APPENDIX H
Parking Impact Analysis Memo

MEMORANDUM

To:	Paul Garcia Atkins	Date:	March 24, 2016
From:	John Boarman Cara Hilgesen LLG, Engineers	LLG Ref:	3-15-2464
Subject:	Palomar Community College District, South Education Center – Parking Analysis		

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INTRODUCTION

Linscott, Law & Greenspan, Engineers (LLG) has prepared this memorandum to analyze the parking requirements for the South Education Center (SEC), a satellite community college campus proposed by Palomar Community College District (PCCD) in the Community of Rancho Bernardo in the City of San Diego. The site is located approximately 0.8 miles west of Interstate 15 (I-15) on the southeast corner of the Rancho Bernardo Road/Matinal Road intersection. A vacant office building currently occupies the site. The Project proposes to convert the existing 110,000 square foot (SF) vacant office building into a community college specialized education center and utilize the existing parking structure located southwest of the building. The District plans their facilities using the full-time equivalent student (FTES) projections for an academic year. The academic year represents the Fall, Spring and Summer semesters combined. At Opening Day, the District anticipates a total of 1,000 annual FTES. On a per semester basis, the Opening Day FTES amounts to 450 FTES in Fall and Spring semester with 100 FTES expected in the summer session. The maximum enrollment anticipated by the District by Year 2035 is projected at 2,000 annual FTES. This would equate to 900 FTES in the Fall and Spring semesters with 200 FTES expected in the summer session. A total of 35-40 staff members is anticipated with maximum enrollment.

CITY'S MUNICIPAL CODE

The City of San Diego Municipal Code (SDMC) identifies parking requirements in Chapter 14, Article 2, Division 5. Based on a review of the SDMC, parking requirements are not provided for a community college land use. The only education-related land uses mentioned in the code relate to kindergarten through ninth grade, grade 10 through 12 schools, and vocational/trade schools; none of which accurately represent the proposed Project.

OTHER PUBLISHED PARKING RATES

The Institute of Transportation Engineers provides parking rates in their published document, *ITE Parking Generation*, Fourth Edition. The ITE rates differentiate between "junior/community college" and "university/college". The primary distinction is that a "junior/community college" is a two-year institution and may be either a junior, community or technical college. "University/College" refers to four-year institutions, thus not the proposed Project. The "junior/community college" 85th

percentile rate for peak parking demand is 0.2 spaces per school population, or 4.8 spaces per thousand square feet (KSF) of gross floor area (GFA).

ITE further defines the independent variables of "student" and "school population". A student is defined as a person who is enrolled in an institution such as a school, college, or univeristy on either a full-time of part-time basis. The number of students refers to the total number of persons enrolled at a facility, not just those present at the time the parking demand study is conducted. "School population" for colleges and universities is defined as the total number of full-time equivalent students plus employees (staff and faculty).

The data collected for calculating the ITE rate was taken from eleven (11) suburban sites and two (2) urban sites. Parking demand was deemed to be similar and thus the data was combined and analyzed together. Of the suburban sites observed, two (2) were identified as having a parking permit system.

An additional resource for published rates, The Urban Land Institute's document, *The Dimensions of Parking*, Fourth Edition, provides a peak parking demand rate ranging between 0.10-0.50 spaces per student, and 0.80 spaces per staff member for the "university/college" land use. However, the "university/college" land use is distinctly different from a "junior/ community college" for all the reasons explained above.

Attachment A contains excerpts of the published ULI and ITE documents.

Even though ITE provides a "junior/community college" rate separate from a four year university, it is worth noting that a satellite campus is still unique as compared to a typical community college. Further details on these key differences are discussed below.

SITE-SPECIFIC CHARACTERISTICS

The proposed PCCD SEC campus is different from a typical main community college campus. The satellite campus does not have the full complement of services as a full community college campus. Of particular note are the lack of sports fields and extracurricular activities offered to students, and a much lower school population with fewer course and degree program offerings.

