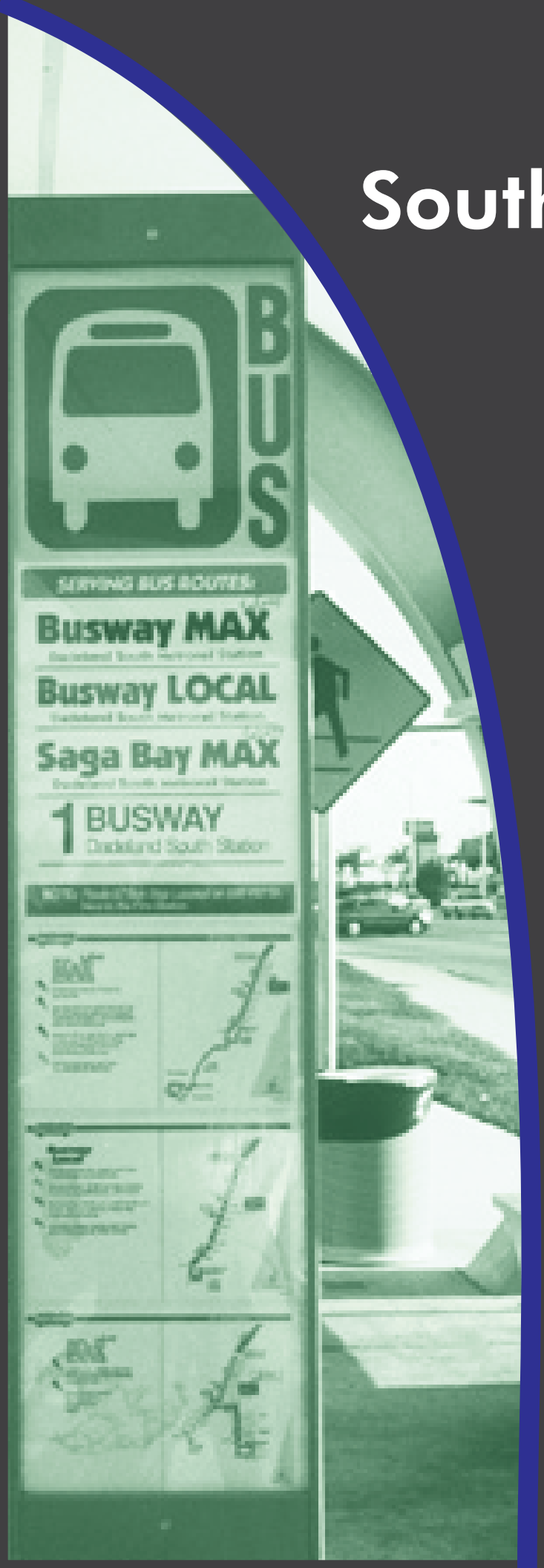

South Dade Busway Feeder Study

January 2008

Miami Dade Transit

MIAMI-DADE COUNTY

Lehman Center for Transportation Research
Florida International University

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South Dade Busway Feeder Study

January 2008

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Work Order No. 2007-1

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South Dade Busway Feeder Study

Executive Summary

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South Dade Busway Transit Feeder Study

Purpose

As the Busway has attracted more ridership, transit riders and potential Busway riders in the community have expressed concerns that the lack of adequate park-and-ride capacity has become a deterrent to their use of the Busway. To address their needs, this study has been requested to determine ways to improve or establish new feeder services to bring people to the Busway from park-and-ride stations located within their communities. New park-and-ride facilities, feeder transit improvements, and other recommendations were determined based on existing transit operations data, existing transit survey data, two new South Dade transportation surveys, current development patterns, and planned development information.

Methodology

The study is market-based, and addresses the urbanized area south of Kendall Drive (SW 88th Street). To determine what service improvements could help to alleviate park-and-ride overcrowding, the survey data that was used was both specifically for this study, and from existing recent transit survey data. This data and analysis has been designed to identify the needs of three markets of existing and potential Busway passengers:

1) Existing transit users whose needs are represented by parking utilization data, the park-and-ride license plate survey, the park-and-ride kiss-and-ride license plate survey, recent Metrorail and Metrobus passenger surveys, and public involvement meetings held in April, May, and June of 2007.
2) Potential transit users from existing South Dade residents are represented by the County Commission District 8 and 9 telephone survey; public involvement meetings held in April, May, and June of 2007.
3) Potential transit users are expected from among future South Dade residents, for which the major redevelopment proposals, both public and private, have been identified.

The South Dade Busway Transit Feeder Study includes six tasks, for which the outcomes are documented in this report.

Task 1	Public Involvement	Report Section 6
Task 2	Parking Utilization at Existing Busway Park-and-Rides • MDT parking data analysis • reconnaissance surveys	Report Section 2
Task 3	South Dade Planned Developments	Report Section 5
Task 4	Existing Busway Transit Rider's Travel Behavior • parking lot license plate survey analysis • drop-off areas license plate survey analysis • Metrobus passenger survey analysis • Metrorail passenger survey analysis	Report Section 3
Task 5	South Dade Residents' Travel Behavior and Transit Attitudes • South Dade telephone survey analysis	Report Section 4
Task 6	Recommendations	Report Section 7

Findings

The pattern of park-and-ride utilization generally runs from south to north, with the most southerly park-and-ride lots very under-utilized, while the facilities at Cutler Bay, Perrine, and Coral Reef Drive near capacity, and the garages at Dadeland South and Dadeland North over-capacity. The reasons are three-fold: 1) population density increases and the geographic size of the service areas generally becomes wider to the north; 2) the south parts of the Busway are new and their markets are not yet well established; and 3) most transit riders generally prefer to park at a Metrorail station, and not have a Busway to Metrorail transfer.

Service areas and concentrations of home origins were determined for each Busway park-and-ride lot and for the Dadeland South and North Metrorail stations. This mapping was based on license plate surveys taken for this study in 2007 for both park-and-ride transit riders and vehicles that drop-off transit riders. Both Metrorail stations have very wide service areas, with significant levels of draw from all along the Busway to Cutler Bay, as well as to parts of Princeton, Naranja, and Homestead. The stations also draw very large numbers of park-and-ride patrons from Kendall, West Kendall, and areas north of the Tamiami Airport. With the exception of the SW 152nd Street lot, Busway park-and-rides draw from much smaller, and more concentrated areas; however, all exhibit a pattern of drawing

from areas south along the Busway. In other words, park-and-ride users show a pattern of preferring to drive more distance to fuller lots to minimize Busway ride time.

Drop-off passengers showed more widely scattered patterns of home origins (of the vehicle), with the Metrorail stations still having the widest service areas, but also the Cutler Bay area also having a wider service area. The passenger drop-offs at other Busway stations showed very small service areas, with the SW 168th Street Station having a comparatively strong and well organized service area for drop-off passengers.

