

Memorandum



Date: September 21, 2016

Agenda Item No. 2(B)4
October 5, 2016

To: Honorable Chairman Jean Monestime
and Members, Board of County Commissioners

From: Carlos A. Gimenez
Mayor

A handwritten signature in black ink, appearing to read "Carlos A. Gimenez", written over a horizontal line.

Subject: Report on the Study of Road Impact Fee For Pedestrian Oriented Mixed-Use - Directive
141414

This following report was prepared by the Department of Transportation and Public Works in coordination with the Department of Regulatory and Economic Resources in response to Resolution No. R-772-14, adopted by the Board of County Commissioners (Board) on September 3, 2014, which directed the County Mayor or County Mayor's designee to: 1) conduct a study of the traffic impacts of certain types of pedestrian oriented mixed-use developments, and 2) whether the road impact fee program should be modified for future pedestrian oriented mixed-use developments to account for internal trips and include recommendations on modifying the road impact fee program in a report to the Board.

The study analyzed six (6) pedestrian oriented developments (PODs) and concluded that a daily internalization rate averaging 14.1 percent should be applied to eligible development projects. Amendments to the impact fee ordinance implementing this credit will be presented under separate cover for Board consideration. A summary of the study is presented below.

Background

A pedestrian oriented development (POD) is a fully pedestrian-connected, planned mixed-use development project where clear, comfortable pedestrian access to commercial and residential areas and other uses is provided. Most data presented in the Institute of Transportation Engineers (ITE) Trip Generation Manual and in Miami-Dade County's Road Impact Fee Ordinance schedule are applicable for a single land use, free-standing site. At a development site consisting of at least two (2) or more land uses, there is potential for interaction among those uses (referred to as "internal capture trips"). The objective of the study was to determine internal capture (internalization) rates for PODs applicable to Miami-Dade County.

Site Selection

The study site selection process was centered upon potential locations within the County that exhibit the following POD characteristics:

- Contains a mix of multiple land uses, multiple buildings, and medium-to-high densities with a mix of housing types;
- Project based on a comprehensive development plan for the site and/or larger area;
- Includes common features and support services such as shared parking, servicing, loading, and utility areas;
- Buildings in the POD center are placed close to and fronting the street;
- Streets within the POD form a "connected network", which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination;
- Internal streets are relatively narrow (two or four lanes) and shaded by rows of trees;
- The POD has a discernible center, such as a square, a green, a roundabout, a park and/or sometimes a busy or memorable street corner;
- The POD has at least one major public space, such as a plaza, park, town square, or other public gathering space;
- Development should be concentrated within a quarter-mile radius of the POD's center;
- All components within a POD are connected by attractive and convenient pedestrian and vehicular circulation systems;
- Connections should be made to adjacent centers, neighborhoods, and public open space areas;
- Transit services are available as an alternative access mode.

An extensive review was performed to locate potential sites, which covered all of the major urban and suburban areas from Aventura to Homestead and from Miami Beach to the County's westernmost urban development limits. The search for suitable sites resulted in the following original list:

- Hammocks Town Center, SW 104 Street and Hammocks Boulevard;
- Kendall Village Center, SW 88 Street (Kendall Drive) and Florida's Turnpike;
- Main Street, Town of Miami Lakes, west of NW 67 Avenue;
- Shops at Merrick Park (formerly known as Village of Merrick Park), Coral Gables, between SW 42 Avenue (Le Jeune Road) and Ponce de León Boulevard; and
- Aventura Mall, City of Aventura and surrounding areas.

A matrix evaluation was prepared to apply the POD definition referenced earlier and the following four (4) sites were selected:

1. Hammocks Town Center (non-POD);
2. Kendall Village Center (POD);
3. Miami Lakes Main Street (POD); and
4. Shops at Merrick Park (POD).

In order to minimize the time and costs associated with additional data collection, two (2) additional PODs from other studies in Florida were summarized and incorporated into this study to provide a total of six (6) sites for the study. The following two (2) sites were added:

5. Mizner Park, Boca Raton, Palm Beach County, Florida: District Wide Trip Generation Study – Florida Department of Transportation, District Four (March 1995)
6. South of Downtown Orlando, Orlando, Florida: Trip Internalization in Multi-Use Developments, the Center for Urban Transportation Research (April 2014)

Internalization Trip Rate Analysis

The trip generation analysis was based on the Institute of Transportation Engineers (ITE) 9th Edition. The overall internalization rate for each POD was calculated by comparing the ITE trip rates based on detailed occupied land uses and traffic data collected at site entry and exit points. A direct comparison of ITE trips for all uses of the POD and traffic counts provides an estimation of the internalization rate at each site for the A.M., P.M. and Daily periods.

Pedestrian Oriented Development Internalization & Criteria

The daily internalization rate as summarized for all six (6) developments differs between PODs and is highest for the Shops at Merrick Park and Kendall Village Center. The internalization rate varies from negative one (1) percent to 56 percent. The large variation is in part due to specific land uses at some PODs such as a gym, college, grocery store or movie theater. The high rate of internalization is strongly influenced by the Shops at Merrick Park due to its balanced uses, attractive restaurants, walkability factor, compact design, location in downtown Coral Gables, and availability of various transit services including a free trolley connecting it to downtown Coral Gables, Miracle Mile, and Metro Station. Due to the large disparity, the rates for Merrick Park (as well as Mizner Park) were removed from the calculations, thereby resulting in a daily internalization rate of 14.1 percent. The appropriate internalization rate for future sites will depend on the site characteristics and to what extent it shares common traits with either one of the studied projects.

Trip generation rates depend on how the land uses are defined. For the PODs, if the ITE trip generation analysis is applied to the individual detailed land uses, the ITE analysis overestimates the trips. Based on this information, the County should apply a trip generation internalization of 14.1 percent to PODs that have a detailed breakdown in land uses. In order to apply an internalization capture of 14.1 percent to a POD, the development must be designed based on the guidelines as presented in the study, and the land uses should be presented in detail to develop the trip generation using the updated Road Impact Fee Ordinance. A check list was developed to help determine if the development is a POD and eligible for a 14.1 percent reduction to the daily trips calculated during the Road Impact Fee application. The set of criteria includes development size, land use type and mix, site plan and building design features, and pedestrian and vehicular internal connectivity.

Road Impact Fee Land Uses

The Road Impact Fee schedule (Table 100, Outside Urban Infill Area and Table 100A, Inside Urban Infill Area) consists of land uses and corresponding daily trip rates based on ITE Trip Generation Manual, 7th Edition. Since the adoption of the Road Impact Fee schedule, the ITE Trip Generation Manual has been updated to the 9th Edition. A comparison between the current Road Impact Fee schedule (based on ITE 7th Edition) and ITE Trip Generation Manual, 9th Edition was performed. In summary, 24 land use trip generation rates are different between the Road Impact Fee schedule and ITE 9th Edition. Out of the 24 land uses that have different rates, ten (10) would produce results with a greater than ten (10) percent difference as compared to the Road Impact Fee schedule, and 16 out of the 24 would result in lower number of trips as compared to the Road Impact Fee schedule. Considering the internalization percentage to be applied to PODs was calculated based on the current ITE Trip Generation Manual 9th Edition as compared to actual traffic counts, the study recommends that the RIF schedule be amended to update the trip rates to the latest ITE Trip Generation Manual, 9th Edition.

Other conclusions from the study include for the non-POD (Hammocks Town Center), the ITE trip generation analysis underestimated the actual trips by 14.0 and 33.6 percent, respectively. If the Hammocks Town Center is typical of shopping center activity in the County, the study recommends that additional sites similar to the Hammocks Town Center be selected for further study. If the data shows that shopping center trips are consistently underestimated by the ITE rates, then a local trip rate might be developed to better represent the trips for shopping centers in the County.

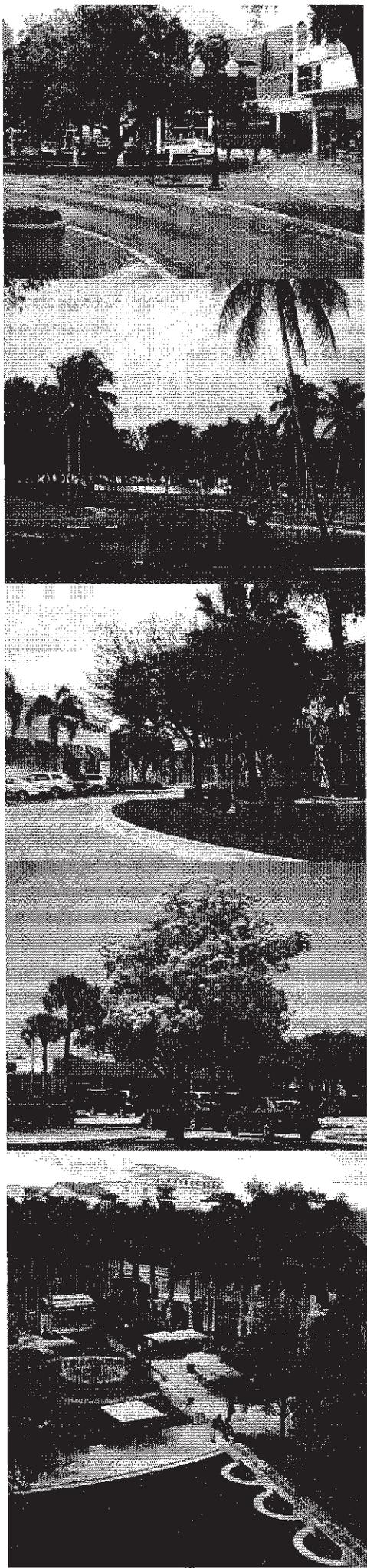
Implementation

The Development Services Division of the Department of Regulatory and Economic Resources will implement the POD impact fee reduction and identify PODs that qualify pursuant to the study criteria upon enactment of the ordinance implementing the 14.1 percent internalization credit. As noted above, that item is being presented to the Board under separate cover and will make this discount available for developments in both incorporated and unincorporated areas of Miami-Dade County.

In accordance with Ordinance No. 14-65, this report will be placed on the next available Board meeting agenda.

If you have any questions or concerns, please do not hesitate to contact Jack Osterholt, Deputy Mayor/Director, Department of Regulatory and Economic Resources, at 305-375-5695 or Alice Bravo, Director of the Department of Transportation and Public Works, at 786-469-5406.

- C: Abigail Price-Williams, County Attorney
- Jack Osterholt, Deputy Mayor/Director, Department of Regulatory and Economic Resources
- Alice Bravo, Director, Department of Transportation and Public Works
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FINAL REPORT

PEDESTRIAN ORIENTED MIXED-USE DEVELOPMENT STUDY



Prepared for:
Miami-Dade County
111 NW 1st Street, Suite 1610,
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April 2016

Prepared by:



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FLORIDA'S *Big* LOCAL FIRM

Project Number: 18191.00
Certificate of Authorization: #13337

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EXECUTIVE SUMMARY

The objective of the **Pedestrian Oriented Mixed-use Development Study** is to determine internal capture rates for Pedestrian Oriented Mixed-Use Developments (PODs) applicable to Miami-Dade County (County), and more specifically how this might be considered by the County in the application of the Road Impact Fee Ordinance (RIFO) [Code of Ordinances, Chapter 33E]. Based on data collected at selected sites in the County, internal daily capture rates were developed for three (3) PODs and one (1) non-POD. Internal capture rates for two additional POD developments from previous studies were also summarized in a similar format in an effort to bolster the data for incorporation into this Study. This would provide a total of six (6) sites for the study, allowing for a more robust analysis while minimizing the time and costs associated with data collection. All information was reviewed with the County prior to finalizing the daily average internal capture rate to be applied for future PODs in the County.

ES-1 Pedestrian Oriented Mixed-Use Development Definition

The first task for this study involved researching and developing the criteria that define a POD. A POD is a fully pedestrian-connected, planned Mixed Use Developed (MXD) project where clear, comfortable pedestrian access to commercial and residential areas and other uses is provided. The following POD characteristics were identified from several sources, including the Reid Ewing Transit Oriented Development (TOD)/POD report,¹ and applied to select the sites to be used for this study:

- Contains a mix of multiple land uses, multiple buildings, and medium-to-high densities with a mix of housing types. The basic POD provides a mix of uses including retail, services, and/or offices with some institutional and/or recreational facilities, but always with residential development integrated into the ultimate site plan;
- Project based on a comprehensive development plan for the site and/or larger area;
- Buildings and individual project components have mostly common features and support services such as shared parking, servicing, loading, and utility areas;
- Buildings in the POD center are placed close to and fronting the street;
- Streets within the POD form a “connected network”, which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination. The internal road system may be a grid system;

¹ “Pedestrian- and Transit-Friendly Design: Primer for Smart Growth”; Ewing, Reid; Smart Growth Network, Based on a manual prepared for the Florida Department of Transportation and published by the American Planning Association.

- The internal streets are relatively narrow (two or four lanes) and shaded by rows of trees. This slows traffic, creating an environment suitable for pedestrians and bicycles;
- The POD has a discernible center. This is often a square, a green, a roundabout, a park and/or sometimes a busy or memorable street corner;
- The POD has at least one major public space, such as a plaza, park, town square, or other public gathering space.
- Higher density, mixed use, pedestrian-oriented development should be concentrated within a quarter-mile radius of the POD's center. A quarter-mile radius represents the distance and time (about a five-minute walk) to or from the center of the POD, an average of roughly 1,200 to 1,500 feet;
- All components within a POD are connected by attractive and convenient pedestrian and vehicular circulation systems. These systems may use a combination of public streets and internal, private streets and ways. While State and local agencies allow a minimum sidewalk width of 5 feet, PODs are recommended to have widths of between 12 and 20 feet along the main corridors. The need to cross parking lots or other obstacles should be minimized;
- Connections should be made to adjacent centers, neighborhoods, and public open space areas. These connections can range from local sidewalks to specifically built pathways and corridors; and
- Transit services are available. Since the development is not a TOD, transit service does not have to be a premium or high frequency service, but it should provide an alternative access mode.

ES-2 Study Sites

The study site selection process was centered upon potential study sites within the County which exhibit, as best as possible, the characteristics of a POD. An extensive aerial review was performed using internet tools such as the Miami-Dade County Property Appraiser's website and Google Earth, coupled with local knowledge and discussions with County staff, to locate potential sites based on POD characteristics. These searches, which covered all of the major urban and suburban areas from Aventura to Homestead and from Miami Beach to the County's westernmost urban development limits, also included field visits to confirm the potential candidate sites' development characteristics. A matrix evaluation was prepared to apply the POD definition and the following four sites were selected:

1. Hammocks Town Center (non-POD);
2. Kendall Village Center (POD);
3. Miami Lakes Main Street (POD); and
4. Shops at Merrick Park (POD).

The following two sites were selected from previous internalization studies which exhibited POD characteristics:

1. Mizner Park, Boca Raton, Palm Beach County, Florida: District Wide Trip Generation Study – Florida Department of Transportation – District Four, dated March 1995; and
2. South of Downtown Orlando (SODO), Orlando, Florida: Trip Internalization in Multi-Use Developments, prepared by the Center for Urban Transportation Research for the Florida Department of Transportation, dated April 2014.

ES-2.1 Hammocks Town Center (Non-POD)

The Hammocks Town Center (44.5 acres) shown in **Figure ES-1** is a multi-building shopping center located in the northeast quadrant of the intersection of SW 104th Street and Hammocks Boulevard. This mixed-use facility is anchored by a Publix supermarket, a CVS Pharmacy, a Miami Dade Public Library, and the Kendall Ice Arena. The development also includes several retail stores, medical services, offices, and several restaurants. Additionally, a McDonald's, two banks, an Extra Space Storage, a Taco Bell and a Mobile gas station occupy separate parcels along the north side of SW 104th Street and the east side of the site. The Coral Club Garden Villas Condos (townhomes) share an access driveway with the site but are not integrated with the other uses on the site. The center is also a designated Park-N-Ride with a bus stop for MetroBus Route 204 (Killian KAT).

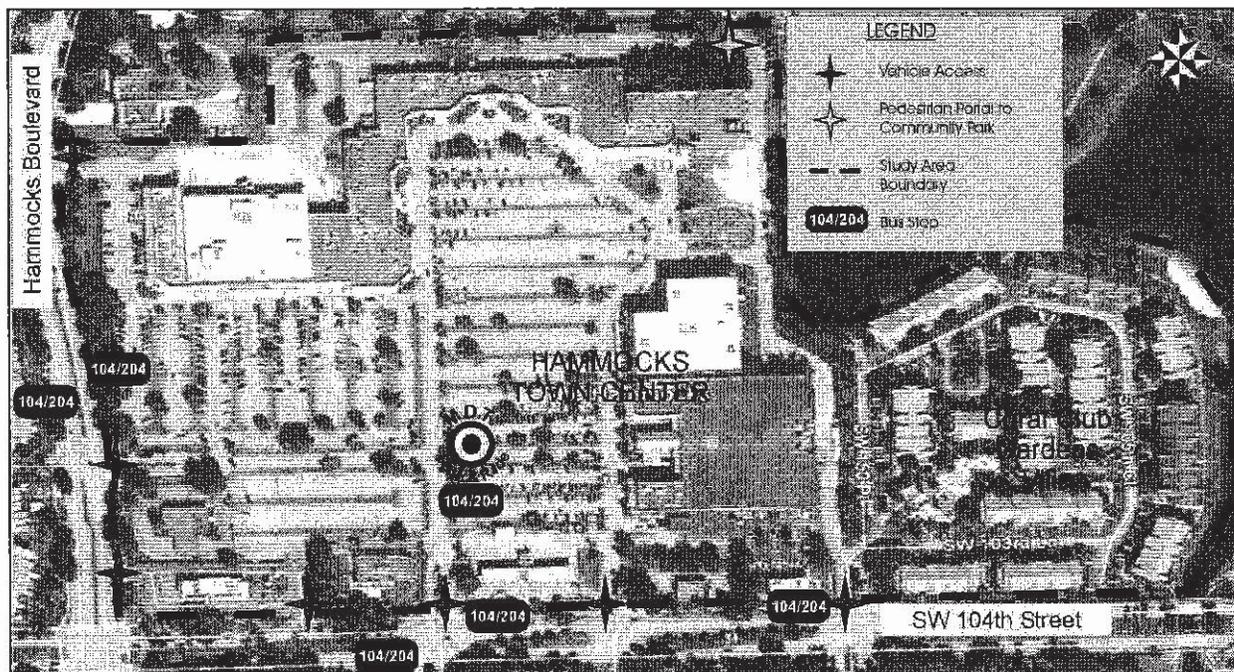


Figure ES-1: Hammocks Town Center

The layout of the Hammocks Town Center follows the traditional open shopping center layout. The buildings are laid out along the north, east, and south sectors of the property with over 800 parking spaces in between. Buildings and open areas within the Hammocks are connected by internal streets and drives, mostly integrated into the parking layout. Other than the single continuous sidewalk/path connecting the main area and the ice rink building, the center has no other internal pedestrian/bicycle connections.

ES-2.2 Kendall Village Center

The Kendall Village Center (38.45 acres) shown in **Figure ES-2** is a planned pedestrian-oriented town center with retail, restaurant, office, residential, and recreational/entertainment uses. It is located at the northwest quadrant of the interchange of Florida's Turnpike and SW 88th Street (North Kendall Drive). The center's occupants include a 16 screen multiplex theater, LA Fitness, restaurants, nightclub, and retail. The site also includes medical offices (a mixed-use office building with approximately 90% medical offices and 10% other office spaces), and a separate multi-floor office building currently housing the Miami-Kendall campus of Nova Southeastern University. Kendall Village Town Villas, a collection of 87 townhomes (gated community), is located in the northeast quadrant of the development project site. Access to and from the residential area is exclusively through the POD.

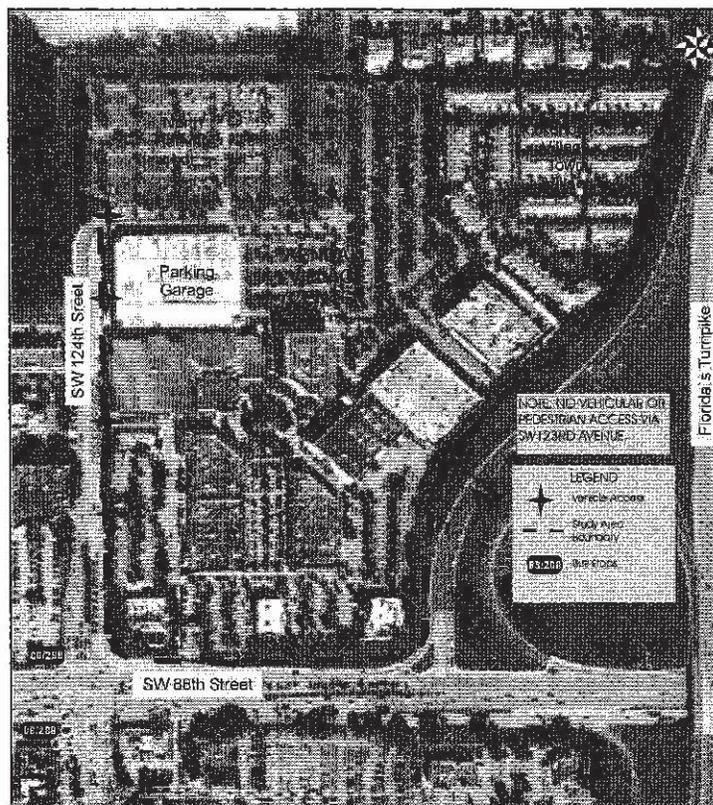


Figure ES-2: Kendall Village Center

The layout of Kendal Village Center generally follows the POD concept by providing a main-street effect with narrow and tree-lined internal streets, building fronts facing and close to the streets, and wide sidewalks connecting all of the buildings and residential areas. The development has a defined center point, a roundabout with a community center. The site has approximately 2,700 parking spaces (including a multi-level garage) generally located behind or to the side of the buildings.

ES-2.3 Miami Lakes Main Street

Miami Lakes Main Street (66 acres) shown in **Figure ES-3**, located in the center of the Town of Miami Lakes, is a planned mixed-use pedestrian-oriented town center with retail, restaurant, office, residential (889 units), and recreational/entertainment uses. The Main Street study site is located along the west side of NW 67th Avenue between Miami Lakeway North in the North and Miami Lakes Drive in the South. The town is an early model of the New Urbanism movement with shopping and services located in walking distance of residences as well as narrow walkable streets and plenty of neighborhood parks.

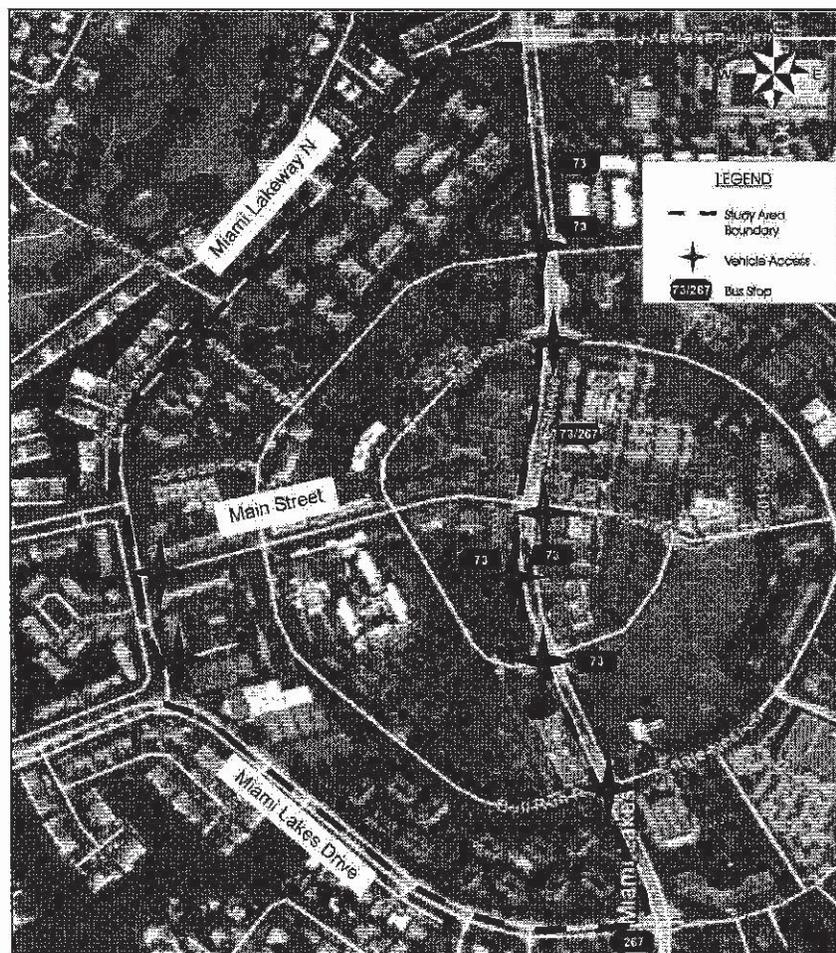


Figure ES-3: Miami Lakes Main Street

The centerpiece of this development is Main Street, a three block mixed-use segment that features pedestrian oriented shopping, living, recreational and business areas within the context of an open air mall. The two easternmost blocks contain over 225,000 square feet of mixed uses with retail on the ground level and residential apartments and/or business offices on the upper one or two levels. The street is configured as a two-lane road with a landscaped median, wide sidewalks and angled parking. The street features a roundabout west of NW 67th Avenue which emphasizes pedestrian movements over the vehicular movements. The western one-third of the street features residential apartments bordering both sides of the street in a manner conveying a city streetscape with a tree-lined street and ample sidewalks. The area has several acres of surface public parking, which provide for the area's needs. Curb parking is also available along all of the study site's internal streets.

ES-2.4 Shops at Merrick Park

The Shops at Merrick Park is a planned upscale pedestrian oriented mixed-use shopping, office, and residential development located at 358 San Lorenzo Avenue in the City of Coral Gables, Miami-Dade County (see **Figure ES-4**). It is generally located north of Greco Avenue, west of Ponce De Leon Boulevard, south of Altara Avenue and east of SW 42nd Avenue/LeJeune Road/SR 953.

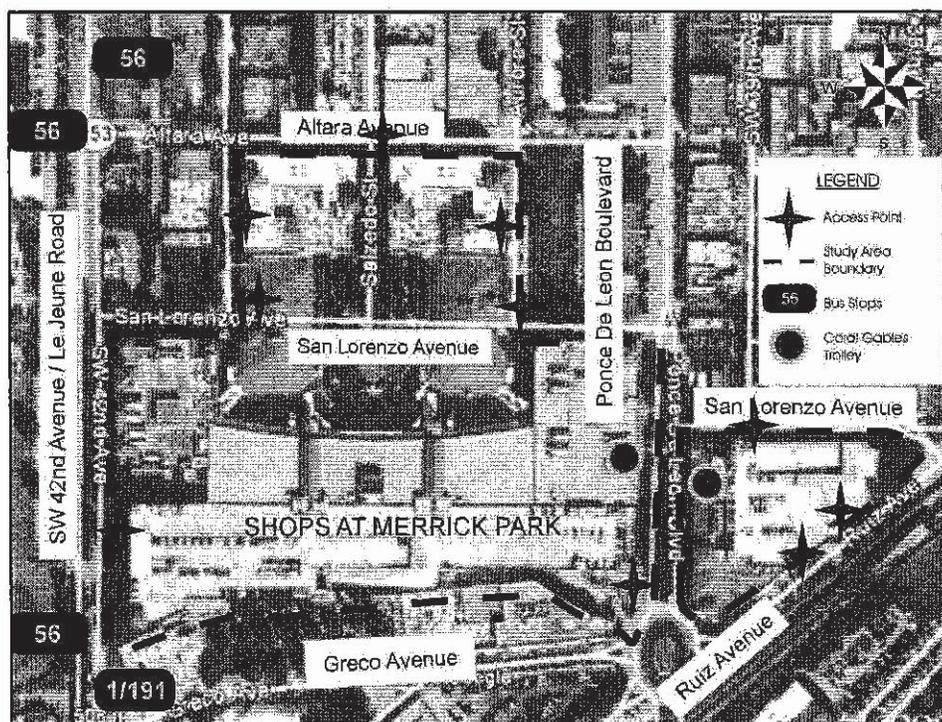


Figure ES-4: Shops at Merrick Park

The Shops at Merrick Park consists of over 850,000 square feet retail stores, offices, medical services, restaurants, and two anchor stores (Neiman Marcus and Nordstrom). The six-story northeast and northwest buildings on the main site consist of

retail/business spaces on the ground floor, two levels of garage, and three levels of apartments (Residence at Merrick Park: total 120 apartments).

The Shops at Merrick Park Office Building is located east of the main development, on the east side of Ponce de Leon Boulevard between San Lorenzo Avenue and Ruiz Avenue. The five-level office building has approximately 126,019 square feet of leasable space with retail on the ground level and mixed office uses on the upper levels. The building is connected via an enclosed pedestrian bridge to the main development site.

Visitors, residents and employees of Shops at Merrick Park typically park at one of the four garages on site. The Shops at Merrick Park has a total of seven vehicular access points at the garages: one off SW 42nd Avenue, one off Ponce de Leon Boulevard, one off Laguna Street, one off Aurora Street, one off San Lorenzo Avenue (East building), and two off Ruiz Avenue (East building). Approximately 56 metered curb parking spaces (operated by the City of Coral Gables) are provided along the bordering streets.

ES-2.5 Mizner Park

Mizner Park (shown in **Figure ES-5**) is a 30-acre site located in Boca Raton, Palm Beach County, Florida. It is located one block north of Palmetto Park road and on the east side of Federal Highway, and is a mixed-used pedestrian oriented development with 136 residential apartments, retail, office, medical office, restaurant, bank, and cinema (as of March 1995). The data and analysis for this site are based on information from the study *District Wide Trip Generation Study – Florida Department of Transportation – District Four*, dated March 1995.

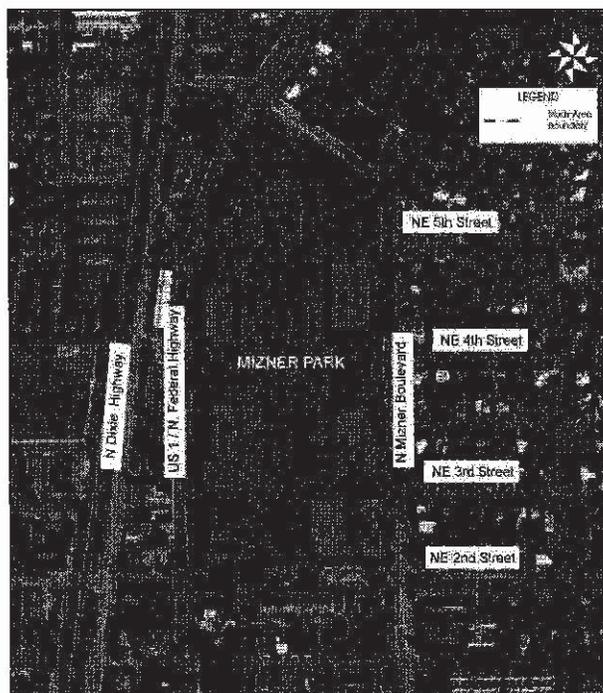


Figure ES-5: Mizner Park

ES-2.6 South of Downtown Orlando (SODO)

SODO (see **Figure ES-6**) is a 22-acre site located on the southwest corner of Orange Avenue and Grant Street in Orlando, Florida, and is a mixed-used pedestrian oriented development comprised of mid-rise residential (300 units), retail, restaurants, and office. The data and analysis for this site are based on information from the study *Trip Internalization in Multi-Use Developments*, prepared by the Center for Urban Transportation Research for the Florida Department of Transportation, dated April 2014.

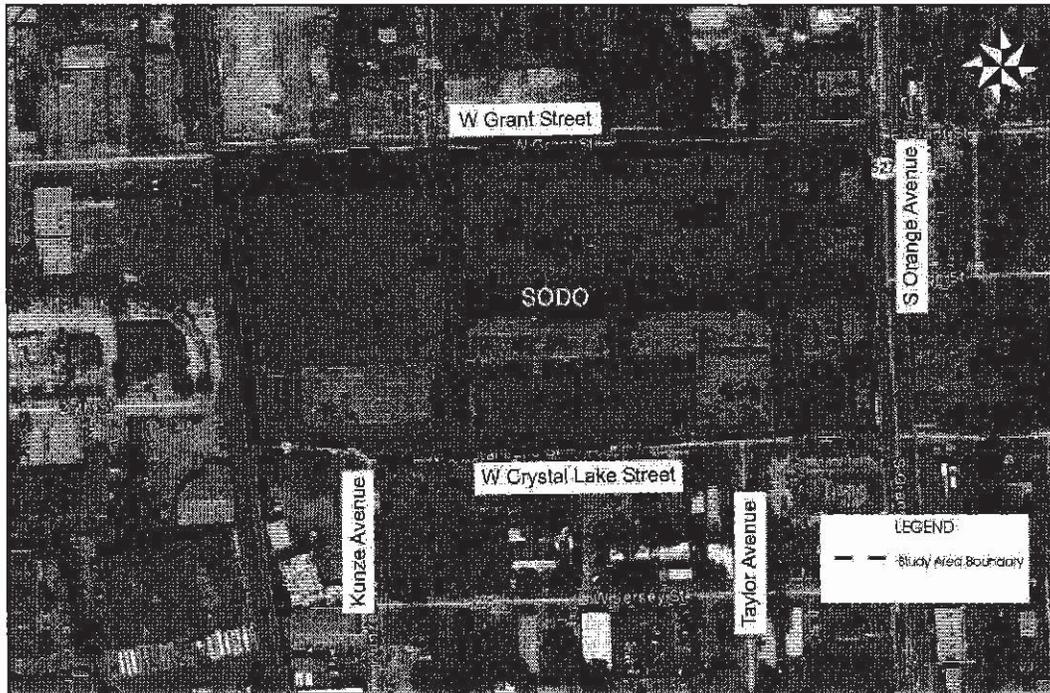


Figure ES-5: SODO

ES-3 Interview Data

Interviews were conducted with visitors, residents and workers at two POD sites (Kendall Village Center and Miami Lakes Main Street) to better understand their trip making characteristics. Surveyors were assigned to predetermined locations on each site. The interviews were conducted during the Midday (11:30 AM to 1:30 PM) and the PM (4:30 PM to 6:30 PM) peak periods on one of the days that the traffic data was collected.

A total of 543 interviews were conducted at Kendall Village Center, of which 296 survey forms were completed in the Midday period and 247 in the PM period. The interviews identified 591 trips that were classified as Types 1 to 4. Trip summaries show that 62 percent of the total trips are single purpose trips with no internalization. The trips with one internal to internal destination represent 24 percent of the total trips, and the remaining trips with two internal destinations represent 14 percent of the total trips.

A total of 475 interviews were conducted at Miami Lakes Main Street, of which 239 survey forms were completed in the Midday period and 236 in the PM period. The interviews identified 512 trips that were classified as Types 1 to 4. Trip summaries show that 40.5 percent of the total trips are single purpose trips with no internalization. The trips with one internal to internal destination represent 23.5 percent of the total trips, and the remaining trips with two internal destinations represent 36 percent of the total trips.

Several graphical summaries were developed to illustrate trip internalization between the various land uses at both Kendall Village Center and Miami Lakes Main Street developments. Graphs and tables are presented in Chapter 16 depicting the percent of each trip type, resident and on-site worker trip characteristics, internal trip purposes, mode of transportation, and internal trips among the various land uses.

ES-4 Comparison of Trip Internalization Studies

Table ES-1 provides a summary of the internal trips for all six developments considered for this study (1 non-POD, 3 PODs with 2015 counts, and 2 PODs based on counts and land uses from previous studies).

The daily internalization rate differs between PODs and is highest for the Shops at Merrick Park and Kendall Village Center. The daily internalization rates vary from -1 percent to 56 percent. The large variation is in part due to specific land uses at some PODs such as a gym, college, grocery store or movie theater, as well as, the proximity and integration of the sites with area transit services.

As expected, the AM internalization rates are significantly lower than daily since most retail stores and restaurants are not open during the AM peak period. The PM internalization rates for the PODs vary between 27 percent and 59 percent.

The rate of internalization is highest for the Shops at Merrick Park. The Shops at Merrick Park high internalization rate is due to its balanced uses, attractive restaurants, walkability factor, compact design, location in downtown Coral Gables, and availability of various transit services including a free trolley connecting it to downtown Coral Gables, Miracle Mile, and Metro Station. Furthermore, ITE trip rates applied to the retail stores at the Shops of Merrick Park may have overestimated trips considering that most retail stores at this site are high-end attracting unique clientele and typically serving fewer customers per day than typical retail stores for which ITE rates were developed.

Table ES-1: Trip Internalization Summary

Mixed-Use Development	%Internal (ITE vs. Counts)			POD (Y/N)	Size (Acres)	Total (KSF)	Detailed Land Uses (Units and KSF)
	Daily	AM	PM				
Hammocks (non-POD)	-14.0%	4.0%	17.7%	No	44.5	358 KSF	240 Units, 30K Restaurant, Ice Arena, Library, Bank
Kendall Village	18.7%	-6.5%	46.4%	Yes	38.5	397 KSF	87 Units, 82K Retail, 53K Office, 54K Rest.,Gym,College,Movie
Miami Lakes Main St.	7.2%	16.5%	27.2%	Yes	65.7	661 KSF	900 Units, 126K Retail, 154K Office,35K Rest.,Hotel,Spa,Movie
Shops at Merrick Park	55.7%	8.8%	59.1%	Yes	19.3	850 KSF	120 Units, 610K retail, 153K Office, 36K Restaurant, Gym
SODO	16.4%	9.1%	26.5%	Yes	18.0	340 KSF	300 Units, 283K Retail+Grocery, 46K Office, 11K Restaurant
Mizner Park (1)	-0.6%	23.8%	36.8%	Yes	30.0	208 KSF	136 Units, 87K Retail, 88K Office, 30K Restaurant, Bank, Movie
Average (PODs)	19.5%	10.3%	39.2%	Yes	34.3	491 KSF	Various Mixed-Use project sizes & land uses
NCHRP Report 684 - Enhancing Internal Trip Capture Estimation for Mix-Use Developments - 2011 (2)							
Crocker Center	41.0%		32.0%		26		0 Units, 87K Retail, 209K Office, Hotel
Mizner Park	40.0%		32.0%		30		136 Units, 163K Retail, 88K Office, Movie
Galleria Area	38.0%		28.0%		165		722 Units, 1150K Retail, 137L Office, Hotel
Country Isles	33.0%		30.0%		61		368 Units, 193K Retail, 59K Office
Village Commons	28.0%		30.0%		72		317 Units, 231K Retail, 293K Office
Boca Del Mar	33.0%		27.0%		253		1144 Units, 198K Retail, 303K Office
Average	35.5%		29.8%		101		Source: Table 6 of NCHRP Report 684
CUTR-FDOT-Trip Internalization in Multi-Use Developments Based on Surveys - April 2014 (3)							
Creekwood (Bradenton)	14.0%	14.0%			43	396 KSF	592 Units, 362K Retail, 35K Restaurants (Suburban)
Sodo (Orlando)	12.0%	14.0%			18	445 KSF	300 Units, 283K Retail, 46K Office, 11K Restaurant
Lakeside Village (Lakeland)	9.0%	16.0%			74	543 KSF	312 Units, 387K Retail, 79K Restaurant, Movie, Hotel (900 R)
Uptown Altamonte	12.0%	13.0%			25	673 KSF	800 Units, 452K Retail, 117K Office, 11K Rest., Hotel, Cinema
Average	11.8%	14.3%			40	514 KSF	Source: CUTR-FDOT April 2014 Multi-Use study (Table ES-6)
FDOT District 2 Internal Trip Capture Study (4)							
Halle Plantation		only	only		n/a		Near Gainesville, Mixed Use, 2700 Units
Magnolia Parke		average	average		n/a		Shands Hospital for children
Palencia Site		AM rate	PM rate		2,350		Planned Community south of Jacksonville
Tioga Site		provided	provided		500		Near Gainesville, 40 Units, 80K Retail, 21 acres Town Center
Average		20.0%	30.0%				Source: Section 2.4 of the CUTR-FDOT 2014 report

Notes:

- 1 - While the initial study for Mizner Park was performed in 1994, the trip generation was updated to ITE Trip Generation Manual, 9th Edition.
- 2 - NCHRP Report 684, Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, 2011
- 3 - CUTR-FDOT-Trip Internalization in Multi-Use Developments Based on Surveys, April 2014
- 4 - Internal Trip Capture Study - District 2, Report prepared for FDOT, URS, 2010.

ES-5 Pedestrian Oriented Development Internalization

Table ES-2 summarizes the internalization percentage for the daily, AM, and PM peak hours for the Hammock Town Center (non-POD) and the five POD developments. As shown in the table, the estimated development trips using the Institute of Transportation Engineers (ITE), 9th Edition, trip generation rates depends on how the land uses are defined. Internalization was estimated for each site based on the detailed make-up of land uses known to be at each site and for the same site assuming aggregated General Office and Shopping Center land uses (ITE Codes 710 and 820, respectively). The results of the five POD studies were reviewed by senior staff at K&S and various County Departments. Each site was reviewed in detail with regards to its characteristics, and applicability in representing typical POD developments within Miami-Dade County.

Table ES-2: Internalization Summary

Period	Non-POD	POD Developments					POD Average ²
	Hammocks Town Center	Kendall Village Center	Miami Lakes Main Street	Shops at Merrick Park ¹	SODO	Mizner Park ¹	
Detailed Land Use Procedure							
Daily	-14.0%	18.7%	7.2%	55.7%	16.4%	-0.6%	14.1%
AM Peak Hour	4.0%	-6.5%	16.5%	8.8%	9.1%	23.8%	6.4%
PM Peak Hour	17.7%	46.4%	27.2%	59.1%	26.5%	36.8%	33.4%
Aggregated Land Use Procedure							
Daily	-33.6%	4.0%	-9.5%	50.1%	n/a	-18.7%	-2.8%
AM Peak Hour	26.5%	-6.9%	-7.1%	1.3%	n/a	15.7%	-7.0%
PM Peak Hour	1.9%	38.3%	18.0%	54.3%	n/a	29.8%	28.2%

¹ Presented for informational purposes only. Not representative of anticipated Miami-Dade POD.

² POD Average internalization rate based on Kendall Village Center, Miami Lakes Main Street and SODO, only.

The excessively high daily internalization rate (55.7 percent) at the Shops at Merrick Park and the low rate (-0.6 percent) at Mizner Park were deemed as statistical outliers not representative of future PODs in the County. The Shops at Merrick Park site has mostly high-end tenants and is located in very close proximity to excellent transit service (Metrorail, Metrobus, and a free trolley bus service operated by the City of Coral Gables). Additionally, the high-end retail associated with this site generates fewer trips than ITE rates would estimate, which likely artificially skews the results of the internalization rates measured at this site based on the methodology used. The Mizner Park study is over twenty-years old, and the development is located in Palm Beach County. There is ample convenient parking at the four garages surrounding the site, and the site does not benefit from the types and frequency of transit services more commonly available in Miami-Dade County. A consensus was reached among the County and K&S staff that these two sites do not represent the typical POD sites that would be anticipated in Miami-Dade County. As such, these two developments were not used in calculating the POD Average rates depicted in **Table ES-2**.

Table ES-2 summarizes the internalization observed at each site, and presents the average of the three representative sites: Kendall Village Center, Miami Lakes Main Street, and SODO. The analysis using detailed land uses yielded daily trips that are on average 14.1 percent lower than the ITE trips. The ITE trip generation analysis using aggregated land uses (where there is no distinction between retail uses or the general office and medical office uses) underestimates the trips on average by 2.8 percent. Based on this information, it is recommended that the County apply a trip generation internalization rate of 14.1 percent to POD developments that have a detailed breakdown in land uses. If the POD does not have the detailed breakdown in land uses, the County might underestimate the trips by 2.8 percent using standard ITE trips.

ES-6 Road Impact Fee Land Uses

Currently, in its application of the Road Impact Fee Ordinance (RIFO), Miami-Dade County does not have a use that reflects POD and the benefits of internalization associated with this land use form. It is recommended that the RIFO be amended to include the POD land use along with a 14.1 percent credit for internalization. However, in order to qualify for the internalization capture rate of 14.1 percent, the development must be designed based on the guidelines as presented in **Section 18**, and the land uses should be presented in detail. **Table ES-3** presents a check list to help determine if the development qualifies as a POD eligible for the daily 14.1 percent internalization.

The Road Impact Fee schedule (Table 100, Outside Urban Infill Area and Table 100A, Inside Urban Infill Area) consists of land uses and corresponding daily trip rates based on ITE Trip Generation Manual, 7th Edition.

Since the adoption of the RIF schedule, the ITE Trip Generation Manual has been updated to the 9th Edition. A comparison between the current RIF schedule (based on ITE 7th Edition) and ITE Trip Generation Manual, 9th Edition was performed. In summary, 24 land use trip generation rates are different between the RIF schedule and ITE 9th Edition. Out of the 24 land uses that have different rates, 10 would produce results with a greater than 10 percent difference as compared to the RIF schedule, and 16 would result in a lower number of trips as compared to the RIF schedule.

Since the recommended internalization percentage for POD developments was calculated based on the current ITE Trip Generation Manual 9th Edition, it is recommended that the RIF schedule be amended to update the trip rates to the latest ITE Trip Generation Manual, 9th Edition.

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**Table ES-3
Pedestrian Oriented Development Criteria**

Criteria		Check Mark
Criteria 1 – Development Size		
1a	Site area is less than 162 acres.	
1b	It is a single <u>Master Planned</u> Development project between 100,000 and 2,000,000 square feet in size.	
Criteria 2 – Development Land Uses		
2a	Non-residential land use exceeds 30 percent of the total project development area.	
2b	Includes residential single family detached apartments, townhouses, or condos (must be between 25 and 55 percent of the overall area).	
2c	It has a combination of at least three other land uses besides residential: <ul style="list-style-type: none"> • Office / Medical Office • Retail; • Service (restaurants, banks); • Recreational; • Hotel; or • Institutional. 	
2d	The second and third highest land uses must be greater than or equal to 10 percent of the overall area.	
2e	The development <u>does not</u> have fast-food restaurants, gas stations, industrial uses, or other uses with drive-through windows?	
Criteria 3 – Building Design Features		
3a	The development has at least one major public space such as a plaza, park, town square, or other public gathering space such as a community center.	
3b	The development has a discernible center. This is often a square, a green, a roundabout, a park and/or sometimes a busy or memorable street corner.	
3c	The development is within a 1,500 foot radius of the POD's center.	
3d	There are multiple buildings accommodating more than one land use.	
3e	The buildings and individual project components have mostly common features and support services such as shared parking, servicing, loading, and utility areas.	
3f	The building setbacks are less than or equal to 25 feet from the roadway.	
3g	The building main entries face the street.	
Criteria 4 – Internal Connectivity		
4a	The pedestrian sidewalks form a network connecting all areas of the development.	
4b	The pedestrian sidewalks are between 12 and 20 foot wide (main corridors).	
4c	The internal vehicular streets are two or four lanes (11 or 10 foot wide lanes) and shaded by rows of trees.	
4d	Vehicles can access any part of the development without using the adjacent regional roadways.	

