%	100%	100%	100%	2
55%	55%	60%	60%	80%	100%	100%	100%	80%	50%	2, 6
80%	80%	80%	70%	80%	100%	100%	100%	85%	70%	2, 6
75%	75%	100%	100%	100%	100%	100%	100%	70%	50%	2
67%	1%	1%	1%	25%	100%	100%	—	—	—	2
100%	30%	30%	100%	100%	100%	100%	30%	10%	5%	2
95%	81%	1%	1%	25%	100%	100%	—	—	—	2
100%	100%	30%	100%	100%	100%	100%	30%	10%	5%	2
85%	25%	—	—	—	—	—	—	—	—	2
100%	25%	10%	5%	5%	—	—	—	—	—	2
30%	55%	100%	95%	60%	30%	10%	1%	1%	—	2, 4
50%	75%	100%	100%	75%	50%	20%	20%	20%	—	2, 4
100%	100%	100%	50%	30%	30%	10%	—	—	—	2
100%	90%	70%	40%	25%	20%	20%	5%	—	—	2
60%	65%	70%	75%	75%	80%	85%	95%	100%	100%	5
70%	75%	80%	85%	85%	90%	95%	95%	100%	100%	2
10%	10%	30%	55%	60%	70%	67%	60%	40%	30%	5
65%	65%	100%	100%	100%	100%	100%	50%	—	—	5
100%	100%	100%	50%	30%	30%	10%	—	—	—	2
100%	90%	75%	60%	55%	55%	55%	45%	45%	30%	5
20%	20%	40%	60%	100%	100%	100%	100%	80%	50%	2
100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	2
70%	75%	85%	90%	97%	98%	99%	100%	100%	100%	2
40%	20%	10%	5%	—	—	—	—	—	—	2
40%	20%	10%	5%	—	—	—	—	—	—	3
—	—	—	—	—	—	—	—	—	—	2
—	—	—	—	—	—	—	—	—	—	2
—	—	—	—	—	—	—	—	—	—	3
—	—	—	—	—	—	—	—	—	—	2

Sources:
1. Confidential data provided by shopping center managers
2. Developed by team members
3. Parking Generation, 3rd ed. (Washington, D.C.: Institute of Transportation Engineers, 2004)
4. John W. Dorsett, "Parking Requirements for Health Clubs," The Parking Professional, April 2004
5. Gerald Salzman, "Hotel Parking: How Much is Enough?" Urban Land, January 1988
6. Parking study conducted by Patton Harris Rust & Associates for the Peterson Companies, 2001

planned parking, proximity to transportation, and so on) and functional design (user friendliness). Even though multiple uses may be located at a single development site, if there is a sea of asphalt for surface parking surrounding each use, it may be difficult to get those bound for a retail/dining/entertainment complex to park at a nearby office building and walk to the destination. It may be necessary to use management strategies such as valet parking or to run a shuttle to more distant parking areas when it is required to meet demand. Chapter 6 includes further exploration of these issues.

Step 2: Select Parking Ratios

The methodology requires the selection for each significant land use of a parking ratio, which is the number of spaces that would be needed if the land use were located by itself in an area with little or no transit and weak pedestrian connections with other uses (the so-called cornfield development). This book recommends parking ratios for a variety of land uses often found in shared parking situations. Where uses not discussed here are included in a shared parking situation, appropriate parking ratios must be developed.

Note that this second edition includes more land uses than the first edition and features more stratification of land uses within broad categories. Individual changes will be further discussed in the section on the development of factors for each land use; the changes and additions are also summarized in Table 2-1.

This book's recommended parking ratios aim to represent the peak accumulation of vehicles at the peak hour on a design day for that land use, as those terms have been defined in chapter 1. Unless otherwise noted in the discussion of a particular land use, the 85th percentile of observed peak-hour accumulations (ignoring seasonality) was employed in determining the parking ratios. The first edition of *Shared Parking* employed the 90th percentile of the peak-hour occupancies observed. In a 1990 article, an Institute of Transportation Engineers (ITE) committee recommended use of the 85th percentile as an appropriate design standard.[1] Weant and Levinson[2] and Smith[3] generally recommended the 85th percentile, as did the Parking Consultants Council.[4] The third edition of *Parking Generation* presents 33rd and 85th percentile values as well as the average values for each land use, to frame the variation in parking ratios and for determining appropriate parking ratios from the data set.

The issue of the appropriate design day/hour for parking has become more of a controversy in recent years as smart growth principles have become more widely accepted. Some planners argue that parking supplies should be based on the average of the peak-hour occupancies observed in order to avoid underused spaces. Others believe that "more is better" and that communities should be protected from the negative impacts of parking shortages with an effective supply factor over and above expected accumulations on most if not all days.

As noted previously, designing a parking system so that every space is occupied at a regularly occurring peak hour will result in a conclusion by owners and users, if not the community at large, that the parking is inadequate. Some have argued that recommended parking ratios should be based on the 85th percentile observation plus an additional effective supply factor of 5-10 percent. Those disagreeing point out that in many cases a system may then have enough spaces to accommodate the 100th percentile accumulation, albeit inefficiently due to increased search time for available spaces.

After considerable debate, the study team for this second edition of *Shared Parking* adopted the 85th percentile of peak-hour observations in developing recommended parking ratios. However, it should be noted that relatively few land uses in *Parking Generation* have a large enough sample size that the 85th percentile value as published was deemed reliable enough to be used directly, without further consideration. In the majority of land uses, the judgment of the *Shared*

WALKER
PARKING CONSULTANTS

Parking team was required to finalize the ratios. Individual considerations for each land use are discussed in chapter 4.

The *Shared Parking* team believes that using the 85th percentile will provide an adequate supply cushion in most locations. But a parking supply based on this ratio will be inadequate for a certain number of locations that perform above the average. For example, some new commercial developments have a "honeymoon" period of high activity after opening, only to settle into a more typical pattern after locals have had a chance to patronize the site. Conversely, there may be a period of time as long as three years during which patronage gradually climbs to a stabilized level. Competitive factors in a local marketplace may also affect whether or not a particular destination will perform above the 85th percentile of all the comparable destinations nationwide. The first entry into a marketplace that satisfies unmet consumer demand will often perform better than average. If exceptional performance by one venue is sustained, competitors will usually enter the marketplace and performance may subsequently become more typical or average.

When a proposed new concept does not quite fit established land use categories and perhaps is being beta tested at a particular development, adjustment from parking ratios for the most closely related land use may be required. While the owners of such venues may be loathe to reveal their business plan, a special parking ratio can be developed by combining likely peak-hour density of patrons and employees with assumptions for modal split and persons per car.

Customizing parking ratios for a particular tenant, however, particularly when it lowers the ratio, is usually not advisable from a longer-term perspective. One of the truisms of almost any business catering to consumer demand is that what is fashionable today can be forgotten tomorrow.

Separate parking ratios should be employed for weekends and weekdays, and thus they are provided here for the land uses included in this report. Weekdays are typically defined as the period of Monday through Friday, and weekends are typically defined as Saturday and Sunday. However, many entertainment venues are as busy on Friday nights as on Saturday nights, while few land uses generate parking needs on Sundays similar to that on Saturdays. Among the land uses that consistently do have peak activity on Sundays are places of worship and professional football stadiums. The parking for either of those uses usually overwhelms the demand from any other use at the peak hours, and thus shared parking is not generally a critical issue for Sunday conditions and there is little published data on Sunday parking needs. Therefore no recommendations are made for Sunday parking demand in this book. For the purposes of this report, "weekday" is defined to be the period from midnight Monday morning to 5 p.m. Friday afternoon. "Weekend" includes Friday evening and all day Saturday.

The adjustment of parking needs for combinations of uses is easier to understand and more reliably predicted if the parking ratios are broken into the components of visitor/customer and employee/resident demand. Other analysts have termed this long-term and short-term demand. Technically speaking, however, some customers (such as hotel guests) park as long or longer than employees, and part-time employees often qualify as short-term parkers (by most definitions, those who stay less than three or four hours). Therefore, this report's recommended parking ratios are broken into visitor/customer and employee/resident components.

The modal splits to private auto for customers and employees are likely to be somewhat different in areas where there is good public transportation. Employees of tenants in an office complex are more likely to use public transportation or to carpool than visitors to those same tenants. There are also some differences in the time-of-day adjustments, depending on whether the user is an employee/tenant. The employees, performers, and staff at a performing arts center will arrive several hours before a scheduled performance, and

If one does not have reliable data for a similarly sited project, one must make some assumptions. Let us consider a hypothetical large office building in Schaumburg, Illinois, which has reasonably good bus transit service. Many commuters, however, will have to transfer between buses in downtown Schaumburg to reach this location. While the census data indicate that 95.2 percent of employees working in this community commute by private auto, that percentage reflects those who take bus and commuter rail service to employment downtown. The local government is requiring the developer to institute transportation demand management measures in this particular activity center, but no data on modal split or ridesharing are yet available. Thus, the modal split to private auto at the project site will be lower than for commuters to areas without such programs, but higher than for commuters to the regional central business district served by transit. It would then be reasonable to assume that this location will be in the middle of the range of percentage using transit. A projection of 95 percent of the employees at the office building commuting by private auto would appear to be a reasonable starting point, equivalent to the percentage currently commuting to downtown Schaumburg by private auto. It is somewhat more difficult to adjust the workers-per-car ratio, but if 10 percent of the 95 percent commuting by private auto will arrive as passengers due to the ridesharing programs, that leaves 85 percent among all employees as drivers. Because the parking ratios assume a nearly 100 percent modal split to private auto and very little ridesharing, or nearly 100 percent drivership, the overall reduction in parking needs due to modal split and persons per car would then be achieved by multiplying the employee parking ratio by 0.85. The equivalent persons per auto of this assumption is 95%/85% or 1.12, somewhat higher than the locality's average ratio of 1.06 persons per auto for all commuters, which seems reasonable for a project that will have a coordinated ridesharing program. For the visitor component, a much lower adjustment for transit usage would be expected, perhaps 0.95 (a 5 percent reduction of parking needs as compared with a more typical "cornfield" site).

Understanding the types of employees generally associated with a land use is also important in adjusting such ratios. For example, hotel and retail employees are more likely to use transit, to carpool, or to be picked up and dropped off than office employees at the same location. However, the parking ratios already reflect the typical modal splits for a particular type of use, even though the setting is assumed to be a suburban location with little or no transit. Adjustments should be made only when the auto occupancy for that use would be unusually affected.

Step 6: Apply Noncaptive Adjustments

Both formal studies and general experience have proven that some reduction of customer parking needs occurs in a mixed-use project due to patronage of multiple land uses. The term "captive market" has been borrowed from market researchers to describe people who are already present in the immediate vicinity and are likely patrons of a second use. For example, a parking demand analysis may consider that employees in a complex or district may already have parked at another land use and thus will not generate any parking demand when they patronize a coffee store or shop for a few minutes while on a break. If an office is located on a "cornfield" site, most employees will not leave the property during breaks, and therefore the office parking ratio at lunchtime and other breaks already reflects the use of that parking space by that employee.

Determining appropriate noncaptive factors is the step that requires the greatest professional judgment and experience. It is important to understand the difference between sequential and simultaneous trips when estimating the effects of captive market influences on the parking supply.

The development community uses the term "captive" for patrons who are already nearby and may be more easily attracted to a land use. The traffic engineer similarly uses "captive" for patrons who are already present for another purpose and thus do not generate another vehicle trip to the site. The parking planner must therefore determine for each time period whether the captive patrons are already counted as parked for another land use and thus do not generate the need for additional parking spaces at that particular hour. The following examples further explain these issues.

- When a traffic engineer estimates that 20 percent of a cinema's patrons are also going to eat at the restaurants in a retail/entertainment center, it is clearly legitimate to reduce the number of inbound and outbound trips to the project to reflect the fact that new trips to the restaurants will not be made via automobile (but rather are already accounted for in the trip generation estimates for the cinema). However, if a family goes to a movie and then goes to dinner (i.e., a sequential trip), the overall parking demand for the project is not reduced either during the movie or while they dine. The car is parked in the project's parking supply for 90-120 minutes for the movie and for 60 minutes or more for dinner.
- With this same trip combination, if the parents have a leisurely dinner while the children go to a movie, this simultaneous trip to two destinations within the center would indeed result in reductions in both trip generation and parking demand. In this case, the car would be counted as parked at the restaurant, and a reduction in the parking demand would be applied to the cinema.
- The employee who stays to dine and attend a movie after work would not be captive from a parking perspective. That employee may be more likely to patronize the on-site restaurant and cinema than to stop at a restaurant or cinema somewhere else on the way home (thus reducing automobile trips to and from the project); however, the time-of-day factors in this book assume that an employee leaves after the end of normal working hours. Thus, a parking space is needed to serve an employee's visit to the restaurant and the cineplex in the evening. During the daytime, an employee patronizing a restaurant may be considered captive, as 90 percent of employees are assumed to stay on site during the lunch hour in the time-of-day factors for employee parking at office buildings.

The key then is to evaluate what percentage of the users at one land use are already counted as being parked for another land use at that particular hour.

Market studies documenting visits to multiple destinations within an existing project can be helpful in determining the noncaptive adjustments for parking needs at a project. Normally, such market studies are not designed to distinguish between sequential and simultaneous visits. The responder is usually asked simply to name all the venues visited on a particular trip to the center. To quantify sequential trips, the questioner must ask where each person arriving in a vehicle is or was at specific times, which is significantly more time-consuming for both questioner and respondent.

When the study team calibrated the shared parking model to actual conditions at one successful retail/entertainment complex, detailed market studies and customer interviews were available identifying the percentage of patrons that visited multiple venues in the complex. When these percentages were entered directly into the shared parking model as estimates of the captive market, the model seriously underestimated the parking demand revealed by actual occupancy counts. The interview percentages thus had to be reduced by 50 percent when used as noncaptive estimates, to get the model to correctly predict parking demand at the center. This complication illustrated the effects of sequential versus simultaneous trips and the need for caution in estimating high levels of captive market even when survey data are available.

Because captive market effects typically reduce the parking needs, the factor employed to adjust the parking ratio is actually the percentage of customers who are not considered captive, or the noncaptive ratio. For example, if 10 percent of the patrons for a food court are expected to be employees of other land uses, the noncaptive ratio is 90 percent.

In addition to evaluation of simultaneous versus sequential visits to destinations, the magnitude of noncaptive adjustments is affected significantly by the combinations of land uses and more specifically the relative quantities. For example, the noncaptive adjustments for a 10,000-square-foot restaurant in a 40,000-square-foot strip shopping center will be distinctly different from the adjustments for the same size restaurant in a mixed-use project with significant office space or hotel rooms. Even then, one must carefully evaluate the potential for patronage of one use by another. With a 10,000-square-foot restaurant in a complex with 100,000 square feet of office space and 30,000 square feet of retail, one would expect there to be no more than 350 employees at the office (estimated from 3.15 employee parking spaces per 1,000 square feet with 1.08 persons per car) and 25 employees at the retail stores (estimated from the weekday parking ratio of 0.70 employee spaces per 1,000 square feet of retail). Any visitor to either land use who eats lunch will be present in a sit-down restaurant for nearly an hour and therefore should be considered to be parked at the restaurant at the noon hour. The restaurant would have about 250 seats (at an estimated 25 seats per thousand square feet). If a noncaptive adjustment of 30 percent is assumed, it is effectively stating that 75 of the 375 employees, or about 20 percent, from the complex eat at the restaurant every day of the week. A 90 percent noncaptive ratio at the restaurant (25 or 10 percent of the 250 seats filled by employees from the complex at lunchtime) would be much more reasonable for this combination. If, instead, the restaurant is a 1,000-square-foot deli with seating for less than 50 people and provides carryout service as well, 75 percent or more of the patrons could be employees of the complex. If the deli is located in a 100,000-square-foot suburban office building without any retail, virtually 100 percent of the patrons may be captive office employees.

Thus, using ranges of noncaptive factors for each land use would be misleading; in fact, they would be meaningless, since the ranges could be extremely broad; zero to 100 percent of the patrons of a restaurant may be noncaptive on daytime weekdays, as demonstrated above. Therefore, suggested ranges of noncaptive factors are not tabulated in this book. Instead, the analyst must evaluate the reasonableness of the captive market estimates for each development by comparing potential patronage from other uses with the expected patronage at peak hours.

There is sometimes confusion regarding whether a patron is captive or simply uses the mode of walking. These distinctions are far easier to understand in self-contained developments, as those who walk from other uses within the project would be considered captive, while those who walked from uses outside the project would be considered to affect the mode adjustment. The issue is considerably more murky in a downtown area; some visitors to a land use may walk from offices, residences, and other land uses and thus could be considered either as captive patrons or as customers who walked to the complex. The important thing is not to double count such patrons both as captive and as noncaptive customers who do not drive and park.

The need to carefully apply such factors to the specific peak hours being modeled necessarily makes shared parking analysis a complex undertaking, often requiring that multiple hours be individually evaluated to determine the overall peak accumulation of demand. It is for this reason that the methodology for shared parking analysis recommended in this edition has been slightly modified to clearly indicate that noncaptive adjustments should be made after time-of-day

Appendix D.1

ADDENDUM TO SHARED PARKING ANALYSIS

MEMORANDUM

REVISED PROJECT, ONE PASEO

606 South Olive Street, Suite 1100
Los Angeles, CA 90014

Office: 213.488.4911
Fax: 213.488.4983
www.walkerparking.com

DATE:	November 29, 2012
TO:	Renee Mezo
COMPANY:	City of San Diego, Development Services
ADDRESS:	1222 First Avenue, MS 501
CITY/STATE:	San Diego, CA 92101
CC:	
HARD COPY TO FOLLOW:	No
FROM:	Steffen Turoff
PROJECT NAME:	One Paseo
PROJECT NUMBER:	37-8142.00
SUBJECT:	Revised Project

The project applicant has revised the Originally Proposed Project to reduce the density and intensity of the proposed development. The Originally Proposed Project was the basis of the Shared Parking Analysis dated December 16, 2011 which was submitted to the City. Per the project applicant's request Walker analyzed the Revised Project in order to update the December 16, 2011 Shared Parking Analysis. The updated analysis was performed using the same methodology and Urban Land Institute (ULI)/Walker Shared Parking model that was employed in the initial Shared Parking Analysis. The shared parking assumptions and ratios employed in the December 16, 2011 memorandum remain applicable because the general mix of the project has not substantially changed with the exception of the elimination of the hotel.

The Originally Proposed Project and the Revised Project, the number of spaces in their respective parking inventories and the number of spaces that we project will be necessary to accommodate the design day peak parking demand for each are summarized in Table 1 of this memorandum.

Based on the revised project, for both Phase I and site build out, we project that the planned parking inventory remains sufficient to meet design day conditions, based on parking industry standards and the assumptions made to reflect conditions specific to the site.

<u>Phase I</u>

The Revised Project for Phase I results in a reduction in office space of 64,600 gfa and 300± gla of commercial space. As is shown in Table 1, our analysis resulted in a combined reduction in the projected design day peak parking demand of 177± spaces compared to the design day peak parking demand projected for the earlier program. The reduction in the planned parking supply for Phase I is 32 spaces. We therefore project a net parking surplus for the revised Phase I program of 312± spaces compared to the 167± space surplus projected previously.

Build out

The Revised Project for build out of the site incorporates the same reduction in office space and parking demand as shown for Phase I, but also includes a reduction of 21,500 gla of commercial square footage. As a result, we project a reduction in parking demand for the projected design day peak of 362± spaces compared to the earlier program, which is shown in Table 1 (3,882± spaces for the Originally Proposed Project compared to 3,520± spaces for the Revised Project).

A total of 3,688 spaces are proposed for the Revised Project. Compared to the projected parking demand of the 3,520± spaces for the design day peak the result is a net parking surplus for the Revised Project at build out of 168± spaces. This compares to a surplus of 207± spaces that was projected previously for the Originally Proposed Project.

Table 1: Comparison of Originally Proposed Project and Revised Project – Shared Parking Model Results

Phase I	Originally Proposed Project	Revised Project	Difference
Office gfa	557,440	492,840	(64,600)
Total commercial gla	100,650	100,354	(296)
Retail gla	75,488	75,266	(222)
Restaurant gla	25,162	25,088	(74)
Planned Parking Supply (spaces)	2,230	2,198	(32)
Projected Demand (spaces) at Peak	2,063	1,886	(177)
Projected Parking Surplus	167	312	145
Build out	**Originally Proposed Project**	**Revised Project**	**Difference**
Office gfa	557,440	492,840	(64,600)
Total commercial gla	220,000	198,500	(21,500)
Retail non-Grocery gla	135,000	118,875	(16,125)
Restaurant gla	55,000	49,625	(5,375)
Grocery Store gla	30,000	30,000	-
Cinema (seats)	1,200	1,200	-
Residential (units)	608	608	-
Planned Parking Supply (spaces)	4,089	3,688	(401)
Projected Demand at Peak	3,882	3,520	(362)
Projected Parking Surplus	207	168	(39)

Source: Walker Parking Consultants and Kilroy Realty Corporation, 2012

Appendix E

SIGHT VISIBILITY ANALYSIS

July 27, 2011
LEC Job No. NCW 14.01-09.08

Leppert Engineering CORPORATION

sent via email

Ms. Victoria Huffman
City of San Diego
LDR- Transportation Division
1222 First Avenue
San Diego, CA 92101-4154

SUBJECT: REVISED SIGHT VISIBILITY ANALSIS FOR ONE PASEO, MAIN STREET AT CARMEL VALLEY, VTM 714401 / PTS# 193036

Dear Ms. Huffman:

The following letter has been revised to use the 85th percentile speed for southbound El Camino Real and to address your comments from the review of our July 11, 2011 submittal.

In response to comment 105 in your review of the project dated December 13, 2010, a sight visibility analysis follows for the proposed project driveways along El Camino Real, south of Del Mar Heights Road in the City of San Diego. The northern portion of the project along El Camino Real is on the inside of a 1,000 foot radius centerline curve. Within the influence of that curve, two proposed private driveways at non-signalized connections are proposed, and one proposed private driveway is proposed as a fourth leg at the existing three way signalized intersection. A fourth private driveway connection is proposed at the extreme southern end of the project, on the outside of an 1,800 foot radius centerline curve, and by inspection, no issues with sight distance are present at that location.

The American Association of State Highway and Transportation Officials (AASHTO) guidelines, 2004 edition, were utilized to determine the required sight distance and possible sight visibility easements for each driveway, (see Attachment A). Intersection Sight Distance is used for *Case B2-Right Turn from Minor Road* conditions at the two non-signalized intersections (Attachment A, page 657). Intersection Sight Distance is calculated using the formula of ISD = 1.47 $V_{major}t_g$, where ISD is the Intersection Sight Distance, V_{major} is the 85th percentile speed (in miles per hour) of the major street, and t_g is the time gap for a minor road vehicle (passenger vehicle) to enter the major road (Attachment A, page 659). The City of San Diego speed survey dated April 27, 2011, for southbound El Camino Real between Ted Williams and Del Mar Heights Road, shows the 85th percentile speed as 48 miles per hour. T_g is adjusted from 7.5 seconds to 6.5 seconds for vehicles making a right-turn from stop (Attachment A, page 663). The resultant ISD is 459 feet for 48 miles per hour approach speeds. For the signalized intersection, *Case D – Intersections with Traffic Signal Control* applies. However where permitted right turns on red are allowed, it defers back to *Case B2 – Right Turn from Minor Road.*

5190 Governor Drive · Suite 205 · San Diego, California 92122 · (858) 597-2001 · Fax (858) 597-2009

Several sight visibility easement areas will be required at the various driveway locations. These easement areas will be graded at 2% or flatter from the adjoining public sidewalks in El Camino Real.

The follow is a summary of the findings of the sight distance analysis at each of the proposed driveways:

Exhibit A shows the plan view of the proposed private driveway at Station 125+40 El Camino Real. It is a 26 foot wide right-turn-in / right-turn-out driveway, located mid way between Del Mar Heights Road and the existing signalized entrance to the Del Mar Highlands Town Center. There is a raised median in El Camino Real to prohibit left turns at this location. A deceleration lane with 100 feet of storage has been provided in El Camino Real, just before the driveway. The line of sight is mostly contained within the parkway area of El Camino Real, with two minor sight visibility easement areas being required. The first easement area, closest to this driveway, has a chord length of approximately 108 feet by 1.7 feet in the middle needed to be granted at this location. The second easement area, located in the irregular transition area for the deceleration lane, has a chord length of approximately 79 feet, with a maximum width of 2.4 feet. The attached Exhibit A Profile of the sight visibility line shows no vertical obstructions within the sight line between the driver's eye and the approaching vehicle.

Exhibit B shows the plan view of the proposed private driveway at Station 121+72.52 El Camino Real. It is proposed as the addition of the fourth leg of the existing signalized 3-way intersection of El Camino Real and the entrance into the Del Mar Highlands Town Center. There are two lanes into the project and two lanes out of the project at this location. There is a deceleration lane provided before the intersection, tying into the deceleration lane from the driveway at 125+40 El Camino Real. Since it is a fully signalized intersection, the condition of concern is the right-turn-on-red condition. The 459' sight visibility line is mostly contained within the existing and proposed right of way of El Camino Real, with a minor sight visibility easement required at this location. The easement area has a chord length of 148 feet, with a width of 3 feet at the midpoint. The attached Exhibit B Profile of the sight visibility line shows no vertical obstructions within the sight line between the driver's eye and the approaching vehicle.

Exhibit C shows the proposed driveway at Station 117+30 El Camino Real. It is a 26 foot wide right-turn-in / right-turn-out driveway, located approximately 440 feet south of the signalized entrance at 121+72.52 El Camino Real. There is a raised median in El Camino Real to prohibit left turns at this location. A deceleration lane with 100 feet of storage is proposed just before this proposed driveway. An irregular shaped sight visibility easement area will be required, with a chord of 253 feet being needed in the same location as the curb transition area for the deceleration lane being provided. The maximum width of the easement area is 13.9 feet. The attached Exhibit C Profile of the sight visibility line shows no vertical obstructions within the sight line between the driver's eye and the approaching vehicle.

In conclusion, the intersections proposed along El Camino Real can be provided with adequate sight distance for drivers leaving the proposed project. Minor sight distance easements will be provided at four locations that will restrict the placement of structures and landscape materials used in these locations to a height of 30 inches. Parkway trees however will be allowed, but at maturity their trunks should not exceed 12 inches in diameter and their canopies should not hang down below eight feet above street level.

If you have any questions, please contact us at (858) 597-2001.

Sincerely,

LEPPERT ENGINEERING CORPORATION

Anthony M. Dieli

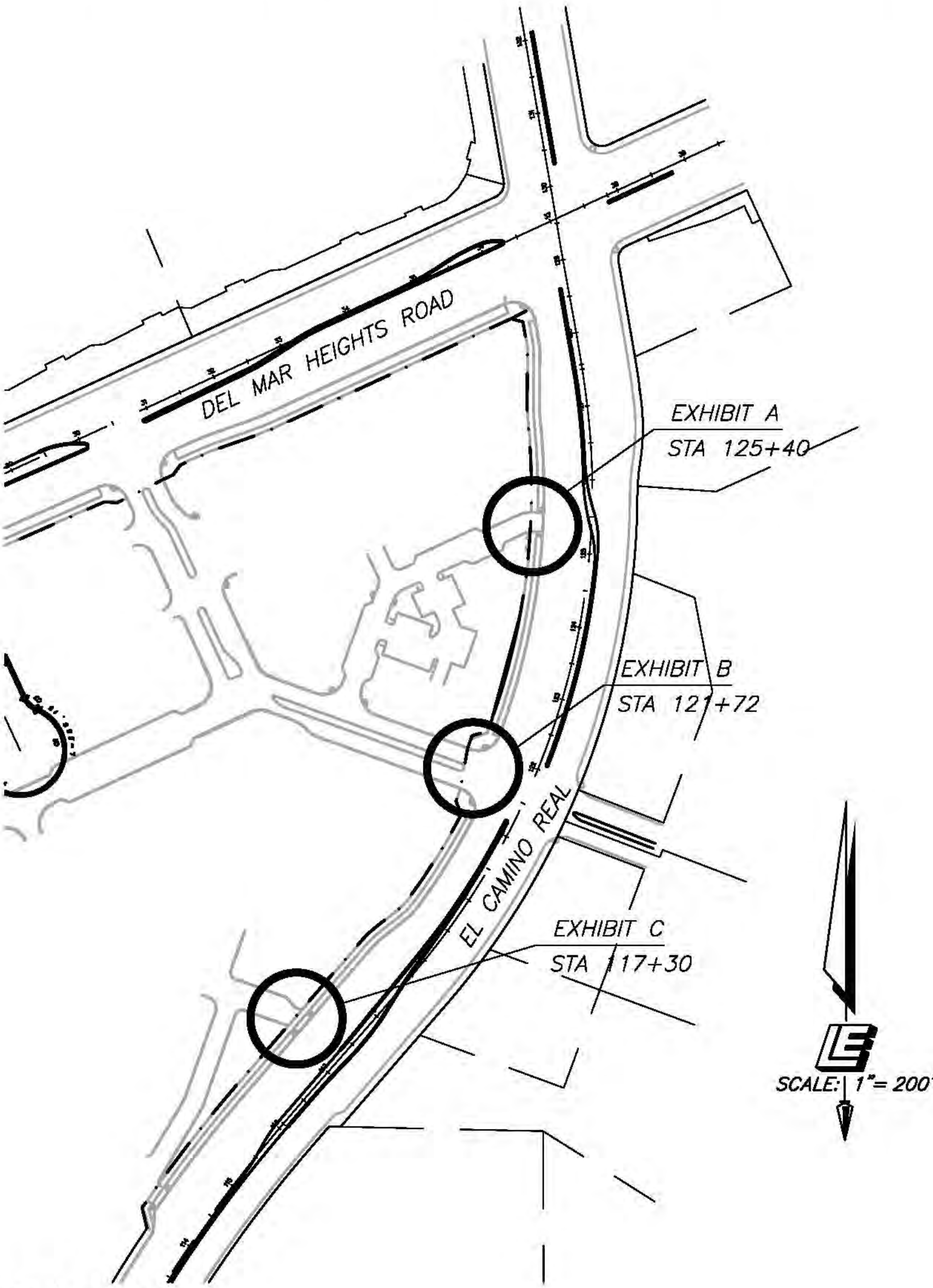
Anthony M. Dieli, PE
RCE 31615, Exp 12/31/2012

REGISTERED PROFESSIONAL ENGINEER
ANTHONY MICHAEL DIELI
C-031615
CIVIL
STATE OF CALIFORNIA

Attachments

EXHIBITS

LOCATION MAP -- SIGHT VISIBILITY ANALYSIS



Leppert Engineering CORPORATION
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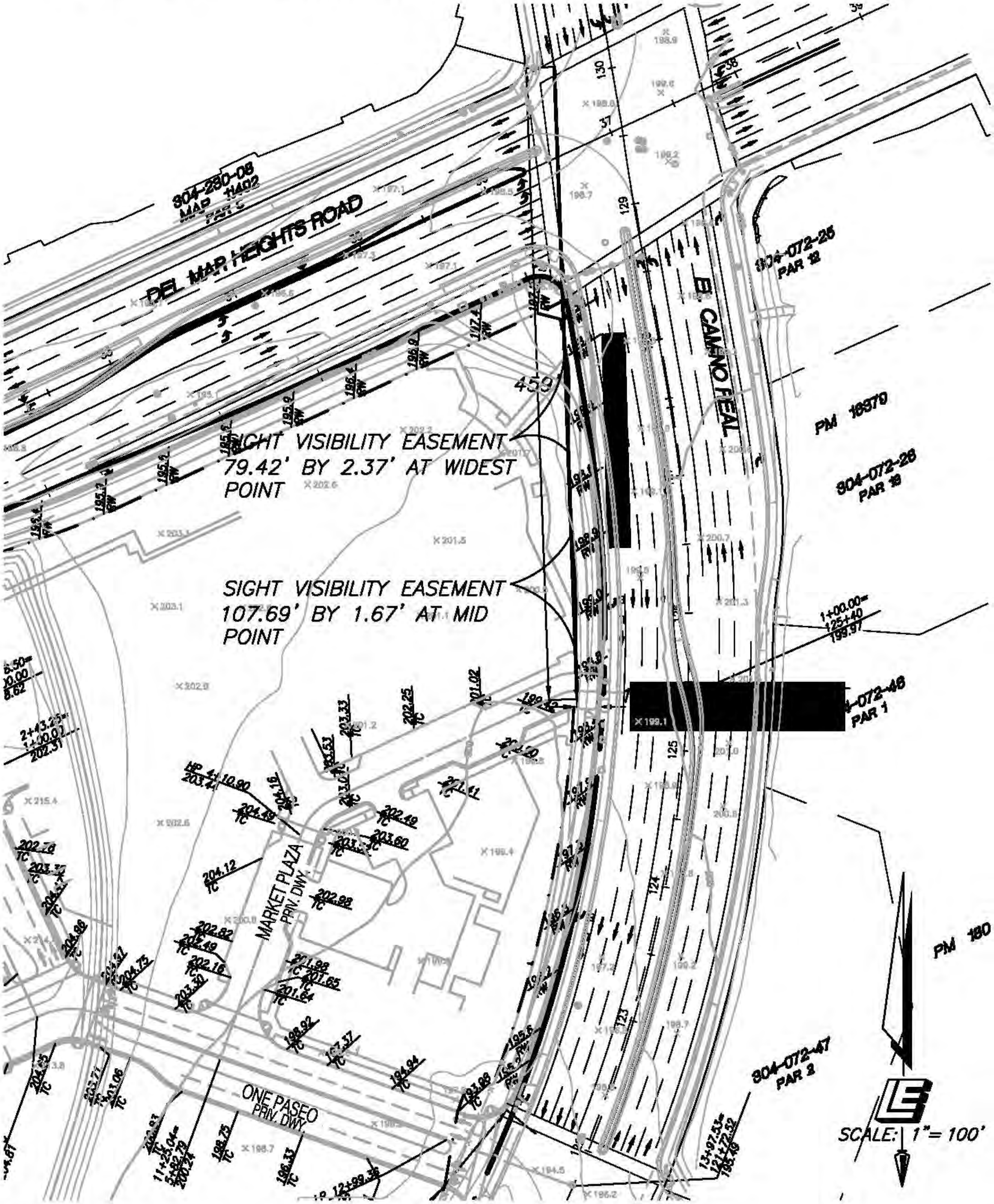
Phone: (619) 597-2001 Fax: (619) 597-2009