The patterns of existing transit riders, based on passenger surveys taken in 2004, show that only 33% to 40% of the passengers are making home to work trips, with the home to school, home to shopping, and other ranking next highest, depending on the route. Among the routes that leave the Busway, most passengers reach their bus by walking. This is true even for the Busway MAX; however, data was not available for the Busway Flyer, the newest route, that may show a stronger typical commuter pattern. Consistent with other data, many passengers use the Busway to transfer at Metrorail. Among the Busway routes that stop at Dadeland South or Dadeland North, more than 20% of passengers transfer to Metrorail. It is the highest for Route 65 for which 36% transfer to Metrorail. This is very high compared to typical Metrobus routes. Consistent with the data that shows that most passengers walk to the bus, for most routes, home origins tend to be clustered along the service corridor of the route. Destinations tend also to be along the corridor, but more widely scattered throughout the County, reinforcing the concept of transferring, particularly to Metrorail. The Busway MAX showed a more particular pattern of not only trip ends along the Busway, but a very strong association with locations in the Miami CBD, and along the Flagler Corridor (see Fig. 3-24) This is important as the MAX is the most commuter-oriented service for which origin-destination data is available.

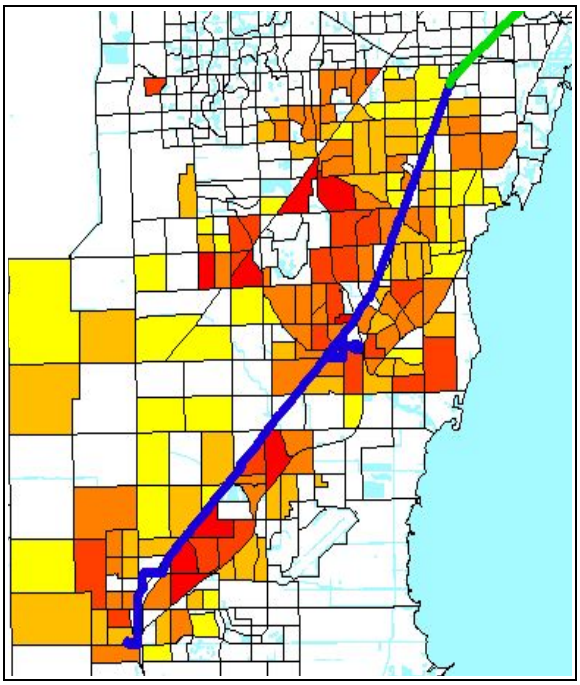
In addition to determining market potentials for passengers already using transit, a 1,000-sample phone survey was performed in South Dade to determine resident's travel patterns and attitudes to transit, park-and-ride use, and feeder transit services. The survey indicates that 84% of South Dade residents drive themselves on their primary commute trip. Only 1% carpool, and 9% use transit (5% walk or bike). Seventy-one percent (71%) of the commute trips are for work, with 24% for shopping, and 6% for school. Almost half of these trips (46%) use the same road at some point in their trip: South Dixie Highway (US-1).

The survey indicated that half (49%) have tried Metrorail, and over ¼ (28%) have tried the Busway; however, even though many have shown some willingness to use transit, only 9% currently use transit regularly. The top ranking reasons of why not to use transit are: 1) "it does not go where I need to go"; 2) "need personal car for business"; and 3) "no need, have a car." That the trip from home to the station takes too long, ranked 4th highest, and that the trip on transit takes too long, ranked 5th highest.

To try to bring more South Dade travelers to use transit, the top ranking reasons that could convince people to use the Busway or Metrorail are: 1) "new routes to meet my needs"; 2) "nothing could convince me"; 3) "convenient stops and express routes"; and 4) "better schedule frequency (less wait time)." After the feeder bus and park-and-ride concept was

explained, 46% answered that they would try a feeder bus to the Busway, and 54% would try one to reach Metrorail.

Those willing to use a feeder bus, weighted by TAZ population density were mapped-out to determine the best potential areas for implementation. An excerpt of the map for willingness to use a feeder to Metrorail is shown at right (more red is higher potential). Very generally, 4 areas were indicated as having strong potentials (see Section 4 for details):



1. Residential areas surrounding Metrozoo, including Country Walk, Richmond West, Richmond Heights, South Miami Heights, West Perrine, and Palmetto Estates.
2. Princeton
3. Naranja and Leisure City
4. Homestead, particularly west of South Dixie Highway

In summary, the phone survey states the problem: that most commutes are in single-occupant-vehicles, and half of these South Dade trips are at some point on one constrained road, South Dixie Highway. The survey also shows a surprisingly strong willingness to try transit and experience with transit by South Dade residents; however, transit still is perceived as being inferior as a commuting alternative. Among the ways to convince people to return to transit are: new routes, express buses, convenient stops, and better service frequency; all of which are feasible in the short term. Three-percent answered that more parking at stations is important, also achievable in the short term. The focus of improvements should be first targeted to these five improvements.

The impact of planned developments was also evaluated. The developments identified and considered for their impacts or potential to be integrated with recommendations include:

- Downtown Kendall
- East Kendall Charrette
- Miami Metrozoo
- Perrine Urban Center
- Quail Roost Transit Village
- Cutler Ridge Metropolitan Urban Center
- Old Cutler Road Charrette
- Goulds Urban Center
- Princeton Urban Center

- Naranja Urban Center
- Leisure City / Naranja Lakes Urban Center

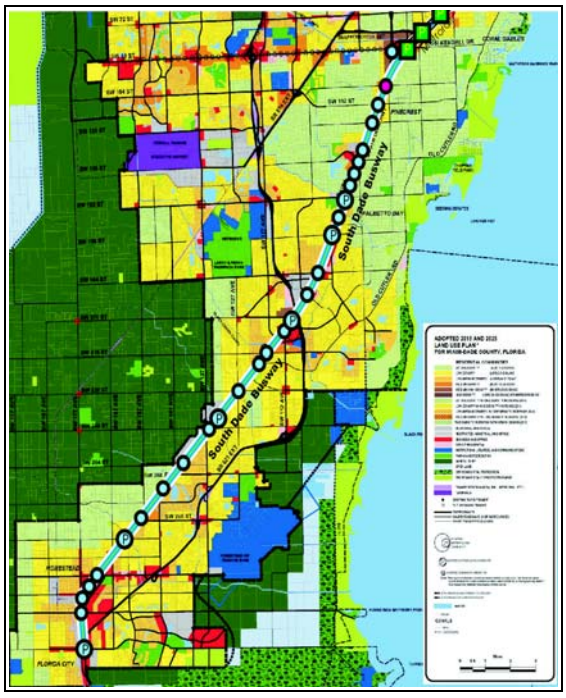
While the continued planning, implementation, and development of all of these are important to re-establishing land use patterns and built environmental conditions that are more supportive of transit use, four were particularly important toward integration with the recommendations of this study.