Note: In order to qualify for internalization and land use distribution, the request requires final approval from the County's Department of Transportation and Public Works Director.

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Table of Contents

<u>Item</u>	<u>Page</u>
EXECUTIVE SUMMARY.....	ES-1
1. INTRODUCTION.....	1-1
1.1 Study Objective.....	1-1
1.2 Basic Mixed-Use Developments	1-1
1.3 Transit and Pedestrian Oriented Developments	1-3
1.3.1 Transit Oriented Development.....	1-3
1.3.2 Pedestrian Oriented Development.....	1-4
2. PEDESTRIAN ORIENTED DEVELOPMENT CHARACTERISTICS	2-1
3. SELECTION PROCEDURE OF STUDY SITES.....	3-1
3.1 Methodology	3-1
3.2 POD Study Site Selection Criteria	3-1
3.2.1 POD Characteristics Criteria.....	3-1
3.2.2 Site Data Collection Factors	3-3
3.3 Candidate POD Study Sites.....	3-4
4. DESCRIPTION AND EVALUATION OF CANDIDATE POD SITES	4-1
4.1 Hammocks Town Center	4-1
4.1.1 Site Description and Inventory	4-1
4.1.2 Hammocks Town Center POD Characteristics Criteria	4-5
4.1.3 Site Data Collection Factors	4-7
4.2 Kendall Village Center	4-8
4.2.1 Site Description and Inventory.....	4-8
4.2.2 Kendall Village Center POD Characteristics Criteria	4-14
4.2.3 Site Data Collection Factors	4-15
4.3 Miami Lakes Main Street	4-16
4.3.1 Site Description and Inventory.....	4-16
4.3.2 Miami Lakes Main Street POD Characteristics Criteria	4-22
4.3.3 Site Data Collection Factors	4-24
4.4 Village of Merrick Park.....	4-25
4.4.1 Site Description and Inventory.....	4-25
4.4.2 Village of Merrick Park POD Characteristics Criteria	4-31
4.4.3 Site Data Collection Factors	4-33
4.5 Aventura Mall Area	4-33
4.5.1 Site Description and Inventory.....	4-33
4.5.2 Aventura Mall Area POD Characteristics Criteria	4-37
4.5.3 Site Data Collection Factors	4-39

Table of Contents (continued)

<u>Item</u>	<u>Page</u>
5. DESIGNATION OF POD AND non-POD SITES	5-1
5.1 Site Selection Criteria Rating Values	5-1
5.2 Site Selection Factor Rating Values	5-3
5.3 Site Selection Matrix	5-4
5.4 Other MXD Site Selections	5-6
5.5 Final Site Selection for Study	5-7
6. HAMMOCKS TOWN CENTER TRAFFIC	6-1
6.1 Study Site Description.....	6-1
6.2 Traffic Counts	6-1
7. KENDALL VILLAGE CENTER TRAFFIC	7-1
7.1 Study Site Description.....	7-1
7.2 Traffic Counts	7-1
8. MIAMI LAKES MAIN STREET TRAFFIC	8-1
8.1 Study Site Description.....	8-1
8.2 Traffic Counts	8-1
9. SHOPS AT MERRICK PARK TRAFFIC.....	9-1
9.1 Study Site Description.....	9-1
9.2 Traffic Counts	9-1
10. HAMMOCKS TOWN CENTER TRIP GENERATION.....	10-1
10.1 Land Use Inventory.....	10-1
10.2 Trip Generation.....	10-1
11. KENDALL VILLAGE CENTER TRIP GENERATION.....	11-1
11.1 Land Use Inventory.....	11-1
11.2 Trip Generation.....	11-1
12. MIAMI LAKES MAIN STREET TRIP GENERATION.....	12-1
12.1 Land Use Inventory.....	12-1
12.2 Trip Generation.....	12-1
13. SHOPS AT MERRICK PARK TRIP GENERATION	13-1
13.1 Land Use Inventory.....	13-1
13.2 Trip Generation.....	13-1
14. SODO TRIP GENERATION	14-1
14.1 Land Use Inventory.....	14-1
14.2 Trip Generation.....	14-1

Table of Contents (continued)

<u>Item</u>	<u>Page</u>
15. MIZNER PARK TRIP GENERATION	15-1
15.1 Land Use Inventory	15-1
15.2 Trip Generation	15-1
16. INTERVIEW DATA	16-1
16.1 Interview Methodology	16-1
16.2 Kendall Village Center Interviews	16-2
16.3 Miami Lakes Main Street Interviews	16-6
16.4 PM Peak Period Comparison	16-9
17. COMPARISON OF INTERNALIZATION STUDIES	17-1
17.1 Trip Internalization Rates	17-1
17.2 Internal Capture Rates Among Land Uses	17-3
18. ROAD IMPACT FEE	18-1
18.1 Background and Description	18-1
18.2 Road Impact Fee Land Uses	18-2
19. PEDESTRIAN ORIENTED DEVELOPMENT GUIDELINES	19-1
20. CONCLUSION	20-1

List of Figures

<u>Figure</u>	<u>Page</u>
Figure 3-1: Location of Candidate POD Sites	3-5
Figure 4-1: Hammocks Town Center Site Location	4-2
Figure 4-2: Hammocks Town Center Land Uses	4-2
Figure 4-3: Hammocks Town Center Access Driveways	4-4
Figure 4-4: Kendall Village Center Site Locations	4-9
Figure 4-5: Kendall Village Center Land Uses	4-10
Figure 4-6: Kendall Village Center Site Access Locations	4-13
Figure 4-7: Miami Lakes Main Street Site Location	4-17
Figure 4-8: Miami Lakes Main Street Land Uses	4-19
Figure 4-9: Miami Lakes Main Street Site Access Locations	4-21
Figure 4-10: Village of Merrick Park Site Location	4-26
Figure 4-11: Village of Merrick Park Land Uses	4-27
Figure 4-12: Village of Merrick Park Access Driveways	4-30
Figure 4-13: Aventura Mall Area Site Location	4-34
Figure 4-14: Aventura Mall Area Land Uses	4-35
Figure 4-15: Aventura Mall Area Site Access	4-37

List of Figures (continued)

<u>Figure</u>	<u>Page</u>
Figure 6-1: Hammocks Town Center Traffic Count Stations	6-2
Figure 7-1: Kendall Village Center Traffic Count Locations	7-2
Figure 8-1: Miami Lakes Main Street Site Traffic Count Locations	8-2
Figure 9-1: Shops at Merrick Park Traffic Count Locations	9-3
Figure 14-1: SODO Site Location	14-2
Figure 15-1: Mizner Park Site Location	15-2
Figure 16-1: Kendall Village Center Interview Trip Summary	16-4
Figure 16-2: Kendall Village Center Interview Trip Summary	16-5
Figure 16-3: Miami Lakes Main Street Interview Trip Summary	16-7
Figure 16-4: Miami Lakes Main Street Interview Trip Summary	16-8

List of Tables

<u>Table</u>	<u>Page</u>
Table 4-1: Hammocks Town Center Land Distribution	4-3
Table 4-2: Hammocks Town Center Building Use Space Distribution	4-4
Table 4-3: Kendall Village Center Primary Uses	4-11
Table 4-4: Kendall Village Center Building Use Space Distribution	4-11
Table 4-5: Miami Lakes Main Street Primary Uses	4-18
Table 4-6: Miami Lakes Main Street Building Use Space Distribution	4-20
Table 4-7: Main Street Residential Inventory	4-24
Table 4-8: Village of Merrick Park Primary Uses	4-28
Table 4-9: Village of Merrick Park Building Use Space Distribution	4-28
Table 4-10: Aventura Mall Area Primary Uses	4-35
Table 4-11: Aventura Mall Area Building Use Space Distribution	4-36
Table 5-1: Site Selection Matrix	5-5
Table 6-1: Hammocks Town Center Daily Traffic Volumes	6-3
Table 6-2: Hammocks Town Center Peak Hour Traffic Volumes	6-3
Table 6-3: Coral Club Gardens Peak Hour Traffic Volumes	6-3
Table 7-1: Kendall Village Center Daily Traffic Volumes	7-4
Table 7-2: Kendall Village Center Peak Hour Traffic Volumes	7-5
Table 7-3: Kendall Village Town Villas Peak Hour Traffic Volumes	7-5
Table 8-1: Miami Lakes Main Street Cordon Line Daily Traffic Volumes	8-4
Table 8-2: Miami Lakes Main Street Residential Areas Daily Traffic Volumes	8-5
Table 8-3: Miami Lakes Main Street Peak Hour Traffic Volumes	8-6
Table 8-4: Miami Lakes Main Street Residences Peak Hour Traffic Volumes	8-6
Table 9-1: Shops at Merrick Park Local Street Daily Traffic	9-2
Table 9-2: Shops at Merrick Park Garage Site Access Summary	9-4
Table 9-3: Shops at Merrick Park Summary of Site Traffic Volumes	9-5
Table 10-1: Hammocks Town Center Land Use Inventory	10-2

List of Tables (continued)

<u>Table</u>	<u>Page</u>
Table 10-2: Hammocks Town Center Daily Trip Generation – Detailed Land Use Procedure	10-3
Table 10-3: Hammocks Town Center AM Peak Hour Trip Generation – Detailed Land Use Procedure	10-4
Table 10-4: Hammocks Town Center PM Peak Hour Trip Generation – Detailed Land Use Procedure	10-5
Table 10-5: Hammocks Town Center Daily Trip Generation – Aggregated Land Uses Procedure	10-5
Table 10-6: Hammocks Town Center AM Peak Hour Trip Generation – Aggregated Land Use Procedure	10-6
Table 10-7: Hammocks Town Center PM Peak Hour Trip Generation – Aggregated Land Use Procedure	10-6
Table 10-8: Summary of Hammocks Town Center Daily and Peak Hour Trips and Internalization	10-7
Table 11-1: Kendall Village Center Land Use Inventory	11-2
Table 11-2: Kendall Village Center Daily Trip Generation – Detailed Land Use Procedure	11-3
Table 11-3: Kendall Village Center AM Peak Hour Trip Generation – Detailed Land Use Procedure	11-3
Table 11-4: Kendall Village Center PM Peak Hour Trip Generation – Detailed Land Use Procedure	11-4
Table 11-5: Kendall Village Center Daily Trip Generation – Aggregated Land Use Procedure	11-4
Table 11-6: Kendall Village Center AM Peak Hour Trip Generation – Aggregated Land Use Procedure	11-5
Table 11-7: Kendall Village Center PM Peak Hour Trip Generation – Aggregated Land Use Procedure	11-5
Table 11-8: Summary of Kendall Village Center Daily and Peak Hour Trips and Internalization	11-6
Table 12-1: Miami Lakes Main Street Residential Land Use Inventory	12-1
Table 12-2: Miami Lakes Main Street Non-Residential Land Use Inventory	12-2
Table 12-3: Miami Lakes Main Street Daily Trip Generation – Detailed Land Use Procedure	12-3
Table 12-4: Miami Lakes Main Street AM Peak Hour Trip Generation – Detailed Land Use Procedure	12-3
Table 12-5: Miami Lakes Main Street PM Peak Hour Trip Generation - Detailed Land Use Procedure	12-4
Table 12-6: Miami Lakes Main Street Daily Trip Generation – Aggregated Land Use Procedure	12-4
Table 12-7: Miami Lakes Main Street AM Peak Hour Trip Generation – Aggregated Land Use Procedure	12-5
Table 12-8: Miami Lakes Main Street PM Peak Hour Trip Generation – Aggregated Land Use Procedure	12-5

List of Tables (continued)

<u>Table</u>	<u>Page</u>
Table 12-9: Summary of Miami Lakes Main Street Daily and Peak Hour Trips and Internalization	12-6
Table 13-1: Shops at Merrick Park Land Use Inventory.....	13-1
Table 13-2: Shops at Merrick Park Daily Trip Generation – Detailed Land Use Procedure	13-2
Table 13-3: Shops at Merrick Park AM Peak Hour Trip Generation – Detailed Land Use Procedure.....	13-2
Table 13-4: Shops at Merrick Park PM Peak Hour Trip Generation – Detailed Land Use Procedure.....	13-2
Table 13-5: Shops at Merrick Park Daily Trip Generation – Aggregated Land Use Procedure	13-3
Table 13-6: Shops at Merrick Park AM Peak Hour Trip Generation – Aggregated Land Use Procedure.....	13-3
Table 13-7: Shops at Merrick Park PM Peak Hour Trip Generation – Aggregated Land Use Procedure.....	13-3
Table 13-8: Summary of Shops at Merrick Park Daily and Peak Hour Trips and Internalization	13-4
Table 14-1: SODO Land Use Inventory	14-1
Table 14-2: SODO Daily Trip Generation	14-3
Table 14-3: SODO AM Peak Hour Trip Generation	14-4
Table 14-4: SODO PM Peak Hour Trip Generation	14-4
Table 14-5: SODO Daily and Peak Hour Trips and Internalization	14-5
Table 15-1: Mizner Park Land Use Inventory.....	15-1
Table 15-2: Mizner Park Daily Trip Generation – Detailed Land Use Procedure	15-3
Table 15-3: Mizner Park AM Peak Hour Trip Generation – Detailed Land Use Procedure	15-3
Table 15-4: Mizner Park PM Peak Hour Trip Generation – Detailed Land Use Procedure	15-4
Table 15-5: Mizner Park Daily Trip Generation – Aggregated Land Use Procedure	15-4
Table 15-6: Mizner Park AM Peak Hour Trip Generation – Aggregated Land Use Procedure	15-5
Table 15-7: Mizner Park PM Peak Hour Trip Generation – Aggregated Land Use Procedure	15-5
Table 15-8: Mizner Park Daily and Peak Hour Trips and Internalization.....	15-6
Table 16-1: Kendall Village Center Trip Types	16-3
Table 16-2: Miami Lakes Main Street Trip Types	16-6
Table 16-3: Average PM Peak Period Percent Internalization	16-10
Table 17-1: Comparison of Internalization Rates.....	17-2
Table 18-1: Trip Rates Comparison.....	18-4
Table 20-1: Internalization Summary	20-1
Table 20-2: Pedestrian Oriented Development Criteria	20-4

Appendices

- Appendix A – Hammocks Town Center Land Use Inventory Details and Transit
- Appendix B – Kendall Village Center Land Use Inventory Details and Transit
- Appendix C – Miami Lakes Main Street Land use Inventory Details and Transit
- Appendix D – Merrick Park Land Use Inventory Details and Transit
- Appendix E – Aventura Mall Area Land Use Inventory and Transit
- Appendix F – Hammocks Town Center Traffic Data
- Appendix G – Kendall Village Center Traffic Data
- Appendix H – Miami Lakes Main Street Traffic Data
- Appendix I – Shops at Merrick Park Traffic Data
- Appendix J – Multiplex Movie Theater Trip Generation
- Appendix K – MXD SODO (South of Downtown Orlando)
- Appendix L – MXD Mizner Park – Boca Raton, Florida
- Appendix M – Interview Questionnaires and Summaries
- Appendix N – Chapter 33E Road Impact Fees – Miami-Dade County, Florida, Code of Ordinances
- Appendix O – Land Use Area Percent Distribution

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1. INTRODUCTION

1.1 Study Objective

The objective of the **Pedestrian Oriented Mixed-use Development Study** is to determine internal capture rates for Pedestrian Oriented Mixed-Use Developments (PODs) applicable to Miami-Dade County (County). The topic is of relevance to County planners and engineers since it provides a basis for the potential revision of the existing Miami-Dade Road Impact Fee Ordinance (RIFO)¹ to reflect the influence of the trip characteristics of the PODs.

Based on data collected at selected POD sites, internal capture rates were developed for three (3) PODs and one (1) non-pedestrian oriented mixed-used development for the daily, AM peak hour, and PM peak hour periods. The internal capture rates for two POD developments selected from previous studies were summarized in a similar format in order to present a total of six (6) sites for the study. All information was reviewed with the County prior to finalizing the daily average internal capture rate to be applied for future PODs in the County.

Research of the definition and characteristics of PODs, existing POD ordinances, and identifications of existing PODs within Miami-Dade County was conducted. Based on this research, study site selection criteria were determined based on two specific sets of factors: (1) the characteristics of a POD and (2) the specific site characteristics which facilitate data collection. These criteria were applied to the potential POD study sites.

1.2 Basic Mixed-Use Developments

The Institute of Transportation Engineers (ITE), in its Trip Generation Manual², defines a Multi-Use Development (MXD) as *“typically a single real-estate project that consists of two or more ITE land-use classifications between which trips can be made without using the off-site road system”*.

ITE's description of MXDs includes:

- Planned as a single-real estate project;
- Between 100,000 and 2 million square feet in size (leasable and/or usable areas and dwelling units);
- Contains two or more land uses;
- Some trips are between on-site land uses (internal trips made by either walking or bicycles or by vehicles using internal/site roadways);
- Trips between land uses do not travel on the major street system;
- It is not a central business district;

¹ Miami-Dade County, Code of Ordinances, Chapter 33E, Road Impact Fees.

² Institute of Transportation Engineers, “Trip Generation Manual, 9th Edition, Volume 1: User’s Guide and Handbook”, Washington, D. C., 2012.

- It is not a suburban activity center: and
- It is not an existing ITE land use classification with potential for a mix of land uses such as shopping center, office park with retail, office building with retail, or hotel with limited retail and restaurant space.

The ITE Manual also states that “a traditional downtown or central business district (CBD) is not considered a multi-use development for purposes of this handbook.”

The Urban Land Institute (ULI) defines MXDs as developments with three or more revenue-producing uses integrated into a physically- and functionally-integrated development that conforms to a coherent plan³.

In the 2001 NCHRP Report 684⁴, MXDs are identified as physically- and functionally-integrated developments based on a single master plan with at least four complementary, interacting land uses that have internal pedestrian connectivity and shared parking.

MXDs are considered three-dimensional, transit and/or pedestrian-oriented places that combine compatible land uses of various types and intensities together with public amenities and utilities. The variety of uses allows people the opportunity to live, work, play and shop in one place, which then becomes a destination for people from other blocks within the development or other neighborhoods.

As defined by The Lexicon of the New Urbanism, mixed-use is “multiple functions within the same building or the same general area through superimposition or within the same area through adjacency”⁵ ... from which many of the benefits include pedestrian activity and traffic capture.

A key component to any MXD is the residential land-use element. The residential component can be integrated to the MXD in different ways depending on its type, density, and size. In suburban settings, single-family detached homes are frequently encountered as part of an MXD. Usually, single-family detached residential land uses have relatively low density, resulting in a sparse MXD with relatively long internal connections when compared with other MXDs. It is also frequent to encounter isolated multi-family homes in MXDs.

Multi-family homes can increase density and improve internal connectivity for MXDs, providing an intermediate level of integration. The most integrated residential components are the neo-traditional residential land uses consisting of low- to mid-rise

³ Urban Land Institute, “Mixed Use Development Handbook”, Washington, D. C., 2003, pp. 4-5.

⁴ B. Bochner, K. Hooper, B. Sperry, and R. Dunphy, “National Cooperative Highway Research Program (NCHRP) Report 684, Enhancing Internal Capture Estimation for Mixed-use Developments”, National Cooperative Research Program, Washington, D. C., 2011.

⁵ “The Lexicon of New Urbanism”, Duany Plater-zyberk & Co.”

apartments with ground-floor retail.⁶ MXDs that include these residential land uses have the greatest potential to increase overall development density and offer an improved internal connectivity.

MXDs are typically categorized as either (1) vertical mixed-use buildings; (2) horizontal mixed-use blocks; or (3) mixed-use walkable neighborhoods:⁷

1. **Vertical Mixed-Use Building:** This category consists of a combination of different uses in the same building. Lower floors would have mostly public uses with private uses on the upper floors. For example, the ground floor could have retail, second floor and up having professional offices and/or some form of residential use. In more urban areas, an entire block or neighborhood may be composed of vertical mixed-use buildings.
2. **Horizontal Mixed-Use Blocks:** This category consists of a combination of single-use buildings on distinct parcels in a range of land uses within one block. In more urban areas, this approach avoids the financing and coding complexities of vertical layered uses while achieving the goal of place making that is made possible by bringing together complementary uses in one place. In less urban areas, horizontal mixed-use offers the advantage of sharing utilities and amenities while facilitating the means to build an entire mix of uses within a walkable block circumscribed by thoroughfares.
3. **Mixed-Use Walkable Neighborhoods:** This category provides various possibilities for combining vertical and horizontal use mixing in an area ideally within a 5 to 10 minute walking distance (a pedestrian shed) or quarter mile radius of neighborhood center.

1.3 Transit and Pedestrian Oriented Developments

There are two forms of MXDs currently emphasized today in both urban and non-urban areas:

1. The transit oriented development (TOD); and
2. The pedestrian oriented development (POD).

1.3.1 Transit Oriented Development

The 2014 Florida Statutes define TODs as a *“mixed-use residential or commercial area designed to maximize access to public transportation and often incorporates features to*

⁶ A. Christoforidis, “New alternatives to the suburb: Neo-traditional developments,” *Journal of Planning Literature*, Vol. 8, No. 4, pp 429-440, 1993.

⁷ Blackson, Howard, “Don’t get mixed-up on mixed-use”, Blog post by Howard Blackson on July 5, 2012, *Better! Cities & Towns*.

encourage transit ridership. A transit-oriented development neighborhood typically has a center with a train station, tram stop, or bus station surrounded by relatively high-density development with progressively lower-density development spreading outward from the center, typically within 1/2 mile of the stop or station.”⁸

In Miami-Dade County, a transit-oriented development is defined as “a high density or intensity mixed-use commercial and residential development designed to encourage public transit use. Transit nodes are generally found in the center of a TOD surrounded by rather high-density development with gradually lower densities spreading outwards from the transit station or stop”.⁹ TODs generally are located within a radius of one-quarter to one-half mile (between 1,300 and 2,600 feet) from a transit stop, as this is considered to be an appropriate scale for pedestrians. In addition, TOD’s are generally located in close proximity of premium transit service such as the MetroRail, bus transit center or corridors. An example of a TOD in Miami-Dade County is the Dadeland South development located at the junction of US-1, South Dixie Highway, and SR-826, Palmetto Expressway.

1.3.2 Pedestrian Oriented Development

There is often the perception among developers and political leaders that auto-oriented development is the only type of development that can be marketable. While there will always be a place in the real estate market for auto-oriented development, there is nothing to lose and much to gain from promoting pedestrian-oriented development in the vicinity of a pedestrian-intensive node like a transit station (although the latter is not necessary). There has been an increasing demand nationwide for compact residential and commercial environments where people have the option to walk. Pedestrian-oriented centers throughout the country are some of the most popular and economically viable places for living, working, and shopping.¹⁰

It should be noted that whereas a TOD is specifically defined in the Florida statutes and Miami-Dade County ordinances, the POD is not. Instead, the pedestrian oriented aspects of developments are considered integral to the POD.

Generally, the City of Portland, Oregon defines a pedestrian oriented development as a “*development which is designed with an emphasis primarily on the street sidewalk and on pedestrian access to the site and building, rather than on auto access and parking areas. The building is generally placed close to the street and the main entrance is oriented to the street sidewalk. There are generally windows or display cases along building facades which face the street. Typically, buildings cover a large portion of the*

⁸ Florida Statutes. §343.91, 2014.

⁹ “Urban Design Manual, Volume I – Private Development”, prepared by Miami-Dade County Sustainability, Planning and Economic Enhancement. Adopted by Resolution #R-1360-98, February 1999.

¹⁰ “Transit Oriented Development: Technical Resources, Chapter 5. Transit Oriented Development Fact Sheet”, Capitol Region Council of Governments, July 2007.

site. Although parking areas may be provided, they are generally limited in size and they are not emphasized by the design of the site.”¹¹

A POD is one where clear, comfortable pedestrian access to commercial and residential areas and other uses is provided. PODs are employed through a combination of land design practices including compact development, mixed-uses, traffic calming, pedestrian, public transit-orientation, and a mix of housing types. While POD works well in community centers and downtowns, it also can be applied successfully in rural and suburban areas.¹² An example of a POD in Miami-Dade County is the Shops at Merrick Park in Coral Gables.

The intent of PODs is to fully integrate more than one use in a unified and fully pedestrian connected planned project; thereby reducing vehicular trips, using land efficiently, and tending to create more active and lively urban environments.¹³ Many governing agencies are encouraging mixed-use development by means of the revision or elimination of regulatory restrictions and providing flexibility in local ordinances and regulations, including traffic impact fees. This is done while maintaining consistency with local comprehensive plans, and assisting with infrastructure such as parks, streets, and other improvements. In this manner, the local jurisdictions ensure that projects with more than one use integrate those uses and offer the advantages of mixed use development.

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¹¹ City of Portland, Oregon, Code of Ordinances, Title 33, Planning and Zoning, Chapter 33.910, Definitions, 1/1/15.

¹² “Innovative Land Use Planning Techniques: A Handbook for Sustainable Development,” New Hampshire. Department of Environmental Services, October 2008.

¹³ City of Souix Falls, Policy Statement, “Horizontal Mixed Use Development (Pedestrian-Oriented Development).”

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2. PEDESTRIAN ORIENTED DEVELOPMENT CHARACTERISTICS

As described in the previous chapter, a POD is a unified land use and fully pedestrian connected planned MXD project where clear, comfortable pedestrian access to commercial and residential areas and other uses is provided. For purposes of this study, and in keeping with the ITE definition of a MXD of a single real estate project between 100,000 and 2 million square feet of multiple uses, the site selection search was aimed at finding existing PODs within Miami-Dade County.

A number of basic identifiable characteristics of mixed-use PODs were derived from ITE sources and other referenced studies and publications that involved the planning and trip generation characteristic of a MXD and/or POD.

The following POD characteristics were selected from several previously noted sources, as well as the Reid Ewing TOD/POD report,¹⁴ and applied to the site search phase of this study:

- Contains a mix of multiple land uses and multiple buildings, and is characterized by medium-to-high density development with a mix of housing types.
 - The basic POD provides a mix of uses including retail, services, and/or offices with some institutional and/or recreational facilities, but always with residential development integrated into the ultimate site plan;
 - Multiple buildings accommodating one or more uses; and
 - Higher densities than typical retail (shopping center) and/or office developments. Development densities are important in promoting walking and transit use. Higher densities mean:
 - More residents and employees within walking distance of basic services;
 - More street life and the added interest and security that goes with having more people around, and
 - A greater propensity to walk or use transit, and lower auto ownership rates;
- Project based on a comprehensive development plan for the site and/or larger area;
- Buildings and individual project components have mostly common features and support services such as shared parking, servicing, loading, and utility areas;
- Buildings in the POD center are placed close to and fronting the street.

¹⁴ "Pedestrian- and Transit-Friendly Design: Primer for Smart Growth"; Ewing, Reid; Smart Growth Network, Based on a manual prepared for the Florida Department of Transportation and published by the American Planning Association.

- Setbacks provide for ease of pedestrian circulation, pedestrian amenities and landscaping. As a convenient rule of thumb, buildings should be set back no farther than 25 feet from the street edge, for beyond that they lose their tangible connection to the street; and
- The main entries face the street, and windows be provided in significant numbers at street level;
- Streets within the POD form a “connected network”, which disperses traffic by providing a variety of pedestrian and vehicular routes to any destination. The internal road system may be a grid system;
- The internal streets are relatively narrow (two or four lanes with no or limited curb parking) and shaded by rows of trees. This slows traffic, creating an environment suitable for pedestrians and bicycles;
- The POD has a discernible center. This is often a square, a green, a roundabout, a park and/or sometimes a busy or memorable street corner;
- The POD has at least one major public space, such as a plaza, park, town square, or other public gathering space.
 - Public spaces contribute more to the street environment when they appear as extensions of streets and sidewalks rather than as stand-alone. Public spaces help punctuate the street network, break up long stretches, and provide streets with start and ending points; and
 - The sizes of the spaces can range from a small flared corner or a recessed building entry equipped with a bench and shade tree to a park or commons area. These spaces are designed and located for substantial public use and may include significant public amenities, such as water features and/or public art;
- Quarter-Mile Radius: Higher density, mixed-use, pedestrian-oriented development should be concentrated within a quarter-mile radius of the POD’s center. A quarter-mile radius represents the distance and time (about a five-minute walk) to or from the center of the POD, an average of roughly 1,200 to 1,500 feet (0.23 to 0.28 mile)¹⁵;
- All components within a POD are connected by attractive and convenient pedestrian and vehicular circulation systems. These systems may use a combination of public streets and internal, private streets and ways. While state and local agencies allow a minimum sidewalk width of 5 feet, PODs are

¹⁵ Distances calculated based on a minimum walking speed of 3.5 feet per second (FDOT’s 2015 Florida Intersection Design Guide).

recommended to have widths of between 12 and 20 feet along the main corridors. Crossing parking lots or other obstacles should be minimized;

- Connections should be made to adjacent centers, neighborhoods, and public open space areas. These connections can range from local sidewalks to specifically built pathways and corridors; and
- Transit services are available. Since the development is not a TOD, transit service does not have to be a premium or high frequency service, but it should provide an alternative access mode.

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3. SELECTION PROCEDURE OF STUDY SITES

3.1 Methodology

The study site selection process was centered upon search and identification of the potential study sites (up to five) within the County which exhibit, as best as possible, the characteristics of a POD. Once identified, the basic information for each candidate site was collected with respect to size, land uses, configurations, contacts of development and/or management companies, etc. Site visits were made to each of the candidate sites to verify the data and selected area. Site selection was performed in coordination with County representatives.

3.2 POD Study Site Selection Criteria

This section provides details on the site selection process. The process was implemented based on a two-level assessment process. The first level involves the selection of the sites based upon the POD characteristics presented in the previous chapter.

The second level considers the ability to collect traffic and pedestrian travel characteristics data (interviews) at the potential site.

3.2.1 POD Characteristics Criteria

Twelve criteria specific to PODs and the scope of this study were established to identify the degree of adherence to POD characteristics of each of the potential study sites. The following are the POD criterion:

Criteria 1:

A single development project between 100,000 and 2,000,000 square feet in size;

Criteria 2:

Land Uses: The POD has a combination of at least four of the following five land uses, as defined by ITE:

- Office (e.g., general offices and medical offices);
- Retail (including supermarkets and pharmacies);
- Residential (e.g., single family detached, apartments, townhouses, and condos);
- Service (e.g., banks, automobile care centers, gasoline stations, bars, restaurants, fast-food restaurants (with or without service lanes), etc.; and
- Institutional (e.g., schools, university, library, day care centers, churches, and museums).

Other uses that can be present within the development include lodging/hotels and recreational uses such as parks, movie theatres, live theatres, arenas, gyms and/or fitness clubs, etc.

This set of land uses was specifically defined by the County for this study;

Criteria 3:

All POD components should be connected by attractive and convenient pedestrian and vehicular circulation systems. Buildings and open areas within the POD are connected by internal streets and drives, and pedestrian/bicycle connections and pathways. Tree-lined streets and/or pedestrian paths are given priority;

Criteria 4:

The POD should have at least one major public space, such as a plaza, park, town square, or other public gathering space;

Criteria 5:

Pedestrian crossings should be clearly defined and protected, and, where ever possible, should avoid crossing parking lots or other obstacles;

Criteria 6:

Connections should be available to adjacent external residential neighborhoods;

Criteria 7:

The POD has multiple buildings with one or more uses;

Criteria 8:

The POD is part of a comprehensive site development plan. POD developed through piecemeal or haphazard planning were not considered;

Criteria 9:

The POD should be close to being fully developed. Retail, residential, and office occupancy should be near full occupancy (90+ percent). The NCHRP Report 684 studied developments that had occupancy rate thresholds of 90 percent or more;

Criteria 10:

Ideally the residential area should be multi-family and integrated with the other uses in the POD. The residences should be about a 5 minute walk time (or maximum 1,500 feet) from the central feature of the POD;

Criteria 11:

Buildings and individual project components may have common features and support services such as shared parking, service areas, loading, and utility areas; and

Criteria 12:

The proximity of transit service to the POD.

3.2.2 Site Data Collection Factors

Five factors were established to evaluate potential candidate sites based upon the ability to collect vehicular volumes and pedestrian interview data pertinent to this study.

Factor 1: Ability to isolate or cordon off development

This factor measures the degree to which the development can be isolated and thereby reduce the potential of through traffic and the use of shared driveway access. Sites which have the potential for a high level of through traffic and/or shared driveways are not as desirable to study because it is difficult to accurately determine site trip generation characteristics.

Factor 2: External Access Points

The number of external access points and the ability to accurately collect traffic count data through these access points must be considered in the evaluation process. Sites with access points, which by their design are difficult to effectively set counters, are not desirable.

Factor 3: Buildings and Internal Access Points

The location and number of buildings within each development site were reviewed and considered in the site evaluation process. It is desirable to have sites where specific land uses can be segregated and counted separately (e. g., residences). Additionally, the ability to accurately collect traffic count data in light of internal driveway widths and speeds is considered in the evaluation process.

Factor 4: Pedestrian Interviews

The study involves interviewing users of the selected PODs in order to identify trip making characteristics within the development. This factor measures the degree and ability to perform interviews at the potential candidate POD sites. The interviews will be conducted either in the POD parking facilities, at the entrance of the parking facilities, or at the entrance to each POD development component with people exiting the site.

Factor 5: Site Owner Approvals

Contact with the property owners and agents of the candidate sites is critical to determine the probability of receiving owner approval to conduct the trip characteristics study at their site. The purpose and data collection needs relative

to the study were discussed with property manager/site representatives of the initially selected POD sites. The rating reflects the overall probability of securing owner approval to do the study.

3.3 Candidate POD Study Sites

While there are numerous examples of mixed-use developments throughout the State, priority was given to identify existing developments within the County that exhibited as best as possible the elements of a POD as defined in the previous chapter. The challenge was to find developments that were planned as POD's from the initial concept design and have most if not all of the POD characteristics, with special emphasis on the number and type of uses within the development, as described in the previous chapter of this report.

An extensive aerial review was performed using internet tools such as the Miami-Dade County Property Appraiser's website and Google Earth to locate potential sites based on the POD characteristics. Both of these internet sites had late 2014 aerials of the entire County; thus, the sites searched and viewed via these tools are generally accurately presented.

These searches, which covered all of the major urban and suburban areas from Aventura to Homestead and from Miami Beach to the County's westernmost urban development limits, also included field visits to confirm the potential candidate sites' development characteristics. The presence of at least four land uses within a compact project site area was the priority criterion used in this process.

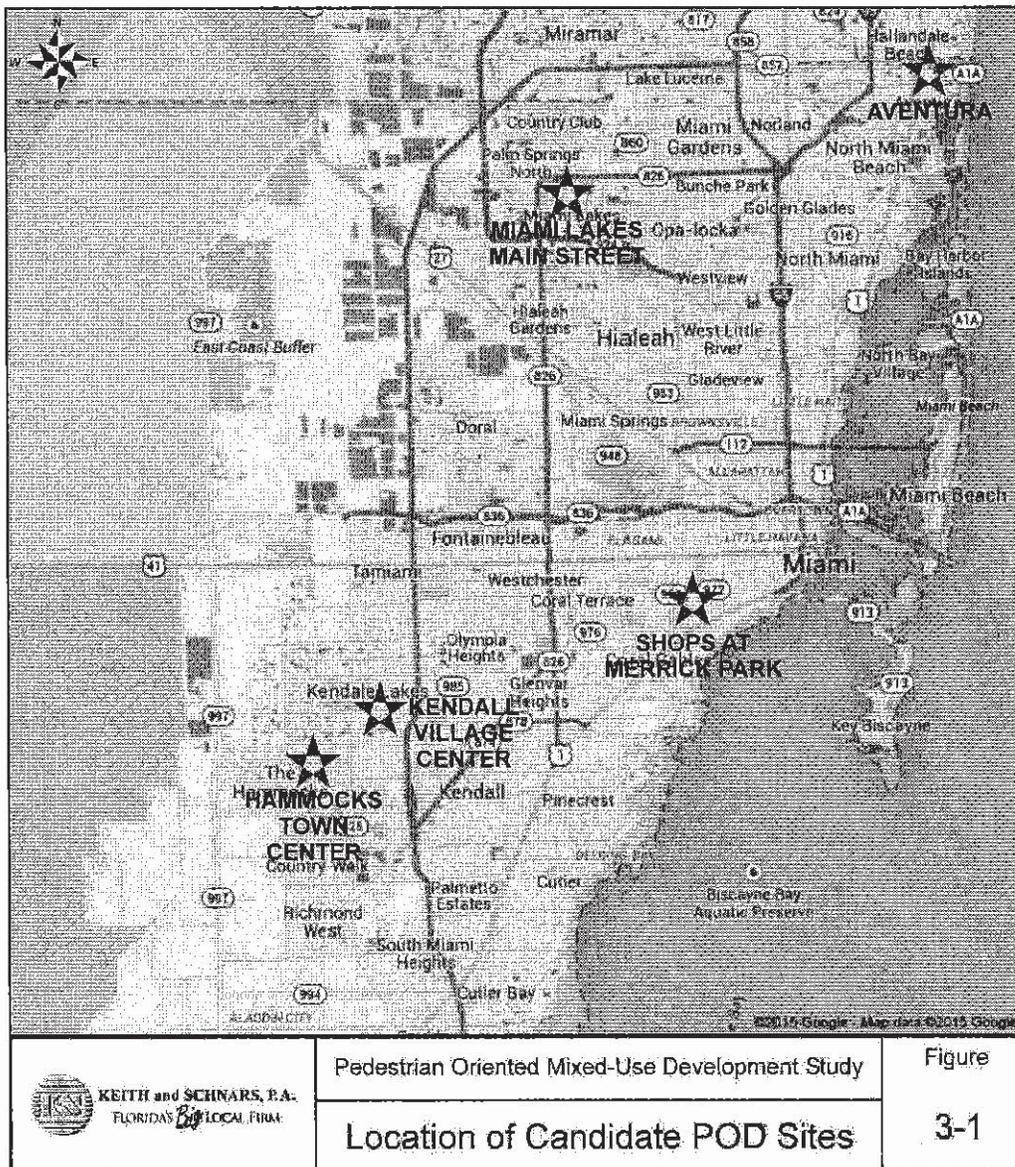
Other factors considered in the screening process of the sites were the scale and usefulness of the candidate sites for this study. As noted previously, a POD is typically a single development project between 100,000 and 2,000,000 square feet in size and has a combination of at least four of five ITE land uses (residential, retail, services, office, and institutional) with residential being the key element in a POD. As such, this criteria ruled out numerous commercial and/or office developments that (1) were too big – over 100 acres, (2) did not contain the prerequisite number of uses, or (3) did not include residences integrated within the site.

Also considered was the site location with respect to the density of the surrounding areas and character of development. While TOD's can be more effective for the major higher density transit areas and sectors along the US-1/I-95 corridors, areas where transit is limited but land development is increasing are underreported. The study emphasizes those developments located west of the US-1/I-95 corridor where transit availability is less intense, where the potential for PODs may be considered to be greater due to the current lower density uses which can be enhanced with higher density uses, and where existing PODs can provide valuable trip internalization and traffic information that could be beneficial for other POD planning in those areas.

The search for suitable study sites resulted in the following original list of candidate sites:

1. Hammocks Town Center, SW 104th Street and Hammocks Boulevard;
2. Kendall Village Center, SW 88th Street (Kendall Drive) and Florida's Turnpike;
3. Main Street, Town of Miami Lakes, west of NW 67th Avenue;
4. Shops at Merrick Park (formerly known as Village of Merrick Park), Coral Gables, between SW 42nd Avenue (Le Jeune Road) and Ponce de Leon Boulevard; and
5. Aventura Mall, City of Aventura and surrounding areas.

The locations of these sites, all within the County, are shown in Figure 3-1.



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4. DESCRIPTION AND EVALUATION OF CANDIDATE POD SITES

The following sections present summary descriptions of the candidate sites and determination of POD characteristics inherent at each site. The five sites (Hammocks Town Plaza, Kendall Village Town Center, Miami Lakes Main Street, Shops at Merrick Park, and Aventura Mall) are described in detail with respect to POD characteristics and suitability for data collection.

4.1 Hammocks Town Center (Non-POD)

4.1.1 Site Description and Inventory

The Hammocks Town Center is a multi-building shopping center located in the master planned community of The Hammocks in the Southwest Kendall area of Miami-Dade County (see **Figure 4-1**). The site address is 10201 Hammocks Boulevard and is located on the northeast quadrant of the intersection of SW 104th Street and Hammocks Boulevard. It is bordered by the Coral Club Garden Villas Condo on the East, SW 104th Street to the South, Hammocks Boulevard to the West and Hammocks Middle School to the North.

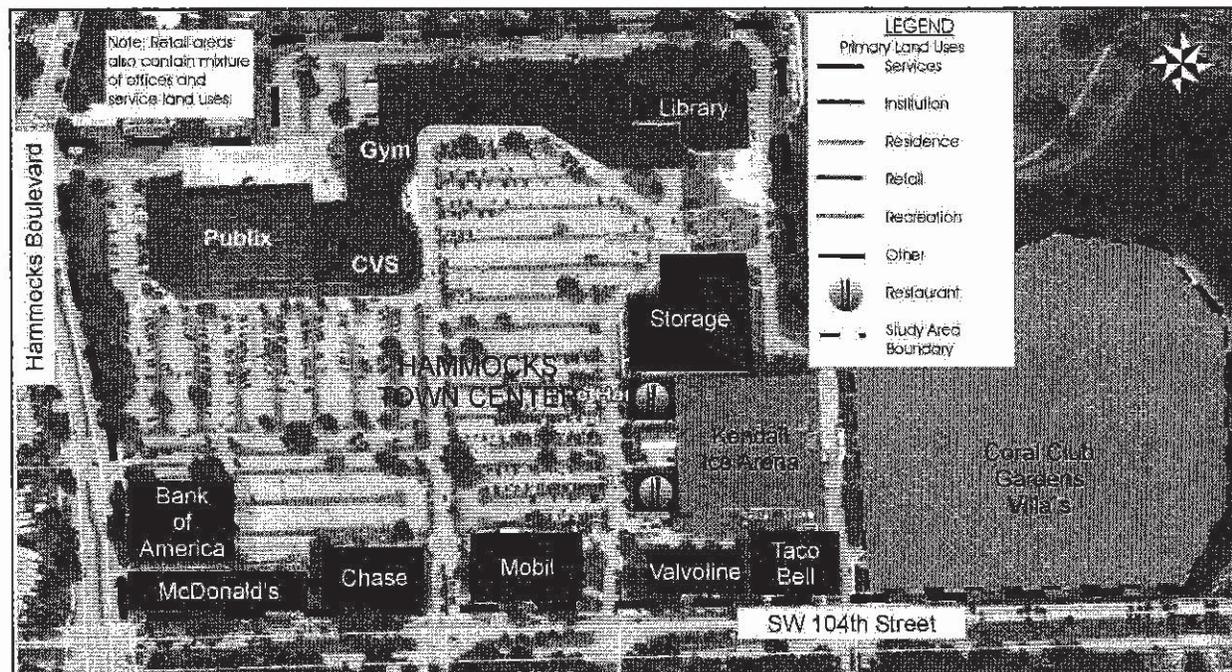
This mixed-use facility is anchored by a Publix supermarket, and contains a CVS Pharmacy, a branch of the Miami Dade Public Library, and the Kendall Ice Arena. The development also includes several retail stores, medical services, offices, and several restaurants. A McDonald's, two banks (Chase and Bank of America), an Extra Space Storage, a Taco Bell and a Mobile gas station occupy separate parcels along the north side of SW 104th Street and the east side of the site. The center is also designated a Miami-Dade Transit Park-n-Ride with a bus stop for MetroBus Route 204 "Killian KAT" (See **Figure 4-2**).

The existing Hammocks Town Center was constructed over a 20 year period. The main retail area of the Hammocks Town Center, along with the Bank of America, was built in 1987, followed by Chase Bank and gas station in 1988, the McDonald's in 1989, the Taco Bell in 1996, the ice rink building in 2000 and the storage facility in 2007.

Built in 1991, Coral Club Garden Villas Condo is a gated 240 unit condo community located adjacent to the east side of the shopping center. The residential area shares a common access drive with the center off SW 104th Street (at Taco Bell). The villas were not part of the original Hammocks Town Center development plan. However, due to the subsequent development of the eastern sector of the Hammocks Town Center (Ice Rink Arena), the condos' access driveway off SW 104th Street was merged with the center's access. This created the opportunity for internal trips between the condos and the center.



 KEITH and SCHNARS, P.A. FLORIDA'S <i>Big</i> LOCAL FIRM	Pedestrian Oriented Mixed-Use Development Study	Figure
	Hammocks Town Center Site Location	4-1



 KEITH and SCHNARS, P.A. FLORIDA'S <i>Big</i> LOCAL FIRM	Pedestrian Oriented Mixed-Use Development Study	Figure
	Hammocks Town Center Land Uses	4-2

The combined shopping center and residential area occupies approximately 44.5 acres of land (**Table 4-1**) and has approximately 356,257 sq. ft. of non-residential building space (**Table 4-2**). Hammocks Town Center is currently managed by Equity One (1600 NE Miami Gardens Drive, North Miami Beach, FL 33179). Equity One representatives provided the current land use information shown in **Table 4-2** (A detailed breakdown of the land uses and tenants is provided in **Appendix A**). Additional building information regarding the properties not under Equity One’s management (e.g., the out parcels, the Kendall Ice Arena, and the storage facility) was obtained from the Miami-Dade County Property Appraiser’s website. The property information is provided in **Appendix A**. The overall non-residential occupancy rate as of April 2015 was 99.8%.

The layout of the Hammocks Town Center follows the traditional open shopping center layout. The general mixed-use category closest to describing the site is a horizontal mixed-use development. The buildings are laid out along the north, east, and south sectors of the property with over 800 parking spaces in between. Fifty parking spaces are designated for the Miami-Dade Transit Park-n-Ride service.