EXHIBIT A ~ SIGHT VISIBILITY AT DRIVEWAY 125+40



SIGHT VISIBILITY EASEMENT

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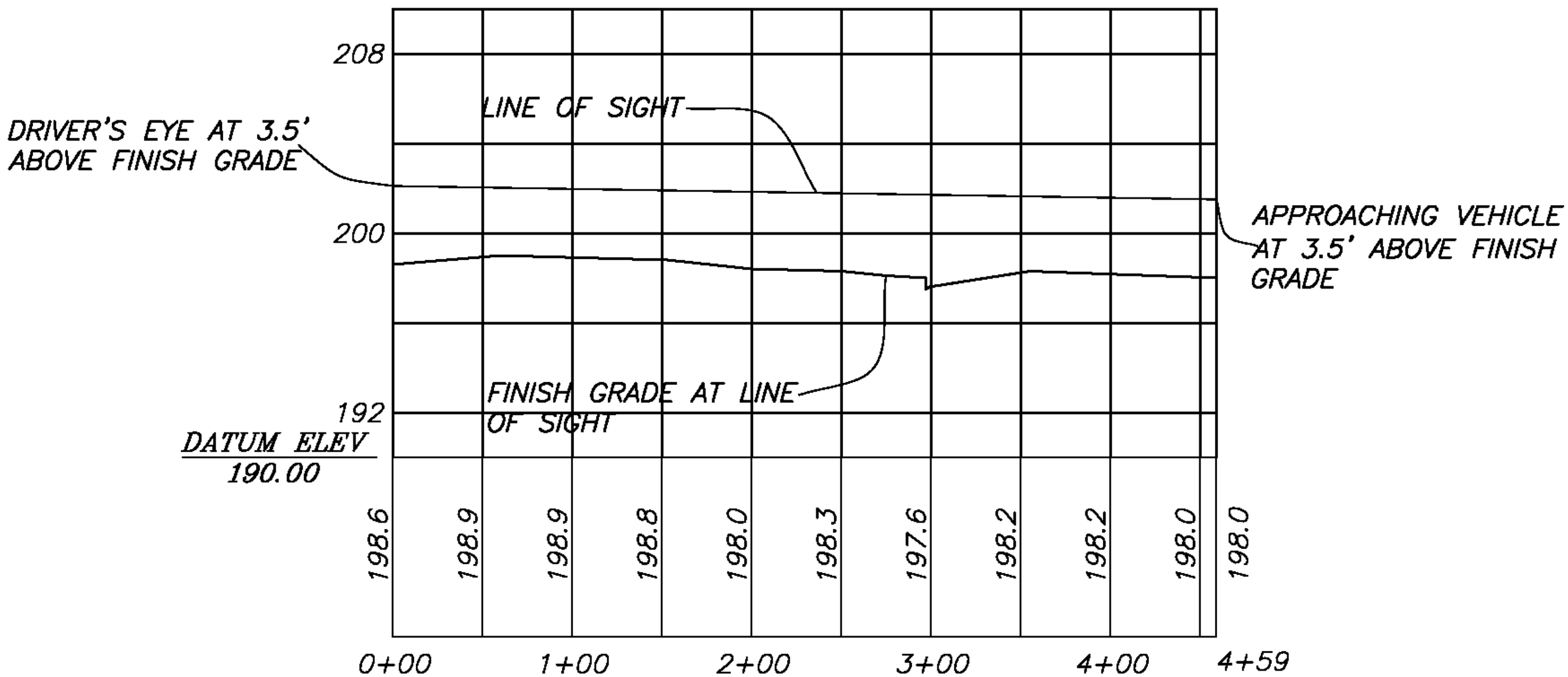
EXHIBIT A ~ SIGHT VISIBILITY AT DRIVEWAY 125+40



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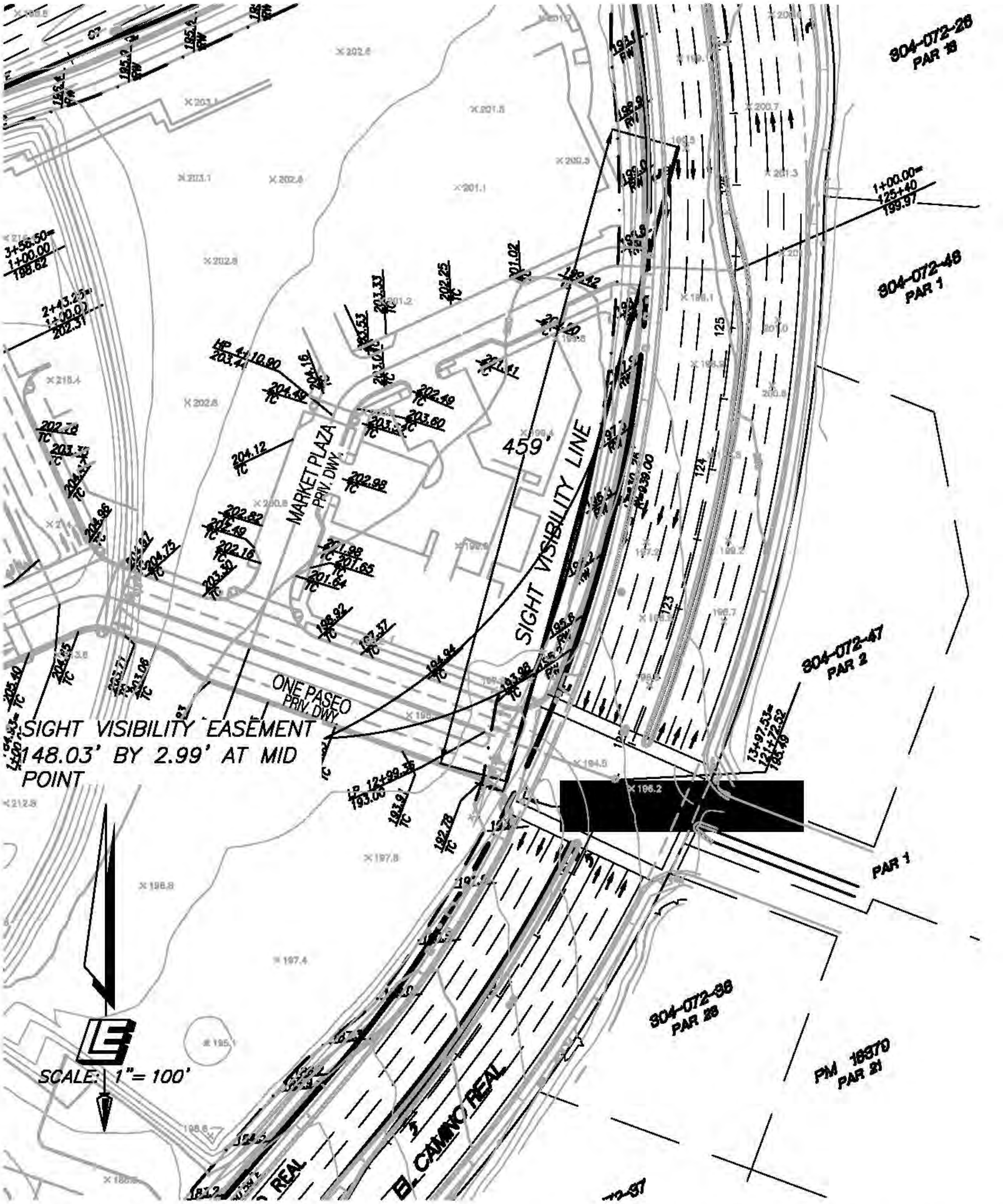
SCALE: HORIZONTAL 1" = 100'
VERTICAL 1" = 8'

EXHIBIT B ~ SIGHT VISIBILITY AT DRIVEWAY 121+72.52



SIGHT VISIBILITY EASEMENT

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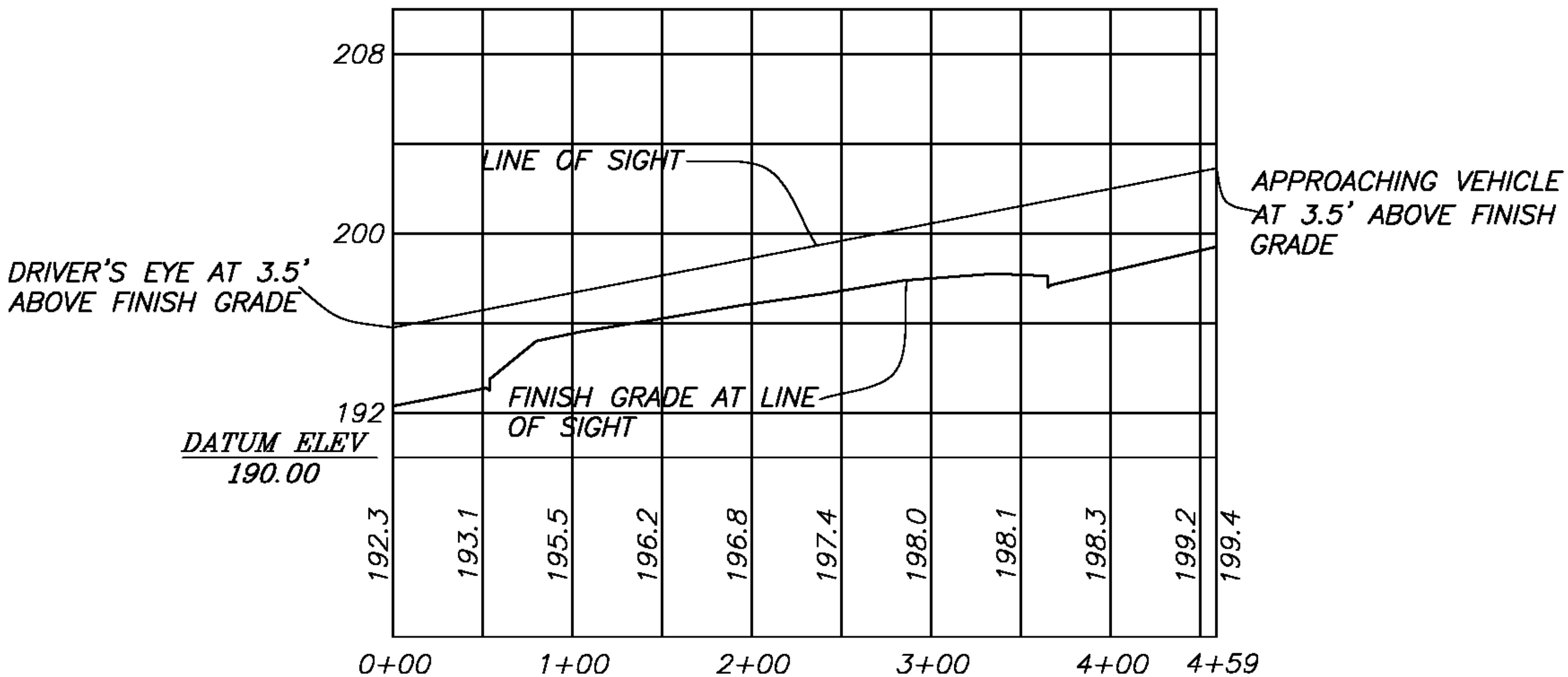
EXHIBIT B ~ SIGHT VISIBILITY AT DRIVEWAY 121+72.52



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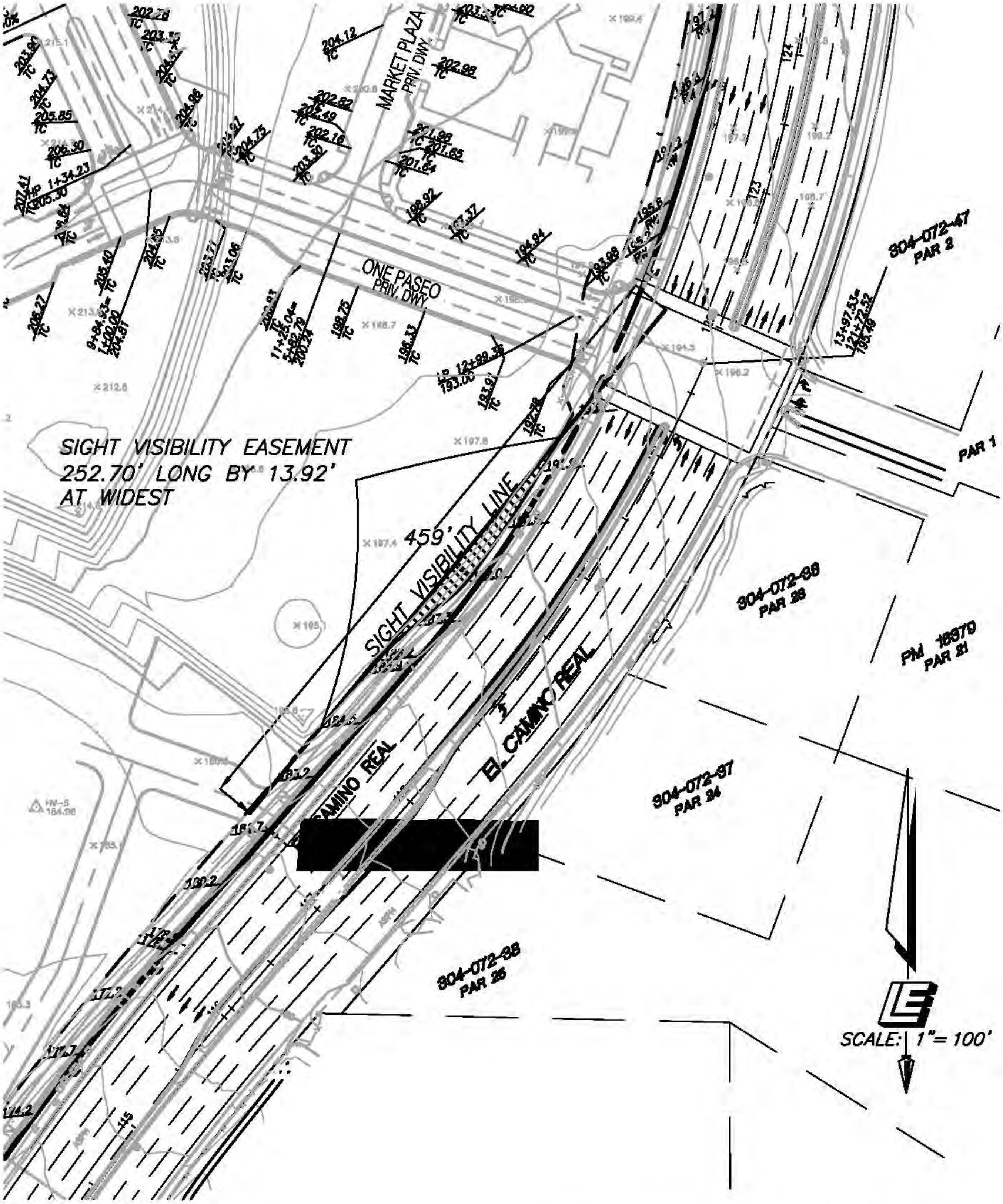
SCALE: HORIZONTAL 1" = 100'
VERTICAL 1" = 8'

EXHIBIT C ~ SIGHT VISIBILITY AT DRIVEWAY 117+30



SIGHT VISIBILITY EASEMENT

Leppert Engineering CORPORATION
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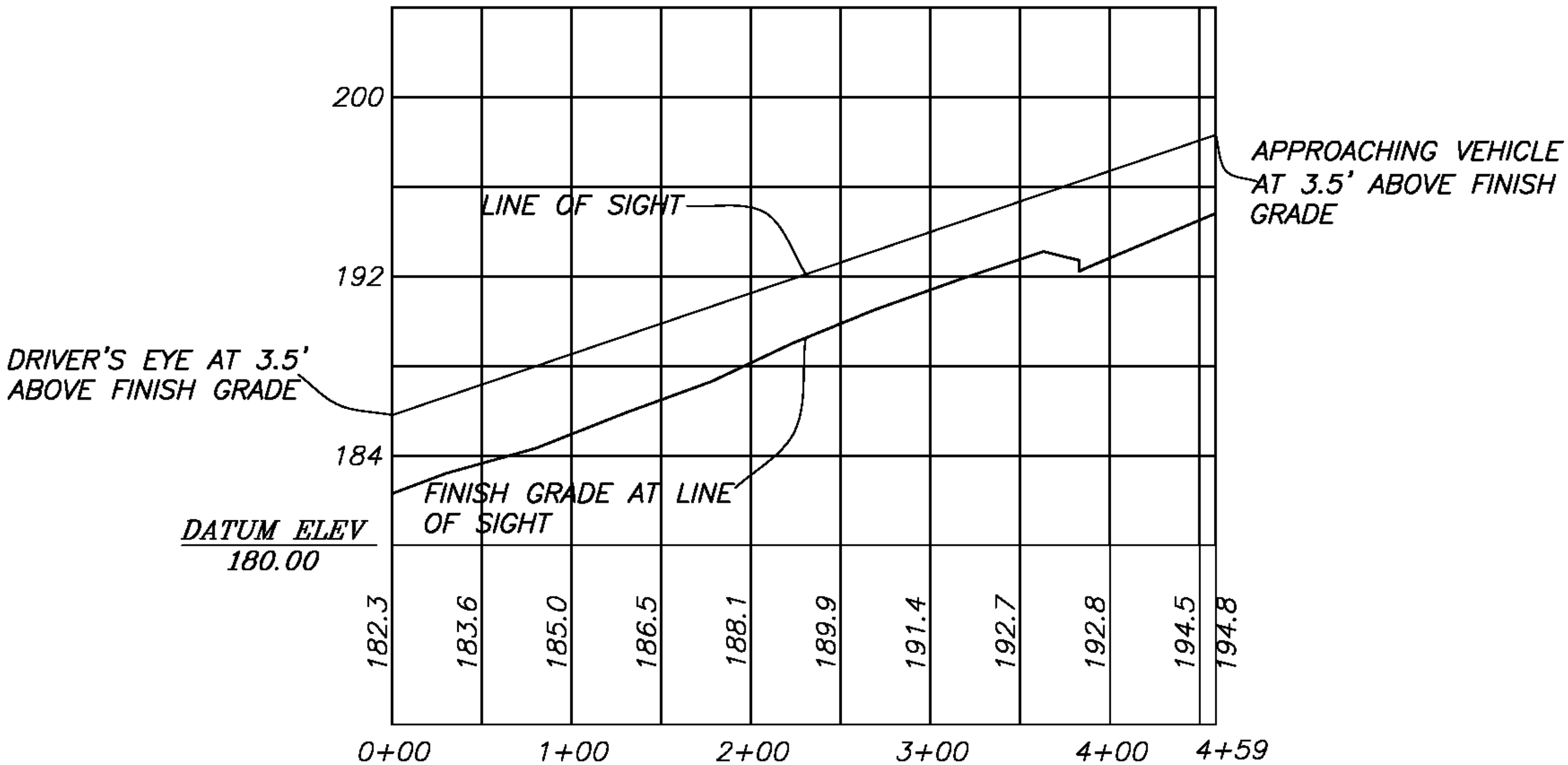
EXHIBIT C ~ SIGHT VISIBILITY AT DRIVEWAY 117+30



SCALE: HORIZONTAL 1" = 100'
VERTICAL 1" = 8'

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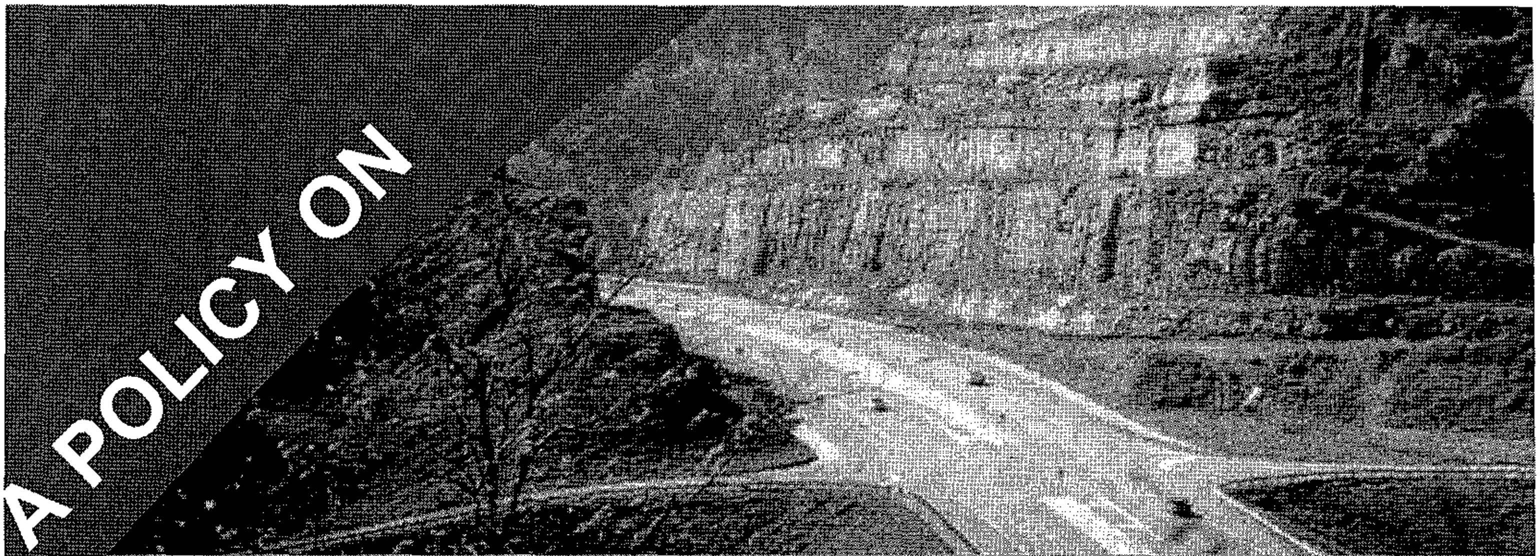
Attachment A

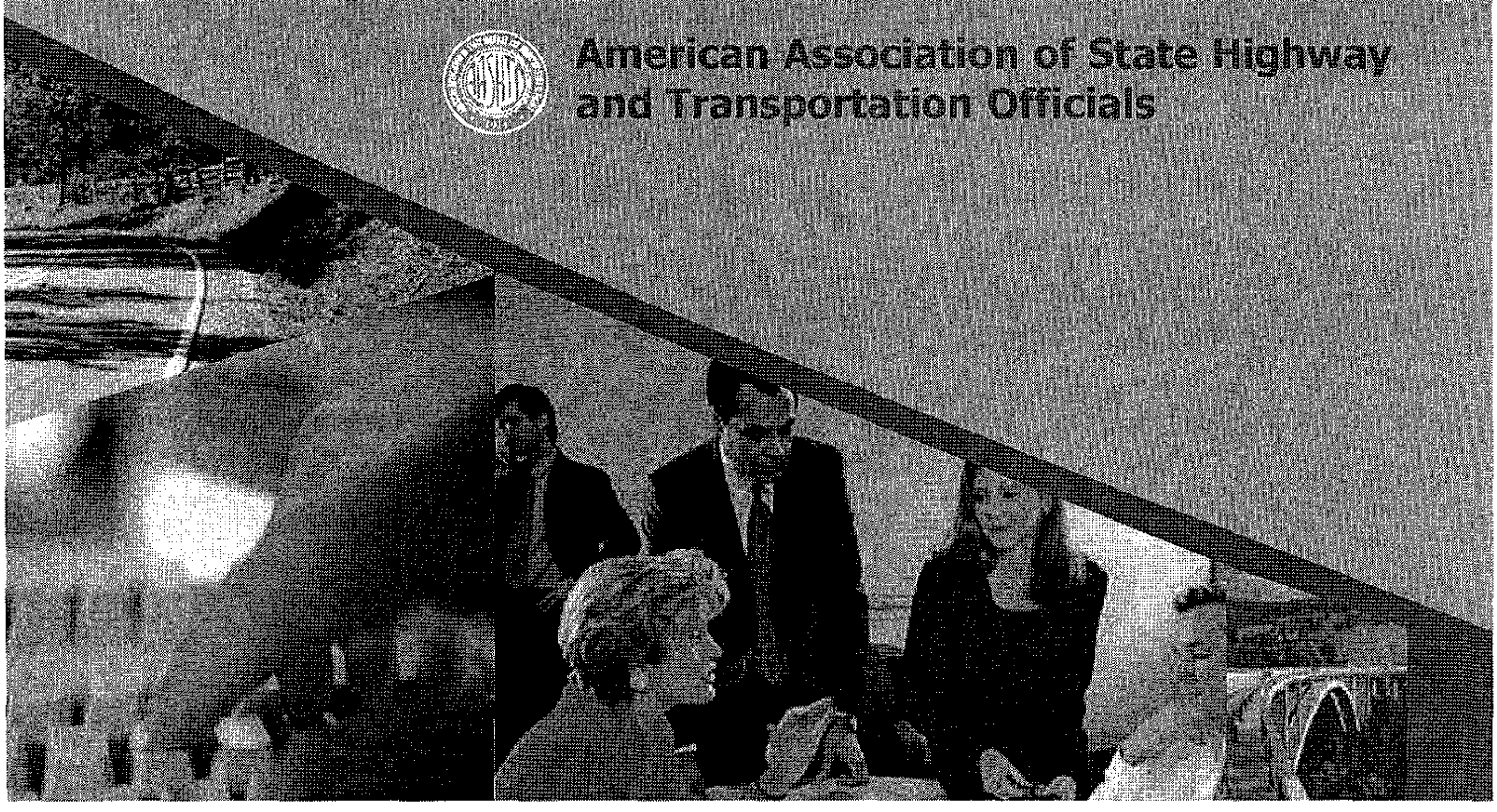


A POLICY ON

Geometric Design of Highways and Streets

2004

American Association of State Highway and Transportation Officials



Geometric design should not be considered complete nor should it be implemented until it has been determined that needed traffic devices will have the desired effect in controlling traffic.

Most of the intersection types illustrated and described in the following discussions are adaptable to either signing control, signal control, or a combination of both. At intersections that do not need signal control, the normal roadway widths of the approach highways are carried through the intersection with the possible addition of speed-change lanes, median lanes, auxiliary lanes, or pavement tapers. Where volumes are sufficient to indicate signal control, the number of lanes for through movements may also need to be increased. Where the volume approaches the uninterrupted flow capacity of the intersection leg, the number of lanes in each direction may have to be doubled at the intersection to accommodate the volume under stop-and-go control. Other geometric features that may be affected by signalization are length and width of storage areas, location and position of turning roadways, spacing of other subsidiary intersections, access connections, and the possible location and size of islands to accommodate signal posts or supports.

At high-volume intersections at grade, the design of the signals should be sophisticated enough to respond to the varying traffic demands, the objective being to keep the vehicles moving through the intersection. Factors affecting capacity and computation procedures for signalized intersections are covered in the HCM (**6**).

An intersection that needs traffic signal control is best designed by considering jointly the geometric design, capacity analysis, design hour volumes, and physical controls. Details on the design and location of most forms of traffic control signals, including the general warrants, are given in the MUTCD (**9**).

INTERSECTION SIGHT DISTANCE

General Considerations

Each intersection has the potential for several different types of vehicular conflicts. The possibility of these conflicts actually occurring can be greatly reduced through the provision of proper sight distances and appropriate traffic controls. The avoidance of conflicts and the efficiency of traffic operations still depend on the judgment, capabilities, and response of each individual driver.

Stopping sight distance is provided continuously along each highway or street so that drivers have a view of the roadway ahead that is sufficient to allow drivers to stop. The provision of stopping sight distance at all locations along each highway or street, including intersection approaches, is fundamental to intersection operation.

Vehicles are assigned the right-of-way at intersections by traffic-control devices or, where no traffic-control devices are present, by the rules of the road. A basic rule of the road, at an intersection where no traffic-control devices are present, requires the vehicle on the left to yield to the vehicle on the right if they arrive at approximately the same time. Sight distance is provided at

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intersections to allow drivers to perceive the presence of potentially conflicting vehicles. This should occur in sufficient time for a motorist to stop or adjust their speed, as appropriate, to avoid colliding in the intersection. The methods for determining the sight distances needed by drivers approaching intersections are based on the same principles as stopping sight distance, but incorporate modified assumptions based on observed driver behavior at intersections.

The driver of a vehicle approaching an intersection should have an unobstructed view of the entire intersection, including any traffic-control devices, and sufficient lengths along the intersecting highway to permit the driver to anticipate and avoid potential collisions. The sight distance needed under various assumptions of physical conditions and driver behavior is directly related to vehicle speeds and to the resultant distances traversed during perception-reaction time and braking.

Sight distance is also provided at intersections to allow the drivers of stopped vehicles a sufficient view of the intersecting highway to decide when to enter the intersecting highway or to cross it. If the available sight distance for an entering or crossing vehicle is at least equal to the appropriate stopping sight distance for the major road, then drivers have sufficient sight distance to anticipate and avoid collisions. However, in some cases, this may require a major-road vehicle to stop or slow to accommodate the maneuver by a minor-road vehicle. To enhance traffic operations, intersection sight distances that exceed stopping sight distances are desirable along the major road.

Sight Triangles

Specified areas along intersection approach legs and across their included corners should be clear of obstructions that might block a driver's view of potentially conflicting vehicles. These specified areas are known as clear sight triangles. The dimensions of the legs of the sight triangles depend on the design speeds of the intersecting roadways and the type of traffic control used at the intersection. These dimensions are based on observed driver behavior and are documented by space-time profiles and speed choices of drivers on intersection approaches (**10**). Two types of clear sight triangles are considered in intersection design, approach sight triangles, and departure sight triangles.

Approach Sight Triangles

Each quadrant of an intersection should contain a triangular area free of obstructions that might block an approaching driver's view of potentially conflicting vehicles. The length of the legs of this triangular area, along both intersecting roadways, should be such that the drivers can see any potentially conflicting vehicles in sufficient time to slow or stop before colliding within the intersection. Exhibit 9-50A shows typical clear sight triangles to the left and to the right for a vehicle approaching an uncontrolled or yield-controlled intersection.

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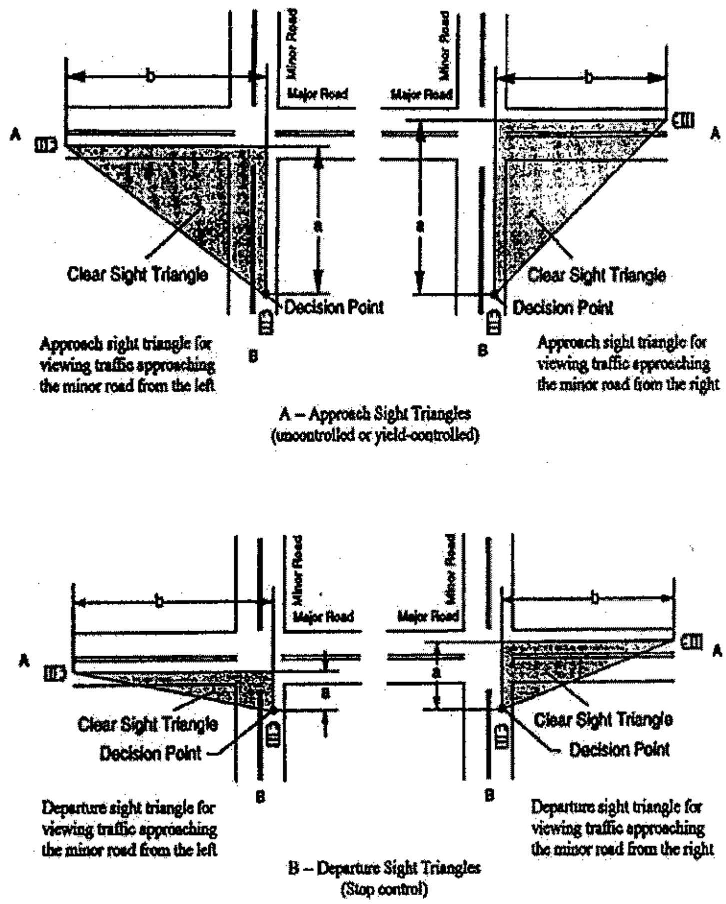

Exhibit 9-50. Intersection Sight Triangles

The vertex of the sight triangle on a minor-road approach (or an uncontrolled approach) represents the decision point for the minor-road driver (see Exhibit 9-50A). This decision point is the location at which the minor-road driver should begin to brake to a stop if another vehicle is present on an intersecting approach. The distance from the major road, along the minor road, is illustrated by the dimension "a" in Exhibit 9-50A.

The geometry of a clear sight triangle is such that when the driver of a vehicle without the right of way sees a vehicle that has the right of way on an intersecting approach, the driver of that potentially conflicting vehicle can also see the first vehicle. Dimension "b" illustrates the length of this leg of the sight triangle. Thus, the provision of a clear sight triangle for vehicles without the right-of-way also permits the drivers of vehicles with the right-of-way to slow, stop, or avoid other vehicles, should it become necessary.

Although desirable at higher volume intersections, approach sight triangles like those shown in Exhibit 9-50A are not needed for intersection approaches controlled by stop signs or traffic signals. In that case, the need for approaching vehicles to stop at the intersection is determined by

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the traffic control devices and not by the presence or absence of vehicles on the intersecting approaches.