The Miami Metrozoo at the time of the study was undergoing review of its expansion plans (DRI and CDMP land use amendment). The site provides the potential to use massive, and currently underutilized parking areas to implement a park-and-ride and feeder services at the center of an area identified as having large potential for successful park-and-ride and feeder bus implementation. Use of the site for a park-and-ride should be integrated with the DRI review process.

The Quail Roost Transit Village, at the time of writing is also going through planning and permitting approvals (CDMP land use amendment and rezoning) and includes a proposal to include a 500-space, 3-bus bay park-and-ride facility within the context of a large urban mixed-use development, itself a potentially large transit trip generator. Additional park-and-ride capacity is needed in Perrine, and the current lot is constrained.

The Cutler Ridge Metropolitan Center is a large-scale planned redevelopment of the Southland Mall and the area south of SW 211th Street and west of the South Dade Government Center. Also to be developed as an urban mixed-use project, it has potential for generating significant transit use, and provides an opportunity to increase park-and-ride capacity.

The Princeton Charrette and Urban Center Zoning District provides incentives to develop a small town center as the nucleus for its surrounding communities. The redevelopment can also provide for a joint development opportunity to increase the area's park-and-ride capacity in the longer-term time horizon.



Finally, with regard to land use patterns, the land use analysis suggests a simple geographic concept with respect to careful consideration of the location of new park-and-ride facilities and associated feeder services. (see excerpt of Dade County Future Land Use Map at right)

Up to Eureka Drive (SW 184th Street), the South Dade Busway corridor is relatively wide: about 15 to 18 miles to the west, and 5 miles to the east. Up to this line, expanding

capacity and new feeder services from the park-and-rides to Metrorail or the Busway makes sense since the area is geographically wide. To the west of the Busway, and north of Tamiami Airport higher developed densities support an already well developed network of transit services including the Kendall Area Transit (KAT) routes. South of Tamiami Airport, developed densities are low, and extensive implementation of community circulators should not be expected to be an efficient use of transit resources; and such services are not recommended by this study.

South of Eureka Drive, the service corridor of development is narrow (3 to 5 miles) since much of the land is agricultural, and development densities are low until reaching Homestead. In this area, circulators would also not be an efficient use of transit resources, and even feeder services need to be implemented judiciously. Only one feeder with limited service frequency is recommended in this area, and the route would serve new development that is currently not served by transit.

Recommendations

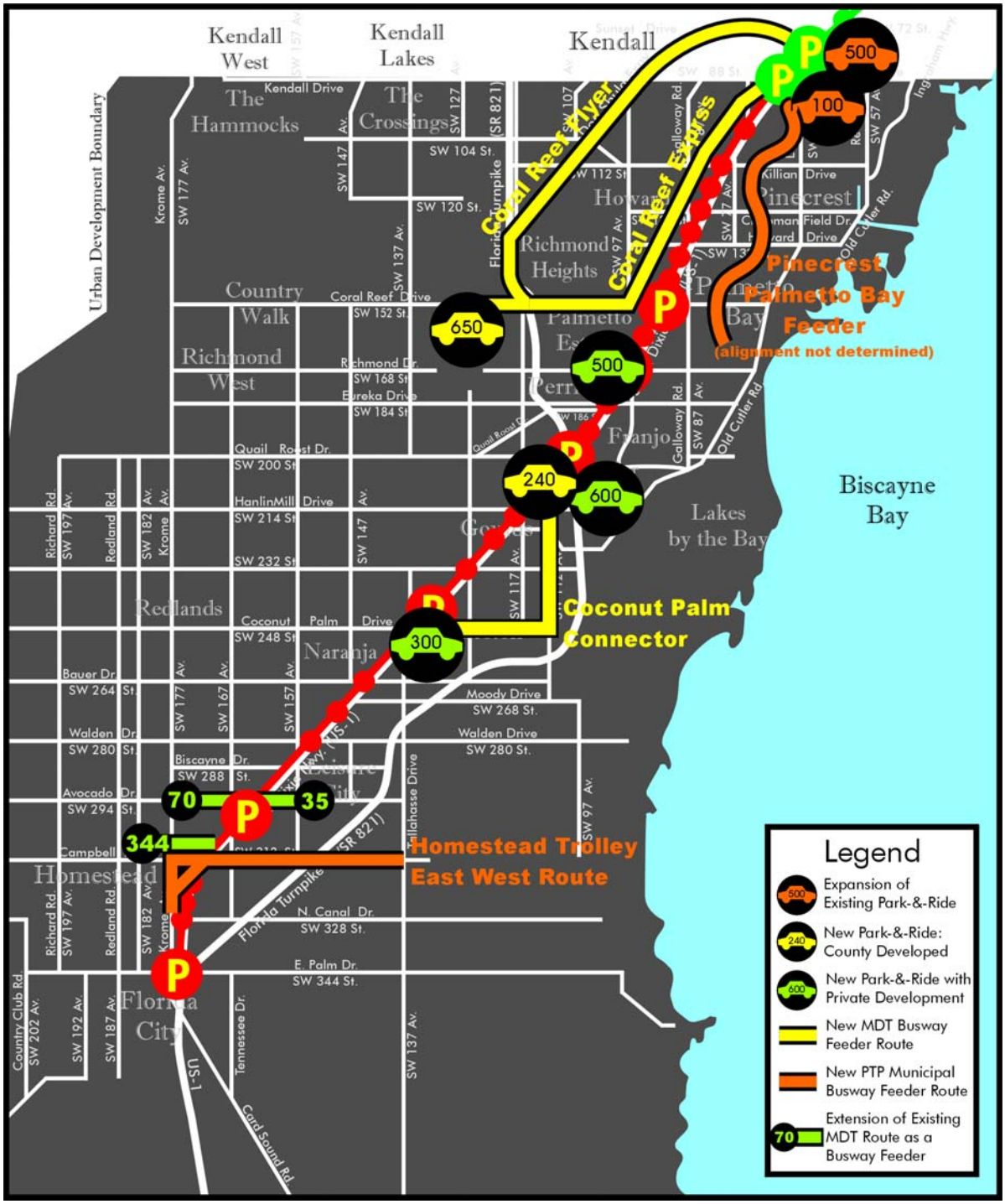
The recommendations integrated all of findings from parking data, license plate surveys, the telephone survey surveys, on-board passenger surveys, and land use analysis to develop recommendations to meet both immediate and forecast transit needs in South Dade. The step-by-step methodology for integrating the analysis and developing recommendations is contained in Section 7 of this report. Among six service areas, thirteen recommendations are provided in Section 7. Of these: six are recommendations to develop feeder services as modifications of new routes or as completely new routes; two are to improve service on existing routes; and five are for improved, expanded, or new park-and-ride facilities in South Dade. The major recommendations are summarized in the table on the following page, and graphically depicted in the illustration.

