Plaza Frontenac

Located in Saint Louis, Missouri, Plaza Frontenac is an upscale shopping center that houses many specialty shops and premier stores. It is classified as a fashion/specialty center. Heitman Retail manages the property, which is positioned in a large urban setting.

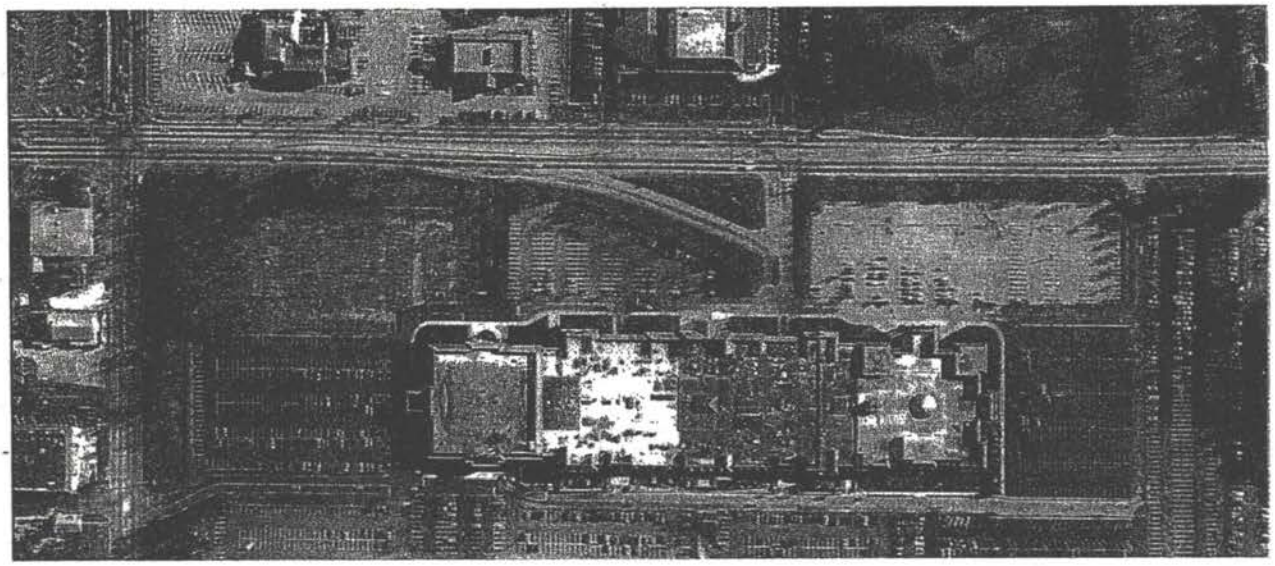
Plaza Frontenac has 48 stores and shops, including two anchor tenants. The total site area is 714,063 square feet, with 443,750 square feet of gross leasable area. There are 12,067 square feet left vacant. Saks Fifth Avenue and Neiman Marcus, the major tenants, occupy approximately 59 percent of the total GLA. Restaurants, all non-fast-food, occupy 21,387 square feet. A six-plex cinema occupies 3.2 percent of the GLA. Of the remaining 45 tenants, 19 are clothing stores.

Plaza Frontenac has adequate parking throughout each day of the year. Even during the holiday shopping season, its parking facilities are never fully occupied. Of its 2,200 parking spaces, 1,880 are located in surface lots. The remaining 220 spaces are located in a two-level parking structure. Patrons and employees are never charged for parking. However, employees are required to park in designated areas away from the building in order to provide more convenient parking for customers.

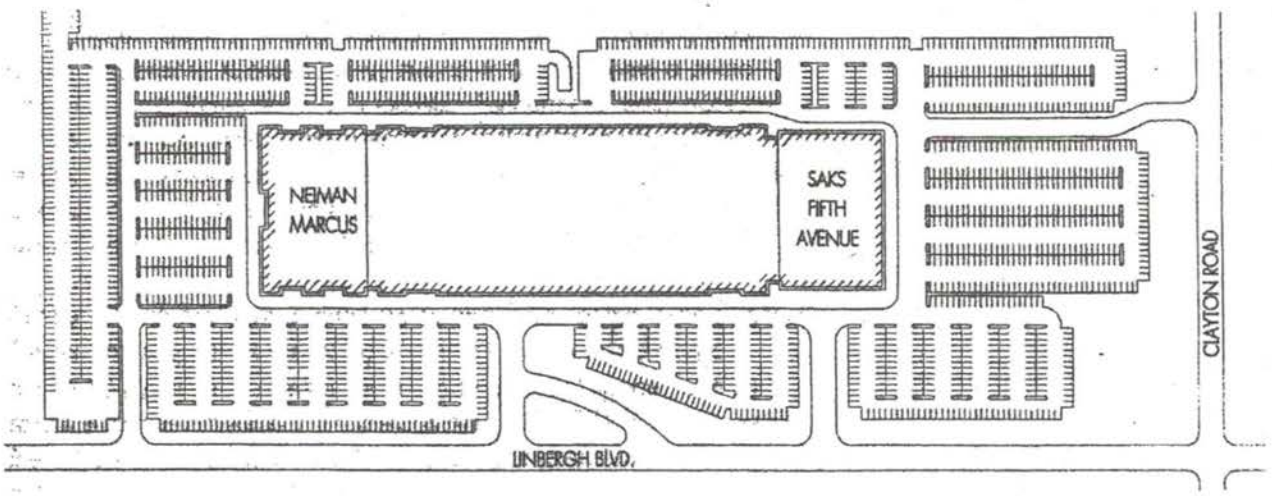
To maintain adequate parking, the center participates in its local Transportation Management Association and provides bus service onto the property. This center has a parking supply of 5.0 parking spaces per 1,000 square feet of occupied GLA. The conditions during the survey day generated 4.0 parked cars per 1,000 square feet of occupied GLA.

Board of Zoning Adjustment
District of Columbia
CASE NO. 17232
EXHIBIT NO. 37A4

Plaza Frontenac



North Wing, Aerial View

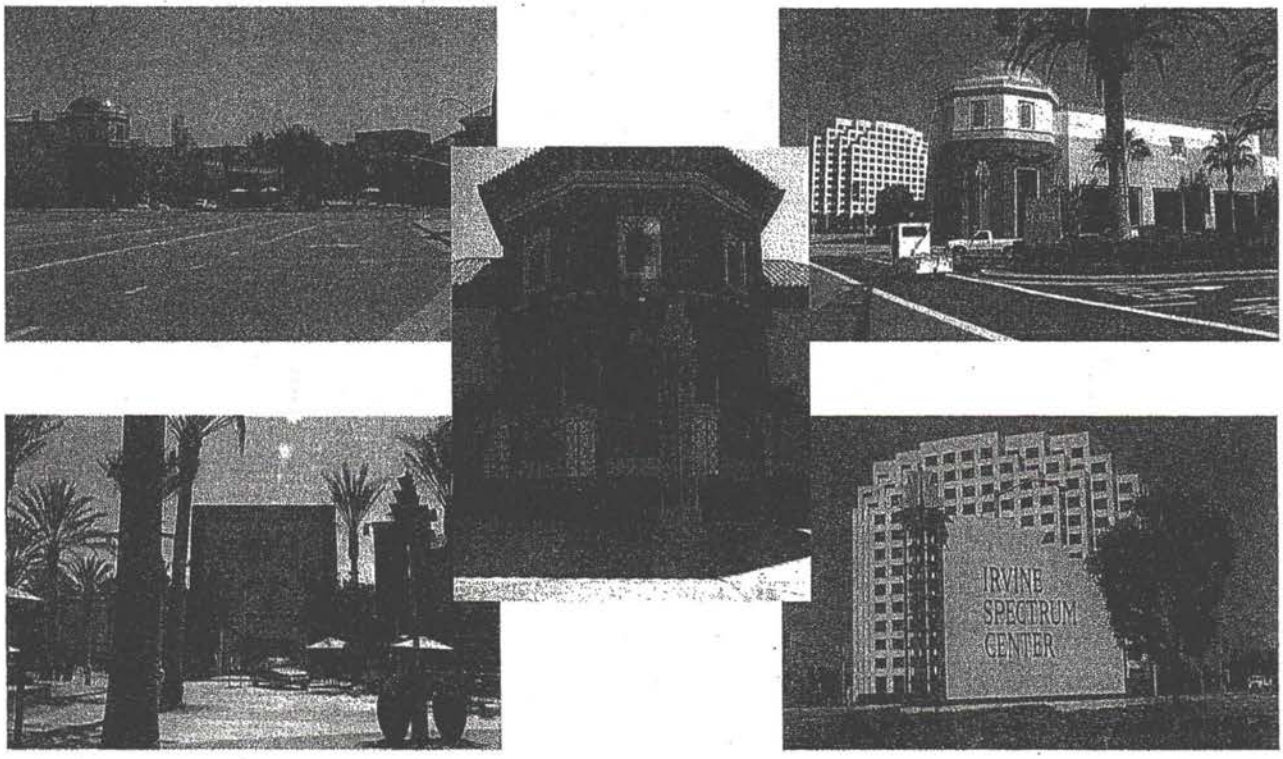


Irvine Spectrum Center

Originally opened in 1995, the Irvine Spectrum Center is a premiere entertainment center located in southern California. In addition to entertainment, it offers a wide array of shopping and dining attractions. Consequently, this center has become a prime attraction for both residents and tourists. Easy access off three main interstates and a tight connection to nearby affluent residential communities make its setting ideal. Open-air courtyards and walkways contain specialty paving, water features, and outdoor dining areas.

Although there are several retail stores and shops at the Irvine Spectrum Center, most of the 450,000 square feet of gross leasable area is occupied by theaters, entertainment tenants, and restaurants. The theaters include Edwards 21 Cinemas and IMAX 3-D Theater, one of the nation's busiest theaters in terms of annual attendance. The entertainment tenants are anchored by Dave & Buster's, Sega City,

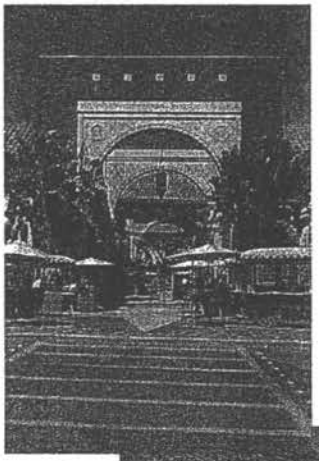
Irvine Spectrum Center



and NASCAR Silicon Motor Speedway. In addition to its vast selection of non-fast-food restaurants, the center features a ten-restaurant, 300-seat restaurant court.

The parking conditions at the Irvine Spectrum Center are changing. The center is executing a major expansion project, which will almost double the total GLA when completed. However, the parking lots have already been expanded, and an immense excess of parking spaces now exists. (The parking ratio currently is 12.1 spaces per 1,000 square feet of occupied GLA.) Once the current phase of construction is completed, the parking ratio will be much more balanced. During the survey day, the parking ratio was 3.6 parked cars per 1,000 square feet of occupied GLA, indicating that the parking supply is adequate. Transit service, provided by the Transportation Corridor, gives direct access from all of Orange County to the Irvine Spectrum Center.









Lakepointe Crossing

Lakepointe Crossing is located in Lewisville, Texas, approximately 20 miles northwest of downtown Dallas. This suburban super regional center contains 588,732 square feet, 48,098 square feet of which is outparcel space. All of the GLA currently is occupied.

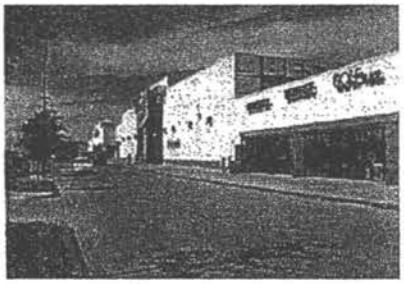
The parking supply at this center provides 3,554 spaces. There is no parking structure, and customers and employees are not charged for parking. Based on the judgment of the management, the parking lots are fully occupied at least ten times per year. All of these days occur during the month of December and occupancy reflects normal seasonal/holiday activity.

Lakepointe Crossing



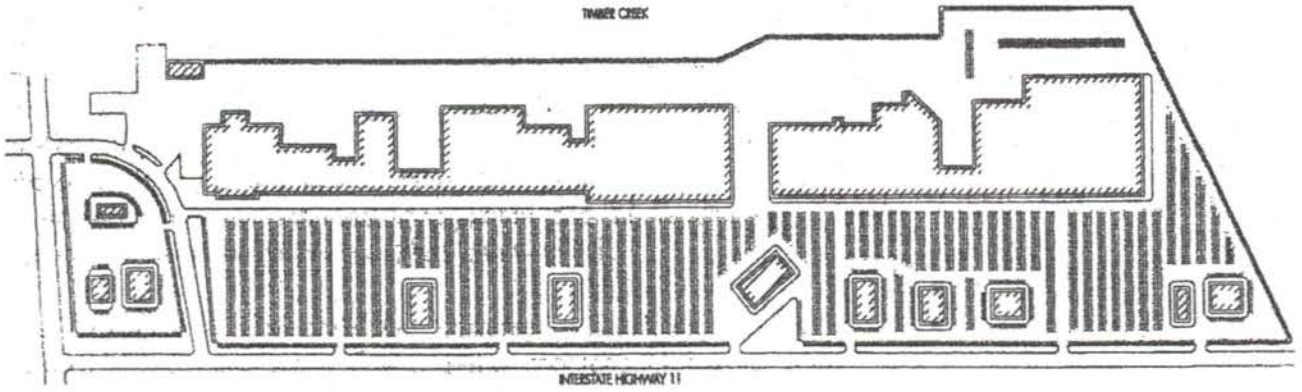
Aerial View

Even with the busy seasonal activity, parking conditions, according to management, are adequate. Unauthorized parking is not a problem, and the surrounding land use does not generate parking on the shopping center's property. Employees use the parking lots behind the building during peak shopping periods to provide adequate parking for customers. Lakepointe Crossing has a parking supply of 6.6 spaces per 1,000 square feet of occupied GLA. The conditions during the survey day generated 5.6 parked cars per 1,000 square feet of occupied GLA.









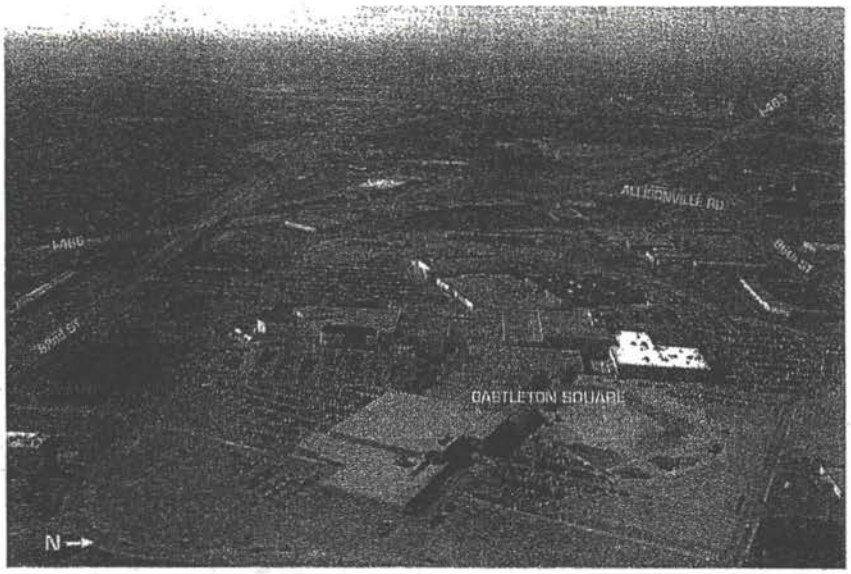
Castleton Square

Castleton Square is a super regional center managed by the Simon Property Group. Located approximately 12 miles northeast of downtown Indianapolis, Indiana, it is easily accessible off of Interstate 465 and 82nd Street. The center, which opened in 1973, was renovated in November 1998. Although the renovations have greatly enhanced the appeal of the center to its patrons, orienting customers to the new ring road configuration and new entrance locations has been difficult.