The California Postsecondary Education Commission (CPEC) has established *Guidelines for Proposed University Campuses, Community Colleges, and Education Centers* (August 1992). The guidelines have established several difference in comparing "education center" versus "community college". The CPEC Guidelines define an educational center as "an off-campus enterprise owned or leased by the parent district and administered by a parent college. The center must enroll a minimum of 500 full-time equivalent students, maintain an onsite administration

(typically headed by a dean or director, but not by a president, chancellor, or superintendent), and offer programs leading to the certificates or degrees to be conferred by the parent institution." In contrast, the *Guidelines* define a community college as "A full-service…institution offering a full complement of lower-division programs and services, usually at a single campus location owned by the district; colleges enroll a minimum of 1,000 full-time-equivalent students. A college will have its own administration and be headed by a president or a chancellor." In addition, the proposed Project will require reduced administrative staff and space, due to the smaller range of classes and facilities, as compared to a community college. Similarly, maintenance staff and facilities needed to serve the Project site would be reduced as compared to that of a typical community college, as extensive maintenance needs are not anticipated.

Even though the education center is characterized by key differences between its operations and that of a typical community/junior college, no credits were applied to the parking calculations for purposes of being conservative.

REQUIRED PARKING

Based on a thorough review of the rates above, it was determined that the ITE rate was most appropriate for calculating the required parking supply. This rate is specific to "junior/ community colleges" and is based on the full-time equivalent student population which is the District's independent variable for projecting campus enrollment.

Using the ITE rate of 0.20 spaces per FTES and the 2,000 annual FTES at maximum enrollment, a total of 408 parking spaces would be required:

0.20 * (2,000 FTES + 40 staff) = 408 parking spaces

Additionally, if the ITE rate per KSF of GFA, a total of 480 spaces would be required.

4.8 spaces * 110 KSF = 480 parking spaces

PROPOSED PARKING

Per the most current site plan for the satellite campus, a total of 737 parking spaces are proposed. The total parking spaces are provided via a 544-space existing parking structure plus 193-space existing surface lot previously constructed for the office land use.

It can therefore be concluded that the proposed Project adequately meets the required parking using both the student population rate and KSF rate.

AVAILABLE OFF-SITE PARKING

As with most college campuses, the Project will require the purchasing of a parking permit to park on campus. The permit will likely be priced at $49 per semester. For comparison purposes, a semester-based parking permit at San Diego State University costs $256 and an annual parking pass at UCSD is currently $732. Typical with community college campuses, there are the occasional students who may choose to park off-site on nearby local streets to avoid a semester-based parking permit fee. Due to the potential of this occurrence, an off-site parking demand study was conducted in the adjacent residential community of Westwood. The study area was selected by drawing a ¼-mile radius from the main campus driveway at the Rancho Bernardo Road/ Matinal Road intersection. The ¼-mile radius was selected consistent with published standards for determining the comfortable walking distance between a transit station or stop and a place of employment.

Figure 1 at the end of this memo shows the parking demand study area.

Within the selected study area, the total on-street parking supply was counted at 511 spaces. The supply amount was calculated by measuring the curb length where on-street curbside parking was permitted along residential streets and discounting any driveways, intersections and red curbs. A conservative length of 25 feet per vehicle was used in the calculations.

The peak periods for conducting parking occupancy counts were selected based on the anticipated class schedule and the peak times for students to be on-site. It also considered the peak times that residents would be parking along local streets; after commuter work hours and on weekends. The times for which occupancy counts were collected were as follows:

Thursday December 10, 2015	10:00 AM	2:00 PM	6:00 PM
Tuesday December 15, 2015	10:00 AM	2:00 PM	6:00 PM
Saturday December 12, 2015	11:00 AM	–	–

Table 1 at the end of this memo shows the results of the parking occupancy counts. This table shows that the demand for parking on these streets is very low. For example, of the approximately 511 total spaces available on residential streets, a maximum of 110 spaces were occupied (22%) during the weekday 10:00 AM timeframe, a maximum of 93 spaces were occupied (18%) during the weekday 2:00 PM timeframe, a maximum of 136 spaces were occupied (27%) during the weekday 6:00 PM timeframe, and a total of 110 spaces were occupied (22%) on a Saturday at 11:00 AM.

Based on the observed parking demand, there is a large amount of existing on-street parking available within the Westwood community that could serve the parking needs of those students who choose to park off campus.