Major Recommendations Summary

Recommendation	Source	Type	Participation	South Dade Busway Feeder Study Recommendations		Other Planned Improvements	
				Capital Cost Impact	Annual Operational Cost Impact	Capital Cost Impact	Annual Operational Cost Impact
More Marketing Improvements in South Dade	SDBWFS	marketing	Miami-Dade County	In-house MDT			
Dadeland North and Dadeland South Expansions	MDT TDP	Park-&-Ride Expansion	Miami-Dade County			$12,700,000	
Dadeland North and Dadeland South Pedestrian Bridges	MPO TIP	Pedestrian Connections	Miami-Dade County			$6,828,000	
Palmetto Bay, Pinecrest Feeder Bus	SDBWFS	coordination	Village of Palmetto Bay, Village of Pinecrest, MDT		$20,000		
Palmetto Bay, Pinecrest Feeder Bus	SDBWFS	New Feeder Route	Village of Palmetto Bay, Village of Pinecrest, MDT		$260,000		
Metrozoo Park-&-Ride	SDBWFS	New Park & Ride (land)	Miami-Dade County				
Metrozoo Park-&-Ride Initial Implementation (325 spaces)	SDBWFS	Park-&-Ride Improvement	Miami-Dade County	$987,500			
Metrozoo Park-&-Ride Initial Implementation (650 spaces)	SDBWFS	Park-&-Ride Improvement	Miami-Dade County	$487,500			
Coral Reef MAX Initial Service Improvements (325 spaces)	SDBWFS	Service Improvement	Miami-Dade County		$130,694		
Coral Reef MAX Full Service Improvements (650 spaces)	SDBWFS	Service Improvement	Miami-Dade County		$130,694		
Coral Reef Flyer Initial Implementation (325 spaces)	SDBWFS	New Feeder Route	Miami-Dade County		$386,959		
Coral Reef Flyer Full Implementation (650 spaces)	SDBWFS	New Feeder Route	Miami-Dade County		$193,479		
Quail Roost Transit Village	Planned Development	New Park & Ride	Transordev, Miami Dade County			$12,500,000	
SW 112th Avenue Park-&-Ride	SDBWFS	New Park & Ride	Miami-Dade County	$1,641,356			
Cutler Ridge Metropolitan Ctr Park-&-Ride Phase I	Planned Development	New Park & Ride	private developer, GSA, Miami-Dade County			$7,500,000	
Cutler Ridge Metropolitan Ctr Park-&-Ride Phase II	Planned Development	New Park & Ride	private developer, GSA, Miami-Dade County			$7,500,000	
Busway Flyer Service Improvement	SDBWFS	Service Improvement	Miami-Dade County		$631,019		
SW 244th Street Park-&-Ride Improvements	SDBWFS	Amenities	Miami-Dade County	$142,500			
Princeton Town Center Park-and-Ride	SDBWFS	New Park & Ride	private developer, Miami-Dade County	$7,500,000			
Coconut Palm Connection Feeder Initial Implementation	SDBWFS	New Feeder Route	Miami-Dade County		$986,562		
Coconut Palm Connection Feeder Full Implementation	SDBWFS	New Feeder Route	Miami-Dade County		$591,937		
Homestead Trolley East West Route	Planned PTP Improvement	coordination	City of Homestead, Miami-Dade County				Homestead PTP
Route 35 Extension to 296th St Busway Station	SDBWFS	Existing Route Extension	Miami-Dade County		$297,144		
Route 70 Extension to 296th St Busway Station	SDBWFS	Existing Route Extension	Miami-Dade County		$163,018		
Route 344 Extension to 312th St Busway Station	SDBWFS	Existing Route Extension	Miami-Dade County		$272,695		
Total				**$10,758,856**	**$4,064,201**	**$47,028,000**	**$0**

SDBWFS = South Dade Busway Feeder Study Recommendation
MPO TIP = Miami-Dade Metropolitan Planing Organization Transportation Improvement Program
MDT TDP = Miami-Dade Transit 2007 Transit Development Program
PTP = People's Transportation Plan

Major Recommendations Map



South Dade Busway Feeder Study

Section 1

Introduction

Background
Purpose
Methodology
Study Area
Report Organization

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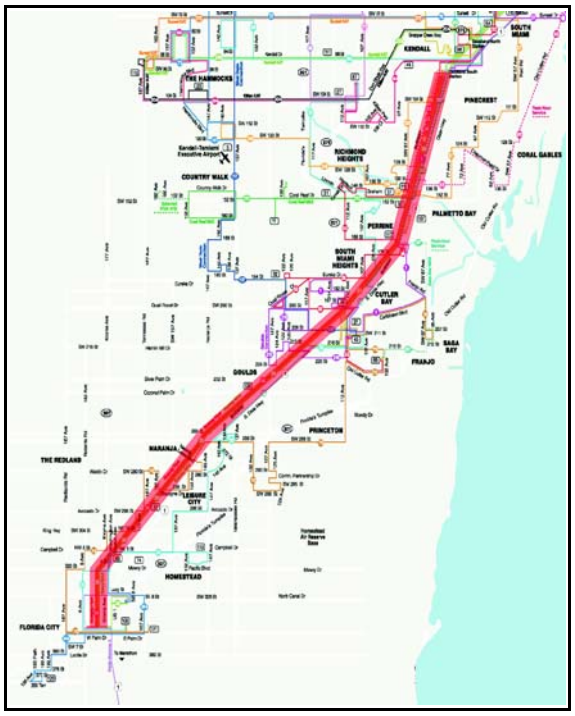
South Dade Busway - Background

The South Miami-Dade Busway began service in 1997 and is Miami-Dade Transit's state-of-the-art alternative to daily traffic congestion along South Dixie Highway. The first of its kind in Florida, the Phase I, 8.2-mile roadway was built by the Florida Department of Transportation, and became the fastest way from Cutler Ridge to Metrorail. Phase II of the Busway extends to Palm Drive (SW 344th Street) in Florida City. The first segment of Phase II opened April 24, 2005 and extended the Busway to Bauer Drive (SW 264th Street). Starting at the Dadeland South Metrorail Station, the Busway includes twenty-nine stations along its alignment. Park-and-ride lots are located at six of these stations, in addition to Dadeland South and Dadeland North Metrorail Stations.