**Table 4-1
Hammocks Town Center Land Distribution**

Primary Uses	Lot Area (sq. ft.)	Acres	Percent (%) Area
Main Retail and auxiliary	1,146,786	26.33	59.2%
Bank of America	36,068	0.83	1.9%
McDonald's	45,971	1.06	2.4%
Chase Bank	35,719	0.82	1.8%
Mobile Service Station	39,826	0.91	2.1%
Extra Space Storage	55,167	1.27	2.8%
Taco Bell	30,800	0.71	1.6%
Kendall Ice Arena	94,520	2.17	4.9%
Coral Club Garden Villas	452,588	10.39	23.4%
Totals	1,937,445	44.48	100.0%

Source: Miami-Dade County Property Appraiser.

The main retail building extends along the north sector of the center from the northwest corner to the northeast corner. The library is located at the northeast quadrant of the building sector. The pedestrian sidewalk extends along the entire front of the building and includes some landscaping and very small plaza areas. The largest plaza is situated in front of the library.

The second building group is located along the east side of the center. The sidewalk/pedestrian path from the main building is extended southward through a currently vacant parcel and connects to the buildings housing the storage facility and ice rink. The sidewalk continues along the frontage of this latter and turns east along the south side of the building, terminating at the service road in the southeast sector of the center.

The outparcels along the south side of the center are interconnected pedestrian-wise via the sidewalks along SW 104th Street and Hammocks Boulevard along the west side. There is no sidewalk connection between the center and the Coral Club garden Villas.

Site access is provided at seven driveways: four off SW 104th Street and three off Hammocks Boulevard (see **Figure 4-3**). The southeast access (SW 150th Place) is shared by the shopping center and the adjacent residential development. The two access drives at the corner of the signalized intersection of SW 104th Street and Hammocks Boulevard directly serve the McDonald's parcel. There is an internal connection between the McDonald's and the center.

SW 104th Street is a four-lane, divided east-west minor arterial with a 40 MPH speed limit. The 2013 average annual daily traffic (AADT) on this road as collected by Florida Department of Transportation (FDOT) is 30,000 vehicles. Hammocks Boulevard is also a four-lane, divided local street with a speed limit of 30 MPH. The 2013 AADT is 6,000 vehicles.

Internally, the site has two well defined grid streets that intersect generally in the center of the site within the parking area. The east-west internal street extends approximately 850 feet from Hammocks Boulevard (at SW 103rd Street) in the west to the Ice Rink building in the east. The north-side internal street extends about 1,020 feet from SW 104th Street (at the entrance to Hammocks Place) to the north internal drive and main mall area. These streets, while providing landscaped buffers between the streets and the parking areas, do not have sidewalks or paths for pedestrian or bicycle uses.

The adjacent surrounding land uses include:

1. North boundary: Hammocks Community Park, Hammocks Middle School, a fire station, and Wild Lime Park;
2. South side of SW 104th Street: residential developments The Broadwater at the Hammocks and Hammock's Place;
3. West side of Hammocks Boulevard: residential developments Chateau Bleu and the Blossoms; and
4. East side: a canal separating the Coral Club Condos and the Hammocks Town Center from the other residential areas to the east.

4.1.2 Hammocks Town Center POD Characteristics Criteria

This section presents a summary comparison of Hammocks Town Center with respect to the POD characteristics criteria:

Criteria 1:

The non-residential land use space is 356,257 sq. ft. which is within the criteria limits. However, the development did not initially include the residential section.

Criteria 2:

The Hammocks Town Center study site has six land uses:

- a. Office (minor general offices and medical offices);
- b. Retail (including a supermarkets and a pharmacy);
- c. Residential (Coral Club Garden Villas Condos with 240 dwelling units);
- d. Service (two banks, a gasoline station, several restaurants, and a fast-food restaurant);
- e. Institutional (Miami-Dade County Library); and
- f. Recreational (Miami Ice Rink).

Criteria 3:

Buildings and open areas within the Hammocks are connected by internal streets and drives, mostly integrated into the parking layout. Other than the single continuous sidewalk/path connecting the main and ice rink building areas, the center has no other internal pedestrian/bicycle connections. There is little landscaping limited to a handful of areas. The site has plenty of trees in parking areas but no pedestrian walkways;

Criteria 4:

The site has no major internal public space that would be consistent with the characteristics of a POD. However, the continuous sidewalk fronting the main and ice rink buildings do have some small plaza-like features at the main building and in the front of the library;

Criteria 5:

Not all of the components of the Hammocks Town Center are connected by attractive and convenient pedestrian and vehicular circulation systems. The only major connecting facility is the aforementioned sidewalk connecting the main and ice rink buildings. However, attempts by pedestrians to shorten the walking distances between the main building and other buildings located to the east and south of the development require crossing large portions of the parking area, without the benefit of paths or coverings;

Criteria 6:

Connections to adjacent residential open space areas are provided via the local sidewalk system along SW 104th Street and Hammocks Boulevard. There is a small pedestrian portal on the northeast corner of the site which connects the site with the Hammocks Community Park;

Criteria 7:

The site includes a total of eight (8) buildings with one or more uses;

Criteria 8:

The Hammocks Town Center was originally planned as a commercial development (opened in 1987). The West Kendall Branch of the Miami-Dade County Library system was opened in 1990. The Coral Club Condos are not part of the original development.

Criteria 9:

The site is about 95 percent developed/occupied. A parcel in the northeast sector of the site between the library and the Extra Storage facility is available for future development;

Criteria 10:

The Coral Club Garden Villas Condos (240 townhomes) share an access driveway with the site but are not integrated with the other uses on the site. The distance from the condo gates to the Publix is approximately 1,600 feet, above the recommended maximum 1,500 feet internal walking distance;

Criteria 11:

The facility has shared parking albeit the parking layout does segregate the parking for the Publix/CVS area. The out parcels have parking areas segregated from the main parking area as well. The service and loading areas are in the rear of the main and ice rink buildings and are connected by a continuous service drive from the northwest corner to the southeast corner of the site; and

Criteria 12:

The site is served by MetroBus Route 104 (average 45-minute frequency) and Route 204 (Rush-hour service only). Bus stops are located along both sides of SW 104th Street and Hammocks Boulevard fronting the development. The Hammocks Town Center also has a 50-space Park-N-Ride parking area with a bus stop for rush-hour service. The bus route maps and schedule information are provided in **Appendix A**.

4.1.3 Site Data Collection Factors

Factor 1: Ability to isolate or cordon off development

The Hammocks Town Center is a fully contained development bounded on the north by a community park, on the east by a canal, on the south by SW 104th Street and on the west by Hammocks Boulevard. The area is easily cordoned off for vehicular counts. The Park-N-Ride operations data was collected during the AM and PM peak periods. The site is not conducive for through traffic;

Factor 2: External Access Points

The site has seven clearly defined external access driveways. One driveway is shared with the adjacent residential area. Traffic counters can be placed on all of the driveways;

Factor 3: Buildings and Internal Access Points

The development has two large separate retail building groups, one anchored by a branch of the public library plus six out-parcels. Access to the outparcels is shared with the sites main access driveways except for the corner site (McDonald's) which has two direct external drives and an internal connector with the rest of the site. The residential component of the development has a driveway which can be monitored separately;

Factor 4: Pedestrian Interviews

The site is conducive to undertaking pedestrian interviews; and

Factor 5: Site Owners Approval

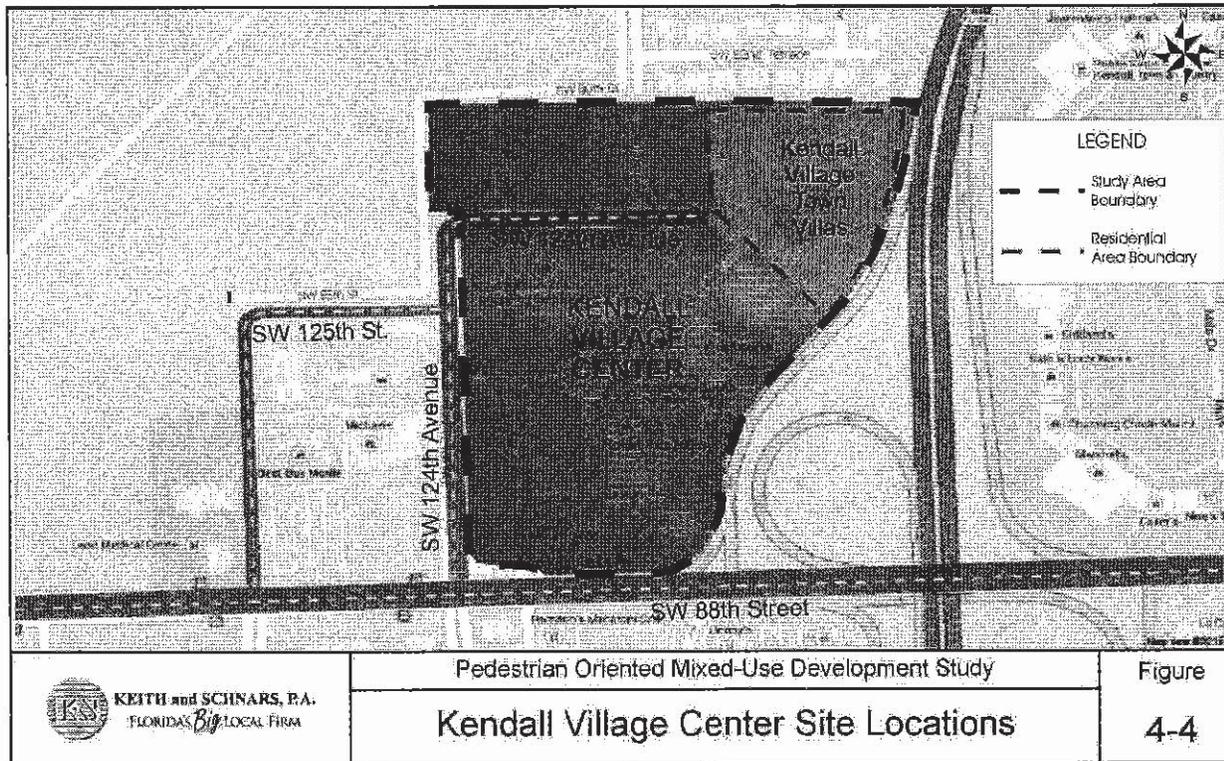
Contact with the property owners and/or agents of the Hammocks Town Center and the adjoining Coral Club Gardens Villas has been established. Authorization for the study was granted.

4.2 Kendall Village Center

4.2.1 Site Description and Inventory

The Kendall Village Center is a planned pedestrian oriented town center with retail, restaurant, office, residential, and recreational/entertainment uses. The site consists of 13 buildings (including four outparcels) and a residential sector with 87 townhomes. It is located in the Southwest Kendall area of the County, at the northwest quadrant of the interchange of Florida's Turnpike and SW 88th Street (North Kendall Drive). The site address is 8659 SW 124th Avenue (see **Figure 4-4**). It is bordered by SR-821 – Homestead Extension of Florida's Turnpike (HEFT) on the East, SW 88th Street (North Kendall Drive) on the South, SW 124th Avenue on the West, and on the North by properties of Miami-Dade County Water and Sewer Department and the Galloway North residential development comprised of single-unit dwellings.

The center includes: Regal Cinemas (16 screen multiplex), LA Fitness, Homefield sports/comedy club, Bahamas Breeze restaurant, On the Border restaurant, the Moonlite Diner, Gap / Gap Kids, Old Navy, Chuck E. Cheese's, Justice, Lane Bryant, Pier 1 Imports, Ann Taylor Loft, Claire's, and Jared's Jewelers, among others. The site also includes medical offices (the fully occupied Professional Arts Building, a mixed-use office building with approximately 90% medical offices and 10% other office spaces), and a separate multi-floor office building currently housing the Miami-Kendall campus of Nova Southeastern University. (**See Figure 4-5.**)

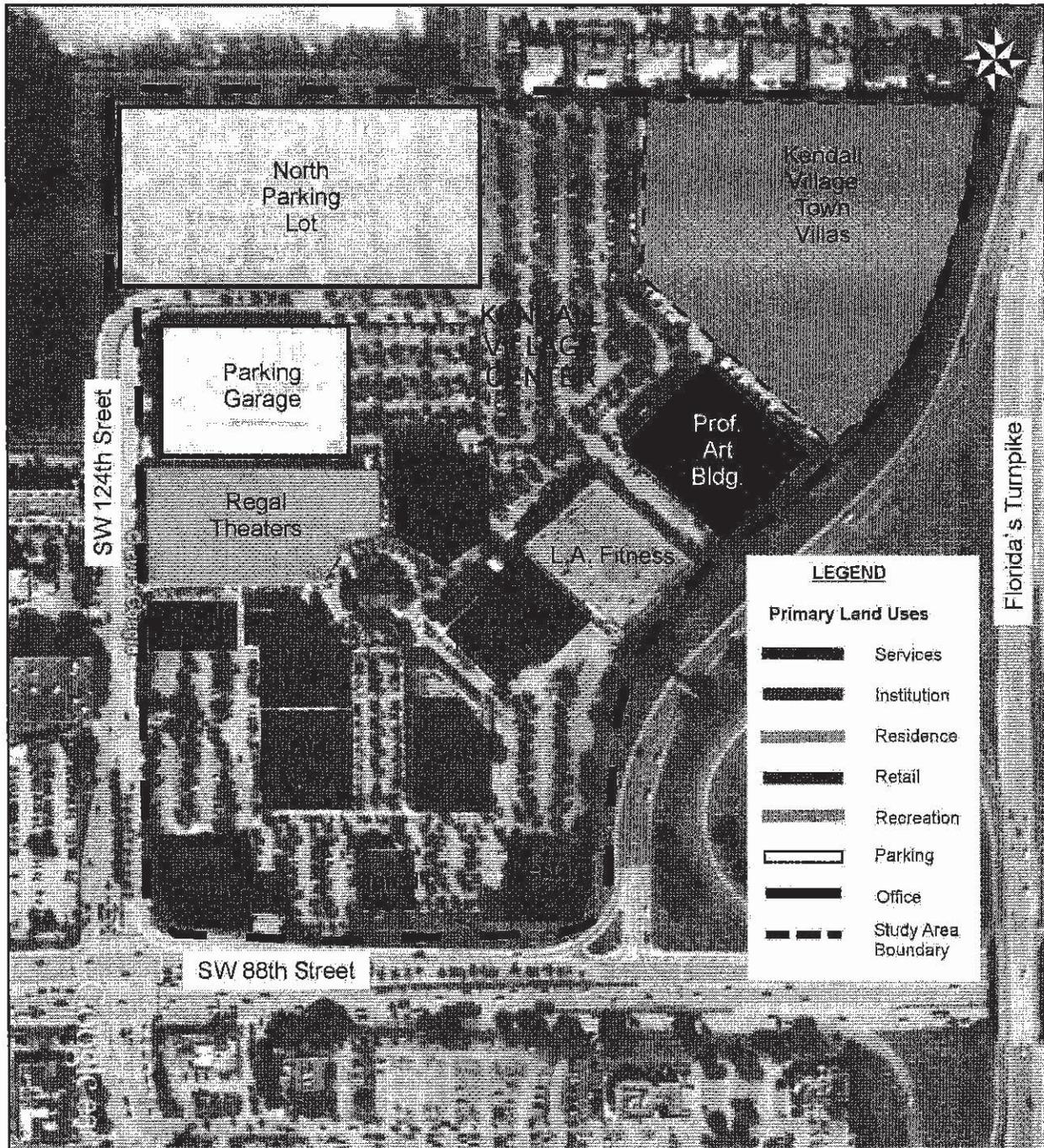


Kendall Village Town Villas, a collection of 87 townhomes (gated community), is located in the northeast quadrant of the development project site. Access to and from the residential area is exclusively through the POD.

The combined shopping/office center and residential area occupy approximately 38.45 acres of land (Table 4-3) and has approximately 397,110 sq. ft. of non-residential building space (Table 4-4). The Kendall Village Center was developed by and is currently managed by Berkowitz Development Group (2665 South Bayshore Dr., suite 1200, Miami). Berkowitz representatives provided the current land use information shown in Table 4-4 (a detailed breakdown of the land uses and tenants is provided in Appendix B). The center also has a 145,773 sq. ft. multi-level parking garage.

A vacant 4.8 acre parcel in the north sector of the site (12.5% of total area) is available for future development. The overall non-residential occupancy rate as of April 2015 was 99.6%.

The Kendall Village Center was designed as part of a Master Plan. The majority of the site buildings, including the condos, were built between 2000 and 2002. The latest components, the Regal Theater and the Professional Arts Building (medical offices), were completed in 2007.



 KEITH and SCHNARS, P.A. FLORIDA'S <i>Big</i> LOCAL FIRM	Pedestrian Oriented Mixed-Use Development Study	Figure
	Kendall Village Center Land Uses	4-5

**Table 4-3
Kendall Village Center Primary Uses**

Primary Uses	Lot Area (sq. ft.)	Acres	Percent
Residential	293,159	6.73	17.5%
Office-Professional Arts (Med)	77,795	1.79	4.6%
Institutional-Nova Southeastern University	146,231	3.36	8.7%
Restaurant-Moonlite Diner	6,622	0.15	0.4%
Restaurant-Bahamas	20,807	0.48	1.2%
Retail	561,360	12.89	33.5%
Gym	43,593	1.00	2.6%
Garage Area	209,524	4.81	12.5%
Regal Theatre	84,986	1.95	5.1%
Restaurant-On the Border	11,797	0.27	0.7%
Jared Jewelry	9,639	0.22	0.6%
Parking/Parcel	209,524	4.81	12.5%
Totals	1,675,037	38.45	100.0%

Source: Miami-Dade County Property Appraiser

**Table 4-4
Kendall Village Center Building Use Space Distribution**

Land Use Space	Area (Sq. Ft.)
Retail	82,031
Office	12,778
Medical Office	39,881
Services-Restaurant	53,801
Recreational	115,271
Institutional - College	91,778
Vacant	1,570
Total Space	397,110
Total Residences	87 DU

Source: Berkowitz Development Group, April 2015.

The layout of the Kendall Village Center generally follows the POD concept by providing a main-street effect with narrow and tree-lined internal streets, building fronts facing and close to the streets, and wide sidewalks connecting all of the buildings and the residential area. The development has a defined center point, a roundabout with a community center.

The movie theater, the Nova Southeastern University building, and the main retail/services buildings are centered around the main roundabout. The street

extending to the south from the roundabout forms the “main street” with ample sidewalks, closed-in building frontages, and a divided two-way street with a landscaped median. A second roundabout is located at the northeast end of the main internal north-south street at the entrance to the residential area. The buildings along this street are also close to the street edge, separated by a wide sidewalk. Both sides of the street have sidewalks.

The general mixed-use category closest to describing the site is a horizontal mixed-use development. Each of the buildings tends to have one main use. The basic internal layout consists of two east-west streets and one main north-south street laid out in a grid-like pattern. The site has approximately 2,700 parking spaces (including a multi-level garage) generally located behind or to the side of the buildings.

The streets are tree-lined and the sidewalks provide ample walking space, access to all stores and office buildings, pedestrian amenities, and have clearly defined crosswalks. The internal streets and sidewalks enhance internal circulation and connect the outparcels to the site’s center. Angled curb parking is provided along the main central streets.

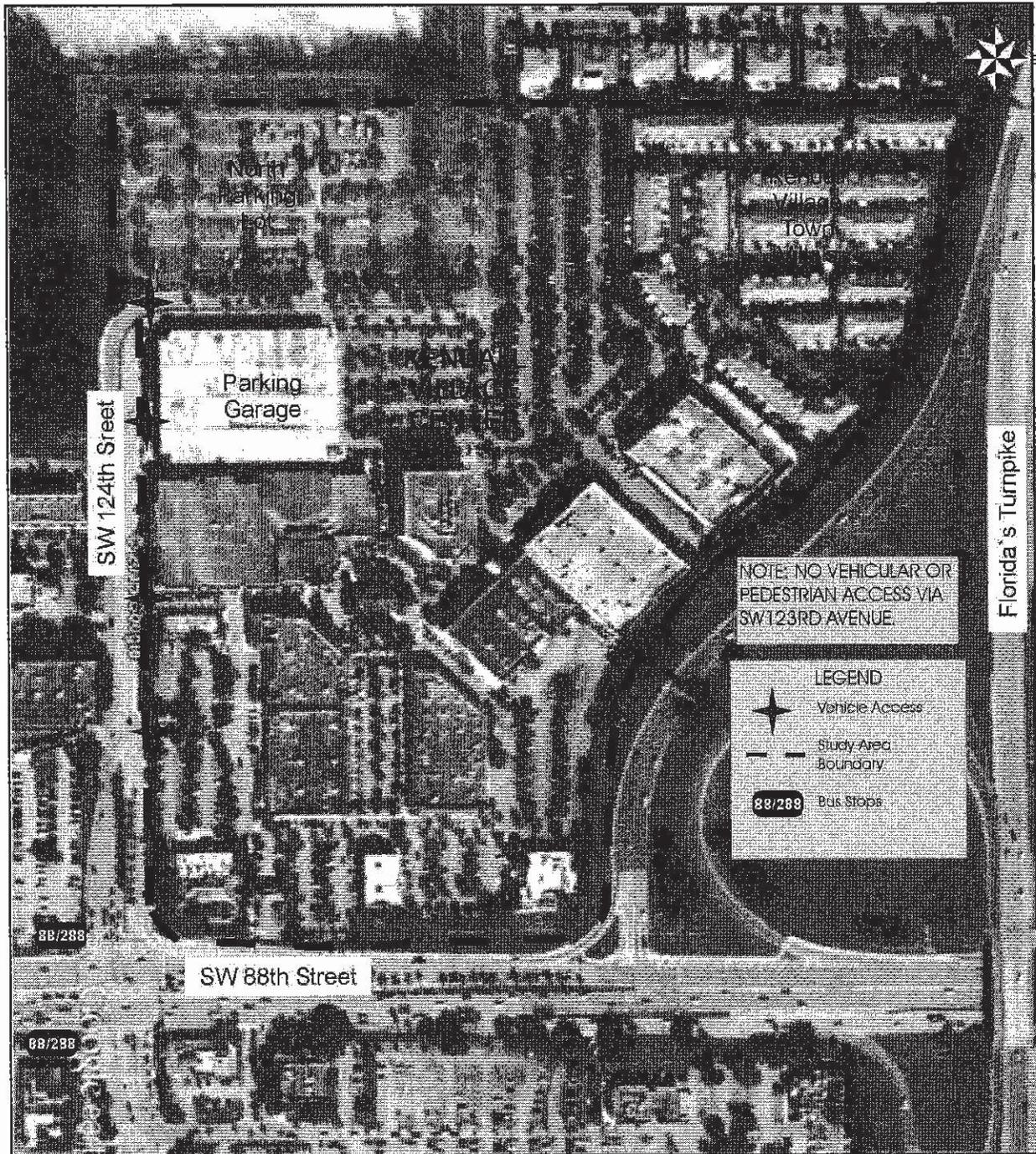
The outparcels on the south side of the POD are interconnected with the rest of the development via clearly marked pedestrian crosswalks.

Site access is provided at four main locations: three off SW 124th Avenue and the fourth at SW 83rd Street (SW 124th Avenue veers to the east to connect with the main internal north-south street) (See **Figure 4-6**). Except for SW 83rd Street which is configured as a four-lane divided road, all of the internal streets are two-way, two-lane roads. There are no vehicular accesses off SW 88th Street. There are no vehicular or pedestrian connections north of the site.

Southwest 88th Street (SR 94) is an eight-lane, divided east-west major arterial with a 45 MPH posted speed limit. The 2013 FDOT AADT on this road is 82,000 vehicles. Southwest 124th Avenue at Kendall Village Center is a four-lane, divided local street with a posted speed limit of 30 MPH.

The adjacent surrounding land uses include:

1. North boundary: Miami-Dade County Water and Sewer Department property and the Galloway North residential development comprised of single-unit dwellings. There are no street or pedestrian connections to these sites from the Kendall Village Center;
2. South side of SW 88th Street: The Kendall Gate Shopping Center with residential developments further south;



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	Kendall Village Center Site Access Locations	4-6

3. West side of SW 124th Avenue: Commercial area with Barnes and Noble, Michaels, Best Buy, a Best Western Hotel, the Kendall Plaza 124; and further west, the Leon Medical Building. At the present time, Leon leases a number of parking spaces at the Kendall Village Center for employee and shuttle bus parking;
4. East side: Florida's Turnpike and interchange with SW 88th Street.

4.2.2 Kendall Village Center POD Characteristics Criteria

This section presents a summary comparison of Kendall Village Center with respect to POD characteristics criteria:

Criteria 1:

The non-residential land use space is 397,110 sq. ft., within the criteria limits.

Criteria 2:

The Kendall Village Center study site has at least six land uses:

- a. Office (Professional Arts Building) minor general offices and medical offices);
- b. Retail;
- c. Residential (Kendall Village Town Villas with 87 dwelling units);
- d. Service (several restaurants);
- e. Institutional (Nova Southeastern University); and
- f. Recreational (Regal Theatres and LA Fitness).

Criteria 3:

All of the buildings have store-front setbacks and face the street, with ample sidewalks with pedestrian amenities, and the streets are tree-lined. Open areas within the Kendall Village Center are connected by internal streets and sidewalks. The main aisles through the parking areas have sidewalks and clearly defined crosswalks and the landscaped parking garage is connected to the main building clusters via sidewalks and crosswalks;

Criteria 4:

The site has a community center at the site's central point of activity, in the middle of a single-lane roundabout. A second landscaped roundabout is located about 800 feet north at the entrance to the residential area;

Criteria 5:

All of the buildings within the Kendall Village Center are accessible to pedestrians via ample sidewalks and clearly defined crosswalks;

Criteria 6:

The retail areas located to the west of the site are accessible by crossing SW 124th Avenue. However, no mid-block crosswalks are provided. Ample sidewalks and pedestrian signal controls along SW 88th Street allow pedestrian access to the retail and residential areas to the south of SW 88th Street;

Criteria 7:

The site includes a total of twelve (12) buildings with one or more uses;

Criteria 8:

The site was developed as part of a Master Plan;

Criteria 9:

The buildings on the site are nearly 100% occupied (as of March 2015), more than 95 percent developed/occupied. A large parcel in the northwest sector of the site is available for future development;

Criteria 10:

Kendall Village Town Villas has 87 dwelling units within a gated area in the northeast quadrant of the POD site. Access is via the POD. No residences are integrated with the other uses on the site; nonetheless, the distance from the condo gates to the community center (the site's center) is less than 800 feet, below the 1,500 feet maximum criteria;

Criteria 11:

The POD has approximately 2,700 parking spaces, (including a three story garage) which are fully accessible and shared by all uses. The service and loading areas are located in the rear of the main buildings and readily accessible with little interference with pedestrian flow; and

Criteria 12:

The site is served by MetroBus Route 88 (average 20-minute frequency) and Route 288 "Kendall Cruiser" (Rush hour service only) along SW 88th Street. The bus stops are located on SW 88th Street west of SW 124th Avenue. The bus route maps and schedule information are provided in **Appendix B**.

4.2.3 Site Data Collection Factors

Factor 1: Ability to isolate or cordon off development

The Kendall Village Center is a completely enclosed POD with only four external access points. The area is easily cordoned off for vehicular counts. No through traffic is possible;

Factor 2: External Access Points

The site has four clearly defined external access driveways. The access for the residential unit is internal to the site. Traffic counters can be placed on all of the driveways;

Factor 3: Buildings and Internal Access Points

All of the site buildings are accessible and have limited doorway access points. The residential sector has a driveway which can be monitored separately;

Factor 4: Pedestrian Interviews

The site's compact layout and accessibility is very conducive to undertaking pedestrian interviews; and

Factor 5: Site Owners Approval

Contact with the property owners and/or agents of the Kendall Village Center, including the management of the Kendall Village Town Villas were established. Authorization for the study was granted.

4.3 Miami Lakes Main Street

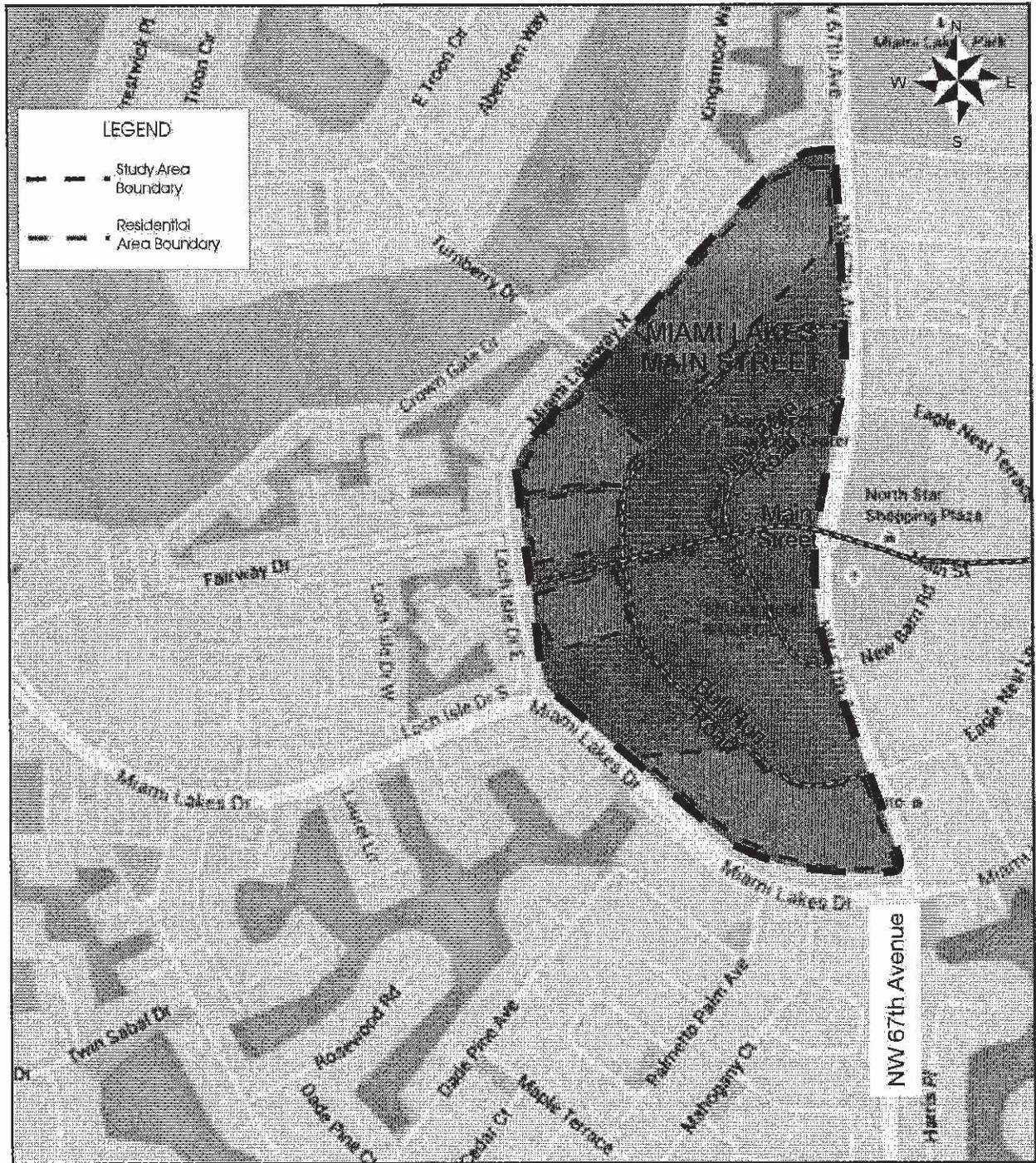
4.3.1 Site Description and Inventory

Miami Lakes Main Street, located in the center of the Town of Miami Lakes, is a planned mixed-use pedestrian-oriented town center with retail, restaurant, office, residential, and recreational/entertainment uses (see **Figure 4-7**).

Built by Graham Companies, developer of Miami Lakes, Main Street is the centerpiece of Miami Lakes Town Center, home to many Miami Lakes residents and businesses. The town is an early model of the New Urbanism movement with shopping and services located in walking distance of residences as well as narrow walkable streets and plenty of neighborhood parks.

The development of Miami Lakes began in the 1960's, and by the 1980's the development of the town center was initiated, including the mixed-use Main Street. In the 1990's, the Master Plan, begun over 50 years ago, was updated for the future phases of the town center, the planned extension of Main Street, and reconfiguration of the layout to accommodate a modern cinema.

The Main Street study site is located along the west side of NW 67th Avenue between Miami Lakeway North in the North and Miami Lakes Drive in the South. The study area consists of seven large blocks totaling almost 66 acres in a half moon shape. The study area is bounded on the east by NW 67th Avenue, on the northwest by Miami Lakeway north, and on the southwest by Miami Lakes Drive.



 KEITH and SCHNARS, P.A. FLORIDA'S <i>Big</i> LOCAL FIRM	Pedestrian Oriented Mixed-Use Development Study	Figure
	Miami Lakes Main Street Site Location	4-7

The internal street system includes:

- Main Street between NW 67th Avenue and Miami Lakeway North;
- Bull Run Road;
- New Barn Road; and
- Meadow Walk between Bull Run Road and Miami Lakeway North.

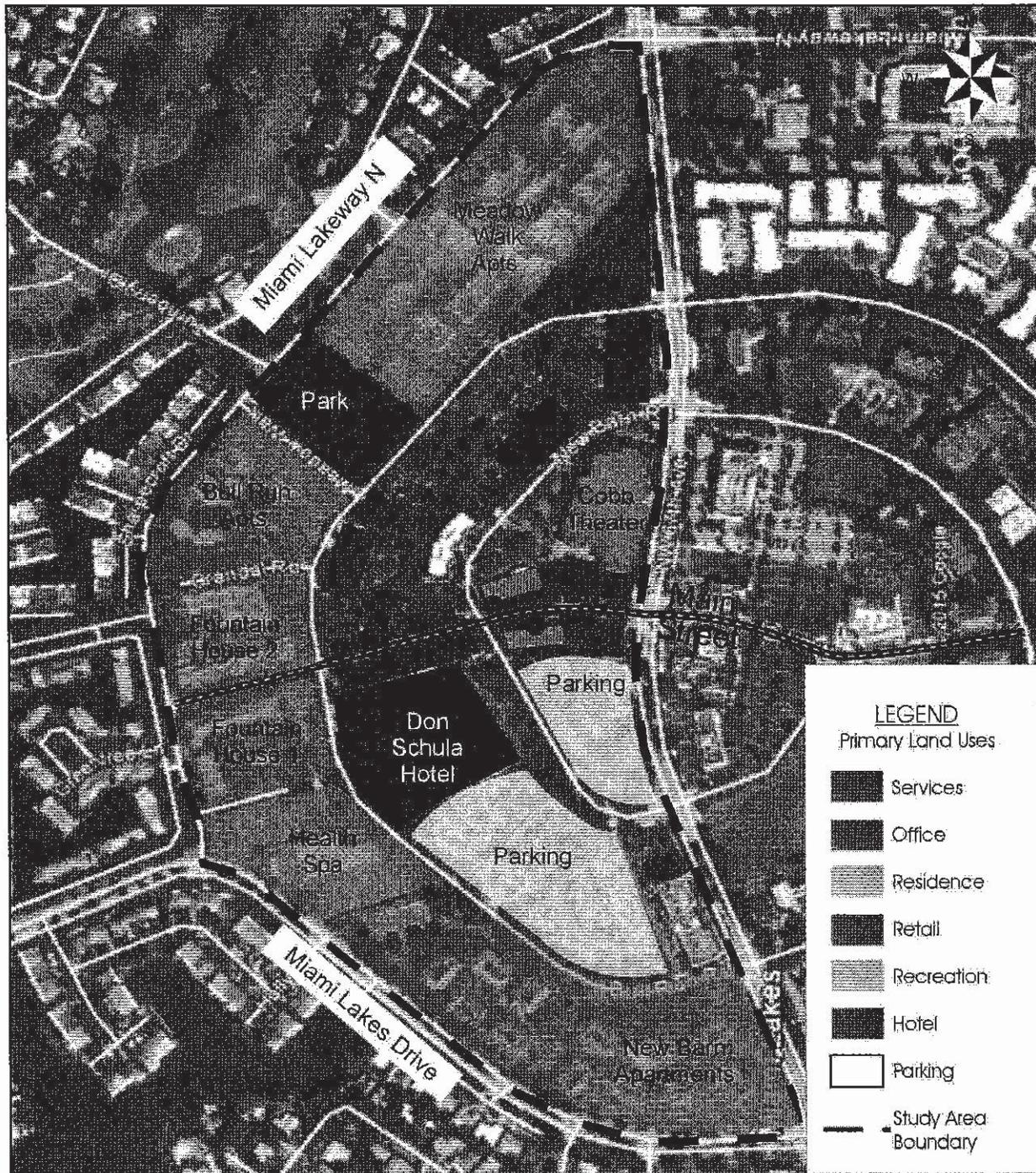
The combined shopping, office, hotel, recreation, and residential areas occupy approximately 65.67 acres of land (**Table 4-5**) and have about 661,322 sq. ft. of non-residential building space (**Table 4-6**). Miami Lakes Main Street was developed by and is currently managed by Graham Companies (6843 Main Street, Miami Lakes). Graham Companies representatives provided the current April 2015 land use/tenant information (including vacancies) as shown in **Table 4-6** for all of the Main Street development including the residential developments: New Barn Apartments, Bull Run Apartments, Meadow Walk Apartments, the Fountain House 1 and 2 Apartments, and the apartments integrated with the other uses along Main Street 4 (a detailed breakdown of the land uses and tenants is provided in **Appendix C**). Information regarding the Chase Bank located at Bull Run Road and NW 67th Avenue was obtained from the County Property Appraiser and local real estate agents. The overall non-residential occupancy rate as of April 2015 was 85.6%.

The study area also has a 205-room hotel (Don Shula's Hotel), five multi-family residential developments plus the residential units above the retail/commercial development on Main Street (889 units), a multiplex movie theater, and a 2.4 acre passive park (see **Figure 4-8**).

Table 4-5
Miami Lakes Main Street Primary Uses

Primary Uses	Lot Area (sq. ft.)	Acres	Percent
Mixed-Retail/Res/Office	360,241	8.27	12.6%
Hotel	322,518	7.40	11.3%
Mixed-Retail/Res/Office	256,830	5.90	9.0%
Office	74,183	1.70	2.6%
Office	94,225	2.16	3.3%
Bank-Chase	51,836	1.19	1.8%
Office	187,395	4.30	6.6%
Residential/New Barn Apartments	401,623	9.22	14.0%
Hotel Recreation	223,942	5.14	7.8%
Residential/Fountain House and II	109,205	2.51	3.8%
Residential/Bull Run	174,240	4.00	6.1%
Park	104,108	2.39	3.6%
Residential/Meadow Walk	500,069	11.48	17.5%
Total	2,860,415	65.67	100.0%

Source: Miami-Dade County Property Appraiser



 KEITH and SCHNARS, P.A. FLORIDA'S <i>Big LOCAL</i> FIRM	Pedestrian Oriented Mixed-Use Development Study	Figure
	Miami Lakes Main Street Land Uses	4-8

**Table 4-6
Miami Lakes Main Street Building Use Space Distribution**

Land Use Space	Area (Sq. Ft.)
Retail	126,068
Office	107,379
Medical Office	46,340
Services-Restaurant	29,775
Services-Non-Restaurant	4,875
Recreational	97,150
Hotel	154,088
Vacant	95,647
Total Space	661,322
Total Residences	889 DU

Source: The Graham Properties, April 2015.

The general mixed-use category closest to describing the site is a Mixed-Use Walkable Neighborhood.

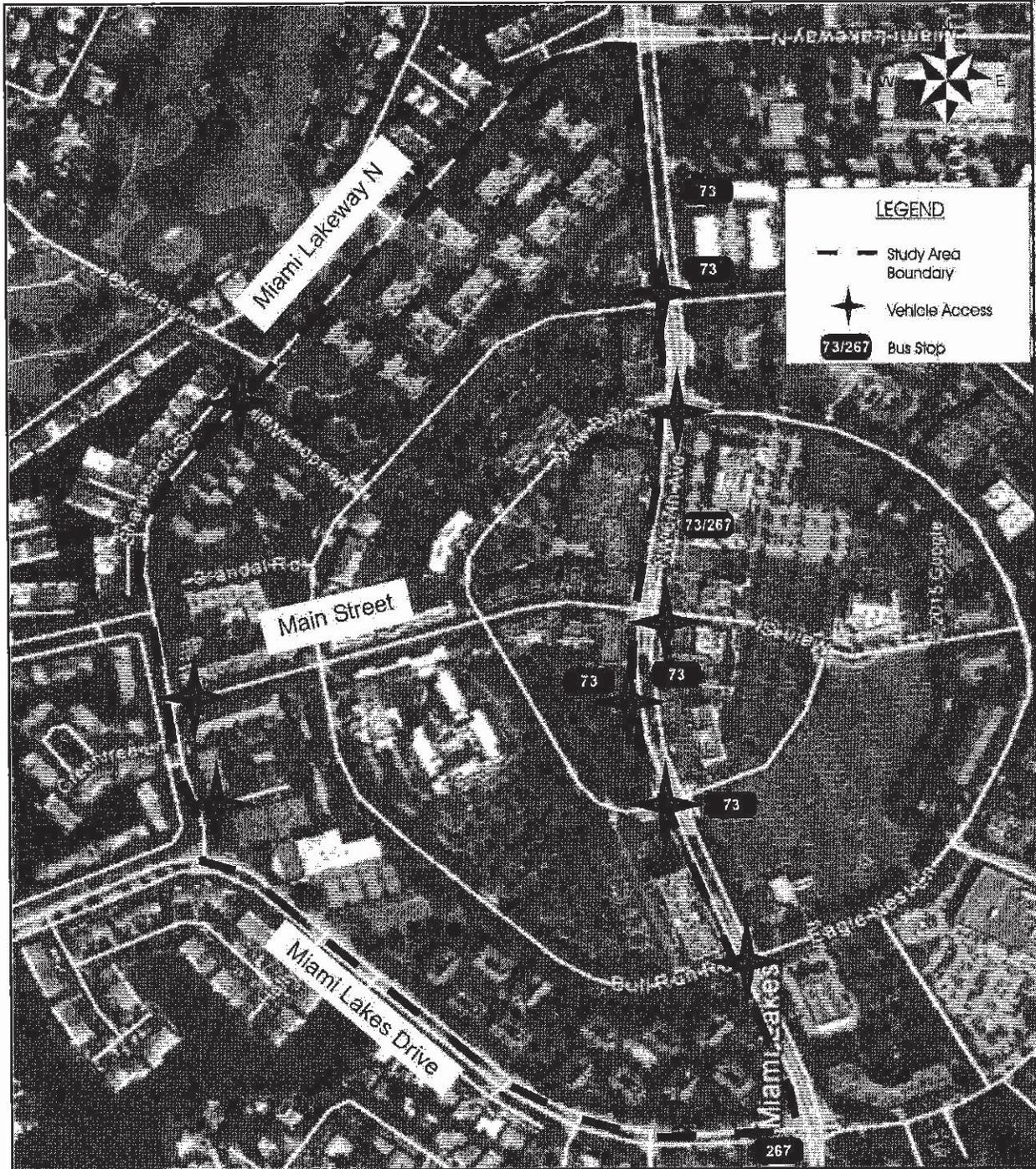
The area has several acres of surface public parking with about 1,000 non-residential parking spaces, which provides the area's needs. Of this latter total, about 820 spaces are open for all Main Street visitors including 75 spaces along Main Street.¹⁶ Curb parking is also available along all of the study site's internal streets.

The centerpiece of this development is Main Street, a three block mixed-use segment that features a pedestrian oriented shopping, living, recreational and business area within a context of an open air mall. The two easternmost blocks contain over 225,000 square feet of mixed uses with retail on the ground level and residential apartments and/or business offices on the upper one or two levels. The street is configured as a two-lane road with a landscaped median, wide sidewalks and angled parking. The street features a roundabout west of NW 67th Avenue which emphasizes pedestrian movements over the vehicular movements.

The western one-third of the street features residential apartments bordering both sides of the street in a manner conveying a city streetscape with a tree-lined street and ample sidewalks.

Vehicular access to the Main Street site is provided at nine main locations: six are located off NW 67th Avenue and three are located off Miami Lakeway North (see **Figure 4-9**).

¹⁶ Don Shula's Hotel and Athletic Club has approximately 400 parking spaces. Another 196 parking spaces are reserved for Main Street employees. The Promenade office building on NW 67th Avenue between New Barn Road and Bull Run Road has about 320 parking spaces.



	Pedestrian Oriented Mixed-Use Development Study	Figure
	Miami Lakes Main Street Site Access Locations	4-9

The three internal streets (Bull Run Road, New Barn Road, and Meadow Walk) are two-way, two-lane roads with parallel curb parking. These internal streets are tree-lined with sidewalks that provide ample walking space, access to all stores and office buildings, pedestrian amenities, and have clearly defined crosswalks, enhancing internal circulation and connecting with the adjacent buildings and parking areas.

Forming the eastern limit of the study site, NW 67th Avenue is a four-lane, divided north-south County arterial. The 2013 average annual daily traffic (AADT) on this road as collected by FDOT is 31,000 vehicles (south of the Palmetto Expressway). Miami Lakeway North, which forms the north and western periphery of the study site, is a two-lane local road with an AADT of 6,500 vehicles. Miami Lakes Drive, which forms the south periphery of the study site, is a four-lane, divided local collector with an AADT of 17,300.

The adjacent surrounding land uses include:

1. North, West and South boundaries: All Town of Miami Lakes residential developments comprised mostly of single-unit dwellings. There are street and pedestrian crossing connections to these sites from the Main Street area; and
2. East side of NW 67th Avenue: This area includes the eastern part of the Miami Lakes Town Center development with commercial, restaurant and residential developments, as well as the Town Hall. The area also has several vacant parcels.

4.3.2 Miami Lakes Main Street POD Characteristics Criteria

This section presents a summary comparison of Miami Lakes Main Street with respect to POD characteristics criteria:

Criteria 1:

The non-residential land use space is 661,322 sq. ft., within the criteria limits.

Criteria 2:

The Miami Lakes Main Street study site has at least six land uses:

- a. Office (general office and medical office along Main Street and buildings along New Barn Road and NW 67th Avenue);
- b. Retail (primarily along Main Street);
- c. Residential (five rental communities integrated along Bull Run Road with over 800 units);
- d. Service (several restaurants and a bank);
- e. Recreational/Entertainment (Cobb Theaters, Shula's Athletic Club, and park); and
- f. Lodging (Don Shula's Hotel).