However, even though there is an adequate parking supply available to accommodate students parking on local streets, there are deterring factors that make this option less desirable than parking on campus. The connectivity of the residential streets in the Westwood community to campus is limited to Matinal Road and Olmeda Way, with only Matinal Road providing a crosswalk at the intersection with Rancho Bernardo Road. The neighborhood is designed in typical suburban cul-de-sac fashion, limiting the walkability within the area and thus, access to campus. For example, any students parking at the midpoint on Florinda Road would have to walk a distance of between 0.65 and 0.85 miles, meandering through the local streets, to reach the main building on campus. In addition, there are several grade changes along these routes. Along Matinal Road from Capilla Road to Rancho Bernardo Road, the most direct route to campus, the elevation changes from 605 feet above mean sea level (amsl) to 640 feet amsl; a steady incline of 35 feet over a distance of 0.15 miles, or a 4% grade which is considered steep. Also, the driveway onto campus from Rancho Bernardo Road to the first main building slopes at an approximately 3% grade, further discouraging students from parking off campus.

Figure 2 shows the routes student would have to walk should they decide to park on residential streets and the changes in elevation.

CONCLUSION

The proposed Project is unique in that it functions differently from a main community college campus, i.e. lack of sports fields and extracurricular activities offered to students, much lower school population and fewer course offerings. This reasoning was the impetus for utilizing a site-specific trip generation rate in the EIR traffic study. The resulting trip generation rate used in the analysis was over 50% lower than the published rates. Typically, trip generation rates and parking rates are complementary of each other in that any unique characteristics noted in a trip generation survey are likely to be reflected in the parking demand.

Since site-specific parking information was not available, a thorough review of published parking rates was conducted to detemine the parking requirements for the PCCD SEC satellite campus. The Institute of Transportation Engineers rate of 0.20 spaces per school population was deemed appropriate for use in this assessment given it was specific to two-year "junior/ community college" campuses. The resulting parking requirement for the Project using the ITE rate is 408 or 480 parking spaces. The campus proposes to provide 737 spaces, thus meeting the requirements of ITE.

Given the likelihood that the Project will impose a parking permit fee (likely in the range of $40 per semester), there is the potential for students to instead choose to park in the nearby residential areas. As part of this analysis, an off-site on-street parking demand study was conducted in the nearby community of Westwood. This

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community is in close proximity to the campus and although adequate supply is provided on campus, students may choose to forgo paying for the parking permit and park in the residential community. A parking occupancy count was conducted during typical peak times for campus activity. The results of the counts indicate that at most, 27% of the supply was occupied by parked vehicles, leaving an adequate supply of on-street parking available for students, should they choose to park off campus. However, although there was ample parking observed within the Westwood community, the lack of walkability and connectivity of the neighborhood, and the changes in elevation along walking routes are likely to deter most students from parking off-site.

To conclude, the Palomar SEC satellite campus meets the published ITE requirements for providing on-site parking and although there is the possibility for students to park off-site in the local community, there is a sufficient supply of parking provided on local streets and the amount of students parking off-site would likely be nominal given the less than desirable walking conditions.

Please call if you have any questions. Thank you.

cc: File
Arnold Torma, KOA Corporation
Jeff Chine, Allen Matkins
Dennis Astl, PCCD

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TABLE 1
EXISTING PARKING OCCUPANCY

Roadway	Parking Supply		Parking Occupancy													
			Weekday												Weekend	
			Thursday 12/10/15						Tuesday 12/15/15						Saturday 12/10/15	
			10:00 AM		2:00 PM		6:00 PM		10:00 AM		2:00 PM		6:00 PM		11: 00 AM	
	Feet	Veh	Veh	%	Veh	%	Veh	%	Veh	%	Veh	%	Veh	%	Veh	%
Via Del Campo	1,140	45	8	18%	9	20%	8	18%	7	16%	7	16%	7	16%	4	9%
Broken Bow Court	1,200	48	2	4%	2	4%	2	4%	4	8%	2	4%	8	17%	7	15%
Matinal Road	1,560	62	20	32%	17	27%	17	27%	17	27%	15	24%	22	35%	23	37%
Florindo Road	2,840	113	31	27%	23	20%	26	23%	22	19%	20	18%	33	29%	37	33%
Capilla Road	3,220	128	32	25%	23	18%	34	27%	25	20%	25	20%	40	31%	45	35%
Palacio Place	730	29	6	21%	5	17%	12	41%	5	17%	7	24%	12	41%	10	34%
Palacio Court	530	21	8	38%	7	33%	5	24%	4	19%	4	19%	4	19%	6	29%
Capilla Place	300	12	0	0%	1	8%	1	8%	0	0%	2	17%	0	0%	1	8%
Olmeda Way	520	20	0	0%	0	0%	0	0%	0	0%	0	0%	1	5%	0	0%
Capilla Court	380	15	3	20%	3	20%	4	27%	5	33%	9	60%	4	27%	2	13%
Lucera Place	230	9	0	0%	1	11%	4	44%	3	33%	2	22%	4	44%	5	56%
Lucera Court	240	9	0	0%	2	22%	0	0%	0	0%	0	0%	1	11%	1	11%
TOTAL	**12,890**	**511**	**110**	**22%**	**93**	**18%**	**113**	**22%**	**92**	**18%**	**93**	**18%**	**136**	**27%**	**141**	**28%**