Figure 1-1
MDT South Dade Transit Map and Busway



Express buses on the exclusive lanes can now speed passengers from the Dadeland South Metrorail Station to Bauer Drive in under 40 minutes, with buses entering the exclusive lanes at major intersections. In addition to conventionally-fueled (diesel) buses, MDT continues to respond to the community's long-range needs, and as part of a demonstration program in early 2007 dispatched two 60 and 45-foot long electric-diesel hybrid buses on the South Dade Busway. The hybrid buses use 25% less fuel, and cut emissions by 50%, and are more reliable with fewer breakdowns. Continuing its commitment to the Busway, MDT will purchase 39 more hybrid buses through 2008, many of which will be traveling along the South Dade Busway.

Figure 1-2
60-foot Hybrid Bus – Busway Demonstration

As the Busway has attracted more ridership, transit riders and potential Busway riders in the community have expressed concerns that the lack of adequate park-and-ride capacity has become a deterrent to their use of the Busway. One way to meet their needs would be to improve or establish new feeder services to bring people to the Busway from park-and-ride stations located within their communities. This study has been requested to address their needs.

South Dade Busway Transit Feeder Study - Purpose

An analysis of Busway transit feeders in South Dade has been requested by Miami Dade Transit (MDT) to provide better alternatives to the use of single occupant vehicles, and to address community concerns over the inadequate park-and-ride facilities to serve the South Dade Busway.

The purpose of the study is to evaluate and recommend improved and new transit feeders for the purposes of:

- their potential to reduce single occupant automobile trips;
- their potential to reduce parking demand at the Busway stations;
- attracting new riders to the Busway

South Dade Busway Transit Feeder Study - Methodology

To address these purposes, the data and analysis of the South Dade Transit Feeder Study has been designed to identify the needs of three markets of existing and potential Busway passengers:

1) Existing transit users whose needs are represented by parking utilization data, the park-and-ride license plate survey, the park-and-ride kiss-and-ride license plate survey, and the Metrorail and Metrobus passenger surveys;
2) Potential transit users from existing South Dade residents, represented by the County Commission District 8 and 9 telephone survey; and
3) Potential transit users from among future South Dade residents.

The South Dade Busway Transit Feeder Study has made use of several sources of recent transit data and analysis, but has also included the collection of new data by MDT's market research contractors.

Public Involvement, Task 1:
One of the most important sources of early data in any study is to talk to people in the community. Task 1 of this Study includes two phases of public outreach and involvement. The first phase included a series of meeting at the beginning of the study, in which a total of six meetings were held in the South Dade. Presentations were made at each meeting, and comments regarding the project and community needs were received. The second series of meetings are to be scheduled after submittal of this draft report, and are expected in October, 2007. A summary of the process in contained in Section 6 of this report.

Park-and-Ride Utilization, Task 2:
Task 2 of the Study was to verify customer concerns regarding over-capacity park-and-rides along the Busway, and identifies utilization trends. MDT maintains parking lot utilization data that is included in its monthly reports. The data was collected for all of the facilities in the South Dade study area for a minimum of two years or to a respective facility's opening. For facilities that have been closed, such as the Cutler Ridge Mall park-and-ride that was replaced by the 200th Street facility on MDT's property, the data was collected back two years from the closing month. The data for each lot was analyzed, and trends were identified relating to the location of the facilities and to the length of time that the facility has been in service. The analysis and results are contained in Section 2 of this report. The results are utilized in the recommendations of this report, to determine net demand for parking by locations versus demand that has been identified in this section as well as latent demands that have been identified in other tasks of this Study.

Long Range Plans Coordination, Task 3:
Task 3 of the Study involves integration of the long-range land use plans and major development initiatives in South Dade to assure that the impact of these developments are considered, and that any recommendations from this Study support the County's desired future land use pattern and provide the greatest impact on reducing single-occupant vehicle use. To this extent, nine master planning initiatives sponsored by the Dade County Department of Planning and Zoning to develop sub-regional downtowns and community centers have been reviewed, and the pertinent aspects of the plan were identified as they relate to this Study. Many of the major developments within South Dade are incorporated into these vision plans, particularly the plans for the Cutler Ridge Metropolitan Center. In addition, the Miami Metrozoo Development of Regional Impact (DRI) is currently under review for expansion, and has been reviewed as part of this effort. The planning and development reviews and analysis for coordination are contained as Section 5 of this report.

Existing Busway Passengers, Task 4:
Task 4 of the Study analyzes the patterns of use by existing transit commuters in South Dade. There are three groups of interest in this task: 1) transit commuters that use MDT's transit network of buses and Metrorail that arrive at a Busway or Metrorail station by any mode: walking, another bus, car; 2) South Dade transit commuters that arrive at the Station in their own car, and use one of the park-and-ride facilities; and 3) South Dade transit commuters that arrive at the Station in by another person's car, and are dropped off (referred to as kiss-and-ride).

For the first group of general South Dade transit users, data from the 2004 Metrobus passenger survey, and the 2004 Metrorail passenger survey was used. The Metrobus survey was performed as an intercept survey written in English, Spanish, and Creole on every bus route in MDT's system for weekdays, Saturday, and Sundays. Sampling levels were determined by route ridership to maintain statistical validity when single routes for one- type of day are analyzed. In total, nearly 28,000 surveys were completed. They included responses to demographic questions about the passenger, their trip characteristics, their origins and destinations, and heir attitudes toward transit. The Metrorail survey, performed a

year later, was mostly the same, except that interview sheets were distributed and collected at station platforms. Among all of the stations, approximately 8,000 surveys were collected. Origins and destinations have been mapped, and for each Busway route, significant home-origin clusters that are off the route's ¼-mile service area are identified, and considered for possible service improvements.

To understand the geographic patterns of South Dade Busway park-and-ride users, a license plate survey was performed at each of the facilities, and the Dadeland South and Dadeland North Metrorail garages. The license plate survey was performed in February 2007, and 2,365 records were collected over the seven locations. License plate numbers were matched to home addresses, and after parsing out lease vehicles, the address were matched to South Dade TAZs. The TAZ-level analysis was mapped, and a cluster analysis was performed to identify communities that are the strongest contributors to each facility.

The Study also incorporates an analysis of passengers that are dropped off (kiss-and-ride) at each Busway Station. As with the park-and-ride passengers, license plate surveys were performed at each of the Busway stations, as well as the South Dadeland and North Dadeland Metrorail stations. The survey included observation and recording of the license plate numbers of vehicles that dropped passengers off at the stations. Also noted, were the number of dropped-off passengers, as well as if any of the passengers had observable physical disabilities with mobility. This survey was also performed in February 2007, and 390 records were taken among the stations. As with the park-and-ride survey, license plate numbers were matched to home address TAZs. The TAZ-level analysis was mapped, and a cluster analysis was performed to identify communities that are the strongest kiss-and-ride contributors to each facility.