Criteria 3:

All of the buildings along Main Street have store-front setbacks and face the street, with ample sidewalks with pedestrian amenities, and the streets are tree-lined. Main Street is connected to the adjacent buildings and parking areas via walkways through the development. Sidewalk widths range from 5 feet to 8 feet. No sidewalks are found within the parking areas;

Criteria 4:

The site has a 2.4 acre passive public park, a public oriented roundabout on Main Street and a large public space between the movie theater and Main Street;

Criteria 5:

All of the buildings within Main Street Village Center are accessible to pedestrians via ample sidewalks and clearly defined crosswalks;

Criteria 6:

Access to the commercial and residential areas east of the site is obtainable by crossing NW 67th Avenue. There are highly visible cross walks at three signalized intersections (including one on Main Street);

Criteria 7:

The site includes over a dozen non-residential buildings, most multi-use;

Criteria 8:

The site was developed as part of an established Master Plan begun over 50 years ago;

Criteria 9:

The buildings on the site are 100% built (as of March 2015); however, approximately 85.6 percent is occupied;

Criteria 10:

The Main Street study area has several multi-family developments with an estimated 889 units, all apartments, listed in **Table 4-7**.

The 46 units on Main Street East are directly integrated into the overall Main Street, forming the upper levels of the buildings. Residents at the five residential developments nearest Main Street are within a range of 500 to 1,400 feet (between 2 and 6 minutes walking time);

**Table 4-7
Main Street Residential Inventory**

Development Name	Number of Units
Main Street East	46
New Barn Apartments	245
Fountain House 2	72
Fountain House	106
Bull Run	100
Meadow Walk	320
Total residential units	889

Source: The Graham Companies, April 2015

Criteria 11:

The POD has approximately 820 public parking spaces which are fully accessible and shared by Main Street visitors. The service and loading areas are located in the rear of the main buildings and readily accessible with little interference with pedestrian or vehicular flow; and

Criteria 12:

The site is served by MetroBus Route 73 (average 30-minute frequency) and Route 267 (Rush hour service only) along NW 67th Avenue. Three bus stops in each direction are located along NW 67th Avenue, north and south of Main Street. The bus route maps and schedule information are provided in **Appendix C**.

4.3.3. Site Data Collection Factors

Factor 1: Ability to isolate or cordon off development

Although Main Street within the potential study area is only three blocks long, the principal development includes a larger pedestrian basin of up to 1,400 feet to the center. There are seven external entry points: five along NW 67th Avenue and two along Miami Lakeway. The area is easily cordoned off for vehicular counts. While some through traffic may be expected, the actual volume is anticipated to be very small due to the inconvenience for through traffic via Main Street and other internal streets. Through traffic should be minimal;

Factor 2: External Access Points

As previously mentioned, there are seven external entry points: five along NW 67th Avenue and two along Miami Lakeway. The access points for the residential units are via the internal streets except for two points along Miami Lakeway. Traffic counters can be placed on all of the residential driveways to segregate this traffic;

Factor 3: Buildings and Internal Access Points

All of the site buildings are accessible and have limited doorway access points. The residential developments have driveways which can be monitored separately;

Factor 4: Pedestrian Interviews

The site's compact layout and accessibility is very conducive to undertaking pedestrian interviews; and

Factor 5: Site Owners Approval

Contact with the property owners and/or agents of the Main Street, who control all of the commercial, business and residential facilities within the study site, has been established. Authorization for the study was granted.

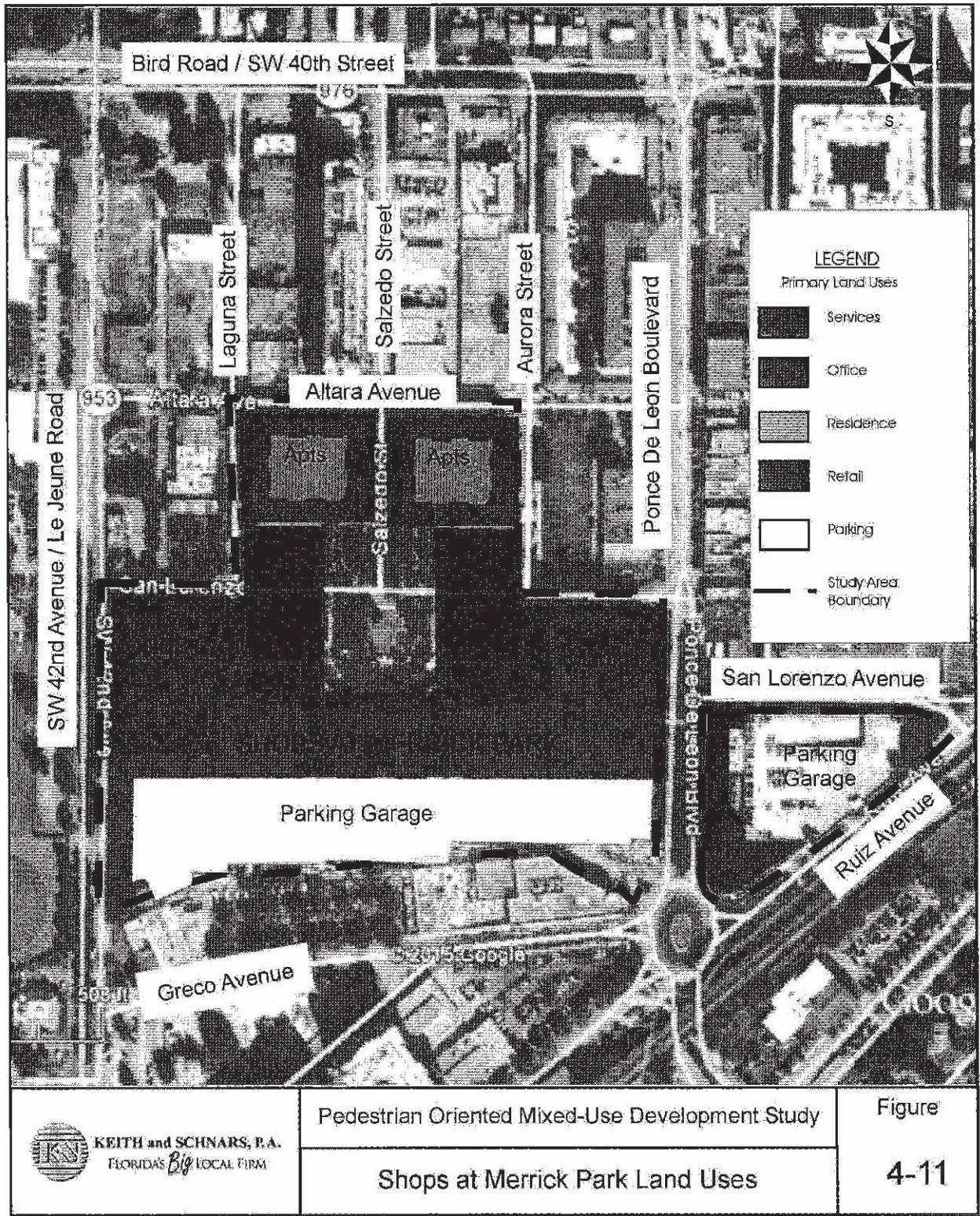
4.4 Shops at Merrick Park

4.4.1 Site Description and Inventory

The Shops at Merrick Park is a planned upscale pedestrian oriented mixed-use shopping, office, and residential development located at 358 San Lorenzo Avenue in the City of Coral Gables (see **Figure 4-10**). It is generally bordered by Ponce De Leon Boulevard on the East, by Greco Avenue on the South, by SW 42nd Avenue (Le Jeune Road – SR 953) on the West, and by Altara Avenue on the North. San Lorenzo Avenue forms the main east-west internal axis; whereas, Salzedo Street forms the north-south axis of the site.

The development includes the Shops at Merrick Park Office Building located east of the main development, on the east side of Ponce de Leon Boulevard between San Lorenzo Avenue on the North and Ruiz Avenue on the South. The five-level office building has approximately 126,021 square feet of leasable space with retail on the ground level and mixed office uses on the upper levels. The building is directly connected to the main development site via an enclosed pedestrian bridge. The six-story northeast and northwest buildings on the main site consist of retail/business spaces on the ground floor, two levels of garage, and three levels of apartments. Built in 2003, the buildings contain a total of 120 apartments. The detailed breakdown is provided in **Appendix D**.

Opened in 2002, The Shops at Merrick Park includes over 100 retail stores, several restaurants, and the anchor stores Neiman Marcus and Nordstrom (see **Figure 4-11**). The development provides approximately 3,275 parking spaces in four garage structures (the main retail garage structure has about 1,910 spaces, the office garage has 1,065 spaces and the two residential towers have 150 spaces each). The combined shopping/office center and residential areas occupy approximately 19.3 acres of land (**Table 4-8**) and has approximately 850,325 sq. ft. of non-residential building space (**Table 4-9**). The general mixed-use category closest to describing the site is a mixed-use walkable development.



 KEITH and SCHNARS, P.A. FLORIDA'S <i>Big</i> LOCAL FIRM	Pedestrian Oriented Mixed-Use Development Study	Figure
	Shops at Merrick Park Land Uses	4-11

**Table 4-8
Shops at Merrick Park Primary Uses**

Primary Uses	Lot Area (sq. ft.)	Acres	Percent
Main Parcel (Retail and Service)	511,185	11.74	60.8%
East Building (Retail)	69,894	1.60	8.3%
West Building (Retail)	69,893	1.60	8.3%
Northeast Building (Residential plus retail)	42,983	0.99	5.1%
Southeast Building (Residential plus retail)	44,005	1.01	5.2%
Office (east side of Ponce de Leon Blvd)	102,910	2.36	12.2%
Totals	840,870	19.30	100.0%

Source: Miami-Dade County Property Appraiser

**Table 4-9
Shops at Merrick Park Building Use Space Distribution**

Building Use Space	Area (sq. ft.)
Retail	610,395
Restaurant	35,770
Office	126,432
Medical Office	26,534
Heath/Fitness	32,510
Vacant Space	18,684
Total space	850,325
Total Residences (Apartments)	120 DU

Source: General Growth Properties, Inc., October 2015.

The layout of the Shops at Merrick Park generally follows the POD concept by providing a main-street effect with narrow and tree-lined internal streets, building fronts near the street and wide sidewalks and elevated walkways connecting all of the retail buildings, the office building and residential areas, with a defined center point – a large park-like plaza in the center. As shown in **Figure 4-11**, the configuration of the main section of the POD is of the form of “Tee”. Laguna Street forms the west edge of the stem of the “Tee”; whereas, Aurora Street forms the east side.

The Salzedo Street plaza area serves as the POD’s main public space providing a park-like environment and outdoor seating areas for the site restaurants. Other smaller but no less prominent plaza-like areas are found throughout the site.

Another of the Shops at Merrick Park’s major pedestrian-friendly facilities is the continuous upper level pedestrian walkway infrastructure connecting all of the site’s uses. It is possible for residents to walk from their apartments within the northern sector

of the site to the main retail building and to the office building east of Ponce de Leon Boulevard, without using the ground level walks or crossing the internal streets at-grade at any time.

Traffic access is provided at three streets: Two on San Lorenzo Avenue (one from the east and one from the west) and one from the north via Salzedo Street (see **Figure 4-12**). Other access points are provided directly to the garages at:

- Main retail – SW 42nd Avenue south of San Lorenzo Avenue;
- Main retail – Ponce de Leon Boulevard at Greco Avenue/Merrick Circle;
- Resident building – Laguna Street;
- Resident building – Aurora Street;
- Office building – San Lorenzo Avenue; and
- Office building – Two driveways off Ruiz Avenue.

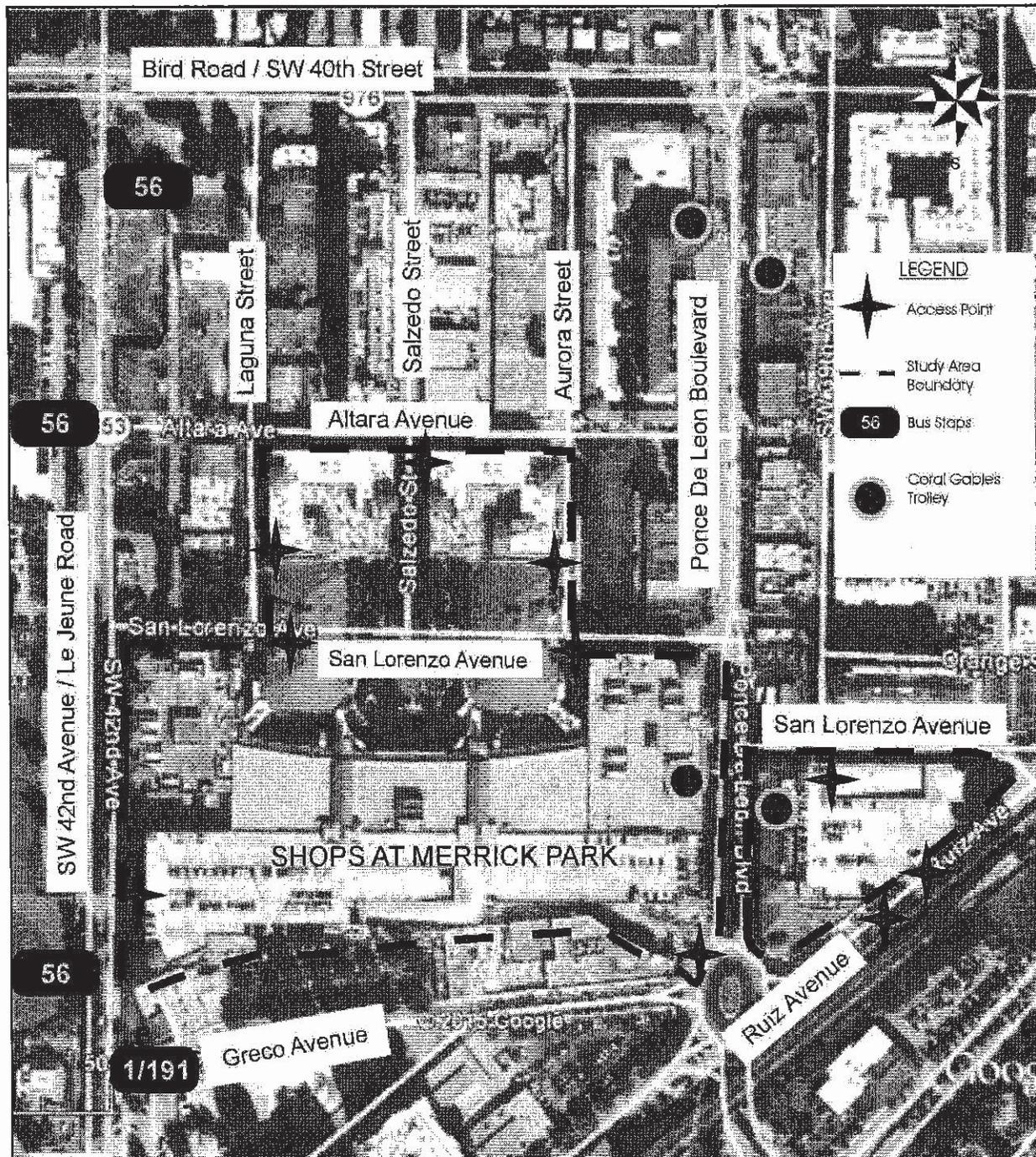
Southwest 42nd Avenue (SR 953) is a four lane, divided north-south county arterial with a 45 MPH speed limit. The 2013 FDOT AADT on the segment adjacent to the Shops at Merrick Park is 28,500 vehicles.

Ponce de Leon Boulevard, along the east side of the Shops at Merrick Park, is a four lane north-south urban street. It has an estimated AADT of over 6,600.

The local streets within and around the site, Laguna Street, Altara Avenue, San Lorenzo Avenue, Salzedo Street, and Aurora Street, are two-lane urban streets with metered curb parking. No parking is permitted on the sections of San Lorenzo Avenue and Salzedo Street within Parks of Merrick Park except for some valet parking operations.

The adjacent surrounding land uses include:

1. North boundary: The urban blocks between Altara Avenue and SW 40th Street (Bird Road) are not part of the Shops at Merrick Park. These contain a mixture of retail, office and residential uses. The most prominent developments are the 4000 Ponce de Leon Building (155,000 square feet of office space and 35,000 square feet of retail) and the One Village Place residential condominium with 112 units. These areas are connected directly to the Shops at Merrick Park via the sidewalk system. Single family residences are found north of Bird Road;
2. South boundary: A line of mixed retail and office buildings are located along Greco Avenue. Further south along Ponce de Leon Boulevard are large newer mixed-use, residential and retail developments. To the southwest there is a large residential neighborhood of single family homes;



 KEITH and SCHNARS, P.A. FLORIDA'S <i>Big</i> LOCAL FIRM	Pedestrian Oriented Mixed-Use Development Study	Figure
	Shops at Merrick Park Access Driveways	4-12

3. West side of SW 42nd Avenue: The Coral Gables High School lies on the west side of SW 42nd Avenue. The area between SW 42nd Avenue and Laguna Street has numerous retail and office buildings; however, there are several parcels currently vacant; and
4. East side: The area between Ponce de Leon Boulevard and Aurora Street has numerous retail and office buildings; however, there are several parcels currently vacant.

4.4.2 Shops at Merrick Park POD Characteristics Criteria

This section presents a summary comparison of Shops at Merrick Park with respect to POD characteristics criteria:

Criteria 1:

The non-residential land use space is 850,325 sq. ft., within the criteria limits;

Criteria 2:

The Shops at Merrick Park has at least four land uses:

- a. Office;
- b. Retail;
- c. Residential (Residences at Merrick Park with 120 dwelling units); and
- d. Service (several restaurants).

Criteria 3:

All of the internal street and pedestrian walk ways provide ample sidewalks with appropriately scaled pedestrian amenities, streetscape and landscaping. All of the internal and peripheral streets are tree-lined; the section of Ponce de Leon Boulevard between San Lorenzo Avenue and Greco Avenue has the most intense level of street trees in the immediate area;

Criteria 4:

The site has a predominant central park/garden area community center at the site's central point of activity. Smaller, but yet noticeable and useful landscaped open areas (some with benches) are found throughout the site;

Criteria 5:

All of the buildings within and around the Shops at Merrick Park are connected by the walkway/circulation system. The sidewalks are amply wide and the crosswalks are clearly defined with no more than two lanes to be crossed;

Criteria 6:

Access to the surrounding retail, office, and residential areas, as well as the Coral Gables High School, is provided via the existing ample sidewalk and roadway system. The existing sidewalk design of the Shops at Merrick Park is extended to the south via Ponce de Leon Boulevard to connect to the roundabout at Ruiz Avenue/Ponce de Leon Boulevard and the County's M-Path Trail (pedestrian and bicycle) that runs beneath the MetroRail line;

Criteria 7:

The site includes a total of seven (7) buildings including four garages with a total of 3,725 spaces;

Criteria 8:

The site was developed as a Master Plan;

Criteria 9:

The buildings on the site are 100% completed. Retail, residential and office occupancy is over 95 percent (as of October 2015);

Criteria 10:

The Shops at Merrick Park has 120 apartment units as integral components of the development. The pedestrian circulation system provides for full access between all of the uses without crossing streets, via second and other upper level walkways. Distances between some extreme site points range between 1,000 and 1,300 feet, generally compatible with the 1,500 feet maximum criteria for a POD;

Criteria 11:

The roadway and sidewalk designs are consistent throughout the site with special emphasis on the central plaza area and Salzedo Street. The Shops at Merrick Park has approximately 3,725 parking spaces, which are fully accessible and shared by all uses. The service and loading areas are located on the south side of the main retail building, on the east side of Laguna Street and the west side of Aurora Street. The office building service area is located along Ruiz Avenue on the south side of the building; and

Criteria 12:

The site is served by MetroBus Route 40 (average 20-30 minute frequency) and Route 42 (average 20 minutes) along SW 40th Street and Route 56 (35-60 minute) along SW 42nd Avenue. The bus stops are located on SW 40th Street one block north of the site and along SW 42nd Avenue on the west side of the site. The site is also served by the Coral Gables Trolley along Ponce de Leon Boulevard with stops on both sides of the roadway in front of the retail and office buildings near San Lorenzo Avenue. The MetroRail Douglas

Road Station is located about 1,500 feet east of the office building. The bus route maps and schedule information are provided in **Appendix D**.

4.4.3 Site Data Collection Factors

Factor 1: Ability to isolate or cordon off development

Because of its compact design and limited roadway access, The Shops at Merrick Park study area can be cordoned off for traffic data collection purposes, specifically at the garage driveways. Visitors to the site will typically use one of the four available parking garages (including the office building parking garage). Some through traffic is possible, but is anticipated to be minimal;

Factor 2: External Access Points

The site has seven external access points at the garage entrances. Traffic counters can be placed on all of the driveways;

Factor 3: Buildings and Internal Access Points

All of the site buildings are accessible and have limited doorway access points;

Factor 4: Pedestrian Interviews

The site's compact layout and accessibility is very conducive to undertaking pedestrian interviews; and

Factor 5: Site Owner Approval

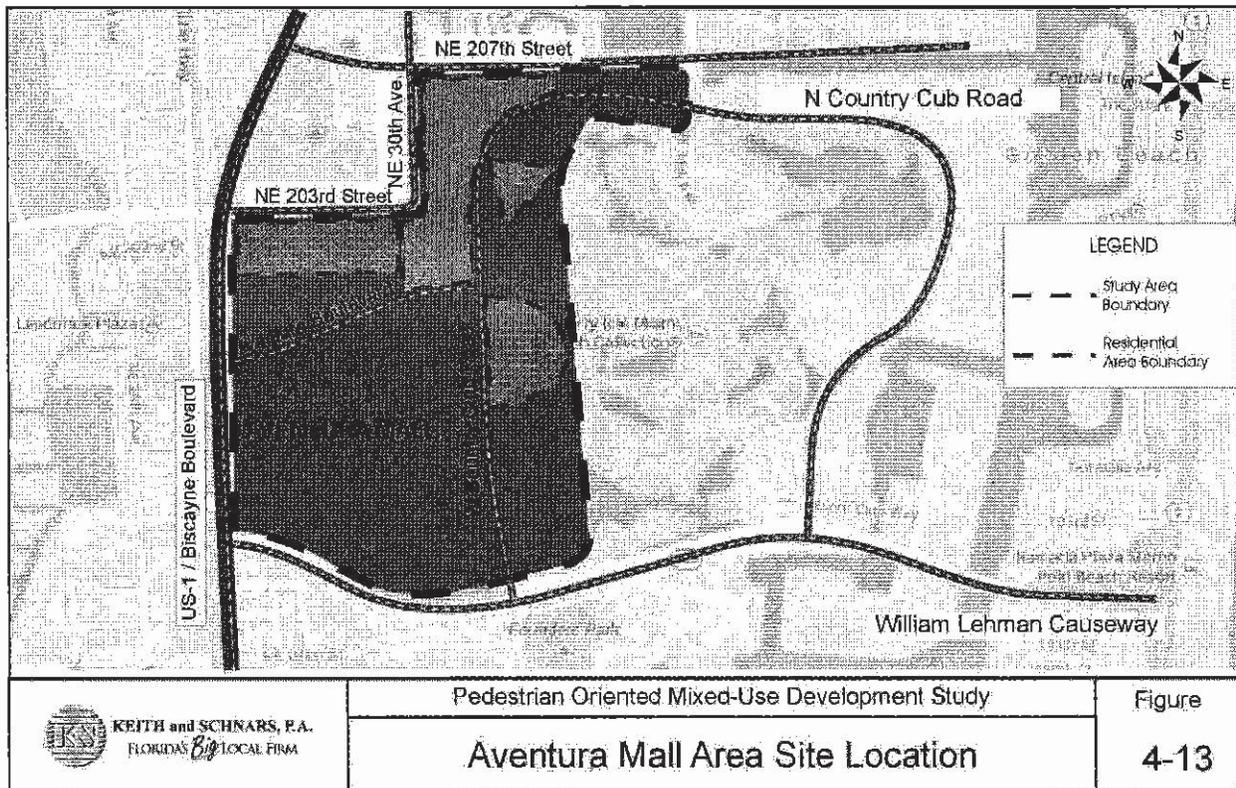
Contact with the commercial property manager and/or agents of the Shops at Merrick Park, including the management of the on-site apartments, was established. However, retail management indicated that based on previous recent experience, on-site surveys will not be permitted.

4.5 Aventura Mall Area

4.5.1 Site Description and Inventory

Aventura Mall is an upscale regional shopping center in the City of Aventura, Florida, opening in 1983 (See **Figure 4-13**). It is the largest conventional mall in the state of Florida, having nearly 2.7 million square feet of gross leasable area, and is the 3rd largest mall in the country. The mall has three floors of retail space with more than 300 stores, including anchor stores Nordstrom, Bloomingdale's, and J.C. Penney, Macy's and AMC Aventura 24 Theatres (See **Figure 4-14**).

The surrounding area includes stores, restaurants, several financial institutions, residential facilities (condominiums and townhomes), shopping plazas, medical centers, resort hotels, and a major tournament golf course. The mall also serves as a transit hub between Miami-Dade Transit and Broward County Transit, as each has several routes that meet here.



The potential study area is bounded by US 1/Federal Highway on the West, the William Lehman Causeway (SR 856) on the South, West Country Club Drive and NE 34th Avenue on the East, and NE 203rd and NE 207th Streets on the North. The area includes Aventura Boulevard, NE 29th Avenue, NE 30th Avenue and Abigail Road which is the Mall's internal peripheral street. The combined Aventura Mall and surrounding area of shops, offices and residential condos occupy approximately 428.3 acres of land (**Table 4-10**) and has approximately 4,822,541 square feet of non-residential building space (**Table 4-11**). The general mixed-use category closest to describing the site is a mixed-use walkable development. The detailed breakdown is provided in **Appendix E**.

The general layout of the Aventura Mall Area consists of the primary shopping mall in the southeastern area of the site with all other commercial, office and hotel uses west of along West Country Club Drive and south of NE 203rd Street. The residential areas are predominately concentrated along the West Country Club Drive corridor north of NE 203rd Street. This area was not developed as a single project, but rather as a series of projects over decades, initiated before the incorporation of the City. All of the internal developments are individual property developments.

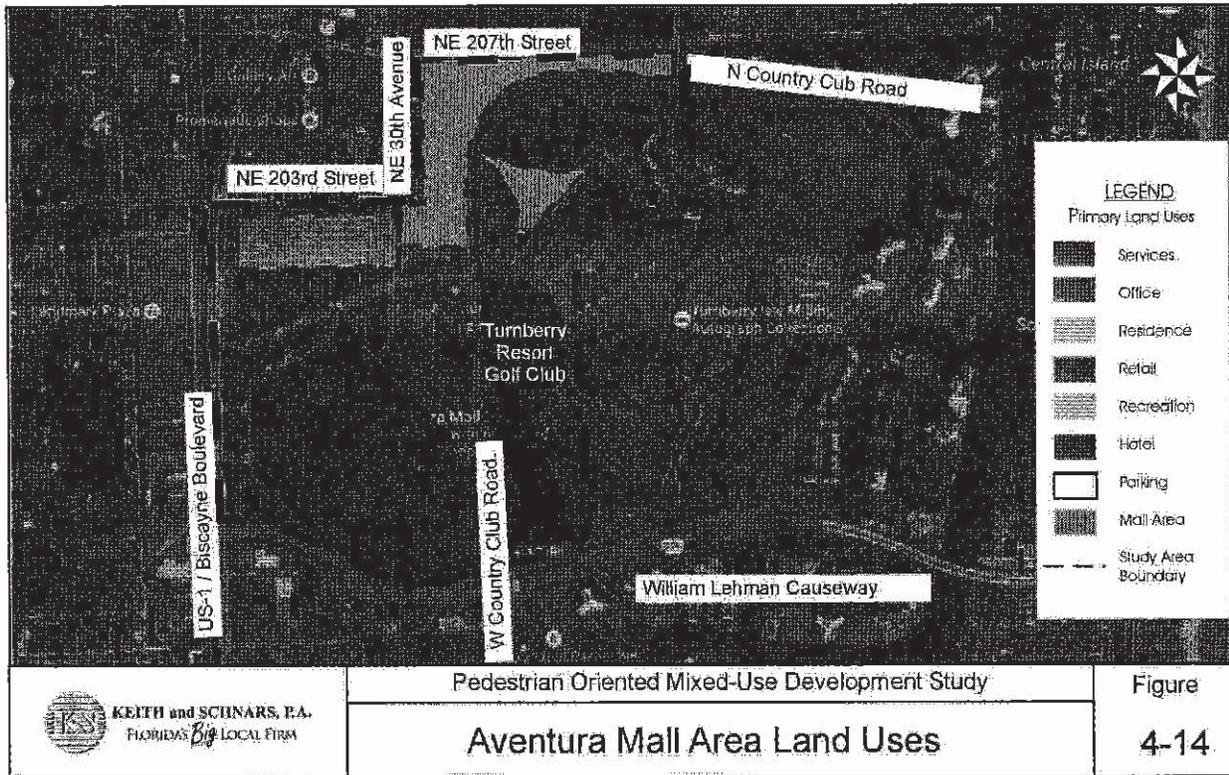


Table 4-10
Aventura Mall Area Primary Uses

Primary Uses	Lot Area (sq. ft.)	Acres	Percent
Retail	3,390,324	77.8	18.2%
Office/Services	611,596	14.0	3.3%
Hotel	788,000	18.1	4.2%
Medical	184,063	4.2	1.0%
Public Services	141,962	3.3	0.8%
Residences	2,370,172	54.4	12.7%
Golf Course	10,501,619	241.1	56.3%
Garage	481,817	11.1	2.6%
Home Care	188,889	4.3	1.0%
Totals	18,658,442	428.3	100.0%

Source: Miami-Dade County Property Appraiser

**Table 4-11
Aventura Mall Area Building Use Space Distribution**

Building Use Space	Area (sq. ft.)
Retail	4,214,513
Office/Services	529,473
Community Services	9,229
Medical	69,326
Total	4,822,541
Lodging/Hotel	690 Rooms
Residential	2,951 DU

Source: Gross unit information from Miami-Dade County Property Appraiser.

The study area has seven primary access points, all of which are signalized intersections (see **Figure 4-15**):

1. West Country Club Drive at the William Lehman Causeway;
2. North Country Club Drive,
3. NE 29th Place;
4. NE 34th Avenue;
5. Aventura Boulevard;
6. North Mall Access Drive on US 1; and
7. South Mall Access Drive on US 1.

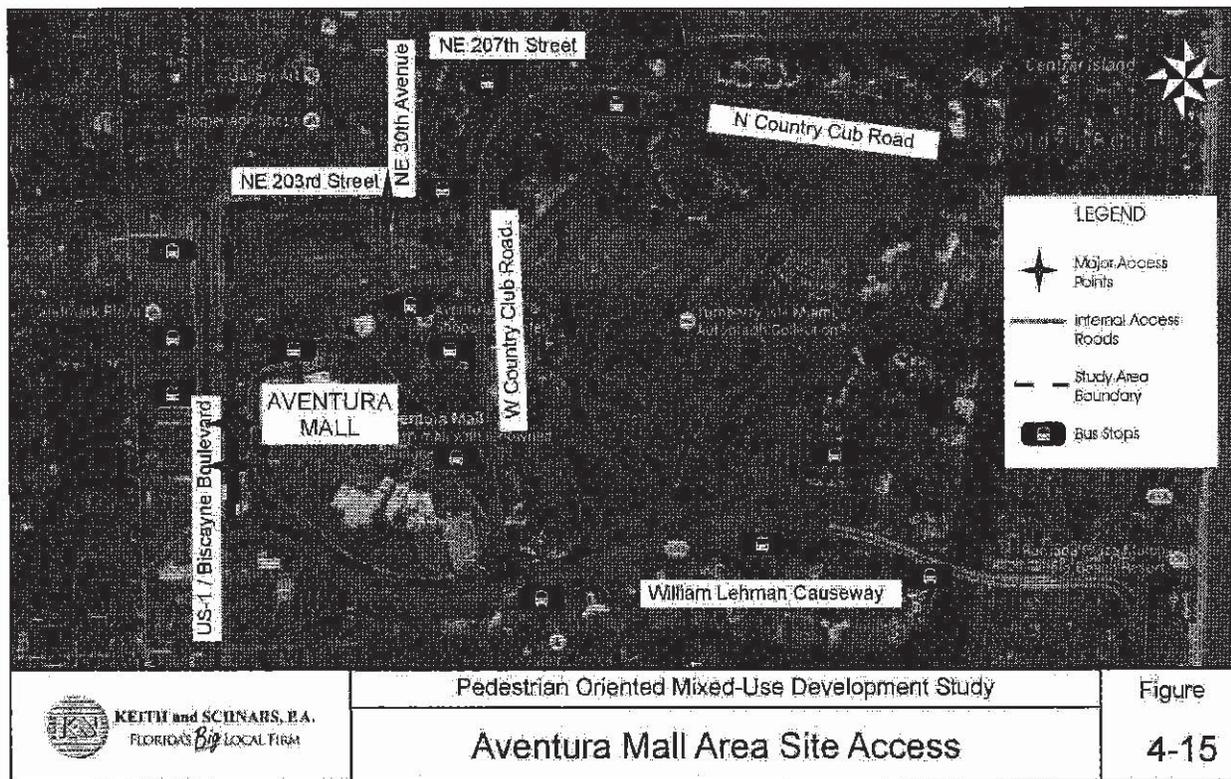
The multiple land uses also have numerous driveway connections to the main streets including Country Club Drive, NE 203rd Street, etc.

Pedestrian accessibility is provided via the extensive city and site sidewalk system with varying levels of pedestrian amenities. Other than the very large private golf course, there are no public parks within the area. The internal streets are tree-lined and the majority of the buildings are set-back beyond 25 feet from the streets.

The Aventura Mall area is served by the following major roadways with their corresponding 2013 FDOT AADTs:

1. US 1/Federal Highway – 74,500 AADT;
2. William Lehman Causeway – 32,500 AADT;
3. West Country Club Drive – 12,800 AADT; and
4. Aventura Boulevard – 11,400 AADT.

The adjacent surrounding land uses include combinations of large residential condo/apartment, services and retail complexes to the south and north; residential condos to the east, and the US 1/Federal Highway and Florida East Coast (FEC) rail corridor on the west.



4.5.2 Aventura Mall Area POD Characteristics Criteria

This section presents a summary comparison of the Aventura Mall area with respect to POD characteristics criteria:

Criteria 1:

The non-residential land use space is over 4 Million square feet, far beyond the maximum 2 Million for a POD in this study.

Criteria 2:

The Aventura Mall Area study site has six land uses:

- a. Office;
- b. Retail;
- c. Residential;
- d. Service;
- e. Recreational; and
- f. Lodging.

Criteria 3:

Almost all of the internal street and pedestrian walk ways provide ample sidewalks with appropriately scaled pedestrian amenities, streetscape and landscaping. The internal and peripheral streets are tree-lined;

Criteria 4:

The site's largest green area is the private Turnberry Golf Course. There are no significant park areas within the area; however, wide and landscaped pedestrian/bicycle paths are provided along both sides of Country Club Drive;

Criteria 5:

All of the buildings/sites within and around the area are connected by the walkway/circulation system. The sidewalks are amply wide and the crosswalks are clearly defined. Due to the traffic volumes in the area, pedestrians are forced to cross at the signalized intersections;

Criteria 6:

Access to the areas is provided via the existing ample sidewalk and roadway system. The Aventura Shuttle Bus is an alternate mode of travel available in the area;

Criteria 7:

The study area has over 30 buildings, mostly single use residential;

Criteria 8:

The Aventura Mall was developed as a planned shopping center. All other surrounding developments were developed as separate projects;

Criteria 9:

The buildings on the site are 100% completed. Retail, residential and office occupancy is estimated to be between 85% and 95% (as of March 2015);

Criteria 10:

The Aventura Mall Area has almost 3,000 dwelling units throughout the area. However, none of these are directly integrated into the main Mall area. The existing sidewalks and paths provide for access between all of the uses, albeit involving a series of crossings at streets and within the large surface parking areas. A large majority of the residences lie beyond 1,500 feet criteria for a POD;

Criteria 11:

The Aventura Mall Area has several thousands of parking spaces spread over 35 developments. These parking areas are mostly site specific and not conducive for sharing. In a similar manner, the service areas are also project site specific.

These areas tend to be placed so as not interfere with pedestrian accessibility;
and

Criteria 12

The Aventura Mall Area is a major transit hub with nine MetroBus routes and one Broward County bus route serving the site. In addition, the City of Aventura operates a free city shuttle service that provides four routes to the area. The bus route maps and schedule information are provided in **Appendix E**.

4.5.3 Site Data Collection Factors

Factor 1: Ability to isolate or cordon off development:

Because of its expansive size and roadway collectors traversing the site, the probability of introducing through traffic is expected to be high and difficult;

Factor 2: External Access Points:

The site has seven external access points at the garage entrances. Traffic counters can be placed on all of the driveways;

Factor 3: Buildings and Internal Access Points

All of the site buildings are accessible and have limited doorway access points;

Factor 4: Pedestrian Interviews

The Aventura Mall Area's expansive area and the high number of uses and locations make it not conducive for undertaking pedestrian interviews; and

Factor 5: Site Owners Approval

An initial contact was made to the Aventura Mall management group. The large amount of individual owners and third parties involved would have made it difficult to obtain approval to conduct the study.

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5. DESIGNATION OF POD AND NON-POD SITES

5.1 Site Selection Criteria Rating Values

For site selection purposes, each of the POD characteristics criteria and the site data collection criteria presented in Chapter 3 was assigned a series of rating values. These values, ranging between 0 and 5 points, depending on the criteria, were allocated to each of the five initial POD sites selected for potential data collection and incorporation in the trip generation study. The points were then summed to obtain a total site value which was used to rank the sites by order of preference.

The following presents the rating values for the POD criteria. The most critical criteria of this group were development size, number of uses on site, and on site walking distances. The total maximum number of points for the POD criteria is 45 points.

Criteria 1: Development size

Points:

- 0 – Less than 100,000 sq. ft. or greater than 2 million sq. ft.
- 5 – Within above limits.

Criteria 2: Number of POD Land Uses

Points:

- 0 – Has required number of uses but no residential uses.
- 3 – Has four or less land uses including residential uses.
- 5 – Has five or more land uses including residential uses

Criteria 3: Attractive/convenient pedestrian and vehicular circulation systems.

Points:

- 0 – Basic mall-type layout and minimal landscaping and amenities.
- 1 – Less than 50% connectivity and some enhanced sidewalks/roads – tree lined.
- 2 – All buildings and open spaces connected by one integrated system and with minor roadway and pedestrian amenities.
- 3 – All buildings and open spaces connected by one integrated system and with substantial roadway and pedestrian amenities.

Criteria 4: Major public spaces

Points:

- 0 – None.
- 1 – Small and limited number of areas sparsely dispersed through area.
- 2 – Minor park like feature.

- 3 – Multiple plazas, green areas, community buildings.
- 4 – Major central park/plaza attraction.

Criteria 5: Pedestrian safety and crossings

Points:

- 0 – None or minor.
- 1 – Narrow sidewalks and limited crosswalk protection.
- 2 – Mixture of sidewalk widths and moderate degree of protection.
- 3 – Substantial wide sidewalks and pedestrian crosswalk protection.

Criteria 6: Connections to adjacent external residential areas

Points:

- 0 – None (isolated).
- 1 – Difficult/obstacles.
- 2 – Use existing sidewalk system.
- 3 – Existing sidewalk system plus special dedicated connections.

Criteria 7: Multiple buildings with one or more uses

Points:

- 0 – Less than 50% of the buildings are multi-use.
- 3 – 50% or more are multi-use.

Criteria 8: Comprehensive site development plan.

Points:

- 0 – No.
- 4 – Yes.

Criteria 9: Occupancy Level

Points:

- 0 – Less than 50% occupancy.
- 1 – Between 51% and 90% occupancy.
- 2 – Greater than 90% occupancy rate.

Criteria 10: Multi-family residential component and distances

Part A: Multi-family

Points:

- 0 – No residential.
- 1 – Less than 50 units.
- 2 – 50 to 200 units.

3 – Greater than 200 units.

Part B: Distances

Points:

0 – Walk distance to center of development is greater than 1,500 feet.

5 – Walk distance to center of development is less than 1,500 feet.

Criteria 11: Shared common features

Points:

0 – None.

1 – Shared parking but not for other facilities such as loading areas.

2 – Shared parking and other facilities.

Criteria 12: Transit services

Points:

0 – No transit service.

1 – Transit stops located a distance of one block or more from the site.

2 – Transit stops located immediately adjacent to the site.

3 – Transit stops located internal to the site.

5.2 Site Selection Factor Rating Values

The following presents the rating values for the site data collection factors. The total maximum number of points for these criteria is 25 points.

Factor 1: Ability to isolate or cordon off development

Points:

0 – None/Less than 50%.

3 – Between 50% and 90%.

5 – 90% to 100%.

Factor 2: External Access Points

Points:

0 – More than 10 external access points.

3 – Between 5 and 10 access points.

5 – Less than 5 access points.

Factor 3: Buildings and Internal Access Points

Points:

0 – Poor sites.

3 – Fair to Good sites.

5 – Very Good to Excellent sites.

Factor 4: Pedestrian Interviews

Points:

0 – Very difficult to perform.

3 – Some difficulties.

5 – Little or no difficulties.

Factor 5: Site Owner Approvals

Points:

0 – None.

3 – Partial, concerns with on-site interviews.

5 – All approved.

5.3 Site Selection Matrix

The scope of the POD study calls for the selection of three sites to collect trip generation data: 2 sites that exhibit POD characteristics and 1 regular mixed-use site that has a large number of uses.

Table 5-1 presents the site selection matrix for the five potential sites. As shown in the matrix, Miami Lakes Main Street, Kendall Village Center, and Shops at Merrick Park are ranked as the top three sites, in that order, as it relates to the POD characteristics criteria. However, once the site data collection factors were also included, the two sites to collect both traffic counts and survey data for the POD trip generation study are Miami Lakes Main Street and Kendall Village Center. The major factor affecting the Shops at Merrick Park final rank was the inability to guarantee the pedestrian interviews, and as such was initially precluded from the traffic counts and further consideration in this study. However, subsequent to further review of the findings of the Draft Report, County staff determined that it would be beneficial to add the Shops at Merrick Park to the final analysis, albeit using only site development and traffic count data.

Table 5-1 Site Selection Matrix

Development Name	Max.	Hammocks Town Center	Kendall Village Center	Miami Lakes Main Street	Shops at Merrick Park	Aventura Mall
POD Characteristics Criteria						
Criteria 1: Development size	5	5	5	5	5	0
Criteria 2: Number of POD Land Uses	5	5	5	5	3	5
Criteria 3: Attractive/convenient pedestrian and vehicular circulation systems.	3	1	2	3	3	2
Criteria 4: Major public spaces	4	1	3	4	4	3
Criteria 5: Pedestrian safety and crossings	3	1	2	3	3	3
Criteria 6: Connections to adjacent residential/public open space areas	3	2	2	2	3	2
Criteria 7: Multiple buildings with one or more uses	3	3	3	3	3	3
Criteria 8: Comprehensive site development plan	4	0	4	4	4	0
Criteria 9: Occupancy Level	2	2	2	1	2	1
Criteria 10A: Multi-family residential component	3	3	2	3	2	3
Criteria 10B: Distances	5	0	5	5	5	0
Criteria 11: Shared common features	2	1	1	1	2	1
Criteria 12: Transit services	3	3	0	2	2	3
Total Criteria Points	45	27	36	41	41	26
Site Data Collection Factors						
Factor 1: Ability to isolate or cordon off development	5	5	5	3	3	0
Factor 2: External access points	5	3	5	3	3	3
Factor 3: Buildings and internal access points	5	3	5	5	5	3
Factor 4: Pedestrian interviews	5	5	5	5	5	0
Factor 5: Site Owner approval	5	5	5	5	3	0
Total Data Collection Points	25	21	26	21	19	6
TOTAL SELECTION POINTS	70	48	61	62	60	32
Ranking		4	2	1	3	5

The Hammocks Town Center and Aventura Mall Area ranked fourth and fifth, respectively. Both sites are not considered to represent POD based on the site selection matrix (**Table 5-1**). The Hammocks site has been selected to be the MXD site (non-POD). As such, while traffic counts would be conducted at this site, the pedestrian interviews would not be performed.

5.4 Other MXD Site Selections

As previously stated, the original scope of the POD study had called for the selection of three sites to collect trip generation data: 2 sites that exhibit POD characteristics and 1 regular mixed-use site that has a large number of uses. The Kendal Village Center and Miami Lakes Main Street meet the criteria for the POD; whereas, the Hammocks Town Center will be the MXD site for analysis. Subsequently, a third site, The Shops at Merrick Park, was added to the POD list.

The scope also requires that two other sites be selected from the following previous internalization studies:

- Enhancing Internal Trip Capture Estimation for Mixed-Use Development, prepared by the National Cooperative Highway Research Program, dated 2011;
- Trip Internalization in Multi-Use Developments, prepared by the Center for Urban Transportation Research for the Florida Department of Transportation, dated April 2014;
- Internal Capture Study – Florida Department of Transportation – District Two, dated May 2010;
- Districtwide Trip Generation Study – Florida Department of Transportation – District Four, dated March 1995, prepared by Walter H. Keller, Inc.; and
- FDOT Trip Generation Study of Multi-Use Developments – Florida Department of Transportation, District Four, December 1993, prepared by Tindale Oliver and Associates, Inc.

Additional research was performed in an effort to find sites in Miami-Dade County. Only one recent report was found that looked at trip generation of existing TODs in the County: “Trip Generation Study of Transit-Oriented Developments in Miami-Dade County”, Miami-Dade Metropolitan Planning Organization, prepared by Center for Urban Transportation Research, February 2014. However, this report did not use the cordon traffic counts for the two sites that were evaluated in detail (Dadeland South and Brickell) to determine internalization because of significant thru traffic in the study sites.

The following two sites were selected from the previous internalization studies which exhibited the POD characteristics:

- Mizner Park, Boca Raton, Palm Beach County, Florida: Districtwide Trip Generation Study – Florida Department of Transportation – District Four, dated March 1995; and

- South of Downtown Orlando (SODO), Orlando, Florida: Trip Internalization in Multi-Use Developments, prepared by the Center for Urban Transportation Research for the Florida Department of Transportation, dated April 2014.

5.5 Final Site Selection for Study

The final six study developments to be used in the Pedestrian-Oriented Mixed-Use Development Study are:

- The Hammocks Town Center (MXD);
- Kendall Village Center (POD);
- Miami Lakes Main Street (POD);
- The Shops at Merrick Park (POD);
- SODO (POD); and
- Mizner Park (POD).