General Notes:

1. Veh = Vehicles
2. Parking supply calculated by measuring length of street segments allowing curbside parking exclusive of residential driveways, red curbs and intersection breaks. A conservative 25' per parking space was assumed.
3. Shading indicates maximum observed parking occupancy for weekday and weekend timeframes.

FIGURE 1
PARKING DEMAND STUDY AREA

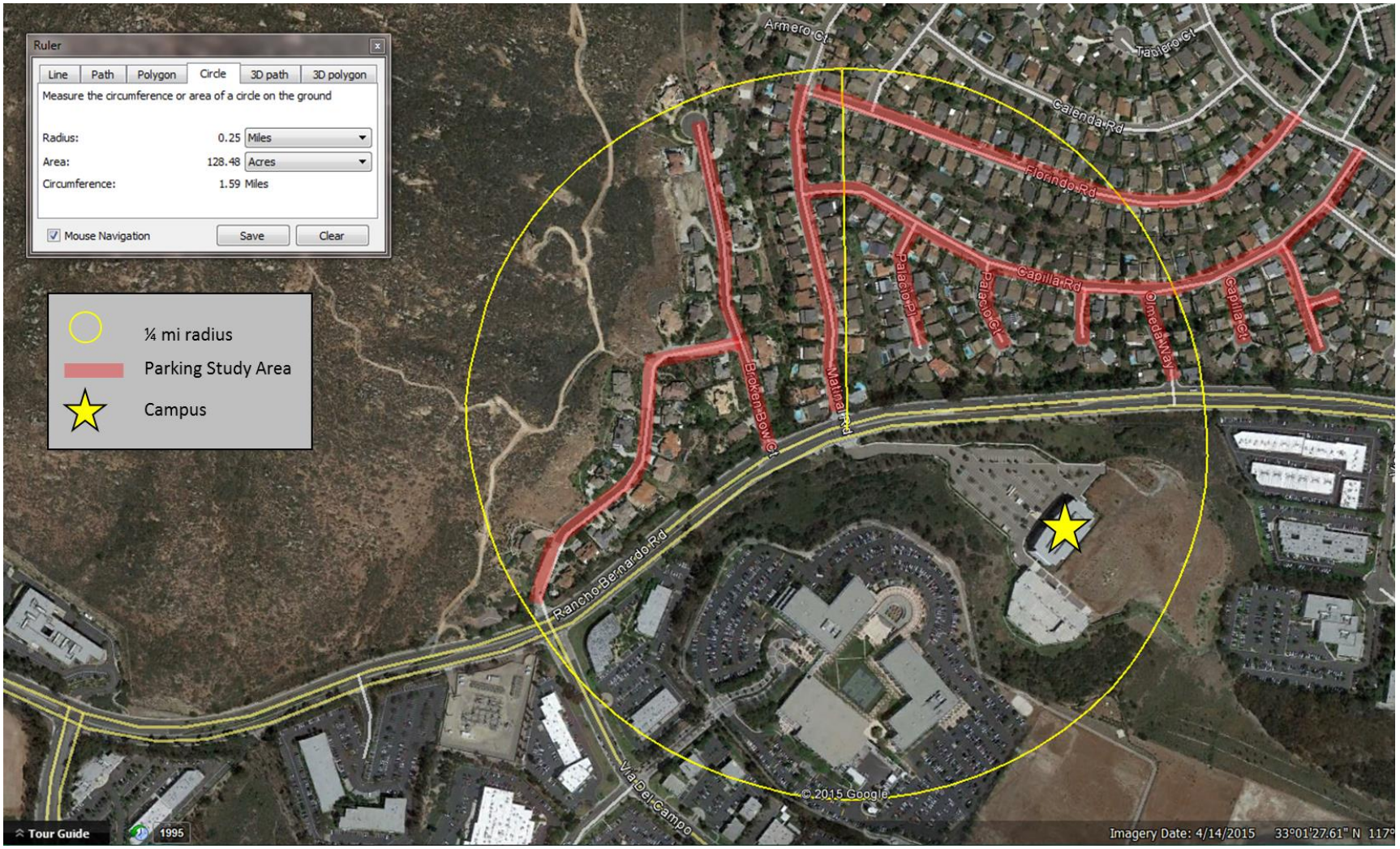


FIGURE 2
WALKING ROUTES & ELEVATION CHANGES

ATTACHMENT A
PUBLISHED PARKING RATES

4th Edition 2010

Parking Generation

ite

Institute of Transportation Engineers

building. GLA is the area for which tenants pay rent; it is the area that produces income. In the retail business, GLA lends itself readily to measurement and comparison; thus, it has been adopted by the shopping center industry as its standard for statistical comparison. Accordingly, GLA is used in this report for shopping centers. For strip centers, discount stores and freestanding retail facilities, GLA usually equals GFA.

School Population: For colleges and universities, population is defined as the total number of full-time equivalent students plus employees (staff and faculty). The specific number of students, staff and faculty should be included separately in notes on the data submission form.

Student: A student is defined as a person who is enrolled in an institution such as a school, college, or university on either a full-time or part-time basis. The number of students refers to the total number of persons enrolled at a facility, not just those present at the time the study is conducted.

Parking Generation Terms

Area Type: Parking demand study sites are categorized by area type, if known. For some land uses, parking demand ratios are presented for different area types.

- **Urban** locations comprise any of the following three area types:
  - **Central Business District (CBD)** is the downtown area for a city. CBD characteristics include good transit service, parking garages, shared parking, an extensive pedestrian sidewalk network, multi-story buildings, priced parking and a wide range of land uses (including mixed-use sites). Because of these characteristics, the analyst must take extra care to make sure only to obtain information for parking attributed to the land use(s) being considered (or only that parking for a defined mixed-use site).