Departure Sight Triangles

A second type of clear sight triangle provides sight distance sufficient for a stopped driver on a minor-road approach to depart from the intersection and enter or cross the major road. Exhibit 9-50B shows typical departure sight triangles to the left and to the right of the location of a stopped vehicle on the minor road. Departure sight triangles should be provided in each quadrant of each intersection approach controlled by stop or yield signs. Departure sight triangles should also be provided for some signalized intersection approaches (see Case D in the section on "Intersection Control").

The recommended dimensions of the clear sight triangle for desirable traffic operations where stopped vehicles enter or cross a major road are based on assumptions derived from field observations of driver gap-acceptance behavior (**10**). The provision of clear sight triangles like those shown in Exhibit 9-50B also allows the drivers of vehicles on the major road to see any vehicles stopped on the minor-road approach and to be prepared to slow or stop, if necessary.

Identification of Sight Obstructions within Sight Triangles

The profiles of the intersecting roadways should be designed to provide the recommended sight distances for drivers on the intersection approaches. Within a sight triangle, any object at a height above the elevation of the adjacent roadways that would obstruct the driver's view should be removed or lowered, if practical. Such objects may include buildings, parked vehicles, highway structures, roadside hardware, hedges, trees, bushes, unmowed grass, tall crops, walls, fences, and the terrain itself. Particular attention should be given to the evaluation of clear sight triangles at interchange ramp/crossroad intersections where features such as bridge railings, piers, and abutments are potential sight obstructions.

The determination of whether an object constitutes a sight obstruction should consider both the horizontal and vertical alignment of both intersecting roadways, as well as the height and position of the object. In making this determination, it should be assumed that the driver's eye is 1 080 mm [3.5 ft] above the roadway surface and that the object to be seen is 1 080 mm [3.5 ft] above the surface of the intersecting road.

This object height is based on a vehicle height of 1 330 mm [4.35 ft], which represents the 15th percentile of vehicle heights in the current passenger car population less an allowance of 250 mm [10 in]. This allowance represents a near-maximum value for the portion of a passenger car height that needs to be visible for another driver to recognize it as the object. The use of an object height equal to the driver eye height makes intersection sight distances reciprocal (i.e., if one driver can see another vehicle, then the driver of that vehicle can also see the first vehicle).

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Where the sight-distance value used in design is based on a single-unit or combination truck as the design vehicle, it is also appropriate to use the eye height of a truck driver in checking sight obstructions. The recommended value of a truck driver's eye height is 2 330 mm [7.6 ft] above the roadway surface.

Intersection Control

The recommended dimensions of the sight triangles vary with the type of traffic control used at an intersection because different types of control impose different legal constraints on drivers and, therefore, result in different driver behavior. Procedures to determine sight distances at intersections are presented below according to different types of traffic control, as follows:

- Case A—Intersections with no control
- Case B—Intersections with stop control on the minor road
  - Case B1—Left turn from the minor road
  - Case B2—Right turn from the minor road
  - Case B3—Crossing maneuver from the minor road
- Case C—Intersections with yield control on the minor road
  - Case C1—Crossing maneuver from the minor road
  - Case C2—Left or right turn from the minor road
- Case D—Intersections with traffic signal control
- Case E—Intersections with all-way stop control
- Case F—Left turns from the major road

Case A—Intersections with No Control

For intersections not controlled by yield signs, stop signs, or traffic signals, the driver of a vehicle approaching an intersection should be able to see potentially conflicting vehicles in sufficient time to stop before reaching the intersection. The location of the decision point (driver's eye) of the sight triangles on each approach is determined from a model that is analogous to the stopping sight distance model, with slightly different assumptions.

While some perceptual tasks at intersections may need substantially less time, the detection and recognition of a vehicle that is a substantial distance away on an intersecting approach, and is near the limits of the driver's peripheral vision, may take up to 2.5 s. The distance to brake to a stop can be determined from the same braking coefficients used to determine stopping sight distance in Exhibit 3-1.

Field observations indicate that vehicles approaching uncontrolled intersections typically slow to approximately 50 percent of their midblock running speed. This occurs even when no potentially conflicting vehicles are present (**10**). This initial slowing typically occurs at deceleration rates up to 1.5 m/s^2 [5 ft/s^2]. Deceleration at this gradual rate has been observed to begin even before a potentially conflicting vehicle comes into view. Braking at greater deceleration rates, which can approach those assumed in stopping sight distance, can begin up to 2.5 s after a vehicle on the intersecting approach comes into view. Thus, approaching vehicles

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may be traveling at less than their midblock running speed during all or part of the perception-reaction time and can, therefore, where necessary, brake to a stop from a speed less than the midblock running speed.

Exhibit 9-51 shows the distance traveled by an approaching vehicle during perception-reaction and braking time as a function of the design speed of the roadway on which the intersection approach is located. These distances should be used as the legs of the sight triangles shown in Exhibit 9-50A. Referring to Exhibit 9-50A, highway A with an assumed design speed of 80 km/h [50 mph] and highway B with an assumed design speed of 50 km/h [30 mph] require a clear sight triangle with legs extending at least 75 m and 45 m [245 and 140 ft] along highways A and B, respectively. Exhibit 9-52 indicates the length of the legs of the sight triangle from Exhibit 9-51.

Metric		US Customary	
Design speed (km/h)	Length of leg (m)	Design speed (mph)	Length of leg (ft)
20	20	15	70
30	25	20	90
40	35	25	115
50	45	30	140
60	55	35	165
70	65	40	195
80	75	45	220
90	90	50	245
100	105	55	285
110	120	60	325
120	135	65	365
130	150	70	405
		75	445
		80	485

Note: For approach grades greater than 3%, multiply the sight distance values in this exhibit by the appropriate adjustment factor from Exhibit 9-53.

Exhibit 9-51. Length of Sight Triangle Leg—Case A—No Traffic Control

This clear triangular area will permit the vehicles on either road to stop, if necessary, before reaching the intersection. If the design speed of any approach is not known, it can be estimated by using the 85th percentile of the midblock running speeds for that approach.

The distances shown in Exhibit 9-51 are generally less than the corresponding values of stopping sight distance for the same design speed. This relationship is illustrated in Exhibit 9-52. Where a clear sight triangle has legs that correspond to the stopping sight distances on their respective approaches, an even greater margin of efficient operation is provided. However, since field observations show that motorists slow down to some extent on approaches to uncontrolled intersections, the provision of a clear sight triangle with legs equal to the full stopping sight distance is not essential.

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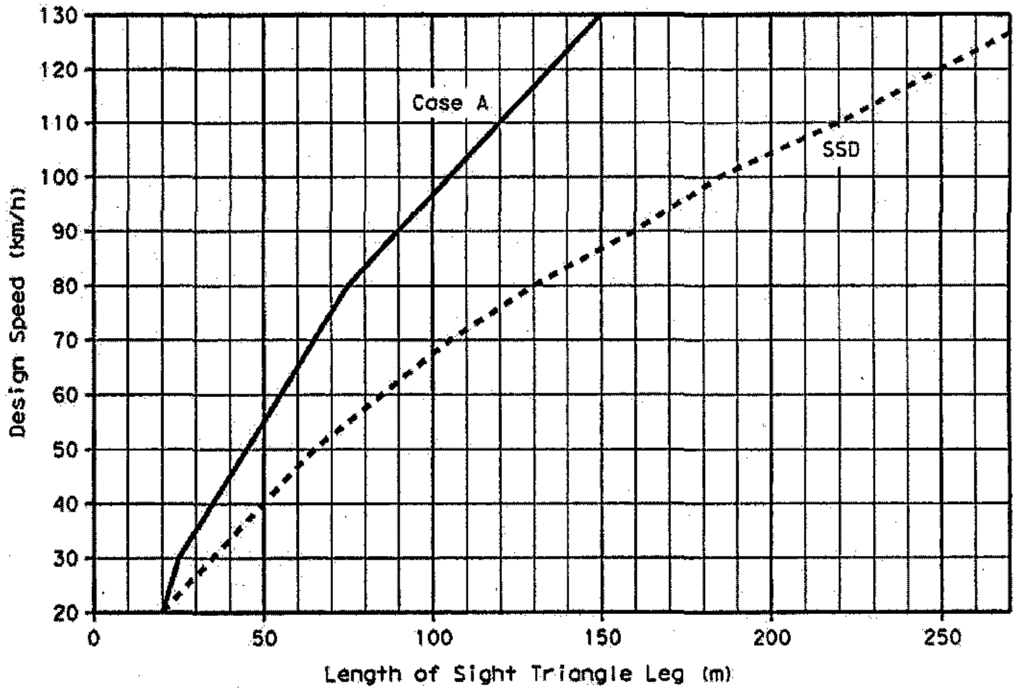
METRIC



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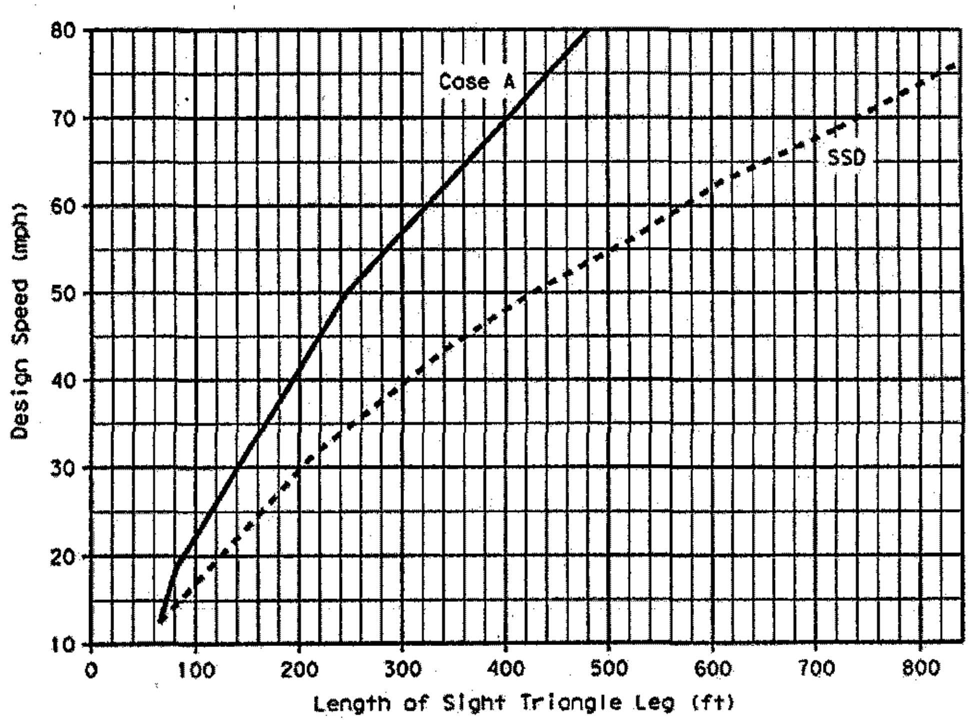

Exhibit 9-52. Length of Sight Triangle Leg—Case A—No Traffic Control

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Where the grade along an intersection approach exceeds 3 percent, the leg of the clear sight triangle along that approach should be adjusted by multiplying the appropriate sight distance from Exhibit 9-51 by the appropriate adjustment factor from Exhibit 9-53.

If the sight distances given in Exhibit 9-51, as adjusted for grades, cannot be provided, consideration should be given to installing regulatory speed signing to reduce speeds or installing stop signs on one or more approaches.

No departure sight triangle like that shown in Exhibit 9-50B is needed at an uncontrolled intersection because such intersections typically have very low traffic volumes. If a motorist finds it necessary to stop at an uncontrolled intersection because of the presence of a conflicting vehicle on an intersecting approach, it is very unlikely another potentially conflicting vehicle will be encountered as the first vehicle departs the intersection.

Case B—Intersections with Stop Control on the Minor Road

Departure sight triangles for intersections with stop control on the minor road should be considered for three situations:

Case B1—Left turns from the minor road;
Case B2—Right turns from the minor road; and
Case B3—Crossing the major road from a minor-road approach.

Intersection sight distance criteria for stop-controlled intersections are longer than stopping sight distance to ensure that the intersection operates smoothly. Minor-road vehicle operators can wait until they can proceed safely without forcing a major-road vehicle to stop.

Case B1—Left Turn from the Minor Road

Departure sight triangles for traffic approaching from either the right or the left, like those shown in Exhibit 9-50B, should be provided for left turns from the minor road onto the major road for all stop-controlled approaches. The length of the leg of the departure sight triangle along the major road in both directions is the recommended intersection sight distance for Case B1.

The vertex (decision point) of the departure sight triangle on the minor road should be 4.4 m [14.5 ft] from the edge of the major-road traveled way. This represents the typical position of the minor-road driver's eye when a vehicle is stopped relatively close to the major road. Field observations of vehicle stopping positions found that, where necessary, drivers will stop with the front of their vehicle 2.0 m [6.5 ft] or less from the edge of the major-road traveled way. Measurements of passenger cars indicate that the distance from the front of the vehicle to the driver's eye for the current U.S. passenger car population is nearly always 2.4 m [8 ft] or less (**10**). Where practical, it is desirable to increase the distance from the edge of the major-road traveled way to the vertex of the clear sight triangle from 4.4 m to 5.4 m [14.5 to 18 ft]. This

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Metric												
Approach grade (%)	Design speed (km/h)											
	20	30	40	50	60	70	80	90	100	110	120	130
–6	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2
–5	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2
–4	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
–3 to +3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
+4	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
+5	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
+6	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9

US Customary														
Approach grade (%)	Design speed (mph)													
	15	20	25	30	35	40	45	50	55	60	65	70	75	80
–6	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2	1.2	1.2	1.2
–5	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.2
–4	1.0	1.0	1.0	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
–3 to +3	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
+4	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
+5	1.0	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
+6	1.0	1.0	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9

Note: Based on ratio of stopping sight distance on specified approach grade to stopping sight distance on level terrain.

Exhibit 9-53. Adjustment Factors for Sight Distance Based on Approach Grade

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increase allows 3.0 m [10 ft] from the edge of the major-road traveled way to the front of the stopped vehicle, providing a larger sight triangle. The length of the sight triangle along the minor road (distance a in Exhibit 9-50B) is the sum of the distance from the major road plus 1/2 lane width for vehicles approaching from the left, or 1-1/2 lane width for vehicles approaching from the right.

Field observations of the gaps in major-road traffic actually accepted by drivers turning onto the major road have shown that the values in Exhibit 9-54 provide sufficient time for the minor-road vehicle to accelerate from a stop and complete a left turn without unduly interfering with major-road traffic operations. The time gap acceptance time does not vary with approach speed on the major road. Studies have indicated that a constant value of time gap, independent of approach speed, can be used as a basis for intersection sight distance determinations. Observations have also shown that major-road drivers will reduce their speed to some extent when minor-road vehicles turn onto the major road. Where the time gap acceptance values in Exhibit 9-54 are used to determine the length of the leg of the departure sight triangle, most major-road drivers should not need to reduce speed to less than 70 percent of their initial speed **(10)**.

The intersection sight distance in both directions should be equal to the distance traveled at the design speed of the major road during a period of time equal to the time gap. In applying Exhibit 9-54, it can usually be assumed that the minor-road vehicle is a passenger car. However, where substantial volumes of heavy vehicles enter the major road, such as from a ramp terminal, the use of tabulated values for single-unit or combination trucks should be considered.

Exhibit 9-54 includes appropriate adjustments to the gap times for the number of lanes on the major road and for the approach grade of the minor road. The adjustment for the grade of the minor-road approach is needed only if the rear wheels of the design vehicle would be on an upgrade that exceeds 3 percent when the vehicle is at the stop line of the minor-road approach.

The intersection sight distance along the major road (dimension "b" in Exhibit 9-50B) is determined by:

Metric	**US Customary**
$ISD = 0.278\ V_{major}\, t_g$	$ISD = 1.47\ V_{major}\, t_g$ **(9-1)**
where: ISD = intersection sight distance (length of the leg of sight triangle along the major road) (m) V_{major} = design speed of major road (km/h) t_g = time gap for minor road vehicle to enter the major road (s)	where: ISD = intersection sight distance (length of the leg of sight triangle along the major road) (ft) V_{major} = design speed of major road (mph) t_g = time gap for minor road vehicle to enter the major road (s)

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Design vehicle	Time gap (t_g) (seconds) at design speed of major road
Passenger car	7.5
Single-unit truck	9.5
Combination truck	11.5

Note: Time gaps are for a stopped vehicle to turn left onto a two-lane highway with no median and grades 3 percent or less. The table values require adjustment as follows:

For multilane highways:

For left turns onto two-way highways with more than two lanes, add 0.5 seconds for passenger cars or 0.7 seconds for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.

For minor road approach grades:

If the approach grade is an upgrade that exceeds 3 percent; add 0.2 seconds for each percent grade for left turns

Exhibit 9-54. Time Gap for Case B1—Left Turn from Stop

For example, a passenger car turning left onto a two-lane major road should be provided sight distance equivalent to a time gap of 7.5 s in major-road traffic. If the design speed of the major road is 100 km/h [60 mph], this corresponds to a sight distance of 0.278(100)(7.5) = 208.5 or 210 m [1.47(60)(7.5) = 661.5 or 665 ft], rounded for design.

A passenger car turning left onto a four-lane undivided roadway will need to cross two near lanes, rather than one. This increases the recommended gap in major-road traffic from 7.5 to 8.0 s. The corresponding value of sight distance for this example would be 223 m [706 ft]. If the minor-road approach to such an intersection is located on a 4 percent upgrade, then the time gap selected for intersection sight distance design for left turns should be increased from 8.0 to 8.8 s, equivalent to an increase of 0.2 s for each percent grade.

The design values for intersection sight distance for passenger cars are shown in Exhibit 9-55. Exhibit 9-56 includes design values, based on the time gaps for the design vehicles included in Exhibit 9-54.

No adjustment of the recommended sight distance values for the major-road grade is generally needed because both the major- and minor-road vehicle will be on the same grade when departing from the intersection. However, if the minor-road design vehicle is a heavy truck and the intersection is located near a sag vertical curve with grades over 3 percent, then an adjustment to extend the recommended sight distance based on the major-road grade should be considered.

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Metric				US Customary			
		Intersection sight distance for passenger cars				Intersection sight distance for passenger cars	
Design speed (km/h)	Stopping sight distance (m)	Calculated (m)	Design (m)	Design speed (mph)	Stopping sight distance (ft)	Calculated (ft)	Design (ft)
20	20	41.7	45	15	80	165.4	170
30	35	62.6	65	20	115	220.5	225
40	50	83.4	85	25	155	275.6	280
50	65	104.3	105	30	200	330.8	335
60	85	125.1	130	35	250	385.9	390
70	105	146.0	150	40	305	441.0	445
80	130	166.8	170	45	360	496.1	500
90	160	187.7	190	50	425	551.3	555
100	185	208.5	210	55	495	606.4	610
110	220	229.4	230	60	570	661.5	665
120	250	250.2	255	65	645	716.6	720
130	285	271.1	275	70	730	771.8	775
				75	820	826.9	830
				80	910	882.0	885

Note: Intersection sight distance shown is for a stopped passenger car to turn left onto a two-lane highway with no median and grades 3 percent or less. For other conditions, the time gap must be adjusted and required sight distance recalculated.

Exhibit 9-55. Design Intersection Sight Distance—Case B1—Left Turn from Stop

Sight distance design for left turns at divided-highway intersections should consider multiple design vehicles and median width. If the design vehicle used to determine sight distance for a divided-highway intersection is larger than a passenger car, then sight distance for left turns will need to be checked for that selected design vehicle and for smaller design vehicles as well. If the divided-highway median is wide enough to store the design vehicle with a clearance to the through lanes of approximately 1 m [3 ft] at both ends of the vehicle, no separate analysis for the departure sight triangle for left turns is needed on the minor-road approach for the near roadway to the left. In most cases, the departure sight triangle for right turns (Case B2) will provide sufficient sight distance for a passenger car to cross the near roadway to reach the median. Possible exceptions are addressed in the discussion of Case B3.

If the design vehicle can be stored in the median with adequate clearance to the through lanes, a departure sight triangle to the right for left turns should be provided for that design vehicle turning left from the median roadway. Where the median is not wide enough to store the design vehicle, a departure sight triangle should be provided for that design vehicle to turn left from the minor-road approach.

The median width should be considered in determining the number of lanes to be crossed. The median width should be converted to equivalent lanes. For example, a 7.2-m [24-ft] median should be considered as two additional lanes to be crossed in applying the multilane highway adjustment for time gaps in Exhibit 9-54. Furthermore, a departure sight triangle for left turns

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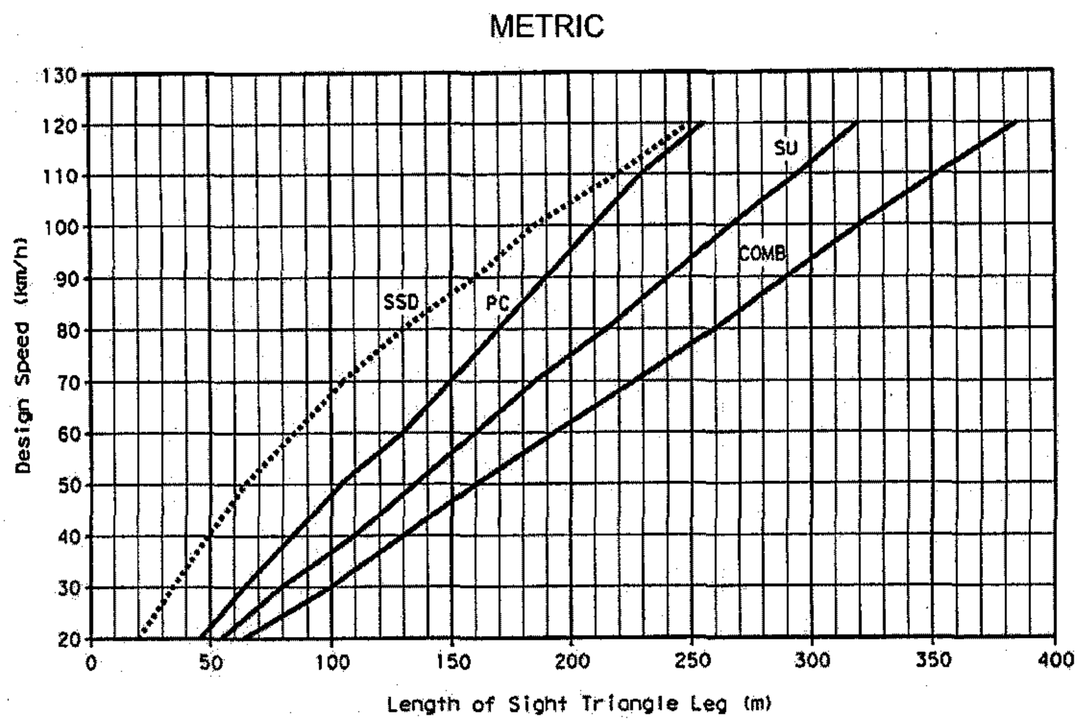

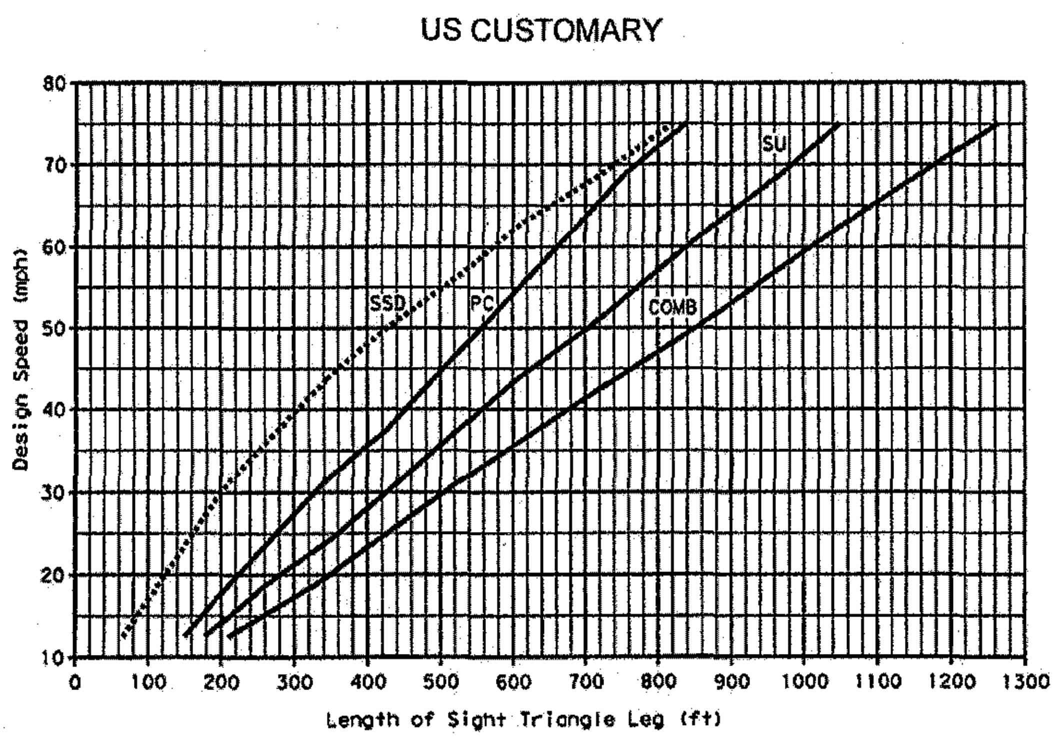

Exhibit 9-56. Intersection Sight Distance—Case B1—Left Turn from Stop

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from the median roadway should be provided for the largest design vehicle that can be stored on the median roadway with adequate clearance to the through lanes. If a divided highway intersection has a 12-m [40-ft] median width and the design vehicle for sight distance is a 22-m [74-ft] combination truck, departure sight triangles should be provided for the combination truck turning left from the minor-road approach and through the median. In addition, a departure sight triangle should also be provided to the right for a 9-m [30-ft] single unit truck turning left from a stopped position in the median.

If the sight distance along the major road shown in Exhibit 9-55, including any appropriate adjustments, cannot be provided, then consideration should be given to installing regulatory speed signing on the major-road approaches.

Case B2—Right Turn from the Minor Road

A departure sight triangle for traffic approaching from the left like that shown in Exhibit 9-50B should be provided for right turns from the minor road onto the major road. The intersection sight distance for right turns is determined in the same manner as for Case B1, except that the time gaps (t_g) in Exhibit 9-54 should be adjusted. Field observations indicate that, in making right turns, drivers generally accept gaps that are slightly shorter than those accepted in making left turns (**10**). The time gaps in Exhibit 9-54 can be decreased by 1.0 s for right-turn maneuvers without undue interference with major-road traffic. These adjusted time gaps for the right turn from the minor road are shown in Exhibit 9-57. Design values based on these adjusted time gaps are shown in Exhibit 9-58 for passenger cars. Exhibit 9-59 includes the design values for the design vehicles for each of the time gaps in Exhibit 9-57. When the minimum recommended sight distance for a right-turn maneuver cannot be provided, even with the reduction of 1.0 s from the values in Exhibit 9-54, consideration should be given to installing regulatory speed signing or other traffic control devices on the major-road approaches.

Case B3—Crossing Maneuver from the Minor Road

In most cases, the departure sight triangles for left and right turns onto the major road, as described for Cases B1 and B2, will also provide more than adequate sight distance for minor-road vehicles to cross the major road. However, in the following situations, it is advisable to check the availability of sight distance for crossing maneuvers:

- where left and/or right turns are not permitted from a particular approach and the crossing maneuver is the only legal maneuver;
- where the crossing vehicle would cross the equivalent width of more than six lanes; or
- where substantial volumes of heavy vehicles cross the highway and steep grades that might slow the vehicle while its back portion is still in the intersection are present on the departure roadway on the far side of the intersection.

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Design vehicle	Time gap (t_g) (seconds) at design speed of major road
Passenger car	6.5
Single-unit truck	8.5
Combination truck	10.5

Note: Time gaps are for a stopped vehicle to turn right onto or cross a two-lane highway with no median and grades 3 percent or less. The table values require adjustment as follows:

For multilane highways:

For crossing a major road with more than two lanes, add 0.5 seconds for passenger cars and 0.7 seconds for trucks for each additional lane to be crossed and for narrow medians that cannot store the design vehicle.

For minor road approach grades:

If the approach grade is an upgrade that exceeds 3 percent, add 0.1 seconds for each percent grade.

Exhibit 9-57. Time Gap for Case B2—Right Turn from Stop and Case B3—Crossing Maneuver

Metric				US Customary			
Design speed (km/h)	Stopping sight distance (m)	Intersection sight distance for passenger cars: Calculated (m)	Intersection sight distance for passenger cars: Design (m)	Design speed (mph)	Stopping sight distance (ft)	Intersection sight distance for passenger cars: Calculated (ft)	Intersection sight distance for passenger cars: Design (ft)
20	20	36.1	40	15	80	143.3	145
30	35	54.2	55	20	115	191.1	195
40	50	72.3	75	25	155	238.9	240
50	65	90.4	95	30	200	286.7	290
60	85	108.4	110	35	250	334.4	335
70	105	126.5	130	40	305	382.2	385
80	130	144.6	145	45	360	430.0	430
90	160	162.6	165	50	425	477.8	480
100	185	180.7	185	55	495	525.5	530
110	220	198.8	200	60	570	573.3	575
120	250	216.8	220	65	645	621.1	625
130	285	234.9	235	70	730	668.9	670
				75	820	716.6	720
				80	910	764.4	765

Note: Intersection sight distance shown is for a stopped passenger car to turn right onto or cross a two-lane highway with no median and grades 3 percent or less. For other conditions, the time gap must be adjusted and required sight distance recalculated.

Exhibit 9-58. Design Intersection Sight Distance—Case B2—Right Turn from Stop and Case B3—Crossing Maneuver

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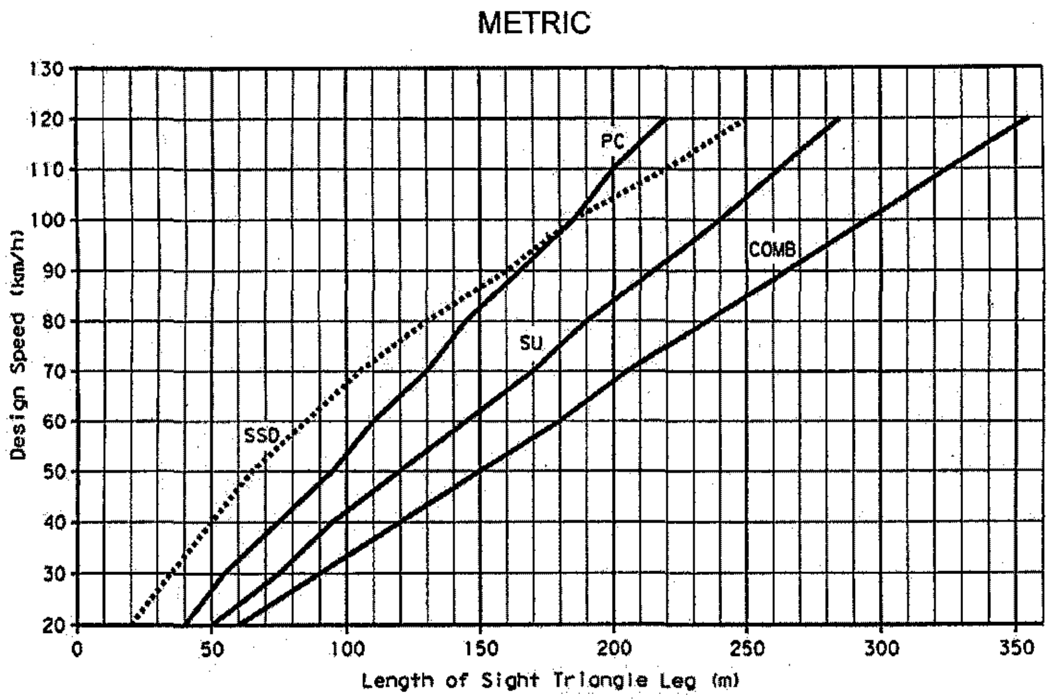

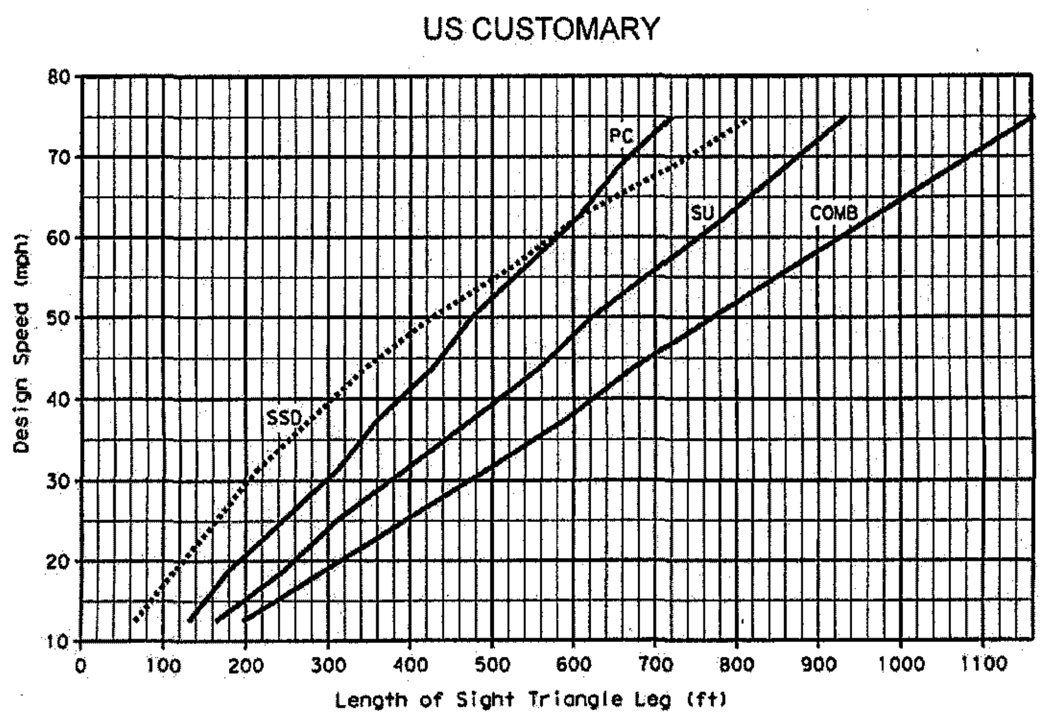

Exhibit 9-59. Intersection Sight Distance—Case B2—Right Turn from Stop and Case B3—Crossing Maneuver

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The formula for intersection sight distance in Case B1 is used again for the crossing maneuver except that time gaps (t_g) are obtained from Exhibit 9-57. Exhibit 9-57 presents time gaps and appropriate adjustment factors to determine the intersection sight distance along the major road to accommodate crossing maneuvers. At divided highway intersections, depending on the relative magnitudes of the median width and the length of the design vehicle, intersection sight distance may need to be considered for crossing both roadways of the divided highway or for crossing the near lanes only and stopping in the median before proceeding. The application of adjustment factors for median width and grade is discussed under Case B1.