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6. HAMMOCKS TOWN CENTER TRAFFIC

6.1 Study Site Description

The Hammocks Town Center is a multi-building shopping center within the master planned community of The Hammocks in the Southwest Kendall area of the County (see **Figure 4-1**). The site address is 10201 Hammocks Boulevard and is located on the northeast quadrant of the intersection of SW 104th Street and Hammocks Boulevard. It is bordered by the Coral Club Garden Villas Condo on the east, SW 104th Street to the south, Hammocks Boulevard to the west and Hammocks Middle School to the north.

The Hammocks Town Center has a total of seven access driveways: four driveways along SW 104th Street on the south and three driveways along Hammocks Boulevard on the west (see **Figure 6-1**).

This mixed-use facility is anchored by a Publix supermarket, and contains a CVS Pharmacy, a branch of the Miami Dade Public Library, and the Kendall Ice Arena. The development also includes several retail stores, medical offices, offices, and several restaurants. A McDonald's, two banks (Chase and Bank of America), an Extra Space Storage, a Taco Bell and a Mobile gas station occupy separate parcels along the north side of SW 104th Street and the east side of the site. The center is also a designated MetroBus Park and Ride (50 parking spaces) with a bus stop for MetroBus Route 204 "Killian KAT".

Coral Club Garden Villas Condo is a gated 240 unit condo community located adjacent to the east side of the shopping center. The residential area shares a common access drive with the center off SW 104th Street (at Taco Bell).

6.2 Traffic Counts

The traffic counts for the Hammocks Town Center were conducted on March 31, April 1 and April 2, 2015 by Miami-Dade County. The traffic count machines were placed at the following locations

- M-1 Coral Club Gardens Villa (Internal driveway accessing the gated residential area);
- M-2 Driveway at SW 104th Street adjacent to the Taco Bell and condos;
- M-3 Driveway at SW 104th Street between the Mobil gas station and car wash facility;
- M-4 Driveway at SW 104th Street between Chase Bank and Mobil gas station;
- M-5 McDonald's driveway at SW 104th Street;
- M-6 McDonald's driveway at Hammocks Boulevard;
- M-7 South Hammocks Town Center driveway at Hammocks Boulevard adjacent to Bank of America; and
- M-8 North Hammocks Town Center driveway at Hammocks Boulevard.

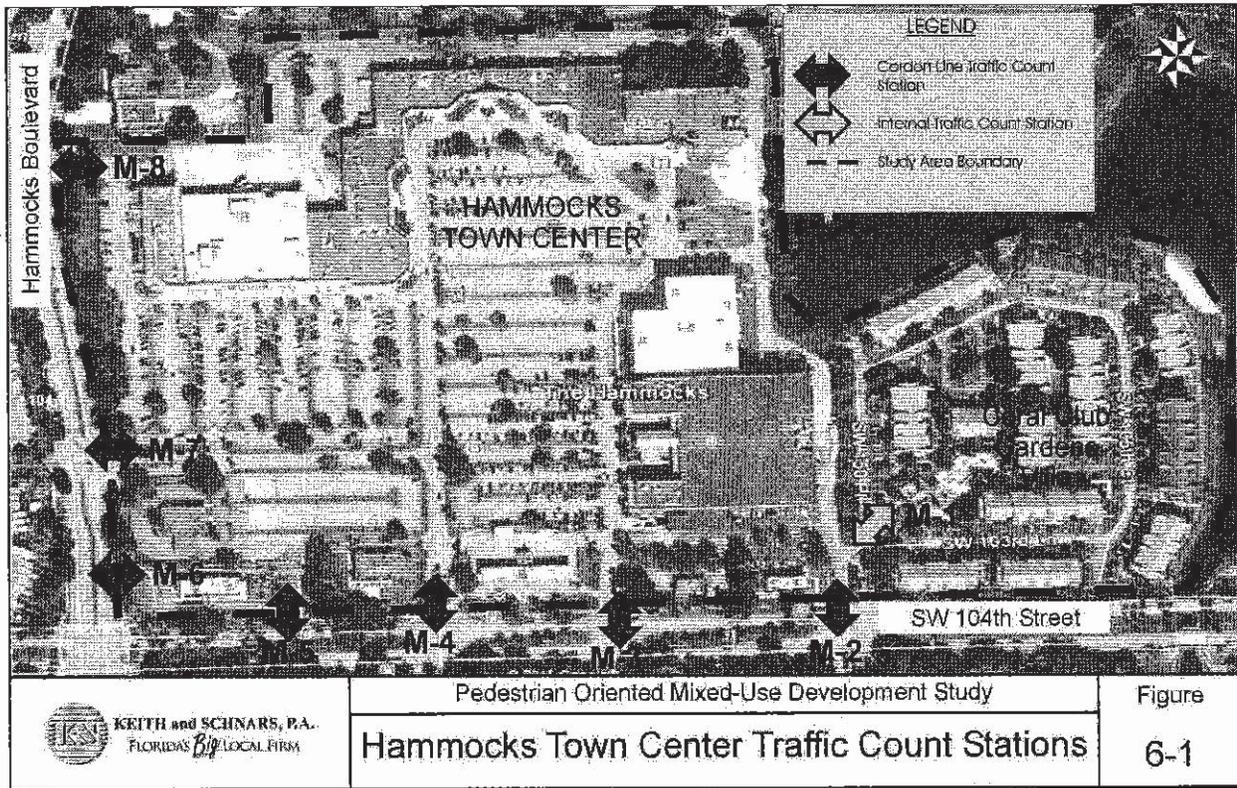


Figure 6-1 presents the traffic count locations at Hammocks Town Center. The traffic count data sheets are provided in **Appendix F**.

Table 6-1 presents the results of the daily traffic counts at Hammocks Town Center. The average three-day daily volume is 28,172 vehicles. This latter volume does not include the volumes registered at the internal Station M-1 accessing the Coral Club Gardens Villas. The average daily traffic at Station M-1 is 2,712 vehicles.

The average three-day AM and PM peak hour volumes recorded at the Hammocks Town Center are shown in **Table 6-2**. The average AM peak hour volume is 1,440 vehicles and the average PM peak hour volume is 2,035 vehicles.

Table 6-3 presents the AM and PM peak hour volumes for the Coral Club Gardens Villas. The AM peak hour volume is 165 vehicles and the PM peak hour volume is 221 vehicles.

**Table 6-1
Hammocks Town Center Daily Traffic Volumes**

Traffic Count Station Locations		Tuesday	Wednesday	Thursday	Average 3-Day ADT
		3/31/2015	4/1/2015	4/2/2015	
M-1	Coral Club Gardens Villa (Internal driveway)	2,558	2,677	2,901	2,712
Cordon Line Stations					
M-2	Taco Bell/Condos at SW 104th Street	1,627	1,637	1,744	1,669
M-3	Gas Station/Car Wash at SW 104th Street	4,052	4,116	4,408	4,192
M-4	Chase/Gas Station at SW 104th Street	5,661	5,881	5,839	5,794
M-5	McDonald's at SW 104th Street	1,932	2,143	2,005	2,027
M-6	McDonald's at Hammocks Boulevard	1,866	1,955	2,068	1,963
M-7	Plaza/BOA at Hammocks Boulevard	8,512	8,875	8,505	8,631
M-8	Plaza/North at Hammocks Boulevard	3,789	3,864	4,034	3,896
Total Hammocks Town Center External Volumes (Stations M-2 through M-8, without Station M-1)					28,172

**Table 6-2
Hammocks Town Center Peak Hour Traffic Volumes**

Peak Hour	Site Volumes				
	Total	Inbound	Percent In	Outbound	Percent Out
AM 8:00 - 9:00 AM	1,440	753	52.3%	687	47.7%
PM 4:15 - 5:15 PM	2,035	1,043	51.3%	992	48.7%

**Table 6-3
Coral Club Gardens Peak Hour Traffic Volumes**

Peak Hour	Site Volumes				
	Total	Inbound	Percent In	Outbound	Percent Out
AM 7:15 - 8:15 AM	165	44	26.7%	121	73.3%
PM 5:00 - 6:00 PM	221	120	54.3%	101	45.7%

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7. KENDALL VILLAGE CENTER TRAFFIC

7.1 Study Site Description

The Kendall Village Center is a planned pedestrian-oriented town center with retail, restaurant, office, residential, and recreational/entertainment uses. The site consists of 13 buildings (including four outparcels) and a residential sector with 87 townhomes. It is located in the Southwest Kendall area of the County, at the northwest quadrant of the interchange of Florida's Turnpike and SW 88th Street (North Kendall Drive). The site address is 8659 SW 124th Avenue (see **Figure 4-4**). It is bordered by SR-821 – Homestead Extension of Florida Turnpike (HEFT) on the East, SW 88th Street (North Kendall Drive) on the South, by SW 124th Avenue on the West, and on the North by properties of Miami-Dade County Water and Sewer Department and the Galloway North residential development comprised of single-unit dwellings. The Kendall Village Center has a total of four access driveways; all off SW 124th Avenue (see **Figure 7-1**).

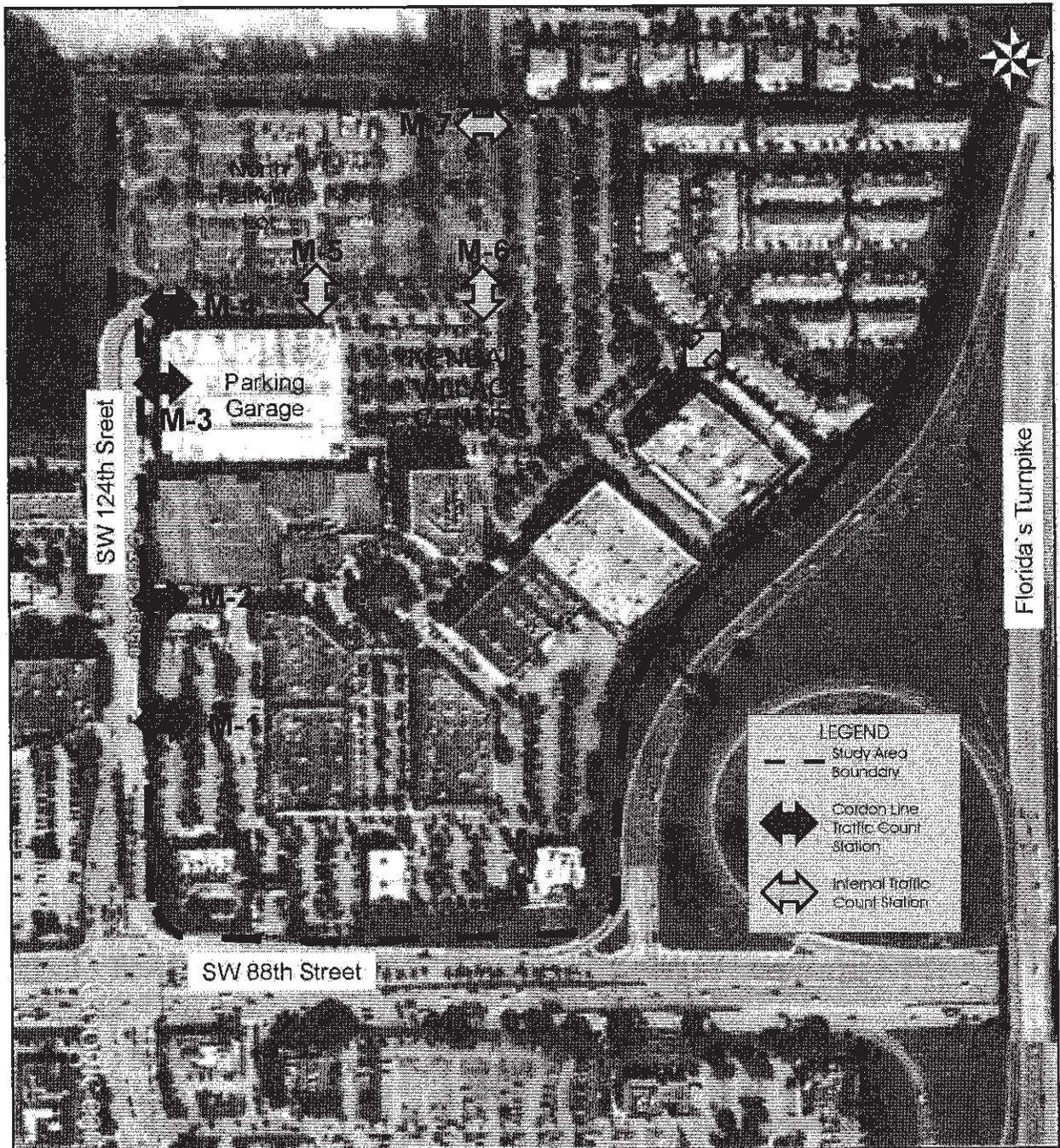
The center includes: Regal Cinemas (16 screen multiplex), LA Fitness, Homefield sports/comedy club, Bahamas Breeze restaurant, On the Border restaurant, the Moonlite Diner, Gap / Gap Kids, Old Navy, Chuck E. Cheese's, Justice, Lane Bryant, Pier 1 Imports, Ann Taylor Loft, Claire's, and Jared's Jewelers, among others. The site also includes regular and medical offices (the fully occupied Professional Arts Building), and a separate multi-floor office building currently housing the Miami-Kendall campus of Nova Southeastern University.

Kendall Village Town Villas, a gated access-controlled community of 87 townhomes, is located in the northeast quadrant of the development project site. Access to and from the residential area is exclusively through Kendall Village Center.

7.2 Traffic Counts

The traffic counts for the Kendall Village Center were conducted on April 7 through 9, 2015 by Miami-Dade County. The count machines were placed at the following locations

- M-1 South access driveway at SW 124th Avenue;
- M-2 Central access driveway at SW 124th Avenue (between the movie theater and Moonlite Diner);
- M-3 Parking garage access driveway at SW 124th Avenue;
- M-4 North access -- SW 124th Avenue;
- M-5 North Lot - West access driveway off SW 124th Avenue;
- M-6 North Lot – East access driveway off SW 124th Avenue;
- M-7 North Lot – North driveway connector; and
- M-8 Kendall Village Villas access driveway.



 KEITH and SCHNARS, P.A. FLORIDA'S <i>Big</i> LOCAL FIRM	Pedestrian Oriented Mixed-Use Development Study	Figure
	Kendall Village Center Traffic Count Locations	7-1

Figure 7-1 presents the traffic count locations at Kendall Village Center. The traffic count data sheets are provided in **Appendix G**.

The study site includes a large parking area in the northern sector. Most of this lot is leased by the Leon Medical Center and the Baptist Hospital for employee and shuttle bus parking only. Both of these medical facilities are located west of the study site. However, employees park in this lot and are then shuttled to and from their work off-site. The vehicle trips associated with this lot are not related to the overall Kendall Village Center. As such, the count program was designed to obtain the traffic data for this lot (Stations M-5, M-6 and M-7) in order to subtract the lot volumes from the total cordon line stations traffic data.

Table 7-1 presents the results of the daily traffic counts at Kendall Village Center. The average unadjusted three-day daily volume entering and exiting the study site is 16,726 vehicles. This latter volume does not include the volumes registered at the internal Station M-8 accessing the Kendall Village Town Villas. The average daily traffic at Station M-8 is 613 vehicles.

From the counts, the north parking lot accounts for approximately 1,634 daily vehicle trips. Thus, as shown in **Table 7-1**, the daily trips associated directly with Kendall Village Center are estimated to be 15,092 vehicles.

The average AM and PM three-day peak hour volumes recorded at the Kendall Village Center are shown in **Table 7-2**. The AM peak hour volume is 637 vehicles and the PM peak hour volume is 1,014 vehicles.

Table 7-3 presents the AM and PM peak hour volumes for the Kendall Village Town Villas. The AM peak hour volume is 62 vehicles and the PM peak hour volume is 50 vehicles.

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**Table 7-1
Kendall Village Center Daily Traffic Volumes**

Cordon Line Stations					
Cordon Line Traffic Count Station Locations		Tuesday	Wednes- day	Thursday	Average
		4/7/2015	4/8/2015	4/9/2015	3-Day ADT
M-1	South Access SW 124th Ave	4,201	4,388	4,767	4,452
M-2	Central Access SW 124th Ave	3,046	3,012	3,064	3,041
M-3	Garage Access SW 124th Ave	3,444	3,194	3,198	3,279
M-4	North Access SW 124th Ave	6,094	5,966	5,805	5,955
Total External Stations		16,785	16,560	16,834	16,726
Internal Stations - North Parking Lot					
Traffic Count Station Locations		Tuesday	Wednes- day	Thursday	Average
		4/7/2015	4/8/2015	4/9/2015	3-Day ADT
M-5	West Access North Lot	1,190	1,093	1,097	1,127
M-6	Central Access North Lot	407	313	362	361
M-7	Parking Lot Connector	154	131	156	147
Total Internal Stations		1,751	1,537	1,615	1,634
Total Kendall Village Center without the North Parking Lot Volumes		Tuesday	Wednes- day	Thursday	Average
		4/7/2015	4/8/2015	4/9/2015	3-Day ADT
		15,034	15,023	15,219	15,092
Internal Station - Kendall Village Villas					
Traffic Count Station Location		Tuesday	Wednes- day	Thursday	Average
		4/7/2015	4/8/2015	4/9/2015	3-Day ADT
M-8	Kendall Villas (Residential)	597	613	629	613
Total Kendall Village Villas		597	613	629	613

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**Table 7-2
Kendall Village Center Peak Hour Traffic Volumes**

Peak Hour		Site Volumes				
		Total	Inbound	Percent In	Outbound	Percent Out
AM	8:00 - 9:00 AM	637	471	73.9%	166	26.1%
PM	4:15 - 5:15 PM	1,014	608	60.0%	406	40.0%

**Table 7-3
Kendall Village Town Villas Peak Hour Traffic Volumes**

Peak Hour		Site Volumes				
		Total	Inbound	Percent In	Outbound	Percent Out
AM	8:00 - 9:00 AM	62	14	22.6%	48	77.4%
PM	4:30 - 5:30 PM	50	19	38.0%	31	62.0%

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8. MIAMI LAKES MAIN STREET TRAFFIC

8.1 Study Site Description

Miami Lakes Main Street, located in the center of the Town of Miami Lakes, is a planned mixed-use pedestrian-oriented town center with retail, restaurant, office, residential, and recreational/entertainment uses (see **Figure 4-7**).

The Main Street study site is located along the west side of NW 67th Avenue between Miami Lakeway North in the North and Miami Lakes Drive in the South. The study area consists of seven large blocks totaling approximately 65.67 acres in a half moon shape. The combined shopping, office, hotel, recreation, and residential areas have about 661,322 sq. ft. of non-residential building space. The study area also has a 205-room hotel (Don Shula's Hotel), five multi-family residential developments with 889 units, a multiplex movie theater, and a 2.4 acre passive park.

The study area is bounded on the east by NW 67th Avenue, on the northwest by Miami Lakeway north, and on the southwest by Miami Lakes Drive. Miami Lakes Main Street has a total of eleven vehicular access points: seven off NW 67th avenue and four off Miami Lakeway North (see **Figure 8-1**). The internal street system includes:

- Main Street between NW 67th Avenue and Miami Lakeway North;
- Bull Run Road;
- New Barn Road; and
- Meadow Walk between Bull Run Road and Miami Lakeway North.

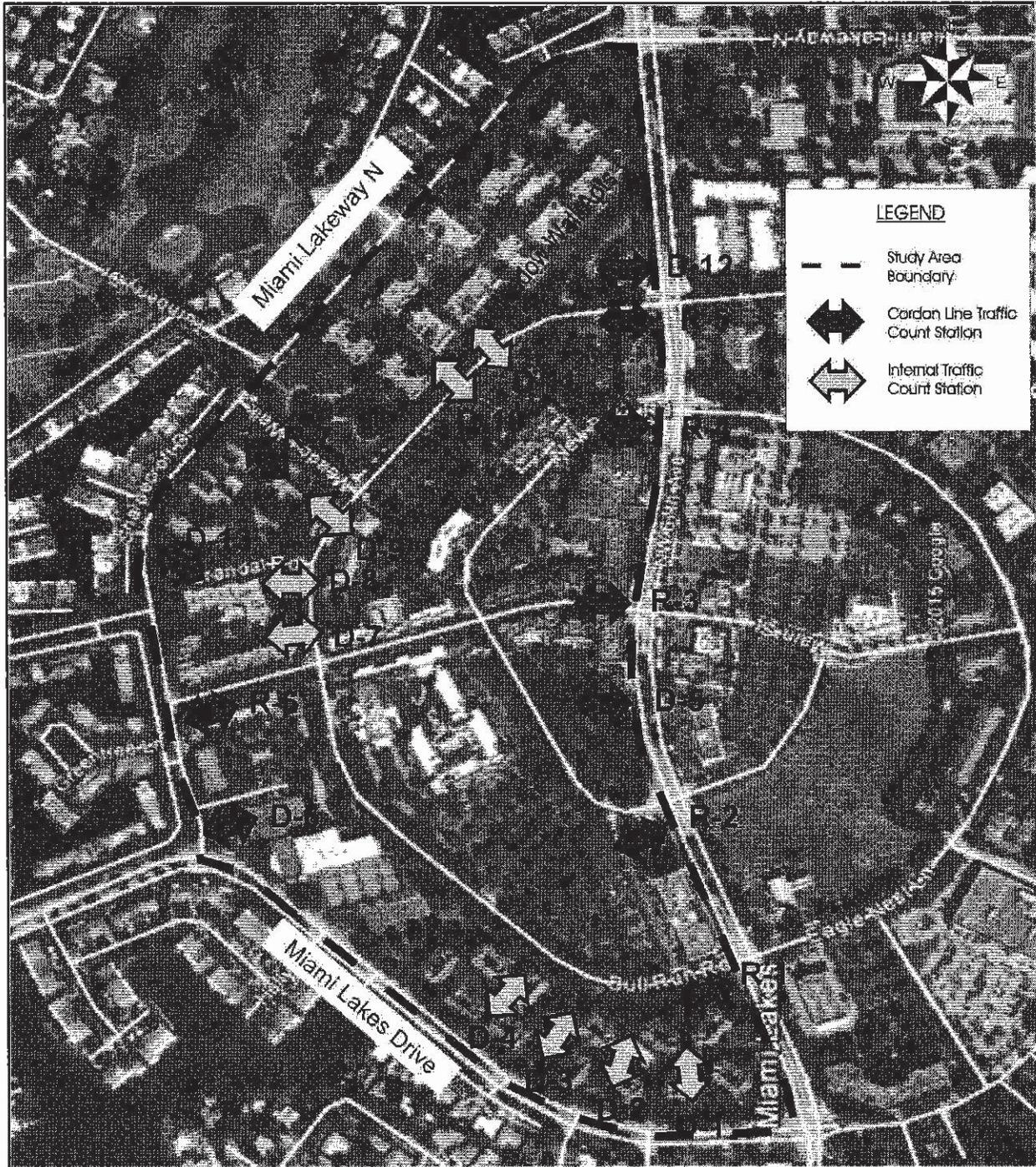
8.2 Traffic Counts

The traffic counts for the Miami Lakes Main Street study site were conducted in two tiers. The first tier consisted of machine counts at all of the cordon line access points of the study area (see **Figure 8-1**). The second tier consisted of the access driveways at the four apartment complexes within the study area. The traffic count data sheets are provided in **Appendix H**.

All of the counts at Miami Lakes Main Street were conducted on April 7 through 9, 2015 by Miami-Dade County. The machine counters were placed at the following locations:

Cordon Line Stations

- R-1 Bull Run Road at NW 67th Avenue – South;
- R-2 New Barn Road at NW 67th Avenue – South;
- D-5 Parking access south of Main Street;



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	Miami Lakes Main Street Site Traffic Count Locations	8-1

- R-3 Main Street at NW 67th Avenue (East);
- R-4 New Barn Road at NW 67th Avenue – North;
- R-5 Bull Run Road at NW 67th Avenue – North;
- D-12 Citi Bank access driveway at NW 67th Avenue;
- D-6 Fountain House 1 Apartments at Miami Lakeway North;
- R-6 Main Street at Miami Lakeway North (West);
- D-13 Bull Run Apartments access driveway at Miami Lakeway North; and
- R-7 Meadow Walk at Miami Lakeway North.

Internal Residential Developments

- New Barn Apartments (NBA) on Bull Run Road;
 - D-1 NBA East Access;
 - D-2 NBA Second Access;
 - D-3 NBA Third Access;
 - D-4 NBA West Access;
- Fountain House Apartments 1;
 - D-6 Driveway at Miami Lakeway North
- Fountain House Apartments 2
 - D-7 Driveway at Bull Run Road
- Bull Run Apartments (BRA);
 - D-8 BRA South Access on Bull Run Road;
 - D-9 BRA North Access on Bull Run Road;
 - D-13 BRA driveway at Miami Lakeway North;
- Meadow Walk Apartments on Bull Run Road;
 - D-10 West driveway; and
 - D-11 East driveway.

Table 8-1 presents the results of the cordon line daily traffic counts at Miami Lakes Main Street. The average three-day daily volume at the cordon line is 23,595 vehicles. **Table 8-2** presents the average daily traffic at the four residential apartment complexes. The average three-day daily volume of the residences is 7,058 vehicles.

The average three-day AM and PM peak hour volumes recorded at Miami Lakes Main Street are shown in **Table 8-3**. The AM peak hour volume is 1,294 vehicles and the PM peak hour volume is 1,827 vehicles.

Table 8-4 presents the AM and PM peak hour volumes for the four apartment complexes within the Main Street study area. The AM peak hour volume is 531 vehicles and the PM peak hour volume is 587 vehicles.

**Table 8-1
Miami Lakes Main Street Cordon Line Daily Traffic Volumes**

Traffic Count Station Location		Tuesday	Wednesday	Thursday	Average
		4/7/2015	4/8/2015	4/9/2015	3-Day ADT
R-1	Bull Run Road at NW 67th Avenue -- South	2,899	3,194	3,019	3,037
R-2	New Barn Road at NW 67th Avenue -- South	1,853	1,915	1,940	1,903
D-5	Parking access south of Main Street	756	711	807	758
R-3	Main Street at NW 67th Avenue (East)	1,419	1,475	1,577	1,490
R-4	New Barn Road at NW 67th Avenue -- North	2,265	2,302	2,366	2,311
R-5	Bull Run Road at NW 67th Avenue -- North	4,314	4,333	4,143	4,263
D-12	Citi Bank Access Drive at NW 67th Avenue	411	397	345	384
D-6	Fountain House 1 Apts at Miami Lakes Way	458	408	453	440
R-6	Main Street at Miami Lakes Way (West)	5,447	5,740	5,513	5,567
D-13	Access to Bull Run Apts at Miami Lakes Way	144	165	179	163
R-7	Meadow Walk at Miami Lakes Way	3,192	3,341	3,303	3,279
TOTAL EXTERNAL STATIONS		23,158	23,981	23,645	23,595

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**Table 8-2
Miami Lakes Main Street Residential Areas Daily Traffic Volumes**

Traffic Count Station Locations		Tuesday	Wednesday	Thursday	Average
		4/7/2015	4/8/2015	4/9/2015	3-Day ADT
New Barn Apartments (NBA)					
D-1	NBA East Access	628	656	679	654
D-2	NBA Second Access	704	797	770	757
D-3	NBA Third Access	88	111	112	104
D-4	NBA West Access	403	418	455	425
	Totals	1,823	1,982	2,016	1,940
Fountain House Apartments 2		4/7/2015	4/8/2015	4/9/2015	Average
D-6	Fountain House 2 Apts at Miami Lakes Way	458	408	453	440
Fountain House Apartments 1		4/7/2015	4/8/2015	4/9/2015	Average
D-7	Fountain House 1 Apts at Bull Run Road	1,184	1,085	1,195	1,155
Bull Run Apartments (BRA)		4/7/2015	4/8/2015	4/9/2015	Average
D-8	Bull Run South Access	333	335	345	338
D-9	Bull Run North Access	314	294	328	312
D-13	Access to Bull Run Apts at Miami Lakes Way	144	165	179	163
	Totals	791	794	852	812
Meadow Walk Apartments		4/7/2015	4/8/2015	4/9/2015	Average
D-10	Meadow Walk West Access	1,047	1,122	1,151	1,107
D-11	Meadow Walk East Access	1,586	1,665	1,581	1,604
	Totals	2,613	2,787	2,732	2,711
TOTAL ALL RESIDENCES		4/7/2015	4/8/2015	4/9/2015	Average
		6,869	7,056	7,248	7,058

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**Table 8-3
Miami Lakes Main Street Peak Hour Traffic Volumes**

Peak Hour		Site Volumes				
		Total	Inbound	Percent In	Outbound	Percent Out
AM	8:00 - 9:00 AM	1,294	681	52.6%	613	47.4%
PM	5:00 - 6:00 PM	1,827	896	49.0%	931	51.0%

**Table 8-4
Miami Lakes Main Street Residences Peak Hour Traffic Volumes**

Peak Hour		Site Volumes				
		Total	Inbound	Percent In	Outbound	Percent Out
AM	8:00 - 9:00 AM	531	185	34.8%	346	65.2%
PM	5:00 - 6:00 PM	587	351	59.8%	236	40.2%

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9. SHOPS AT MERRICK PARK TRAFFIC

9.1 Study Site Description

The Shops at Merrick Park is a planned upscale pedestrian oriented mixed-use shopping, office, and residential development located at 358 San Lorenzo Avenue in the City of Coral Gables (see **Figure 4-10**). It is generally bordered by Ponce De Leon Boulevard on the east, by Greco Avenue on the south, by SW 42nd Avenue (Le Jeune Road – SR 953) on the west, and by Altara Avenue on the north. San Lorenzo Avenue forms the main east-west internal axis; whereas, Salzedo Street forms the north-south axis of the site.

The Shops at Merrick Park consists of over 850,000 square feet retail stores, offices, medical services, restaurants (some with outdoor seating), and the anchor stores Neiman Marcus and Nordstrom. The six-story northeast and northwest buildings on the main site consist of retail/business spaces on the ground floor, two levels of garage, and three levels of apartments (Residence at Merrick Park: total 120 apartments).

The development includes the Shops at Merrick Park Office Building located east of the main development, on the east side of Ponce de Leon Boulevard between San Lorenzo Avenue on the north and Ruiz Avenue on the south. The five-level office building has approximately 126,019 square feet of leasable space with retail on the ground level and mixed office uses (including medical services) on the upper levels. The building is connected directly to the main development site via an enclosed pedestrian bridge.

Visitors, residents and employees of Shops at Merrick Park typically park at one of the four garages on site. The Shops at Merrick Park has a total of seven vehicular access points at the garages: one off SW 42nd Avenue, one off Ponce de Leon Boulevard, one off Laguna Street, one off Aurora Street, one off San Lorenzo Avenue (East building), and two off Ruiz Avenue (East building). Approximately 56 metered curb parking spaces (operated by the City of Coral Gables) are provided along the bordering streets: Aurora Street, Laguna Street, Altara Avenue, and San Lorenzo Avenue.

9.2 Traffic Counts

9.2.1 Local Street Traffic

Local traffic data was collected using machine counters at the main street access points to the Shops of Merrick Park interior, namely:

- L-1 San Lorenzo Street east of SW 42nd Avenue;
- L-2 San Lorenzo Street west of Ponce de Leon Boulevard; and
- L-3 Salzedo Street south of Altara Avenue.

Figure 9-1 presents the locations of the local street counts (identified as “L” stations). These counts were conducted by Miami-Dade County on October 27, 28 and 29, 2015. The traffic count data summary sheets and tables are provided in **Appendix I**. It must be noted that these stations do not reflect the actual number of vehicles entering or exiting the Shops at Merrick Park site. The traffic includes (1) local circulation traffic either going towards or coming from the garages, (2) local non-Merrick park traffic (e.g. travelling between Ponce de Leon Boulevard to/from SW 42nd Avenue), and (3) valet parking services (Note: general valet parking service is offered at a designated stand on Salzedo Street, as well the at the Neiman Marcus entry on San Lorenzo Street). The traffic information from the “L” stations was used to provide a basis for expanding the Shops at Merrick Park trips recorded at the multiple garages, the latter collected for an 18-hour period (see **Section 9.2.2**)

Table 9-1 presents the results of the cordon line daily traffic counts at Miami Lakes Main Street. The combined average three-day daily volume at the local traffic locations is 5,701 vehicles.

Table 9-1 Shops at Merrick Park Local Street Daily Traffic

Traffic Count Station Location		Tuesday	Wednesday	Thursday	Average
		10/27/2015	10/28/2015	10/29/2015	3-Day ADT
L-1	Salzedo Street south of Altara Avenue	967	880	941	929
L-2	San Lorenzo Avenue east of SW 42nd Ave.	2,895	2,689	2,876	2,820
L-3	San Lorenzo Avenue west of Ponce de Leon Boulevard	1,898	1,936	2,021	1,952
Total Local Stations		5,760	5,505	5,838	5,701

9.2.2 Site Garage Access Counts

Traffic data for the four garage facilities were obtained through the Shops at Merrick Park’s management: General Growth Properties, Inc. and SP+ (parking management company for Shops at Merrick Park). Detailed access data was recorded for October 27, 28 and 29, 2015 at each of the garage access points as shown in **Figure 9-1** (identified as “G” stations). The data, as summarized in **Table 9-1**, consisted of hourly inbound and outbound traffic at all of the garage driveways between 5 AM and 11 PM during the three-day count period and located at the following locations:

- G-1: Combined Main Garage access driveways at SW 42nd Avenue (west) and Ponce de Leon Boulevard (east);
- G-2: Combined Office Building Garage driveways at San Lorenzo Avenue and Ruiz Avenue;
- G-3: Aurora Garage driveway at Aurora Street; and



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	Shops At Merrick Park Site Traffic Count Locations	9-1

- G-4: Laguna Garage driveway at Laguna Street.

The garage access counts included all transient and monthly card holders. The Aurora and Laguna garages provide reserved parking spaces for the Residences at Merrick Park as well as Shops at Merrick Park visitors. The East Office Building garage includes visitors to the retail sectors of Shops at Merrick Park. The garage data is provided in **Appendix I**.

The Shops at Merrick Park site is surrounded by a number of on-street parking spaces (approximately 67 spaces) along San Lorenzo and Altara Avenues and Laguna and Aurora Streets. The spaces are City controlled metered spaces used by all visitors to stores, offices, residences and other services in the general vicinity of Shops at Merrick Park. In order to account for any Shops at Merrick Park related parking at these off-street spaces, the garage access traffic was adjusted by an additional 5%.

Table 9-2 presents the adjusted average daily traffic at the four garages directly serving Shops at Merrick Park. As shown in **Table 9-2**, the average site traffic volume between 5 AM and 11 PM is 12,560 vehicles.

Table 9-2 Shops at Merrick Park Garage Site Access Summary

Hour	G-1: Main Garage (1)		G-2: Office Building Garage (2)		G-3: Aurora Garage (3)		G-4: Laguna Garage (3)		All Garages		TOTAL IN+OUT	Estimated 5% Curb Parking	ADJUSTED TOTAL IN+OUT
	In	Out	In	Out	In	Out	In	Out	In	Out			
5am-6am	72	19	37	2	3	3	12	8	124	32	156	8	164
6am-7am	132	32	220	1	11	9	21	26	384	68	452	23	475
7am-8am	215	59	401	9	13	12	35	22	664	102	766	38	804
8am-9am	318	79	249	25	28	20	44	21	639	145	784	39	823
9am-10am	283	145	100	37	19	19	27	26	429	227	656	33	689
10am-11am	335	224	56	60	26	18	28	28	445	330	775	39	814
11am-12pm	431	222	62	119	42	16	34	25	569	382	951	48	999
12pm-1pm	316	294	115	75	36	39	23	31	490	439	929	46	975
1pm-2pm	248	306	65	63	23	39	24	25	360	433	793	40	833
2pm-3pm	241	298	33	60	27	23	21	29	322	410	732	37	769
3pm-4pm	258	298	28	135	43	28	39	30	368	491	859	43	902
4pm-5pm	265	306	12	296	37	28	50	30	364	660	1,024	51	1,075
5pm-6pm	266	346	5	284	47	32	49	57	367	719	1,086	54	1,140
6pm-7pm	174	362	4	144	47	37	34	46	259	579	838	42	880
7pm-8pm	67	262	3	55	31	35	21	36	122	388	510	26	536
8pm-9pm	20	266	2	22	12	37	14	22	48	346	394	20	414
9pm-10pm	7	104	0	8	8	22	9	16	24	150	174	9	183
10pm-11pm	4	42	1	2	6	11	3	12	14	67	81	4	85
Totals	3,652	3,653	1,393	1,397	459	428	488	490	5,992	5,968	11,960	600	12,560

Notes:

General -- Garage access data provided by SP+ (Garage Management for Shops at Merrick Park) - includes transient and monthly card holders.

(1) Garage access driveways into main parking garage off Ponce de Leon Boulevard - east- and SW 42nd Avenue - west.

(2) Garage access driveways off San Lorenzo Avenue and Ruiz Avenue

(3) Garage access driveways off Aurora Street. Includes residential parking.

(4) Garage access driveways off Laguna Street. Includes residential parking.

The average daily Shops at Merrick Park site traffic was estimated by expanding the garage volume (12,560 vehicles) by a factor of 1.043 which represents the local street daily factor from 18 hours to 24 hours. Thus, the Shops at Merrick Park average weekday daily traffic is estimated at 13,100 vehicles.

Table 9-3 summarizes the average three-day daily and AM and PM peak hour volumes recorded at Shops at Merrick Park. The AM peak hour volume is 823 vehicles and the PM peak hour volume is 1,140 vehicles.

**Table 9-3
Shops at Merrick Park– Summary of Site Traffic Volumes**

Time Period		Site Volumes				
		Total	Inbound	Percent In	Outbound	Percent Out
Daily		13,100	6,563	50.1%	6,537	49.9%
AM Peak Hour	8:00 - 9:00 AM	823	671	81.5%	152	18.5%
PM Peak Hour	5:00 - 6:00 PM	1,140	385	33.8%	755	66.2%

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10. HAMMOCKS TOWN CENTER TRIP GENERATION

10.1 Land Use Inventory

The primary commercial component of the Hammocks Town Center is currently managed by Equity One, Inc. (1600 NE Miami Gardens Drive, North Miami Beach, FL 33179). Equity One, Inc. representative provided the current land use information shown in **Table 10-1**. Additional building and/or tenant information regarding the properties not under Equity One's management (e.g., the out parcels, the Kendall Ice Arena, and the storage facility) was obtained from the Miami-Dade County Property Appraiser's website. The 240 unit Coral Club Gardens Villas are townhouse condominiums organized under a homeowners' association.

10.2 Trip Generation

The trip generation analysis was based on ITE Manual 9th Edition. The procedure in "*Table 3.1 – Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations*" of the trip generation manual (9th Edition, Volume 1) was used to decide whether to use the average rates or equations to calculate the trips. The AM and PM peak hour trip generation analysis correspond to the peak hour of the adjacent street, one hour between 7 and 9 AM and one hour between 4 and 6 PM, respectively.

Trip generation analysis was done using two procedures. The first procedure uses the detailed land uses as they exist in the development. The second procedure assumes that the land uses are not fully known to emulate a development application to the County. In the second procedure, it is assumed that land use code 820 for a shopping center is mainly used (aggregated procedure).

Tables 10-2, 10-3 and 10-4 present, respectively, the estimated daily, AM peak hour, and PM peak hour volumes for Hammocks Town Center based on the detailed land use procedure. **Tables 10-5, 10-6 and 10-7** present, respectively, the estimated daily, AM peak hour, and PM peak hour volumes for Hammocks Town Center based on the aggregated land use procedure.

Table 10-8 presents a summary of the Hammocks Town Center daily and AM and PM peak hour trips. Also shown are the internalization rates for each period.

**Table 10-1
Hammocks Town Center Land Use Inventory**

EQUITY ONE Tenant [1]	Area (Sq. Ft.)	EQUITY ONE Tenant [1]	Area (Sq. Ft.)
King's Liquor	950	Omega Learning Center	1,600
Aivacell, Inc	950	Amici's Trattoria Italian	3,204
Hammocks Veterinary Hospital	1,760	Tutti Frutti	1,250
Miwi Cuban & American Sandwich	880	Aromas del Peru	1,860
Spin Cycle Luandromat)	1,760	Magic Wok	938
Hammocks AutoTag(RumbosExpress)	1,880	Island Restaurant	1,808
Little Caesar's	1,282	Dr. Phone Fix	1,088
Publix Supermarkets, Inc	39,795	Anillo Dental Center	3,200
CVS	10,356	Town Custom Cleaners	2,285
Rainbow Apparel of America	8,528	Hammocks Town Center Preschool	9,554
Aromas del Peru	1,803	Reyna Chiropractic Center	1,440
H&R Block	1,915	Impact Dance Studio	1,081
The Hammocks Medical Offices	2,015	Supercuts, Inc.	1,600
Nails Express	1,050	Q Hubo Café	800
Palmi Unisex Salon	1,050	Liria Gifts and Jewelry	800
YouFit Health Club	2,100	Metro -Dade Public Library	40,000
Porky's Gym	14,025	Vacant	700
Subway	1,600		
		Total EQUITY ONE	166,907
NON-EQUITY ONE [2]	Area (Sq. Ft.)	OUT PARCELS [2]	Area (Sq. Ft.)
Extra Space Storage	81,560	Bank of America	4,486
Kendall Ice Arena- 86,074 total	71,074	McDonald's	4,915
Casa Vieja Restaurant	7,500	Chase Bank	4,395
Other Retail	7,500	Service Station	5,814
		Taco Bell	2,106
Total Non-EQUITY ONE	167,634	Total Outparcels	21,716
TOTAL HAMMOCKS TOWN CENTER = 356,257			

Sources:

[1] Equity One, Inc., April 2015

[2] Miami-Dade Property Appraiser, 2015

**Table 10-2
Hammocks Town Center Daily Trip Generation – Detailed Land Uses Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Coral Club Gardens Villa	DU	240	230	Daily	$\ln(T) = 0.87\ln(X) + 2.46$	1,378	50.0%	689	50.0%	689
Retail [2]	GLA (Sq. Ft.)	28,482	820	Daily	$\ln(T) = 0.65\ln(X) + 5.83$	3,002	50.0%	1,501	50.0%	1,501
Supermarket	GLA (Sq. Ft.)	39,795	850	Daily	$T = 102.24(X)$	4,069	50.0%	2,035	50.0%	2,034
Pharmacy w/o Drive Through	GLA (Sq. Ft.)	10,356	880	Daily	$T = 90.06(X)$	933	50.0%	467	50.0%	466
General Office	GLA (Sq. Ft.)	3,795	710	Daily	$\ln(T) = 0.76\ln(X) + 3.68$	110	50.0%	55	50.0%	55
Medical Office	GLA (Sq. Ft.)	10,175	720	Daily	$T = 40.89(X) - 214.97$	201	50.0%	101	50.0%	100
Restaurant	GLA (Sq. Ft.)	22,925	932	Daily	$T = 127.15(X)$	2,915	50.0%	1,458	50.0%	1,457
Banks	GLA (Sq. Ft.)	8,881	912	Daily	$T = 148.15(X)$	1,316	50.0%	658	50.0%	658
Health Club/Spa	GLA (Sq. Ft.)	16,125	492	Daily	$T = 32.93(X)$	531	50.0%	266	50.0%	265
Gas Station	Pumps	12	945	Daily	$T = 162.78 (X)$	1,953	50.0%	977	50.0%	976
Fast Food Rest. w/Drive	GLA (Sq. Ft.)	7,021	934	Daily	$T = 496.12 (X)$	3,483	50.0%	1,742	50.0%	1,741
Ice Rink [1]	GLA (Sq. Ft.)	71,074	465	Daily	$T = 23.60 (X) [1]$	1,677	50.0%	839	50.0%	838
Pre-school	Students	207	585	Daily	$T = 4.79(X) - 33.46$	958	50.0%	479	50.0%	479
Storage	GLA (Sq. Ft.)	81,560	151	Daily	$T = 2.50(X)$	204	50.0%	102	50.0%	102
Public Library	GLA (Sq. Ft.)	40,000	590	Daily	$\ln(T) = 0.69\ln(X) + 5.05$	1,989	50.0%	995	50.0%	994
TOTAL DAILY ITE TRIPS						24,719		12,384		12,355
<i>ITE TRIP GENERATION, 9th EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	28,170	Traffic data obtained March 31, April 1-2, 2015			
					Delta	-3,451				
					Internalization	-14.0%				

Notes:

[1] No Daily ITE rate for this use. Assumed Daily Trip Rate is 10 times the PM rate of 2.36.

[2] Excludes 700 sq. ft. vacant space.

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**Table 10-3
Hammocks Town Center AM Peak Hour Trip Generation – Detailed Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	Formula (ITE 9th Ed.)	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Coral Club Gardens Villa	DU	240	230	AM	$\ln(T) = 0.80 \ln(X) + 0.26$	104	17.0%	18	83.0%	86
Retail [2]	GLA (Sq. Ft.)	28,482	820	AM	$\ln(T) = 0.61 \ln(X) + 2.24$	73	62.0%	45	38.0%	28
Supermarket	GLA (Sq. Ft.)	39,795	850	AM	$T = 3.40(X)$	135	62.0%	84	38.0%	51
Pharmacy w/o Drive Through	GLA (Sq. Ft.)	10,356	880	AM	$T = 10.22(X) - 75.80$	30	65.0%	20	35.0%	10
General Office	GLA (Sq. Ft.)	3,795	710	AM	$\ln(T) = 0.80 \ln(X) + 1.57$	14	88.0%	12	12.0%	2
Medical Office	GLA (Sq. Ft.)	10,175	720	AM	$T = 2.39(X)$	24	79.0%	19	21.0%	5
Restaurant	GLA (Sq. Ft.)	22,925	932	AM	$T = 10.81(X)$	248	55.0%	136	45.0%	112
Banks	GLA (Sq. Ft.)	8,881	912	AM	$T = 12.08(X)$	107	57.0%	61	43.0%	46
Health Club/Spa	GLA (Sq. Ft.)	16,125	492	AM	$T = 1.41(X)$	23	50.0%	12	50.0%	11
Gas Station	Pumps	12	945	AM	$T = 10.16 (X)$	122	50.0%	61	50.0%	61
Fast Food Rest. w/Drive	GLA (Sq. Ft.)	7,021	934	AM	$T = 45.42 (X)$	322	51.0%	164	49.0%	158
Ice Rink [1]	GLA (Sq. Ft.)	71,074	465	AM	$T = 1.18 (X) [1]$	84	60.0%	50	40.0%	34
Pre-school	Students	207	585	AM	$T = 0.79(X) + 4.67$	156	53.0%	83	47.0%	73
Storage	GLA (Sq. Ft.)	81,560	151	AM	$T = 0.14(X)$	11	55.0%	6	45.0%	5
Public Library	GLA (Sq. Ft.)	40,000	590	AM	$T = 1.32(X) - 5.84$	47	71.0%	33	29.0%	14
TOTAL AM PEAK HOUR ITE TRIPS						1,500		804		696
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	1,440	Traffic data obtained March 31, April 1-2, 2015			
					Delta	60				
					Internalization	4.0%				

Notes:

[1] No AM peak hour ITE rate for this use. Assumed 5% of daily trip rate.