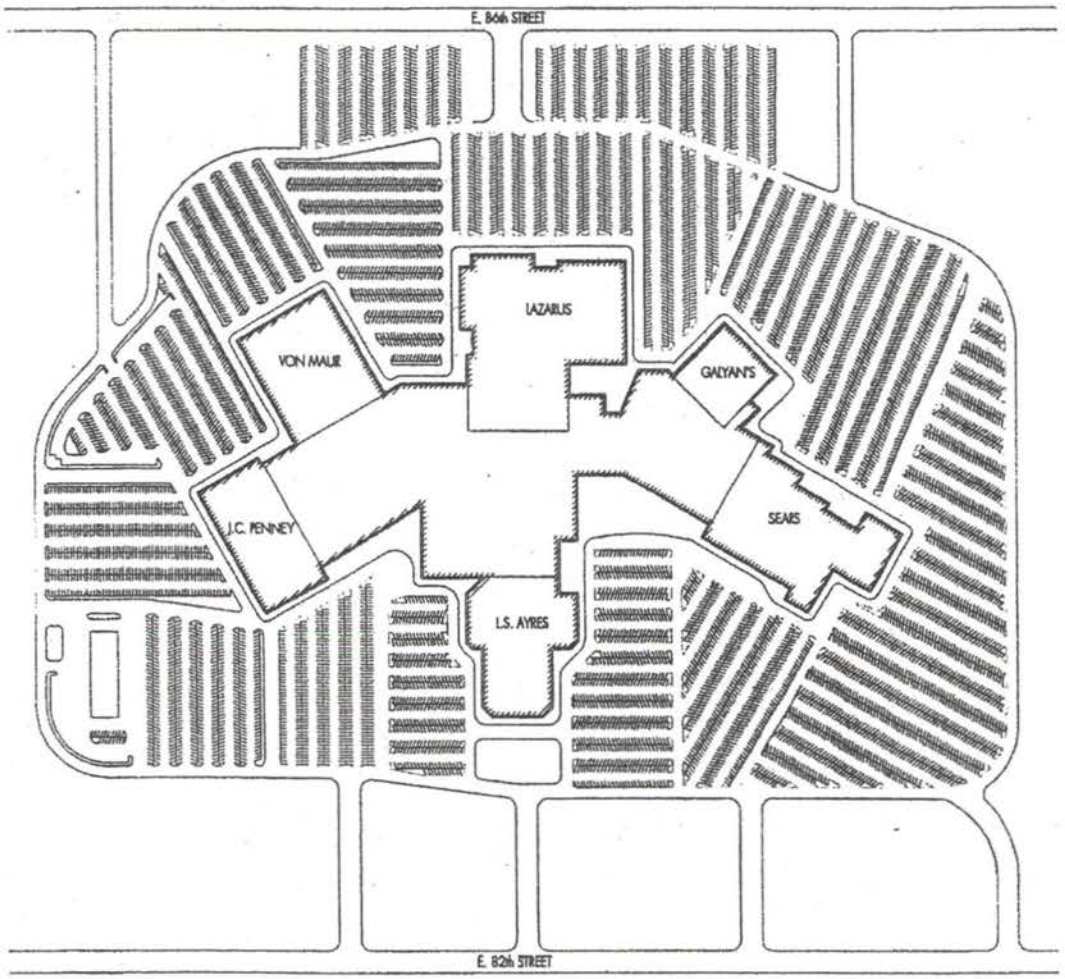
The total occupied GLA of Castleton Square is 1,384,527 square feet, and 36,934 square feet remain vacant. The largest anchor tenant is Lazarus, with 309,080 square feet. The other anchors—Sears, L.S. Ayres, Galyan's, JC Penney, and Von Maur—account for approximately 75 percent of the center's total occupied GLA. In addition, the center has 17,500 square feet of restaurant space and 11,833 square feet devoted to a theater. The remaining tenants are 112 specialty shops, which together occupy 316,500 square feet.

Castleton Square has a total supply of 7,606 parking spaces. Included in the supply is a two-level, 256-space parking structure where customers can park without charge. A recent parking count determined that on-site parking is fully occupied three days per year: the Friday after Thanksgiving, and the two Saturdays immediately preceding Christmas Day. Management stated that the greatest parking challenge is urging customers to use the reconfigured parking areas on what was once the "back" side of the mall. During the survey day, Castleton Square had a parking demand of 5.2 parked cars per 1,000 square feet of GLA. The current parking supply is 5.4 parking spaces per 1,000 square feet of GLA.

Castleton Square



Aerial View

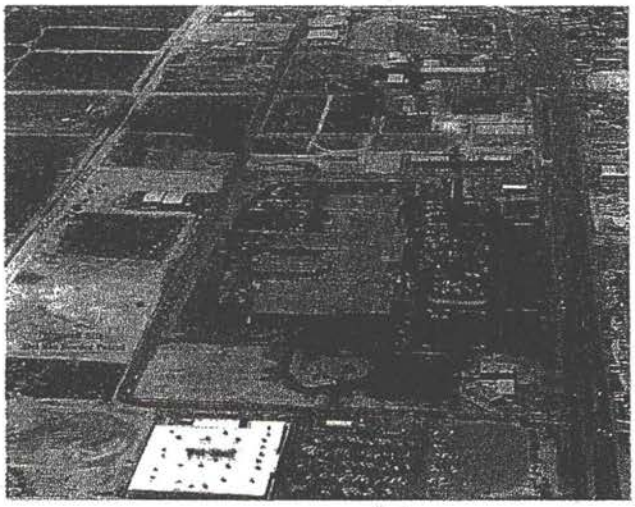


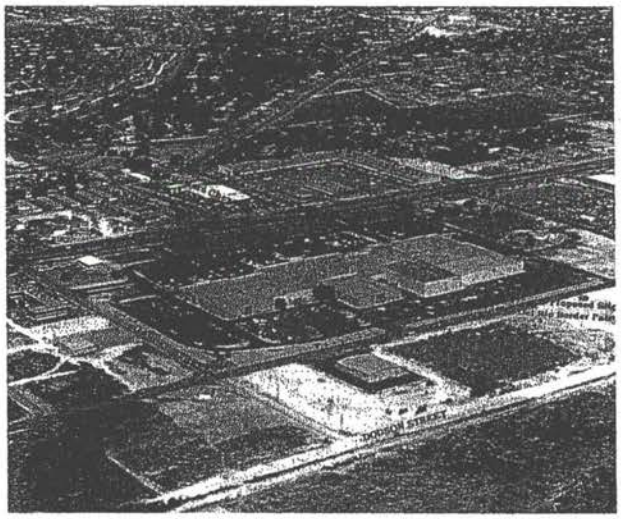
Plaza Del Sol

The Plaza Del Sol Mall is a small community center located in Del Rio, Texas. It is one of the few centers participating in the study that is in a rural or highway nonsuburban setting. The city of Del Rio is immediately across the international border of Ciudad Acuna, Mexico. Lake Amistad in Del Rio helps generate activity at the center due to hunting, fishing, and water sports. Managed by CBL and Associates Management, Inc., Plaza Del Sol is the only shopping center in Del Rio.

Plaza Del Sol has 260,242 square feet of gross leasable area. Approximately 5 percent of the area is vacant, and the remaining 95 percent is currently leased to 39 tenants. The anchor tenants are provided by Kmart, Bealls, and JC Penney. Kmart is the largest anchor with 87,461 square feet, nearly 34 percent of the Plaza Del Sol's total GLA. Bealls has 30,000 square feet and JC Penney has 38,720

Plaza Del Sol

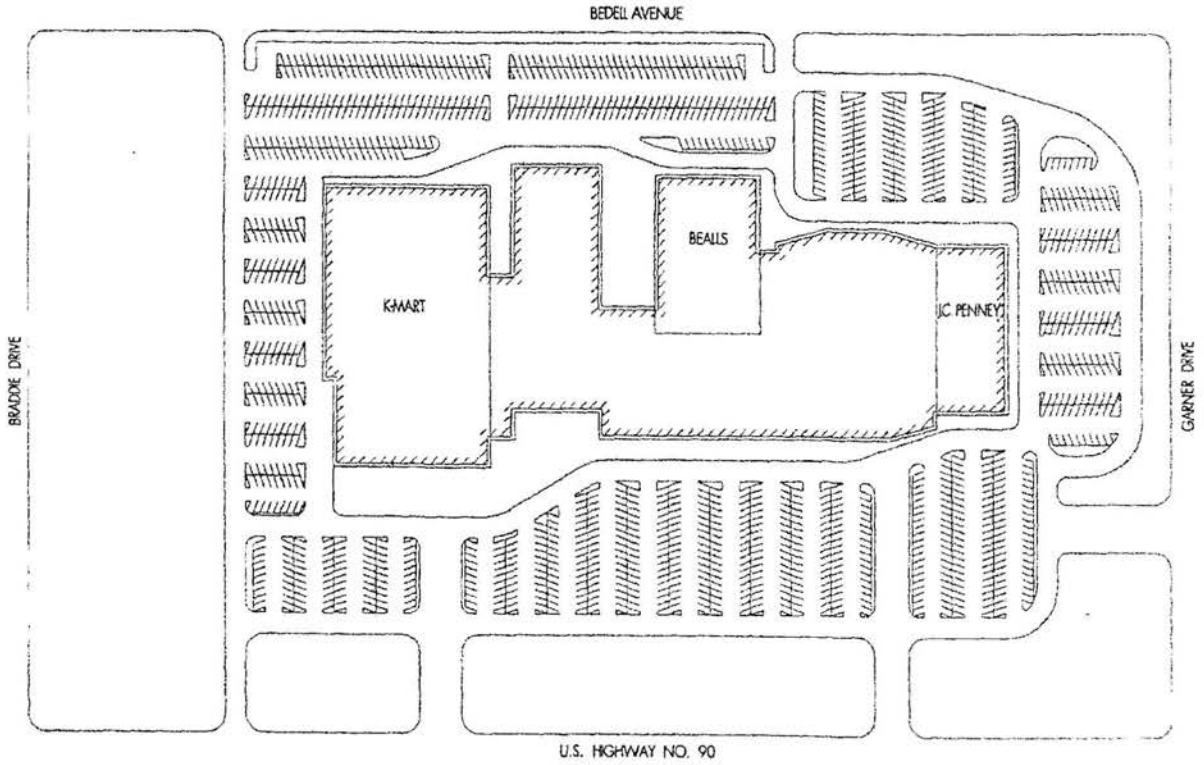




Aerial Views

square feet. Other tenants occupy 790 square feet of office space and 9,470 square feet of non-fast-food restaurant space. Plaza Del Sol also has an eight-screen, 24,814-square-foot movie theater.

The management of this center conducted recent parking occupancy counts and found that the parking lots were fully occupied approximately five times per year: Christmas Eve, the weekend prior to Christmas, Easter weekend, Halloween, and during an annual car stereo show. The total number of parking spaces on site is 1,340, all of which are located in surface lots. Employees can park in the surface lots, although they are required to park along the outer perimeters of the lots. Plaza Del Sol has implemented a bus service for its transit patrons. The parking supply is 5.0 spaces per 1,000 square feet of occupied GLA. There were 4.8 parked cars per 1,000 square feet of occupied GLA during the survey day.



Chapel Hills Mall

Located on the northern outskirts of Colorado Springs, Colorado, Chapel Hills Mall is a large, super regional shopping center. Although near a large city, the center is far enough from Colorado Springs to be considered in a suburban setting. The economy in the Colorado Springs area has thrived throughout the past decade. Consequently, employment rates have increased, which has led to a population increase. Moreover, shopping center vacancies have declined, and construction of retail space has been steadily on the rise. These trends are expected to continue.

The total site area at the Chapel Hills Mall is 99.93 acres, and the gross leasable area is 1,206,334 square feet. There are 33,598 square feet of vacant space. The major tenants occupy approximately 62 percent of the total GLA. They are JC Penney (62,422 square feet), Foley's (171,083 square feet), Sears (132,369 square feet), Dillard's (207,141 square feet), Mervyn's (82,499 square feet), and Kmart (27,977 square feet). Restaurants occupy 19,800 square feet and cinemas 49,586 square feet. Altogether, the Chapel Hills Mall has 122 tenants.

A parking structure at Chapel Hills Mall provides approximately 10 percent of its total parking supply. Although management at the center indicated that expansion of the parking area was unnecessary, it did state that parking was fully occupied ten or more days per year. Like virtually every center surveyed, parking at capacity at Chapel Hills Mall occurs during the holiday season. At this time, employees are required to park on the outer perimeters of the parking lots. The parking supply at this center is 5.0 spaces per 1,000 square feet of occupied GLA, and there were 4.8 parked cars per 1,000 square feet of occupied GLA during the survey day.

Chapel Hills Mall



Aerial View



Santa Monica Place

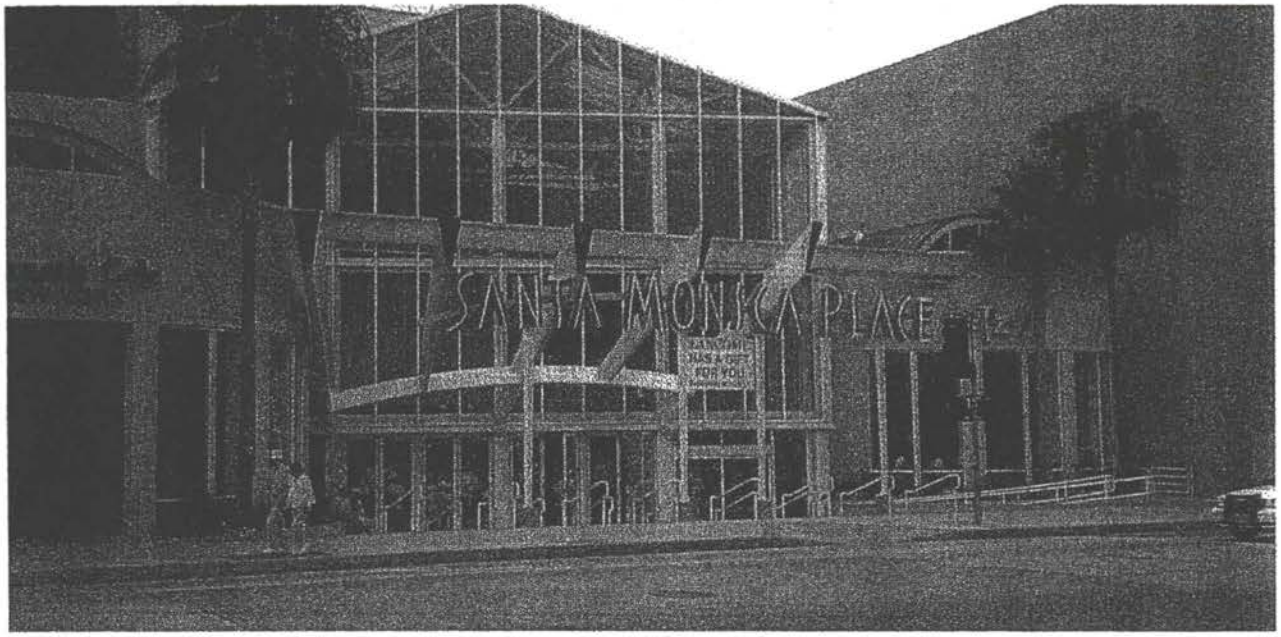
Santa Monica Place, a subsidiary of the Rouse Company, is a three-level regional center located in Santa Monica, California. Because of its southern California location, it has been included in scenes from several Hollywood blockbuster films. Furthermore, the close proximity of Santa Monica Pier and beach provides a historic setting for this center, which was constructed in 1980. It is located on the south end of Third Street Promenade, at the intersection of Fourth and Broadway.