The analysis of the 2003 bus passenger survey, the 2004 Metrorail passenger survey, the 2007 Busway park-and-ride survey, and the 2007 Busway kiss-and-ride survey are included as Section 3 of this report.

South Dade Community, Task 5:
As one of the goals of the Study is to attract new ridership to the Busway, it is important to measure the potential of the general population in South Dade regarding their potential use of the Busway, Metrorail, and both if by new transit feeder services. To inform an analysis of travel characteristics, travel patterns, and transit attitude of South Dade residents, a telephone survey was performed of County Commission Districts 8 and 9. Voters and non-voter were included on the call list. The survey was performed in March 2007, and included 1,000 interviews. Household travel characteristics were collected including travel mode, travel time, and address-level home-origins and destinations. Preferences and attitudes were focused on the central question of what transit characteristics are needed to motivate their use of Metrorail, the Busway, and either by feeder transit services from community-located park-and-ride facilities. The analysis organized the data to understand the potential component of the population that may use transit if more convenient park-and-rides and feeder services are implemented in their communities. Among those that stated that they would be willing to try transit, their home origins were mapped out by TAZ, and a cluster analysis was performed to determine the communities with the greatest potential for new

transit ridership by the implementation of community park-and-ride and complimentary transit feeders. This analysis is contained in Section 4 of this report.

Recommendations (Task 6)

Taking the findings of the community comments, parking utilization analysis, transit passenger surveys, park-and-ride surveys, kiss-and-ride surveys, and South Dade household travel telephone survey, recommendations for additional park-and-ride capacity and Busway transit feeder services were developed for presentation to MDT staff and the community. Using the parking utilization analysis, areas of existing need (over-capacity facilities), and areas with existing capacity were identified. Were existing capacity exists; the growth trend was noted with respect to the potential for reaching capacity in the near-term. In each of the former analysis sections, the results of the transit passenger surveys, park-and-ride surveys, kiss-and-ride surveys, and South Dade household travel telephone survey were all developed to provide cluster analyses in which communities, and their relative potential for the use of new transit feeder services were identified. To develop the recommendations, an overlay technique is used for each community to determine its relative potential. Where sufficient potential is identified, and comparison to the park-and-ride utilization data shows no or little excess capacity at the nearest Busway facility, then a recommendation is made to locate an additional park-and-ride in the community with a feeder service. Locations for new facilities are made based on an identification of park-and-ride service area from the surveys, and from opportunities identified from the Task 3 identification of long-range redevelopment plans and development initiatives. The recommendations are contained in Section 7 of this report.

South Dade Busway Transit Feeder Study – Study Area

The study area of the South Dade Busway Transit Feeder Study is the land within the Urban Development Boundary (UDB) in Dade county that is south of Kendall Drive (SW 88th Street). This area is illustrated in figure 1-1 as the tan area.

Figure 1-3
South Dade Busway Transit Feeder Study Area

South Dade Busway Transit Feeder Study – Process, Status

The South Dade Busway Transit Feeder Study was proposed in response to community needs that were expressed in County Commission Districts 8 and 9. Those needs and concerns motivated Miami Dade Transit to develop the scope of the Study and issue the work order for the Study in February 2007. Data collection for meetings took place in February and March 2007. The first series of public meetings for the Study were held in April, May, and June 2007. This draft of the Study is submitted on the 5th of October, 2007, and following the second series of public meetings in October 2007 to present the recommendations, recommendations and the study will be finalized by November 2007.

The Project Manager for the Study at MDT is David Fialkoff, Chief of Operations Planning. MDT community relations coordination for the Study is by Michelle Simmons, MDT Public Involvement Coordinator, and Novia Chang.

The study has been performed by the Lehman Center for Transportation Research (LCTR) at the Florida International University (FIU), College of Engineering. Primary research, public meeting presentations, and report preparation was performed by Mark Alvarez as a sub-consultant to the LCTR. The Project Director is Fabian Cevallos, PhD, Transit Program Director at the LCTR. Tekisha Ivy of the LCTR is the Community Relations Coordinator.

Data collection efforts including two license plate surveys at the Busway stations, and a community wide transportation-related telephone survey were performed by the Corradino Group and Amplitude Research for MDT.

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South Dade Busway Feeder Study

Section 2

(Task 2)

South Dade Busway Station Parking Utilization & Park-and-Ride Facility Existing Conditions

Existing conditions at the Park-and-Ride Facilities:

- Dadeland North
- Dadeland South
- SW 152nd Street
- SW 168th Street
- SW 200th Street
- SW 244th Street
- SW 296th Street
- SW 344th Street

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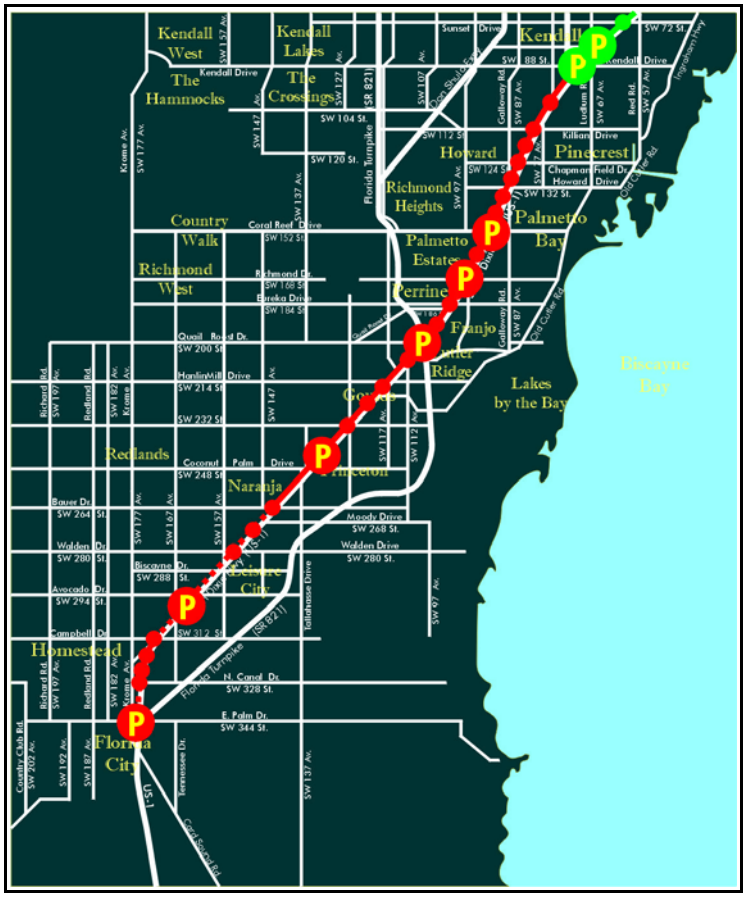
South Dade Busway Station Parking Utilization

Among the twenty-nine stations along the South Dade Busway, one is the Dadeland South terminus with a large park-and-ride facility, and eight others include park-and-ride lots. These facilities provide capacity for South Dade travelers options to access transit services along the Busway. This is especially important in service areas where land use intensity can not justify dense bus route coverage and transit riders are best served by providing places to park or be dropped-off at the beginning of their transit commutes.