[2] Excludes 700 sq. ft. vacant space.

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**Table 10-4
Hammocks Town Center PM Peak Hour Trip Generation – Detailed Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	Formula (ITE 9th Ed.)	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Coral Club Gardens Villa	DU	240	230	PM	$\ln(T) = 0.82\ln(X) + 0.32$	123	67.0%	82	33.0%	41
Retail [1]	GLA (Sq. Ft.)	26,482	820	PM	$\ln(T) = 0.67\ln(X) + 3.31$	259	48.0%	124	52.0%	135
Supermarket	GLA (Sq. Ft.)	39,795	850	PM	$\ln(T) = 0.74\ln(X) + 3.25$	394	51.0%	201	49.0%	193
Pharmacy w/o Drive Through	GLA (Sq. Ft.)	10,358	880	PM	$T = 8.40(X)$	87	49.0%	43	51.0%	44
General Office	GLA (Sq. Ft.)	3,795	710	PM	$T = 1.12(X) + 78.45$	83	17.0%	14	83.0%	69
Medical Office	GLA (Sq. Ft.)	10,175	720	PM	$T = 0.90(X) + 1.53$	11	28.0%	3	72.0%	8
Restaurant	GLA (Sq. Ft.)	22,925	932	PM	$T = 9.85(X)$	226	60.0%	136	40.0%	90
Banks	GLA (Sq. Ft.)	8,881	912	PM	$T = 24.3(X)$	216	50.0%	108	50.0%	108
Health Club/Spa	GLA (Sq. Ft.)	16,125	492	PM	$\ln(T) = 0.95\ln(X) + 1.43$	59	57.0%	34	43.0%	25
Gas Station	Pumps	12	945	PM	$T = 13.51(X)$	162	50.0%	81	50.0%	81
Fast Food Rest. w/Drive	GLA (Sq. Ft.)	7,021	934	PM	$T = 32.65(X)$	229	52.0%	119	48.0%	110
Ice Rink	GLA (Sq. Ft.)	71,074	465	PM	$T = 2.36(X)$	168	45.0%	76	55.0%	92
Pre-school	Students	207	565	PM	$\ln(T) = 0.88\ln(X) + 0.27$	143	47.0%	67	53.0%	76
Storage	GLA (Sq. Ft.)	81,560	151	PM	$T = 0.26(X)$	21	50.0%	11	50.0%	10
Public Library	GLA (Sq. Ft.)	40,000	590	PM	$T = 7.30(X)$	292	48.0%	140	52.0%	152
TOTAL PM PEAK HOUR ITE TRIPS						2,473		1,239		1,234
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	2,035	Traffic data obtained March 31, April 1-2, 2015			
					Delta	438				
					Internalization	17.7%				

Notes:

[1] Excludes 700 sq. ft. vacant space.

**Table 10-5
Hammocks Town Center Daily Trip Generation – Aggregated Land Uses Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Coral Club Gardens Villa	DU	240	230	Daily	$\ln(T) = 0.87\ln(X) + 2.46$	1,378	50.0%	689	50.0%	689
Retail [1]	GLA (Sq. Ft.)	131,653	820	Daily	$\ln(T) = 0.65\ln(X) + 5.83$	8,121	50.0%	4,061	50.0%	4,060
Banks [2]	GLA (Sq. Ft.)	8,881	912	Daily	$T = 148.15(X)$	1,316	50.0%	658	50.0%	658
Gas Station [2]	Pumps	12	945	Daily	$T = 162.78(X)$	1,953	50.0%	977	50.0%	976
Fast Food Rest. w/Drive [2]	GLA (Sq. Ft.)	7,021	934	Daily	$T = 496.12(X)$	3,483	50.0%	1,742	50.0%	1,741
Ice Rink [3]	GLA (Sq. Ft.)	71,074	465	Daily	$T = 23.60(X)$ [1]	1,677	50.0%	839	50.0%	838
Pre-school	Students	207	565	Daily	$T = 4.79(X) - 33.46$	958	50.0%	479	50.0%	479
Storage	GLA (Sq. Ft.)	81,560	151	Daily	$T = 2.50(X)$	204	50.0%	102	50.0%	102
Public Library	GLA (Sq. Ft.)	40,000	590	Daily	$\ln(T) = 0.69\ln(X) + 5.05$	1,989	50.0%	995	50.0%	994
TOTAL DAILY ITE TRIPS						21,079		10,542		10,537
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	28,170	Traffic data obtained March 31, April 1-2, 2015			
					Delta	-7,091				
					Internalization	-33.6%				

Notes:

[1] The aggregate retail area includes all office and restaurant uses. Excludes 700 sq. ft. vacant space.

[2] Out parcel units separately developed.

[3] No Daily ITE rate for this use. Assumed Daily Trip Rate is 10 times the PM rate of 2.36.

**Table 10-6
Hammocks Town Center AM Peak Hour Trip Generation – Aggregated Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	Formula (ITE 9th Ed.)	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Coral Club Gardens Villa	DU	240	230	AM	$\ln(T)=0.80\ln(X)+0.26$	104	17.0%	18	83.0%	86
Retail [1]	GLA (Sq. Ft.)	131,653	820	AM	$\ln(T)=0.61\ln(X)+2.24$	185	62.0%	115	38.0%	70
Banks [2]	GLA (Sq. Ft.)	8,881	912	AM	$T = 12.08(X)$	107	57.0%	61	43.0%	46
Gas Station [2]	Pumps	12	945	AM	$T = 10.16 (X)$	122	50.0%	61	50.0%	61
Fast Food Rest. w/Drive [2]	GLA (Sq. Ft.)	7,021	934	AM	$T = 45.42 (X)$	322	51.0%	164	49.0%	158
Ice Rink [3]	GLA (Sq. Ft.)	71,074	465	AM	$T = 1.18 (X) [1]$	84	60.0%	50	40.0%	34
Pre-school	Students	207	565	AM	$T = 0.73(X) + 4.67$	156	53.0%	83	47.0%	73
Storage	GLA (Sq. Ft.)	81,560	151	AM	$T = 0.14(X)$	11	55.0%	6	45.0%	5
Public Library	GLA (Sq. Ft.)	40,000	590	AM	$T = 1.32(X) - 5.84$	47	71.0%	33	29.0%	14
TOTAL AM PEAK HOUR ITE TRIPS						1,138		591		547
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	1,440	Traffic data obtained March 31, April 1-2, 2015			
					Delta	-302				
					Internalization	-26.5%				

Notes:

[1] The aggregate retail area includes all office and restaurant uses. Excludes 700 sq. ft. vacant space.

[2] Out parcel units separately developed.

[3] No AM peak hour ITE rate for this use. Assumed 5% of daily trip rate.

**Table 10-7
Hammocks Town Center PM Peak Hour Trip Generation – Aggregated Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	Formula (ITE 9th Ed.)	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Coral Club Gardens Villa	DU	240	230	PM	$\ln(T)=0.82\ln(X)+0.32$	123	67.0%	82	33.0%	41
Retail [1]	GLA (Sq. Ft.)	131,653	820	PM	$\ln(T)=0.67\ln(X)+3.31$	721	48.0%	346	52.0%	375
Banks [2]	GLA (Sq. Ft.)	8,881	912	PM	$T = 24.3(X)$	216	50.0%	108	50.0%	108
Gas Station [2]	Pumps	12	945	PM	$T = 13.51 (X)$	162	50.0%	81	50.0%	81
Fast Food Rest. w/Drive [2]	GLA (Sq. Ft.)	7,021	934	PM	$T = 32.65(X)$	229	52.0%	119	48.0%	110
Ice Rink	GLA (Sq. Ft.)	71,074	465	PM	$T = 2.36 (X)$	168	45.0%	76	55.0%	92
Pre-school	Students	207	565	PM	$\ln(T)=0.88\ln(X)+0.27$	143	47.0%	67	53.0%	76
Storage	GLA (Sq. Ft.)	81,560	151	PM	$T = 0.26(X)$	21	50.0%	11	50.0%	10
Public Library	GLA (Sq. Ft.)	40,000	590	PM	$T = 7.30(X)$	292	48.0%	140	52.0%	152
TOTAL PM PEAK HOUR ITE TRIPS						2,075		1,030		1,045
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	2,035	Traffic data obtained March 31, April 1-2, 2015			
					Delta	40				
					Internalization	1.9%				

Notes:

[1] The aggregate retail area includes all office and restaurant uses. Excludes 700 sq. ft. vacant space.

[2] Out parcel units separately developed.

**Table 10-8
Summary of Hammocks Town Center Daily and Peak Hour Trips and Internalization**

Period	Actual Trips	ITE Trips	Percent Internalization
Detailed Land Use Procedure			
Daily	28,170	24,719	-14.0%
AM Peak Hour	1,440	1,500	4.0%
PM Peak Hour	2,035	2,473	17.7%
Aggregate Land Use Procedure			
Daily	28,170	21,079	-33.6%
AM Peak Hour	1,440	1,138	-26.5%
PM Peak Hour	2,035	2,075	1.9%

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11. KENDALL VILLAGE CENTER TRIP GENERATION

11.1 Land Use Inventory

The Kendall Village Center was developed by and is currently managed by Berkowitz Development Group (2665 South Bayshore Dr., suite 1200, Miami). Berkowitz representatives provided the current land use information shown in **Table 11-1**.

11.2 Trip Generation

The trip generation analysis was based on ITE Manual 9th Edition. The procedure in “*Table 3.1 – Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations*” of the trip generation manual (9th Edition, Volume 1) was used to decide whether to use the average rates or equations to calculate the trips. . The AM and PM peak hour trip generation analysis correspond to the peak hour of the adjacent street, one hour between 7 and 9 AM and one hour between 4 and 6 PM, respectively.

Trip generation analysis was done using two procedures. The first procedure uses the detailed land uses as they exist in the development. The second procedure assumes that the land uses are not fully known to emulate a development application to the County. In the second procedure, it is assumed that land use code 820 for a shopping center is mainly used (aggregated procedure).

Tables 11-2, 11-3 and 11-4 present, respectively, the estimated daily, AM peak hour, and PM peak hour volumes for Kendall Village Center based on the detailed land use procedure. **Tables 11-5, 11-6 and 11-7** present, respectively, the estimated daily, AM peak hour, and PM peak hour volumes for Kendall Village Center based on the aggregated land use procedure.

For the daily trip calculations, the following was assumed for specific land uses:

- Nova Southeastern University: Due to the nature of the campus conditions (leased office building space without typical campus amenities and no on-site residences); the Junior/Community College Land Use Code 540 was applied. The college is primarily class room oriented with nursing and med /tech students travelling between the main office building and the Professional Arts Building. Nova Southeastern University Miami Campus administration indicated that approximately 400 students visit the campus daily and others use the on-line programs offered through this campus;
- Homefield Comedy Club: No rates for daily trips are provided by ITE. The daily trip generation was assumed the same as the High turn-over sit-down restaurant (Land Use Code 932) based on engineering judgement. The comedy club weekday hours are from 5:00 pm to 3:00 am (5:00 am on Fridays). Comedy shows are scheduled on Fridays and Saturdays between 8:00 pm and 10:00 pm; and

**Table 11-1
Kendall Village Center Land Use Inventory**

Land Uses	Unit	Land Use Type(ITE)	Number	Totals By Building or Use
Kendall Village Town Villas	Dwelling Units	Residential	87	87
Professional Arts Center	Sq. Ft.			74,552
Medical Offices	Sq. Ft.	Medical Off	39,881	
Non-Medical Offices	Sq. Ft.	Office	12,778	
NOVA Uses	Sq. Ft.	Institutional	21,893	
VACANT	Sq. Ft.	N/A	0	
LA Fitness	Sq. Ft.	Recreational		45,000
Office Tower	Sq. Ft.			69,885
Nova SE University	Sq. Ft.	Institutional	69,885	
Main Retail Area				
Northeast Building				27,231
Home Field Comedy Club	Sq. Ft.	Recreational	11,642	
Pier 1 Imports	Sq. Ft.	Retail	9,600	
Justins	Sq. Ft.	Retail	5,989	
Southeasxt Building				30,890
Chuck E Cheese's	Sq. Ft.	Restaurant	16,159	
Claire's	Sq. Ft.	Retail	1,059	
GAP	Sq. Ft.	Retail	8,747	
Vitamin Shoppe	Sq. Ft.	Retail	3,355	
VACANT	Sq. Ft.		1,570	
Northwest Building				21,156
Lane Bryant	Sq. Ft.	Retail	5,481	
Justice	Sq. Ft.	Retail	4,649	
Famous Footware	Sq. Ft.	Retail	8,077	
Venetian Nail Spa	Sq. Ft.	Retail	2,949	
Southwest Building				26,325
Ann Taylor LOFT	Sq. Ft.	Retail	5,319	
UBreakfix	Sq. Ft.	Retail	998	
Old Navy	Sq. Ft.	Retail	20,008	
Out Parcels				
Jared Jewelry	Sq. Ft.	Retail		5,800
Bahama Breeze	Sq. Ft.	Restaurant		13,000
On the Border	Sq. Ft.	Restaurant		8,500
Moonlite Diner	Sq. Ft.	Restaurant		4,500
Regal Multiplex Movie Theater	Sq. Ft.	Recreational	70,271	70,271
Total Non-Residential Area				397,110

Source: Berkowitz Development Group, April 17, 2015.

**Table 11-2
Kendall Village Center Daily Trip Generation – Detailed Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Kendall Village Town Villas	DU	87	230	Daily	$\ln(T) = 0.87\ln(X) + 2.46$	570	50%	285	50%	285
Retail	GLA (Sq. Ft.)	82,031	820	Daily	$\ln(T) = 0.65\ln(X) + 5.83$	5,971	50%	2,984	50%	2,984
General Office	GLA (Sq. Ft.)	12,778	710	Daily	$\ln(T) = 0.76\ln(X) + 3.68$	275	50%	138	50%	138
Medical Office	GLA (Sq. Ft.)	39,881	720	Daily	$T = 40.89(X) - 214.97$	1,416	50%	708	50%	708
Restaurants [1]	GLA (Sq. Ft.)	42,159	932	Daily	$T = 127.15(X)$	5,361	50%	2,680	50%	2,680
University/College [2]	Students	400	540	Daily	$T = 1.23(X)$	492	50%	246	50%	246
Health Club/Spa	GLA (Sq. Ft.)	45,000	492	Daily	$T = 32.93(X)$	1,482	50%	741	50%	741
Drinking Place [3]	GLA (Sq. Ft.)	11,642	932	Daily	$T = 127.15(X)$	1,480	50%	740	50%	740
Multiplex Movie Theater [4]	Screens	16	445	Daily	$T = 95.06(X)$	1,521	50%	761	50%	761
TOTAL DAILY ITE TRIPS						18,568	50%	9,283	50%	9,283
<i>ITE TRIP GENERATION, 9th EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	15,092	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	3,476				
					Internalization	18.7%				

Notes:

[1] Used only restaurant – Moonlite Diner – open during AM peak hour.

[2] Due to nature of campus conditions - leased office building space without typical campus amenities and no on-site residences - used ITE rates for Junior/Community College, ITE Code 540. Student information provided by Nova Southeastern University, Miami-Kendall Campus administration.

[3] No rates for daily trips provided by ITE. Used 932 - High turn-over sit-down restaurant rate (127.15 trips per KSF).

[4] Daily- non-Friday weekday trip rate not provided in ITE Trip Generation, 9th Edition. Applied Thursday daily rate presented in article: "Trip Generation for Entertainment Land Uses", Jullie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999.

**Table 11-3
Kendall Village Center AM Peak Hour Trip Generation – Detailed Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Kendall Village Town Villas	DU	87	230	AM	$\ln(T) = 0.80\ln(X) + 0.26$	46	17%	8	83%	38
Retail	GLA (Sq. Ft.)	82,031	820	AM	$\ln(T) = 0.61\ln(X) + 2.24$	139	62%	86	38%	53
General Office	GLA (Sq. Ft.)	12,778	710	AM	$\ln(T) = 0.80\ln(X) + 1.57$	37	88%	33	12%	4
Medical Office	GLA (Sq. Ft.)	39,881	720	AM	$T = 2.39(X)$	95	79%	75	21%	20
Restaurants [1]	GLA (Sq. Ft.)	4,500	932	AM	$T = 10.81(X)$	49	55%	27	45%	22
University/College [2]	Students	400	540	AM	$\ln(T) = 0.70\ln(X) + 0.74$	139	84%	117	16%	22
Health Club/Spa	GLA (Sq. Ft.)	45,000	492	AM	$T = 1.41(X)$	63	50%	32	50%	32
Drinking Place [3]	GLA (Sq. Ft.)	11,642	925	AM	N/A					
Multiplex Movie Theater [4]	Screens	16	445	AM	$T = 1.88(X)$	30	60%	18	40%	12
TOTAL AM PEAK HOUR ITE TRIPS						598	66%	395	34%	203
<i>ITE TRIP GENERATION, 9th EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	637	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	-39				
					Internalization	-6.5%				

Notes:

[1] Only Moonlite Diner open during AM peak hour. All others open at 10 AM or later.

[2] Due to nature of campus conditions - leased office building space without typical campus amenities and no on-site residences - used ITE rates for Junior/Community College, ITE Code 540. Student information provided by Nova Southeastern University, Miami-Kendall Campus administration.

[3] N/A – Facility closed during AM peak hour.

[4] Non-Friday weekday AM peak hour trip rate not provided in ITE Trip Generation, 9th Edition. Applied Thursday AM peak hour rate presented in article: "Trip Generation for Entertainment Land Uses", Jullie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999.

**Table 11-4
Kendall Village Center PM Peak Hour Trip Generation – Detailed Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Kendall Village Town Villas	DJ	87	230	PM	$\ln(T)=0.82\ln(X)+0.32$	54	67%	36	33%	18
Retail	GLA (Sq. Ft.)	82,031	820	PM	$\ln(T)=0.67\ln(X)+3.31$	525	48%	252	52%	273
General Office	GLA (Sq. Ft.)	12,778	710	PM	$T = 1.12(X)+78.45$	93	17%	16	83%	77
Medical Office	GLA (Sq. Ft.)	39,881	720	PM	$\ln(T)=0.90\ln(X)+1.53$	127	28%	36	72%	91
Restaurant	GLA (Sq. Ft.)	42,159	932	PM	$T = 9.85(X)$	415	60%	249	40%	166
University/College [1]	Students	400	540	PM	$\ln(T)=0.64\ln(X)+1.32$	174	63%	110	37%	64
Health Club/Spa	GLA (Sq. Ft.)	45,000	492	PM	$\ln(T)=0.95\ln(X)+1.43$	155	57%	88	43%	67
Drinking Place	GLA (Sq. Ft.)	11,642	925	PM	$T = 11.34(X)$	132	66%	87	34%	45
Multiplex Movie Theater	Screens	16	445	PM	$T = 13.64(X)$	218	45%	98	55%	120
TOTAL PM PEAK HOUR ITE TRIPS						1,893	51%	972	49%	921
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	1,014	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	879				
					Internalization	46.4%				

Notes:

[1] Due to nature of campus conditions - leased office building space without typical campus amenities and no on-site residences - used ITE rates for Junior/Community College, ITE Code 540. Student information provided by Nova Southeastern University, Miami-Kendall Campus administration.

**Table 11-5
Kendall Village Center Daily Trip Generation – Aggregated Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Kendall Village Town Villas	DJ	87	230	Daily	$\ln(T)=0.87\ln(X)+2.46$	570	50%	285	50%	285
Retail [1]	GLA (Sq. Ft.)	154,832	820	Daily	$\ln(T)=0.65\ln(X)+5.83$	9,023	50%	4,510	50%	4,510
General Office [2]	GLA (Sq. Ft.)	52,659	710	Daily	$\ln(T)=0.76\ln(X)+3.68$	807	50%	404	50%	404
Restaurants [3]	GLA (Sq. Ft.)	26,000	932	Daily	$T = 127.15(X)$	3,306	50%	1,652	50%	1,652
University/College [2]	Students	400	540	Daily	$T = 1.23(X)$	492	50%	246	50%	246
Multiplex Movie Theater [5]	Screens	16	445	Daily	$T = 95.06(X)$	1,521	50%	761	50%	761
TOTAL DAILY ITE TRIPS						15,719	50%	7,858	50%	7,858
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	15,092	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	627				
					Internalization	4.0%				

Notes:

[1] Includes main retail buildings and designated retail outparcel (Jared Jewelry).

[2] Assumed all office space not known/designated by specific use at time of site plan submittal.

[3] Assumed designated outparcel use for restaurants. Three outparcels: Bahamas Breeze, On the Border, and Moonlit.

[4] Assumed student population to be same as for detailed land use procedure.

[5] Daily- non-Friday weekday trip rate not provided in ITE Trip Generation, 9th Edition. Applied Thursday daily rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999.

**Table 11-6
Kendall Village Center AM Peak Hour Trip Generation – Aggregated Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Kendall Village Town Villas	DU	87	230	AM	$\ln(T)=0.80\ln(X)+0.26$	46	17%	8	83%	38
Retail [1]	GLA (Sq. Ft.)	154,832	820	AM	$\ln(T)=0.61\ln(X)+2.24$	204	62%	126	38%	78
General Office [2]	GLA (Sq. Ft.)	52,659	710	AM	$\ln(T)=0.80\ln(X)+1.57$	115	88%	101	12%	14
Restaurants [3]	GLA (Sq. Ft.)	26,000	720	AM	$T = 2.39(X)$	62	79%	49	21%	13
University/College [4]	Students	400	540	AM	$\ln(T)=0.70\ln(X)+0.74$	139	84%	117	16%	22
Multiplex Movie Theater [5]	Screens	16	445	AM	$T = 1.88(X)$	30	60%	18	40%	12
TOTAL AM PEAK HOUR ITE TRIPS						596	70%	419	30%	177
<i>ITE TRIP GENERATION, 9th EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	637	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	-41				
					Internalization	-6.9%				

Notes:

[1] Includes main retail buildings and designated retail outparcel (Jared Jewelry).

[2] Assumed all office space not known/designated by specific use at time of site plan submittal.

[3] Assumed designated outparcel use for restaurants. Three outparcels: Bahamas Breeze, On the Border, and Moonlit.

[4] Assumed student population to be same as for detailed land use procedure.

[5] Non-Friday weekday AM peak hour trip rate not provided in ITE Trip Generation, 9th Edition. Applied Thursday AM peak hour rate presented in article: "Trip Generation for Entertainment Land Uses", Jullie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999.

**Table 11-7
Kendall Village Center PM Peak Hour Trip Generation – Aggregated Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Kendall Village Town Villas	DU	87	230	PM	$\ln(T)=0.82\ln(X)+0.32$	54	67%	36	33%	18
Retail [1]	GLA (Sq. Ft.)	154,832	820	PM	$\ln(T)=0.67\ln(X)+3.31$	804	48%	386	52%	418
General Office [2]	GLA (Sq. Ft.)	52,659	710	PM	$T = 1.12(X)+78.45$	137	17%	23	83%	114
Restaurant [3]	GLA (Sq. Ft.)	26,000	932	PM	$T = 9.85(X)$	256	60%	154	40%	102
University/College [4]	Students	400	540	PM	$\ln(T)=0.64\ln(X)+1.32$	174	63%	110	37%	64
Multiplex Movie Theater	Screens	16	445	PM	$T = 13.64(X)$	218	45%	98	55%	120
TOTAL AM PEAK HOUR ITE TRIPS						1,643	49%	807	51%	836
<i>ITE TRIP GENERATION, 9th EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	1,014	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	629				
					Internalization	38.3%				

Notes:

[1] Includes main retail buildings and designated retail outparcel (Jared Jewelry).

[2] Assumed all office space not known/designated by specific use at time of site plan submittal.

[3] Assumed designated outparcel use for restaurants. Three outparcels: Bahamas Breeze, On the Border, and Moonlit.

[4] Assumed student population to be same as for detailed land use procedure.

- Daily non-Friday weekday trip rates for Multiplex Movie Theaters are not provided in the ITE manual. Applied Thursday daily rate presented in the article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999 (See **Appendix J**).

For the AM peak hour trip calculations, the following was assumed for specific land uses:

- Nova Southeastern University: Applied the ITE rates for Junior/Community College, Land Use Code 540;
- Homefield Comedy Club: Does not open in the mornings and therefore no trips were assumed; and
- Non-Friday AM peak hour trip rate for Multiplex Movie Theater not provided by ITE. Applied Thursday AM peak hour rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999 (See **Appendix J**).

For the PM peak hour trip calculations, the following was assumed for specific land uses:

- Nova Southeastern University: Applied the ITE rates for Junior/Community College, Land Use Code 540.

Table 11-8 presents a summary of the Kendall Village Center daily and AM and PM peak hour trips. Also shown are the internalization rates for each period.

Table 11-8
Summary of Kendall Village Center Daily and Peak Hour Trips and Internalization.

Period	Actual Trips	ITE Trips	Percent Internalization
Detailed Land Use Procedure			
Daily	15,092	18,568	18.7%
AM Peak Hour	637	598	-6.5%
PM Peak Hour	1,014	1,893	46.4%
Aggregated Land Use Procedure			
Daily	15,092	15,719	4.0%
AM Peak Hour	637	596	-6.9%
PM Peak Hour	1,014	1,643	38.3%

12. MIAMI LAKES MAIN STREET TRIP GENERATION

12.1 Land Use Inventory

Miami Lakes Main Street was developed by and is currently managed by Graham Companies (6843 Main Street, Miami Lakes). Graham Companies representatives provided the current April 2015 land use/tenant information (including vacancies) as shown in **Tables 12-1** for the residential and **12-2** for the non-residential components of the Main Street development. Information regarding the Chase Bank located at Bull Run Road and NW 67th Avenue was obtained from the realty broker website LoopNet.com (See **Appendix C**).

Table 12-1
Miami Lakes Main Street Residential Land Use Inventory

Residential Development	Number of Units
New Barn Apartments	245
Fountain House	106
Fountain House 2	72
Bull Run	100
Meadow Walk Apartments	320
Main Street East	35
Main Street West	11
Total	889

Source: The Graham Companies, April 2015

12.2 Trip Generation

The trip generation analysis was based on ITE Manual 9th Edition. The procedure in "Table 3.1 – Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations" of the trip generation manual (9th Edition, Volume 1) was used to decide whether to use the average rates or equations to calculate the trips. . The AM and PM peak hour trip generation analysis correspond to the peak hour of the adjacent street, one hour between 7 and 9 AM and one hour between 4 and 6 PM, respectively.

Trip generation analysis was done using two procedures. The first procedure uses the detailed land uses as they exist in the development. The second procedure assumes that the land uses are not fully known to emulate a development application to the County. In the second procedure, it is assumed that land use code 820 for a shopping center is mainly used (aggregated procedure).

**Table 12-2
Miami Lakes Main Street Non-Residential Land Use Inventory**

Building/Facility Name	Total Sq. Ft.	Land Use and ITE Code									
		Restau- rant	Regular Office	Medical Office	Retail	Bank	Athletic Club	Hotel Rooms	Movie Screens	Vacant	Percent Vacant
		932	710	720	820	912	493	310	445	N/A	N/A
Arbor Place	45,962	5,796	28,388	5,796						5,982	13.0%
Laurel Court	29,112		25,555							3,557	12.2%
Plaza Royale	49,384			29,342						20,042	40.6%
The Promenade	76,957		28,499	5,225						43,233	56.2%
Main Street 1: Graham	21,255		18,681							2,574	12.1%
Main Street 2	12,001		6,256							5,745	47.9%
Gerardo's Market Place	12,896	3,201		4,072	5,623						0.0%
Main Street 1 South	12,957	1,521			11,436						0.0%
Main Street 1 North	18,332	1,718			15,225					1,389	7.6%
Main Street 2 South	24,388	6,984		1,905	15,499						0.0%
Main Street 2 North	88,840	10,555			78,285						0.0%
Don Schula's Hotel	154,088							205			0.0%
Athletic Club & Spa	31,588						31,588				0.0%
Movie Theatre	65,562								17		0.0%
Chase Bank Office Building (with Drive Thru Bank)	18,000					4,875				13125 [1]	72.9%
Sub-Totals	661,322	29,775	107,379	46,340	126,068	4,875	31,588	205	17	95,647	37.8%
Total Area without Multiplex and Hotel, and Vacancies	346,025	Note [1]: Overall building size is 18,000 sq. ft. As of April 2015, 13,125 sq. ft. is vacant.									

Tables 12-3, 12-4 and 12-5 present, respectively, the estimated daily, AM peak hour, and PM peak hour volumes for Miami Lakes Main Street based on the detailed land use procedure. **Tables 12-6, 12-7 and 12-8** present, respectively, the estimated daily, AM peak hour, and PM peak hour volumes for Miami Lakes Main Street based on the aggregated land use procedure.

For the daily trip calculations, the following was assumed for specific land uses:

- Daily- non-Friday weekday trip rate for Multiplex Movie Theater not provided by ITE. Applied Thursday daily rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999 (See **Appendix J**).

**Table 12-3
Miami Lakes Main Street Daily Trip Generation – Detailed Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential [1]	DU	889	220	Daily	$T = 6.06(X) + 123.56$	5,511	50%	2,756	50%	2,756
Retail	GLA (Sq. Ft.)	126,068	820	Daily	$\ln(T) = 0.65\ln(X) + 5.83$	7,895	50%	3,948	50%	3,948
General Office	GLA (Sq. Ft.)	107,379	710	Daily	$\ln(T) = 0.76\ln(X) + 3.68$	1,386	50%	693	50%	693
Medical Office	GLA (Sq. Ft.)	46,340	720	Daily	$T = 40.89(X) - 214.97$	1,680	50%	840	50%	840
Restaurant	GLA (Sq. Ft.)	29,775	932	Daily	$T = 127.15(X)$	3,787	50%	1,894	50%	1,894
Bank	GLA (Sq. Ft.)	4,875	912	Daily	$T = 148.15(X)$	722	50%	361	50%	361
Athletic Club	GLA (Sq. Ft.)	31,588	493	Daily	$T = 43.0(X)$	1,358	50%	679	50%	679
Hotel	Rooms	205	310	Daily	$T = 8.95(X) - 373.16$	1,462	50%	731	50%	731
Multiplex Movie [2]	Screens	17	445	Daily	$T = 95.06(X)$	1,616	50%	808	50%	808
TOTAL DAILY ITE TRIPS						25,417	50%	12,709	50%	12,709
ITE TRIP GENERATION, 9 TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9 th Ed., Vol. 1					Three Day Average Traffic Counts	23,595	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	1,822				
					Internalization	7.2%				

Notes:

[1] All residential units within New Barn Apts., Fountain House 1 and 2, Bull Run Apts., Meadow Walk Apts., Main Street East and Main Street West.

[2] Daily- non-Friday weekday trip rate not provided in ITE Trip Generation, 9th Edition. Applied Thursday daily rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999.

**Table 12-4
Miami Lakes Main Street AM Peak Hour Trip Generation – Detailed Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential [1]	DU	889	220	AM	$T = 0.49(X) + 3.73$	439	20%	88	80%	351
Retail	GLA (Sq. Ft.)	126,068	820	AM	$\ln(T) = 0.61\ln(X) + 2.24$	180	62%	112	38%	68
General Office	GLA (Sq. Ft.)	107,379	710	AM	$\ln(T) = 0.80\ln(X) + 1.57$	203	86%	179	12%	24
Medical Office	GLA (Sq. Ft.)	46,340	720	AM	$T = 2.39(X)$	111	79%	88	21%	23
Restaurant	GLA (Sq. Ft.)	29,775	932	AM	$T = 10.81(X)$	322	55%	177	45%	145
Bank	GLA (Sq. Ft.)	4,875	912	AM	$T = 12.06(X)$	59	57%	34	43%	25
Athletic Club	GLA (Sq. Ft.)	31,588	493	AM	$T = 2.97(X)$	94	61%	57	39%	37
Hotel	Rooms	205	310	AM	$T = 0.53(X)$	109	59%	64	41%	45
Multiplex Movie [2]	Screens	17	445	AM	$T = 1.88(X)$	32	60%	19	40%	13
TOTAL AM PEAK HOUR ITE TRIPS						1,549	53%	817	47%	732
ITE TRIP GENERATION, 9 TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9 th Ed., Vol. 1					Three Day Average Traffic Counts	1,294	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	255				
					Internalization	16.5%				

Notes:

[1] All residential units within New Barn Apts., Fountain House 1 and 2, Bull Run Apts., Meadow Walk Apts., Main Street East and Main Street West.

[2] AM trip rate not provided in ITE Trip Generation, 9th Edition. Applied weekday AM peak hour of adjacent street rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., 1998.

**Table 12-5
Miami Lakes Main Street PM Peak Hour Trip Generation – Detailed Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential [1]	DU	889	220	PM	$T = 0.55(X) + 17.65$	507	65%	330	35%	177
Retail	GLA (Sq. Ft.)	126,068	820	PM	$\ln(T) = 0.67\ln(X) + 3.31$	700	48%	336	52%	364
General Office	GLA (Sq. Ft.)	107,379	710	PM	$T = 1.12(X) + 78.45$	199	17%	34	83%	165
Medical Office	GLA (Sq. Ft.)	46,340	720	PM	$\ln(T) = 0.9\ln(X) + 1.53$	146	28%	41	72%	105
Restaurant	GLA (Sq. Ft.)	29,775	932	PM	$T = 9.85(X)$	293	60%	176	40%	117
Bank	GLA (Sq. Ft.)	4,875	912	PM	$T = 24.3(X)$	118	50%	59	50%	59
Athletic Club	GLA (Sq. Ft.)	31,588	493	PM	$T = 6.58(X) - 17.51$	190	62%	118	38%	72
Hotel	Rooms	205	310	PM	$T = 0.60(X)$	123	51%	63	49%	60
Multiplex Movie	Screens	17	445	PM	$T = 13.64(X)$	232	60%	139	40%	93
TOTAL PM PEAK HOUR ITE TRIPS						2,508	52%	1,295	48%	1,213
<i>ITE TRIP GENERATION, 9TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	1,827	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	681				
					Internalization	27.2%				

Notes:

[1] All residential units within New Barn Apts., Fountain House 1 and 2, Bull Run Apts., Meadow Walk Apts., Main Street East and Main Street West.

**Table 12-6
Miami Lakes Main Street Daily Trip Generation – Aggregated Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential Total [1]	DU	889	220	Daily	$T = 6.06(X) + 123.56$	5,611	50%	2,756	50%	2,755
Retail [2]	GLA (Sq. Ft.)	155,843	820	Daily	$\ln(T) = 0.65\ln(X) + 5.83$	9,062	50%	4,531	50%	4,531
Office [3]	GLA (Sq. Ft.)	153,719	710	Daily	$\ln(T) = 0.76\ln(X) + 3.68$	1,821	50%	911	50%	910
Drive In Bank	GLA (Sq. Ft.)	4,875	912	Daily	$T = 148.15(X)$	722	50%	361	50%	361
Athletic Club [4]	GLA (Sq. Ft.)	31,588	493	Daily	$T = 43.0(X)$	1,358	50%	679	50%	679
Hotel	Rooms	205	310	Daily	$T = 8.95(X) - 373.16$	1,462	50%	731	50%	731
Multi-Plex Theatre [5]	Screens	17	445	Daily	$T = 95.06(X)$	1,616	50%	808	50%	808
TOTAL DAILY ITE TRIPS						21,662	50%	10,777	50%	10,775
<i>ITE TRIP GENERATION, 9TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	23,596	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	-2,043				
					Internalization	-9.5%				

Notes:

[1] All residential units within New Barn Apts., Fountain House 1 and 2, Bull Run Apts., Meadow Walk Apts., Main Street East and Main Street West.

[2] Retail uses include restaurants.

[3] Office use includes medical offices.

[4] Athletic Club at Main Street is a stand-alone facility built as part of the Don Schula Resort Hotel complex.

[5] Daily- non-Friday weekday trip rate not provided in ITE Trip Generation, 9th Edition. Applied Thursday daily rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999.

**Table 12-7
Miami Lakes Main Street AM Peak Hour Trip Generation – Aggregated Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential Total [1]	DU	889	220	AM	$T = 0.49(X) + 3.73$	439	20%	88	80%	351
Retail [2]	GLA (Sq. Ft.)	155,843	820	AM	$\ln(T) = 0.61\ln(X) + 2.24$	205	62%	127	38%	78
Office [3]	GLA (Sq. Ft.)	153,719	710	AM	$\ln(T) = 0.80\ln(X) + 1.57$	270	88%	238	12%	32
Drive In Bank	GLA (Sq. Ft.)	4,875	912	AM	$T = 12.08(X)$	59	57%	34	43%	25
Athletic Club [4]	GLA (Sq. Ft.)	31,588	493	AM	$T = 2.97(X)$	94	61%	57	39%	37
Hotel	Rooms	205	310	AM	$T = 0.53(X)$	109	59%	64	41%	45
Multi-Plex Theatre [5]	Screens	17	445	AM	$T = 1.88(X)$	32	60%	19	40%	13
TOTAL AM PEAK HOUR ITE TRIPS						1,208	52%	627	48%	581
<i>ITE TRIP GENERATION, 9TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	1,294	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	-86				
					Internalization	-7.1%				

Notes:

- [1] All residential units within New Barn Apts., Fountain House 1 and 2, Bull Run Apts., Meadow Walk Apts., Main Street East and Main Street West.
- [2] Retail uses include restaurants.
- [3] Office use includes medical offices.
- [4] Athletic Club at Main Street is a stand-alone facility built as part of the Don Schula Resort Hotel complex.
- [5] AM trip rate not provided in ITE Trip Generation, 9th Edition. Applied weekday AM peak hour of adjacent street rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., 1998.

**Table 12-8
Miami Lakes Main Street PM Peak Hour Trip Generation – Aggregated Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential Total	DU	889	220	PM	$T = 0.55 (X) + 17.65$	507	65%	330	35%	177
Retail (1)	GLA (Sq. Ft.)	155,843	820	PM	$\ln(T) = 0.67\ln(X) + 3.31$	807	48%	387	52%	420
General Office (2)	GLA (Sq. Ft.)	153,719	710	PM	$T = 1.12 (X) + 78.45$	251	17%	43	83%	208
Drive In Bank	GLA (Sq. Ft.)	4,875	912	PM	$T = 24.3 (X)$	118	50%	59	50%	59
Athletic Club/Spa	GLA (Sq. Ft.)	31,588	493	PM	$T = 6.58 (X) - 17.51$	190	62%	118	38%	72
Hotel	Rooms	205	310	PM	$T = 0.60 (X)$	123	51%	63	49%	60
Multi-Plex Theatre (3)	Screens	17	445	PM	$T = 13.64 (X)$	232	60%	139	40%	93
TOTAL PM PEAK HOUR ITE TRIPS						2,228	51%	1,138	49%	1,090
<i>ITE TRIP GENERATION, 9TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	1,827	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	401				
					Internalization	18.0%				

Notes:

- [1] All residential units within New Barn Apts., Fountain House 1 and 2, Bull Run Apts., Meadow Walk Apts., Main Street East and Main Street West.
- [2] Retail uses include restaurants.
- [3] Office use includes medical offices.
- [4] Athletic Club at Main Street is a stand-alone facility built as part of the Don Schula Resort Hotel complex.

For the AM peak hour trip calculations, the following was assumed for specific land uses:

- Restaurant uses during the AM peak hour are limited to the Vie de France and Gerardo's Market Place (total 4,722 square feet). All other restaurant closed in AM peak; and
- Non-Friday AM peak hour trip rate for Multiplex Movie Theater not provided by ITE. Applied Thursday PM peak hour rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999 (See **Appendix J**).

For the PM peak hour trip calculations, the following was assumed for specific land uses:

- Non-Friday PM peak hour trip rate for Multiplex Movie Theater not provided by ITE. Applied Thursday AM peak hour rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999 (See **Appendix J**).

Table 12-9 presents a summary of the Miami Lakes Main Street daily and AM and PM peak hour trips. Also shown are the internalization rates for each period.

Table 12-9
Summary of Miami Lakes Main Street Daily and Peak Hour Trips and Internalization

Period	Actual Trips	ITE Trips	Percent Internalization
Detailed Land Use Procedure			
Daily	23,595	25,417	7.2%
AM Peak Hour	1,294	1,549	16.5%
PM Peak Hour	1,827	2,508	27.2%
Aggregate Land Use Procedure			
Daily	23,595	21,552	-9.5%
AM Peak Hour	1,294	1,208	-7.1%
PM Peak Hour	1,827	2,228	18.0%

13. SHOPS AT MERRICK PARK TRIP GENERATION

13.1 Land Use Inventory

Shops at Merrick Park, formerly known as Village of Merrick Park, was developed and is currently managed by General Growth Properties, Inc. (GGP). The current, October 2015, land use/tenant information (including vacancies) was obtained by GGP representatives as shown in **Table 13-1** for the residential and for the non-residential components of Shops at Merrick Park development. (See **Appendix D**)

Table 13-1
Shops at Merrick Park Land Use Inventory

Building/Facility Name	Total Sq. Ft.	Land Use and ITE Code							
		Dwelling Units	Restau-rant	Regular Office	Medical Office	Retail	Fitness Club	Vacant	Percent Vacant
		220	931	710	720	820	492	N/A	N/A
Residences at Merrick Park		120							
Main Building	572,254		0	4,016	7,255	554,912	0	6,071	1.1%
East Island	18,250		3,334	0	0	14,916	0	0	0.0%
West Island	17,775		2,629	0	0	12,136	3,010	0	0.0%
NE Section	56,215		14,988	10,516	1,707	18,109	0	10,895	19.4%
NW Section	59,810		14,819	3,451	0	10,322	29,500	1,718	2.9%
East Office Building	126,021		0	108,449	17,572	0	0	0	0.0%
Sub-Totals	850,325		35,770	126,432	26,534	610,395	32,510	18,684	2.2%
Total Area without Residences and Vacancies	831,641								

Source: General Growth Properties, Inc., October 2015.

13.2 Trip Generation

The trip generation analysis was based on ITE Manual 9th Edition. The procedure in “*Table 3.1 – Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations*” of the trip generation manual (9th Edition, Volume 1) was used to decide whether to use the average rates or equations to calculate the trips. The AM and PM peak hour trip generation analysis correspond to the peak hour of the adjacent street, one hour between 7 and 9 AM and one hour between 4 and 6 PM, respectively.

Trip generation analysis was done using two procedures. The first procedure uses the detailed land uses as they exist in the development. The second procedure assumes that the land uses are not fully known to emulate a development application to the County. In the second procedure, it is assumed that land use code 820 for a shopping center and land use code 710 for general office is mainly used (aggregated procedure).

Tables 13-2, 13-3 and 13-4 present, respectively, the estimated daily, AM peak hour, and PM peak hour volumes for Shops at Merrick Park based on the detailed land use procedure. **Tables 13-5, 13-6 and 13-7** present, respectively, the estimated daily, AM peak hour, and PM peak hour volumes for Shops at Merrick Park based on the aggregated land use procedure.

**Table 13-2
Shops at Merrick Park Daily Trip Generation – Detailed Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential [1]	DU	120	220	Daily	$T = 6.06(X) + 123.56$	851	50%	426	50%	426
Retail	GLA (Sq. Ft.)	610,395	820	Daily	$\ln(T) = 0.65\ln(X) + 5.83$	22,009	50%	11,005	50%	11,005
General Office	GLA (Sq. Ft.)	126,432	710	Daily	$\ln(T) = 0.76\ln(X) + 3.68$	1,569	50%	785	50%	785
Medical Office	GLA (Sq. Ft.)	26,534	720	Daily	$T = 40.89(X) - 214.97$	870	50%	435	50%	435
Quality Restaurant	GLA (Sq. Ft.)	35,770	931	Daily	$T = 89.95(X)$	3,219	50%	1,610	50%	1,610
Health Club/Spa	GLA (Sq. Ft.)	32,510	492	Daily	$T = 32.93(X)$	1,071	50%	536	50%	536
TOTAL DAILY ITE TRIPS						29,589	50%	14,795	50%	14,795
ITE TRIP GENERATION, 9 TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9 th Ed., Vol. 1					Three Day Average Traffic Counts	13,100	Traffic data obtained October 27, 28 & 29, 2015			
					Delta	16,489				
					Internalization	55.7%				

Notes:

[1] All residential units within Shops at Merrick Park.

**Table 13-3
Shops at Merrick Park AM Peak Hour Trip Generation – Detailed Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential [1]	DU	120	220	AM	$T = 0.49(X) + 3.73$	63	20%	13	80%	50
Retail	GLA (Sq. Ft.)	610,395	820	AM	$\ln(T) = 0.61\ln(X) + 2.24$	470	62%	291	38%	179
General Office	GLA (Sq. Ft.)	126,432	710	AM	$\ln(T) = 0.80\ln(X) + 1.57$	231	88%	203	12%	28
Medical Office	GLA (Sq. Ft.)	26,534	720	AM	$T = 2.39(X)$	63	79%	50	21%	13
Quality Restaurant	GLA (Sq. Ft.)	35,770	931	AM	$T = 0.81(X)$	29	55%	16	45%	13
Health Club/Spa	GLA (Sq. Ft.)	32,510	492	AM	$T = 1.41(X)$	46	50%	23	50%	23
TOTAL AM PEAK HOUR ITE TRIPS						902	66%	596	34%	306
ITE TRIP GENERATION, 9 TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9 th Ed., Vol. 1					Three Day Average Traffic Counts	823	Traffic data obtained October 27, 28 & 29, 2015			
					Delta	79				
					Internalization	8.8%				

Notes:

[1] All residential units within Shops at Merrick Park.

**Table 13-4
Shops at Merrick Park PM Peak Hour Trip Generation – Detailed Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential [1]	DU	120	220	PM	$T = 0.55(X) + 17.65$	84	65%	55	35%	29
Retail	GLA (Sq. Ft.)	610,395	820	PM	$\ln(T) = 0.67\ln(X) + 3.31$	2,014	48%	967	52%	1,047
General Office	GLA (Sq. Ft.)	126,432	710	PM	$T = 1.12(X) + 78.45$	220	17%	37	83%	183
Medical Office	GLA (Sq. Ft.)	26,534	720	PM	$\ln(T) = 0.9\ln(X) + 1.53$	89	28%	25	72%	64
Quality Restaurant	GLA (Sq. Ft.)	35,770	931	PM	$T = 7.49(X)$	268	67%	180	33%	88
Health Club/Spa	GLA (Sq. Ft.)	32,510	492	PM	$\ln(T) = 0.95\ln(X) + 1.43$	114	57%	65	43%	49
TOTAL PM PEAK HOUR ITE TRIPS						2,789	48%	1,328	52%	1,461
ITE TRIP GENERATION, 9 TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9 th Ed., Vol. 1					Three Day Average Traffic Counts	1,140	Traffic data obtained October 27, 28 & 29, 2015			
					Delta	1,649				
					Internalization	59.1%				

Notes:

[1] All residential units within Shops at Merrick Park.