Santa Monica Place has approximately 570,000 square feet and accommodates 140 tenants. Two anchor tenants, Robinsons-May and Macy's, are positioned diagonally to each other, and they are both adjacent to a parking structure.

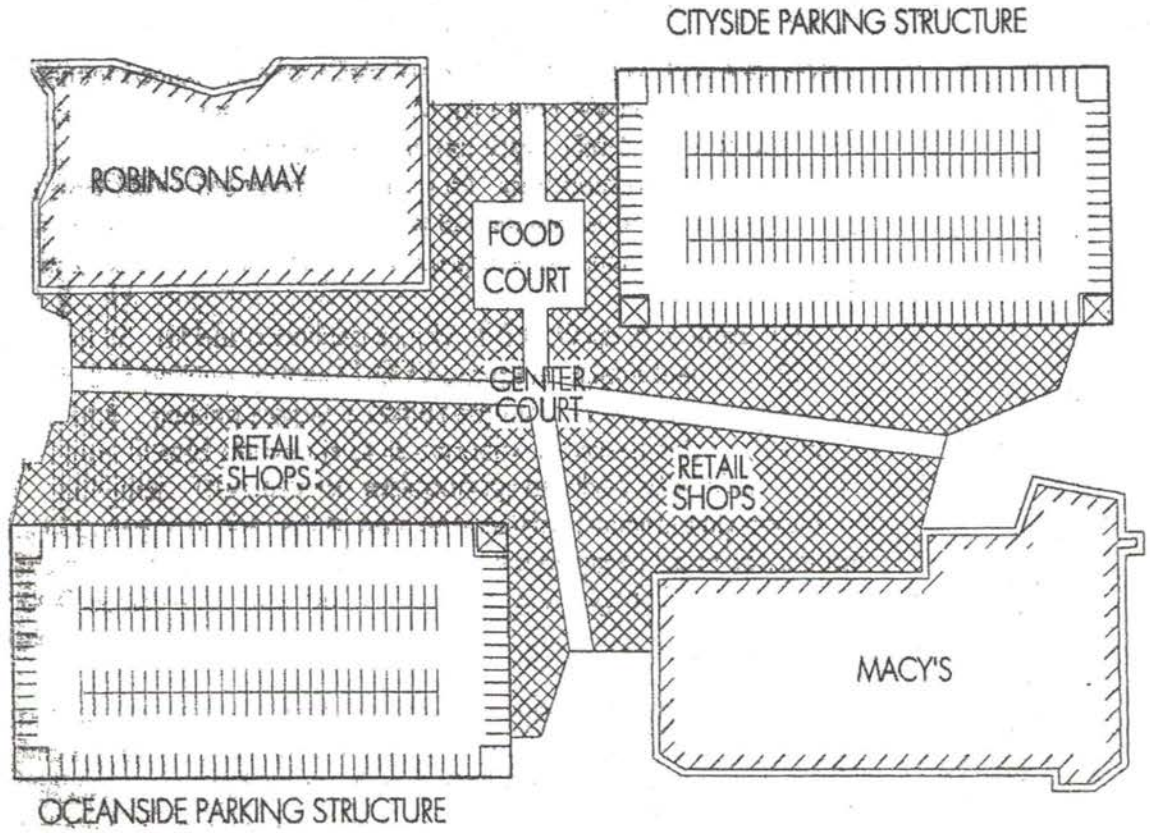
According to management, enforcing parking and controlling access to the center's two parking structures is a difficult task. There are 2,020 parking spaces within the two structures, yielding a parking supply of 3.5 spaces per 1,000 square feet of occupied GLA. Demand during the survey day generated 4.0 parked cars per 1,000 square feet of occupied GLA. Therefore, employees are required to park off site during peak shopping periods in order to provide adequate parking for customers.

Patrons are charged a flat rate of $3 to park after 5:00 p.m. on Thursday through Sunday, although the fee is waived with a minimum $25 purchase at the mall. Parking at all other times is for three hours. Management has indicated that capacity parking exists more than ten times per year, mainly on Saturday afternoons. Public transportation is provided by the Santa Monica Big Blue Bus and by Greyhound. Employees who use public transportation are reimbursed by the center.

Santa Monica Place



Main Entrance



Cielo Vista Mall

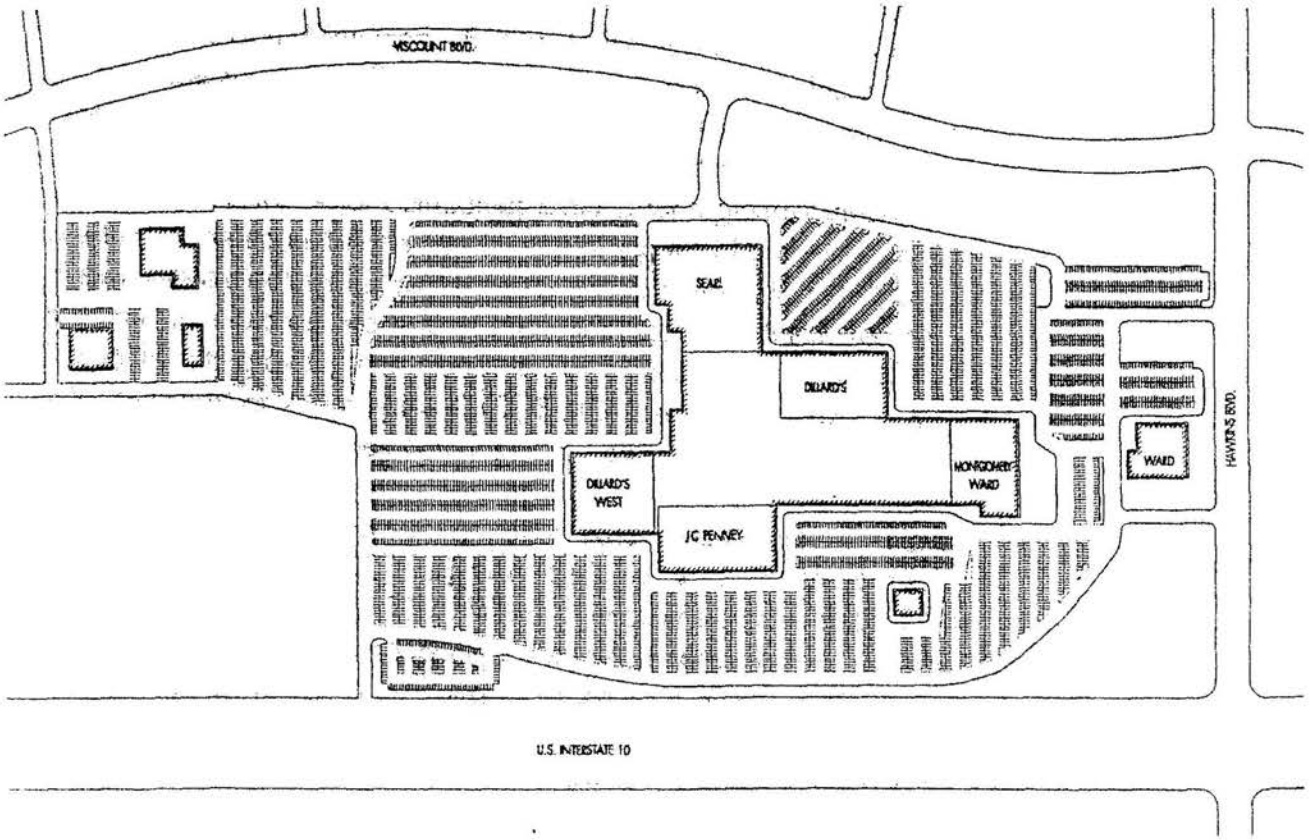
Cielo Vista Mall is a large, super regional shopping center located in El Paso, Texas. This 1,167,140-square-foot center is managed by the Simon Property Group. The total site area encompasses 83 acres.

Cielo Vista Mall has 123 stores. Dillard's is the largest tenant, occupying 26 percent of the total occupied GLA. The remaining anchor tenants—Montgomery Ward, JC Penney, and Sears—occupy 42 percent, and restaurants occupy 2 percent. This mall has no office space or cinema.

Cielo Vista Mall has a parking supply of 6,000 spaces, yielding a ratio of 5.2 parking spaces per 1,000 square feet of occupied GLA. None of the parking supply is contained within a structure, and management said parking is at its capacity approximately four to six times per year. Peak parking days are the Friday after Thanksgiving and the Saturdays and weekdays immediately before Christmas Day. During the survey day, the number of parked cars per 1,000 square feet of occupied GLA was 5.3, slightly higher than the parking supply.

Management at Cielo Vista Mall has taken several steps to maintain adequate parking conditions. Employees are required to park in remote areas at all times. During the holiday season, employees must park even farther away from the store entrances. Warning tickets or stickers are placed on vehicles parked in unauthorized areas, and the local police department often assists in the ticketing procedure.

Cielo Vista Mall



St. Charles Towne Plaza

St. Charles Towne Plaza is a community center located in the suburban setting of Waldorf, Maryland, less than 40 miles southeast of Washington, D.C. Built in 1987, it is managed by the Simon Property Group. The city of Waldorf is located on the periphery of the Washington, D.C.–Baltimore metropolitan area, the fourth largest consumer market in the United States, making it attractive to businesses of all sizes. Moreover, its remarkably large industrial zone has drawn the attention of several major companies looking for regional distribution facilities. Consequently, the city is undergoing rapid growth. City officials expect this growth to continue, and they have high hopes that Waldorf will develop into a vibrant marketplace for the entire Mid-Atlantic region.

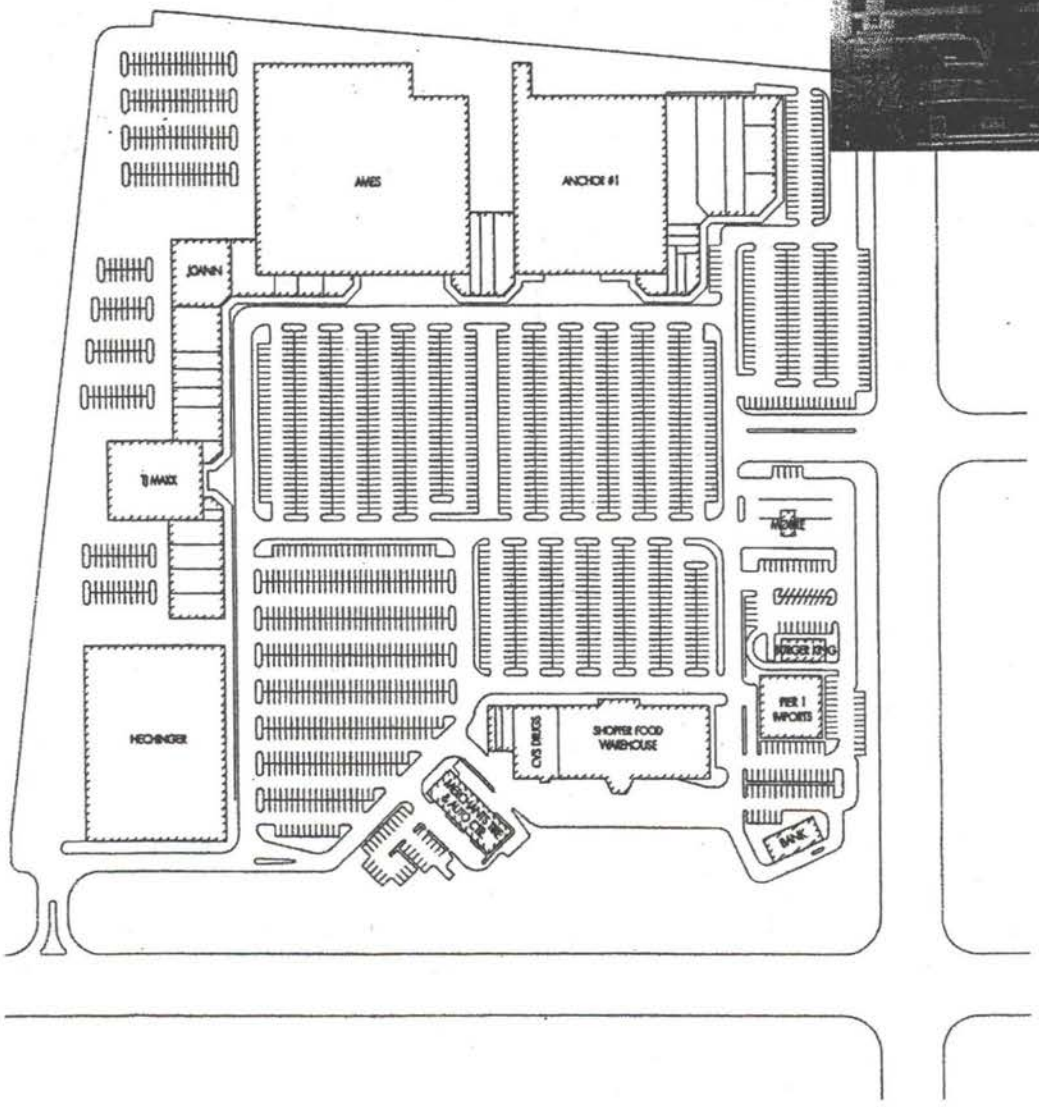
The major part of the GLA is occupied by four major tenants. These tenants include Hechinger (70,000 square feet), Shopper's Restaurant Warehouse (94,028 square feet), Ames (78,900 square feet), and Service Merchandise (51,250 square feet). In addition, 25 tenants occupy the remainder of space. Overall, the total GLA is 403,212 square feet, and all of the area is occupied.