Exhibit 9-58 shows the design values for passenger cars for the crossing maneuver based on the unadjusted time gaps in Exhibit 9-57. Exhibit 9-59 includes the design values based on the time gaps for the design vehicles in Exhibit 9-57.

Case C—Intersections with Yield Control on the Minor Road

Drivers approaching yield signs are permitted to enter or cross the major road without stopping, if there are no potentially conflicting vehicles on the major road. The sight distances needed by drivers on yield-controlled approaches exceed those for stop-controlled approaches.

For four-leg intersections with yield control on the minor road, two separate pairs of approach sight triangles like those shown in Exhibit 9-50A should be provided. One set of approach sight triangles is needed to accommodate crossing the major road and a separate set of sight triangles is needed to accommodate left and right turns onto the major road. Both sets of sight triangles should be checked for potential sight obstructions.

For three-leg intersections with yield control on the minor road, only the approach sight triangles to accommodate left- and right-turn maneuvers need be considered, because the crossing maneuver does not exist.

Case C1—Crossing Maneuver from the Minor Road

The length of the leg of the approach sight triangle along the minor road to accommodate the crossing maneuver from a yield-controlled approach (distance *a* in Exhibit 9-50A) is given in Exhibit 9-60. The distances in Exhibit 9-60 are based on the same assumptions as those for Case A except that, based on field observations, minor-road vehicles that do not stop are assumed to decelerate to 60 percent of the minor-road design speed, rather than 50 percent.

Sufficient travel time for the major road vehicle should be provided to allow the minor-road vehicle: (1) to travel from the decision point to the intersection, while decelerating at the rate of 1.5 m/s^2 [5 ft/s^2] to 60 percent of the minor-road design speed; and then (2) to cross and clear the intersection at that same speed. The intersection sight distance along the major road to accommodate the crossing maneuver (distance b in Exhibit 9-50A) should be computed with the following equations:

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Metric	US Customary	
$t_g = t_a + \dfrac{w + L_a}{0.167V_{\text{minor}}}$ $b = 0.278V_{major}t_g$	$t_g = t_a + \dfrac{w + L_a}{0.88V_{\text{minor}}}$ $b = 1.47V_{major}t_g$	**(9-2)**

Metric			US Customary		
where:			where:		
t_g	=	travel time to reach and clear the major road (s)	t_g	=	travel time to reach and clear the major road (s)
b	=	length of leg of sight triangle along the major road (m)	b	=	length of leg of sight triangle along the major road (ft)
t_a	=	travel time to reach the major road from the decision point for a vehicle that does not stop (s) (use appropriate value for the minor-road design speed from Exhibit 9-60 adjusted for approach grade, where appropriate)	t_a	=	travel time to reach the major road from the decision point for a vehicle that does not stop (s) (use appropriate value for the minor-road design speed from Exhibit 9-60 adjusted for approach grade, where appropriate)
w	=	width of intersection to be crossed (m)	w	=	width of intersection to be crossed (ft)
L_a	=	length of design vehicle (m)	L_a	=	length of design vehicle (ft)
V_{minor}	=	design speed of minor road (km/h)	V_{minor}	=	design speed of minor road (mph)
V_{major}	=	design speed of major road (km/h)	V_{major}	=	design speed of major road (mph)

The value of t_g should equal or exceed the appropriate travel time for crossing the major road from a stop-controlled approach, as shown in Exhibit 9-57. The design values for the time gap (t_g) shown in Exhibit 9-60 incorporate these crossing times for two-lane highways and are used to develop the length of the leg of the sight triangle along the major road in Exhibit 9-61. These basic unadjusted lengths are illustrated in Exhibit 9-62 for passenger cars and should be calculated separately for other design vehicle types.

The distances and times in Exhibit 9-60 should be adjusted for the grade of the minor-road approach using the factors in Exhibit 9-53. If the major road is a divided highway with a median wide enough to store the design vehicle for the crossing maneuver, then only crossing of the near lanes needs to be considered and a departure sight triangle for accelerating from a stopped position in the median should be provided based on Case B3. For median widths not wide enough to store the design vehicle, the crossing width should be adjusted as discussed in Case B1.

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Metric					US Customary				
	Minor-road approach		Travel time (t_g) (seconds)			Minor-road approach		Travel time (t_g) (seconds)	
Design speed (km/h)	Length of leg[1] (m)	Travel time t_a[1,2] (seconds)	Calculated value	Design value[3,4]	Design speed (mph)	Length of leg[1] (ft)	Travel time t_a[1,2] (seconds)	Calculated value	Design value[3,4]
20	20	3.2	7.1	7.1	15	75	3.4	6.7	6.7
30	30	3.6	6.2	6.5	20	100	3.7	6.1	6.5
40	40	4.0	6.0	6.5	25	130	4.0	6.0	6.5
50	55	4.4	6.0	6.5	30	160	4.3	5.9	6.5
60	65	4.8	6.1	6.5	35	195	4.6	6.0	6.5
70	80	5.1	6.2	6.5	40	235	4.9	6.1	6.5
80	100	5.5	6.5	6.5	45	275	5.2	6.3	6.5
90	115	5.9	6.8	6.8	50	320	5.5	6.5	6.5
100	135	6.3	7.1	7.1	55	370	5.8	6.7	6.7
110	155	6.7	7.4	7.4	60	420	6.1	6.9	6.9
120	180	7.0	7.7	7.7	65	470	6.4	7.2	7.2
130	205	7.4	8.0	8.0	70	530	6.7	7.4	7.4
					75	590	7.0	7.7	7.7
					80	660	7.3	7.9	7.9

1 For minor-road approach grades that exceed 3 percent, multiply the distance or the time in this table by the appropriate adjustment factor from Exhibit 9-53.

2 Travel time applies to a vehicle that slows before crossing the intersection but does not stop.

3 The value of t_g should equal or exceed the appropriate time gap for crossing the major road from a stop-controlled approach.

4 Values shown are for a passenger car crossing a two-lane highway with no median and grades 3 percent or less.

Exhibit 9-60. Case C1—Crossing Maneuvers from Yield-Controlled Approaches—Length of Minor Road Leg and Travel Times

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Metric

Major road design speed (km/h)	Stopping sight distance (m)	Minor-road design speed (km/h) 20	30–80	90	100	110	120	130
		Design values (m)						
20	20	40	40	40	40	45	45	45
30	35	60	55	60	60	65	65	70
40	50	80	75	80	80	85	90	90
50	65	100	95	95	100	105	110	115
60	85	120	110	115	120	125	130	135
70	105	140	130	135	140	145	150	160
80	130	160	145	155	160	165	175	180
90	160	180	165	175	180	190	195	205
100	185	200	185	190	200	210	215	225
110	220	220	200	210	220	230	240	245
120	250	240	220	230	240	250	260	270
130	285	260	235	250	260	270	280	290

US Customary

Major road design speed (mph)	Stopping sight distance (ft)	Minor-road design speed (mph) 15	20–50	55	60	65	70	75	80
		Design values (ft)							
15	80	150	145	150	155	160	165	170	175
20	115	200	195	200	205	215	220	230	235
25	155	250	240	250	255	265	275	285	295
30	200	300	290	300	305	320	330	340	350
35	250	345	335	345	360	375	385	400	410
40	305	395	385	395	410	425	440	455	465
45	360	445	430	445	460	480	490	510	525
50	425	495	480	495	510	530	545	570	585
55	495	545	530	545	560	585	600	625	640
60	570	595	575	595	610	640	655	680	700
65	645	645	625	645	660	690	710	740	755
70	730	690	670	690	715	745	765	795	815
75	820	740	720	740	765	795	820	850	875
80	910	790	765	790	815	850	875	910	930

Note: Values in the table are for passenger cars and are based on the unadjusted distances and times in Exhibit 9-60. The distances and times in Exhibit 9-60 need to be adjusted using the factors in Exhibit 9-53.

Exhibit 9-61. Length of Sight Triangle Leg along Major Road—Case C1—Crossing Maneuver at Yield Controlled Intersections

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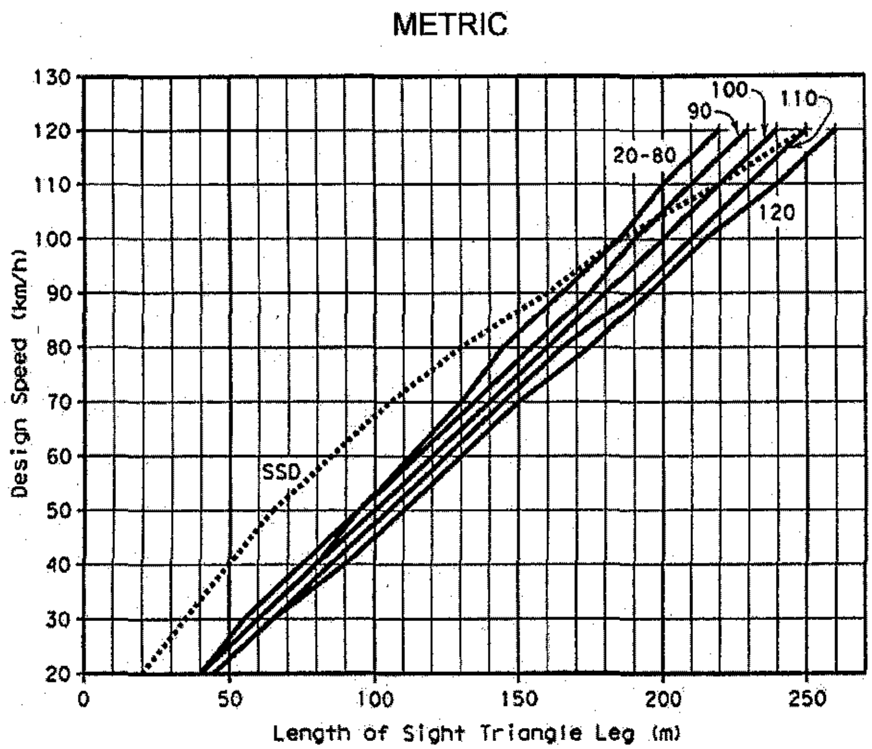

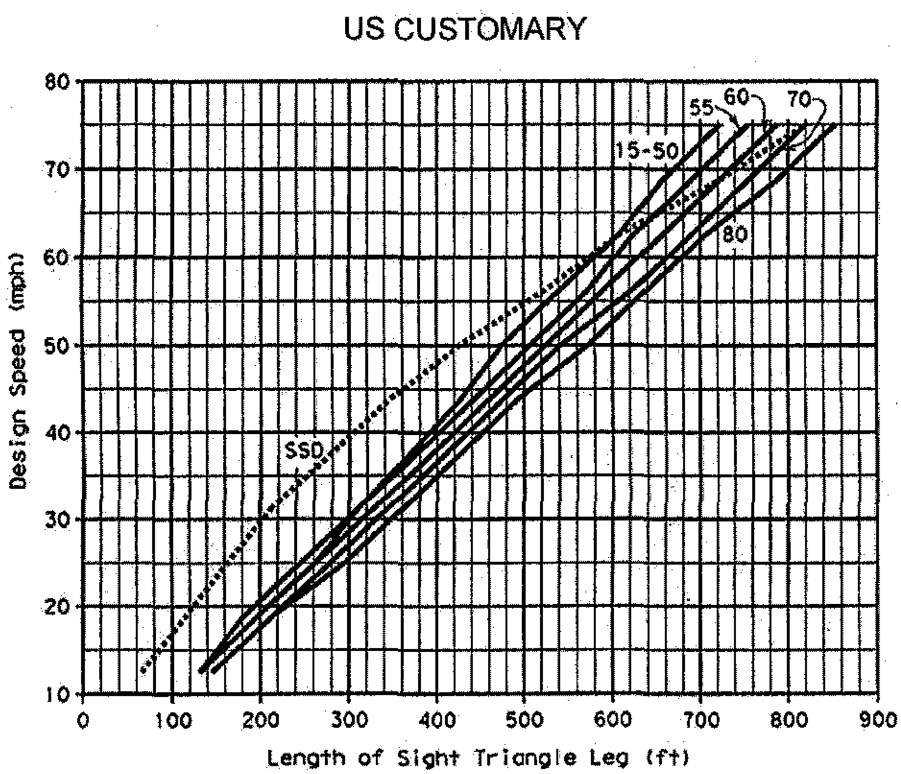

Exhibit 9-62. Length of Sight Triangle Leg along Major Road for Passenger Cars—Case C1—Crossing Maneuver

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Case C2—Left- and Right-Turn Maneuvers

The length of the leg of the approach sight triangle along the minor road to accommodate left and right turns without stopping (distance a in Exhibit 9-50A) should be 25 m [82 ft]. This distance is based on the assumption that drivers making left and right turns without stopping will slow to a turning speed of 16 km/h [10 mph].

The leg of the approach sight triangle along the major road (distance b in Exhibit 9-50A) is similar to the major-road leg of the departure sight triangle for a stop-controlled intersections in Cases B1 and B2. However, the time gaps in Exhibit 9-54 should be increased by 0.5 s to the values shown in Exhibit 9-63. The appropriate lengths of the sight triangle leg are shown in Exhibit 9-64 for passenger cars and in Exhibit 9-65 for the general design vehicle categories. The minor-road vehicle needs 3.5 s to travel from the decision point to the intersection. This represents additional travel time that is needed at a yield-controlled intersection, but is not needed at a stop-controlled intersection (Case B). However, the acceleration time after entering the major road is 3.0 s less for a yield sign than for a stop sign because the turning vehicle accelerates from 16 km/h [10 mph] rather than from a stop condition. The net 0.5-s increase in travel time for a vehicle turning from a yield-controlled approach is the difference between the 3.5-s increase in travel time and the 3.0-s reduction in travel time.

Departure sight triangles like those provided for stop-controlled approaches (see Cases B1, B2, and B3) should also be provided for yield-controlled approaches to accommodate minor-road vehicles that stop at the yield sign to avoid conflicts with major-road vehicles. However, since approach sight triangles for turning maneuvers at yield-controlled approaches are larger than the departure sight triangles used at stop-controlled intersections, no specific check of departure sight triangles at yield-controlled intersection should be needed.

Yield-controlled approaches generally need greater sight distance than stop-controlled approaches, especially at four-leg yield-controlled intersections where the sight distance needs of the crossing maneuver should be considered. If sight distance sufficient for yield control is not available, use of a stop sign instead of a yield sign should be considered. In addition, at locations where the recommended sight distance cannot be provided, consideration should be given to installing regulatory speed signing or other traffic control devices at the intersection on the major road to reduce the speeds of approaching vehicles.

Case D—Intersections with Traffic Signal Control

At signalized intersections, the first vehicle stopped on one approach should be visible to the driver of the first vehicle stopped on each of the other approaches. Left-turning vehicles should have sufficient sight distance to select gaps in oncoming traffic and complete left turns. Apart from these sight conditions, there are generally no other approach or departure sight triangles needed for signalized intersections. Signalization may be an appropriate crash countermeasure for higher volume intersections with restricted sight distance that have experienced a pattern of sight-distance related crashes.

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Design vehicle	Time gap (t_g) seconds
Passenger car	8.0
Single-unit truck	10.0
Combination truck	12.0

Note: Time gaps are for a vehicle to turn right or left onto a two-lane highway with no median. The table values require adjustments for multilane highways as follows:

For left turns onto two-way highways with more than two lanes, add 0.5 seconds for passenger cars or 0.7 seconds for trucks for each additional lane, from the left, in excess of one, to be crossed by the turning vehicle.

For right turns, no adjustment is necessary.

Exhibit 9-63. Time Gap for Case C2—Left or Right Turn

Metric				US Customary			
		Length of leg				Length of leg	
		Passenger cars				Passenger cars	
Design speed (km/h)	Stopping sight distance (m)	Calculated (m)	Design (m)	Design speed (mph)	Stopping sight distance (ft)	Calculated (ft)	Design (ft)
20	20	44.5	45	15	80	176.4	180
30	35	66.7	70	20	115	235.2	240
40	50	89.0	90	25	155	294.0	295
50	65	111.2	115	30	200	352.8	355
60	85	133.4	135	35	250	411.6	415
70	105	155.7	160	40	305	470.4	475
80	130	177.9	180	45	360	529.2	530
90	160	200.2	205	50	425	588.0	590
100	185	222.4	225	55	495	646.8	650
110	220	244.6	245	60	570	705.6	710
120	250	266.9	270	65	645	764.4	765
130	285	289.1	290	70	730	823.2	825
				75	820	882.0	885
				80	910	940.8	945

Note: Intersection sight distance shown is for a passenger car making a right or left turn without stopping onto a two-lane road.

Exhibit 9-64. Design Intersection Sight Distance—Case C2—Left or Right Turn at Yield-Controlled Intersections

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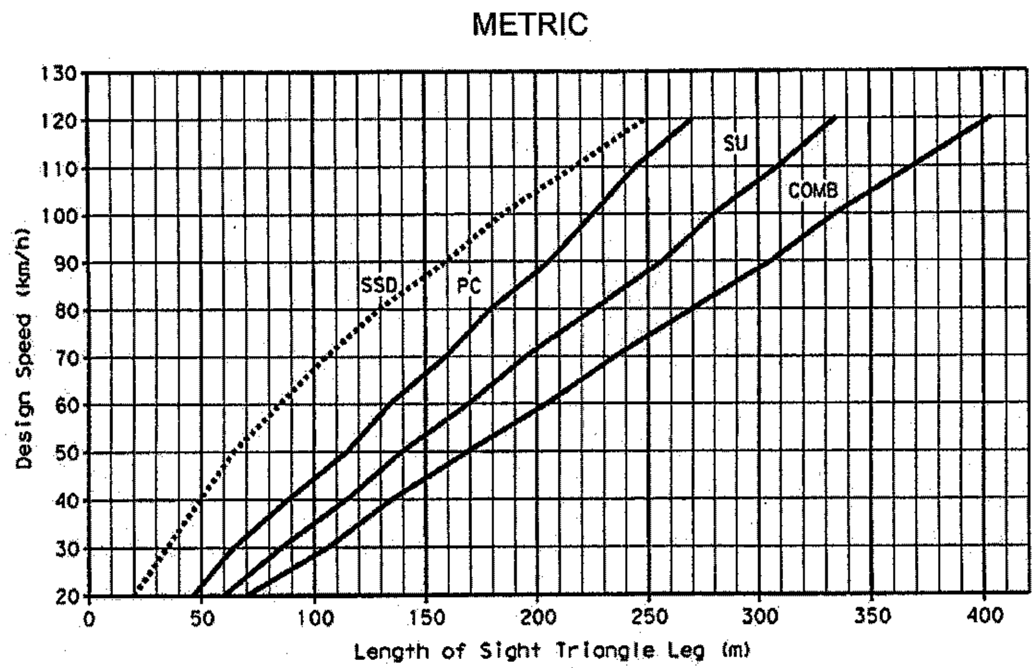

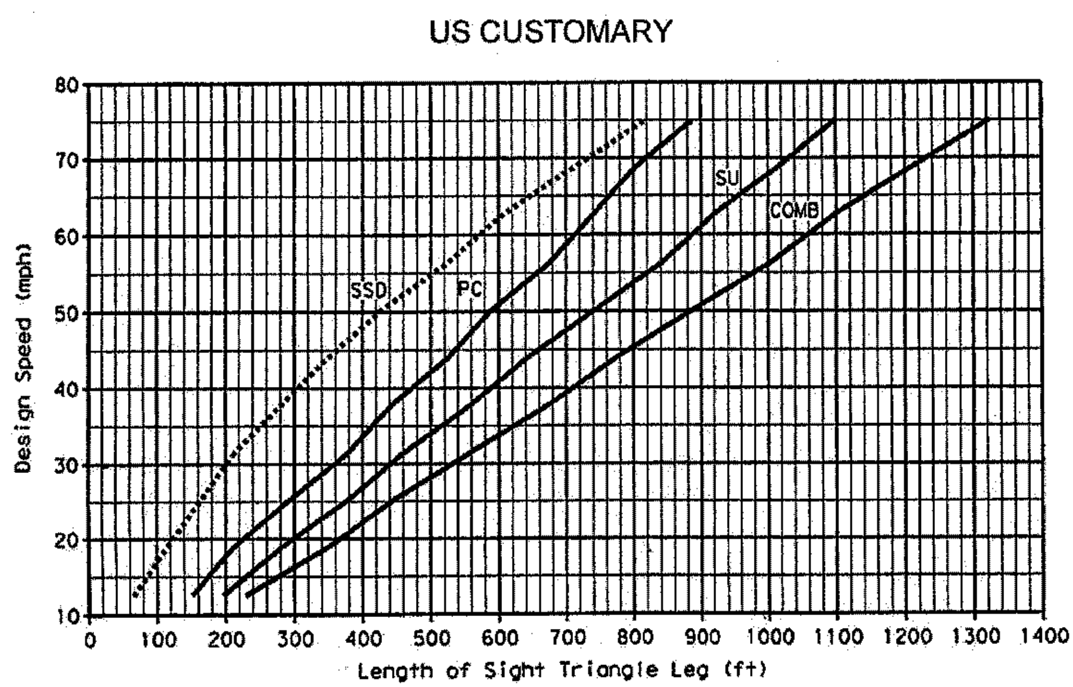

Exhibit 9-65. Intersection Sight Distance—Case C2—Yield-Controlled Left or Right Turn

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However, if the traffic signal is to be placed on two-way flashing operation (i.e., flashing yellow on the major-road approaches and flashing red on the minor-road approaches) under off-peak or nighttime conditions, then the appropriate departure sight triangles for Case B, both to the left and to the right, should be provided for the minor-road approaches. In addition, if right turns on a red signal are to be permitted from any approach, then the appropriate departure sight triangle to the left for Case B2 should be provided to accommodate right turns from that approach.

Case E—Intersections with All-Way Stop Control

At intersections with all-way stop control, the first stopped vehicle on one approach should be visible to the drivers of the first stopped vehicles on each of the other approaches. There are no other sight distance criteria applicable to intersections with all-way stop control and, indeed, all-way stop control may be the best option at a limited number of intersections where sight distance for other control types cannot be attained.

Case F—Left Turns from the Major Road

All locations along a major highway from which vehicles are permitted to turn left across opposing traffic, including intersections and driveways, should have sufficient sight distance to accommodate the left-turn maneuver. Left-turning drivers need sufficient sight distance to decide when it is safe to turn left across the lane(s) used by opposing traffic. Sight distance design should be based on a left turn by a stopped vehicle, since a vehicle that turns left without stopping would need less sight distance. The sight distance along the major road to accommodate left turns is the distance traversed at the design speed of the major-road in the travel time for the design vehicle given in Exhibit 9-66.

Design vehicle	Time gap (t_g) (seconds) at design speed of major road
Passenger car	5.5
Single-unit truck	6.5
Combination truck	7.5

Adjustment for multilane highways:

For left-turning vehicles that cross more than one opposing lane, add 0.5 seconds for passenger cars and 0.7 seconds for trucks for each additional lane to be crossed.

Exhibit 9-66. Time Gap for Case F—Left Turns from the Major Road

The table also contains appropriate adjustment factors for the number of major-road lanes to be crossed by the turning vehicle. The unadjusted time gap in Exhibit 9-66 for passenger cars was used to develop the sight distances in Exhibit 9-67 and illustrated in Exhibit 9-68.

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Metric				US Customary			
		Intersection sight distance				Intersection sight distance	
Design speed (km/h)	Stopping sight distance (m)	Passenger cars Calculated (m)	Passenger cars Design (m)	Design speed (mph)	Stopping sight distance (ft)	Passenger cars Calculated (ft)	Passenger cars Design (ft)
20	20	30.6	35	15	80	121.3	125
30	35	45.9	50	20	115	161.7	165
40	50	61.2	65	25	155	202.1	205
50	65	76.5	80	30	200	242.6	245
60	85	91.7	95	35	250	283.0	285
70	105	107.0	110	40	305	323.4	325
80	130	122.3	125	45	360	363.8	365
90	160	137.6	140	50	425	404.3	405
100	185	152.9	155	55	495	444.7	445
110	220	168.2	170	60	570	485.1	490
120	250	183.5	185	65	645	525.5	530
130	285	198.8	200	70	730	566.0	570
				75	820	606.4	610
				80	910	646.8	650

Note: Intersection sight distance shown is for a passenger car making a left turn from an undivided highway. For other conditions and design vehicles, the time gap should be adjusted and the sight distance recalculated.

Exhibit 9-67. Intersection Sight Distance—Case F—Left Turn from Major Road

If stopping sight distance has been provided continuously along the major road and if sight distance for Case B (stop control) or Case C (yield control) has been provided for each minor-road approach, sight distance will generally be adequate for left turns from the major road. Therefore, no separate check of sight distance for Case F may be needed.

However, at three-leg intersections or driveways located on or near a horizontal curve or crest vertical curve on the major road, the availability of adequate sight distance for left turns from the major road should be checked. In addition, the availability of sight distance for left turns from divided highways should be checked because of the possibility of sight obstructions in the median.

At four-leg intersections on divided highways, opposing vehicles turning left can block a driver's view of oncoming traffic. Exhibit 9-98, presented later in this chapter, illustrates intersection designs that can be used to offset the opposing left-turn lanes and provide left-turning drivers with a better view of oncoming traffic.

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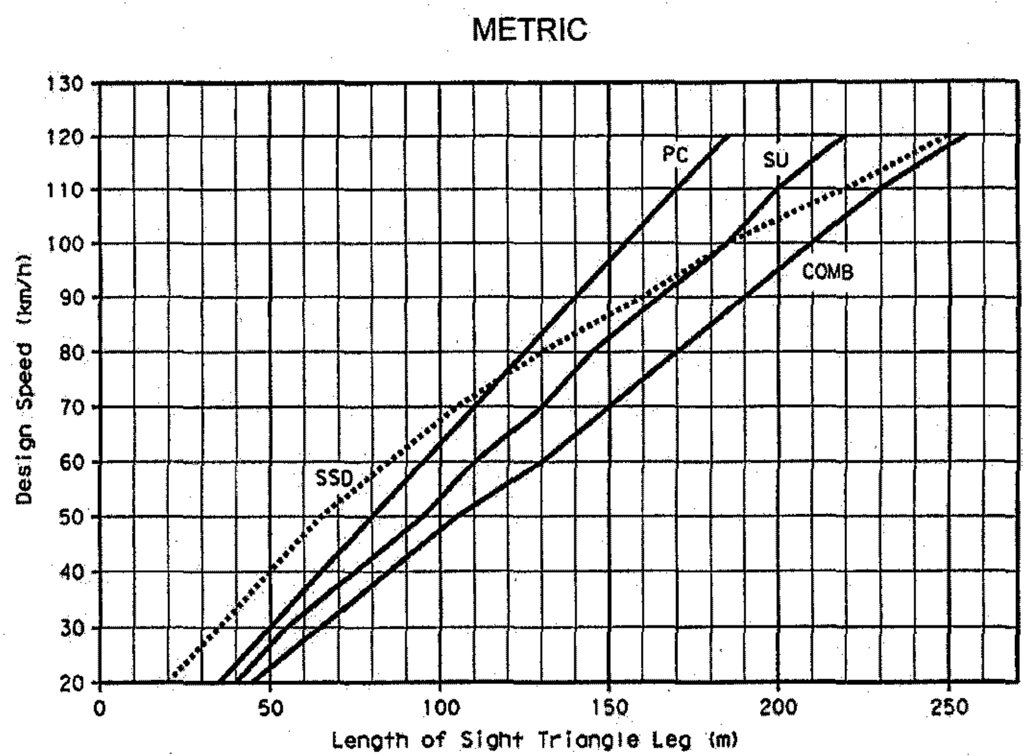

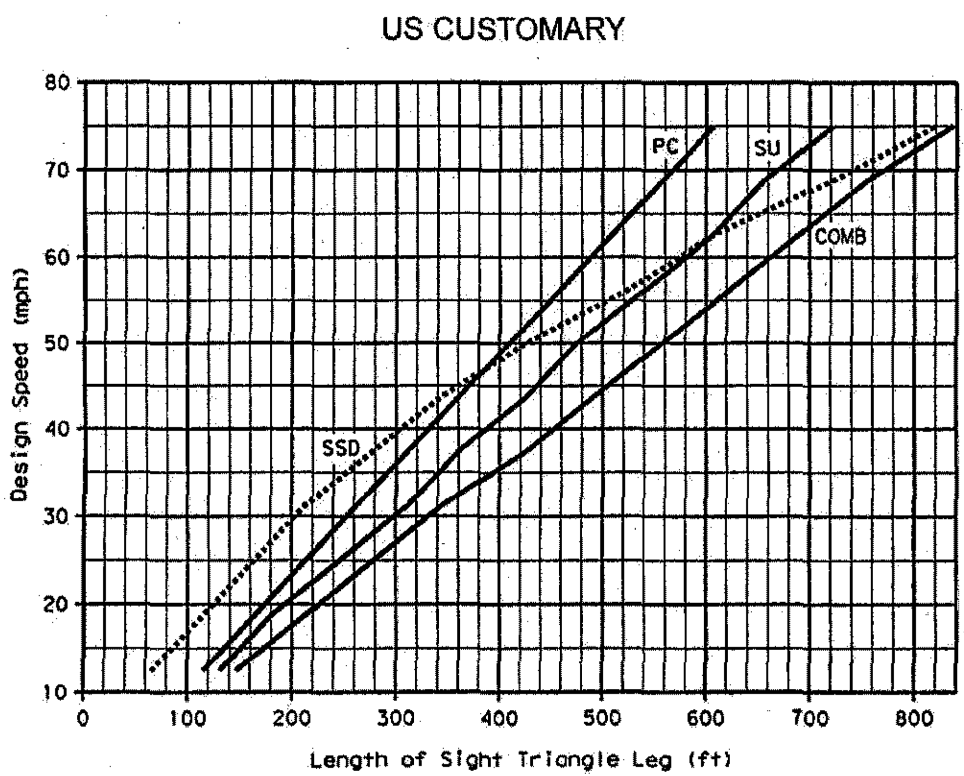

Exhibit 9-68. Intersection Sight Distance—Case F—Left Turn from Major Road

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Appendix F

ACOUSTICAL REPORT

HELIX
Environmental Planning

One Paseo

ACOUSTICAL REPORT

March 2012

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San Diego, CA 92130

Prepared by:
HELIX Environmental Planning, Inc.
7578 El Cajon Boulevard, Suite 200
La Mesa, CA 91942

ACOUSTICAL REPORT

One Paseo

Project No. 193036

Prepared For

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Contact: Robert Little
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Prepared By

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Job No. KIL-03

March 2012

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

APPENDIX

TABLE OF CONTENTS (cont.)

LIST OF FIGURES

Follows
Page

LIST OF TABLES

Page

GLOSSARY OF TERMS AND ACRONYMS

A-Weighted Sound Levels	Decibels (referenced to 20 micro-Pascals) as measured with an A-weighting network of standard sound level meter, abbreviated dB(A)
ANSI	American National Standards Institute
CADNA	Computer Aided Noise Abatement
CEQA	California Environmental Quality Act
City	City of San Diego
CNEL	Community Noise Equivalent Level: A 24-hour average, where sound levels during the evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dB weighting, and sound levels during the nighttime hours of 10:00 p.m. to 7 a.m. have an added 10 dB weighting
Construction Site	For purposes of noise and vibration control requirements, the contract limits of construction; this includes right-of-way lines, property lines, construction easement boundary or property lines, and contractor staging areas outside the defined boundary lines, used expressly for construction
CVPD-EC	Carmel Valley Planned District Employment Center
CVPD-MUC	Carmel Valley Planned District Mixed Use Center
dB	Decibel
dBA	A-weighted sound pressure level
Daytime	The period from 7:00 a.m. to 10 p.m.
Evening	The period from 7:00 p.m. to 10:00 p.m.
GLA	Gross leasable area
HVAC	Heating, ventilating, and air conditioning
L_{EQ}	The equivalent sound level, or the continuous sound level, that represents the same sound energy as the varying sound levels, over a specified monitoring period
M1	noise measurement location approximately in the middle of the project side adjacent to El Camino Real

GLOSSARY OF TERMS AND ACRONYMS (cont.)