  - **Central City, Not Downtown (CND)** is the area outside the downtown area of a larger city. This area has greater land use density than suburban sites but is substantially less dense than the CBD. The intent of this area designation is for the areas around large central cities (for example, Seattle, San Francisco, Oakland, Atlanta, or Washington, DC) where travel characteristics are likely to be unlike suburban conditions. The analyst must assess whether characteristics (for example, transit, demand management, pricing, shared parking) are sufficiently different than a suburban setting to justify this designation.
  - **Suburban Center (SBC)** areas are those downtown areas of suburbs that have developed CBD characteristics but are not the central city of a metropolitan region. These activity centers have characteristics that may include good transit service, a mix of surface and structured parking, connected streets, a connected pedestrian network and a mix of land uses. Without distinctive transit, pedestrian and shared/consolidated parking features, the SBC designation should not be used in lieu of suburban. Examples include the downtown areas of Bellevue, WA; Las Colinas, TX; and Walnut Creek, CA.
- **Suburban (SUB)** locations are outside the central city of a metropolitan area. Characteristics may include limited transit services, surface parking, less-than-complete pedestrian networks, predominance of single-story buildings, sites with isolated land uses and larger groupings of homogeneous land uses.
- **Rural (RUR)** areas are located outside a metropolitan region.

Land Use: 540
Junior/Community College

Description

This land use includes two-year junior, community, or technical colleges. Four-year (or more) colleges or universities are described in university/college (Land Use 550). A number of two-year institutions have sizable evening programs.

Database Description

The database consisted of eleven suburban sites and two urban sites. Parking demand at the urban sites was similar to that of the suburban sites and, therefore, the data were combined and analyzed together.

Transit services were located within three blocks of all sites except two suburban sites that did not provide transit information.

- Average parking supply ratio: 0.2 spaces per total number of students, faculty and employees (school population) and 4.8 spaces per 1,000 square feet (sq. ft.) gross floor area (GFA).

Two of the suburban sites reported that a parking permit system was employed. The remaining sites did not report whether parking was free or priced. Data were insufficient from which to estimate an effect of different pricing policies on parking demand for this land use.