St. Charles Towne Plaza does occasionally lack adequate parking for its employees and patrons. According to its management, parking is fully occupied more than ten days per year. As a means of solving some of the parking problems, employees are required to park along the outer periphery of the parking lots. However, no incentive is offered to employees to encourage carpooling, and the center does not have a transit system. St. Charles Towne Plaza has a parking supply of 5.8 spaces per 1,000 square feet of occupied GLA. The parking occupancy counts indicated a ratio of 4.4 parked cars per 1,000 square feet of occupied GLA during the survey day.

St. Charles Towne Plaza

Shopper's Food Warehouse Entrance





Independence Mall

Independence Mall, located a few miles west of Cape Cod Bay, is approximately 30 miles southeast of Boston, Massachusetts. It is a regional center managed by the Pyramid Management Group.

The total GLA of the center is 751,768 square feet; 77,000 square feet currently are vacant. The center is anchored by Filene's, Bradlees, JC Penney, and Sears; these tenants occupy approximately 50 percent of the total GLA. In addition, the center has offices, a 14-screen movie cinema, restaurant service, and almost 100 specialty shops.

The parking supply of 3,956 spaces is in surface lots. According to management, full capacity parking usually is reached between four and six times a year due to seasonal peak activity combined

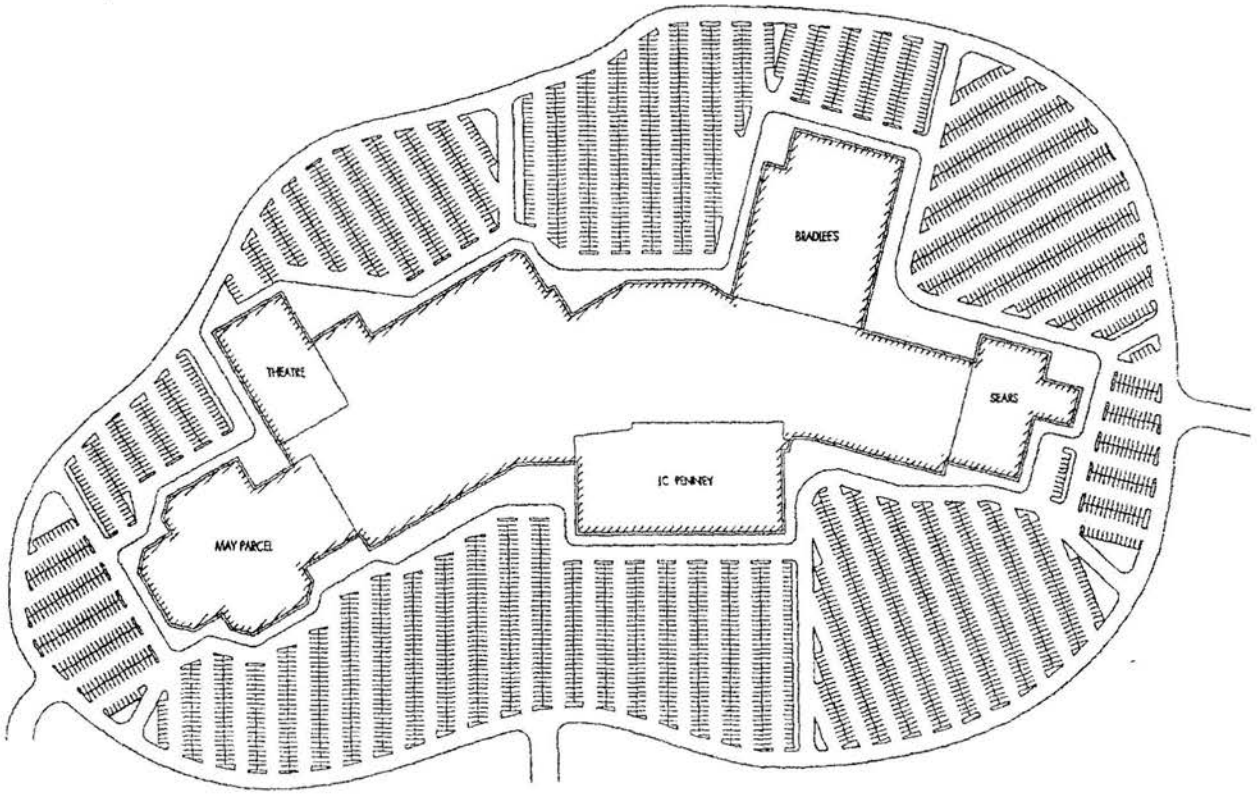
Independence Mall



Aerial View

with a special event. There are no restrictions regarding employee parking except during the holiday shopping season, when employees must park at least 20 spaces away from the building. Parking demand during the survey day generated a need for 3,265 spaces; the ratio was 4.2 parked cars per 1,000 square feet of occupied GLA. The parking supply yields a ratio of 5.1 parked cars per 1,000 square feet of occupied GLA.

The management at Independence Mall has not indicated any need for major improvements in the current parking system. The only problems related to parking are caused by snowstorms, when patrons tend to triple-park, and by the small number of parking spaces near entrances and destination shops.



Appendices

Appendix A
Recommended Parking Ratios[a]

Percentage of Total GLA in Combined Cinema, Restaurant, and Entertainment Usages

Center Size (GLA in Square Feet)	0%	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	21%+
0–400,000	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.03	4.06	4.09	4.12	4.15	4.18	4.21	4.24	4.27	4.30	SP[b]
400,000–419,999	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.00	4.03	4.06	4.09	4.12	4.15	4.18	4.21	4.24	4.27	4.30	SP[b]
420,000–439,999	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.06	4.09	4.12	4.15	4.18	4.21	4.24	4.27	4.30	4.33	4.36	SP[b]
440,000–459,999	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.11	4.14	4.17	4.20	4.23	4.26	4.29	4.32	4.35	4.38	4.41	SP[b]
460,000–479,999	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.17	4.20	4.23	4.26	4.29	4.32	4.35	4.38	4.41	4.44	4.47	SP[b]
480,000–499,999	4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.22	4.25	4.28	4.31	4.34	4.37	4.40	4.43	4.46	4.49	4.52	SP[b]
500,000–519,999	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.28	4.31	4.34	4.37	4.40	4.43	4.46	4.49	4.52	4.55	4.58	SP[b]
520,000–539,999	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.33	4.36	4.39	4.42	4.45	4.48	4.51	4.54	4.57	4.60	4.63	SP[b]
540,000–559,999	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.39	4.42	4.45	4.48	4.51	4.54	4.57	4.60	4.63	4.66	4.69	SP[b]
560,000–579,999	4.44	4.44	4.44	4.44	4.44	4.44	4.44	4.44	4.44	4.44	4.44	4.47	4.50	4.53	4.56	4.59	4.62	4.65	4.68	4.71	4.74	SP[b]
580,000–599,999	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.53	4.56	4.59	4.62	4.65	4.68	4.71	4.74	4.77	4.80	SP[b]
600,000–2,500,00	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.50	4.53	4.56	4.59	4.62	4.65	4.68	4.71	4.74	4.77	4.80	SP[b]

a Parked cars per 1,000 square feet of gross leasable area.

b Shared parking methology is recommended. Shared parking is defined as parking spaces that can be used to serve two or more individual land uses without conflict or encroachment.

Appendix B
Letter to Center Manager

International Council of Shopping Centers

Urban Land Institute

Dear Center Manager:

Greetings and best regards for the upcoming holiday season to you and your family.

Walker Parking Consultants (WPC) has been retained by the Urban Land Institute (ULI) and the International Council of Shopping Centers (ICSC) to survey shopping center parking. This information will be used to update the landmark ULI/ICSC study (in 1982), which became the primary source of guidance on parking requirements and benchmarks for the shopping center industry. The retail environment has changed significantly during the past 15 years, and the original study is very much in need of an update. Your assistance in accomplishing that update could not be more important.

There are two ways by which you can assist our industry through your participation in this study:

The first is to fill out the enclosed questionnaire and return it to our study consultant Walker Parking Consultants. The survey form is designed in a multiple choice format and should require about ten minutes to complete.

The second is to assist in on-site data collection in your parking lot during peak shopping days next year. Details are spelled out at the end of the survey form.

The information obtained will be kept confidential and will only be used collectively.

If you have any questions or need assistance in completing this form, please contact John Dorsett with Walker Parking Consultants at 1-317-842-6890.

Looking forward to working with you, we are...

John Konarski III, Ph.D.
Staff Vice President
International Council of Shopping Centers

Rachelle L. Levitt
Senior Vice President, Policy and Practice
Urban Land Institute

Appendix B *(cont.)*
General Questionnaire

To Be Completed by Center Management

Name of Center: _____
(Please indicate only one center per form. If additional forms are needed, please photocopy or request additional forms from WPC.)

Address of this Center: _____

_____

_____

Contact Person: _____

Title: _____

Telephone: (_____) _____

Address (if different from above): _____

_____

_____

Information for This Center:

A. Shopping center location (check one box and insert ZIP Code)
- ❑ Urban setting in a large city (over 250,000 people)
- ❑ Urban setting in a town, suburban business district or edge city
- ❑ Suburban location
- ❑ Rural or highway non-suburban location
- ❑ Other: (Describe) _____

B. ZIP Code in which center is physically located: _____

C. Type of shopping center (Refer to enclosed definition sheet and check only one)
- ❑ Neighborhood center
- ❑ Community center
- ❑ Regional center
- ❑ Super regional center
- ❑ Fashion/specialty center
- ❑ Power center
- ❑ Theme/entertainment center
- ❑ Factory Outlet center
- ❑ Other (Describe) _____

D. Vacancy and Occupancy as of December 1998: (**Occupied** space refers to space *physically occupied* by tenants, whether owned or unowned, and includes temporary tenants and anchors. **Vacant** space refers to spaces designated for occupancy that are *not physically occupied* by tenants, anchors or temporary tenants, even if currently leased. Occupied and vacant space square footage should be as of **December 1998.** If there has been a significant change in occupancy during December, provide averages for the month.)

1. Total occupied gross leasable area excluding outparcels (include anchors, whether owned or unowned, and temporary tenants) _____ square feet
2. Total occupied outparcel space, including anchors and temporary tenants, that functions as part of the center (whether owned or unowned) _____ square feet
3. Total vacant gross leasable area (including anchor and outparcel space, whether owned or unowned) _____ square feet

E. Tenant mix characteristics

This center (including owned or unowned outparcel space that functions as part of the center) has:

Movie theater space:
Occupied _____ square feet Vacant _____ square feet
Total seats _____ Total screens _____

Non-movie theater commercial recreation space (bowling alley, skating rink, health club, arcade, virtual reality venue, etc.) _____ square feet

Fast-food space (including food court seating area) _____ square feet

Non-fast-food restaurant space _____ square feet

Grocery/supermarket space _____ square feet

Discount/off-price store space _____ square feet

Office tenant space:
Occupied _____ square feet Vacant _____ square feet

Other non-retail space (bank branch, library, day care, post office, tax preparation, travel agency, etc.) _____ square feet

Appendix B *(cont.)*
General Questionnaire

Parking at This Center:

A. Total number of parking spaces on site: _____

B. Are any of these spaces in a parking garage, deck, or other structure? ❑ No ❑ Yes

If yes, how many spaces are in a garage or structure? _____

What is the highest vertical garage level? _____

C. Is there any parking charge to the customer?
❑ No ❑ Yes

If yes, what is the initial rate? $_____ for _____ hours

What is the subsequent rate? $_____ for _____ hours

Is there a parking validation program (by stores/tenants)?
❑ No ❑ Yes

If yes, describe: _____

_____

Is there a valet parking program at this center?
❑ No ❑ Yes

D. How many days per year is on-site parking fully occupied (over 95%) at any time during the day?

❑ Never
❑ One
❑ Two
❑ Three
❑ Four to six
❑ Seven to nine
❑ Ten or more

Additional comments: _____

_____

This answer is based on:

❑ Recent count ❑ Judgment/past experience

E. When is on-site parking fully occupied? _____

_____

(Please provide specific dates or times, for example, Friday after Thanksgiving, Saturday before Christmas, every Friday evening, Saturday afternoons, etc.)

F. Is peak parking demand at this center usually associated with:

❑ A special event or promotion?
❑ Normal seasonal/holiday activity?
❑ A combination of seasonal peak with a special event?

G. Does this shopping center participate in a local or regional Transportation Management Association? ❑ No ❑ Yes

H. *Do shopping center tenant employees park on site during* off-peak seasons? ❑ No ❑ Yes

Where do the tenant employees park? _____

_____

If they park on site, are specific spaces reserved for employees?
❑ No ❑ Yes

If yes, where are those spaces located? _____

_____

If yes, how many spaces are reserved? _____

Are employees ever charged for parking? ❑ No ❑ Yes

Are incentives provided to encourage employees to carpool or use transit (such as carpool matching or subsidized bus passes)?
❑ No ❑ Yes

If yes, describe: _____

_____

Please estimate the number of employees (both retailer and center) working in the center during:

Normal period _____ Peak period _____

Are shopping center employees asked to park in a different location during peak shopping times? ❑ No ❑ Yes

If yes, describe: _____

_____

I. How many handicapped parking spaces are provided? _____

Is violation of handicapped parking a common occurrence at your center? ❑ No ❑ Yes

J. Are there spaces designated for compact cars?
❑ No ❑ Yes

If yes, how many? _____

K. Do parkers from adjacent properties or land uses frequently park on shopping center property? ❑ No ❑ Yes

If yes, 1. Describe: _____

_____

2. Does this have a significant effect on parking availability for your shoppers? ❑ No ❑ Yes

If yes, *describe:* _____

_____

3. Has any action been taken to curb unauthorized parking? ❑ No ❑ Yes

If yes, describe: _____

L. What are your three biggest parking-related problems? (Please rank in descending order of significance.)

1. _____

_____

2. _____

_____

3. _____

_____

M. Has there been any need to increase parking area, since the center opened, that was not associated with an expansion of tenant floor area? ❑ No ❑ Yes

N. Please use this space to provide any further thoughts you may have on parking availability, management, or utilization.

_____

_____

_____

_____

TRANSIT AT THIS CENTER

A. Is there scheduled bus or train service to the shopping center area? ❑ No ❑ Yes, bus ❑ Yes, train

B. Do buses enter the center property? ❑ No ❑ Yes

C. Which of the following amenities are provided for transit patrons? ❑ No ❑ Yes

- ❑ Shelter or canopy
- ❑ Seating
- ❑ Interior waiting area
- ❑ Signage for bus schedules and routes
- ❑ Plantings
- ❑ Park-and-ride or commuter parking
- ❑ Direct enclosed pedestrian connection to transit
- ❑ Other (Describe): _____

_____

D. Do you have any comments related to provision of transit at your center? _____

_____

ADDITIONAL DATA ON THIS CENTER

Do you regularly collect parking counts during peak periods that you would be willing to share? (Data will be kept confidential and only used collectively) ❑ No ❑ Yes

We are also requesting your assistance to conduct parked car counts during a Saturday in December. Information regarding this activity will be forthcoming.

If you have any questions or need assistance in completing this form, please contact John Dorsett with Walker Parking Consultants at 317-842-6890.

Thank you for completing this questionnaire.