**Table 13-5
Shops at Merrick Park Daily Trip Generation – Aggregated Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential Total [1]	DU	120	220	Daily	$T = 6.06(X) + 123.56$	851	50%	426	50%	425
Retail [2]	GLA (Sq. Ft.)	678,675	820	Daily	$\ln(T) = 0.65\ln(X) + 5.83$	23,579	50%	11,790	50%	11,789
Office [3]	GLA (Sq. Ft.)	152,966	710	Daily	$\ln(T) = 0.76\ln(X) + 3.68$	1,814	50%	907	50%	907
TOTAL DAILY ITE TRIPS						26,244	50%	13,123	50%	13,121
<i>ITE TRIP GENERATION, 9TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	13,100	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	13,144				
					Internalization	50.1%				

1. All residential units within Shops At Merrick Park
2. Includes all retail, health clubs, and restaurants.
3. Includes all general office and medical offices.

**Table 13-6
Shops at Merrick Park AM Peak Hour Trip Generation – Aggregated Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential Total [1]	DU	120	220	AM	$T = 0.49(X) + 3.73$	63	20%	13	80%	50
Retail [2]	GLA (Sq. Ft.)	678,675	820	AM	$\ln(T) = 0.61\ln(X) + 2.24$	502	62%	311	38%	191
Office [3]	GLA (Sq. Ft.)	152,966	710	AM	$\ln(T) = 0.80\ln(X) + 1.57$	269	88%	237	12%	32
TOTAL AM PEAK HOUR ITE TRIPS						834	67%	561	33%	273
<i>ITE TRIP GENERATION, 9TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	823	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	11				
					Internalization	1.3%				

1. All residential units within Shops At Merrick Park
2. Includes all retail, health clubs, and restaurants.
3. Includes all general office and medical offices.

**Table 13-7
Shops at Merrick Park PM Peak Hour Trip Generation – Aggregated Land Use Procedure**

Land Use	Unit	Number	ITE Code	Period	ITE 9 th Edition Rate or Formula	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential Total [1]	DU	120	220	PM	$T = 0.55(X) + 17.65$	84	65%	55	35%	29
Retail [2]	GLA (Sq. Ft.)	678,675	820	PM	$\ln(T) = 0.67\ln(X) + 3.31$	2,162	48%	1,038	52%	1,124
Office [3]	GLA (Sq. Ft.)	152,966	710	PM	$T = 1.12(X) + 78.45$	250	17%	43	83%	208
TOTAL PM PEAK HOUR ITE TRIPS						2,496	45%	1,135	55%	1,361
<i>ITE TRIP GENERATION, 9TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Three Day Average Traffic Counts	1,140	Traffic data obtained April 7, 8, and 9, 2015.			
					Delta	1,356				
					Internalization	54.3%				

1. All residential units within Shops At Merrick Park
2. Includes all retail, health clubs, and restaurants.
3. Includes all general office and medical offices.

Table 13-8 presents a summary of the Shops at Merrick Park daily and AM and PM peak hour trips. Also shown are the internalization rates for each period.

**Table 13-8
Summary of Shops at Merrick Park Daily and Peak Hour Trips
and Internalization**

Period	Actual Trips	ITE Trips	Percent Internalization
Detailed Land Use Procedure			
Daily	13,100	29,589	55.7%
AM Peak Hour	823	902	8.8%
PM Peak Hour	1,140	2,789	59.1%
Aggregate Land Use Procedure			
Daily	13,100	26,244	50.1%
AM Peak Hour	823	834	1.3%
PM Peak Hour	1,140	2,496	54.3%

The high daily and PM internalization rates for the Shops at Merrick Park are explained by the unique characteristics of this POD that can be summarized into three main factors:

First, it is a successful “new urbanism” development where people can live, work, eat exercise, and entertain without leaving the development or needing a car. Furthermore, it is a POD type development served by or accessible to an array of local and regional public transit services such as MetroRail, MetroBus, bus trolley, and others. Considering there is no free parking at the Shops at Merrick Park; employees and some visitors have an incentive to use transit.

Second, it is located near Coral Gables’ downtown area that favors alternate modes of transportation due to (1) chronic traffic congestions on arterials leading to the Shops at Merrick Park, (2) high parking costs in downtown, and (3) a greater familiarity of city residents with non-vehicle travel. Traffic congestion on surrounding arterials encourages people to avoid traveling at certain peak hours and take advantage of visiting more than one destination once at the Shops of Merrick Park.

Finally, and what could be the most important factor is that a large number of retail stores at the Shops of Merrick Park are high-end stores that attract a more affluent clientele (e.g., Neiman Marcus, Nordstrom, Gucci, Hugo Boss and Lacoste). Similar stores generally generate much fewer trips per store than typical shopping centers. Since ITE trip generation rates do not account for such exclusive stores, applying ITE trip rates for shopping center results in trip overestimation.

14. SODO TRIP GENERATION

14.1 Land Use Inventory

The SODO development and traffic count data was obtained from the Trip Internalization in Multi-Use Developments, prepared by the Center for Urban Transportation Research for the Florida Department of Transportation, dated April 2014 (See **Appendix K**). The SODO is a 22-acre MXD comprising of mid-rise residential, retail, restaurants, and office (See **Table 14-1**). SODO is located in the southwest corner of S. Orange Avenue and Grant Street in Orlando, Florida (See **Figure 14-1**).

Table 14-1
SODO Land Use Inventory

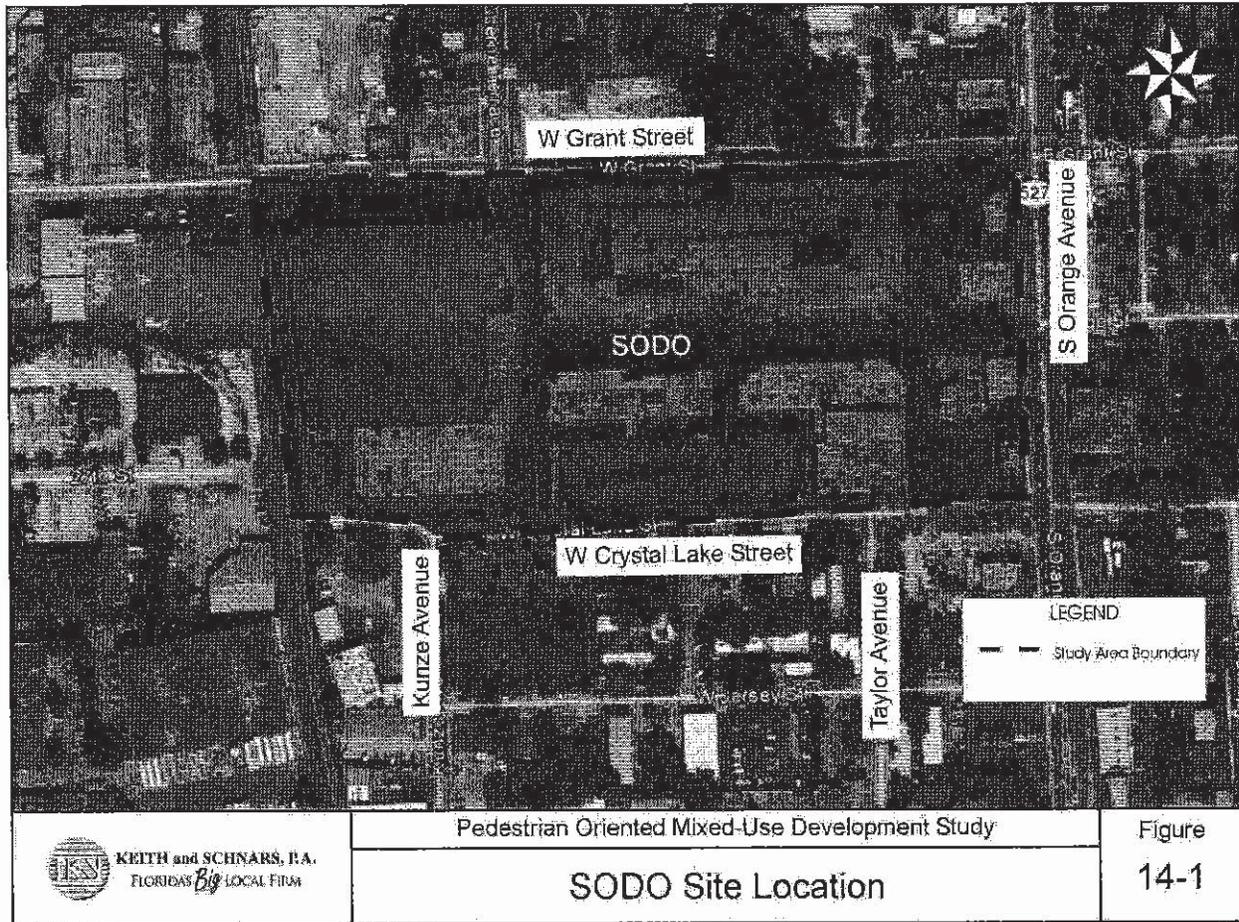
Land Use	Occupied Development Units
Residential – Apartments	300 DU
Retail	282,862 GLA sq. ft.
General Office	23,063 GLA sq. ft.
Medical Office	23,063 GLA sq. ft.
Restaurant	11,309 GLA sq. ft.

14.2 Trip Generation

The trip generation analysis was based on ITE Manual 9th Edition. The procedure in “*Table 3.1 – Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations*” of the trip generation manual (9th Edition, Volume 1) was used to decide whether to use the average rates or equations to calculate the trips. . The AM and PM peak hour trip generation analysis correspond to the peak hour of the adjacent street, one hour between 7 and 9 AM and one hour between 4 and 6 PM, respectively.

Tables 14-2, 14-3 and 14-4 present, respectively, the estimated daily, AM peak hour, and PM peak hour volumes for SODO. **Table 14-5** presents a summary of the SODO Daily, AM and PM peak hour trips. Also shown are the internalization rates for each period.

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**Table 14-2
SODO Daily Trip Generation**

Land Use [1]	Unit	Number	ITE Code	Period	Trip Rate or Equation	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential - Apartments [2]	DU	300	220	Daily	$T = 6.06(X) + 123.56$	1,942	50%	971	50%	971
Retail [3]	GLA (Sq. Ft.)	282,862	820	Daily	$\ln(T) = 0.65\ln(X) + 5.83$	13,350	50%	6,673	50%	6,673
General Office [4]	GLA (Sq. Ft.)	23,063	710	Daily	$\ln(T) = 0.76\ln(X) + 3.68$	431	50%	216	50%	216
Medical Office [4]	GLA (Sq. Ft.)	23,063	720	Daily	$T = 40.89(X) - 214.97$	728	50%	364	50%	364
Restaurant [5]	GLA (Sq. Ft.)	11,309	932	Daily	$T = 127.15(X)$	1,438	50%	718	50%	718
TOTAL DAILY ITE TRIPS						17,889	50%	8,942	50%	8,942
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>				Daily		14,951	Traffic count dates: September 27-28, 2011			
				Traffic Volume [6]						
				Delta	2,938					
				Internalization		16.4%				

Notes:

- [1] Land use information obtained from "Trip Internalization in Multi-Use Developments, Final Report, Florida Department of Transportation, Center for Urban Transportation Research, April 2014, pp. 41-49.
- [2] 100% occupancy at time of CUTR study.
- [3] Total occupied space of total 345,000 sq. ft. of available space (for retail and restaurants).
- [4] Total occupied office of 46,126 sq. ft. per CUTR study. Total available office space is 100,000 sq. ft. Distribution of occupied office space was 50% medical and 50% general office.
- [5] Total occupied restaurant space per CUTR report.
- [6] Daily SODO traffic volume estimated based on traffic volumes presented in CUTR Report, Table 4-13: Summary of Cordon Counts and Vehicle Occupancy by Direction and Time of Day – SODO. Adjustments made based on traffic information from FDOT Count Station 755023, On SR-527 (S Orange) 0.143 mi. north of Michigan St.

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**Table 14-3
SODO AM Peak Hour Trip Generation**

Land Use [1]	Unit	Number	ITE Code	Period	Trip Rate	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential - Apartments [2]	DU	300	220	AM	$T = 0.49(X) + 3.73$	151	20%	30	80%	121
Retail [3]	GLA (Sq. Ft.)	282,862	820	AM	$\ln(T) = 0.61\ln(X) + 2.24$	294	62%	182	38%	112
General Office [4]	GLA (Sq. Ft.)	23,063	710	AM	$\ln(T) = 0.80\ln(X) + 1.57$	60	88%	53	12%	7
Medical Office [4]	GLA (Sq. Ft.)	23,063	720	AM	$T = 2.39(X)$	55	79%	43	21%	12
Restaurant [5]	GLA (Sq. Ft.)	11,309	932	AM	$T = 10.81(X)$	122	55%	67	45%	55
TOTAL AM PEAK HOUR ITE TRIPS						682	55%	375	45%	307
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					AM Peak Hour Traffic Counts [6]	620	Traffic count dates: September 27-28, 2011			
					Delta	62				
					Internalization	9.1%				

Notes:

[1] Land use information obtained from "Trip Internalization in Multi-Use Developments, Final Report, Florida Department of Transportation, Center for Urban Transportation Research, April 2014, pp. 41-49.

[2] 100% occupancy at time of CUTR study.

[3] Total occupied space of total 345,000 sq. ft. of available space (for retail and restaurants).

[4] Total occupied office of 46,126 sq. ft. per CUTR study. Total available office space is 100,000 sq. ft. Distribution of occupied office space was 50% medical and 50% general office.

[5] Total occupied restaurant space per CUTR report.

[6] SODO AM peak hour traffic volume estimated based on traffic volumes presented in CUTR Report, Table 4-13: Summary of Cordon Counts and Vehicle Occupancy by Direction and Time of Day – SODO. Adjustments made based on traffic information from FDOT Count Station 755023, On SR-527 (S Orange) 0.143 mi. north of Michigan St.

**Table 14-4
SODO PM Peak Hour Trip Generation**

Land Use [1]	Unit	Number	ITE Code	Period	Trip Rate	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential - Apartments [2]	DU	300	220	PM	$T = 0.55(X) + 17.65$	183	65%	119	35%	64
Retail [3]	GLA (Sq. Ft.)	282,862	820	PM	$\ln(T) = 0.67\ln(X) + 3.31$	1,203	48%	577	52%	626
General Office [4]	GLA (Sq. Ft.)	23,063	710	PM	$T = 1.12(X) + 78.45$	104	17%	18	83%	86
Medical Office [4]	GLA (Sq. Ft.)	23,063	932	PM	$\ln(T) = 0.90\ln(X) + 1.43$	71	28%	20	72%	51
Restaurant [5]	GLA (Sq. Ft.)	11,309	932	PM	$T = 9.85(X)$	111	60%	67	40%	44
TOTAL PM PEAK HOUR ITE TRIPS						1,672	48%	801	52%	871
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					PM Peak Hour Traffic Counts [6]	1,228	Traffic count dates: September 27-28, 2011			
					Delta	444				
					Internalization	26.5%				

Notes:

[1] Land use information obtained from "Trip Internalization in Multi-Use Developments, Final Report, Florida Department of Transportation, Center for Urban Transportation Research, April 2014, pp. 41-49.

[2] 100% occupancy at time of CUTR study.

[3] Total occupied space of total 345,000 sq. ft. of available space (for retail and restaurants).

[4] Total occupied office of 46,126 sq. ft. per CUTR study. Total available office space is 100,000 sq. ft. Distribution of occupied office space was 50% medical and 50% general office.

[5] Total occupied restaurant space per CUTR report.

[6] SODO PM peak hour traffic volume estimated based on traffic volumes presented in CUTR Report, Table 4-13: Summary of Cordon Counts and Vehicle Occupancy by Direction and Time of Day – SODO. Adjustments made based on traffic information from FDOT Count Station 755023, On SR-527 (S Orange) 0.143 mi. north of Michigan St.

**Table 14-5
SODO Daily and Peak Hour Trips and Internalization**

Period	Actual Trips	ITE Trips	Percent Internalization
Daily	14,951	17,889	16.4%
AM Peak Hour	620	682	9.1%
PM Peak Hour	1,228	1,672	26.5%

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15. MIZNER PARK TRIP GENERATION

15.1 Land Use Inventory

Mizner Park development and traffic count data was obtained from the Districtwide Trip Generation Study – Florida Department of Transportation – District Four, dated March 1995 (See **Appendix L**). At the time of that study, Mizner Park was a 30 acre site located in Boca Raton, Florida. It is specifically located one block north of Palmetto Park Road and on the east side of US 1/Federal Highway and graphically shown in **Figure 15-1**. **Table 15-1** summarizes the development program as it existed at the time of the Districtwide Trip Generation Study.

Table 15-1
Mizner Park Land Use Inventory

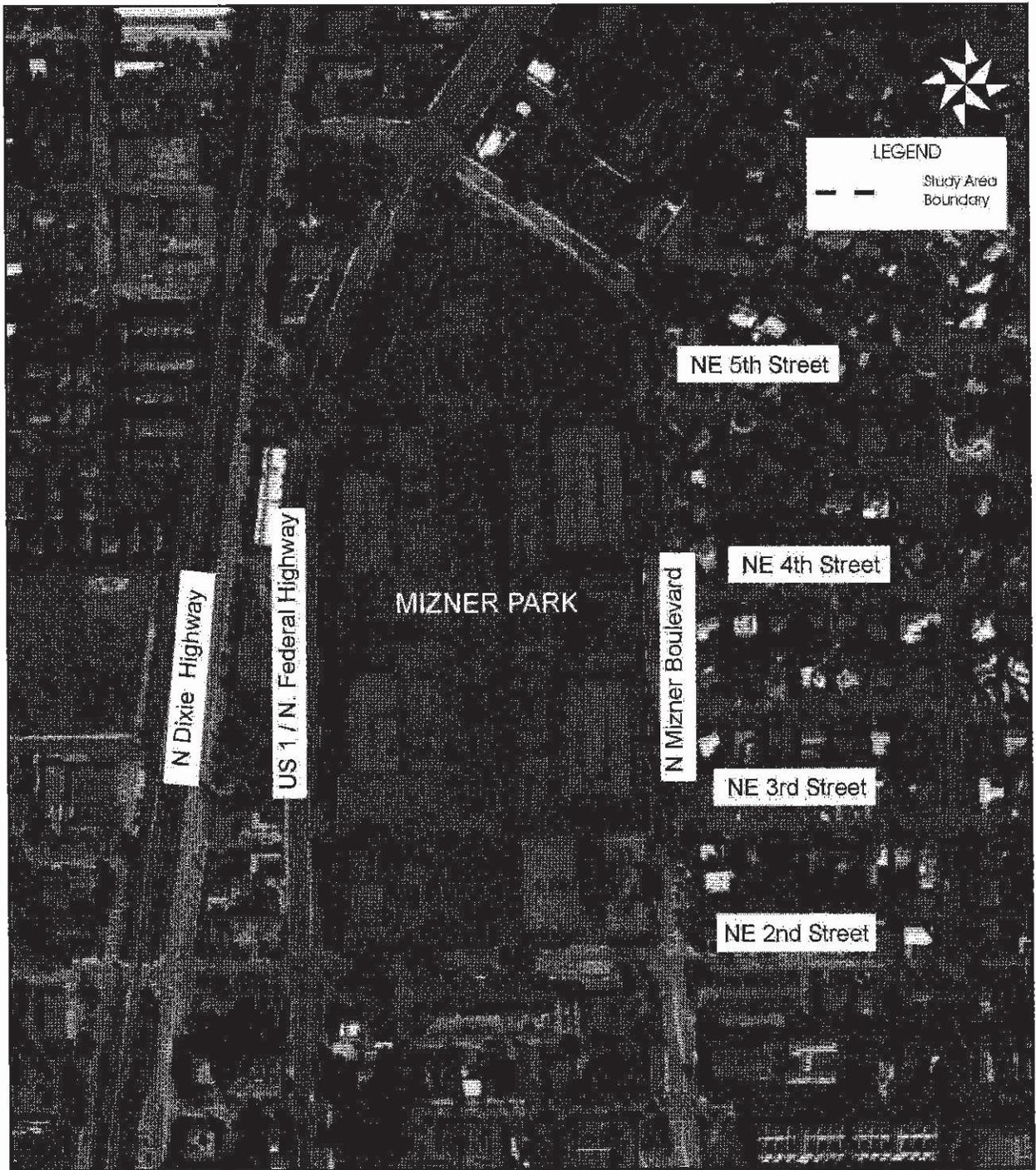
Land Use	Occupied Development Units
Residential	136 apartments
Retail	86,632 GLA sq. ft.
Office	77,555 GLA sq. ft.
Medical Office	10,724 GLA sq. ft.
Restaurant	29,697 GLA sq. ft.
Drive in Bank	3,653 GLA sq. ft.
Cinema	8 screens

15.2 Trip Generation

The trip generation analysis was based on ITE Manual 9th Edition. The procedure in “*Table 3.1 – Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations*” of the trip generation manual (9th Edition, Volume 1) was used to decide whether to use the average rates or equations to calculate the trips. . The AM and PM peak hour trip generation analysis correspond to the peak hour of the adjacent street, one hour between 7 and 9 AM and one hour between 4 and 6 PM, respectively.

Trip generation analysis was done using two procedures. The first procedure uses the detailed land uses as they exist in the development. The second procedure assumes that the land uses are not fully known to emulate a development application to the County. In the second procedure, it is assumed that land use code 820 for a shopping center is mainly used (aggregated procedure).

Tables 15-2, 15-3 and 15-4 present, respectively, the estimated daily, AM peak hour, and PM peak hour volumes for Mizner Park based on the detailed land use procedure. **Tables 15-5, 15-6 and 15-7** present, respectively, the estimated daily, AM peak hour, and PM peak hour volumes for Mizner Park based on the aggregated land use procedure.



 KEITH and SCHNARS, P.A. FLORIDA'S <i>Big</i> LOCAL FIRM	Pedestrian Oriented Mixed-Use Development Study	Figure
	Mizner Park Site Location	15-1

**Table 15-2
Mizner Park Daily Trip Generation – Detailed Land Use Procedure**

Land Use [1]	Unit	Number	ITE Code	Period	Trip Rate or Equation [2]	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential - Apartments	DU	136	220	Daily	$T = 6.06(X) + 123.56$	948	50%	474	50%	474
Retail	GLA (Sq. Ft.)	86,632	820	Daily	$\ln(T) = 0.65\ln(X) + 5.83$	6,187	50%	3,094	50%	3,093
General Office	GLA (Sq. Ft.)	77,555	710	Daily	$\ln(T) = 0.76\ln(X) + 3.68$	1,083	50%	542	50%	541
Medical Office	GLA (Sq. Ft.)	10,724	720	Daily	$T = 40.89(X) - 214.97$	224	50%	112	50%	112
Restaurant	GLA (Sq. Ft.)	29,697	931	Daily	$T = 89.95 (X)$	2,671	50%	1,336	50%	1,335
Drive In Bank	GLA (Sq. Ft.)	3,653	912	Daily	$T = 148.15(X)$	541	50%	271	50%	270
Movie Theater with Matinee [3]	Screens	8	444	Daily	$T = 95.06(X)$	760	50%	380	50%	380
TOTAL DAILY ITE TRIPS						12,414	50%	6,209	50%	6,205
<i>ITE TRIP GENERATION, 9TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Daily Traffic Volume [4]	12,486	Traffic counts: August 9, 10, and 11, 1994			
					Delta	-72				
					Internalization	-0.6%				

Notes:

[1] Land use inventory and occupancy information obtained from Districtwide Trip Generation Study; Florida Department of Transportation, District Four; March 1995. Inventory as present in 1995.

[2] Trip generation rates/equations used in original 1995 study were based on ITE "Trip Generation, 5th Edition". All rates and equations presented here are from ITE "Trip Generation, 9th Edition", except where noted.

[3] Since number of screens (8) is less than 10 screens, ITE Code 444-Movie Theatre with Matinee would typically apply. However, there is no rate or equation applicable for a weekday (non-Friday). Therefore applied Thursday daily rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999.

[4] Daily traffic volume obtained from FDOT Districtwide Trip Generation Study, March 1995.

**Table 15-3
Mizner Park AM Peak Hour Trip Generation – Detailed Land Use Procedure**

Land Use [1]	Unit	Number	ITE Code	Period	Trip Rate or Equation [2]	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential - Apartments	DU	136	220	AM	$T = 0.49(X) + 3.73$	70	20%	14	80%	56
Retail	GLA (Sq. Ft.)	86,632	820	AM	$\ln(T) = 0.61\ln(X) + 2.24$	143	62%	89	38%	54
General Office	GLA (Sq. Ft.)	77,555	710	AM	$\ln(T) = 0.80\ln(X) + 1.57$	157	88%	138	12%	19
Medical Office	GLA (Sq. Ft.)	10,724	720	AM	$T = 2.39(X)$	26	79%	21	21%	5
Restaurant	GLA (Sq. Ft.)	29,697	931	AM	$T = 0.81(X)$	24	55%	13	45%	11
Drive In Bank	GLA (Sq. Ft.)	3,653	912	AM	$T = 12.08(X)$	44	57%	25	43%	19
Movie Theater with Matinee [3]	Screens	8	445	AM	$T = 1.88(X)$	15	60%	9	40%	6
TOTAL AM PEAK HOUR ITE TRIPS						479	64%	309	36%	170
<i>ITE TRIP GENERATION, 9TH EDITION -- Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					AM Peak Hour Traffic Counts [4]	365	Traffic counts: August 9, 10, and 11, 1994			
					Delta	114				
					Internalization	23.8%				

Notes:

[1] Land use inventory and occupancy information obtained from Districtwide Trip Generation Study; Florida Department of Transportation, District Four; March 1995. Inventory as present in 1995.

[2] Trip generation rates/equations used in original 1995 study were based on ITE "Trip Generation, 5th Edition". All rates and equations presented here are from ITE "Trip Generation, 9th Edition", except where noted.

[3] Since number of screens (8) is less than 10 screens, ITE Code 444-Movie Theatre with Matinee would typically apply. However, there is no rate or equation applicable for a weekday AM peak hour (non-Friday). Therefore applied Thursday AM peak hour rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999.

[4] AM peak hour traffic volume obtained from FDOT Districtwide Trip Generation Study, March 1995.

**Table 15-4
Mizner Park PM Peak Hour Trip Generation – Detailed Land Use Procedure**

Land Use [1]	Unit	Number	ITE Code	Period	Trip Rate or Equation [2]	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential - Apartments	DU	136	220	PM	$T = 0.55(X) + 17.65$	92	65%	60	35%	32
Retail	GLA (Sq. Ft.)	86,632	820	PM	$\ln(T) = 0.67\ln(X) + 3.31$	545	48%	262	52%	283
General Office	GLA (Sq. Ft.)	77,555	710	PM	$T = 1.12(X) + 78.45$	165	17%	28	83%	137
Medical Office	GLA (Sq. Ft.)	10,724	720	PM	$\ln(T) = 0.90\ln(X) + 1.43$	36	28%	10	72%	26
Restaurant	GLA (Sq. Ft.)	29,697	931	PM	$T = 7.49(X)$	222	60%	133	40%	89
Drive In Bank	GLA (Sq. Ft.)	3,653	912	PM	$T = 24.3 (X)$	22	50%	11	50%	11
Movie Theater with Matinee [3]	Screens	8	444	PM	$T = 37.83 (X)$	303	52%	158	48%	145
TOTAL PM PEAK HOUR ITE TRIPS						1,385	48%	661	52%	724
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					PM Peak Hour Traffic Counts [4]	875	Traffic counts: August 9, 10, and 11, 1994			
					Delta	510				
					Internalization	36.8%				

Notes:

[1] Land use inventory and occupancy information obtained from Districtwide Trip Generation Study; Florida Department of Transportation, District Four, March 1995. Inventory as present in 1995.

[2] Trip generation rates/equations used in original 1995 study were based on ITE "Trip Generation, 5th Edition". All rates and equations presented here are from ITE "Trip Generation, 9th Edition", except where noted.

[3] Applied weekday PM peak hour rate for ITE Code 444 - Movie Theater with Matinee (Less than 10 screens).

[4] PM peak hour traffic volume obtained from FDOT Districtwide Trip Generation Study, March 1995.

**Table 15-5
Mizner Park Daily Trip Generation – Aggregated Land Use Procedure**

Land Use [1]	Unit	Number	ITE Code	Period	Trip Rate or Equation [2]	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential - Apartments	DU	136	220	Daily	$T = 6.06(X) + 123.56$	948	50%	474	50%	474
Retail [3]	GLA (Sq. Ft.)	119,182	820	Daily	$\ln(T) = 0.65\ln(X) + 5.83$	7,612	50%	3,806	50%	3,806
General Office [4]	GLA (Sq. Ft.)	88,279	710	Daily	$\ln(T) = 0.76\ln(X) + 3.68$	1,195	50%	598	50%	597
Movie Theater with Matinee [5]	Screens	8	444	Daily	$T = 95.06(X)$	760	50%	380	50%	380
TOTAL DAILY ITE TRIPS						10,515	50%	5,258	50%	5,257
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>					Daily Traffic Volume [6]	12,486	Traffic counts: August 9, 10, and 11, 1994			
					Delta	-1,971				
					Internalization	-18.7%				

Notes:

[1] Land use inventory and occupancy information obtained from Districtwide Trip Generation Study; Florida Department of Transportation, District Four, March 1995. Inventory as present in 1995.

[2] Trip generation rates/equations used in original 1995 study were based on ITE "Trip Generation, 5th Edition". All rates and equations presented here are from ITE "Trip Generation, 9th Edition", except where noted.

[3] Retail use consolidates general retail, restaurants, and bank.

[4] Office use consolidates all office types including medical.

[5] Since number of screens (8) is less than 10 screens, ITE Code 444-Movie Theatre with Matinee would typically apply. However, there is no rate or equation applicable for a weekday (non-Friday). Therefore applied Thursday daily rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999.

[6] Daily traffic volume obtained from FDOT Districtwide Trip Generation Study, March 1995.

**Table 15-6
Mizner Park AM Peak Hour Trip Generation – Aggregated Land Use Procedure**

Land Use [1]	Unit	Number	ITE Code	Period	Trip Rate or Equation [2]	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential - Apartments	DU	136	220	AM	$T = 0.49(X) + 3.73$	70	20%	14	80%	56
Retail [3]	GLA (Sq. Ft.)	119,182	820	AM	$\ln(T) = 0.61\ln(X) + 2.24$	174	62%	108	38%	66
General Office [4]	GLA (Sq. Ft.)	88,279	710	AM	$\ln(T) = 0.80\ln(X) + 1.57$	174	88%	153	12%	21
Movie Theater with Matinee [5]	Screens	8	445	AM	$T = 1.88(X)$	15	60%	9	40%	6
TOTAL AM PEAK HOUR ITE TRIPS						433	66%	284	34%	149
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>						AM Peak Hour Traffic Counts [6]	Traffic counts: August 9, 10, and 11, 1994			
						Delta				
						Internalization				

Notes:

[1] Land use inventory and occupancy information obtained from Districtwide Trip Generation Study; Florida Department of Transportation, District Four, March 1995. Inventory as present in 1995.

[2] Trip generation rates/equations used in original 1995 study were based on ITE "Trip Generation, 5th Edition". All rates and equations presented here are from ITE "Trip Generation, 9th Edition", except where noted.

[3] Retail use consolidates general retail, restaurants, and bank.

[4] Office use consolidates all office types including medical.

[5] Since number of screens (8) is less than 10 screens, ITE Code 444-Movie Theater with Matinee would typically apply. However, there is no rate or equation applicable for a weekday AM peak hour (non-Friday). Therefore applied Thursday AM peak hour rate presented in article: "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., presented at 1999 ITE Annual Meeting, August, 1999.

[6] AM peak hour traffic volume obtained from FDOT Districtwide Trip Generation Study, March 1995.

**Table 15-7
Mizner Park PM Peak Hour Trip Generation – Aggregate Land Use Procedure**

Land Use [1]	Unit	Number	ITE Code	Period	Trip Rate or Equation [2]	Total	Percent Inbound	Inbound Trips	Percent Outbound	Outbound Trips
Residential - Apartments	DU	136	220	PM	$T = 0.55(X) + 17.65$	92	65%	60	35%	32
Retail [3]	GLA (Sq. Ft.)	119,182	820	PM	$\ln(T) = 0.67\ln(X) + 3.31$	674	48%	324	52%	350
General Office [4]	GLA (Sq. Ft.)	88,279	710	PM	$T = 1.12(X) + 78.45$	177	17%	30	83%	147
Movie Theater with Matinee [5]	Screens	8	444	PM	$T = 37.83 (X)$	303	52%	158	48%	145
TOTAL PM PEAK HOUR ITE TRIPS						1,246	46%	571	54%	675
<i>ITE TRIP GENERATION, 9TH EDITION – Based on Table 3.1 Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations - Trip Generation Manual, 9th Ed., Vol. 1</i>						PM Peak Hour Traffic Counts [6]	Traffic counts: August 9, 10, and 11, 1994			
						Delta				
						Internalization				

Notes:

[1] Land use inventory and occupancy information obtained from Districtwide Trip Generation Study; Florida Department of Transportation, District Four, March 1995. Inventory as present in 1995.

[2] Trip generation rates/equations used in original 1995 study were based on ITE "Trip Generation, 5th Edition". All rates and equations presented here are from ITE "Trip Generation, 9th Edition", except where noted.

[3] Retail use consolidates general retail, restaurants, and bank.

[4] Office use consolidates all office types including medical.

[5] Applied weekday PM peak hour rate for ITE Code 444 - Movie Theater with Matinee (Less than 10 screens).

[6] PM peak hour traffic volume obtained from FDOT Districtwide Trip Generation Study, March 1995.

The Districtwide Trip Generation Study – Florida Department of Transportation – District Four, dated March 1995 used mid-rise apartment land use code 223, specialty retail land use code 826, and quality restaurant land use code 931. The mid-rise apartment land use has limited data to support the trip rate/equation and does not provide a daily trip generation rate. The specialty retail land use has also limited data to support the trip rates/equations. Therefore, based on professional judgement, the apartment land use code 220 and shopping center land use code 820 have been used to perform the ITE trip generation analysis.

Table 15-8 presents a summary of Mizner Park daily and AM and PM peak hour trips. Also shown are the internalization rates for each period.

**Table 15-8
Mizner Park Daily and Peak Hour Trips and Internalization**

Period	Actual Trips	ITE Trips	Percent Internalization
Detailed Land Use Procedure			
Daily	12,486	12,414	-0.6%
AM Peak Hour	365	479	23.8%
PM Peak Hour	875	1,385	36.8%
Aggregate Land Use Procedure			
Daily	12,487	10,515	-18.7%
AM Peak Hour	365	433	15.7%
PM Peak Hour	875	1,246	29.8%

Source: District Wide Trip Generation Study, FDOT D4, March 1995

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16. INTERVIEW DATA

16.1 Interview Methodology

Interviews were conducted with visitors, residents and workers at the two POD (Kendall Village Center and Miami Lakes Main Street) sites to better understand their trip making characteristics. Surveyors were assigned to predetermined locations on each site. The interviews were conducted during the Midday (11:30 AM to 1:30 PM) and the PM (4:30 PM to 6:30 PM) peak periods on one of the days that the traffic data was collected. The interview data was collected on the following dates:

- Kendall Village Center – April 7, 2015; and
- Miami Lakes Main Street -- April 8, 2015.

The surveyors were assigned to the following locations within the POD:

Kendall Village Center

- Nova Southeastern University building (2 surveyors);
- Professional Arts Center (2 surveyors);
- LA Fitness (2 surveyors);
- Northwest Building (2 surveyors)
- Southwest Building (2 surveyors)
- Southeast Building (2 surveyor);
- Northeast Building (1 surveyor);
- Jared jewelry (1 surveyor);
- On the Border restaurant (1 surveyor);
- Bahama Breeze restaurant (1 surveyor); and
- Moonlite Diner (1 surveyor).

Miami Lakes Main Street

- Medical office building (2 surveyors);
- IMG medical office building (1 surveyors);
- Office Building (2 surveyors)
- Main street retail/restaurant (9 surveyors);
- Arbor Plaza/El Novillo restaurant (1 surveyor);
- Gerardo market area (1 surveyor);
- Hotel (1 surveyor); and
- Gym/spa (1 surveyor).

Surveyors were originally assigned to the movie theaters; however, there was not enough activity at the movie theaters and therefore they were moved to a different location. The questionnaire used for the interview at each POD is provided in

Appendix M. It should be noted that the initial survey form included questions on trip origin and final trip destination (zip codes). However, these questions were deleted from the survey to comply with a request from the site managers as they viewed them as too personal.

Each of the interview forms was reviewed for accuracy and classified into one of four (4) trip types:

- Type 1: Single purpose trip (no internal trips);
- Type 2: One Internal Trip (arrival type):
 - i. Arrived from outside the development;
 - ii. Made visit to first location;
 - iii. Made visit to second location;
- Type 3: One internal trip (departure type):
 - i. Arrived from inside the development;
 - ii. Made visit to second location;
 - iii. Departed the development;
- Type 4: Two internal trips:
 - i. Arrived from inside the development;
 - ii. Made visit to second location;
 - iii. Going to visit a third location.

After interviews were grouped per trip type, they were further categorized by travel mode. Trip types 2 through 4 were added together to consolidate the overall internal trips. As stated above, the trip length could not be calculated because zip code data was not allowed to be collected by the site managers.

16.2 Kendall Village Center Interviews

A total of 543 interviews were conducted at Kendall Village Center, of which 296 survey forms were completed in the Midday period and 247 in the PM period. The survey forms are included in **Appendix M**. The interviews identified 591 trips that were classified as Types 1 to 4. Trip types are summarized in **Table 16-1**. **Table 16-1** shows that 62 percent of the total trips are single purpose trips with no internalization. The trips with one internal to internal destination represent 24 percent of the total trips, and the remaining trips with two internal destinations represent 14 percent of the total trips.

Several graphical summaries were developed to illustrate trip internalization between the various land uses at Kendall Village Center. **Figures 16-1 and 16-2** show the results for the Midday and PM peak hour periods, respectively. Multiple graphs are presented depicting the percent of each trip type, resident and on-site worker trip characteristics, internal trip purposes, and mode of transportation.

**Table 16-1
Kendall Village Center Trip Types**

Kendall Village Center						
Trip Type	Midday		PM		Total	
	Trips	%	Trips	%	Trips	%
1	195	60.7%	169	62.6%	364	61.6%
2	42	13.1%	38	14.1%	80	13.5%
3	32	10.0%	33	12.2%	65	11.0%
4	52	16.2%	30	11.1%	82	13.9%
TOTAL	321	100.0%	270	100.0%	591	100.0%

Notes:

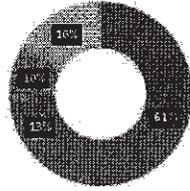
- Trip Type 1: No internal trips.
- Trip Type 2: Arrived from outside the site (one internal trip).
- Trip Type 3: Arrived from inside the site (one internal trip).
- Trip Type 4: Two internal trips.

Figures M-1 & M-7 provided in **Appendix M** depict the internal trip distribution among the various land uses for combined trip types 2 through 4 for the Midday and PM peak hour periods, respectively. Separate internalization graphs for each of the four trip types are depicted in **Figures M-2 to M-6** for the Midday hour and **Figures M-8 to M-12** for the PM peak hour. These figures are included in **Appendix M**.

The survey data summarized in **Figures 16-1 and 16-2** indicate that the percent of trip type 1 with an origin and a destination outside the site (no internalization) is 61 percent in the Midday period and 63 percent in the PM period. The percent of interviewed persons making only one internal trip (trip types 2 and 3) is 23 percent in the Midday period and 26 percent in the PM period. The percent of interviewed persons making two internal trips (trip type 4) is 16 percent in the Midday period and 11 percent in the PM period. **Figures 16-1 and 16-2** also show that less than 3 percent of interviewed persons are resident and approximately 12 percent work on site. The mode of travel is predominately by car (94 percent in the Midday and 97 percent in the PM periods). The combined bicycle, bus and walk modes did not exceed 6 percent of all trips in the Midday period and 3 percent in the PM period.

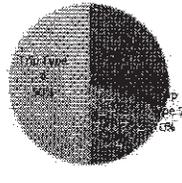
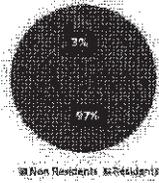
Trip internalization depends on the types and scale of land uses as well as site location. The land uses at Kendall Village include Residential, Office, Retail, Restaurant, Medical, Gym, Entertainment, University and others. Internal trips between the land uses are summarized in the tables included in **Figures 16-1 and 16-2** and illustrated in the internalization figures provided in **Appendix M**. These figures show that the main origins and destinations of internal trips are from Gym to Retail, Restaurant to Retail, Restaurant to Gym, Gym to Residential, Residential to Gym and University to Gym. Retail has the highest number of internal trips during the PM period, followed by Restaurant and Residential.

Total number of interviews collected: 296
 Total number of trips: 321
 Midday: 11:30 AM – 1:30 PM
 04/08/2015

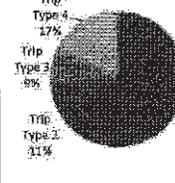
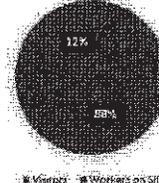


- Trip Type 1: No Internal trips
 External → Internal → External
 (Single Trip Purpose)
- Trip Type 2: One Internal trip
 External → Internal → Internal → External
 (Interview conducted inbound to the site)
- Trip Type 3: One Internal trip
 External → Internal → Internal → External
 (Interview conducted outbound from the site)
- Trip Type 4: Two Internal trips
 External → Internal → Internal → Internal → External

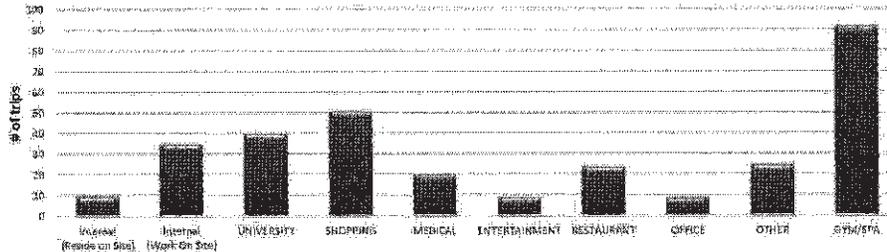
Trip Characteristics of Residents:



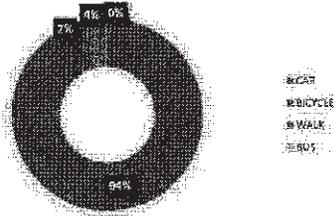
Trip Characteristics of Workers on Site:



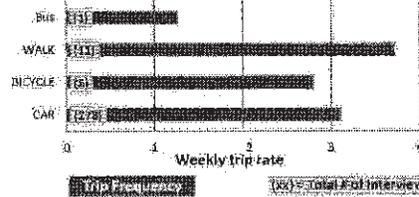
Summary of Trip Purposes:



Mode of Transportation:



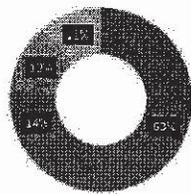
Weekly Trip Frequency per Mode of Transportation



Internal Trips Among Land-Uses:

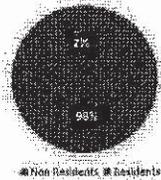
	Overall	Residential	University	Retail	Entertainment	Restaurant	Office	Medical Office	Other	Syn	Total Trips
Residential	5	0	4	0	1	1	0	0	1	1	12
University	1	0	1	0	0	0	2	1	1	1	6
Retail	5	0	10	0	0	0	0	1	5	0	21
Entertainment	0	0	0	0	1	0	0	0	0	0	1
Restaurant	0	1	3	2	1	1	1	1	1	0	12
Office	1	1	0	0	0	0	3	1	0	0	6
Medical Office	3	1	4	0	1	1	1	1	1	1	13
Other	1	1	1	0	1	2	1	0	2	1	11
Syn	2	2	6	0	0	0	0	0	0	0	10
Total (N)	18	4	31	2	3	3	4	4	6	2	114

Total number of interviews collected: 248
 Total number of trips: 270
 P.M. Period: 4:30 PM – 6:30 PM
 04/08/2015

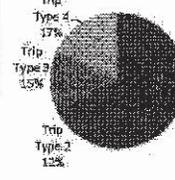
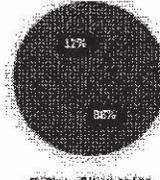


- Trip Type 1: No Internal trips
External → Internal → External
(Single Purpose Trip)
- Trip Type 2: One internal trip
External → Internal → Internal → External
(Interview conducted inbound to the site)
- Trip Type 3: One internal trip
External → Internal → Internal → External
(Interview conducted outbound from the site)
- Trip Type 4: Two internal trips*
External → Internal → Internal → Internal → External

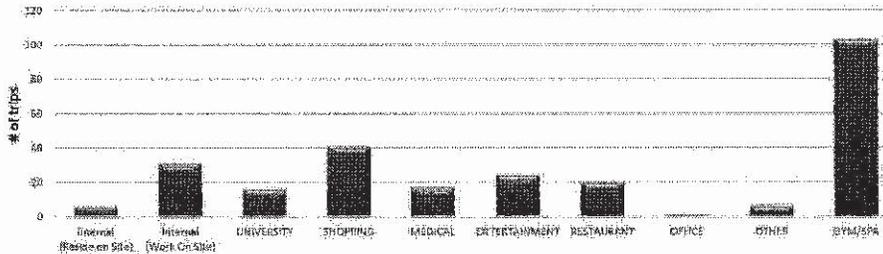
Trip Characteristics of Residents:



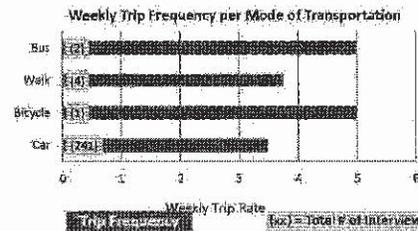
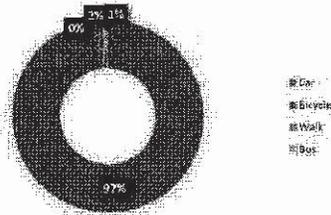
Trip Characteristics of Workers on Site:



Summary of Trip Purposes:



Mode of Transportation:



Internal Trips Among Land-Uses:

	Overall	Residential	University	Retail	Entertainment	Restaurant	Office	Medical Office	Other	Gym	Total (From)
Residential	3	3	0	0	0	0	0	0	0	0	3
University	2	0	2	0	0	0	0	0	0	0	2
Retail	2	0	0	2	0	0	0	0	0	0	2
Entertainment	3	0	0	3	0	0	0	0	0	0	3
Restaurant	2	0	0	0	2	0	0	0	0	0	2
Office	0	0	0	0	0	0	0	0	0	0	0
Medical Office	1	0	0	0	0	0	1	0	0	0	1
Other	1	0	0	0	0	0	0	1	0	0	1
Gym	0	0	0	0	0	0	0	0	0	0	0
Total (To)	12	3	2	2	2	2	0	1	0	0	12

16.3 Miami Lakes Main Street Interviews

A total of 475 interviews were conducted at Miami Lakes Main Street, of which 239 survey forms were completed in the Midday period and 236 in the PM period. The survey forms are included in **Appendix M**. The interviews identified 512 trips that were classified as Types 1 to 4. Trip types are summarized in **Table 16-2**. **Table 16-2** shows that 40.5 percent of the total trips are single purpose trips with no internalization. The trips with one internal to internal destination represent 23.5 percent of the total trips, and the remaining trips with two internal destinations represent 36 percent of the total trips.