One study was submitted for a site that was identified as a technical college. This site exhibited parking characteristics that were different from the other junior/community colleges that were included in this land use and it was therefore excluded from the data plot. The technical college had 1,500 students and a peak parking demand of 0.82 vehicles per student (total school population data were not available). Data were collected only between 8:00 and 9:00 a.m. at this site.

Land Use: 540
Junior/Community College

Although most of the sites provided evening courses, little data were provided on parking demand after 5:00 p.m. **Caution should be exercised if estimating parking demand for a college with significant numbers of evening classes.**

The following table presents the time-of-day distribution of parking demand at the surveyed suburban sites.

Based on Vehicles per School Population	***Weekday***	
Hour Beginning	Percent of Peak Period	Number of Data Points*
12:00–4:00 a.m.	–	0
5:00 a.m.	–	0
6:00 a.m.	–	0
7:00 a.m.	10	2
8:00 a.m.	70	4
9:00 a.m.	86	7
10:00 a.m.	100	7
11:00 a.m.	92	7
12:00 p.m.	88	7
1:00 p.m.	85	7
2:00 p.m.	81	6
3:00 p.m.	70	4
4:00 p.m.	55	5
5:00 p.m.	55	4
6:00 p.m.	64	3
7:00 p.m.	70	3
8:00 p.m.	–	0
9:00 p.m.	–	0
10:00 p.m.	–	0
11:00 p.m.	–	0

*Subset of database

For all school uses, it is important to collect data on the total number of students, faculty and employees in order to accurately measure parking demand for the site. It is important to specify the type of junior/community college.

Parking demand observations should also include evening hours and when special events occur at the site.

Future studies should provide information on any existing parking program, parking permit fees or transportation demand management programs.

Additional Data

Quality of transit access may play a role in the parking demand for junior/community colleges.

Study Sites/Years

Canada:
Coquitlam, BC (1991)

Land Use: 540
Junior/Community College

United States:
Valhalla, NY (1991); Clackamas, OR (1995); Portland, OR (1995); Lincroft, NJ (1996); Lansing, MI (2000); Santa Barbara, CA (2002); Oxnard, CA (2003); Ventura, CA (2003); Moorpark, CA (2004); Oregon City, OR (2004); Santa Barbara, CA (2009)