Please return the completed form to:

Walker Parking Consultants
6602 E. 75th Street
Suite 210
Indianapolis, IN 46250

Appendix C
Parking Survey Results
General Questionnaire

	No. of Responses	Percentage of Respondents	Percentage of Total	
INFORMATION FOR THIS CENTER				
A. Shopping center location	113	23%	23%	Large Urban
	146	30%	30%	Urban
	186	39%	38%	Suburban
	31	6%	6%	Rural/Highway Non-urban
	7	2%	2%	Other
	483	100%	N/A	Subtotal
	7		1%	No Answer
	490		**100%**	**Total**
C. Type of shopping center	135	28%	28%	Neighborhood
	112	23%	23%	Community
	74	15%	15%	Regional
	102	21%	21%	Super Regional
	8	2%	2%	Fashion/Specialty
	27	6%	6%	Power
	16	3%	3%	Theme/Entertainment
	9	2%	2%	Outlet
	7	2%	2%	Other
	490	100%	N/A	Subtotal
	0		0%	No Answer
	490		**100%**	**Total**
PARKING AT THIS CENTER				
B. Are any of these spaces in a parking garage, deck or other structure?	416	87%	85%	No
	62	13%	13%	Yes
	478	100%	N/A	Subtotal
	12		2%	No Answer
	490		**100%**	**Total**
C. Is there any parking charge to the customer?	463	98%	94%	No
	9	2%	2%	Yes
	472	100%	N/A	Subtotal
	18		4%	No Answer
	490		**100%**	**Total**
Is there a parking validation program (by stores/tenants)?	421	98%	86%	No
	10	2%	2%	Yes
	431	100%	N/A	Subtotal
	59		12%	No Answer
	490		**100%**	**Total**

Appendix C (*cont.*)
Parking Survey Results
General Questionnaire

	No. of Responses	Percentage of Respondents	Percentage of Total	
Is there a valet parking program at this center?	407	96%	83%	No
	17	4%	4%	Yes
	424	100%	N/A	Subtotal
	66		13%	No Answer
	490		**100%**	**Total**
D. How many days per year is on-site parking fully occupied (over 95%) at any time during the day?	205	43%	42%	0
	11	2%	2%	1
	20	4%	4%	2
	29	6%	6%	3
	58	12%	12%	4-6
	28	6%	6%	7-9
	125	26%	25%	10+
	476	100%	N/A	Subtotal
	14		3%	No Answer
	490		**100%**	**Total**
This answer is based on:	57	13%	12%	Count
	380	87%	77%	Judgment
	437	100%	N/A	Subtotal
	53		11%	No Answer
	490		**100%**	**Total**
F. Is peak parking demand at this center usually associated with:	13	3%	3%	Special Event
	310	72%	63%	Seasonal/Holiday
	109	25%	22%	Combination
	432	100%	N/A	Subtotal
	58		12%	No Answer
	490		**100%**	**Total**
G. Does this shopping center participate in a local or Regional Transportation Management Association?	416	89%	85%	No
	54	11%	11%	Yes
	470	100%	N/A	Subtotal
	20		4%	No Answer
	490		**00%**	**Total**
H. Do shopping center tenant employees park on-site during off-peak seasons?	44	9%	9%	No
	428	91%	87%	Yes
	472	100%	N/A	Subtotal
	18		4%	No Answer
	490		**100%**	**Total**
If they park on site, are specific spaces reserved for employees?	267	66%	62%	No
	140	34%	33%	Yes
	407	100%	N/A	Subtotal
	21		5%	No Answer
	428		**100%**	**Total**

Appendix C (*cont.*)
Parking Survey Results
General Questionnaire

	No. of Responses	Percentage of Respondents	Percentage of Total	
Are employees ever charged for parking?	464	99%	95%	No
	7	1%	1%	Yes
	471	100%	N/A	Subtotal
	19		4%	No Answer
	490		**100%**	**Total**
Are shopping center employees asked to park in a different location during peak shopping times?	273	61%	56%	No
	175	39%	36%	Yes
	448	100%	N/A	Subtotal
	42		9%	No Answer
	490		**100%**	**Total**
Is violation of handicapped parking a common occurrence at your center?	375	82%	77%	No
	84	18%	17%	Yes
	459	100%	N/A	Subtotal
	31		6%	No Answer
	490		**100%**	**Total**
J. Are there spaces designated for compact cars?	375	82%	77%	No
	84	18%	17%	Yes
	459	100%	N/A	Subtotal
	31		6%	No Answer
	490		**100%**	**Total**
K. Do parkers from adjacent properties or land uses frequently park on shopping center property?	360	76%	73%	No
	113	24%	23%	Yes
	473	100%	N/A	Subtotal
	17		3%	No Answer
	490		**100%**	**Total**
2. Does this have a significant effect on parking availability for your shoppers?	95	78%	19%	No
	27	22%	6%	Yes
	122	100%	N/A	Subtotal
	368		75%	No Answer
	490		**100%**	**Total**
3. Has any action been taken to curb unauthorized parking?	51	36%	10%	No
	90	64%	18%	Yes
	141	100%	N/A	Subtotal
	349		71%	No Answer
	490		**100%**	**Total**

Appendix C (*cont.*)
Parking Survey Results
General Questionnaire

	No. of Responses	Percentage of Respondents	Percentage of Total	
M. Has there been any need to increase parking area, since the center opened, that was not associated with an expansion of tenant floor area?	361	88%	74%	No
	48	12%	10%	Yes
	409	100%	N/A	Subtotal
	81		16%	No Answer
	490		**100%**	**Total**
TRANSIT AT THIS CENTER				
A. Is there scheduled bus or train service to the shopping center area?	10			Train
	175			Bus
B. Do buses enter the center property?	304	63%	62%	No
	175	37%	36%	Yes
	479	100%	N/A	Subtotal
	11		2%	No Answer
	490		100%	Total
C. Which of the following amenities are provided for transit patrons?	131			Shelter or Canopy
	143			Seating
	35			Interior Waiting Area
	126			Signage for Bus Schedules and Routes
	54			Plantings
	22			Park-and-Ride or Commuter Parking
	2			Direct Enclosed Pedestrian Connection to Transit
	15			Other
ADDITIONAL DATA ON THIS CENTER				
Do you regularly collect parking counts during peak periods that you would be willing to share?	338	81%	69%	No
	79	19%	16%	Yes
	417	100%	N/A	Subtotal
	73		15%	No Answer
	490		**100%**	**Total**

Appendix D
Parked Car Survey: Data Collection Survey Form

International Council of Shopping Centers

Urban Land Institute

ULI/ICSC Parking Requirements for Shopping Centers
Parked Car Survey—Data Collection Form

Name of Center _____

City/State _____

On-site Parking Capacity _____

Instructions: On Saturday, December 12, between 1:00 p.m. and 3:00 p.m., please record the following information, filling in all boxes on this form. This date and time frame are critical to the integrity of this study. Please fax the results of the survey to John Dorsett at (317) 577-6500.

No. of illegally parked cars _____

No. of empty parking spaces _____

No. of employees parking off site _____

Please contact John Dorsett at (317) 842-6890 if you have questions.
Walker Parking Consultants, ULI, and ICSC thank you for your participation.

Appendix E
Case Study Tenant Classification Survey Form

Name of Center

_____

Location of Center

_____(City,State)

Owner/Manager

_____(Managing Company)

_____ (Center Manager)

_____

Center Type

_____(Community, Regional, etc.)

Basic Land Use Data

Total Site Area

_____Square feet

Total Gross Leasable Area

_____Square feet

Total Vacant Area

_____Square feet

Total Occupied Area

_____Square feet

Specific Site Characteristics

Transit Service

_____

_____

Surrounding Land Use

_____

Parking Supply Data

Parking Spaces

_____

Parking Index

_____

Overall Tenant Data	Square Feet of GLA	Percent of Total GLA
Major Tenants		
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
Offices	_____	_____
Theaters	_____	_____
Food Service	_____	_____

Tenant Classifications	Number of Occupied Stores or Spaces	Square Feet of Total GLA*
General Merchandise	_____	_____
Food	_____	_____
Food Service	_____	_____
Clothing	_____	_____
Shoes	_____	_____
Home Furnishing	_____	_____
Home Appliance/Music	_____	_____
Building Materials/Garden	_____	_____
Auto Supplies/Service Station	_____	_____
Hobby/Special Interest	_____	_____
Gifts/Specialty	_____	_____
Liquor	_____	_____
Drugs	_____	_____
Other Retail	_____	_____
Personal Services	_____	_____
Recreation/Community	_____	_____
Financial	_____	_____
Offices	_____	_____
Other	_____	_____
Total	_____	_____

*Areas devoted to individual tenants are approximate.

Appendix F
Parking Ratio Calculations

1998 STUDY

Occupancy (GLA x 1,000)	Parking Supply Index	Design Hour Parking Space Demand	Design Hour Parking Demand Index
34.641	6.55293	130	3.75278
73.356	4.59403	224	3.05360
75.648	6.97970	329	4.34909
77.939	6.29980	285	3.65671
80.082	5.29302	236	2.94698
82.420	7.29192	375	4.54987
82.933	5.91311	368	4.43732
83.309	8.32129	418	5.01747[b]
83.403	5.92305	220	2.63779
84.053	6.26985	307	3.65246
85.174	6.99874	149	1.74936[b]
101.692	5.70305	298	2.93042
104.588	5.46908	405	3.87234
112.295	5.78525	421	3.74905[b]
127.250	[a]	498	3.91356
129.879	3.44564	192	1.47830[b]
134.376	6.54121	386	2.87254
145.104	4.89869	436	3.00474
146.122	8.17955	585	4.00350
146.484	5.09165	344	2.34838
148.294	6.59501	947	6.38596[b]
148.713	5.66191	636	4.27669[b]
150.888	7.93571	586	3.88368
168.000	2.70238	217	1.29167
172.023	5.28999	927	5.38881
209.040	6.38491	1097	5.24780
216.529	5.67637	988	4.56290
217.216	6.44913	965	4.44258[b]
233.796	5.70331	822	3.51589
243.094	4.67917	703	2.89189
245.477	6.34683	1556	6.33868
247.412	4.66815	892	3.60532[b]
252.643	3.76659	775	3.06757
256.392	7.01710	1176	4.58673

a Center parking capacity not available.

b Represents center where over 20 percent of floor area consists of a non-retail use (such as cinema, restaurant, entertainment, etc.).

Appendix F (*cont.*)
Parking Ratio Calculations

1998 STUDY

Occupancy (GLA x 1,000)	Parking Supply Index	Design Hour Parking Space Demand	Design Hour Parking Demand Index
268.040	9.13490	1278	4.76795
269.237	7.37785	755	2.80422
272.623	4.66945	974	3.57270
273.632	6.21839	1521	5.55856
276.848	[a]	1021	3.68794
278.852	4.61953	1176	4.21729
297.030	7.68657	664	2.23546
317.419	5.67884	1140	3.59147
325.792	3.47171	655	2.01049
326.819	4.89673	953	2.91599
331.531	4.92865	755	2.27731
338.055	4.33066	1250	3.69762
345.000	[a]	770	2.23188
354.556	4.35756	1689	4.76370
359.941	5.98409	2307	6.40938
403.212	5.83756	1766	4.37983
417.937	6.16122	1242	2.97174
426.054	7.59344	2183	5.12376
441.199	5.09214	2065	4.68043
454.686	5.00125	1414	3.10984
463.332	6.46836	1913	4.12879
470.366	5.38458	2079	4.41996
475.734	6.76281	1138	2.39209
527.066	5.11321	1993	3.78131
534.766	5.07699	1835	3.43141
555.102	5.48548	3060	5.51250
572.000	3.53147	2262	3.95455
573.614	5.88375	2548	4.44201
588.732	6.57376	3285	5.57979
588.900	4.58966	1606	2.72712[b]
613.907	5.92187	3526	5.74354
615.460	5.86963	2768	4.49745
628.245	[a]	1514	2.40989
629.476	5.40132	2455	3.90007

a Center parking capacity not available.

b Represents center where over 20 percent of floor area consists of a non-retail use (such as cinema, restaurant, entertainment, etc.).

Appendix F (cont.)
Parking Ratio Calculations

1998 STUDY

Occupancy (GLA x 1,000)	Parking Supply Index	Design Hour Parking Space Demand	Design Hour Parking Demand Index
634.200	5.49038	2123	3.34752
635.189	5.46325	3307	5.20632
656.402	5.86531	3010	4.58560
680.700	5.93507	2923	4.29411
682.799	4.33009	2224	3.25718
684.435	4.69146	3211	4.69146
685.003	6.49486	4389	6.40727
687.689	7.76514	4232	6.15394
710.238	2.81596	1789	2.51887
720.000	6.22222	1586	2.20278
726.445	5.17089	3860	5.31355
727.445	6.03894	2395	3.29235
735.121	8.97660	4501	6.12280
738.074	6.84393	3781	5.12279
743.000	5.79538	2709	3.64603
743.231	6.49965	4475	6.02101
745.819	5.89694	4136	5.54558
780.678	6.37168	3799	4.86628
781.550	5.06174	3265	4.17760
787.694	4.82368	3588	4.55507
794.074	5.99314	4019	5.06124
800.000	5.62500	3513	4.39125
800.412	5.35287	2481	3.09965
808.078	4.56808	3180	3.93526
810.500	6.66379	4435	5.47193
813.261	5.95135	4540	5.58246
813.415	8.63112	2025	2.48950[b]
838.793	[a]	2015	2.40226
839.677	5.00076	4002	4.76612
842.347	[a]	3829	4.54563
860.000	5.17674	2855	3.31977
862.924	4.76869	2292	2.65609
866.767	5.54941	4171	4.81214

a Center parking capacity not available.

b Represents center where over 20 percent of floor area consists of a non-retail use (such as cinema, restaurant, entertainment, etc.).

Appendix F (*cont.*)
Parking Ratio Calculations

1998 STUDY

Occupancy (GLA x 1,000)	Parking Supply Index	Design Hour Parking Space Demand	Design Hour Parking Demand Index
878.316	5.65037	1883	2.14388
883.309	4.46024	3027	3.42689
884.067	5.09011	5060	5.72355
893.034	7.03864	4267	4.77809
901.660	3.29503	3341	3.70539
903.068	4.52458	4043	4.47696
903.396	4.93034	4073	4.50854
931.854	4.36227	3541	3.79995
941.488	5.22046	4699	4.99104
949.637	18.97106	4997	5.26201
970.000	4.84845	4139	4.26701
972.579	4.51891	4461	4.58677
977.478	4.58488	4402	4.50343
998.209	4.80861	5101	5.11015
1001.000	5.23477	3902	3.89810
1008.266	5.66021	5813	5.76534
1018.637	5.10915	4687	4.60125
1029.172	5.56272	3762	3.65537
1030.610	5.38103	5224	5.06884
1035.825	5.26633	4875	4.70639
1036.468	5.63452	5666	5.46664
1052.946	5.84835	6176	5.86545
1054.774	4.71001	5088	4.82378
1057.851	5.30434	5600	5.29375
1071.634	5.66459	4915	4.58645
1071.651	5.18079	5092	4.75155
1078.568	6.03764	5151	4.77578
1086.048	4.40981	4188	3.85618
1101.077	5.09592	5277	4.79258
1103.248	5.89169	4214	3.81963
1106.746	4.57377	3741	3.38018
1108.061	5.13607	5432	4.90226
1117.801	4.95795	5244	4.69135
1125.557	5.33186	5045	4.48223

a Center parking capacity not available.

b Represents center where over 20 percent of floor area consists of a non-retail use (such as cinema, restaurant, entertainment, etc.).