M2	noise measurement location approximately in the middle of the project side adjacent to Del Mar Heights Road
MCAS	Marine Corps Air Station
MF	Multi-Family
mph	Miles per hour
Nighttime	Periods other than daytime (as defined above), including legal holidays
Noise	Any audible sound that has the potential to annoy or disturb humans, or to cause an adverse psychological or physiological effect in humans
Noise Level Measurements	Unless otherwise indicated, the use of A-weighted and "slow" response of instrument complying with at least Type 2 requirements of latest revision of American National Standard Institute (ANSI) S1.4. Specification for Sound Level Meters
Noise-sensitive Location	A location where particular sensitivities to noise exist, such as residential areas, institutions, hospitals, parks, or other environmentally sensitive areas
SANDAG	San Diego Regional Association of Governments
sf	square feet
Sound Pressure Level (SPL)	The observable effect of acoustic energy radiation, quantifying sound level as perceivable by the receiver. When Sound Pressure is used to describe a noise source, the distance between source and receiver must be known in order to yield useful information about the power rating of the source.
Sound power level	A specialized analytical metric used to fully quantify the acoustic energy emitted by a source and is complete without accompanying information on the position of measurement relative to the source. It may be used to calculate the sound pressure level at any desired distance.
Sound Transmission Control (STC)	Sound transmission control

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EXECUTIVE SUMMARY

The proposed project entails the phased construction of an approximately 1,857,440-gross square foot mixed-use development on a 23.6-acre graded and vacant site located in the urbanized area of the Carmel Valley community of the City of San Diego (City). The property consists of four parcels, and is located at the southwestern corner of Del Mar Heights Road and El Camino Real.

This Acoustical Report evaluates potential noise impacts to proposed on-site uses and off-site sensitive receptors resulting from the project under Existing Plus Project, Near-term With Project, and Long-term Cumulative (Year 2030) With Project buildout conditions.

The primary noise sources in the vicinity of the project site include traffic noise on Del Mar Heights Road and El Camino Real. Other noise generated by residential and commercial uses are considered negligible at the project site. The measured noise level on-site was 67.4 A-weighted decibels (dBA) L_{EQ} (see glossary) near El Camino Real and 66.3 dBA L_{EQ} near Del Mar Heights Road. The calculated noise levels at these same two locations were 68.4 dBA L_{EQ} and 66.0 dBA L_{EQ}. Future noise levels are expected to increase as a result of increased traffic on the surrounding roadways. Thus, this analysis utilizes buildout traffic conditions.

The City has several established noise thresholds, including the following that are applicable to the project: construction noise thresholds (Municipal Code, Chapter 5, Article 9.5, Division 4, §59.5.0404 Construction Noise); stationary noise limits at property lines (Municipal Code, Chapter 5, Article 9.5, Division 4, § 59.5.0401, Sound Level Limits); exterior usable space noise limits (Zoning Code); land use-noise compatibility guidelines (General Plan Noise Element); and traffic noise significance thresholds (California Environmental Quality Act [CEQA] Significance Determination Thresholds).

Project construction noise impacts to off-site properties would be in compliance with the Municipal Code that establishes a threshold of 75 decibels (dB) L_{EQ} average over the 12-hour period between 7:00 a.m. and 7:00 p.m. However, construction of Phase 3 while Phase 2 residential units are occupied would result in a potentially significant construction noise impact.

Project off-site traffic noise impacts would be less than significant.

While the project-proposed stationary noise impacts to off-site properties would be in compliance with the Municipal Code, on-site uses may exceed the Municipal Code noise limits. This impact would be considered potentially significant and would require mitigation.

Noise impacts from the surrounding environment to the proposed residential and commercial uses would be potentially significant per the Land Use-Noise Compatibility Guidelines. Mitigation would be required.

The mix of proposed commercial and residential/hotel uses on site would potentially result in the exceedance of the noise levels in the Land Use-Noise Compatibility Guidelines. These impacts would be considered potentially significant and would require mitigation.

Proposed mitigation would reduce potential on-site impacts to less than significant levels. Noise attenuation would be required to mitigate potential on-site construction noise impacts. As one option, a 12-foot temporary noise wall would be placed between the Phase 3 construction and the occupied Phase 2 residences. To mitigate land use-noise compatibility impacts to residences and commercial uses from roadway noise, enhanced building materials could be used. An exterior-to-interior noise analysis would be required, and the measures determined to be needed to reduce interior noise levels shall be incorporated into the project design prior to the issuance of building permits. To mitigate for potential on-site residential/hotel land-use compatibility impacts, an interior noise analysis of building plans shall be completed and appropriate measures shall be required, which would be related to heating, ventilating and air conditioning (HVAC), elevator, amplification devices, and specific lease agreements. To ensure no on-site noise impacts would result from the project, an on-site noise impact study shall be completed once building plans have been developed and, if necessary, measures shall be incorporated to ensure that property line noise impacts are less than significant per the Municipal Code.

1.0 INTRODUCTION

The proposed project entails the phased construction of an approximately 1,857,440-gross square foot mixed-use development on a 23.6-acre graded and vacant site located in the urbanized area of the Carmel Valley community of the City. The property consists of four parcels, and is located at the southwestern corner of Del Mar Heights Road and El Camino Real.

The project site is designated Employment Center by the Carmel Valley Community Plan, and zoned as Carmel Valley Planned District - Employment Center (CVPD-EC). The project proposes to change the community plan designation to Community Village and rezone the site to Carmel Valley Planned District- Mixed Use Center. The project includes the construction and operation of retail, market, office, hotel, outdoor public gathering area, and residential uses. This acoustical analysis report is submitted to satisfy the acoustical requirements of the City. The purpose of this report is to assess noise impacts from current and known future noise sources to the site and to assess project noise impacts to surrounding areas under Existing Plus Project (Buildout), Near-term With Project, and Long-term Cumulative (Year 2030) With Project conditions. This is necessary to determine if mitigation is required and feasible to reduce property line noise impacts for usable exterior space to below the City's property line noise limits and insure that it is feasible to plan exterior-to-interior noise impact levels with reasonable building noise control features. The City's CEQA Significance Determination Thresholds also require analysis of traffic noise impacts.

1.1 NOISE AND SOUND LEVEL DESCRIPTORS

All noise level or sound level values presented herein are expressed in terms of dB, with A-weighting to approximate the hearing sensitivity of humans. Time-averaged noise levels are expressed by the symbol L_{EQ}, for a specified duration. The Community Noise Equivalent Level (CNEL) is a 24-hour average, where sound levels during evening hours of 7:00 p.m. to 10:00 p.m. have an added 5 dB weighting, and sound levels during nighttime hours of 10:00 p.m. to 7:00 a.m. have an added 10 dB weighting. This is similar to the Day-Night sound level, L_{DN}, which is a 24-hour average with an added 10 dB weighting on the same nighttime hours but no added weighting on the evening hours. Sound levels expressed in CNEL are always based on the A-weighted decibel. These metrics are used to express noise levels for both measurement and municipal regulations, for land use guidelines, and for enforcement of noise ordinances.

1.2 PROJECT LOCATION

The project site encompasses a 23.6-acre graded and vacant site located in the developed Carmel Valley community of San Diego. The property is located at the southwestern corner of Del Mar Heights Road and El Camino Real. The Assessor's Parcel Numbers for the property are 304-070-43, 304-070-49, 304-070-57, and 304-070-52. The site is a roughly triangular-shaped area bounded by the two aforementioned roadways with High Bluff Drive to the west along part of the third side and a separate commercial office development along the rest of the project site. Interstate 5 is a quarter mile to the west of the project site. Please see Figures 1-1 and 1-2 for the project vicinity and an aerial view of the project site.

The nearest airport to the proposed project site is Marine Corps Air Station (MCAS), Miramar, located approximately 10 miles southeast of the site. The proposed project site is not located within the following contours identified in the MCAS Miramar Airport Land Use Compatibility Plan: noise contour, safety contour, over flight contour, or airport influence area. Therefore, no air traffic noise issues are anticipated for the project, and this issue is not discussed further in the analysis below.

1.3 PROJECT DESCRIPTION

The proposed project entails the phased construction of a mixed-use development with a maximum of 1,857,440 gross square feet (sf) of building area with approximately 270,000 gross leasable area (GLA) of commercial/retail, 536,000 GLA of office, a 150-room hotel, and 608 multi-family residential units. The project also would include public space areas, internal roadways, parking facilities, landscaping, hardscape treatments, and utility improvements to support these uses. Refer to Tables 1-1 and 1-2 below for development summaries of the proposed project. Figure 1-3 shows the proposed project site plan.

For the purposes of phasing, the project has been divided into five blocks (Blocks A through E) surrounded by a central Main Street. Blocks D and E would be constructed in Phase 1, Block A is anticipated to be constructed in Phase 2, and Blocks B and C are anticipated to be developed in Phase 3.

To allow for these proposed uses, the project proposes General Plan/land use plan amendments and a rezone. The project proposes to change the General Plan land use designation from Industrial Employment to Multiple Use, the Carmel Valley Community Plan designation from Employment Center to Community Village, and the Carmel Valley Employment Center Precise Plan designation from Employment Center to Community Village. The rezone consists of changing from the existing CVPD-EC zone to a new zone, Carmel Valley Planned District - Mixed Use Center (CVPD-MC)

1.4 SENSITIVE RECEPTORS

Off-site sensitive receptors in the vicinity include schools, parks, and residences. Proposed on-site land uses that would be considered sensitive noise receptors include residences and hotel rooms. While not considered sensitive uses, impacts to offices and commercial uses may be considered significant if noise exceeds the City's established thresholds described below in Section 1.5.

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Regional Location Map

ONE PASEO

Figure 1-1

HELIX Environmental Planning

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Aerial Photograph

ONE PASEO

HELIX
Environmental Planning

Figure 1-2

Source: Elkus/Manfredi Architects (2011)

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Site Plan

ONE PASEO

HELIX Environmental Planning

Figure 1-3

Table 1-1
DEVELOPMENT SUMMARY

Phase/Block	Commercial Retail[1] (sf)		Commercial Office[3] (sf)		Hotel (Rooms)	Residential (MF Units)	Total[3]
	Retail	Cinema[2]	Corporate Office	Professional Office[4]			
Phase 1							
Block D	61,190	---	270,000	21,000	---	---	352,190
Block E	39,460	---	245,000	---	---	---	284.460
Phase 1 Total	*100,650*	---	*515,000*	*21,000*	---	---	*636,650*
Phase 2							
Block A	65,610	---	---	---	---	194	65,610 + 194 MF units
Phase 2 Total	*65,610*	---	---	---		*194*	*65,610 + 194 MF units*
Phase 3							
Block B	38,940	---	---	---	150	181	38,940 + 150 hotel rooms + 181 MF units
Block C	14,800	---	---	---		233	14,800 + 233 MF units
Block D	---	50,000	---	---	---		50,000
Phase 3 Total	*53,740*	*50,000*	---	---	---	*414*	*103,740 + 418 MF units*
Total[1]	**220,000**	**50,000**	**515,000**	**21,000**	**150**	**608**	**806,000 + 150 hotel rooms + 608 MF units**

MF = multi-family
[1] As it relates to retail, all areas are considered gross leasable because all retail space may be leasable.
[2] Cinema consists of up to 10 screens.
[3] Gross Leasable Area (excludes parking structures in conformance with City of San Diego LDC Sections 113.0234 and 142.0560). Density transfers permitted in accordance with procedures described in the Precise Plan.
[4] Professional Office (located on Main Street).

Table 1-2
GROSS FLOOR AREA SUMMARY [1]

Commercial Retail[2] (sf)		Commercial Office (sf)		Hotel (sf)	Residential (sf)	Total
Retail	Cinema[3]	Corporate Office	Professional Office[4]			
220,000	50,000	535,600	21,840	100,000	930,000	1,857,440

[1] Gross Floor Area calculations per Land Development Code.
[2] Gross square feet
[3] Cinema of up to 10 screens.
[4] Professional Office (located on Main Street).

1.5 APPLICABLE NOISE REGULATIONS AND STANDARDS

Applicable noise standards for this project are codified in the following:

City of San Diego Municipal Code, Chapter 5, Article 9.5, Division 4, §59.5.0404 Construction Noise

(a) It shall be unlawful for any person, between the hours of 7:00 p.m. of any day and 7:00 a.m. of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with exception of Columbus Day and Washington's Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator. In granting such permit, the Administrator shall consider whether the construction noise in the vicinity of the proposed work site would be less objectionable at night than during the daytime because of different population densities or different neighboring activities; whether obstruction and interference with traffic particularly on streets of major importance, would be less objectionable at night than during the daytime; whether the type of work to be performed emits noises at such a low level as to not cause significant disturbances in the vicinity of the work site; the character and nature of the neighborhood of the proposed work site; whether great economic hardship would occur if the work were spread over a longer time; whether proposed night work is in the general public interest; and he shall prescribe such conditions, working times, types of construction equipment to be used, and permissible noise levels as he deems to be required in the public interest.

(b) Except as provided in subsection C. hereof, it shall be unlawful for any person, including the City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12–hour period from 7:00 a.m. to 7:00 p.m.

(c) The provisions of subsection B. of this section shall not apply to construction equipment used in connection with emergency work, provided the Administrator is notified within 48 hours after commencement of work.

City of San Diego Municipal Code, Chapter 5, Article 9.5, Division 4, § 59.5.0401, Sound Level Limits

(a) It shall be unlawful for any person to cause noise by any means to the extent that the one-hour average sound level exceeds the applicable limit given in the following table (Table 1-3), at any location in the City of San Diego on or beyond the boundaries of the property on which the noise is produced. The noise subject to these limits is that part of the total noise at the specified location that is due solely to the action of said person.

Table 1-3
APPLICABLE NOISE LIMITS

Land Use Zone	Time of Day	One-hour Average Sound Level (dB)
Single Family Residential	7:00 a.m. to 7:00 p.m.	50
	7:00 p.m. to 10:00 p.m.	45
	10:00 p.m. to 7:00 a.m.	40
Multi-Family Residential (Up to a maximum density of 1/2000)	7:00 a.m. to 7:00 p.m.	55
	7:00 p.m. to 10:00 p.m.	50
	10:00 p.m. to 7:00 a.m.	45
All other Residential	7:00 a.m. to 7:00 p.m.	60
	7:00 p.m. to 10:00 p.m.	55
	10:00 p.m. to 7:00 a.m.	50
Commercial	7:00 a.m. to 7:00 p.m.	65
	7:00 p.m. to 10:00 p.m.	60
	10:00 p.m. to 7:00 a.m.	60
Industrial or Agricultural	anytime	75

Source: City of San Diego Municipal Code, Chapter 5, Article 9.5, Division 4, § 59.5.0401, Sound Level Limits

(b) The sound level limit at a location on a boundary between two zoning districts is the arithmetic mean of the respective limits for the two districts. Permissible construction noise level limits shall be governed by Section 59.5.0404 of this article.

(c) Fixed-location public utility distribution or transmission facilities located on or adjacent to a property line shall be subject to the noise level limits of Part (a) of this section, measured at or beyond six feet from the boundary of the easement upon which the equipment is located.

Zoning Code

The City typically requires multi-family residential developments to provide on-site usable outdoor recreation space through the Zoning Code. It is assumed that the proposed zone classification (CVPD-MUC) will require open space for proposed multi-family uses. The maximum noise level at usable outdoor areas that are proposed to meet this requirement is 65 CNEL.

City of San Diego General Plan Noise Element (March 2008)

The following policies were instated to ensure that the City would consider existing and future noise levels when making land use planning decisions to minimize people's exposure to excessive noise. More specifically, the Land Use-Noise Compatibility Guidelines were established for "evaluating land use noise compatibility when reviewing proposed land use development projects."

NE-A.1. Separate excessive noise-generating uses from residential and other noise-sensitive land uses with a sufficient spatial buffer of less sensitive uses.

NE-A.2. Assure the appropriateness of proposed developments relative to existing and future noise levels by consulting the guidelines for noise-compatible land use (shown on Table 1-4, Land Use - Noise Compatibility Guidelines, below) to minimize the effects on noise-sensitive land uses.

Table 1-4
LAND USE - NOISE COMPATIBILITY GUIDELINES

Land Use Category	**Exterior Noise Exposure (dBA CNEL)**				
	>60	60-65	65-70	70-75	75<
Open Space and Parks and Recreational					
Community & Neighborhood Parks; Passive Recreation					
Regional Parks; Outdoor Spectator Sports, Golf Courses; Athletic Fields; Outdoor, Spectator Sports, Water Recreational Facilities; Horse Stables; Park Maintenance Facilities					
Agricultural					
Crop Raising & Farming; Aquaculture, Dairies; Horticulture Nurseries & Greenhouses; Animal Raising, Maintain & Keeping; Commercial Stables					
Residential					
Single Units; Mobile Homes; Senior Housing		45			
Multiple Units; Mixed-Use Commercial/Residential; Live Work; Group Living Accommodations		45	45		
Institutional					
Hospitals; Nursing Facilities; Intermediate Care Facilities; Kindergarten through Grade 12 Educational Facilities; Libraries; Museums; Places of Worship; Child Care Facilities		45			
Vocational or Professional Educational Facilities; Higher Education Institution Facilities (Community or Junior Colleges, Colleges, or Universities)		45	45		

Table 1-4 (cont.) LAND USE - NOISE COMPATIBILITY GUIDELINES					
Land Use Category	**Exterior Noise Exposure (dBA CNEL)**				
	>60	60-65	65-70	70-75	75<
Cemeteries					
Sales					
Building Supplies/Equipment; Food, Beverages & Groceries; Pets & Pet Supplies; Sundries, Pharmaceutical, & Convenience Sales; Wearing Apparel & Accessories			50	50	
Commercial Services					
Building Services; Business Support; Eating & Drinking; Financial Institutions; Assembly & Entertainment; Radio & Television Studios; Golf Course Support			50	50	
Visitor Accommodations		45	45	45	
Offices					
Business & Professional; Government; Medical, Dental & Health Practitioner; Regional & Corporate Headquarters			50	50	
Vehicle and Vehicular Equipment Sales and Services Use					
Commercial or Personal Vehicle Repair & Maintenance; Commercial or Personal Vehicle Sales & Rentals; Vehicle Equipment & Supplies Sales & Rentals; Vehicle Parking					
Wholesale, Distribution, Storage Use Category					
Equipment & Materials Storage Yards; Moving & Storage Facilities; Warehouse; Wholesale Distribution					
Research & Development				50	

	Compatible	Indoor Uses	Standard construction methods should attenuate exterior noise to an acceptable indoor noise level.
		Outdoor Uses	Activities associated with the land use may be carried out.
	Conditionally Compatible	Indoor Uses	Building structure must attenuate exterior noise to the indoor noise level indicated by the number for occupied areas.
		Outdoor Uses	Feasible noise mitigate techniques should be analyzed and incorporated to make the outdoor activities acceptable.
	Incompatible	Indoor Uses	New construction should not be undertaken.
		Outdoor Uses	Severe noise interference makes outdoor activities unacceptable.

Source: City 2008

NE-A.3. Limit future residential and other noise-sensitive land uses in areas exposed to high levels of noise.

NE-A.4. Require an acoustical study consistent with Acoustical Study Guidelines for proposed developments in areas where the existing or future noise level exceeds or would exceed the “compatible” noise level thresholds as indicated on the Land Use - Noise Compatibility Guidelines, so that noise mitigation measures can be included in the project design to meet the noise guidelines.

NE-A.5. Prepare noise studies to address existing and future noise levels from noise sources that are specific to a community when updating community plans.

CEQA Significance Thresholds

This report addresses the applicable City’s CEQA Significance Determination Thresholds, but with the following revisions. The City’s CEQA Significance Determination Thresholds contain specific traffic noise and land use compatibility significance thresholds that were previously included as a part of the City of San Diego Progress Guide and General Plan. Specifically, the Land Use Compatibility Chart Table (K-4) has been updated in the current General Plan (2008), and the Transportation Element of the 2008 General Plan does not include the traffic noise thresholds that are in Table K-2 of the City’s CEQA Significance Determination Thresholds. This analysis utilizes the 2008 General Plan Land Use-Noise Compatibility thresholds instead of Table K-4 to evaluate potential noise – land use compatibility impacts. Based on direction from City staff, the most conservative traffic noise guidelines should be utilized based on a combination of Table K-2 and the 2008 General Plan Land Use-Noise Compatibility thresholds. Thus, the traffic noise thresholds in the Table 1-5 below are used in this analysis.

Table 1-5
TRAFFIC NOISE SIGNIFICANCE THRESHOLDS IN CNEL

Structure or Proposed Use that would be impacted by Traffic Noise	Interior Space	Exterior Useable Space [1]	General Indication of Potential Significance
Single-family detached	45 dB	65 dB	Structure or outdoor useable area[2] is <50 feet from the center of the closest (outside) lane on a street with existing or future ADTs >7500[24]
Multi-family, schools, libraries, hospitals, day care, hotels, motels, parks, convalescent homes.	DSD/BDR ensures 45 dB pursuant to Title 24	65 dB	
Offices, Churches, Business, Professional Uses	50 dB*	70 dB	Structure or outdoor usable area is <50 feet from the center of the closest lane on a street with existing or future ADTs > 20,000
Commercial, Retail, Industrial, Outdoor Spectator Sports Uses	50 dB*	75 dB	Structure or outdoor usable area is <50 feet from the center of the closest lane on a street with existing or future ADTs >40,000

Source: City 2008 and City 2011
[1] If a project is currently at or exceeds the significance thresholds for traffic noise described above and noise levels would result in less than a 3 dB increase, then the impact is not considered significant.
[2] Exterior usable areas do not include residential front yards or balconies, unless the areas such as balconies are part of the required usable open space calculation for multi-family units.
[3] Traffic counts are available from:

- San Diego Regional Association of Governments (SANDAG) Regional Economic Development Information System: http://cart.sandag.cog.ca.us/REDI/
- SANDAG Traffic Forecast Information Center: http://pele.sandag.org/trfic.html

*Based on the more restrictive City of San Diego 2008 Land Use-Noise Compatibility Guidelines

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2.0 ENVIRONMENTAL SETTING

2.1 SURROUNDING LAND USES

The proposed site is surrounded by Del Mar Highlands Town Center shopping center to the east, a single-family residence to the southeast, office buildings to the south and west, and residential neighborhoods to the north. Del Mar Highlands Town Center is a 30-acre shopping center that contains retail shops, restaurants, major grocery store, and a major drug store, a theater, plaza, and amphitheater. The surrounding offices to the south contain a research and development company (Neurocrine Biosciences), and the Highlands Corporate Center complex to the west contains law offices, the Hydrologic Research Center, and other tenants. Residences north of the site (across Del Mar Heights Road) consist of condominiums. Surrounding buildings range from one to four stories.

2.2 SURROUNDING ROADWAY DESCRIPTIONS

Del Mar Height Road is a divided six-lane prime arterial adjacent to the site with a posted 40 miles per hour (mph) speed limit. El Camino Real is a divided six-lane major adjacent to the site with a posted 50 mph speed limit. High Bluff Drive is a collector with two lanes in the northbound direction and one lane in the southbound direction, and has a posted 30 mph speed limit. High Bluff Drive is located adjacent to a portion of the western project boundary.

2.3 EXISTING NOISE ENVIRONMENT

The primary noise sources in the vicinity of the project site include automobile and truck traffic noise along El Camino Real, Del Mar Heights Road, and High Bluff Drive. The shopping areas to the east have a negligible noise impact to the project site due to the distance separating the site and the existing noise levels. Residential uses in the surrounding areas are not considered substantial noise generators. While heating and ventilation systems and outdoor parking areas on the Neurocrine site to the south generate noise, these sources are not considered substantial because of the separation distance. Thus, this analysis focuses on the noise impacts from the surrounding roadways on the project, internal project impacts, and project impacts to adjacent uses.

2.4 FUTURE NOISE ENVIRONMENT

The surrounding project area is entirely built out with the exception of the project site. However, buildout of other areas in the region would lead to additional traffic on the roadways in the area that would generate traffic noise increases. The roadway classification, speed limit, alignment, truck percentages, and roadbed grade elevations are expected to remain the same for all surrounding roadways.

The impact analysis below is based on buildout traffic conditions, as the buildout conditions include the highest traffic and the worst-case noise scenario. The Existing Plus Project and Near-term With Project roadway traffic volumes are presented only for information and to show that the buildout conditions actually do represent the worst-case scenario. All noise planning for the site will be based on the future buildout traffic volumes.

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3.0 STUDY METHODS, EQUIPMENT, AND PROCEDURES

This section discusses the methods and procedures followed for the noise study, including the selection of noise measurement and receiver locations, noise measurement procedures, and noise impact evaluation.

3.1 METHODOLOGY

Typically, a “one-hour” equivalent sound level measurement (L_{EQ}, A-Weighted) is recorded for at least one noise-sensitive location on the site. During the on-site noise measurement, start and end times are recorded, vehicle counts are made for cars, medium trucks (double-tires/two axles), and heavy trucks (three or more axles) for the corresponding road segment(s). Supplemental sound measurements of one hour or less in duration are often made to further describe the noise environment of the site.

For measurements of less than one hour in duration, the measurement time is long enough for a representative traffic volume to occur and the noise level (L_{EQ}) to stabilize; 15 minutes is usually sufficient for this purpose. The vehicle counts are then converted to one-hour equivalent volumes by applying an appropriate factor. Other field data gathered include measuring or estimating distances, angles-of-view, slopes, elevations, roadway grades, and vehicle speeds. This information is subsequently verified using available maps and records.

3.2 EQUIPMENT

The following equipment was used to measure existing noise levels at the project site:

- Larson Davis System LxT Integrating Sound Level Meter
- Larson Davis Model CA250 Calibrator
- Windscreen and tripod for the sound level meter
- Distance measurement wheel
- Digital camera

The sound level meter was field-calibrated immediately prior to the noise measurement, to ensure accuracy. All sound level measurements conducted and presented in this report in accordance with the regulations, were made with a sound level meter that conforms to the American National Standards Institute specifications for sound level meters (ANSI SI.4-1983 R2001). All instruments are maintained with National Bureau of Standards traceable calibration per the manufacturers’ standards.

3.3 NOISE MODELING SOFTWARE

Modeling of the outdoor noise environment is accomplished using Computer Aided Noise Abatement (CADNA) Ver. 3.6, which is a model-based computer program, developed by DataKustik for predicting noise impacts in a wide variety of conditions. CADNA assists in the calculation, presentation, assessment, and mitigation of noise exposure. It allows for the input of project information, such as noise source data, barriers, structures, and topography to create a detailed CADNA model and uses the most up-to-date calculation standards to predict outdoor noise impacts. CADNA traffic noise prediction is based on the data and methodology used in the Federal Highway Administration Traffic Noise Model version 2.5.

The model calculated noise output is the one-hour L_{EQ}, and is the equivalent CNEL with the use of 8 to 10 percent of the average daily traffic [Caltrans Technical Noise Supplement Nov, 2009] (six to eight percent traffic may be converted by adding two to the one-hour L_{EQ} for the equivalent CNEL).

3.4 SUMMARY OF SITE-SPECIFIC FEATURES INCLUDED IN CADNA MODEL

The CADNA models (including both the existing and proposed conditions models) include the existing and modified site topography, and existing and planned on-site structures. The model takes into consideration that some of the structures provided noise shielding to other areas of the site. Please refer to Figure 1-3 for a view of where on-site structures will be located.

4.0 EXISTING NOISE ENVIRONMENT

As described in Section 2, the dominant noise source at the project site is traffic on the adjacent streets. An on-site inspection and traffic noise measurements were completed on the afternoon of April 3, 2009. Two "one-hour" equivalent measurements were made: one approximately in the middle of the project side adjacent to El Camino Real (M1); and the second one approximately in the middle of the project side adjacent to Del Mar Heights Road (M2). The measurement locations are shown as M1 and M2 on Figure 1-2. The microphone was placed at approximately five feet above the existing project site grade for both measurements.

4.1 SITE NOISE MEASUREMENTS AND COMPARISON CALCULATIONS

Traffic volumes for both roadways were recorded for automobiles, medium-size trucks, and large trucks during the measurement period. After a continuous 15-minute sound level measurement, no changes in the L_{EQ} were detectable and results were recorded. The measured noise level and related weather conditions are found in Table 4-1. The traffic counts for the 15-minute measurement and one-hour equivalent volumes are shown in Table 4-2.

Table 4-1
ON-SITE NOISE MEASUREMENT CONDITIONS AND RESULTS

Date	April 3, 2009
Time	1:30 p.m. – 2:45 p.m.
Conditions	Clear skies, winds from the west at 6 to 8 mph, temperature in the low 60s with moderate humidity
Measured Noise Level	
Location M1	67.4 dBA L_{EQ}
Location M2	66.3 dBA L_{EQ}

Table 4-2
TRAFFIC COUNTS

Roadway	Traffic	Autos	MT[1]	HT[2]
El Camino Real	15-minute Count	225	6	0
	Hourly	900	24	0
Del Mar Heights	15-minute Count	630	6	0
	Hourly	2520	24	0

[1] Medium Trucks (double-tires/two axles)
[2] Heavy Trucks (three or more axels)

4.2 CALCULATED NOISE LEVEL

The CADNA model generated traffic noise levels are shown in Table 4-3 with the measured noise levels and the difference between the two. A difference of less than two dB is considered sufficiently accurate without an adjustment.

Table 4-3
CALCULATED VERSUS MEASURED TRAFFIC NOISE DATA

Calibration Receiver Position	Calculated	Measured	Difference	Correction
El Camino Real	68.4 dBA L_{EQ}	67.4 dBA L_{EQ}	1.0 dB	None applied
Del Mar Heights	66.0 dBA L_{EQ}	66.3 dBA L_{EQ}	0.3 dB	None applied

5.0 IMPACTS

The City of San Diego Zoning Code includes property line noise limits and the General Plan includes noise standards for proposed land uses. These applicable standards are presented in the City of San Diego California Environmental Quality Act Significance Determination Thresholds and are utilized below to determine if the future noise levels would result in significant impacts.

5.1 SIGNIFICANCE THRESHOLDS

5.1.1 Construction Noise

According to the City's Significance Determination Thresholds, construction noise impacts may be significant if the project would:

- Result in temporary construction noise that exceeds noise levels identified in the City's Municipal Code 59.0404, including result in temporary construction noise level that exceeds an average sound level greater than 75 dBA L_{EQ} at a sensitive receptor during the 12-hour period from 7:00 a.m. to 7:00 p.m.

5.1.2 Operational Noise

Stationary Noise

According to the City's Significance Determination Thresholds, noise impacts may be significant if the project would:

- Generate noise that would expose surrounding properties to noise exceeding the City's Noise Ordinance, which allows noise levels up to (1) 55/50/45 dBA (7:00 a.m. to 7:00 p.m./7:00 p.m. to 10:00 p.m./10:00 p.m. to 7:00 a.m.) along the northern property line where multi-family is adjacent to multi-family; (2) 60/55/52.5 dBA where proposed multi-family is adjacent to commercial to the east and west; (3) 65/60/60 dBA along the southern property lines where commercial is adjacent to commercial; and (4) 57.5/52.5/50 dBA where commercial is adjacent to a single-family residence to the southeast.

Transportation Noise

Off-site Transportation Noise

According to the City's Significance Determination Thresholds, noise impacts may be significant if the project would:

- Increase ambient noise levels by more than 3 CNEL

On-Site Transportation Noise

According to the City's Significance Determination Thresholds, noise impacts may be significant if the project would:

- Expose on-site uses, or increase traffic noise in surrounding areas, to noise levels in excess of 65 CNEL at residences, hospitals, and care facilities; 70 CNEL at offices and professional uses; and 75 CNEL at commercial or outdoor spectator sport uses
- Expose habitable areas to interior noise levels in excess of 45 CNEL
- Expose office space to interior noise levels in excess of 50 CNEL

5.2 CONSTRUCTION NOISE IMPACTS

Construction activities can be roughly divided into seven phases, with these phases potentially exhibiting some overlap depending on specific locations and timing; rough grading, utilities excavation, foundation preparation, building construction, finish grading, paving, and landscaping. Site construction would entail the use of heavy equipment throughout the site for the full term of construction. While specific construction plans are not available, it is assumed that both an excavator (generating average noise levels of 80.7 dBA at 50 feet) and a loader (generating average noise levels of 79.1 dBA at 50 feet) would be used during the initial excavation. Other typical equipment for the proposed type of construction is assumed to include: small dozer, , backhoe loader(s), compactor(s), water truck, boom concrete pumper, trencher(s), forklifts, light mobile cranes or sky lifts, grader, paver, compactor, skid steer(s), mini excavator, trencher, and a variety of specific tools including welders, metal shears, and light hand tools. As indicated in the Geotechnical Report (Geotechnical Investigations, Inc. 2008), soils underlying the site include clay and silty soils and blasting or breaking would not be necessary to excavate for the underground parking structures. The equipment necessary for the construction phase of the proposed project would be typical of construction equipment used for general office/commercial construction. Construction hours would be limited to the hours and days indicated in the City of San Diego Municipal Code.

The loudest construction noise impact would occur during rough grading where the equipment may have a maximum noise levels at 50-feet of 85 to 90 dBA. At the closest off-site residence distance across Del Mar Heights Road this would be reduced to well below 75 dBA due to distance attenuation.

If an excavator and a loader are assumed to be working in the northeastern corner of Block C for the excavation of the subterranean parking structure, the construction noise impacts of Phase 3 to potential on-site residences at the northwest end of Block B might exceed 75 dBA L_{EQ} (12-hour), although the approximate level calculated with the Federal Construction Noise Levels and Ranges (Appendix A) is 74.7 dBA. This is based on the approximate 100 feet of separation between on-site residences and the impact footprint for Phase 3. As a result, construction noise impacts during construction of Phase 3 could be potentially significant.

5.3 OPERATIONAL NOISE IMPACTS

5.3.1 Stationary Source Impacts

The proposed improvements would introduce several operational stationary noise sources, which would be regulated by the Municipal Code property line noise limits. The specific noise generators could include refrigeration and freezer condensers (grocery store and restaurants), trash compactors, forklifts, delivery trucks, restaurant kitchen fans, HVAC, and parking lot traffic. Specific planning information is not currently available for this equipment; however, equipment examples would include a 100-ton capacity Carrier 30GTN100 (large building cooling system), which has an average sound power rating of 100 dBA, or a backup alarm with a typical 30-second per hour operational time and an approximate sound power of 109 dBA. Assuming a break in the line of sight due to parapet walls or intervening structures, noise generated by the building cooling system would be reduced to 45 dBA L_{EQ} at 120 feet. The backup alarm would produce an hourly average sound level of approximately 39 dBA L_{EQ}. As such, it is assumed that these sources would rarely create noise impacts to receivers over 120 feet from the noise source and are highly unlikely to impact any off-site areas across roadways. The office use directly to the south of the site (Neurocrine) would not be significantly impacted considering the distance from proposed structures to the property line, type of proposed uses on site, and the adjacent uses are commercial (65/60/60 dBA thresholds). Residences are not noise generators, and the parking structure and residences would be approximately 50 feet from the property line. Therefore, stationary source noise impacts to off-site receptors would be less than significant.