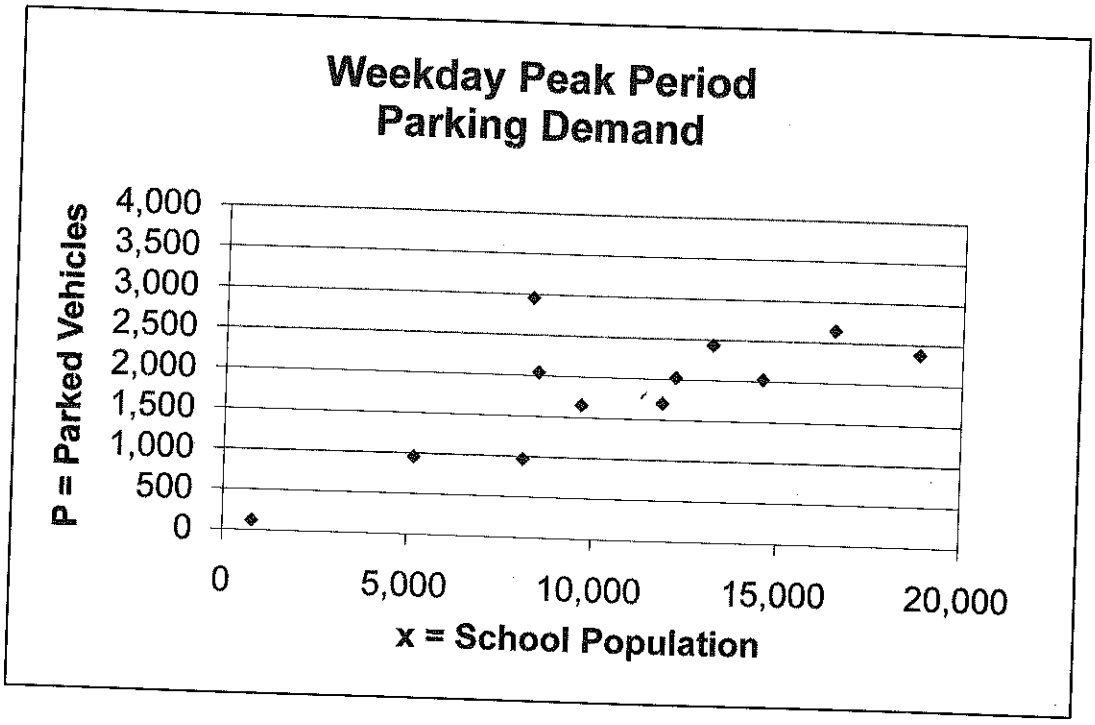
4th Edition Source Numbers

1015, 1130

Land Use: 540
Junior/Community College

Average Peak Period Parking Demand vs. School Population
On a: Weekday

Statistic	Peak Period Demand
Peak Period	10:00–11:00 a.m.
Number of Study Sites	12
Average Size of Study Sites	11,000
Average Peak Period Parking Demand	0.18 vehicles per school population
Standard Deviation	0.06
Coefficient of Variation	36%
Range	0.12–0.36 vehicles per school population
85th Percentile	0.20 vehicles per school population
33rd Percentile	0.15 vehicles per school population