Appendix F (*cont.*)
Parking Ratio Calculations

1998 STUDY

Occupancy (GLA x 1,000)	Parking Supply Index	Design Hour Parking Space Demand	Design Hour Parking Demand Index
1130.288	5.55079	5502	4.86779
1143.796	3.97161	5314	4.64593
1148.145	5.67933	5025	4.37662
1154.840	5.22847	5292	4.58245
1165.823	5.42261	5931	5.08739
1174.001	5.02533	5607	4.77598
1176.095	5.73588	6221	5.28954
1183.690	19.69732	3154	2.66455
1192.541	5.31470	6578	5.51595
1242.159	5.87053	6341	5.10482
1250.000	4.87500	5920	4.73600
1267.058	5.09567	6390	5.04318
1286.323	5.04677	6330	4.92100
1291.896	6.36131	5197	4.02277
1300.000	4.84615	6348	4.88308
1301.199	5.95790	6552	5.03536
1307.568	[a]	5590	4.27511
1312.174	6.02249	4440	3.38370
1319.500	5.45231	7088	5.37173
1366.521	5.23080	7379	5.39984
1370.045	5.68932	7503	5.47646
1371.204	5.83866	7743	5.64686
1387.013	5.66035	7269	5.24076
1403.642	5.66802	6845	4.87660
1427.104	4.79376	6650	4.65979
1510.708	4.66801	6158	4.07623
1531.972	4.68155	7240	4.72593
1543.396	4.37708	4931	3.19490
1544.000	4.66321	5960	3.86010
1625.374	4.61494	6973	4.29009
1700.000	[a]	5715	3.36176
1705.272	4.48081	7356	4.31368
1850.903	4.86249	4325	2.33670[b]
2384.388	5.25901	10287	4.31431

a Center parking capacity not available.

b Represents center where over 20 percent of floor area consists of a non-retail use (such as cinema, restaurant, entertainment, etc.).

Appendix G
Parking Ratio Calculations

1980 STUDY

Occupancy (GLA x 1,000)	Parking Supply Index	Design Hour Parking Space Demand	Design Hour Parking Demand Index
27.564	7.43724	185	6.71165
36.498	5.31536	134	3.67143
43.376	5.44080	106	2.44375
43.400	7.39631	148	3.41014
48.018	3.72777	188	3.91520
58.410	7.46448	118	2.02020
58.707	6.83053	427	7.27341
59.456	8.08956	184	3.09473
61.883	6.80316	145	2.34313
63.664	6.00025	179	2.81164
63.800	4.09091	239	3.74608
64.701	5.25494	174	2.68929
65.000	5.15385	185	2.84615
67.257	4.18232	460	6.83944
68.000	4.47059	272	4.00000
68.030	4.11583	196	2.88108
68.870	6.04037	289	4.19631
73.949	5.93652	115	1.55513
74.880	7.63889	273	3.64583
77.370	6.70803	276	3.56727
78.627	5.75682	359	4.56586
81.644	3.82147	218	2.67013
82.166	6.31648	265	3.22518
82.655	6.17023	240	2.90364
85.075	5.24243	237	2.78578
89.701	8.28580	397	4.43156
90.000	4.24444	196	2.17778
92.619	6.46736	401	4.32947
94.389	5.38198	303	3.21012
94.950	8.18325	524	5.51869
101.832	5.11652	316	3.10315
104.940	3.76406	368	3.50677
107.000	4.74766	416	3.88785
107.100	4.43511	402	3.75350
109.000	5.76147	311	2.85321

Appendix G (*cont.*)
Parking Ratio Calculations

1980 STUDY

Occupancy (GLA x 1,000)	Parking Supply Index	Design Hour Parking Space Demand	Design Hour Parking Demand Index
109.111	3.60184	147	1.34725
110.000	5.54545	269	2.44545
110.170	5.86367	453	4.11183
112.237	4.28557	349	3.10949
113.000	4.34783	422	3.73451
116.550	7.16431	366	3.14028
117.479	4.95408	528	4.49442
127.048	4.44714	309	2.43215
146.141	5.65208	541	3.70190
148.000	4.00000	412	2.78378
160.000	7.04375	716	4.47500
160.240	5.48050	368	2.29656
170.391	8.16358	337	1.97780
172.458	7.72362	1,165	6.75527
176.877	5.34835	904	5.11090
180.000	4.58333	703	3.90556
202.444	5.91982	944	4.66302
202.500	3.40741	557	2.75062
221.060	6.52764	1,378	6.23360
221.508	5.06528	1,068	4.82150
241.200	5.70481	1,382	5.72968
248.937	4.53127	903	3.62742
250.663	6.18759	1,090	4.34847
268.199	5.85759	859	3.20285
272.700	7.04437	1,587	5.81958
283.273	6.83793	1,007	3.55487
296.120	7.95623	1,644	5.55180
320.000	6.58750	1,457	4.55312
323.500	5.70943	1,173	3.62597
334.435	5.51378	1,712	5.11908
337.092	6.27425	1,218	3.61326
350.306	4.80437	1,702	4.85861
381.282	7.28070	2,690	7.05515
400.634	8.20949	1,718	4.28820
410.091	7.40811	2,568	6.26202
417.344	4.79618	2,371	5.68116

Appendix G (cont.)
Parking Ratio Calculations

1980 STUDY

Occupancy (GLA x 1,000)	Parking Supply Index	Design Hour Parking Space Demand	Design Hour Parking Demand Index
420.621	6.15281	2,285	5.43244
429.000	4.44522	1,182	2.75524
429.845	3.45706	1,512	3.51755
432.040	7.00398	1,634	3.78206
440.472	5.56903	2,267	5.14675
456.588	7.39178	2,239	4.90376
464.666	4.60546	2,070	4.45481
464.920	5.41168	2,406	5.17508
467.565	4.54910	2,138	4.57263
497.234	5.33424	1,720	3.45914
523.421	6.39256	2,590	4.94822
527.693	7.51194	3,094	5.86326
529.856	4.86925	2,235	4.21813
530.000	5.45283	3,166	5.97358
538.000	5.78996	3,004	5.58364
550.000	6.16786	2,741	4.98364
555.000	5.60901	3,380	6.09009
558.035	7.53358	3,531	6.32756
587.595	7.41667	4,168	7.09332
593.355		3,952	6.66043
600.000	5.68000	3,408	5.68000
602.210	4.28089	2,972	4.93515
607.660	4.85966	3,116	5.12790
620.000	5.71935	3,432	5.53548
620.730	6.62449	2,743	4.41901
630.000	7.61905	4,800	7.61905
650.610	5.61014	3,564	5.44795
667.390	5.52448	3,482	5.21732
687.530	7.29710	3,329	4.84195
687.90	3.69240	1,888	2.74458
692.72	6.20888	4,182	6.03710
700.00	6.00000	4,029	5.75571
701.91	5.58189	3,544	5.04906
702.18	8.18445	5,271	7.50657
708.70	5.49930	2,884	4.06945
720.00	4.53472	3,149	4.37361

Appendix G (*cont.*)
Parking Ratio Calculations

1980 STUDY

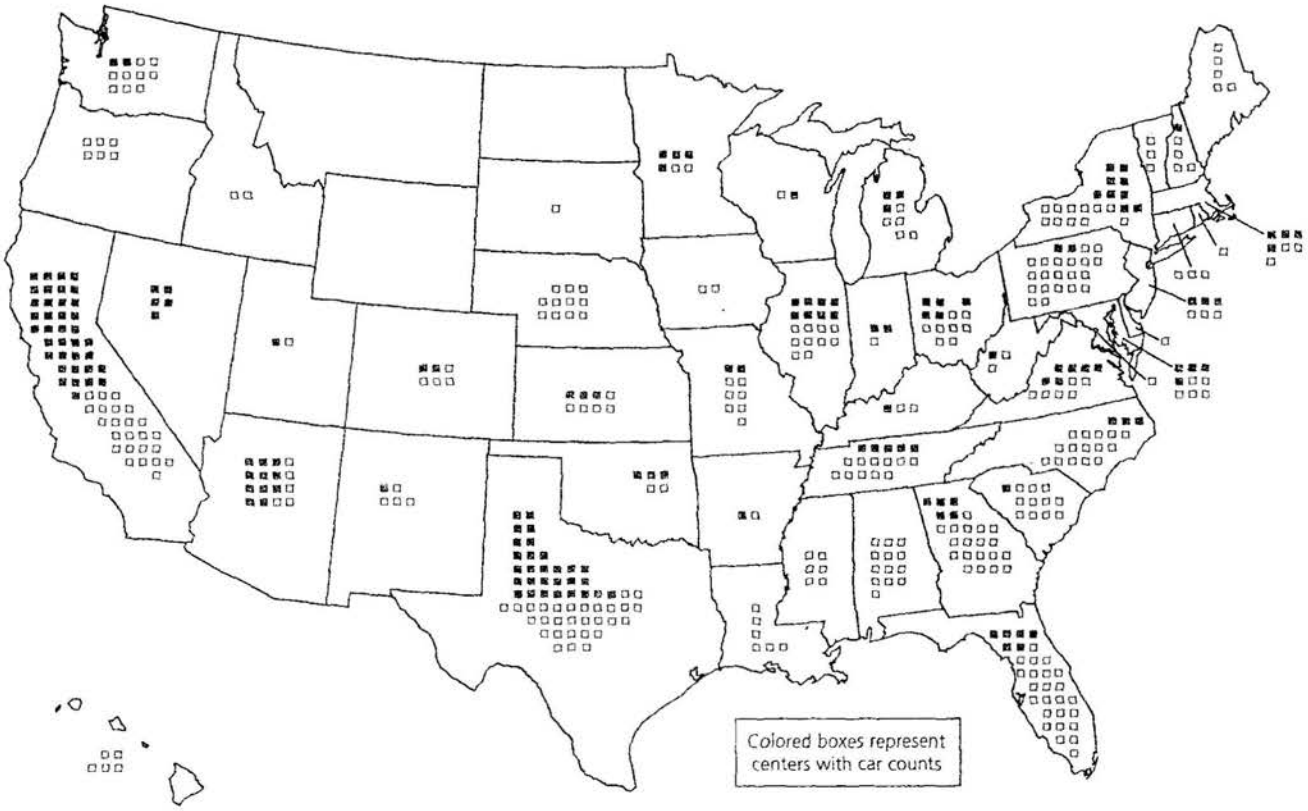
Occupancy (GLA x 1,000)	Parking Supply Index	Design Hour Parking Space Demand	Design Hour Parking Demand Index
724.30	6.52216	3,202	4.42082
729.53	5.95178	4,301	5.89558
733.04	4.71868	3,093	4.21939
733.13	5.37424	3,973	5.41925
735.90	5.59995	4,121	5.59995
739.89	5.83599	4,390	5.93331
758.43	5.07496	2,512	3.31211
765.76	8.46611	4,881	6.37407
803.91	5.97827	4,453	5.53917
810.50	5.38680	4,321	5.33128
819.26	5.43173	4,223	5.15465
828.69	4.87638	4,180	5.04411
831.09	5.29428	3,812	4.58677
841.33	5.55310	5,291	6.28884
841.33	5.48178	7,771	9.23654
844.80	5.68297	5,461	6.46422
853.04	6.68875	4,093	4.75821
865.35	5.68210	5,465	6.31537
871.87	4.42040	3,420	3.92262
889.03	4.26083	2,955	3.32385
905.79	5.54988	5,087	5.61612
914.93	5.67147	4,191	4.58068
947.00	5.49102	4,693	4.95565
947.51	6.33235	5,076	5.35717
950.00	2.36316	1,884	1.98316
955.57	3.88356	3,916	4.09809
974.63	5.62777	5,688	5.83605
978.00	4.60123	4,225	4.32004
992.27	5.86331	6,446	6.49620
998.36	5.90969	6,447	6.45759
1014.82	6.71624	5,456	5.37643
1015.09	5.91081	6,410	6.31471
1032.43	3.94312	4,053	3.92568
1038.93	Not applicable	4,437	Not applicable
1048.00	5.82061	5,619	5.36164

Appendix G (*cont.*)
Parking Ratio Calculations

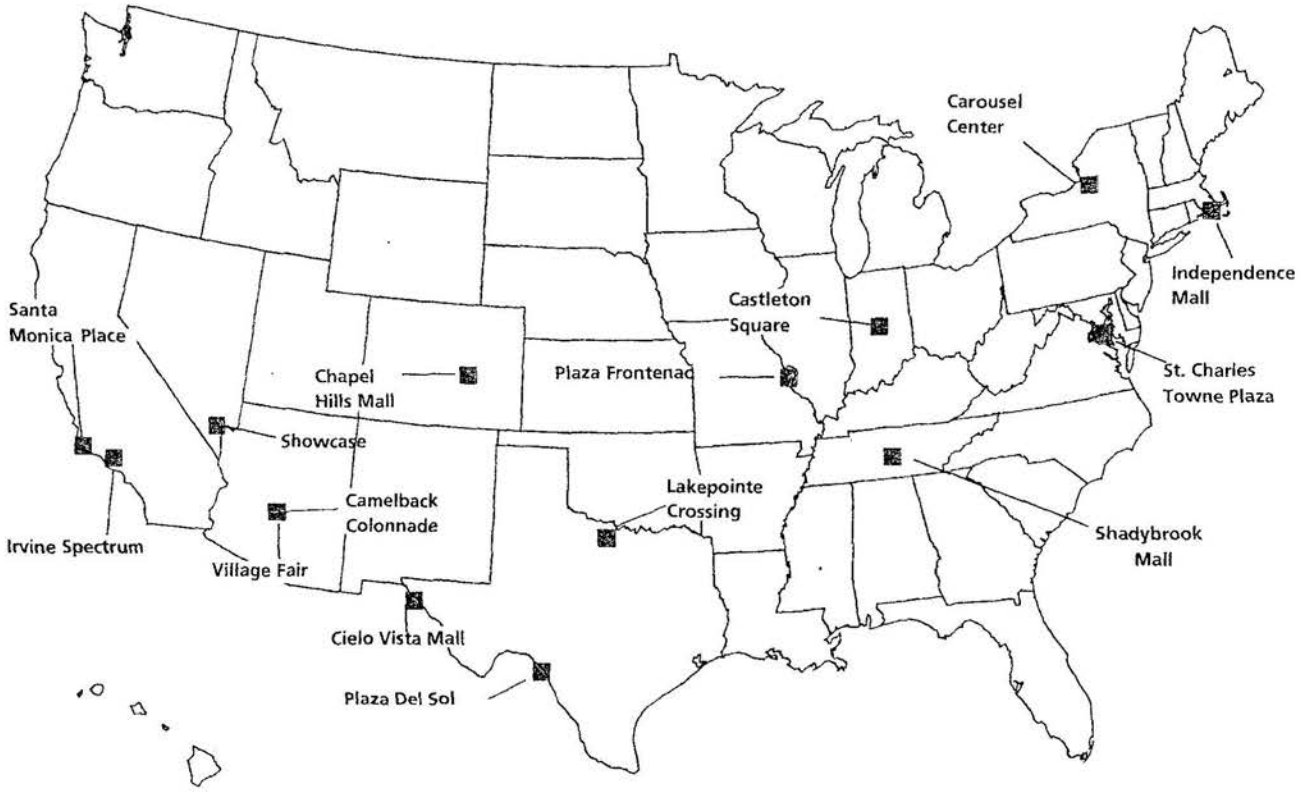
1980 STUDY

Occupancy (GLA x 1,000)	Parking Supply Index	Design Hour Parking Space Demand	Design Hour Parking Demand Index
1061.29	5.54327	5,759	5.42644
1104.46	5.79377	3,429	3.10468
1132.36	5.00019	5,497	4.85448
1199.98	5.80591	6,809	5.67424
1200.00	5.37833	4,369	3.64083
1289.32	5.09337	3,755	2.91238
1438.00	5.64743	7,513	5.22462
1469.78	4.57076	5,883	4.00264

Appendix H
Map of Centers Participating in General Questionnaire/Parked Car Counts



Appendix I
Map of Centers Participating in Case Studies



Appendix J
Determination of Survey Day and Hour

To establish December 12, 1998, as the day best representing the 20th busiest hour, detailed data were obtained from 32 shopping centers that collect continuous data via the following mechanisms:

- Pedestrian counting devices at entries/exits
- Vehicular counting devices on entry roads that capture inbound vehicular traffic counts
- Parking access and revenue control equipment that tracks parking activity.