Because the proposed project is a mixed-used development, residential uses would be in close proximity to commercial uses and could be exposed to noise generated by on-site stationary noise sources. Due to the close proximity of these proposed uses, there is potential for on-site stationary sources to exceed the noise limits of the Noise Ordinance. Therefore, stationary source noise impacts to on-site sensitive receptors would be potentially significant.

5.3.2 Transportation Noise Impacts

Roadway Traffic Conditions and Improvements

Off-site traffic improvements would occur as part of project development. The off-site traffic improvements that are proposed to be implemented by the project would occur within the existing developed right-of-way and some would involve minor road widening (maximum of approximately four feet); however, none would result in increased traffic noise levels that would exceed traffic noise significance thresholds at noise-sensitive uses or exterior useable areas. The traffic noise impacts associated with these improvements would be less than significant.

Table 5-1 provides the Existing, Existing Plus Project (Buildout), Near-term without Project, Near-term With Project (Phase 1), Near-term With Project (Phases 1 and 2), Near-term With Project Buildout, and Long-term Cumulative (Year 2030) With Project traffic volumes for Del Mar Heights Road, El Camino Real, and High Bluff Drive in the project vicinity. Traffic volumes were taken from the Traffic Impact analysis prepared for the project (USA 2012).

Table 5-1
TRAFFIC VOLUMES ON PROJECT AREA ROADWAYS

	Roadway	Existing	Existing Plus Project (Buildout)	Near-term without Project	Near-term With Project (Phase 1)	Near-term With Project (Phases 1 and 2)	Near-term With Project Buildout	Long-term Cumulative (Year 2030) With Project
Del Mar Heights Rd								
1	I-5 Northbound Ramps to High Bluff Drive	51,625	62,140	54,775	58,631	61,721	65,290	62,315
2	High Bluff Drive to Third Avenue	37,910	50,042	40,648	45,098	48,664	52,781	54,902
3	Third Avenue to First Avenue	37,910	48,964	40,648	44,109	47,951	51,702	53,824
4	First Avenue to El Camino Real	37,910	48,964	40,648	43,120	47,951	51,702	53,824
5	El Camino Real to Carmel Country Road	32,674	39,953	33,654	36,324	38,463	41,473	46,189
El Camino Real								
6	Quarter Mile Drive to Del Mar Heights Road	14,925	16,543	15,373	15,966	16,441	16,990	30,618
7	Del Mar Heights Road to Townsgate Drive	14,731	10,123	17,014	18,497	19,686	22,406	28,392
8	Townsgate Drive to High Bluff Drive	15,425	18,930	16,662	17,947	18,977	20,167	29,505
9	High Bluff Drive to Valley Centre Drive	19,364	21,790	21,035	21,925	22,638	23,461	38,046
High Bluff Drive								
10	Del Mar Heights Road to El Camino Real	9,842	10,651	10,137	10,434	10,672	10,946	12,509

Off-site Transportation Noise Impacts

Off-site traffic noise contours were developed for the Existing Conditions, Existing Plus Project (Buildout), Near-term Without Project, Near-term with Project (Phase 1), Near-term With Project (Phases 1 and 2), Near-term With Project Buildout, and Long-term Cumulative (Year 2030) With Project traffic scenarios using CADNA modeling software to show estimated traffic noise levels at off-site locations in the project vicinity. The off-site traffic noise contours for these conditions are illustrated in the following figures:

- Figure 5-1: Off-site Traffic Noise Contours – Existing Conditions
- Figure 5-2: Off-site Traffic Noise Contours – Existing Conditions Plus Project Buildout
- Figure 5-3: Off-site Traffic Noise Contours – Near-term Near-term Without Project
- Figure 5-4: Off-site Traffic Noise Contours – Near-term With Project Phase 1
- Figure 5-5: Off-site Traffic Noise Contours – Near-term With Project Phases 1 and 2
- Figure 5-6: Off-site Traffic Noise Contours – Near-term With Project Phases 1, 2, and 3
- Figure 5-7: Off-site Traffic Noise Contours – Long-term Cumulative (Year 2030) With Project

In order for a significant three CNEL traffic noise increase to occur as a result of a project, a project would have to double the amount of traffic on a roadway maintaining full speed (if speed is less than the existing speed, then noise would not reach the three-dBA/CNEL increase). As shown in Figures 5-1 through 5-7, traffic noise levels would not exceed 65 CNEL at exterior useable areas in the project vicinity. Project construction and operation would not double the amount of traffic on any roadway. Therefore, project off-site traffic noise impacts would be less than significant.

Traffic/Land Use – Noise Compatibility Impacts

As indicated in the Noise Element (City 2008), the Land Use-Noise Compatibility Guidelines were established for "evaluating land use noise compatibility when reviewing proposed land use development projects."

As indicated in the existing conditions, noise generated in the project vicinity is primarily from traffic noise; other off-site noise sources have a negligible contribution to noise levels at nearby off-site or on-site residential. On site, there is a potential for the proposed mixed uses to have land use-noise compatibility issues. Thus, the on-site land use compatibility noise analysis focuses on traffic noise at the project site and compatibility between proposed uses.

<u>Off-site Land Use - Noise Compatibility Impacts to Proposed Uses</u>

As shown in Table 5-1, the buildout (Long-term Cumulative [Year 2030] With Project) scenario would experience more overall traffic compared to the Existing Plus Project and Near-term With Project scenarios. Thus, the buildout traffic volumes are utilized in the noise impact analysis below to insure the worst-case scenario is analyzed for on-site impacts. However, on-site traffic noise contours were developed for the Existing Plus Project (Buildout), Near-term With Project (Phase 1), Near-term With Project (Phases 1 and 2), Near-term With Project Buildout, and

Long-term Cumulative (Year 2030) With Project traffic scenarios using CADNA modeling software to show estimated traffic noise levels within the project site. The on-site noise contours for these conditions are illustrated in Figures 5-8 through 5-12:

- Figure 5-8: On-site Traffic Noise Contours – Existing Conditions Plus Project Buildout
- Figure 5-9: On-site Traffic Noise Contours – Near-term With Project Phase 1
- Figure 5-10: On-site Traffic Noise Contours – Near-term With Project Phases 1 and 2
- Figure 5-11: On-site Traffic Noise Contours – Near-term With Project Phases 1, 2, and 3
- Figure 5-12: On-site Traffic Noise Contours – Long-term Cumulative (Year 2030) With Project

To determine the compatibility impacts of traffic noise to the proposed uses, a series of modeling receivers were identified. This noise modeling focused on residential receivers, as the residential receivers are located along the roadway with the most traffic (Del Mar Heights Road), have the lowest traffic noise threshold (65 CNEL). The noise receiver modeling locations were placed along the periphery edge of the buildings with views of the major roadways at twenty-five feet above the approximate ground elevation of the building. This is intended to take into account an interior first-floor height of 15 feet, five feet between stories for HVAC and utilities, and another five feet to represent the approximate height of a person standing in a second-floor residence. These residential receiver points R 01 to R 84 were numbered in clockwise direction starting from the western side of the site and are shown on Figure 5-13, Residential Receiver Analysis Locations. Table 5-2 below shows the future noise level at the proposed residential building facades.

Table 5-2
UNMITIGATED BUILDOUT NOISE CONDITIONS*

Receiver	CNEL (dBA*)	Receiver	CNEL (dBA)	Receiver	CNEL (dBA)	Receiver	CNEL (dBA)
R 01	55.1	R 22	45.3	R 43	55.5	R 64	**69.2**
R 02	54.6	R 23	57.2	R 44	50.3	R 65	**69.2**
R 03	56.6	R 24	**61.0**	R 45	42.7	R 66	**67.7**
R 04	**60.8**	R 25	**66.7**	R 46	49.8	R 67	**63.3**
R 05	**61.8**	R 26	**69.5**	R 47	59.6	R 68	**63.1**
R 06	**60.8**	R 27	**69.4**	R 48	**64.8**	R 69	**64.1**
R 07	52.8	R 28	**69.4**	R 49	**66.4**	R 70	**67.5**
R 08	49.5	R 29	**67.5**	R 50	**67.1**	R 71	**69.3**
R 09	58.2	R 30	**67.5**	R 51	**67.0**	R 72	**69.9**
R 10	**63.4**	R 31	**69.5**	R 52	**66.3**	R 73	**69.8**
R 11	**67.7**	R 32	**69.5**	R 53	**62.1**	R 74	**69.0**
R 12	**68.5**	R 33	**69.5**	R 54	52.5	R 75	**69.5**
R 13	**68.8**	R 34	**68.5**	R 55	58.5	R 76	**70.2**

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Off-site Traffic Noise Contours - Existing Conditions

ONE PASEO

HELIX Environmental Planning

Figure 5-1

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Off-site Traffic Noise Contours - Existing Conditions Plus Project Buildout

ONE PASEO

HELIX
Environmental Planning

Figure 5-2

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Off-site Traffic Noise Contours – Near-term Without Project

ONE PASEO

Figure 5-3

HELIX Environmental Planning

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Off-site Traffic Noise Contours – Near-term With Project Phase 1

ONE PASEO

Figure 5-4

HELIX Environmental Planning

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Off-site Traffic Noise Contours – Near-term With Project Phases 1 and 2

ONE PASEO

Figure 5-5

HELIX Environmental Planning

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Off-site Traffic Noise Contours – Near-term With Project Phases 1, 2 and 3

ONE PASEO

Figure 5-6

HELIX
Environmental Planning

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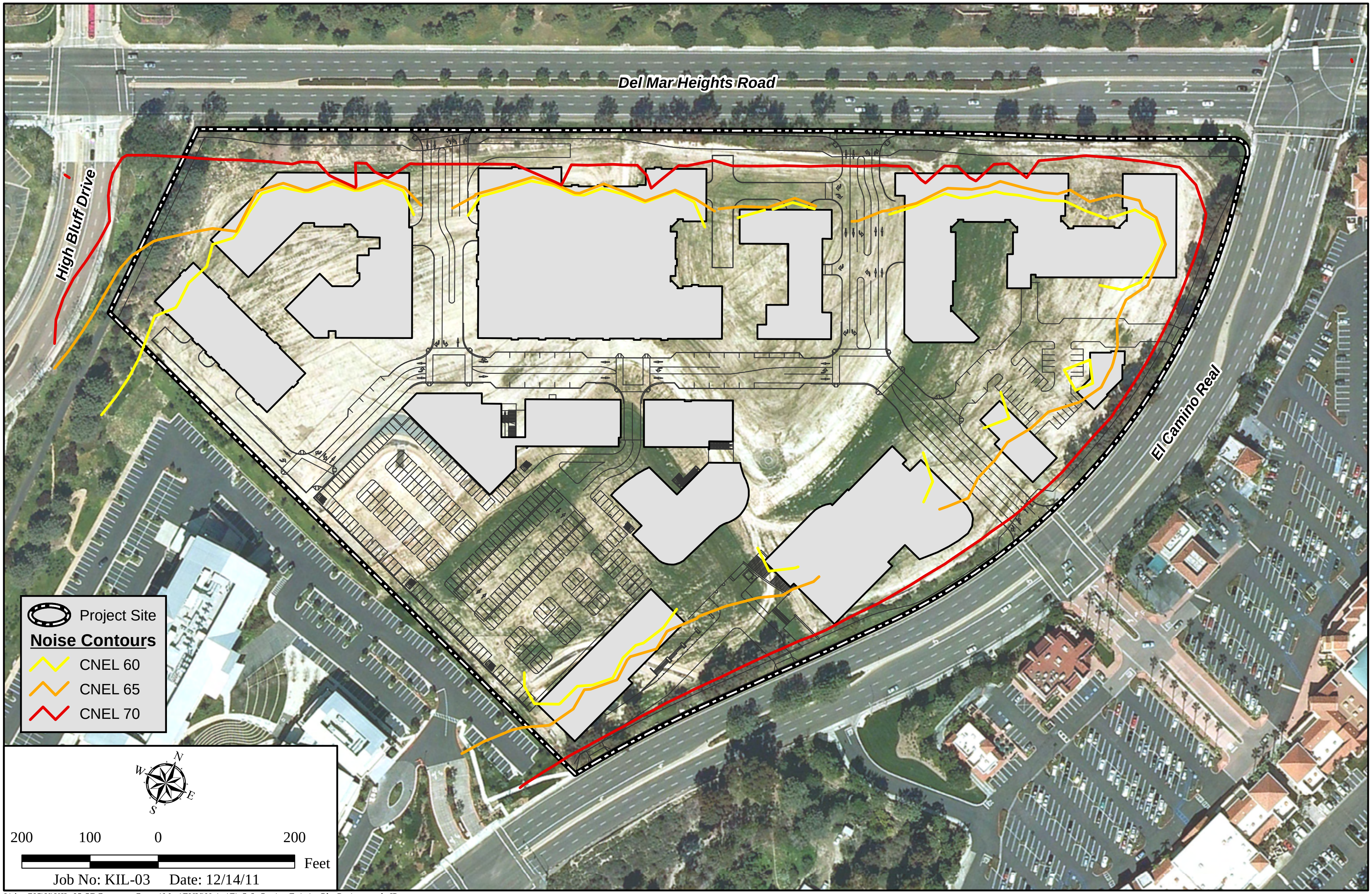
Off-site Traffic Noise Contours – Long-term Cumulative Plus Project Buildout

ONE PASEO

Figure 5-7

HELIX Environmental Planning



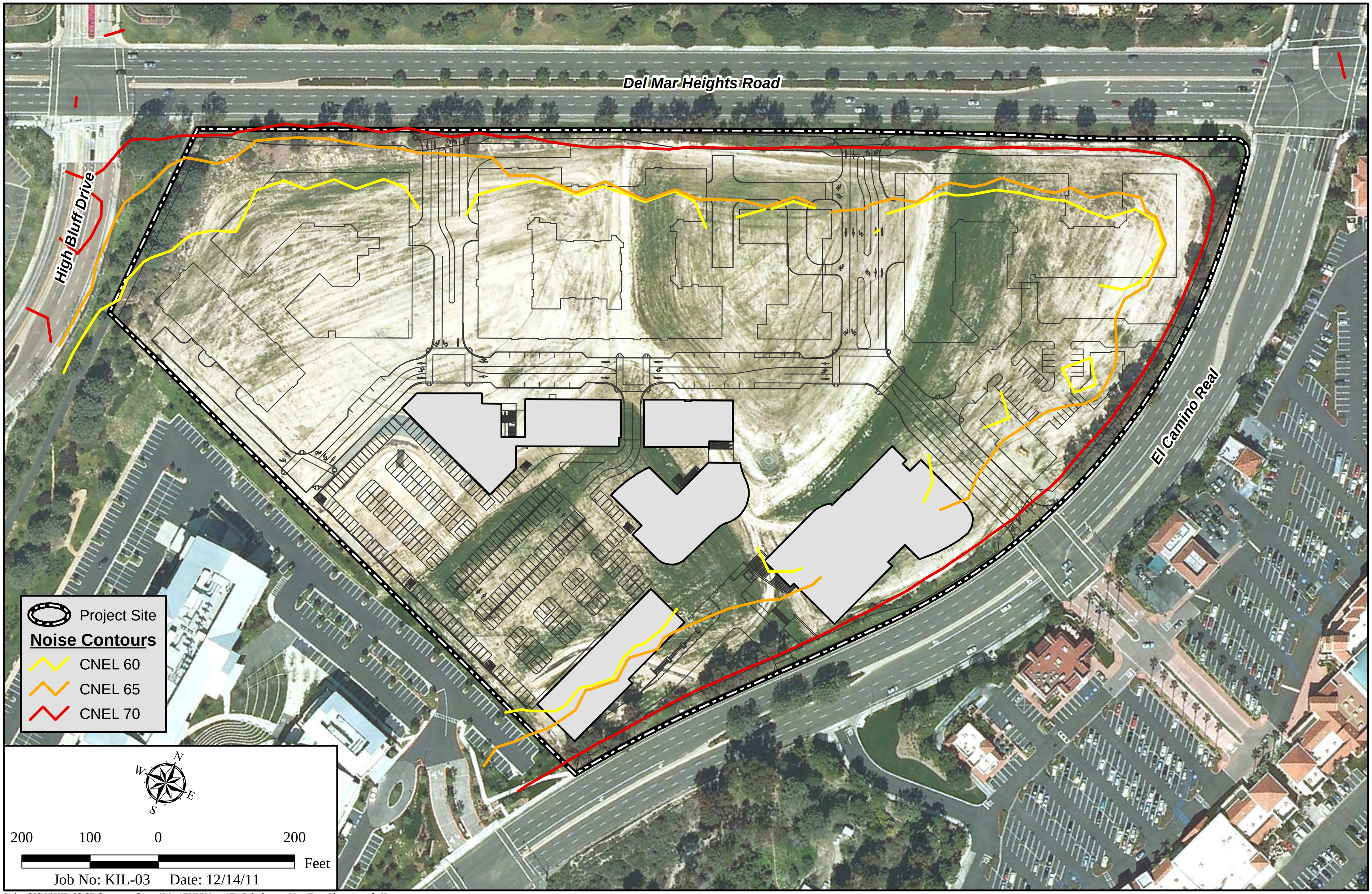
I:\ArcGIS\K\KIL-03 SDCorporateCenter\Map\ENV\Noise\Fig5-8_Onsite_ExistingPlusProject.mxd -JP

On-site Traffic Noise Contours - Existing Conditions Plus Project Buildout

ONE PASEO

Figure 5-8

HELIX Environmental Planning



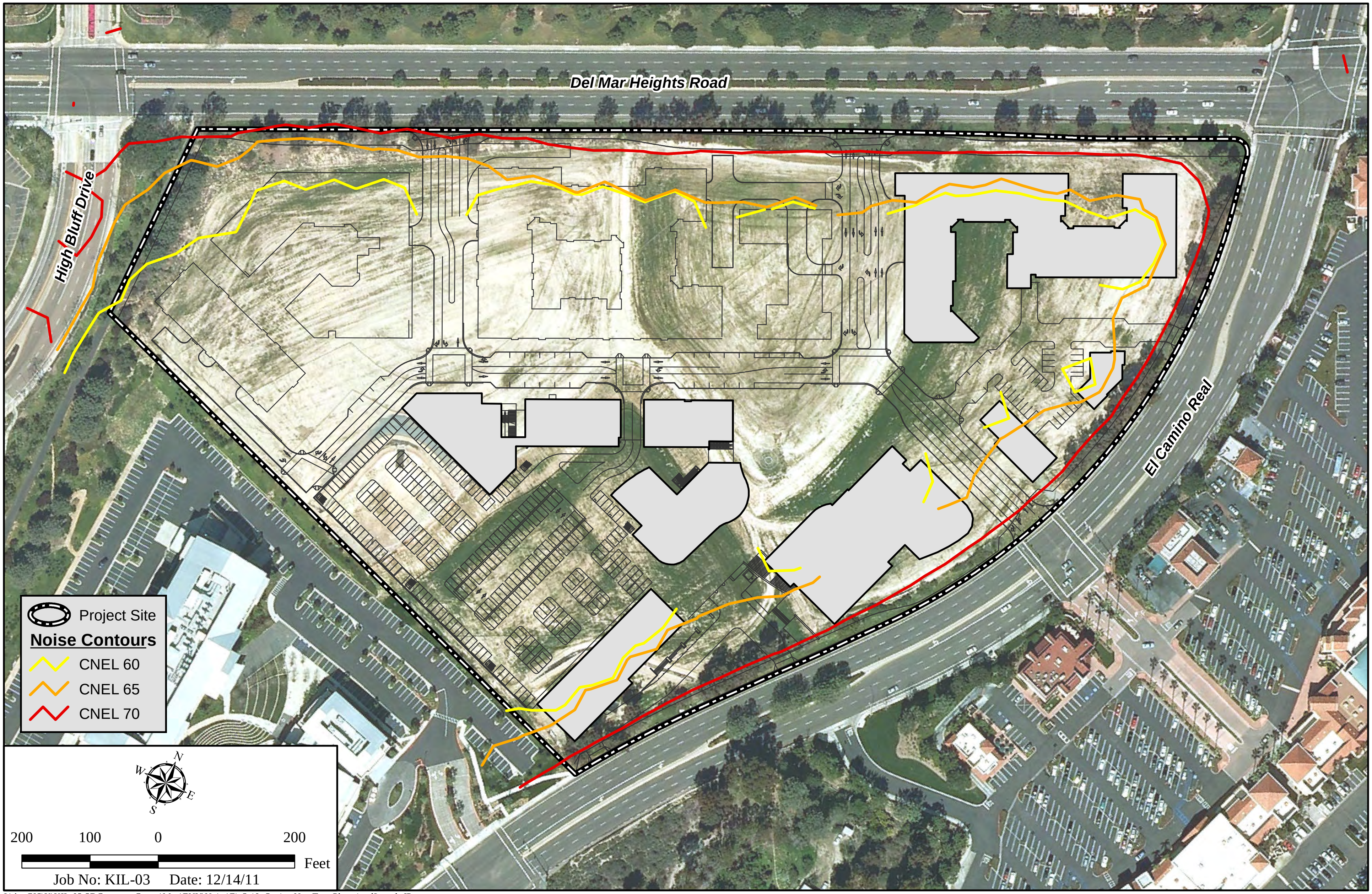
I:\ArcGIS\K\KIL-03 SDCorporateCenter\Map\ENV\Noise\Fig5-9_Onsite_NearTermPhase1.mxd -JP

On-site Traffic Noise Contours – Near-term With Project Phase 1

ONE PASEO

Figure 5-9

HELIX Environmental Planning



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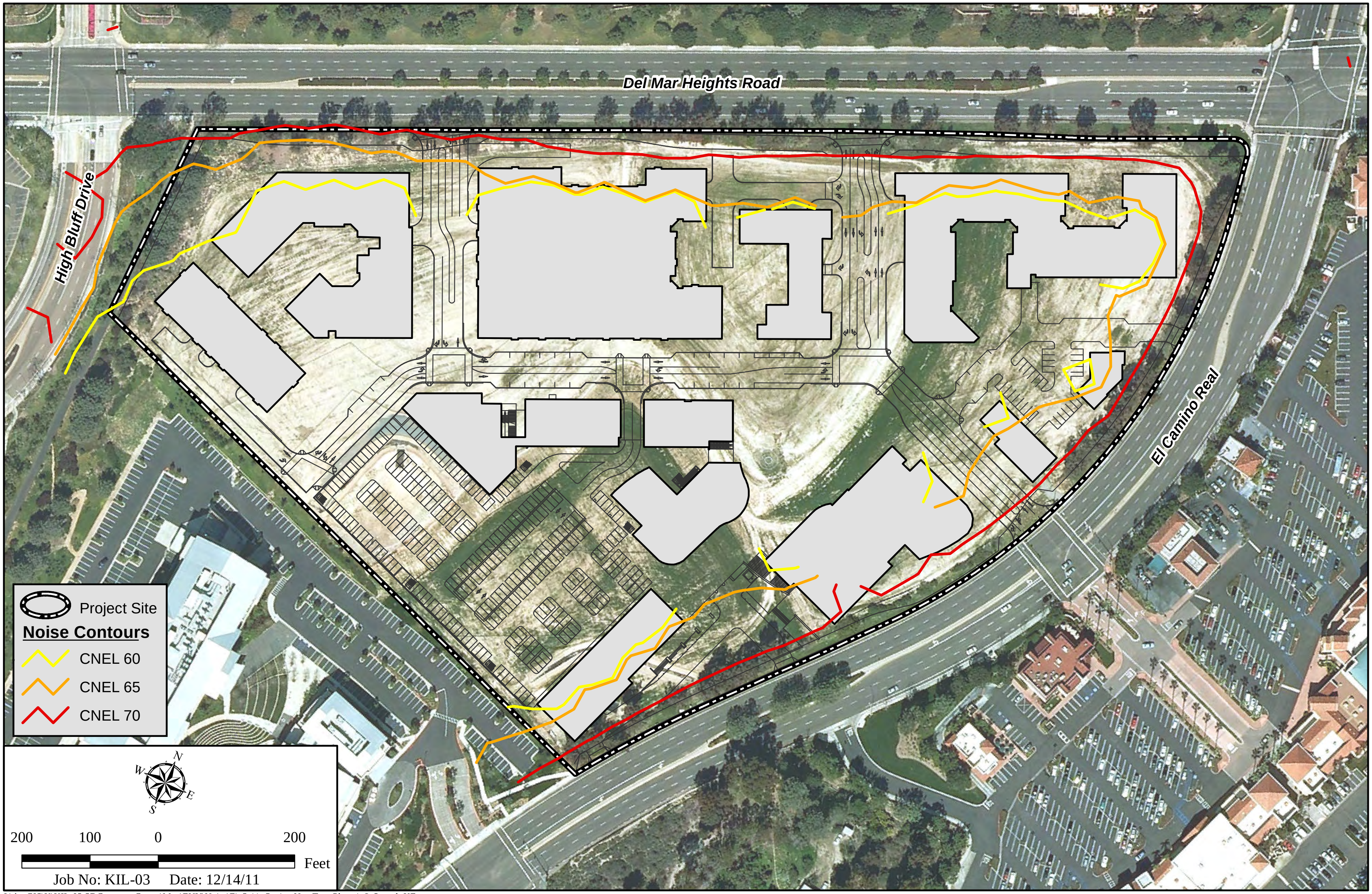
On-site Traffic Noise Contours – Near-term With Project Phases 1 and 2

ONE PASEO

Figure 5-10

HELIX
Environmental Planning



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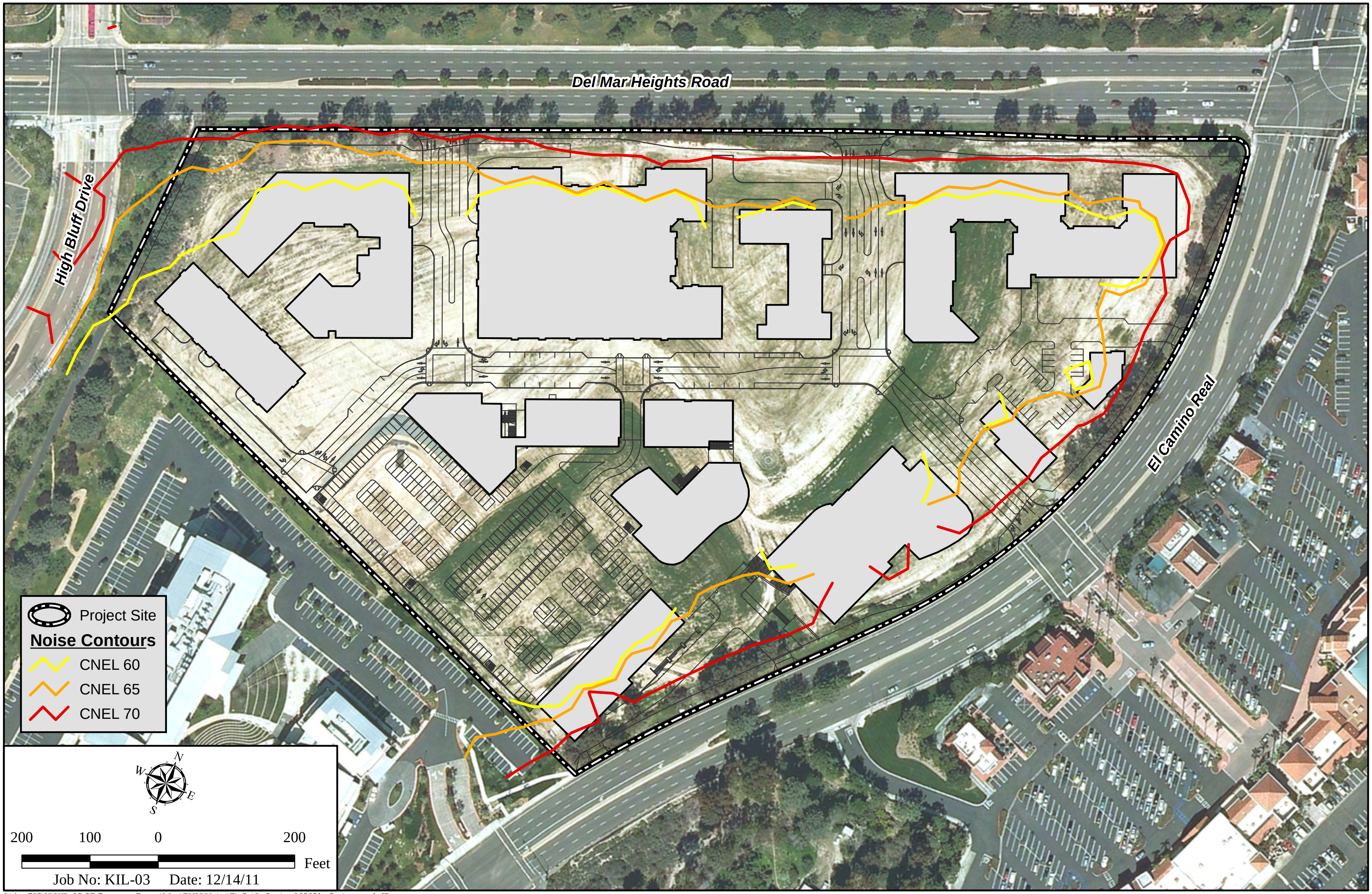
On-site Traffic Noise Contours – Near-term With Project Phases 1, 2 and 3

ONE PASEO

Figure 5-11

HELIX Environmental Planning



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On-site Traffic Noise Contours – Long-term Cumulative Plus Project Buildout

ONE PASEO

Figure 5-12

HELIX
Environmental Planning

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Residential Receiver Analysis Locations

ONE PASEO

HELIX Environmental Planning

Figure 5-13

Table 5-2 (cont.) UNMITIGATED BUILDOUT NOISE CONDITIONS*							
Receiver	**CNEL (dBA*)**	**Receiver**	**CNEL (dBA)**	**Receiver**	**CNEL (dBA)**	**Receiver**	**CNEL (dBA)**
R 14	**69.2**	R 35	**65.2**	R 56	59.0	R 77	**68.9**
R 15	**69.1**	R 36	**64.0**	R 57	57.5	R 78	**66.6**
R 16	**67.5**	R 37	58.1	R 58	56.5	R 79	**63.8**
R 17	**61.7**	R 38	42.5	R 59	56.7	R 80	**62.1**
R 18	58.1	R 39	55.1	R 60	59.8	R 81	**61.4**
R 19	53.4	R 40	55.2	R 61	**66.4**	R 82	**61.4**
R 20	50.2	R 41	56.6	R 62	**69.3**	R 83	58.8
R 21	44.3	R 42	56.5	R 63	**69.2**	R 84	**61.5**

Table 5-2 and Figure 5-13 show future traffic noise levels at the proposed project building facades assuming no external mitigation. As shown, several residential receivers would be located in areas experiencing an exterior noise level greater than 60 CNEL. These residences could have interior noise levels that exceed 45 CNEL considering that standard construction leads to an approximate 15-dBA/CNEL reduction. Thus, residences are not considered compatible with the future traffic noise levels on site along the perimeter of the site (Figures 5-7 through 5-10) and the proposed project would result in a potentially significant land use-noise compatibility impact.

Proposed exterior usable areas associated with residences would not be exposed to noise levels exceeding the 65 CNEL threshold, as the open space areas used to meet the open space requirements would be designed to be located outside the 65 CNEL contour (Figure 5-13). Thus, proposed residential outdoor usable areas would have a less than significant impact related to land use-noise compatibility.

The project does not include exterior usable office or retail space within areas exceeding 75 CNEL, respectively. However, the project includes commercial office space located within the 65 CNEL or higher contour, and thus it would potentially be exposed to interior noise levels above the 50 CNEL land use-noise compatibility threshold (considering the 15-dBA/CNEL standard construction attenuation). Thus, proposed commercial uses would be considered to be significantly impacted.

<u>On-site Land Use - Noise Compatibility Impacts Between Proposed Uses</u>

As discussed above, the project would include several new noise sources. These new noise sources could pose land use–noise compatibility issues within the project site between residential/hotel uses and commercial uses. Specifically, proposed on-site grocery stores, retail, restaurants, and nighttime entertainment venues may have a noise impact to proposed residences or hotel uses where these uses occur adjacent to each other or are stacked residential/hotel over commercial. These impacts would likely be from HVAC systems and other types of air movement systems such as restaurant kitchen fans (grease fans), with noticeable impacts from amplified music systems. Since building plans and specific uses/tenants have not yet been developed or identified, it is not feasible to accurately analyze the potential noise compatibility issues. It is apparent, however that without proper planning there is potential for the areas with commercial and residential uses stacked or adjacent to each other to experience significant compatibility noise impacts.

5.4 IMPACT SUMMARY

- While construction noise at surrounding properties would be in compliance with the Municipal Code, construction of Phase 3 while Phase 2 is occupied would result in noise levels at on-site residencies greater than the 75 dBA average required by the City of San Diego Municipal Code. Thus, construction noise impacts are considered potentially significant and mitigation would be required.

- While the project’s stationary noise impacts to off-site properties would be in compliance with the Municipal Code, on-site uses may exceed the Municipal Code noise limits. This impact would be considered potentially significant and would require mitigation.

- Project off-site transportation noise impacts would be less than significant.

- Noise impacts from the surrounding environment (roadways) to the proposed residential and commercial uses would be potentially significant per the land use-noise compatibility guidelines. Mitigation would be required.