◆ Actual Data Points

THE DIMENSIONS OF PARKING

FOURTH EDITION

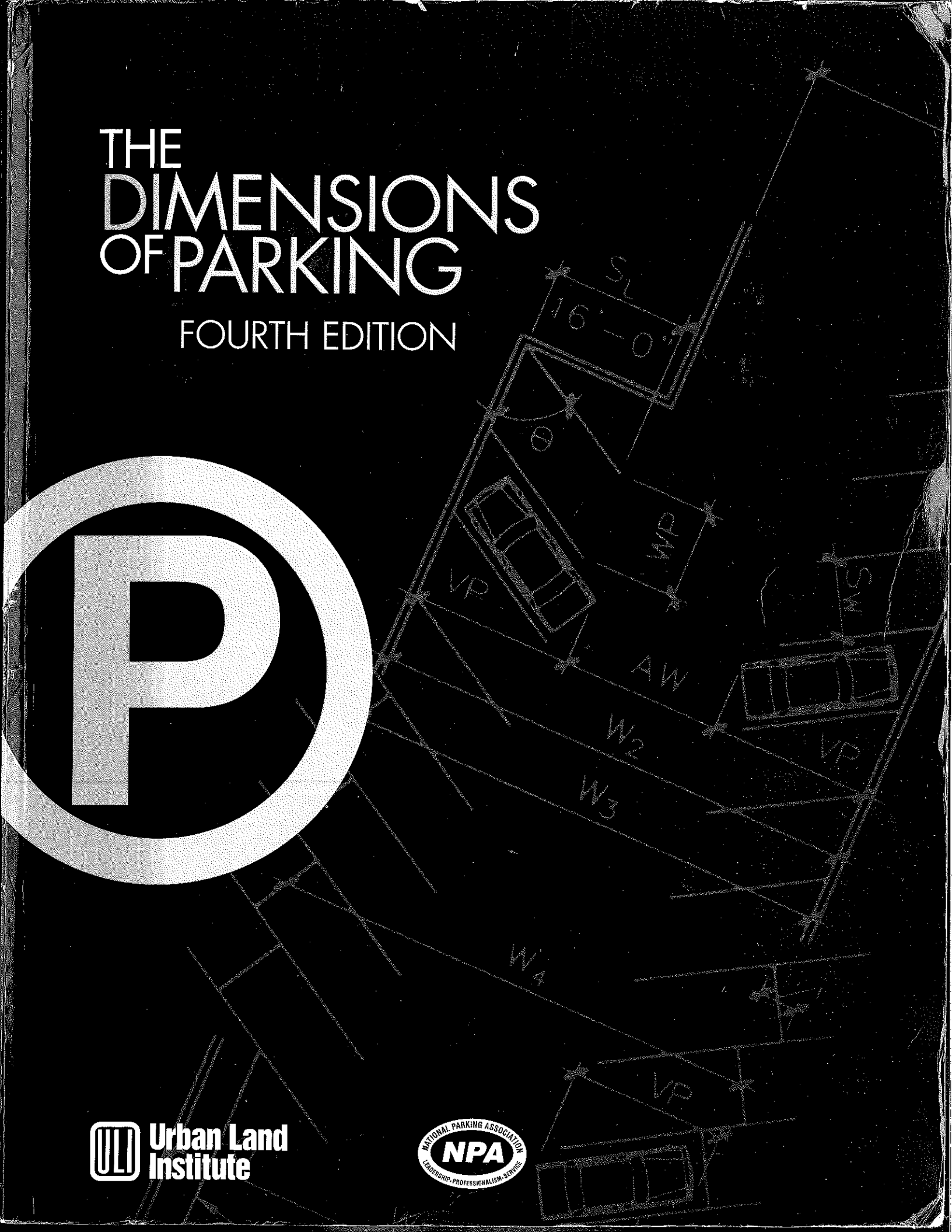


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FIGURE 3-2

RANGES OF GENERATION FACTORS

Land Use	Peak Space Factor	Unit	Short-Term Percent
Shopping Center >600,000 sq. ft.	4.5 spaces	Per 1,000 square feet GLA	80
Shopping Center <600,000 sq. ft.	4.0–4.5 spaces	Per 1,000 square feet GLA	80
Office	0.50–3.00 spaces	Per 1,000 square feet GLA	10
Office	0.10–0.75 space	Per employee	10
Medical Center	0.75–4.50 spaces	Per bed	33
Medical Center	0.10–0.75 space	Per employee	33
Industrial	0.67–3.50 spaces	Per 1,000 square feet GLA	10
Industrial	0.36–1.60 spaces	Per employee	10
University/College	0.10–0.50 space	Per student	NA
	0.80 space	Per staff person	NA
Cinema	10–85 spaces	Per screen	100
Hotel	0.20–1.50 spaces	Per room	NA
Restaurant	5–25 spaces	Per 1,000 square feet GLA	90
Residential	0.20–2.00 spaces	Per unit	NA

Sources: ULI–the Urban Land Institute and ICSC, *Parking Requirements for Shopping Centers*, Second Edition (Washington, D.C.: ULI, 1999); ULI–the Urban Land Institute, *Shared Parking* (Washington, D.C.: ULI, 1983); and Barton-Aschman Associates, Inc., for survey data.

uses that will generate parking demand. Land uses should be defined in terms of square footage and/or number of employees by type of use (retail, restaurant, private office, government office, medical facility, hotel, special generator, or other). Units of measurement include seats, rooms, and other units.

The most difficult yet most important step is to calibrate the raw factors to reflect local conditions. First, the analyst should conduct a field count of peak parking occupancy for the representative land use or uses—one building or one area. Next, the analyst uses the unadjusted parking generation factors to estimate peak parking occupancy by multiplying each factor by the appropriate quantified land use. For example, the retail factor (parkers per 1,000 square feet) is multiplied by the number of thousands of square feet of retail. Finally, the analyst compares the two results—counts and estimates. The first comparison is likely to show a difference. If so, the analyst performs a series of iterations to adjust the factors until the results agree, that is, until the estimates match the field counts. The process is easier and more accurate if employees and visitors can be stratified as long- and short-term parkers. When the calibration is completed, the analyst can use the resulting factors or model to estimate parking demand.

Tips on Estimating Demand

If a project involves more than one land use with integrated parking facilities, the analyst should consider adjustments for shared parking. Substantial parking space reductions may result when variation in peak demand by time of day and season is taken into account. It should be noted, however, that the concept of shared parking applies only if parking is fully integrated into a multiuse project and a significant number of spaces are not reserved.

The most accurate projection of parking demand derives from a thorough understanding of the development program and/or existing conditions, the availability of sound data, and the accurate identification of local factors. To this end, a parking demand study should be conducted at a comparable site or sites and include a detailed parking occupancy survey that determines the availability of existing parking. It may also be helpful to survey patrons or employees at comparable facilities to determine travel patterns, automobile occupancy, and length of stay.

The use of a computer spreadsheet to assist in calculating parking demand permits a greater emphasis on sensitivity analysis. A computerized analysis makes it easy to answer the "what if" questions: What if automobile occupancy changes, or transit use increases, or shared parking is expanded? But, as with most computer applications, good software is not a substitute for reliable data.

How Do I Begin?

Probably the most important question related to a parking demand study is the nature of the information that must be collected. The answer to this question varies by type of proj-