Table 16-2
Miami Lakes Main Street Trip Types

Miami Lakes Main Street						
Trip Type	Midday		PM		Total	
	Trips	%	Trips	%	Trips	%
1	107	35.7%	110	46.6%	217	40.5%
2	57	19.0%	33	14.0%	83	16.8%
3	22	7.3%	14	5.9%	36	6.7%
4	114	38.0%	79	33.5%	176	36.0%
TOTAL	300	100.0%	236	100.0%	512	100.0%

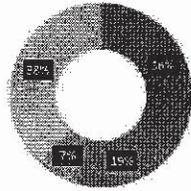
Notes:

- Trip Type 1: No internal trips.
- Trip Type 2: Arrived from outside the site (one internal trip).
- Trip Type 3: Arrived from inside the site (one internal trip).
- Trip Type 4: Two internal trips.

Several graphical summaries were developed to illustrate trip internalization between the various land uses at Miami Lakes Main Street. **Figures 16-3 and 16-4** show the results for the Midday and PM peak hour periods, respectively. Multiple graphs are presented depicting the percent of each trip type, resident and on-site worker trip characteristics, internal trip purposes, and mode of transportation. **Figures M-13 & M-19** provided in **Appendix M** depict the internal trip distribution among the various land uses for combined trip types 2 through 4 for the Midday and PM peak hour periods, respectively. Separate internalization graphs for each of the four trip types are depicted in **Figures M-14 to M-18** for the Midday hour and **Figures M-20 to M-24** for the PM peak hour. These figures are included in **Appendix M**.

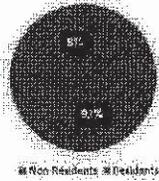
The survey data summarized in **Figures 16-3 and 16-4** indicate that the percent of trip Type 1 with an origin and a destination outside the site (no internalization) is 36 percent in the Midday period and 47 percent in the PM period; a significant lower percentage of Type 1 trips compared to Kendall Village Center.

Total number of interviews collected: 239
 Total number of survey trips: 299
 Midday: 11:30 AM – 1:30 PM
 04/07/2015

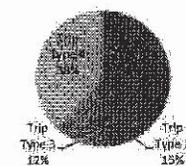
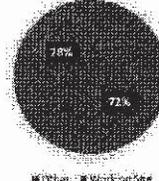


- Trip Type 1: No internal trips
External → Internal → External
(Single Trip Purpose)
- Trip Type 2: One internal trip
External → Internal → Internal → External
(Interview conducted inbound to the site)
- Trip Type 3: One internal trip
External → Internal → Internal → Internal → External
(Interview conducted outbound from the site)
- Trip Type 4: Two internal trips
External → Internal → Internal → Internal → Internal → External

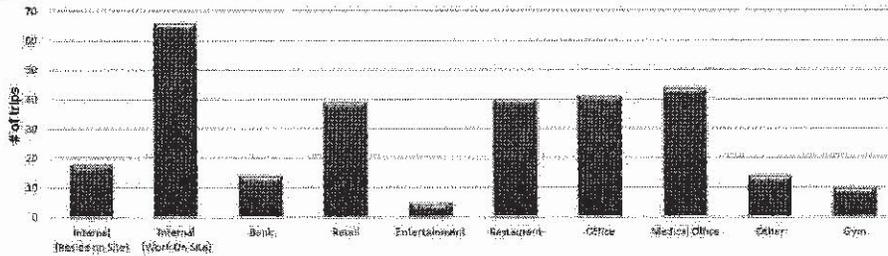
Trip Characteristics of Residents:



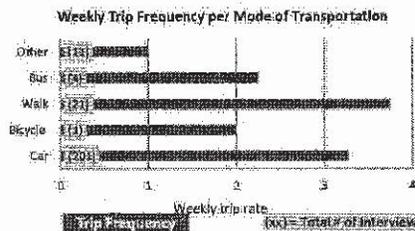
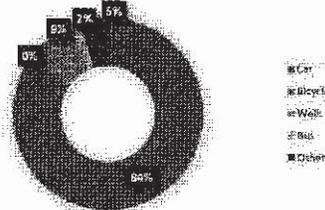
Trip Characteristics of Workers on Site:



Summary of Internal Trip Purposes:



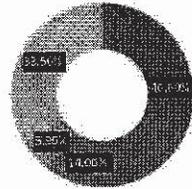
Mode of Transportation:



Internal Trips Among Land-Uses:

	Overall	Residential	Bank	Retail	Entertainment	Restaurant	Office	Medical Office	Other	Gym	Total (From)
Bank	0	0	1	0	0	0	0	0	0	0	1
Bank	1	1	0	0	0	0	0	0	0	0	1
Bank	1	1	0	0	0	0	0	0	0	0	1
Bank	2	2	0	0	0	0	0	0	0	0	2
Bank	3	3	0	0	0	0	0	0	0	0	3
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Bank	66	66	0	0	0	0	0	0	0	0	66
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Bank	68	68	0	0	0	0	0	0	0	0	68
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Bank	101	101	0	0	0	0	0	0	0	0	101
Bank	102	102	0	0	0	0	0	0	0	0	102
Bank	103	103	0	0	0	0	0	0	0	0	103
Bank	104	104	0	0	0	0	0	0	0	0	104
Bank	105	105	0	0							

Total number of interviews collected: 181
 Total number of trips: 236
 PM Period: 4:30 PM – 6:30 PM
 04/07/2015



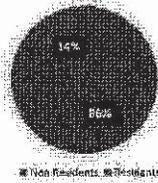
W Trip Type 1: No internal trips
 External → Internal → External
 (Single Trip Purpose)

N Trip Type 2: One internal trip
 External → Internal → Internal → External
 (Interview conducted inbound to the site)

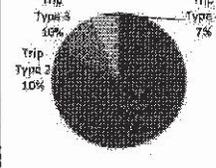
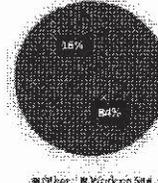
W Trip Type 3: One internal trip
 External → Internal → Internal → External
 (Interview conducted outbound from the site)

W Trip Type 4: Two internal trips
 External → Internal → Internal → Internal → External

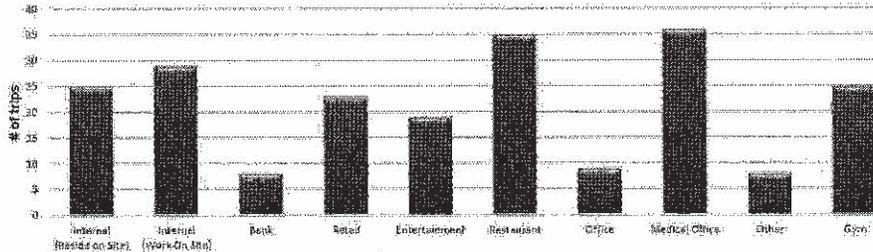
Trip Characteristics of Residents:



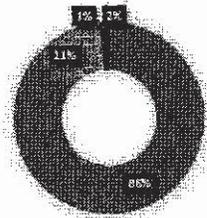
Trip Characteristics of Workers on Site:



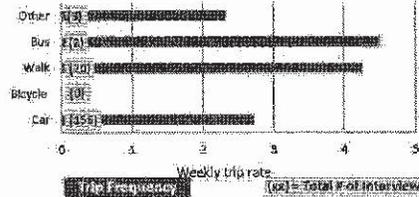
Summary of Internal Trip Purposes:



Mode of Transportation:



Weekly Trip Frequency per Mode of Transportation



Internal Trips Among Land-Uses:

	Office	Restaurant	Bank	Retail	Entertainment	Restaurant	Office	Medical Office	Other	Gym	Total (From)
Bank (Bank)	0	0	0	1	1	3	0	0	1	1	6
Bank (Bank)	0	0	0	1	0	2	0	0	1	0	4
Retail (Retail)	0	0	0	0	0	2	0	0	1	1	4
Entertainment (Entertainment)	0	0	0	0	2	3	2	2	0	0	7
Restaurant (Restaurant)	0	1	1	1	2	2	1	1	0	1	8
Office (Office)	1	0	0	0	0	0	1	0	0	0	2
Medical Office (Medical Office)	0	0	0	0	0	1	2	1	1	0	5
Other (Other)	0	0	0	1	0	2	0	0	1	0	4
Gym (Gym)	0	0	0	0	0	1	0	0	0	1	2
Total (To)	1	1	1	3	3	11	3	3	3	2	28



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Pedestrian Oriented Mixed Use Development Study

Figure

Miami Lakes Main Street Interview Trip Summary

16-4

The percent of interviewed persons making only one internal trip (trip types 2 and 3) is 26 percent in the Midday period and 20 percent in the PM period. The percent of interviewed persons making two internal trips (trip type 4) is 38 percent in the Midday period and 33 percent in the PM period, approximately a two to three times higher percentage of Type 4 trips compared to Kendall Village Center. **Figures 16-3 and 16-4** also show that between 8 and 14 percent of interviewed persons are residents and 16 to 18 percent work on site. The mode of travel remains predominately by car (84 percent in the Midday and 86 percent in the PM periods). The combined bicycle, bus and walk modes represent 16 percent of all trips in the Midday period and 14 percent in the PM period. The walk mode is approximately 10 percent of all trips.

Trip internalization depends on the types and scale of land uses as well as the site location. The land uses at Miami Lakes Main Street include Residential, Office, Retail, Restaurant, Medical, Gym, Entertainment, Bank and others. Internal trips among the land uses are summarized in the tables included in **Figures 16-3 and 16-4** and illustrated in the figures included in **Appendix M**. These figures show that the highest number of internal trips at Miami Lakes Main Street during the Midday period is between Office and Restaurant. Internal trips to and from Office, Restaurant and Retail represent over half of all internal trips during Midday. During the PM period, the highest number of internal trips is from Restaurant to Residential. Restaurant, Residential and Entertainment have the highest internal trips.

16.4 PM Peak Period Comparison

The PM peak period interviews were used to crosscheck the estimated internalization percentages based on the actual traffic counts and ITE trip generation analysis procedure. The internalization rates from interviews, and ITE vs. counts are summarized in **Table 16-3**. The average PM internalization based on the interviews (45.4 percent) is 8.6 percentage points higher than the average PM internalization calculated based on the traffic counts and ITE trip generation (36.8 percent). The interviews are strictly a sample size and the traffic count is a 100 percent sample size at the daily level. Finally, type 4 trips include trips within a similar land use such as from retail to retail. ITE trip equations already account for internal trips. Therefore, since the average 36.8 percent internalization based on the traffic counts and ITE trip generation procedure is less biased and based on a 100 percent sample, it provides a more sound and conservative estimate as compared to extrapolation of the interviews to a daily percent.

For the reasons stated above, interviews provide reasonable information on internal trips among the site's land uses and the relative attractiveness of each land use. However, extrapolating these interviews to establish a peak hour or daily internalization rate for the entire site is not justifiable considering only a small percent of trips are captured in these interviews.

Table 16-3
Average PM Peak Period Percent Internalization

Site Name	Percent Internalization	
	Interviews	ITE and Counts
Kendall Village	37.4	46.4
Miami Lakes Main Street	53.4	27.2
Average	45.4	36.8

17. COMPARISON OF INTERNALIZATION STUDIES

As previously noted, the objective of this study is to develop internalization rates for mixed-use POD developments in Miami-Dade County, and collect survey data to help identify internalization among land use pairs. A comparison of the internalization of this study with mixed-use development internalization rates from various studies is presented in this section of the report.

17.1 Trip Internalization Rates

The overall internalization rate for each POD was calculated by comparing the ITE trip rates based on detailed occupied land uses and traffic data collected at POD entry and exit points. A direct comparison of ITE trips for all uses of the POD and traffic counts provides an estimation of the internalization rate at each site for the AM, PM and Daily periods.

The trip generation analysis was based on ITE 9th Edition. The procedure in Table 3.1 of the ITE Manual was used to decide whether to use the average rates or equations to calculate the trips for each land use of selected projects. Recent 2015 traffic data was collected at three PODs (Kendall Village Center, Miami Lakes Main Street and Shops at Merrick Park) and one non-POD mixed-use site (Hammocks Town Center). Counts and land uses for two additional PODs (SODO and Mizner Park) were obtained from previous studies and summarized using a similar procedure.

Table 17-1 provides a summary of the internal trips for all six developments considered for this study (1 non-POD, 3 PODs with 2015 counts, and 2 PODs based on counts and land uses from previous studies). The daily internalization rate differs between PODs and is highest for the Shops at Merrick Park and Kendall Village Center. The average daily internalization rate is 20 percent and varies from -1 percent to 56 percent. The large variation is in part due to specific land uses at some PODs such as a gym, college, grocery store or movie theater, as well as, the proximity and integration of the sites with area transit services.

As expected, the AM internalization rates are significantly lower than daily since most retail and restaurants are not open during the AM peak period. The PM internalization rates for the PODs vary between 27 percent and 59 percent. The Shops at Merrick Park high internalization rate is due to its balanced uses, attractive restaurants, walkability factor, compact design, location in downtown Coral Gables, and availability of various transit services including a free trolley connecting it to downtown Coral Gables, Miracle Mile, and Metro Station. Furthermore, ITE trip rates applied to the retail stores at the Shops of Merrick Park may have overestimated trips considering that most retail stores at this site are high-end and attract a unique clientele. As such, they would likely serve fewer customers per day than typical retail stores for which ITE rates were developed. For the reasons noted above, the Shops at Merrick Park and the Kendall Village Center may be skewing the analysis.

**Table 17-1
Comparison of Internalization Rates**

Mixed-Use Development	%Internal (ITE vs. Counts)			POD (Y/N)	Size (Acres)	Total (KSF)	Detailed Land Uses (Units and KSF)
	Daily	AM	PM				
Hammocks (non-POD)	-14.0%	4.0%	17.7%	No	44.5	358 KSF	240 Units, 30K Restaurant, Ice Arena, Library, Bank
Kendall Village	18.7%	-6.5%	46.4%	Yes	38.5	397 KSF	87 Units, 82K Retail, 53K Office, 54K Rest.,Gym,College,Movie
Miami Lakes Main St.	7.2%	16.5%	27.2%	Yes	65.7	661 KSF	900 Units, 126K Retail, 154K Office,35K Rest.,Hotel,Spa,Movie
Shops at Merrick Park	55.7%	8.8%	59.1%	Yes	19.3	850 KSF	120 Units, 610K retail, 153K Office, 36K Restaurant, Gym
SODO	16.4%	9.1%	26.5%	Yes	18.0	340 KSF	300 Units, 283K Retail+Grocery, 46K Office, 11K Restaurant
Mizner Park (1)	-0.6%	23.8%	36.8%	Yes	30.0	208 KSF	136 Units, 87K Retail, 88K Office, 30K Restaurant, Bank, Movie
Average (PODs)	19.5%	10.3%	39.2%	Yes	34.3	491 KSF	Various Mixed-Use project sizes & land uses
NCHRP Report 684 - Enhancing Internal Trip Capture Estimation for Mix-Use Developments - 2011 (2)							
Crocker Center	41.0%		32.0%		26		0 Units, 87K Retail, 209K Office, Hotel
Mizner Park	40.0%		32.0%		30		136 Units, 163K Retail, 88K Office, Movie
Galleria Area	38.0%		28.0%		165		722 Units, 1150K Retail, 137L Office, Hotel
Country Isles	33.0%		30.0%		61		368 Units, 193K Retail, 59K Office
Village Commons	28.0%		30.0%		72		317 Units, 231K Retail, 293K Office
Boca Del Mar	33.0%		27.0%		253		1144 Units, 198K Retail, 303K Office
Average	35.5%		29.8%		101		Source: Table 6 of NCHRP Report 684
CUTR-FDOT-Trip Internalization in Multi-Use Developments Based on Surveys - April 2014 (3)							
Creekwood (Bradenton)	14.0%	14.0%			43	396 KSF	592 Units, 362K Retail, 35K Restaurants (Suburban)
Sodo (Orlando)	12.0%	14.0%			18	445 KSF	300 Units, 283K Retail, 46K Office, 11K Restaurant
Lakeside Village (Lakeland)	9.0%	16.0%			74	543 KSF	312 Units, 387K Retail, 79K Restaurant, Movie, Hotel (900 R)
Uptown Altamonte	12.0%	13.0%			25	673 KSF	800 Units, 452K Retail, 117K Office, 11K Rest., Hotel, Cinema
Average	11.8%	14.3%			40	514 KSF	Source: CUTR-FDOT April 2014 Multi-Use study (Table ES-6)
FDOT District 2 Internal Trip Capture Study (4)							
Halle Plantation		only	only		n/a		Near Gainesville, Mixed Use, 2700 Units
Magnolia Parke		average	average		n/a		Shands Hospital for children
Palencia Site		AM rate	PM rate		2,350		Planned Community south of Jacksonville
Tioga Site		provided	provided		500		Near Gainesville, 40 Units, 80K Retail, 21 acres Town Center
Average		20.0%	30.0%				Source: Section 2.4 of the CUTR-FDOT 2014 report

Notes:

- 1 - While the initial study for Mizner Park was performed in 1994, the trip generation was updated to ITE Trip Generation Manual, 9th Edition.
- 2 - NCHRP Report 684, Enhancing Internal Trip Capture Estimation for Mixed-Use Developments, 2011
- 3 - CUTR-FDOT-Trip Internalization in Multi-Use Developments Based on Surveys, April 2014
- 4 - Internal Trip Capture Study - District 2, Report prepared for FDOT, URS, 2010.

NCHRP Report 684, published in 2011, examines trip internalization at six developments. The approximate average daily internalization rate for those studies is 36 percent and the approximate average PM peak hour internalization rate is 30 percent. The PM internalization rates from the NCHRP report are lower, but consistent with current findings. If the Shops at Merrick Park and the Kendall Village Center are not included, the average PM internalization for the studied sites is also 30 percent. This is also consistent with the 30 percent PM peak hour average internalization rate for the four mixed-use projects examined in the FDOT District 2 Study performed by URS in 2010. It should be noted that the trip internalization rates from the CUTR 2014 study summarized in **Table 17-1** are based on surveys only and therefore are not consistent with the procedure used in other studies. Since the survey captures a small sample of visitors, counts are more accurate in estimating internalization rates for the entire site.

17.2 Internal Capture Rates Among Land Uses

Chapter 7 of Volume 1 of ITE Trip Generation Manual, 9th Edition, provides tables (Tables 7-1 and 7-2) to estimate the internal capture rates for trip origins and destinations among the three most common land uses (Office, Retail and Residential) for the Midday, PM and Daily periods. NCHRP Report 684, published in 2011, expanded the land uses to six (adding Restaurant, Hotel and Movie), developed rates for the AM peak hour, and provided a methodology to adjust for the effects of proximity where capture rates decrease with distance between the uses. CUTR-FDOT Trip Internalization in Multi-Use Developments, published in April 2014, further expanded the NCHRP procedure by adding more interview data from new developments in Florida. The trip rates estimated using the new procedure were compared to traffic counts and found to represent a better correlation with field data. The analysis confirmed that internal capture rates are higher for compact developments with a friendlier walking environment. Proximity adjustments recommended in the NCHRP report were found to produce better results for mixed use developments greater than 55 acres.

In the NCHRP and CUTR reports, the highest internalization rates based on surveys were found among uses such as Hotel and Restaurant, Restaurant and Retail, Residential and Retail, and Residential and Office. These high internalization rates are generally supported by the interviews conducted at Kendall Village Center and Miami Lakes Main Street. However, these two sites incorporated additional land uses including Gym, Medical Office, Entertainment and Bank; and therefore a direct comparison of internal capture rates could not be made between this study and the NCHRP and CUTR studies. Detailed trip capture rates between uses at Kendall Village Center and Miami Lakes Main Street are provided in tabular and graphical formats in Chapter 16 and **Appendix M** of this report.

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18. ROAD IMPACT FEE

18.1 Background and Description

In 1989, Miami-Dade County passed a detailed road impact fee ordinance -- Ordinance Number 88-112, effective June 4, 1989, "Miami-Dade County Road Impact Fee Ordinance (RIFO)." This ordinance was incorporated in the County's Code of Ordinances as Chapter 33E Road Impact Fees. Included in the ordinance is a detailed road impact fee formula and process applicable to all building permits for development in the County.

The Road Impact Fee (RIF) schedule is based on the capital cost of roadway improvements required to serve any increase in transportation requirements resulting from proposed development activities together with impact fee administrative costs. The RIF schedule (Table 100, Outside Urban Infill Area and Table 100A, Inside Urban Infill Area) consists of 60 land uses and corresponding daily trip rates based on Institute of Transportation Engineers' Trip Generation Manual, 7th Edition (see **Appendix N**). This latter publication identified 150 land uses and provided trip rates and trip formulas (where available) for each of the uses.

The RIF process is based upon daily trip rate or rates of the subject development as found in the Institute of Transportation Engineers' Trip Generation Manual, 7th Edition or 9th Edition. In late 2014, the Miami-Dade County Commission adopted Ordinance 14-122, effective December 12, 2014, making several modifications to the County's RIF schedule. A notable change is that the timing of the RIF Present Day Cost ("PDC") multiplier increases in the Impact Fee Rate Schedule. Prior to the ordinance's passage, the RIF rate was adjusted on January 1 of each year, and April 22 of each year (with the last April increase scheduled on April 22, 2015), while other county impact fees, such as police and fire, adjusted on October 1 of each year.

With the April 22 annual road impact fee increases, the impact fee charts were modified three times per year, leading to a lack of predictability in impact fees. With the ordinance's enactment, the PDC multiplier for the RIF will now be adjusted on October 1 of each year. Therefore, the anticipated January 1, 2015 increase was postponed and the current PDC multiplier remains in effect an additional ten months until October 1, 2015 and will thereafter be adjusted in accordance with the County's fiscal year. The April 22, 2015 and January 1, 2016 County's RIF non-PDC increases are still scheduled to take effect. However, the result is a simplified process that aligns the PDC Multiplier RIF increases with other County impact fee schedules and after 2016, there should be only one impact fee schedule per year rather than three schedules per year.

Additionally, the new ordinance added over 20 new land use categories to the RIF schedule to reflect current development patterns in Miami-Dade County. The ordinance changed the rates in various impact fee categories. While some of the fees have increased, many of the fees have decreased, including the fees for residential

development. One of the new categories added is for a “High-Rise Apartment or Condominium (more than three floors) category”, with the ITE Code 222. The impact fees for this new category are significantly less than the fees assessed prior to the adoption of the new ordinance.

Another significant change allows fee payers for quality or high turnover restaurants to request the fee to be computed either on a per seat basis or per square foot basis.

The County's purpose in implementing the change is to allow for more accurate projections of how a development will impact traffic volume, ultimately ensuring fee payers are charged in accordance with their actual impact on local roadways.

18.2 Road Impact Fee Land Uses

The following is a listing of the ITE land uses used in the RIFO:

- 000 Port and Terminal
 - 30 Truck Terminals
- 100 Industrial
 - 130 Industrial Park
 - 140 Manufacturing
 - 150 Warehousing
 - 151 Mini-Warehouse
- 200 Residential
 - 210 Single-Family Detached
 - 220 Apartment (Rentals)
 - 222 High-Rise Apartment or Condominium (more than three floors)
 - 230 Condominium, Townhouse
 - 240 Mobile Home
 - 251 Senior Adult Housing—Detached
 - 252 Senior Adult Housing—Attached
 - 253 Congregate Care Facility
 - 254 Assisted Living Facility
 - 255 Continuing Care Retirement Community
- 300 Lodging
 - 310 Hotel
 - 311 All Suites Hotel
 - 320 Motel
- 400 Recreational
 - 420 Marina
 - 430 Golf Course
 - 480 Amusement Park
 - 490 Tennis Courts (open to public; no ancillary facilities)
 - 491 Racquet Club
 - 492 Health/Fitness

- 500 Institutional
 - 520 Elementary School
 - 530 High School
 - 540 Jr./Community College
 - 550 University
 - 560 Church/Synagogue
 - 565 Day Care Center
- 600 Medical
 - 610 Hospital
 - 620 Nursing Home
 - 630 Clinic
- 700 Office
 - 710 General Office Building
 - 720 Medical Office Building
 - 750 Office Park
 - 760 Research Center
 - 770 Business Park
- 800 Retail
 - 813 Discount Superstore (free standing)
 - 816 Hardware/Paint Store/Pool Supply (free standing)
 - 817 Nursery/Garden Center
 - 820 Shopping Center/General Retail
 - 841 Car Sales
 - 848 Tire Store
 - 850 Supermarket (free standing)
 - 851 Convenience Market
 - 853 Convenience Market with Gasoline
 - 862 Home Improvement Superstore
 - 875 Department Store (free standing)
 - 880 Pharmacy/Drugstore (no Drive thru)
 - 881 Pharmacy/Drugstore (with Drive thru)
 - 890 Furniture Store (free standing)
- 900 Services
 - 911 Bank (Walk-in)
 - 912 Bank (Drive-in)
 - 931 Quality Restaurant
 - 932 High Turnover Restaurant
 - 933 Fast Food Restaurant No Drive Thru
 - 934 Fast Food Restaurant with Drive Thru
 - 937 Coffee/Donut Shop
 - 944 Service Stations w/Gasoline

Table 18-1 compares those land uses in the RIF schedule that have different trip rates as compared to the ITE 9th Edition Trip Generation Manual.

**Table 18-1
Trip Rates Comparison**

ITE Code	ITE Land Use Type	Daily Trip Generation Rate Per Unit of Development			Percent Difference ITE 9th vs. RIFO
		RIFO	ITE 9th Edition		
30	Truck Terminals	9.85/1,000 GSF	9.89/1,000 GSF	0.4%	
130	Industrial Park	6.96/1,000 GSF	6.83/1,000 GSF	-1.9%	
150	Warehousing	4.96/1,000 GSF	3.56/1,000 GSF	-28.2%	
151	Mini-Warehouse	2.50/1,000 GSF	1.65/1,000 GSF	-34.0%	
210	Single-Family Detached	9.57/unit	9.52/unit	-0.5%	
220	Apartment (Rentals)	6.72/unit	6.65/unit	-1.0%	
230	Condominium, Townhouse	5.86/unit	5.81/unit	-0.9%	
255	Continuing Care Retirement Community	2.28/unit	2.40/unit	5.3%	
310	Hotel	8.92/available room	8.17/available room	-8.4%	
311	All Suites Hotel	6.24/available room	4.90/available room	-21.5%	
320	Motel	9.11/available room	5.63/available room	-38.2%	Used occupied room from 7th Edition
445	Multiplex Movie Theater	---	95.06/screen [3]	---	Not included in RIFO
492	Health/Fitness	4.02/1,000 GSF [1]	32.93/1,000 GSF	---	A check of the 7th Edition reveals that there is no daily rate of 4.02. The daily rate is 32.93/1,000 GSF in both the 7th and 9th Editions.
540	Jr./Community College	1.20/student	1.23/student	2.5%	
550	University	2.38/student	1.71/student	-28.2%	
565	Day Care Center	79.26/1,000 GSF	74.06/1,000 GSF	-6.6%	
610	Hospital	17.57/1,000 GSF	13.22/1,000 GSF	-24.8%	
620	Nursing Home	2.37/bed	2.74/bed	15.6%	

**Table 18-1 (Continued)
Trip Rates Comparison**

ITE Code	ITE Land Use Type	Daily Trip Generation Rate Per Unit of Development			
		RIFO	ITE 9th Edition	Percent Difference ITE 9th vs. RIFO	
710	General Office Building				Based on the daily equation with the upper range as the square feet input to calculate the trips. The trips are then divided by the square feet to derive the rate.
	1–50,000	15.65/1,000 GSF	15.50/1,000 GSF	-0.9%	
	50,001–100,000	13.34/1,000 GSF	13.13/1,000 GSF	-1.6%	
	100,001–200,000	11.37/1,000 GSF	11.12/1,000 GSF	-2.2%	
	200,001–300,000	10.36/1,000 GSF	10.09/1,000 GSF	-2.7%	
	300,001–400,000	9.70/1,000 GSF	9.41/1,000 GSF	-3.0%	
	400,001–500,000	9.21/1,000 GSF	8.92/1,000 GSF	-3.1%	
	500,001–600,000	8.83/1,000 GSF	8.54/1,000 GSF	-3.3%	
	600,001–700,000	8.53/1,000 GSF	8.23/1,000 GSF	-3.5%	
	700,001–more	8.27/1,000 GSF	7.97/1,000 GSF	-3.6%	
770	Business Park	12.76/1,000 GSF	12.44/1,000 GSF	-2.5%	
817	Nursery/Garden Center	36.08/1,000 GSF	68.10/1,000 GSF	88.7%	
911	Bank (Walk-in)	156.48/1,000 GSF	No rate or equation available in 9th Edition [2].		
912	Bank (Drive-in)	246.49/1,000 GSF	148.15/1,000 GSF	-39.9%	
932	High Turnover Restaurant	158.37/1,000 GSF -	127.15/1,000 GSF or 4.83/seat	-19.7%	

A comparative assessment of the changes of the trip rates resulted in the following:

1. The daily trip rate for Health/Fitness (4.02/1000 GSF) is incorrect. The correct rate is 32.93/1000 GSF, found in both the 7th and 9th Editions;
2. The Walk-in Bank land use daily rate is not provided in the 9th Edition.
3. The RIF schedule should include the daily trip rate for multiplex theater (95.06/screen). The daily rate for the multiplex theater was obtained from the "Trip Generation for Entertainment Land Uses", Julie M. Doyle, P.E., 1998.

It is recommended that the RIFO be amended to update the trip rates for the land uses listed in **Table 18-1**. In summary, 24 land use trip generation rates are different between the RIF schedule and ITE 9th Edition. Out of the 24 land uses that have different rates, 10 would produce results with a greater than 10 percent difference as

compared to the RIF schedule, and 16 out of the 24 would result in lower number of trips as compared to the RIF schedule.

Since the internalization percentage to be applied to POD developments was calculated based on the current ITE Trip Generation Manual 9th Edition as compared to actual traffic counts, it is recommended that the RIF schedule be amended to update the trip rates to the latest ITE Trip Generation Manual, 9th Edition.

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19. PEDESTRIAN ORIENTED DEVELOPMENT GUIDELINES

The following guidelines are recommended to aid in identifying eligible POD projects for RIFO credit. Project review should be coordinated amongst the pertinent County agencies during the DRC process. It is recommended all the guidelines be satisfactorily addressed by the developer. If there are any issues regarding the adherence to any of the guidelines, the County will determine what necessary action, if any, must be undertaken by the developer to satisfy the guideline(s) requirements.

Guidelines for POD Designation:

1. **Development Size:** Project should be a single comprehensive mixed-use real estate development project between 100,000 and 2 million square feet of multiple uses (four or more), with multiple buildings with one or more uses, either horizontal or vertical (e.g. retail/offices bottom level and residences upper levels), and medium-to-high density;
2. **Site Size:** The maximum site area should be 162 acres. This is based on the distance of 1,500 feet that people are willing to walk to their destination.¹⁷ The site should be compact, not linear or spread out haphazardly amongst disparate parcels;
3. **Land Uses:** The project should have a minimum of four (4) distinguishable land uses, one of which must be residential. The other uses may include retail, office, services (e.g. restaurants, banks, and gas stations), recreational, hotel, and institutional.

The scale of these uses should be analyzed to assure POD compatibility with respect to proportional area (sq. ft.). The residential land use must be between 25 and 55 percent of the overall area and the next two largest land uses must be greater than or equal to 10 percent of the overall area, based on the PODs studied for this report (See **Appendix O**).

A discussion of land uses in relation to POD follows:

- a. **Residential Land Uses:** The residential component of the POD should consist of medium to high density multi-family units such as apartments or townhomes. The project should not contain detached single unit homes;

¹⁷ This represents a walk time of approximately 7.1 minutes based on a walking speed of 3.5 feet per second (FDOT). With a 1,500 foot walk radius from the outer POD site limits to the center of the POD, the area is estimated at 162 acres ($1,500^2 \times 3.1416 / 43,560$ sq. ft. per acre = 162 acres).

Ideally, some residences can be integrated with other uses such as office or commercial along the internal POD streets. The residences can be placed on the upper levels of the buildings with retail, offices and/or services on the lower level (Main Street at Miami Lakes the Residences at Merrick Park are a prime examples of this type of mixed-use);

- b. Retail: Typical big box retail developed as free standing stores are not conducive to POD developments. However, if they are master planned in accordance with the pedestrian connectivity and associated POD criteria as discussed in Section 2, they can be successful components. Other uses not typical of a POD include: home improvement, sporting goods, toys, baby, or other large free-standing retail stores, large discount stores, heavy equipment sales or rental, auto sales, etc.;
- c. Pharmacies and other uses without drive-through lanes are recommended for the POD. If a pharmacy or any other use with drive-through lanes is proposed within a POD, it should be located on the periphery of the POD adjacent to a major roadway;
- d. Large supermarkets are not generally conducive to a POD (Note – none of the three PODs referenced in this study – Kendall Village Center, Main Street and Shops at Merrick Park – have supermarkets. Main Street has a small grocery store). However, standard sized supermarkets could be located on the periphery of the POD site with the primary access off a major collector or arterial. Smaller store-front grocery stores (less than 20,000 square feet) are conducive to a POD;
- e. Office: Office uses are an important element for a POD; however, it is recommended that these offices be integrated in buildings with other uses as much as possible. Offices are inactive during the evening and weekends and as such do not contribute to the POD environment during those periods. Single use office buildings devoid of other uses should be avoided.

Medical offices can be incorporated into the POD. However, the trips associated with medical offices are greater than regular office use and, based on the surveys conducted for this study, the trips tend to be single purpose trips with very little or negligible interaction with other POD uses;

- f. Services: Walk-in banks, sit-down and/or carry-out restaurants without drive through windows, and cafes are service uses conducive to a POD.

Gas stations, especially those with convenience market, and other automobile and/or truck related services should not be included in the POD;

- g. Recreational: These uses include POD compatible parks, community centers, theaters (movie and live), tennis/racquetball courts, health/fitness clubs, and athletic clubs;
- h. Lodging: Hotels and resorts are conducive to a POD. These should be located close to the POD's activity center, and connected to the overall POD pedestrian and vehicular circulation systems. The Don Shula Resort Hotel at Main Street is an excellent example of the merging of a resort hotel with the center of the Main Street development;
- i. Institutional: Institutional uses such as worship centers, day care centers, museums and libraries are conducive to PODs. However, the scale of these uses should be analyzed to assure POD compatibility with respect to proportional area. Parking and access for these uses must be evaluated with respect to traffic circulation and possible impacts on internal pedestrian circulation.

Many public and private schools and university/colleges may require large portions of land that would not be conducive to a POD. However, some educational institutions that do not require typical substantial campus areas (e.g., athletic facilities, student centers, dormitories, etc.) may be considered for a POD. These include technical schools or special educational learning centers (e.g., technical or graduate schools such as Phoenix University); and

- j. No industrial uses should be included in a POD.

4. Shared facilities: Buildings and individual project components have mostly common features and support services such as shared parking, servicing, loading, and utility areas;

5. Street oriented buildings: Setbacks provide for ease of pedestrian circulation, pedestrian amenities and landscaping. As a convenient rule of thumb, buildings should be set back no farther than 25 feet from the street edge, for beyond that they lose their tangible connection to the street. Ideally, buildings could be flush with the sidewalk or set back just far enough for a modest yard, forecourt or landscaped area in front. The main entries face the street, and windows should be provided in significant numbers at street level;

6. **A discernible/distinctive center:** POD's should have a discernible or distinctive center. The center can be a square, a green, a landscaped roundabout, a small park, and/or enhanced landscaped corners or building frontages;
7. **Major public space:** A POD should have at least one major public space such as a plaza, park, town square, or other public gathering spaces such as a community center.

Public spaces contribute more to the street environment when they appear as extensions of street and sidewalk rather than as stand-alone. Public spaces help punctuate the street and pedestrian networks, break up long walk stretches, and provide streets with starts and endings. The sizes of the spaces can range from a series of small flared corners, a recessed building entry equipped with benches and shade trees, to a park or commons area. These spaces are designed and located for substantial public use and may include significant public amenities, such as water features and/or public art;

8. **Internal streets:** Streets within the POD should form a “connected network”, dispersing traffic by providing a variety of pedestrian and vehicular routes to any POD destination. The internal road system may be a grid or radial system, but should be centered on the POD's central area.

The internal streets should be narrow (one lane in each direction) with no or limited curb parking. Nine to ten foot lanes plus curb parking and/or bike lanes are recommended. Wider streets may be considered at the primary access points to allow for transitioning to the adjacent collectors or arterials; however, these roads should be reduced within the POD. Combined with trees lining the street edges, this slows traffic, creating an environment suitable for pedestrians and bicycles;

9. **Parking:**

- a. The off-street parking locations (surface and/or garages) for vertical mixed-use development include the rear or sides of buildings, provided that the exposure of surface parking to streets is limited. Parking lots or structures may also be surrounded by mixed-use buildings, hidden from direct view.
- b. Curb parking: Curb parking is optional. Curb parking can be allowed on the internal streets. Ideally, the less on-street parking the better for a POD. For example, the primary parking for the Shops at Merrick Park is confined to the four major parking garages on site.

Nonetheless, if curb parking is to be provided it should adhere to County standards and include more sidewalk areas and landscaping;

10. Sidewalks/Paths: All components within a POD, buildings, open areas, parks, etc., should be connected by an attractive and convenient pedestrian circulation system, sidewalks/paths. These systems may use a combination of public streets and internal private streets and ways. Crossing through parking lots or other obstacles should be minimized.

While state and local agencies allow a minimum sidewalk width of 5 feet, PODs are recommended to have widths of between 8 and 20 feet along the main corridors.

Crosswalks should be clearly defined through striping and/or surface treatments;

11. External connections: Connections should be made to adjacent centers, neighborhoods, and public open space areas. These connections can range from local sidewalks to specifically built pathways and corridors.

12. Transit connections: Since the POD development is not a TOD, transit service does not have to be a premium or high frequency service; however, placement of the POD along or within one-quarter-mile distance from a transit route is encouraged.

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20. CONCLUSION

Table 20-1 summarizes the internalization percentage for the daily, AM, and PM peak for the Hammock Town Center (non-POD) and the five POD developments studies. As shown in the table, the development estimated trips using ITE trip generation rates depends on how the land uses are defined.

**Table 20-1
Internalization Summary**

Period	Non-POD	POD Developments					POD Average ²
	Hammocks Town Center	Kendall Village Center	Miami Lakes Main Street	Shops at Merrick Park ¹	SODO	Mizner Park ¹	
Detailed Land Use Procedure							
Daily	-14.0%	18.7%	7.2%	55.7%	16.4%	-0.6%	14.1%
AM Peak Hour	4.0%	-6.5%	16.5%	8.8%	9.1%	23.8%	6.4%
PM Peak Hour	17.7%	46.4%	27.2%	59.1%	26.5%	36.8%	33.4%
Aggregated Land Use Procedure							
Daily	-33.6%	4.0%	-9.5%	50.1%	n/a	-18.7%	-2.8%
AM Peak Hour	-26.5%	-6.9%	-7.1%	1.3%	n/a	15.7%	-7.0%
PM Peak Hour	1.9%	38.3%	18.0%	54.3%	n/a	29.8%	28.2%

¹ Presented for informational purposes only. Not representative of anticipated Miami-Dade POD.

² POD Average internalization rate based on Kendall Village Center, Miami Lakes Main Street and SODO, only.

Internalization was estimated for each site based on the detailed make-up of land uses known to be at each site and for the same site assuming aggregated General Office and Shopping Center land uses (ITE Codes 710 and 820, respectively). The results of the five POD studies were reviewed by senior staff at K&S and various County Departments. Each site was reviewed in detail with regards to its characteristics, and applicability in representing typical POD developments within Miami-Dade County.

The excessively high daily internalization rate (55.7 percent) at the Shops at Merrick Park and the low rate (-0.6 percent) at Mizner Park were deemed as statistical outliers not representative of future PODs in the County. The Shops at Merrick Park site has mostly high-end tenants and is located in very close proximity to excellent transit service (MetroRail, MetroBus, and a free trolley bus service operated by the City of Coral Gables). Additionally, the high-end retail associated with this site generates fewer trips than ITE rates would estimate, which likely artificially skews the results of the internalization rates measured at this site based on the methodology used. The Mizner Park study is over twenty-years old, and the development is located in Palm Beach County. There is ample convenient parking at the four garages surrounding the site, and the site does not benefit from the types and frequency of transit services more

commonly available in Miami-Dade County. A consensus was reached among the County and K&S staff that these two sites do not represent the typical POD sites that would be anticipated in Miami-Dade County. As such, these two developments were not used in calculating the POD Average rates depicted in **Table 20-1**.

For the POD developments, **Table 20-1** summarizes the internalization observed at each site, and presents the average of the three representative sites: Kendall Village Center, Miami Lakes Main Street, and SODO. The analysis using detailed land uses yielded daily trips that are on average 14.1 percent lower than the ITE trips. The ITE trip generation analysis using aggregated land uses (where there is no distinction between retail uses or the general office and medical office uses) underestimates the trips on average by 2.8 percent. Based on this information, it is recommended that the County apply a daily trip generation internalization rate of 14.1 percent to POD developments that have a detailed breakdown in land uses. If the POD does not have the detailed breakdown in land uses, the County might underestimate the trips by 2.8 percent using standard ITE trips.

Other Findings:

For the non-POD development (Hammocks Town Center), regardless which procedure was used, the ITE trip generation analysis underestimated the actual trips by 14.0 and 33.6 percent, respectively. If the Hammocks Town Center is typical of shopping center activity in the County, it is recommended that the County select additional sites similar to the Hammocks Town Center to collect traffic data, and perform the ITE trip generation analysis. If the data shows that shopping center trips are consistently underestimated by the ITE rates, then a local trip rate should be developed to better represent the trips for shopping centers in the County.

Recommended Changes to the Road Impact Fee Land Uses

Currently, in its application of the Road Impact Fee Ordinance (RIFO), Miami-Dade County does not have a use that reflects POD and the benefits of internalization associated with this land use form. It is recommended that the RIFO be amended to include the POD land use along with a 14.1 percent credit for internalization. However, in order to qualify for the internalization capture rate of 14.1 percent, the development must be designed based on the guidelines as presented in **Section 18**, and the land uses should be presented in detail. **Table 20-2** presents a check list to help determine if the development qualifies as a POD eligible for the daily 14.1 percent internalization.

The Road Impact Fee schedule (Table 100, Outside Urban Infill Area and Table 100A, Inside Urban Infill Area) consists of land uses and corresponding daily trip rates based on ITE Trip Generation Manual, 7th Edition.

Since the adoption of the RIF schedule, the ITE Trip Generation Manual has been updated to the 9th Edition. A comparison between the current RIF schedule (based on ITE 7th Edition) and ITE Trip Generation Manual, 9th Edition was performed. In

summary, 24 land use trip generation rates are different between the RIF schedule and ITE 9th Edition. Out of the 24 land uses that have different rates, 10 would produce results with a greater than 10 percent difference as compared to the RIF schedule, and 16 would result in a lower number of trips as compared to the RIF schedule.

Since the recommended internalization percentage for POD developments was calculated based on the current ITE Trip Generation Manual 9th Edition, it is recommended that the RIF schedule be amended to update the trip rates to the latest ITE Trip Generation Manual, 9th Edition.

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**Table 20-2
Pedestrian Oriented Development Criteria**

Criteria		Check Mark
Criteria 1 – Development Size		
1a	Site area is less than 162 acres.	
1b	It is a single <u>Master Planned</u> Development project between 100,000 and 2,000,000 square feet in size.	
Criteria 2 – Development Land Uses		
2a	Non-residential land use exceeds 30 percent of the total project development area.	
2b	Includes residential single family detached apartments, townhouses, or condos (must be between 25 and 55 percent of the overall area).	
2c	It has a combination of at least three other land uses besides residential: <ul style="list-style-type: none"> • Office / Medical Office • Retail; • Service (restaurants, banks); • Recreational; • Hotel; or • Institutional. 	
2d	The second and third highest land uses must be greater than or equal to 10 percent of the overall area.	
2e	The development <u>does not</u> have fast-food restaurants, gas stations, industrial uses, or other uses with drive-through windows?	
Criteria 3 – Building Design Features		
3a	The development has at least one major public space such as a plaza, park, town square, or other public gathering space such as a community center.	
3b	The development has a discernible center. This is often a square, a green, a roundabout, a park and/or sometimes a busy or memorable street corner.	
3c	The development is within a 1,500 foot radius of the POD's center.	
3d	There are multiple buildings accommodating more than one land use.	
3e	The buildings and individual project components have mostly common features and support services such as shared parking, servicing, loading, and utility areas.	
3f	The building setbacks are less than or equal to 25 feet from the roadway.	
3g	The building main entries face the street.	
Criteria 4 – Internal Connectivity		
4a	The pedestrian sidewalks form a network connecting all areas of the development.	
4b	The pedestrian sidewalks are between 12 and 20 foot wide (main corridors).	
4c	The internal vehicular streets are two or four lanes (11 or 10 foot wide lanes) and shaded by rows of trees.	
4d	Vehicles can access any part of the development without using the adjacent regional roadways.	

NOTE: In order to qualify for internalization and land use distribution, the request requires final approval from the County's Department of Transportation and Public Works Director.

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