- The mix of commercial and residential/hotel uses on site would potentially result in the exceedance of the Land Use – Noise Compatibility Guidelines. These impacts would be considered potentially significant and would require mitigation.

Project off-site transportation noise impacts would be less than significant.

6.0 MITIGATION

6.1 CONSTRUCTION NOISE MITIGATION

As indicated in Section 5.3, project on-site construction noise impacts could be significant if Phase 3 is constructed when residential units in Phase 2 are occupied. As such, the following mitigation shall be implemented to reduce this potential impact to below a level of significance:

> During construction of Phase 3, noise attenuation shall be provided sufficient to comply with the Noise Ordinance. Potential attenuation measures include, but are not limited to, use of sound walls, sound blankets, noise attenuation devices/modifications to construction equipment, and use of quieter equipment. As one option, a temporary 12-foot-high noise barrier[1] could be constructed 50-feet in both (north-south) directions along Third Avenue from the point(s) where the proposed subterranean parking garage is within 100 feet of occupied residences.

Construction impacts of off-site properties would be less than significant and no mitigation for construction impacts to off-site residences would be required.

6.2 OPERATIONAL NOISE MITIGATION

Stationary Noise Mitigation

While the proposed project would not have stationary noise impacts at external property lines, the potential on-site uses may experience noise in exceedance of the Municipal Code stationary noise source thresholds. Analysis of the on-site noise impacts cannot be completed at this time as specific building plans have not yet been developed for analysis. Mitigation to control the potential residential and commercial noise sources is always feasible for normal commercial and residential sources with building plan analysis and planning prior to construction. Prior to issuance of the building permits, an on-site noise impact study shall be completed and the appropriate measures shall be incorporated into the project design to ensure compliance with Municipal Code noise limits.

6.3 PROJECT OFF-SITE TRANSPORTATION NOISE MITIGATION

As indicated in Section 5.3, project traffic generated on roadways would lead to a less than significant traffic noise impact and no mitigation is required.

[1] The normal, minimum noise reduction of a barrier which fully breaks the line of site between the noise source and the noise receiver is 5 dBA. Therefore the noise impact would easily be reduced to well below 75 dBA L_{EQ} (12-hour), if it would otherwise be slightly above.

6.4 ON-SITE TRANPORTATION NOISE/LAND USE – NOISE COMPATIBILITY MITIGATION

Off-site Land Use - Noise Compatibility Impacts to Proposed Uses

Where residential exterior noise levels are in exceedance of 60 CNEL and commercial exterior noise levels are in exceedance of 65 CNEL, noise levels may exceed allowable interior standards after the 15 CNEL exterior-to-interior reduction assumed to be provided by standard building construction. However, feasible exterior-to-interior noise control elements may be incorporated in the building design to control interior noise for any commercial or residential interior space. Mitigation for interior noise is provided by analysis of the planned building features for the usable interior space. This information must include wall heights and lengths, room volumes, window and door tables typical for a building plan, as well as information on any other openings in the building shell. With this specific building plan information, the analyst can determine the predicted interior noise levels at the planned on-site buildings. If predicted noise levels are too high, the analyst may require enhanced glazing or even an enhanced wall design. Glazing is available with Sound Transmission Control (STC) ratings from a normal low of STC 22 to readily-available STC 40, and even up to STC 60 for extreme noise levels. Likewise, a typical wall may have STC ratings as low as 34, which can be raised as high as STC 60.

It is important to recognize in the planning of residential structures that simple air conditioning does not fulfill the building code specifications for forced fresh air ventilation. The International Building Code 2006 states "Section 1203.1 General. Buildings shall be provided with natural ventilation in accordance with Section 1203.4 or mechanical ventilation in accordance with the International Mechanical Code."

As the efficacy of the noise attenuation measures in this report is unknown, the mitigation to be provided would require an exterior-to-interior noise analysis for the residential and commercial spaces once building plans become available. This analysis shall show what measures are required to reduce interior residential space to 45 CNEL and interior commercial office space to 50 CNEL. These measures shall be required to be incorporated into the project design prior to issuance of building permits.

On-site Land Use - Noise Compatibility Impacts Between Proposed Uses

As indicated in the impact discussion above, there is potential for operation of retail and commercial uses on site to cause internal project exceedance of the land use-noise compatibility guidelines at the proposed residences and hotel. To mitigate this significant land use-noise compatibility impact, an interior noise analysis of proposed residences shall be completed prior to building permit issuance to determine the appropriate measures that shall be incorporated into building design to ensure residential interior noise levels would be below 45 CNEL. These land use-noise compatibility measures may include the following:

- No routing commercial air handling ducts in or adjacent interior living space walls without specific plans to address isolation;

- No direct mounting of commercial HVAC systems over interior living areas without specific plans to address isolation;
- Care in mounting clusters of residential HVAC systems over residential areas;
- No routing of coolant or large water lines including HVAC water for commercial services in walls adjacent living areas without specific plans to address isolation;
- No operable windows looking directly at any rooftop HVAC systems in adjacent buildings;
- No elevator shafts directly adjacent living quarters without specific plans to address isolation;
- No use of commercial spaces for nighttime entertainment, which have a common floor ceiling to a living space;
- Limitations on the use of exterior amplified music systems associated with entertainment such as prohibiting exterior amplified music systems in areas directly adjacent to or below on-site residences[2]; and
- Strict enforceable commercial lease agreements to control interior and exterior noise to limit impacts to residential areas.

[2] This excludes temporary outside amplification systems use for a short-term special event conducted with a separate City special event permit.

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7.0 CONCLUSION

No on-site to off-site noise impacts are anticipated from either the construction or operation of the proposed project. In addition, the project would not generate substantial traffic noise on exterior roadways. However, construction noise generated by Phase 3 when residential units in Phase 2 are occupied would result in potentially significant on-site construction noise impacts. In addition, buildout traffic conditions would result in noise levels on site that exceed the Land Use – Noise Compatibility thresholds for residential and commercial uses. Also, proposed on-site uses could generate stationary noise that would exceed the Municipal Code noise limits and the Land Use – Noise Compatibility Guidelines. These impacts would be considered significant and would require mitigation.

Proposed mitigation would reduce potential on-site impacts to less than significant levels. A temporary noise wall would be constructed on site in between the proposed Phase 3 construction and occupied Phase 2 units to reduce construction noise to less than significant levels. To mitigate land use-noise compatibility impacts to residences and commercial uses from roadway noise enhanced building materials could be used. An exterior-to-interior noise analysis would be required, and the measures determined to be needed to reduce interior noise levels shall be incorporated into the project design prior to the issuance of building permits. To mitigate for potential on-site residential/hotel land-use compatibility impacts, an interior noise analysis of building plans shall be completed and appropriate measures shall be required, which would be related to HVAC, elevator, amplification devices, and specific lease agreements. To ensure no on-site noise impacts would result from the project, an on-site noise impact study shall be completed once building plans have been developed and, if necessary, measures shall be incorporated to ensure that on-site noise impacts are less than significant per the Municipal Code.

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8.0 CERTIFICATION

The findings and recommendations of this acoustical analysis report are based on the information available and are a true and factual analysis of the potential acoustical issues associated with the One Paseo Project located in the City of San Diego, California. This report was prepared by Charles Terry.

Charles Terry, Acoustics and Noise Group Manager

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9.0 REFERENCES

1. 2001 California Building Code, Based on the 1997 Uniform Building Code, Appendix Chapter 12, Division II - Sound Transmission Control, Section 1208 - *Sound Transmission Control*.

2. 2001 California Building Code, Based on the 1997 Uniform Building Code, Chapter 12, Section 1203.3 - Ventilation.

3. 2001 California Noise Insulation Standards, effective 11/01/02, Based on 1997 Uniform Building Code, California Code of Regulations, Title 24.

4. California Department of Transportation, Traffic Noise Model.

5. City of San Diego Noise Element to the General Plan, 2008.

6. City of San Diego California Environmental Quality Act Significance Determination Thresholds, 2011.

7. Harris, Cyril M., Handbook of Acoustical Measurements and Noise Control, 3rd Edition, Acoustical Society of America, 1998.

8. Heeden, Robert A., Compendium of Materials for Noise Control, U.S. Department of Health, Education and Welfare, National Institute for Occupational Safety and Health, November 1978.

9. Irvine, Leland K., Richards, Roy L., Acoustics and Noise Control Handbook for Architects and Builders, Kreiger Publishing Company, 1998.

10. NBS Building Sciences Series 77, Acoustical and Thermal Performance on Exterior Residential Walls, U.S. Department of Commerce/National Bureau of Standards, November 1976.

11. Urban Systems Associated, Traffic Impact Analysis for One Paseo, March 23, 2012.

12. Western Electro-Acoustic Laboratory, Inc., 1711 Sixteenth Street, Santa Monica, California 90404, 213-80-9268, Sound Transmission Loss Vs. Glazing Type, Window Size and Air Filtration , January 1985. The research described in this report was prepared for the California Association of Window Manufacturers, 823 North Harbor Boulevard, Suite E, Fullerton, California 92632, 714-525-7088.

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Appendix A

FOR ACOUSTICAL REPORT

FHWA CONSTRUCTION NOISE LEVELS AND RANGES

9.0 CONSTRUCTION EQUIPMENT NOISE LEVELS AND RANGES

9.1 Equipment Type Inventory and Related Emission Levels

Noise levels generated by individual pieces of construction equipment and specific construction operations form the basis for the prediction of construction-related noise levels. A variety of information exists related to sound emissions related to such equipment and operations. This data transcends the period beginning in the 1970s thru 2006. This information exists for both stationary and mobile sources and for steady, intermittent, and impulse type generators of noise.

9.1.1 Stationary Equipment

Stationary equipment consists of equipment that generates noise from one general area and includes items such as pumps, generators, compressors, etc. These types of equipment operate at a constant noise level under normal operation and are classified as non-impact equipment. Other types of stationary equipment such as pile drivers, jackhammers, pavement breakers, blasting operations, etc., produce variable and sporadic noise levels and often produce impact-type noises. Impact equipment is equipment that generates impulsive noise, where impulsive noise is defined as noise of short duration (generally less than one second), high intensity, abrupt onset, rapid decay, and often rapidly changing spectral composition. For impact equipment, the noise is produced by the impact of a mass on a surface, typically repeating over time.

9.1.2 Mobile Equipment

Mobile equipment such as dozers, scrapers, graders, etc., may operate in a cyclic fashion in which a period of full power is followed by a period of reduced power. Other equipment such as compressors, although generally considered to be stationary when operating, can be readily relocated to another location for the next operation.

9.2 Sources of Information

Construction-related equipment and operation noise level data may be provided by numerous sources, including suppliers, manufacturers, agencies, organizations, etc. Some information is included in this document, and many web-based links are given for equipment manufacturers.

9.3 Specifics of Construction Equipment and Operation Noise Inventories

Details included in each specific inventory of construction equipment and operation noise emission levels are often variable in terms of how data is represented. Some inventories include ranges of noise levels while others present single numbers for each equipment type. Others provide levels for specific models of each type of construction equipment. Often, different noise descriptors are used, such as L_{Aeq}, L_{max}, L_{10}, sound power level, etc. As such, the array of data does not readily lend itself to being combined into a single table or easily compared. As such, this Handbook attempts to summarize a variety of such inventories and provide links to each, thereby providing the reader with a variety of sources from which to choose the appropriate levels for use in his or her respective analysis.

9.4 Summaries of Referenced Inventories

Included below are examples of several inventories of construction-related noise emission values. These and additional inventories are included on the companion CD-ROM.

9.4.1 RCNM Inventory

Equipment and operation noise levels in this inventory are expressed in terms of L_{max} noise levels and are accompanied by a usage factor value. They have been recently updated and are based on extensive measurements taken in conjunction with the Central Artery/Tunnel (CA/T) Project. Table 9.1 summarizes the equipment noise emissions database used by the CA/T Project. While these values represent the "default" values for use in the RCNM, user-defined equipment and corresponding noise levels can be added.

Table 9.1 RCNM Default Noise Emission Reference Levels and Usage Factors.

Equipment Description	Impact Device?	Acoustical Usage Factor (%)	Spec. 721.560 L_{max} @ 50 feet (dBA, slow)	Actual Measured L_{max} @ 50 feet (dBA, slow) (Samples Averaged)	Number of Actual Data Samples (Count)
All Other Equipment > 5 HP	No	50	85	N/A	0
Auger Drill Rig	No	20	85	84	36
Backhoe	No	40	80	78	372
Bar Bender	No	20	80	N/A	0
Blasting	Yes	N/A	94	N/A	0
Boring Jack Power Unit	No	50	80	83	1
Chain Saw	No	20	85	84	46
Clam Shovel (dropping)	Yes	20	93	87	4
Compactor (ground)	No	20	80	83	57
Compressor (air)	No	40	80	78	18
Concrete Batch Plant	No	15	83	N/A	0
Concrete Mixer Truck	No	40	85	79	40
Concrete Pump Truck	No	20	82	81	30
Concrete Saw	No	20	90	90	55
Crane	No	16	85	81	405
Dozer	No	40	85	82	55
Drill Rig Truck	No	20	84	79	22
Drum Mixer	No	50	80	80	1
Dump Truck	No	40	84	76	31
Excavator	No	40	85	81	170
Flat Bed Truck	No	40	84	74	4
Front End Loader	No	40	80	79	96
Generator	No	50	82	81	19
Generator (<25KVA, VMS Signs)	No	50	70	73	74
Gradall	No	40	85	83	70

Grader	No	40	85	N/A	0
Grapple (on backhoe)	No	40	85	87	1
Horizontal Boring Hydraulic Jack	No	25	80	82	6
Hydra Break Ram	Yes	10	90	N/A	0
Impact Pile Driver	Yes	20	95	101	11
Jackhammer	Yes	20	85	89	133
Man Lift	No	20	85	75	23
Mounted Impact Hammer (hoe ram)	Yes	20	90	90	212
Pavement Scarifier	No	20	85	90	2
Paver	No	50	85	77	9
Pickup Truck	No	40	55	75	1
Pneumatic Tools	No	50	85	85	90
Pumps	No	50	77	81	17
Refrigerator Unit	No	100	82	73	3
Rivit Buster/Chipping Gun	Yes	20	85	79	19
Rock Drill	No	20	85	81	3
Roller	No	20	85	80	16
Sand Blasting (single nozzle)	No	20	85	96	9
Scraper	No	40	85	84	12
Sheers (on backhoe)	No	40	85	96	5
Slurry Plant	No	100	78	78	1
Slurry Trenching Machine	No	50	82	80	75
Soil Mix Drill Rig	No	50	80	N/A	0
Tractor	No	40	84	N/A	0
Vacuum Excavator (Vac-Truck)	No	40	85	85	149
Vacuum Street Sweeper	No	10	80	82	19
Ventilation Fan	No	100	85	79	13
Vibrating Hopper	No	50	85	87	1
Vibratory Concrete Mixer	No	20	80	80	1
Vibratory Pile Driver	No	20	95	101	44

Warning Horn	No	5	85	83	12
Welder/Torch	No	40	73	74	5

For each generic type of equipment listed in Table 9.1, the following information is provided:

- an indication as to whether or not the equipment is an impact device;
- the acoustical usage factor to assume for modeling purposes;
- the specification "Spec" limit for each piece of equipment expressed as an L_{max} level in dBA "slow" at a reference distance of 50 foot from the loudest side of the equipment;
- the measured "Actual" emission level at 50 feet for each piece of equipment based on hundreds of emission measurements performed on CA/T work sites; and
- the number of samples that were averaged together to compute the "Actual" emission level.

A comparison of the "Spec" emission limits against the "Actual" emission levels reveals that the Spec limits were set, in general, to realistically obtainable noise levels based on the equipment used by contractors on the CA/T Project. When measured in the field, some equipment such as pile drivers, sand blasting, demolition shears, and pumps tended to exceed their applicable emission limit. As such, these noisy devices needed to have some form of noise mitigation in place in order to comply with the Spec emission limits. Other equipment, such as clamshell shovels, concrete mixer trucks, truck-mounted drill rigs, man-lifts, chipping guns, ventilation fans, pavers, dump trucks, and flatbed trucks, easily complied. Therefore, the Spec emission limits for these devices could have been reduced somewhat further. It is recommended that the user review the RCNM User's Guide contained in Appendix A for detailed guidance regarding application of values contained in Table 9.1.

9.4.2 FHWA Special Report Inventories

Appendix A of the 1977 Handbook provides tables of construction equipment noise levels and ranges. The majority of the data were provided by the American Road Builders Association. These data were taken during a 1973 survey in which member contractors were asked to secure readings of noise exposure to operators of various types of equipment. Additionally, the contractors were asked to take readings at 50 feet from the machinery. These 50-foot peak readings are provided in Tables 9.2 through 9.8. Though the data were produced under varying conditions and degrees of expertise, the values are relatively consistent.

Table 9.2 Construction Equipment Noise Levels Based on Limited Data Samples - Cranes.

Manufacturer	Type or Model	Peak Noise Level (dBA)	Remarks
Northwestern	80D	77	Within 15m 1958 mod
Northwestern	8	84	Within 15m 1940 mod
Northwestern	6	72	Within 15m 1965 mod
American	7260	82	Within 15m 1967 mod
American	599	76	Within 15m 1969 mod
American	5299	70	Within 15m 1972 mod
American	4210	82	Within 15m 1968 mod
Buck Eye	45C	79	Within 15m 1972 mod
Buck Eye	308	74	Within 15m 1968 mod
Buck Eye	30B	73	Within 15m 1965 mod
Buck Eye	30B	70	Within 15m 1959 mod
Link Belt	LS98	76	Within 15m 1956 mod
Manitowoc	4000	94	Within 15m 1956 mod

Grove	RF59	82	Within 15m 1973 mod
Koehr	605	76	Within 15m 1967 mod
Koehr	435	86	Within 15m 1969 mod
Koehr	405	84	Within 15m 1969 mod

Table 9.3 Construction Equipment Noise Levels Based on Limited Data Samples - Backhoes.

Manufacturer	Type or Model	Peak Noise Level (dBA)	Remarks
Link Belt	4000	92	Within 15m 1971 mod
John Deere	609A	85	Within 15m 1971 mod
Case	680C	74	Within 15m 1973 mod
Drott	40 yr.	82	Within 15m 1971 mod
Koehr	1066	81 & 84	Within 15m 2 tested

Table 9.4 Construction Equipment Noise Levels Based on Limited Data Samples - Front Loaders.

Manufacturer	Type or Model	Peak Noise Level (dBA)	Remarks
Caterpillar	980	84	Within 15m 1972 mod
Caterpillar	977K	79	Within 15m 1969 mod
Caterpillar	977	87	Within 15m 1971 mod
Caterpillar	977	94	Within 15m 1967 mod
Caterpillar	966C	84	Within 15m 1973 mod
Caterpillar	966C	85	Within 15m 1972 mod
Caterpillar	966	81	Within 15m 1972 mod
Caterpillar	966	77	Within 15m 1972 mod
Caterpillar	966	85	Within 15m 1966 mod
Caterpillar	955L	90	Within 15m ;1973 mod
Caterpillar	955K	79	Within 15m 1969 mod
Caterpillar	955H	94	Within 15m 1963 mod
Caterpillar	950	78 & 80	Within 15m 1972 mod
Caterpillar	950	75	Within 15m 1968 mod
Caterpillar	950	88	Within 15m 1967 mod
Caterpillar	950	86	Within 15m 1965 mod
Caterpillar	944A	80	Within 15m 1965 mod
Caterpillar	850	82	Within 15m 1968 mod
Michigan	75B	90	Within 15m 1969 mod
Michigan	475A	96	Within 15m 1967 mod
Michigan	275	85	Within 15m 1971 mod

Michigan	125	87	Within 15m 1967 mod
Hough	65	82	Within 15m 1971 mod
Hough	60	91	Within 15m 1961 mod
Hough	400B	94	Within 15m 1961 mod
Hough	H90	86	Within 15m 1961 mod
Trojan	3000	85	Within 15m 1956 mod
Trojan	RT	82	Within 15m 1965 mod
Payloader	H50	85	Within 15m 1963 mod

Table 9.5 Construction Equipment Noise Levels Based on Limited Data Samples - Dozers.

Manufacturer	Type or Model	Peak Noise Level (dBA)	Remarks
Caterpillar	D5	83	Within 15m 1967 mod
Caterpillar	D6	85	Within 15m 1967 mod
Caterpillar	D6	86	Within 15m 1964 mod
Caterpillar	D6	81	Within 15m 1967 mod
Caterpillar	D6B	83	Within 15m 1967 mod
Caterpillar	D6C	82	Within 15m 1962 mod
Caterpillar	D7	85	Within 15m 1956 mod
Caterpillar	D7	86	Within 15m 1969 mod
Caterpillar	D7	84	Within 15m 1969 mod
Caterpillar	D7	78	Within 15m 1970 mod
Caterpillar	D7	78	Within 15m 1972 mod
Caterpillar	D7E	86	Within 15m 1965 mod
Caterpillar	D7E	78	Within 15m 1970 mod
Caterpillar	D7E	84	Within 15m 1973 mod
Caterpillar	D7F	80	Within 15m 1972 mod
Caterpillar	D8	92	Within 15m 1954 mod
Caterpillar	D8	95	Within 15m 1968 mod
Caterpillar	D8	86	Within 15m 1972 mod
Caterpillar	D8H	88	Within 15m 1966 mod
Caterpillar	D8H	82	Within 15m 1972 mod
Caterpillar	D9	85	Within 15m 1972 mod
Caterpillar	D9	94	Within 15m 1972 mod
Caterpillar	D9	90	Within 15m 1963 mod
Caterpillar	D9	87	Within 15m 1965 mod
Caterpillar	D9	90	Within 15m 1965 mod

Caterpillar	D9	88	Within 15m 1968 mod
Caterpillar	D9	92	Within 15m 1972 mod
Caterpillar	D9G	85	Within 15m 1965 mod
Allis Chambers	HD41	93	Within 15m 1970 mod
International	TD15	79	Within 15m 1970 mod
International	TD20	87	Within 15m 1970 mod
International	TD25	90	Within 15m 1972 mod
International	TD8	83	Within 15m 1970 mod
Case	1150	82	Within 15m 1972 mod
John Deer	350B	77	Within 15m 1971 mod
John Deer	450B	65	Within 15m 1972 mod
Terex	8230	70	Within 15m 1972 mod
Terex	8240	93	Within 15m 1969 mod
Michigan	280	85	Within 15m 1961 mod
Michigan	280	90	Within 15m 1962 mod
Caterpillar	824	90	Within 15m 1968 mod

Table 9.6 Construction Equipment Noise Levels Based on Limited Data Samples - Graders.

Manufacturer	Type or Model	Peak Noise Level (dBA)	Remarks
Caterpillar	16	91	Within 15m 1969 mod
Caterpillar	16	86	Within 15m 1968 mod
Caterpillar	140	83	Within 15m 1970 mod
Caterpillar	14E	84	Within 15m 1972 mod
Caterpillar	14E	85	Within 15m 1971 mod
Caterpillar	14C	85	Within 15m 1971 mod
Caterpillar	14B	84	Within 15m 1967 mod
Caterpillar	12F	82	Within 15m 1961-72 mod
Caterpillar	12F	72-92	Within 15m 1961-72 mod
Caterpillar	12E	81.3	Within 15m 1959-67 mod
Caterpillar	12E	80-83	Within 15m 1959-67 mod
Caterpillar	12	84.7	Within 15m 1960-67 mod
Caterpillar	12	82-88	Within 15m 1960-67 mod
Gallon	T500	84	Within 15m 1964 mod
Allis Chambers		87	Within 15m 1964 mod

Table 9.7 Construction Equipment Noise Levels Based on Limited Data Samples - Scrapers.

Manufacturer	Type or Model	Peak Noise Level (dBA)	Remarks
Caterpillar	660	92	Within 15m
Caterpillar	641B	85	Within 15m 1972 mod
Caterpillar	641B	86	Within 15m 1972 mod
Caterpillar	641	80 & 84	Within 15m 1972 mod
Caterpillar	641	83 & 89	Within 15m 1965 mod
Caterpillar	637	87	Within 15m 1971 mod
Caterpillar	633	87	Within 15m 1972 mod
Caterpillar	631C	89	Within 15m 1973 mod
Caterpillar	631C	83	Within 15m 1972 mod
Caterpillar	631B	94	Within 15m 1969 mod
Caterpillar	631B	84-87	Within 15m 1968 mod
Caterpillar		85 avg.	Within 15m 1968 mod
Caterpillar	621	90	Within 15m 1970 mod
Caterpillar	621	86	Within 15m 1967 mod
Caterpillar	613	76	Within 15m 1972 mod
Terex	TS24	87	Within 15m 1972 mod
Terex	TS24	84-91	
Terex	TS24	82	Within 15m 1971 mod
Terex	TS24	81-83	Within 15m 1971 mod
Terex	TS24	94	Within 15m 1966 mod
Terex	TS24	92-98	Within 15m 1966 mod
Terex	TS24	94.7	Within 15m 1963 mod
Terex	TS24	94-95	Within 15m 1963 mod
Terex	TS14	82	Within 15m 1969 mod
Terex	S35E	84	Within 15m 1971 mod

Table 9.8 Noise Levels of Standard Compressors.

Manufacturer	Model	Silenced or Standard	Type Eng.	Type Comp.	Test Avg. Cond. (cfm.psi)	Avg. Cond. Noise Lev. (cfm.psi) (dBA) at 7m*
Atlas	ST-48	Standard	Diesel	Reciprocal	160,100	83.6
Atlas	ST-95	Standard	Diesel	Reciprocal	330,105	80.2
Atlas	VSS-170Dd	Silenced	Diesel	Reciprocal	170,850	70.2
Atlas	VT-85M	Standard	Gas	Reciprocal	85,100	81.4
Atlas	VS-85Dd	Silenced	Gas	Reciprocal	85,100	75.5
Atlas	VSS-125Dd	Silenced	Diesel	Reciprocal	125,100	70.1

Atlas	STS-35Dd	Silenced	Diesel	Reciprocal	125,100	73.5
Atlas	VSS-170Dd	Silenced	Diesel	Reciprocal	170,100	
Gardner-Denver	SPWDA/2	Silenced	Diesel	Rotary-Screw	1200,000	73.3
Gardner-Denver	SPQDA/2	Silenced	Diesel	Rotary-Screw	750,000	78.2
Gardner-Denver	SPHGC	Silenced	Gas	Rotary-Screw	185,000	77.1
Ingersoll-Rand	DXL 1200	Standard	Diesel	Rotary-Screw	1200,125	92.6
Ingersoll-Rand	DXL 1200 (doors open)	Standard	Diesel	Rotary-Screw	1200,125	
Ingersoll-Rand	DXL 900S	Silenced	Diesel	Rotary-Screw	900,125	76.0
Ingersoll-Rand	DXL 900S	Silenced	Diesel	Rotary-Screw	900,125	75.1
Ingersoll-Rand	DXLCU1050	Standard	Diesel	Rotary-Screw	1050,125	90.2
Ingersoll-Rand	DXL 900S	Silenced	Diesel	Rotary-Screw	900,125	75.3
Ingersoll-Rand	DXL 900S	Silenced	Diesel	Rotary-Screw	900,125	75.0
Ingersoll-Rand	DXL 900	Standard	Diesel	Rotary-Screw	900,125	89.9
Ingersoll-Rand	DXL 750	Standard	Diesel	Rotary-Screw	750,125	87.7
Jaeger	A	Standard	Gas	Rotary-Screw	175,100	88.2
Jaeger	A(doors open)	Standard	Gas	Rotary-Screw	175,100	
Jaeger	E	Standard	Gas	Vane	85,100	81.5
Jaeger	E(doors open)	Standard	Gas	Vane	85,100	
Worthington	60 G/2Qt	Silenced	Gas	Vane	160,100	74.2
Worthington	750-QTEX	Silenced	Diesel	Rotary-Screw	750,100	74.7

*Data taken from EPA Report - EPA 550/9-76-004.

9.4.3 FTA Noise and Vibration Assessment Procedure

Chapter 12 of the FTA Transit Noise and Vibration Guidance Handbook discusses construction noise evaluation methodology and contains the noise emission levels for construction equipment displayed in Table 9.9.

Table 9.9 FTA Construction Equipment Noise Emission Levels.

Equipment	Typical Noise Level (dBA) 50 ft from Source*
Air Compressor	81
Backhoe	80
Ballast Equalizer	82
Ballast Tamper	83
Compactor	82
Concrete Mixer	85
Concrete Pump	82
Concrete Vibrator	76
Crane Derrick	88
Crane Mobile	83
Dozer	85
Generator	81
Grader	85
Impact Wrench	85
Jack Hammer	88
Loader	85
Paver	89
Pile Driver (Impact)	101
Pile Driver (Sonic)	96
Pneumatic Tool	85
Pump	76
Rail Saw	90
Rock Drill	98
Roller	74
Saw	76
Scarifier	83
Scraper	89
Shovel	82
Spike Driver	77
Tie Cutter	84
Tie Handler	80
Tie Inserter	85
Truck	88

*Table based on EPA Report, measured data from railroad construction equipment taken during Northeast Corridor improvement project and other measured data.

9.5 Links to Equipment Manufacturers

Table 9.10 contains web-based links to manufacturers of construction equipment. While few of these links contain noise-related data associated with the equipment, they provide descriptions and/or specifications related to the equipment, as well as sources for possibly obtaining additional information related to the equipment. Information in this table is by no means all-inclusive and does not represent any type of endorsement of the manufacturers, suppliers, or equipment. Users are hereby advised that the referenced websites may have certain restrictions, copyrights, etc., associated with any use of data contained therein.

Table 9.10 Equipment Manufacturers and Websites.