In short, much more extensive data are available, at least for large centers, than were available during either of the two previous studies.

For the survey conducted in 1997, 16 centers provided hourly pedestrian/vehicular traffic data. Based on a review of data from these 16 centers, the time period that best captured conditions representing the 20th busiest hour was between the hours of 1:00 p.m. and 3:00 p.m. on the second Saturday before the week of Christmas.

To best determine conditions representing the 20th busiest hour, an analysis of the 16 centers providing hourly pedestrian/vehicular traffic volumes was conducted. Since the 20th busiest hour fell on 11 different days, a range including the reported 18th through 22nd busiest hours was evaluated for each of the 16 centers. The variance in daily traffic volumes representing days capturing the 18th versus the 22nd busiest hour was small—3.1 percent. Based on this evaluation, Saturday, December 13, 1997, was the day most often capturing the 18th through the 22nd busiest hour. As shown in Table 15, Saturday, December 13, 1997, was represented 11 times out of a possible 80 (16 centers x 5 positions—18, 19, 20, 21, 22 per center) chances.

An analysis of daily pedestrian/vehicular traffic volumes for the 32 centers collecting daily data provided further evidence that the 20th busiest hour is best captured on the second Saturday before the week of Christmas, in this case, December 12, 1998. Moreover, the 1980 *Parking Requirements for Shopping Centers* study used the second Saturday before the week of Christmas as a data collection day,

Table 15
18th–22nd Busiest Hour for 16 Centers

	Number of Centers with:					
Date	18th Busiest Hour	19th Busiest Hour	20th Busiest Hour	21st Busiest Hour	22nd Busiest Hour	Total 18th–22nd Busiest Hour
12/13/97	1	2	1	5	2	11
12/21/97	2	3	3	0	1	9
12/20/97	1	3	1	1	2	8
12/26/97	2	2	1	1	0	6
12/23/97	0	0	4	0	1	5
12/14/97	1	1	1	1	1	5
12/22/97	1	0	1	1	2	5
12/6/97	0	0	0	3	1	4
12/24/97	2	1	0	0	1	4
11/27/98	0	1	1	0	2	4
11/28/98	0	1	1	0	2	4
12/27/97	1	0	0	1	0	2
12/19/97	2	0	0	0	0	2
11/21/98	1	0	0	1	0	2
2/14/98	1	0	0	1	0	2
11/22/98	0	1	0	0	0	1
12/28/97	0	0	0	0	1	1
12/29/97	1	0	0	0	0	1
11/7/98	0	1	0	0	0	1
8/22/98	0	0	1	0	0	1
12/7/97	0	0	1	0	0	1
1/2/98	0	0	0	1	0	1

providing yet another reason to select this Saturday as a data collection day for this study.

It is extremely difficult to identify the collective 20th busiest hour for a group of centers. In the case of the 16 centers that provided hourly pedestrian/vehicular traffic volumes for the year 1997, 16 different hours were identified as the 20th busiest hour.

The parking and pedestrian/vehicular traffic data collected from the 32 centers were evaluated to identify the busiest days of parking and traffic conditions and, ultimately, to support the use of December 13, 1997, as a day approximating the 20th busiest hour. In 1997, the 20th busiest hour most frequently fell on Saturday, December 13. Therefore, the second Saturday preceding the week of Christmas was established as the date to maximize the probability of capturing the 20th busiest hour. Consequently, the 1998 Parked Car Survey was conducted on Saturday, December 12, 1998.

Table 16 lists the 18 busiest days based on parking and pedestrian/traffic data from the 32 centers. The top ten days of volume were ranked for each of the 32 centers. Only 18 days were represented by at least two centers as having one of the top ten positions. The day most frequently represented as the busiest was Tuesday, December 23, 1997.

The following is how Table 16 should be read:

Read across the row labeled Tuesday, December 23, 1997. Eleven of the 32 centers reported December 23, 1997, as their busiest day measured by parking and pedestrian/vehicular traffic volumes. Three of the 32 centers reported it as their second busiest day. Four of the 32 centers reported it as their third busiest day, etc.

After the day best representing the 20th busiest hour was determined, the *time* of day needed to be resolved. The 25 busiest hours were examined for each of the 16 centers that provided hourly parking data. Of the 400 total hours examined (16 centers x 25 busiest

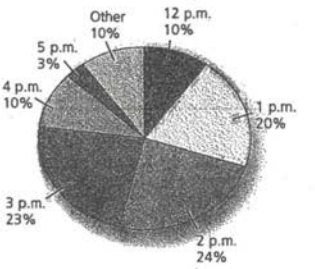
Table 16
Top Parking and Pedestrian/Vehicular Traffic Days

			Number of Centers Reporting Top Traffic Day as:										
Rank		Date	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	Total
1st	Tues.	12/23/97	11	3	4	4	2	5	1	0	1	1	32
2nd	Sat.	12/20/97	4	8	8	4	4	2	1	1	0	0	32
3rd	Sat.	12/13/97	6	5	4	5	3	3	4	0	1	0	31
4th	Mon.	12/22/97	2	7	5	5	6	3	1	1	0	1	31
5th	Fri.	12/26/97	3	3	5	3	7	4	3	2	0	0	30
6th	Sat.	12/6/97	0	0	0	4	0	5	2	6	3	3	23
7th	Fri.	12/19/97	0	0	1	0	2	1	4	4	4	4	20
8th	Fri.	11/28/97	2	1	0	4	1	2	1	0	2	0	13
9th	Fri.	12/12/97	0	0	0	0	1	0	1	3	2	6	13
10th	Sun.	12/21/97	0	2	0	1	0	1	1	2	3	3	13
11th	Sat.	12/27/97	1	0	0	0	0	1	3	3	2	1	11
12th	Wed.	12/24/97	0	1	1	1	2	0	1	1	2	1	10
13th	Thurs.	12/18/97	0	0	1	0	1	1	2	2	1	2	10
14th	Fri.	11/27/98	2	0	0	1	0	1	1	1	0	0	6
15th	Wed.	12/17/97	0	0	0	0	0	1	0	0	0	3	4
16th	Sat.	11/29/97	0	0	0	0	0	0	1	0	2	0	3
17th	Fri.	2/14/97	0	0	0	0	1	0	0	0	0	1	2
18th	Sat.	11/28/98	0	0	1	0	0	0	1	0	0	0	2

Note: The only days that were included in this table are days that ranked in the top ten inbound traffic for at least two centers. Data were obtained from 32 centers.

hours), 67 percent occurred between 1:00 and 3:00 p.m. Furthermore, as shown in Figure 11, the 20th busiest hour was analyzed for each of these 16 centers, and 69 percent fell between the hours of 1:00 and 3:00 p.m. Therefore, the Parked Car Survey was scheduled to be conducted on Saturday, December 12, 1998, between 1:00 and 3:00 p.m.

Figure 11
Distribution of 25 Busiest Hours for 16 Centers



Note: The center types are defined in Chapter 5.

Parking Requirements for Shopping Centers

Summary Recommendations and Research Study Report

Second Edition

A Survey Study Conducted by Walker Parking Consultants under the Direction of ULI–the Urban Land Institute and the International Council of Shopping Centers

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CAMBRIDGE SYSTEMATICS

Columbia Heights/Mount Pleasant Transportation Study

final report

prepared for

District Department of Transportation

prepared by

Cambridge Systematics, Inc.

with

Daniel Consultants, Inc.
Chance Management Advisers, Inc.

January 2004

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final report

Columbia Heights/Mount Pleasant Transportation Study

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District Department of Transportation

prepared by

Cambridge Systematics, Inc.
4445 Willard Avenue, Suite 300
Chevy Chase, Maryland 20815

January 2004

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Executive Summary

Columbia Heights/Mount Pleasant Transportation Study

Executive Summary

This study, led by the District Department of Transportation (DDOT), is intended to identify a series of short- and long-term improvements that will enhance the operation and condition of the transportation system in the Columbia Heights and Mount Pleasant neighborhoods. These neighborhoods are undergoing a significant amount of change, with a number of large-scale commercial, retail, and residential developments underway.

The evaluation of potential improvements is based on the following key objectives developed during the study:

- Promote safe and convenient mobility for all forms of transportation – pedestrian/bicycle/vehicular/transit;
- Provide a framework for addressing future transportation needs through transit-oriented development principles;
- Provide a forum for community input on future transportation system elements;
- Develop creative approach to right-size parking for urban residential, commercial, and employment needs; and
- Improve aesthetic of neighborhood streets.

ES.1 Columbia Heights/Mount Pleasant Multimodal Transportation System

Travel characteristics in the neighborhood support the need to focus on all forms of transportation, particularly transit and pedestrian travel. Available data indicates that alternative forms of transportation play a key role in the study area's transportation system. Overall, 44 percent of residents in the study area use transit to commute to work. Just 26 percent of area residents drive alone to work, in comparison to the District average of 38 percent.

Columbia Heights and Mount Pleasant are challenged by the large numbers of automobile commuters that travel through the neighborhoods. The challenge is to accommodate these commuters while addressing neighborhood concerns regarding high speeds,

pedestrian safety, and heavy traffic volumes. At present, most of the study area intersections are operating at a level of service (LOS) of "D" or better during both morning and evening peak periods and on weekends. However, a number of individual approaches to intersections are operating at LOS of "E" or "F." Delays are more consistent on the eastbound and westbound approaches to intersections. In many cases, delays at these intersections can be addressed by retiming signals to better accommodate traffic. However, some intersection changes are also necessary.

In addition to Metrorail, the study area is served by a network of 19 Washington Metropolitan Area Transit Authority (WMATA) bus routes. High levels of service are provided with headways as short as four minutes during peak hours of travel on some routes. Bus service continues to play a critical role in the neighborhood transportation system and a number of bus stop locations warrant a shelter based on boarding data. In some instances, individual bus stops with observed boarding volumes in excess of 400 passengers per day do not have a shelter provided.

Pedestrian safety is a particularly critical issue given the high level of pedestrian activity. Unfortunately, high volumes of traffic, particularly during peak hours, have created pedestrian safety issues at a number of locations. Much of the new development planned in the heart of Columbia Heights is expected to attract patrons that walk or take transit. If these new developments are successful in encouraging transit and pedestrian travel, the pedestrian environment must be comfortable and safe. In addition, most riders at this Metrorail Station are arriving on foot (85 percent of all passengers walk to the Station).

The lack of connectivity through out the neighborhood and additional bike lane coverage are concerns for bicyclists in the area. The 14th Street bike lane that ends two blocks short of the Metrorail Station and is an example of this problem.

Parking is also a critical issue. No off-street parking is available to the general public within one-quarter mile of the Columbia Heights Metrorail Station. A number of parking regulation signs are faded, present confusing messages, and appear to be indicative of poor maintenance. Improving the appearance and clarity of the signs' messages would help avoid motorist confusion and unnecessary tickets. New retail development is likely to increase the demand for neighborhood parking.

ES.2 Recommended Transportation Improvements

This report contains more than 30 specific recommendations for improvements. Many of these recommendations focus on low-cost, high-impact recommendations that will address specific transportation issues identified. A number of these recommendations seek to rebalance the transportation system with an increased emphasis on transit, pedestrian, and bicycle travel. Although recommendations are grouped by various modes of transportation, many will provide benefit to more than one form of travel. In particular, a number of the traffic recommendations are intended to address pedestrian safety issues identified at specific intersections. The recommendations contained in this report will

help support increased travel that will come with planned new development in the neighborhood.

Traffic – Recommendations address isolated areas of congestion as well as pedestrian safety issues created by excessive signal timing lengths. In addition, some geometric changes are recommended to promote pedestrian safety and accommodate increased traffic expected with several large-scale developments along 14th Street.

Transit – The Columbia Heights and Mount Pleasant neighborhoods are provided with a wealth of transit services with Metrorail and numerous WMATA bus routes. Transit recommendations fine-tune the existing transit system with an emphasis on improving bus-related infrastructure, recognizing the significance of bus travel within the neighborhood.

Pedestrian – The study area has developed as a high-density neighborhood that allows residents to access services and jobs on foot. Recommendations contained within this section seek to address safety issues and enhance the overall pedestrian environment within the neighborhood. Addressing these issues will facilitate pedestrian travel and reduce the level of auto travel among area residents.

Bicycle – The District has recently begun to promote bicycle travel aggressively with the designation of bike lanes, bicycle parking, and other supporting facilities. Bicycle travel will play a large role in discouraging automobile travel to the new retail developments along 14th Street. Recommendations seek to expand the coverage of bicycle lanes within the study area.

Parking – The Columbia Heights and Mount Pleasant neighborhoods struggle with a limited supply of on- and off-street parking. Recommendations address issues of enforcement, regulations, and potential shared parking strategies to ensure that the neighborhood will not be adversely affected by increased demand for parking that will likely follow increased retail development. Maintaining a high share of non-auto trips to the developments is critical to insure that parking supplies are adequate. Shared parking strategies may offer some relief to the neighborhood on Sundays when excessive on-street parking blocks travel lanes and contributes to increased traffic congestion.