In addition to the Dadeland South station, the Dadeland North Metrorail Stations; is analyzed as part of the Busway system as it likely receives some overflow commuters that are not adequately served by other Busway park and ride facilities, or other MDT Busway services.

Figure 2-1
South Dade Busway Park-and-Ride Locations



Busway park-and-ride station locations are depicted in the diagram above by the red location circles along the Busway that include the letter "P" at the center. The illustration shows the Busway and all of ts stations in red. The green line, and green circles are Metrorail and the Metrorail stations. Dadeland South, both a Busway terminus and a Metrorail terminus, is shown in green. Table 2-1 provides more detail regarding the park-and-ride facilities, including capacity, consumer cost, MDT services, and general service areas.

In addition to summarizing the results of the utilization data for each of the Busway park-and-ride lot, an existing conditions summary is included based on direct weekday observations taken in September and October of 2007. The observations were used to validate the utilization data, as well as document comments on the design, maintenance, and environmental conditions of each facility. To the extent that the physical design and condition of the lots has an effect on their utilization, these reports are important and their results are used in the analysis for the recommendations where pertinent.

Table 2-1
South Dade Busway Park and Ride Facilities

Station	Opened	Closed	Service Area Community	MDT Busway Routes	MDT Cross Routes	Parking Capacity	Parking Cost
Dadeland North	December 1984	Currently operating	Pinecrest, Kendall	1, 52	87, 88,104, 204, 272, 288	1,975	$4.^{00}$ per day
Dadeland South	December 1984	Currently operating	Pinecrest, Kendall	1, 31, 34, 38, 52, 65, 136, 252, 287	73, 88, 104, 500	1,100	$4.^{00}$ per day
SW 152nd Street	April 2001	Currently operating	Palmetto Bay Richmond Heights	1, 31, 34, 38, 52, 252, 287	57	126	free
SW 168th Street	January 2003	Currently operating	Perrine, South Miami Heights	1, 31, 34, 38, 52, 287	none	149	free
Southland Mall	April 2001	August 2006	Cutler Ridge, Franjo,Goulds	1, 31, 34, 38	1, 35, 52, 70, 137, 216	50	free
SW 200th Street	October 2004	Currently operating	Cutler Ridge, Franjo,Goulds	1, 31, 34, 38	1, 35, 52, 70, 137, 216	131	free
SW 244th Street	June 2005	Currently operating	Naranja, Redland, Princeton	34, 38	35	95	free
SW 296th Street	December 2007	Currently operating	Homestead, Florida City	34, 38	70	117	free
SW 344th Street	December 2007	Currently operating	Homestead, Florida City	34, 38	70	117	free

One of the primary motivations of this study is to provide alternatives to using existing South Dade park-and-ride lots that are reported to be at or near their capacity. At these lots, current and potential park-and-ride users report conditions that are inconvenient, and in some cases causing them to balk, leave the lot, and return to using their automobiles instead of the Busway for their commute trips.

To determine whether lots are at or near capacity, an analysis was performed using Metro Dade Transit's park-and-ride lot utilization data. Data was collected for all of the lots, from the most recent month available (July 2007) going back to 2001 or when the facility was opened. Most of the park-and-ride lots along the Busway were opened in 2005 or later, so the last three years of complete data have been used for the analysis: from June 2004 through June 2007. Complete tabular results are contained in Appendix A.

Utilization refers to a simple ratio of how many cars park on an average day, compared to the number of marked spaces that are available in the facility, including handicap spaces. The number of cars that use the facility are tallied either by a count, or by the average daily revenue from each facility. For example, if a lot has 100 spaces, and 90 vehicles park there on an average ay, then the utilization is 90%. In the use of measuring utilization, it is possible to have greater than 100% utilization without being over-capacity. If 200 vehicles came into a 100-space facility within the day, then the utilization would be 200% with a

turnover of 2.0. Turnover is the number of time that an average space is used in the average day.

For the Busway park-and-ride facilities, it is expected that turnover is at or below 1.0 per day since the lots are generally used for morning-time commutes, with the spaces occupied until the commuter returns in the afternoon. The spaces may or may not be used again, but if they are used after typical commute times, revenue collection would not count their presence anyway.

Figure 2-2, provides a detailed summary of the utilization for each Busway park-and-ride facility. There are two temporal and spatial patterns that are apparent, and an affirmation of transit users' input.

1. Not unexpectedly, as with new transit services themselves, park-and-ride services take some time to fully develop their market. Until the market is mature, utilization changes, but increases and decreases until the facility reaches market maturity, and the utilization stabilizes. For bus services this period is generally considered between 18 and 24 months. For the mature Busway park-and-ride facilities, SW 152nd Street, SW 168th Street, and SW 200th Street / Southland Mall, this period ranges between 12 and 36 months.

2. There is a spatial pattern of lower utilization of park-and-ride facilities in relation to how far south along the Busway that they are located. In part this is due to the more recent opening date of the more southerly park-and-rides and the impact of their position in their market life-cycle. Although not easily discernible from this data set, the spatial pattern may also be affected by the market impedance of presumably longer Busway travel times associated with these stops (to Metrorail or one of the multiple CBDs), and the fewer number of transit routes offered at these stations. The spatial pattern of diminishing utilization for the park-and-rides that are further south is illustrated in Figure 2-3.

3. Third, the data supports the contention of Busway transit riders and other South Dade residents that there is not enough capacity at the park-and-ride facilities. Clearly, the park-and-ride facilities at Dadeland North, Dadeland South, SW 152nd Street, SW 168th Street, and SW 200th Street are at this time at or near capacity. It is important to understand that parking facilities that are near capacity, even if still not full, may cause enough frustration to the park-and-ride driver, that the person may leave the facility, and choose to use another mode of transportation, other than transit. This level varies by the type of facility (surface lot or structure), information available, payment system, trip purpose, and amount of time a person is willing or able to "hunt" for a space. In the case of transit park-and-rides, the driver's time to "hunt" is short, especially as the transit vehicle's arrival time comes near. Further, a trip to work is just as well satisfied by leaving the facility and continuing the trip by car. Therefore, for transit park-and-ride purposes, the sensitivity to near-full parking facilities is very high, and facilities that are above utilized for a single turnover of parking per day should be considered to be under-capacity.

The following sections provide a more detailed description of the utilization conditions and implications for feeder transit services for each park-and-ride facility.