Equipment	Manufacturer	Website Address
Arrow Boards		
	North Star	http://northstar-traffic.com/index.cfm?SC=14&PT=1
	Trafcom	http://www.trafcon.com
	Allmand	http://www.allmand.com/MB%20AB%20page.htm
Articulated Trucks		
	Case	http://www.casece.com/products/products.asp?RL=NAE&id=196
	Hitachi	http://www.hitachi-c-m.com/global/products/articulate/index.html
	Terex	http://www.terex.com/main.php
	Caterpillar	http://www.cat.com/cda/layout?m=37840&x=7
	Volvo	http://www.volvo.com/constructionequipment/na/en-us/products/articulatedhaulers/
Asphalt Saws		
	Allied	http://www.alliedcp.com/products/rotocut.asp
Augers - See Drills / Augers		
Backhoes - See Loaders/Backhoes		
Boring Equipment - See Pile Drivers/Boring Equipment		
Compaction Equipment		
	Allied	http://www.alliedcp.com/products/compactor.asp
Compressors		
	Sullair	http://www.sullair.com/corp/details/0,10294,CLI1_DIV61_ETI5714,00.html
	Compair	http://www.compair.com/Products/Portable_Compressors.aspx
Concrete and Asphalt Batch/Mixing Plants and Equipment		
	Con-E-Co	http://www.con-e-co.com/products.cfm
	Terex	http://www.terex.com/main.php
	Gunter & Zimmerman	http://www.guntert.com/concrete_mobilebatching.asp
	Rex Con	http://www.rexcon.com
Concrete Breakers/ Hydraulic Hammers/Hydraulic Breakers		
	Drillman	http://www.drillmanindia.com/concrete-breaker.html
	Hydro Khan	http:/www.sangi.co.kr/english/e_product1_2.php
	Stanley	http://www.stanley-hydraulic-tools.com/Hand%20Held/NoAmbreakers.htm
	Lynx	http://www.stanley-hydraulic-tools.com/Lynx/breakers.htm
Concrete Chain Saws		
	Lynx	http://www.stanley-hydraulic-tools.com/Lynx/concrete-saws.htm
Concrete Core Drilling Machines		
	Multiquip	http://www.multiquip.com/multiquip/318_ENU_HTML.htm
Concrete Cutters		

	Vermeer	http://www.vermeermfg.com/vcom/TrenchingEquipment/Line.jsp?PrdlnID=3618
Concrete/Material Pumps		
	Multiquip	http://www.multiquip.com/multiquip/309_ENU_HTML.htm
	Reed	http://www.reedpumps.com/
Concrete Mixer Trucks		
	Oshkosh	http://www.oshkoshtruck.com/concrete/products~overview~home.cfm
	London	http://www.lmi.ca/mixers.cfm
	Terex/Advance	http://www.advancemixer.com
Concrete Saws		
	Multiquip	http://www.multiquip.com/multiquip/315_ENU_HTML.htm
	Diamond Core Cut	http://www.diamondproducts.com/dp_home.htm
Concrete Screeds		
	Multiquip	http://www.multiquip.com/multiquip/317_ENU_HTML.htm
Concrete Vibrators		
	Multiquip	http://www.multiquip.com/multiquip/313_ENU_HTML.htm
	Sullair	http://www.sullair.com/corp/details/0,10294,CLI1_DIV61_ETI5722,00.html
Cranes		
	Malcolm Drilling	www.malcolmdrilling.com
	Link-Belt	http://www.linkbelt.com/lit/products/frameproducthome.htm
	Casagrande	http://www.casagrandegroup.com
	Liebherr	http://www.liebherr.com/em/en/35381.asp
	Terex	http://www.terex.com/main.php
Crawler Tractors - See Dozers/Crawler Tractors		
Crushing and Screening Equipment		
	Cedarapids	http://www.cedarapids.com/crushscr.htm
	Hitachi	http://www.hitachi-c-m.com/
	Komatsu	http://www.komatsu.com/ce/products/mobile_crushers.html
	Terex	http://www.terex.com/main.php
Crushers/Pulverizers		
	Hydro Khan	http://www.sangi.co.kr/english/e_product3.php
Cutoff Saws		
	Multiquip	http://www.multiquip.com/multiquip/309_ENU_HTML.htm
	Lynx	http://www.stanley-hydraulic-tools.com/Lynx/cutoff%20saw.htm
Dozers/CrawlerTractors		
	John Deere	http://www.deere.com/en_US/cfd/construction/deere_const/crawlers/deere_dozer_sele
	Caterpillar	http://www.cat.com/cda/layout?m=37840&x=7
	Case	http://www.casece.com/products/products.asp?RL=NAE&id=2
	Komatsu	http://www.komatsu.com/ce/products/crawler_dozers.html
Dewatering Pumps		
	Multiquip	http://www.multiquip.com/multiquip/371_ENU_HTML.htm
Drills / Augers		
	Malcolm Drilling	www.malcolmdrilling.com
	Casagrande	www.casagrandegroup.com
	Soilmec	http://www.soilmec.com/_vti_g1_techno.aspx?rpstry=4_

	Terex	http://www.terex.com/main.php
Excavators		
	Hitachi	http://www.hitachi-c-m.com/global/products/excavator/index.html
	Caterpiller	http://www.cat.com/cda/layout?m=37840&x=7
	Volvo	http://www.volvo.com/constructionequipment/na/en-us/products/compactexcavators/
		http://www.volvo.com/constructionequipment/na/en-us/products/wheeledexcavators/
		http://www.volvo.com/constructionequipment/na/en-us/products/crawlerexcavators/
	John Deere	http://www.deere.com/en_US/cfd/construction/deere_const/excavators/deere_excavato
	Liebherr	http://www.liebherr.com/em/en/18891.asp
	Soilmec	http://www.soilmec.com/_vti_g1_t02.aspx?rpstry=29_
	Gehl	http://www.gehl.com
	Case	http://www.casece.com/products/products.asp?RL=NAE&id=216
	Komatsu	http://www.komatsu.com/ce/products/crawler_excavators.html
		http://www.komatsu.com/ce/products/wheel_excavators.html
	Terex	http://www.terex.com/main.php
	Link-Belt	http://www.lbxco.com/lx_series.asp
	Gradall	http://www.gradall.com/
	Badger Daylighting	http://www.badgerinc.com/
Fork Lifts - See Lifts / Variable Reach Fork Lifts/ Material Handlers		
Generators		
	Terex	http://www.terex.com/main.php
	Multiquip	http://www.multiquip.com/multiquip/212_ENU_HTML.htm
	Sullair	http://www.sullair.com/corp/details/0,10294,CLI1_DIV61_ETI5714,00.html
	Baldor	http://www.baldor.com/products/generators/ts.asp
Graders		
	Case	http://www.casece.com/products/products.asp?RL=NAE&id=190
	Volvo	http://www.volvo.com/constructionequipment/na/en-us/products/MotorGraders/
	Komatsu	http://www.komatsu.com/ce/products/motor_graders.html
	Terex	http://www.terex.com/main.php
Hand Compaction Equipment		
	Terex	http://www.terex.com/main.php
	Multiquip	http://www.multiquip.com/multiquip/56_ENU_HTML.htm
Hydraulic Hammers/Hydraulic Breakers - See Concrete Breakers/ HydraulicHammers/Hydraulic Breakers		
Jackhammers - See Rock Drilling Equipment/Jackhammers		
Lifts / Variable Reach Fork Lifts/ Material Handlers		
	Genie Lift	www.genielift.com
	Sky Track	www.kirby-smith.com/
	Ingersol-Rand	www.ingersollrand.com
	Terex	http://www.terex.com/main.php
	Roadtec	http://www.roadtec.com/www/docs/102/mtv-material-transfer-vehicle/
LightTowers		
	Baldor	http://www.baldor.com/products/generators/mlt.asp
	Multiquip	http://www.multiquip.com/multiquip/293_ENU_HTML.htm
	Allmand	http://www.allmand.com/Night%20Lite%20Pro%20page.htm
Loaders/Backhoes		
	Case	http://www.casece.com/products/products.asp?RL=NAE&id=54

	Caterpillar	http://www.cat.com/cda/layout?m=37840&x=7
	Volvo	http://www.volvo.com/constructionequipment/na/en-us/products/backhoeloaders/
	John Deere	http://www.deere.com/en_US/cfd/construction/deere_const/backhoes/deere_backhoe_
	Komatsu	http://www.komatsu.com/ce/products/backhoe_loaders.html
Material Handlers - See Lifts / Variable Reach Fork Lifts/ Material Handlers		
Milling Machines		
	Wirtgen	https://www.wirtgenamerica.com/noflash.html
Mining Trucks - See Rigid Dump Trucks/Mining Trucks		
Pans - See Scrapers/Pans		
Pavers/Paving Equipment		
	Caterpillar/ Barber Greene	http://www.cat.com/cda/layout?m=37840&x=7
	Rosco	http://www.leeboy.com/rosco/
	Bomag	http://www.bomag.com/americas/index.aspx?&Lang=478
	Gehl	http://www.gehl.com/const/prodpg_ap.html
	Leeboy	http://www.leeboy.com/leeboy/
	Terex	http://www.terex.com/main.php
	Ingersoll-Rand	http://www.road-development.irco.com/Default.aspx?MenuItemID=12
	Vogele	http://www.vogeleamerica.com/noflash.html
	GOMACO	http://www.gomaco.com/index.html
	Roadtec	http://www.roadtec.com
Pile Drivers/Boring Equipment		
	Soilmec	http://www.soilmec.com/_vti_g1_t09.aspx?rpstry=29_
	Leffer	http://www.leffer.com/hme.html
	Bauer	http://www.bauer.de/en/maschinenbau/produkte/drehbohrgeraete/bg_reihe/usbg15h.ht
Pipelayers/Trenchers		
	Liebherr	http://www.liebherr.com/em/en/18908.asp
	Caterpillar	http://www.cat.com/cda/layout?m=37840&x=7
	Case	http://www.casece.com/products/products.asp?RL=NAE&id=28&archived=1
	Vermeer	http://www.vermeermfg.com/vcom/TrenchingEquipment/trenching-equipment.htm
	Ditchwitch	http://www.ditchwitch.com/dwcom/Product/ProductView/115
	Eagle	http://www.guntert.com/trenchers_home.asp
Profilers - See Roadway Planers/Profilers		
Rammers		
	Multiquip	http://www.multiquip.com/multiquip/56_ENU_HTML.htm
Rebar Benders/Cutters		
	Multiquip	http://www.multiquip.com/multiquip/1316_ENU_HTML.htm
Recyclers - See Stabilizers/Recyclers		
Rigid Dump Trucks/Mining Trucks		
	Hitachi	http://www.hitachi-c-m.com/global/products/rigid/index.html
	Caterpillar	http://www.cat.com/cda/layout?m=37840&x=7
	Liebherr	http://www.liebherr.com/em/en/18898.asp
	Komatsu	http://www.komatsu.com/ce/products/dump_trucks.html
	Terex	http://www.terex.com/main.php
Roadway Planers/Profilers		
	Terex	http://www.terex.com/main.php
	Roadtec	http://www.roadtec.com/products/cold_planers/default.htm

Rock Drilling Equipment/Jackhammers		
	Drillman	http://www.drillmanindia.com/rock-drilling-machine.html
	Whaker	http://www.wackergroup.com/webapp/wcs/stores/servlet/
	Sullair	http://www.sullair.com/corp/details/0,10294,CLI1_DIV61_ETI5721,00.html
	Allied	http://www.alliedcp.com/products/hammers.asp
Rollers - See Tampers/Rollers		
Scrapers/Pans		
	Terex	http://www.terex.com/main.php
Screening Equipment - See Crushing and Screening Equipment		
Slabbuster		
	Allied	http://www.alliedcp.com/products/slabbuster.asp
Slip Form Pavers		
	Huron	http://www.huronmanufacturing.com/
	Guntert & Zimmerman	http://www.guntert.com/concreteSlipformPavers.asp
Stabilizers/Recyclers		
	Bomag	http://www.bomag.com/americas/index.aspx?&Lang=478
	Komatsu	http://www.komatsu.com/ce/products/mobile_crushers.html
	Terex	http://www.terex.com/main.php
	Wirtgen	https://www.wirtgenamerica.com/noflash.html
	Roadtec	http://www.roadtec.com
Sweepers		
	Elgin	http://www.elginsweeper.com
	Johnston	http://www.johnstonsweepers.com/
Tampers/ Rollers		
	Bomag	http://www.bomag.com/americas/index.aspx?&Lang=478
	Komatsu	http://www.komatsu.com/ce/products/vibratory_rollers.html
	Whaker	http://www.wackergroup.com/webapp/wcs/stores/servlet/
	Lynx	http://www.stanley-hydraulic-tools.com/Lynx/tamper.htm
	Multiquip	http://www.multiquip.com/multiquip/181_ENU_HTML.htm
	Ingersoll-Rand	http://www.road-development.irco.com/Default.aspx?MenuItemID=15
Trenchers - See Pipelayers/Trenchers		
Trucks - See Articulated Trucks, Concrete Mixer Trucks, Rigid Dump Trucks/Mining Trucks		
Vacuum Units		
	Advanced Recycling Systems	www.arsrecycling.com/
	Vacmasters	http://www.vacmasters.com/airsystm.htm
	Vector	http://www.vector-vacuums.com/
Variable Message Signs		
	Allmand	http://www.allmand.com/MB%20only%20page.htm
	North Star	http://northstar-traffic.com/index.cfm?SC=13&PT=1
	Trafcom	http://www.trafcon.com
	Daktronics	http://www.daktronics.com/vms_prod/dak_vms_products.cfm
Vibratory Rammers		
	Whaker	http://www.wackergroup.com/webapp/wcs/stores/servlet/
Welders/Welding Equipment		

	Airgas	www.airgas.com
	Multiquip	http://www.multiquip.com/multiquip/408_ENU_HTML.htm
	Miller	http://www.millerwelds.com/products/
	Lincoln	http://www.mylincolnelectric.com/Catalog/equipmentseries.asp?browse=101|400|
Wheel Loaders		
	Hitachi	http://www.hitachi-c-m.com/global/products/loader/index.html
	Case	http://www.casece.com/products/products.asp?RL=NAE&id=30
	Caterpillar	http://www.cat.com/cda/layout?m=37840&x=7
	Volvo	http://www.volvo.com/constructionequipment/na/en-us/products/wheelloaders/
	Terex	http://www.terex.com/main.php
	Komatsu	http://www.komatsu.com/ce/products/wheel_loaders.html
	TCM	http://www.tcmglobal.net/products/main02.html

Page Top | < Previous | Contents | Next >

FHWA Home | HEP Home | Feedback

FHWA

United States Department of Transportation - **Federal Highway Administration**

Appendix F.1

ADDENDUM TO ACOUSTICAL REPORT

Addendum
To the
One Paseo Acoustical Report

Introduction

This addendum has been prepared to discuss how the changes included in the Revised Project development proposal currently being processed by the project applicant relate to the results and conclusions made in the Acoustical Report dated March 2012, and included as Appendix F in the Draft Environmental Impact Report (EIR).

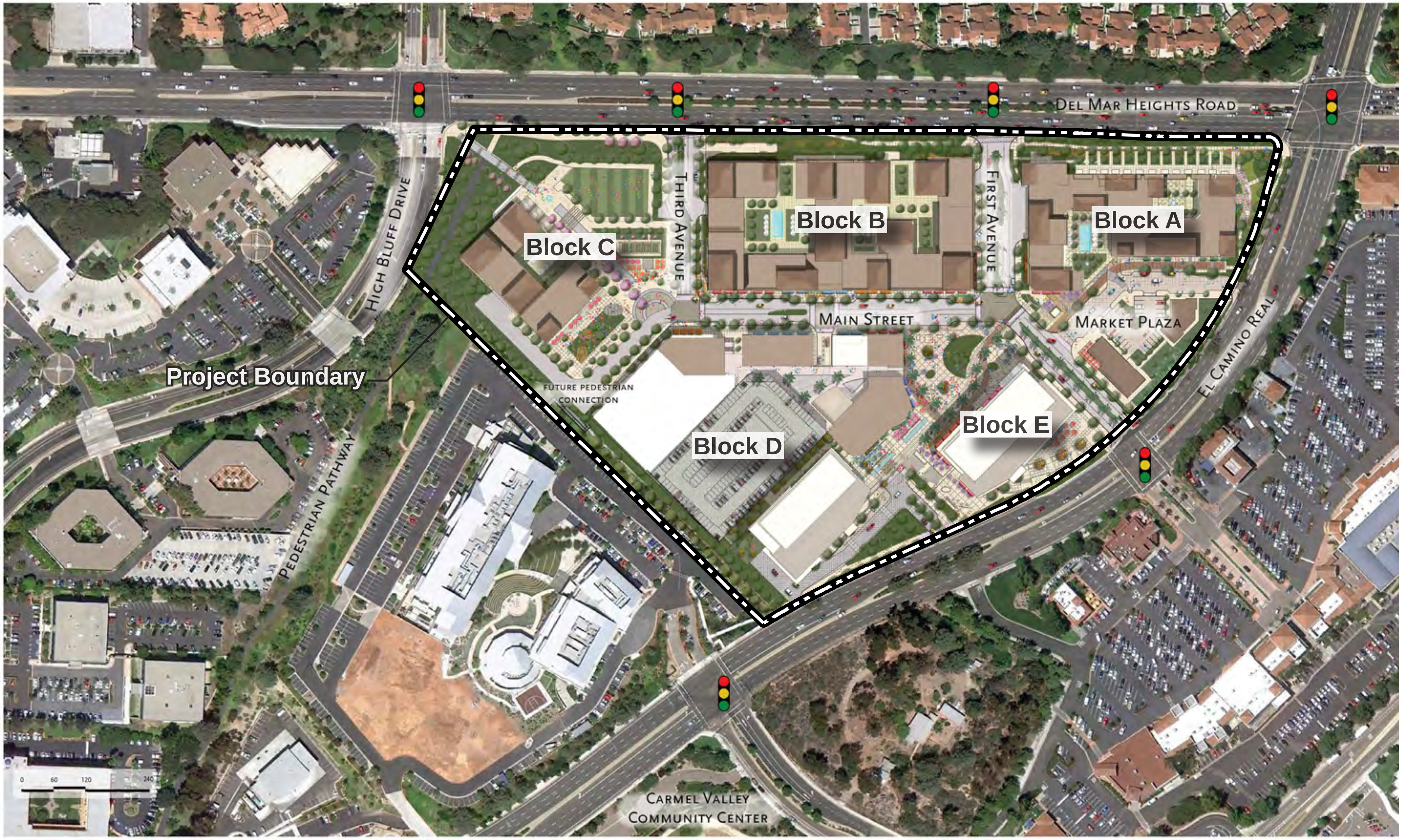
In response to comments received during the public review period for the Draft EIR, Kilroy Realty Corporation has reduced the density and intensity of the proposed development. For comparison purposes, the new plan is referred to as the "Revised Project" while the plan analyzed in the Draft EIR is referred to as the "Originally Proposed Project." The land use components of the Revised Project are illustrated in Table 1 and Figure 1.

Table 1
Revised Project

	Commercial Retail[1] (Square Feet)		Commercial Office[3] (Square Feet)		Multi-family Residential (Dwelling Units)
Block	**Retail**	**Cinema[2]**	**Corporate Office**	**Professional Office[4]**	
A	47,353	---	---	---	165
B	38,000	---	---	---	337
C	12,611	---	---	---	106
D	70,100	48,000	221,000	21,000	
E	30,254		242,000		
Total	**198,500**	**48,000**	**463,000**	**21,000**	**608**

[1] All areas are considered gross leasable because all retail space may be leasable.
[2] Cinema consists of up to 1,200 seats with 400 seats in Phases 1 & 2 and 1,200 seats in Phase 3.
[3] Gross Leasable Area (excludes parking structures in conformance with City of San Diego LDC Sections 113.0234 and 142.0560). Density transfers permitted in accordance with procedures described in the Precise Plan.
[4] Professional Office (located on Main Street).

A comparison of the land uses associated with the Revised Project with the Originally Proposed Project is illustrated in Table 2. As Table 2 indicates, the most substantial changes associated with the Revised Project include elimination of the originally proposed hotel, a 14 percent reduction in the amount of office space, and 10 percent reduction in the amount of retail space. Overall the total square footage of the development would decrease by 22 percent from 1,857,440 to 1,454,069, resulting in a 22 percent reduction in the FAR from 1.8 to 1.4. The number of residential units would remain unchanged.

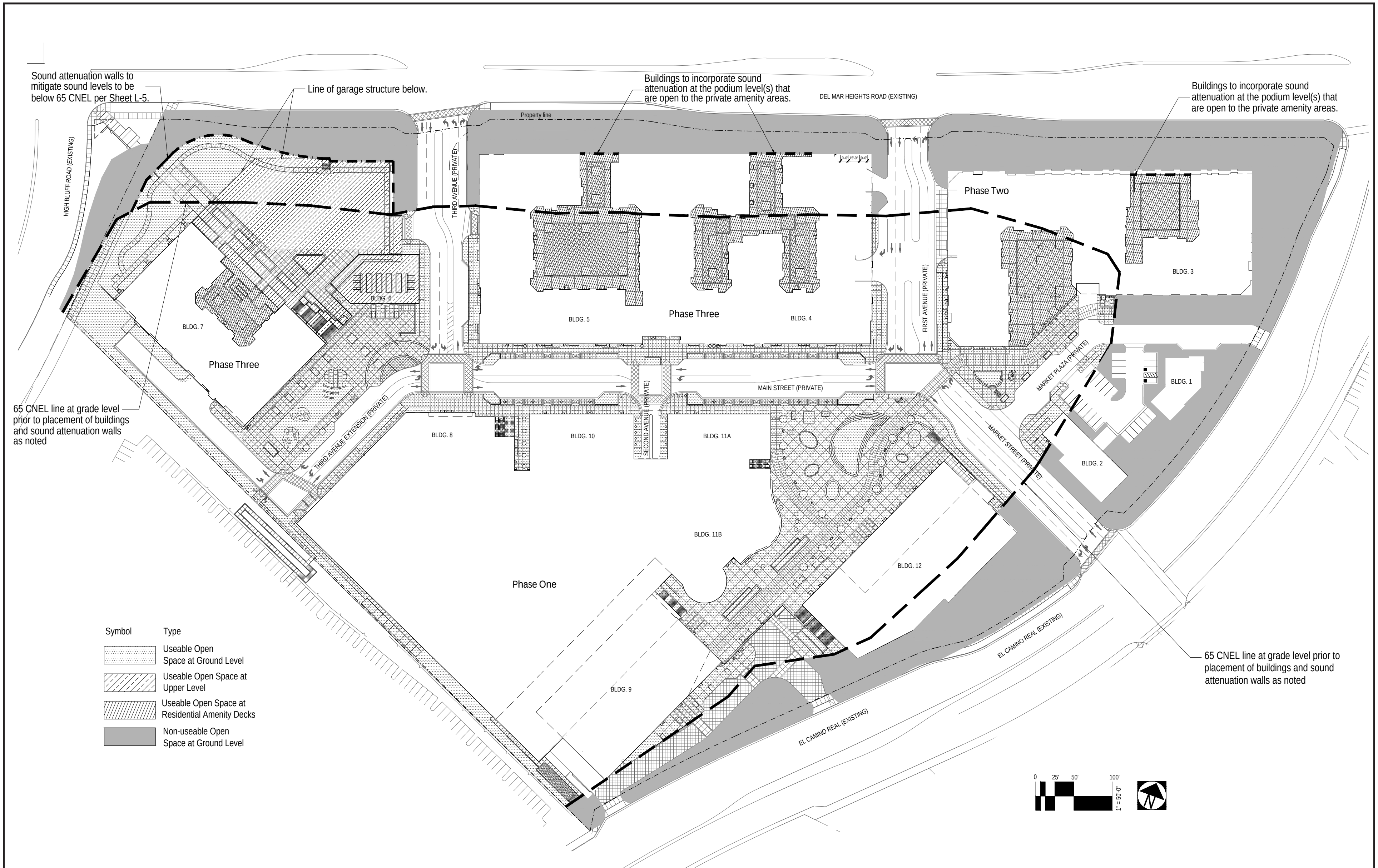


I:\ArcGIS\K\KIL-03 SDCorporateCenter\Map\ENV\Misc\Fig1_SitePlan.indd -RK

Revised Project

ONE PASEO

Figure 1



Source: Nowell and Associates 2012

I:\ArcGIS\K\KIL-03 SDCorporateCenter\Map\ENV\Misc\Fig2_NoiseContour.indd -RK

Existing 65 CNEL Contour and Noise Barrier Location

ONE PASEO

Figure 2

Table 2
Land Use Comparison of the Originally Proposed Project with Revised Project (Gross Floor Area[1])

Project	Commercial Retail (Square Feet)		Commercial Office (Square Feet)		Hotel (Square Feet)	Multi-Family Residential (Dwelling Units)		Total	
	Retail	Cinema[2]	Corporate	Professional		Units	Square Feet	Square Feet	FAR
Originally Proposed Project	220,000	50,000	535,600	21,840	100,000	608	930,000	1,857,440	1.8
Revised Project	198,500	48,000	471,000	21,840	0	608	714,729	1,454,069	1.4
Net Change with Revised Project	**-21,500**	**-2,000**	**-64,600**	**0**	**-100,000**	**0**	**-215,271**	**-403,371**	**-1.0**

[1] Gross Floor Area calculations per Land Development Code.
[2] Cinema of up to 1,200 seats.

Analysis

As with the Originally Proposed Project, the Revised Project includes land uses which would be sensitive to noise associated with construction and operation of the proposed development as well as traffic noise. Noise-sensitive receptors associated with the Revised Project include habitable rooms within residential units, offices, and usable outdoor recreation areas. Greenbelt areas and residential front porches are not considered noise sensitive because they are not occupied for prolonged periods of time. Sensitive noise receptors adjacent to the proposed development include multi-family residences to the north of the project site (across Del Mar Heights Road), and a single-family residence to the southwest (on the corner of El Camino Real and Townsgate Drive). Other sensitive noise receptors, such as schools and parks and other multi-family residences in the vicinity, are located too far from the project site to be adversely affected by the project noise.

<u>Construction Noise</u>

As with the Originally Proposed Project, construction noise levels at on on-site residences (built in earlier phases) may exceed the 12-hour average of 75 dBA. As a result, construction noise impacts would be potentially significant to on-site sensitive receptors. However, construction noise levels generated by the project would not exceed limits allowed by the Noise Ordinance at off-site sensitive receptors.

<u>Stationary Noise</u>

As with the Originally Proposed Project, the Revised Project would introduce several operational stationary noise sources including refrigeration and freezer condensers (associated with markets and restaurants), trash compactors, forklifts, delivery trucks, amplification systems (night-time entertainment), restaurant kitchen fans, HVAC systems, and parking lot traffic.

Because the proposed project is a mixed-used development, residential uses would be in close proximity to commercial uses and could be exposed to noise generated by on-site stationary noise sources. In particular, the residential buildings along Main Street would include ground-floor commercial retail uses with residential units above. The proposed residences also would be near other commercial uses that could include markets and/or restaurants that typically contain stationary noise sources. Due to the close proximity of these proposed uses, there is a potential for on-site stationary sources to exceed the noise limits of the City's Noise Ordinance. Therefore, as with the Originally Proposed Project, stationary sources could significantly impact on-site residential development within the Revised Project. As with the Originally Proposed Project, stationary noise sources would be attenuated to below 45 dBA by the distance separating the proposed uses from off-site noise sensitive receptors and, thus, not significantly impact off-site noise-sensitive receptors.

Traffic Noise

Onsite Traffic Noise

As with the Originally Proposed Project, traffic noise along Del Mar Heights Road and El Camino Real would exceed 65 CNEL. Based on roadway traffic noise model calculations, the un-attenuated 65 CNEL noise contour along Del Mar Heights Road would extend between 100 and 125 feet into the project site. Along El Camino Real, the 65 CNEL contour would extend between 100 and 165 feet into the project site. As illustrated in Figure 2, residential units along Del Mar Heights Road as well as office uses along El Camino Real would be exposed to noise levels over 65 CNEL. Assuming that standard construction materials provide a 15-dBA reduction, residential uses that would be exposed to exterior noise levels above 60 CNEL and office uses that would be exposed to exterior noise levels above 65 CNEL could have interior noise levels exceeding 45 and 50 CNEL, respectively. Thus, proposed residences and offices may not be consistent with the General Plan Noise Element Land Use – Noise Compatibility Guidelines, resulting in a potentially significant noise impact.

Unlike the Originally Proposed Project, the Revised Project includes public and private usable outdoor open space that would be exposed to traffic noise over 65 CNEL. Usable public open space would include the recreation area in the northwest corner of Block C. Although public open space, the greenbelt areas located along Del Mar Heights Road and El Camino Real are not counted as usable open space and, thus, are not governed by the 65 CNEL noise standard.

Private outdoor areas within the 65 CNEL noise contour include a pool area between Buildings 4 and 5 in Block B, a second-floor gathering area in Building 3 of Block A, and the front porches of residential units facing Del Mar Heights Road in Building 3 of Block A. The outdoor areas associated with the pool and the second-floor space are counted as useable open space and, therefore, would be considered impacted by noise in excess of 65 CNEL. Like the greenbelt, the front porch areas are not counted as usable open space and are not governed by the 65 CNEL noise standard. The Revised Project does not include exterior usable office or retail space within areas exceeding 70 or 75 CNEL, respectively.

In anticipation of traffic noise, the Revised Project includes noise attenuation features to assure that noise levels within on-site noise-sensitive land uses are not exceeded. As illustrated on Figure 2, a sound attenuation barrier would be located between recreation activities in the northwest corner of the project site and Del Mar Heights Road. A barrier would also be located between Del Mar Heights Road and the second-story open space and ground-level pool areas. The barrier heights and locations illustrated on Figure 2 are based on traffic volumes anticipated by the horizon year (2030). The traffic volumes are based on the traffic analysis conducted for the Revised Project (Appendix C.1 of the Final EIR), and include traffic generated by future projects in the community, as well as the proposed development. These calculations are included in Attachment A of this addendum.

The noise attenuation barriers would be constructed of masonry block, glass or other suitable material. The final location and height of the barriers would be determined by subsequent acoustical analysis, once the final plans have been prepared. With the planned attenuation barriers, future users of the usable public and private open space would be protected from noise levels in excess of 65 CNEL. Thus, the Revised Project would not result in a significant noise impact related to public and private useable open space.

Offsite Traffic Noise

As with the Originally Proposed Project, traffic generated by the proposed development on local roads would not have a significant impact on off-site sensitive noise receptors. Calculations were made to predict the incremental traffic noise related to project traffic. The traffic volumes assumed in this analysis were based on the traffic analysis prepared for the Revised Project found in Appendix C.1 of the Final EIR. Based on these calculations, project-related traffic would, with one exception, not increase future traffic noise levels by more than 1 dBA. The exception would occur along the north side of Del Mar Heights Road, between El Camino Real and I-5. The addition of project traffic to this portion of Del Mar Heights Road would increase the traffic noise levels by an estimated 1.1 dBA. It should be noted that the multi-family development along this segment of Del Mar Heights Road is currently buffered from traffic noise by an existing berm and masonry wall that interrupt the line of sight between the roadway and the off-site residences thereby reducing the transmission of traffic noise to residences behind the wall. In addition, noise level increases of 3 dBA or less are not detectable to the human ear, as recognized in footnote 22 of Table K-2 found on page 51 of the City's CEQA Significance Determination Thresholds. Thus, the impact of project traffic on local traffic noise would not be significant.

Mitigation

As with the Originally Proposed Project, implementation of Mitigation Measures 5.4-1, 5.4-2 and 5.4-3, identified in Section 5.4 of the Draft EIR, as well as Mitigation Measures 5.4-4 and 5.4-5 (formerly Mitigation Measure 5.4-4 in the Draft EIR) included in Section 5.4 of the Final EIR would reduce potential noise impacts associated with the Revised Project to a level less than significant.

Mitigation Measure 5.4-1: Prior to issuance of building permits, a noise analysis shall be completed to assess building-specific stationary noise sources and impacts to on-site uses. Appropriate noise planning and attenuation measures identified in the noise analysis shall be incorporated into the project design to ensure compliance with the Noise Ordinance noise limits for stationary sources (i.e., interior noise levels of 45 dBA L_{eq} or less for residential uses; 50 dBA L_{eq} or less for commercial uses). Methods for ensuring compliant interior noise levels may include, but would not be limited to, the following:

- Installation of roof-top mechanical ventilation and HVAC units on mounts that isolate the building from vibration caused by the machinery;
- In the floors separating residential uses from non-residential uses, use additional thicknesses of building materials and/or materials designed to isolate the residential spaces from vibration generated by non-residential spaces;
- Commercial air handling ducts shall not be routed in or adjacent to interior living space walls without specific plans to address isolation;
- Commercial HVAC systems shall not be mounted over interior living areas without specific plans to address isolation;
- Clusters of residential HVAC systems shall not be mounted directly over residential areas;
- Coolant or large water lines including HVAC water for commercial services shall not be routed in walls adjacent to living areas without specific plans to address isolation;
- Operable windows shall not be located where they look directly at any rooftop HVAC systems in adjacent buildings;
- Elevator shafts shall not be located directly adjacent to living quarters without specific plans to address isolation; and/or
- Commercial spaces for nighttime entertainment shall not have a common floor ceiling to a living space.

Once the project is constructed and in full operation, the developer shall conduct on-site noise measurements to verify that noise planning and attenuation measures identified in the noise analysis have mitigated project noise to levels below those proscribed by the Noise Ordinance noise limits for stationary sources.

Mitigation Measure 5.4-2: Prior to issuance of building permits, an exterior-to-interior noise analysis shall be completed to assess off-site noise sources and impacts to interior on-site residential and commercial uses. Appropriate noise planning and attenuation measures identified in the noise analysis shall be incorporated into the project design to ensure compliance with the General Plan Noise Element Land use - Noise Compatibility Guidelines (i.e., interior noise levels of 45 dBA CNEL or less for residential and hotel uses; 50 dBA CNEL or less for commercial uses). Methods for ensuring compliant interior noise levels may include, but would not be limited to, the following:

- Use of window glazing with an increased sound transmission classification;
- Use of additional thicknesses of interior drywall; and/or
- Use of additional thicknesses of exterior building materials.

Once the project is constructed and in full operation, interior noise measurements shall be conducted to verify that exterior-to-interior noise planning has mitigated project noise levels to ensure compliance with the General Plan Noise Element Land use – Noise Compatibility Guidelines.

Mitigation Measure 5.4-3: Prior to issuance of building permits, an interior noise analysis shall be completed to assess on-site noise sources and impacts to interior on-site residential uses. Appropriate noise planning and attenuation measures identified in the noise analysis shall be incorporated into the project design to ensure compliance with the General Plan Noise Element Land use - Noise Compatibility Guidelines. Potential noise planning and attenuation measures may include, but are not limited to, the following:

- Commercial air handling ducts shall not be routed in or adjacent to interior living space walls without specific plans to address isolation;
- Commercial HVAC systems shall not be mounted over interior living areas without specific plans to address isolation;
- Clusters of residential HVAC systems shall not be mounted directly over residential areas;
- Coolant or large water lines including HVAC water for commercial services shall not be routed in walls adjacent to living areas without specific plans to address isolation;
- Operable windows shall not be located where they look directly at any rooftop HVAC systems in adjacent buildings;
- Elevator shafts shall not be located directly adjacent to living quarters without specific plans to address isolation;
- Commercial spaces for nighttime entertainment shall not have a common floor ceiling to a living space;
- Limitations upon the use of exterior amplified music systems associated with entertainment such as prohibiting exterior amplified music systems in areas directly adjacent to or below on-site residences 1; and
- Commercial lease agreements shall include strict enforceable measures to control interior and exterior noise to limit impacts to residential areas.

Once the project is constructed and in full operation, interior noise measurements shall be conducted to verify that interior noise planning has mitigated project noise levels to ensure compliance with the General Plan Noise Element Land use – Noise Compatibility Guidelines.

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[1] This excludes temporary outside amplification systems use for a short-term special event conducted with a separate City special event permit.

Mitigation Measure 5.4-4: Prior to issuance of building permits, a noise analysis shall be completed to determine the location and construction materials for noise attenuation features shown on the project development plans needed to protect usable recreation areas from noise levels in excess of 65 CNEL. Barriers should consist of a single, solid sound wall with a height based on the finished grade of the noise source. The sound attenuation barrier should be solid and constructed of masonry, wood, plastic, fiberglass, steel, or a combination of those materials, with no cracks or gaps through or below the wall. Any seams or cracks must be filled or caulked. If wood is used, it may be tongue and groove and must be at least one-inch thick or have a surface density of at least 3.5 pounds per square foot. Glass or clear plastic may be used on the upper portion. Sheet metal of 18-gauge (minimum) may be used, if it meets the other criteria and is properly supported and stiffened so that it does not rattle or create noise itself from vibration or wind. Any doors or gates must be designed with overlapping closures on the bottom and sides and meet the minimum specifications of the wall materials described above.

Once the project is constructed and in full operation, the developer shall conduct on-site noise measurements to verify that noise planning and attenuation measures identified in the noise analysis have mitigated project noise to levels below 65 CNEL.

Mitigation Measure 5.4-5: During construction of Phase 3, noise attenuation shall be provided sufficient to comply with the Noise Ordinance (i.e., a 12-hour average of greater than 75 dBA L_{eq}). Potential attenuation measures include, but are not limited to, use of sound walls, sound blankets, noise attenuation devices/modifications to construction equipment, and use of quieter equipment. As one option, a temporary 12-foot-high noise barrier could be constructed 50 feet in both (north-south) directions along Third Avenue from the point(s) where the proposed subterranean parking garage is within 100 feet of occupied residences.

The minimum noise reduction from a barrier that obstructs the line-of-sight between the noise source and the noise receiver is five dBA. Therefore, with a 12-foot-high temporary noise barrier, noise levels at the on-site residences in Block B would be reduced to below 75 dBA (12-hour) if they would otherwise be slightly above 75 dBA.