1.0 Assessment of Existing Conditions

Columbia Heights/Mount Pleasant Transportation Study

1.0 Assessment of Existing Conditions

1.1 Introduction

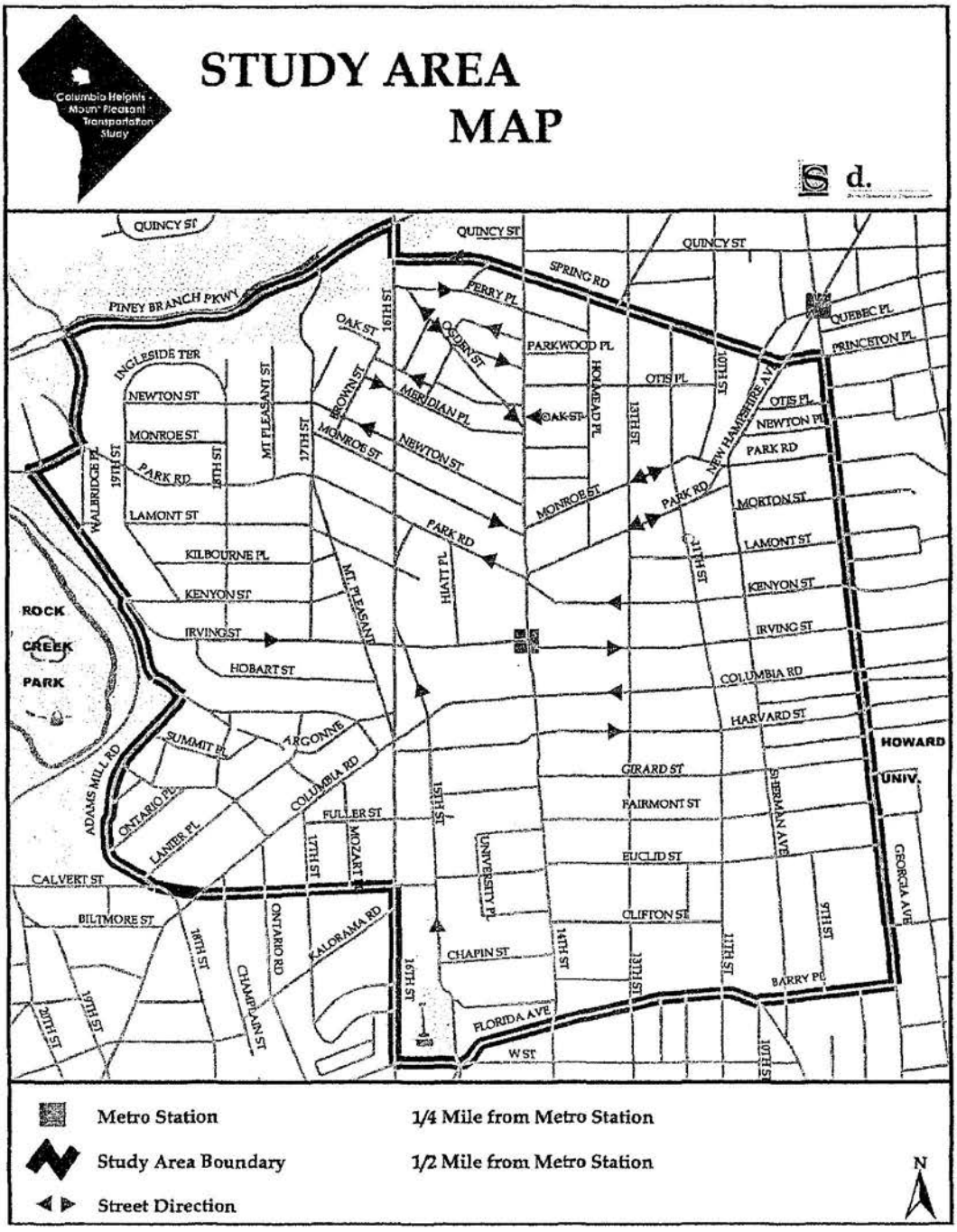
DDOT is leading an effort to address transportation issues proactively in the Columbia Heights and Mount Pleasant neighborhoods. These neighborhoods are undergoing a significant amount of change, with a number of large-scale commercial, retail, and residential developments underway. This study is intended to review current transportation issues in the neighborhood and identify a series of short- and long-term improvements that will enhance the operation and condition of transportation in the neighborhoods.

This section was the first product of the study and summarizes existing conditions. Figure 1.1 illustrates the boundaries of the study area. The emphasis of this study is on the area within one-quarter mile of the Columbia Heights Metrorail Station. Key elements summarized in this section consist of:

- Demographics/Land Use;
- Existing Traffic Characteristics;
- Pedestrian/Bicycle Issues;
- Transit Services; and
- Existing Parking Characteristics.

This analysis provides the framework for defining short-term and long-term transportation options. Issues identified in this section, together with input from neighborhood residents, will serve as the basis for identifying recommended transportation improvements.

Figure 1.1 Study Area Map



1.2 Demographics and Land Use

Neighborhood Population is Increasing

The 2000 U.S. Census reported that Columbia Heights/Mount Pleasant study area contains approximately 50,210 residents, an increase from 48,430, or almost four percent, since 1990. This population increase has occurred despite an overall decline in the total population of the District of Columbia. This portion of the City now represents almost nine percent of the District's population.

Many Neighborhood Residents Choose Not to Drive

Travel characteristics in the neighborhood support the need to focus on all forms of transportation, particularly transit and pedestrian travel. Available data indicates that alternative forms of transportation play a key role in the study area's transportation system. Overall, 44 percent of residents in the study area use transit to commute to work in comparison to the District average of just 33 percent. Just 26 percent of area residents drive alone to work, in comparison to the District average of 38 percent.

There is some variation in mode choice within the study area. As shown in Figure 1.2, the southeastern portion of the study area has the highest percentage of commuters walking or bicycling to work, at 22 percent in comparison to 13 percent on average for the District. The highest proportion of auto use is found in the northwest portion of the study area, primarily consisting of the Mount Pleasant neighborhood, where 30 percent drive alone to work.

Significant New Development Planned

The study area contains a diverse mix of commercial, residential, and institutional land uses. Commercial land uses are found primarily along Georgia Avenue, 14th Street, Mount Pleasant Street, and Columbia Road. The remainder of the study area is primarily residential with a mix of row houses, low-rise apartment buildings, and single-family homes. A number of medium- to moderate-density residential apartment homes are located along 16th Street. Churches, community centers, and public schools also are located throughout the neighborhood.

Revitalization and redevelopment efforts are underway throughout the study area. The National Capital Revitalization Corporation (NCRC) along with its subsidiary, RLA Revitalization Corporation (RLARC), has initiated 11 development projects throughout the study area. These parcels are primarily located along the 14th Street corridor and near the Columbia Heights Metrorail Station. WMATA also has plans to develop a parcel it owns near the Columbia Heights Metrorail Station. A number of small, private, residential developments are underway throughout the neighborhood.

Figure 1.2 Commuting Mode

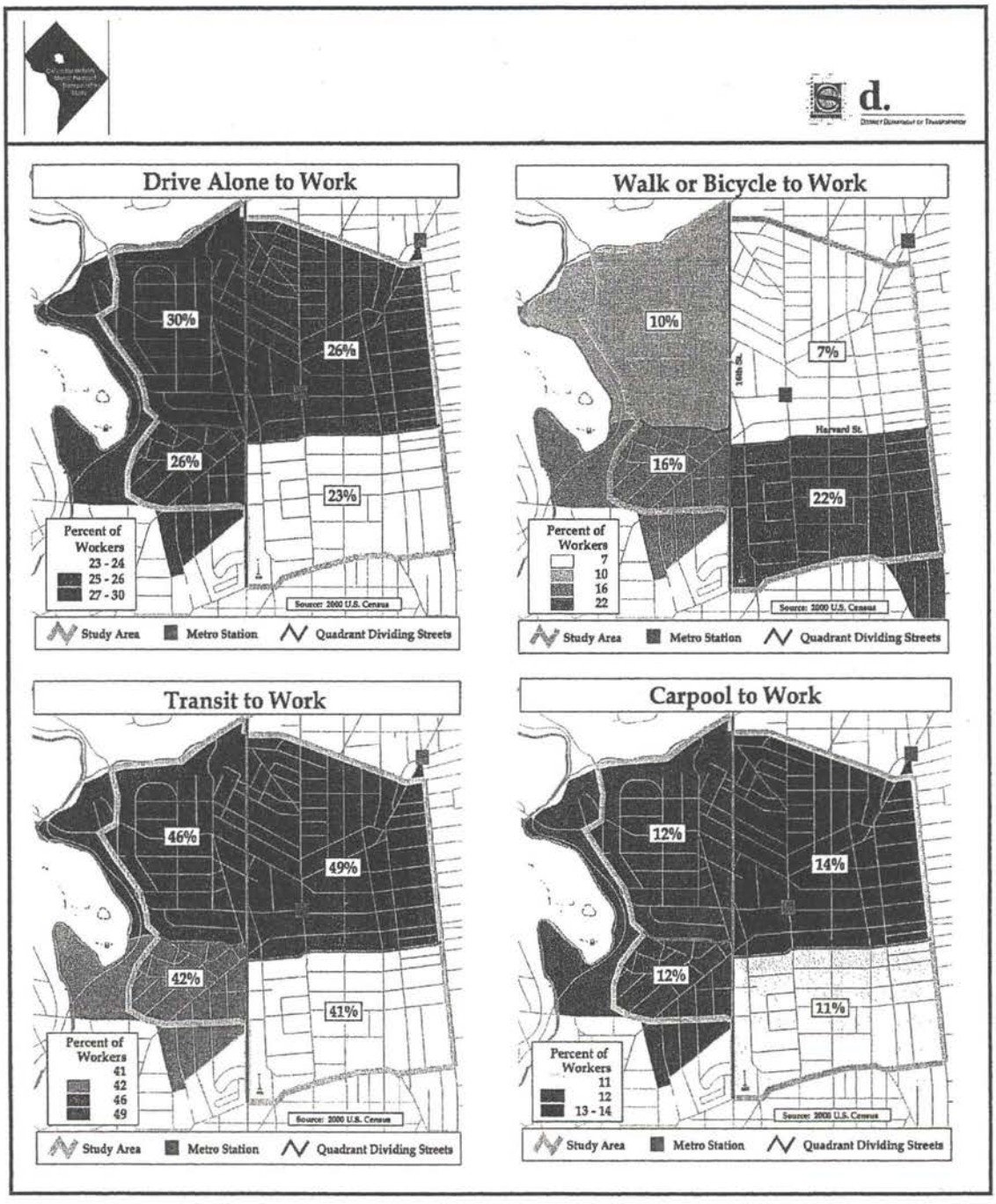


Table 1.1 Proposed Developments in Study Area

Parcel #	Developer	Location	Site Size	Use	Parking
NCRC/RLA-Owned Parcels					
24	Dance Institute	14th/Monroe	14,075 sq. ft.	Institutional/Commercial	9
29	Tivoli Partners	1365 Park Road	2.79 acres	Commercial/Entertainment	259
38	NPCDC	14th/Park/Kenyon	7,500 sq. ft.	Park/Civic	
27	Grid Properties	1400 Park Road	4.69 acres	Commercial	1,300
15	CHV/Victory Housing	1365 Irving Street	1.34 acres	Residential/Commercial	166
26	CHV	1444 Irving Street	2.69 acres	Residential/Commercial	242
40	Urban League	2901 14th Street	N/A	Office	N/A
5	NPCDC	2746 14th Street	24,000 sq. ft.	Residential/Commercial	70
19	Triangle	1330 Euclid	16,200 sq. ft.	Residential	20
11	Duron, Inc.	2511 14th Street	N/A	Commercial	22
32	Triangle	1431 Chapin Street	15,000 sq. ft.	Residential	11
WMATA-Owned Lot					
Lot 78	Triangle	14th/Park/Kenyon	40,709 sq. ft.	Residential/Commercial	109

Source: NCRC, Triangle.

The largest developments will take place on Parcels 29, 27, 15, and 26. Given the nature of surrounding development and high levels of transit service in the neighborhood, the expectation is that approximately half of all trips will arrive by means other than an automobile. A brief summary of major developments is provided below.

Parcel 29 (Tivoli Square) will be a mixed-use development including retail, office space, and housing, as well as the restoration of the Tivoli Theatre. The project includes:

- A 250-seat theater;
- A new supermarket; and
- 23 residential townhouses.

A Traffic Impact Analysis for this site was conducted in December 2000. This analysis concluded that the existing street network in the vicinity of Tivoli Square will be able to accommodate the future traffic levels after site development at an acceptable level of service "D."

Parcel 27 will be a 546,000-square-foot retail and entertainment complex, also referred to as D.C. USA. This project is located across 14th Street from the Columbia Heights Metrorail Station. The project includes:

- Specialty retailers such as Target and Whole Foods;
- Restaurants and various entertainment and recreational uses including a bowling center and a health and fitness club; and
- Approximately 15,000 square feet of space allocated at below-market rents for local and minority-owned specialty retailers.

A Traffic Impact Analysis was conducted in December 2000. This analysis concluded that the development at Parcel 27 can be accommodated on the existing street network with an acceptable level of service "D." This development is located adjacent to the Columbia Heights Metrorail Station.

Parcel 15 will consist of a group of multi-story apartment buildings with ground-level retail fronting 14th Street and is known as Columbia Heights Plaza. This project will include:

- Metro piazzas and a civic space;
- 135 rental apartments; and
- An affordable 60-unit senior living facility.

A traffic study for this project is expected to be released in summer 2003.

Parcel 26 is planned as a mix of retail and apartment units. Specific elements include:

- 21,000-square-foot ground-floor retail frontage located on Irving Street;
- 220 rental units; and
- 20 condominium units.

1.3 Existing Traffic Characteristics

Study Area Served by Mix of Regional and Local Roadways

The streets within the study area fall within four categories of functional classification:

- Principal Arterial;
- Minor Arterial;

- Collector; and
- Local.

16th Street and Georgia Avenue are the principal arterials in the study area. Both 16th Street and Georgia Avenue are part of the National Highway System and are intended to serve regional traffic. As shown in Figure 1.3, the highest traffic volumes in the study area are found on 16th Street. A number of other neighborhood roadways also serve significant levels of traffic:

- Irving Street, Harvard Street, Columbia Road, and Park Road function as major east-west routes, as does Monroe Street to a lesser degree; and
- Sherman Avenue and 13th Street both function as commuter arterials between Downtown Washington, D.C., and outlying areas.

Alleys also constitute an important part of the street system as they provide access to parking areas, private garages, and back lots for neighborhood residents and commercial deliveries. Alleys provide internal block access and cross-block routes for pedestrians circulating through the neighborhood.

Local Freight Movement is Limited

In general, truck traffic within the study area is primarily limited to light trucks serving local destinations given the lack of industrial and warehousing facilities within close proximity. Twenty-four-hour traffic counts taken over the course of an average weekday at the intersection of Irving Street and 14th Street indicate that less than one percent of traffic is related to heavy trucks.

Table 1.2 Vehicle Classification Counts - 14th Street at Irving Street

	Auto	Buses	Light Trucks	Heavy Trucks
14th Street Northbound	91.5%	3.1%	4.7%	0.7%
14th Street Southbound	93.2	2.5	4.3	0.1
Irving Street Eastbound	89.5	1.9	7.7	0.9

Notes: Autos - all passenger vehicles; Light Trucks - single-unit trucks between two to five axles; Heavy Trucks - single-unit trucks of more than five axles and all multi-trailer trucks.

Source: Traffic volume counts by Daniel Consultants, Inc., analysis by Cambridge Systematics, Inc.