Figure 2-2
South Dade Busway Park-&-Ride Lots Utilization

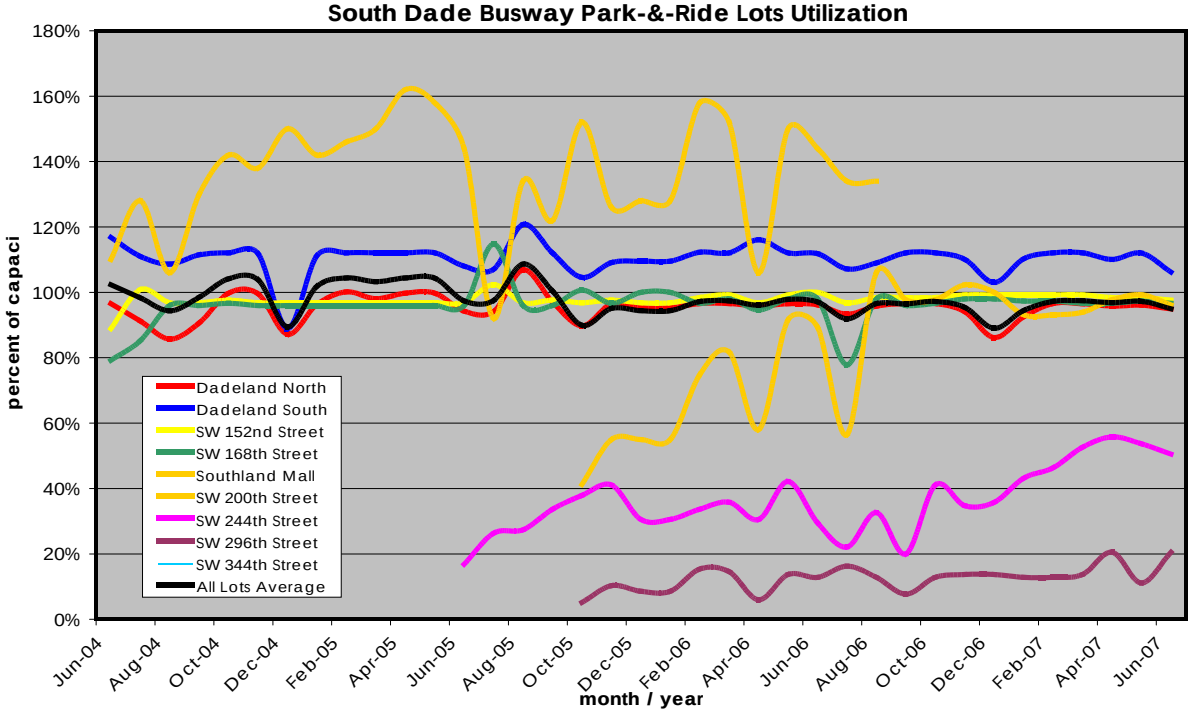
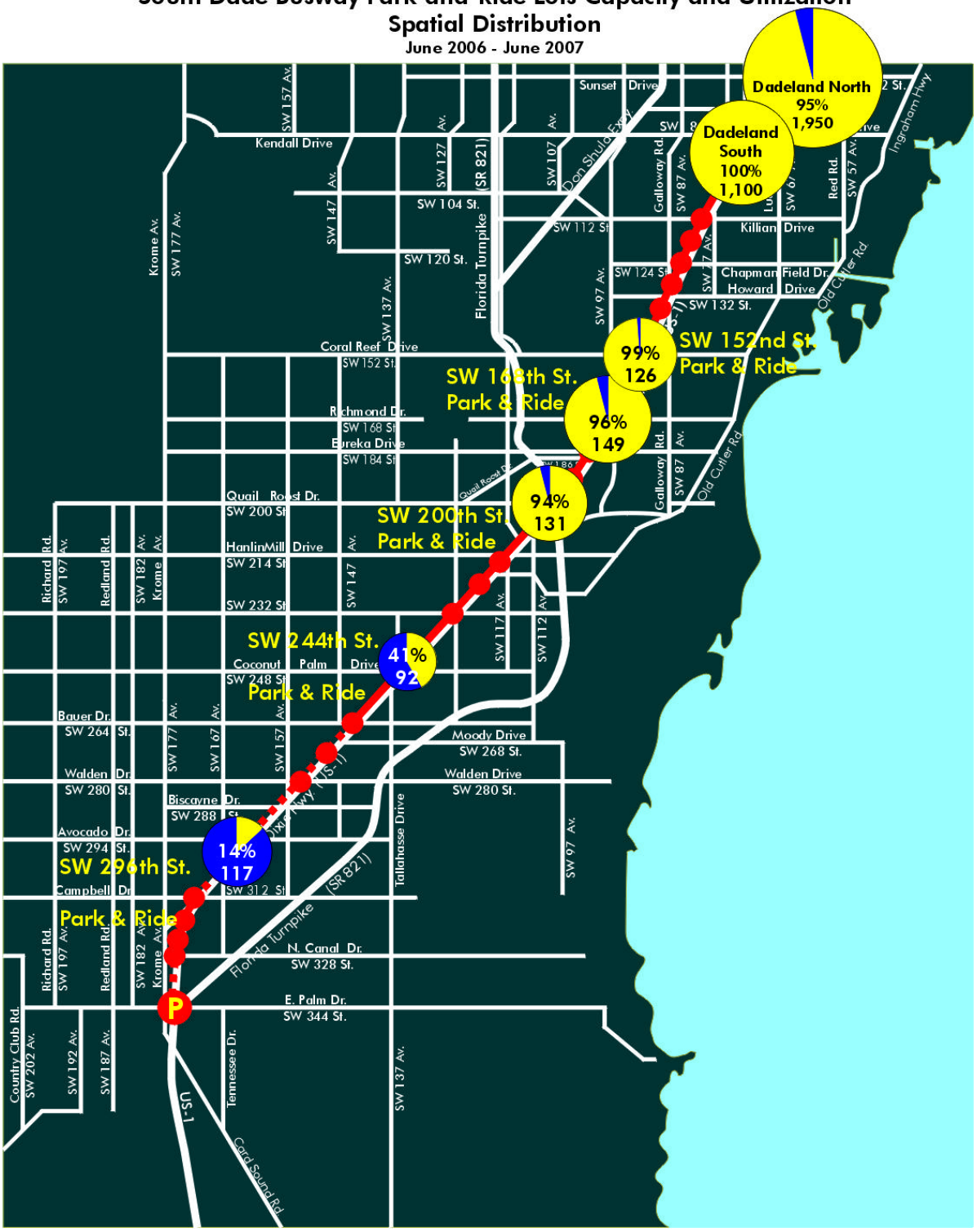


Figure 2-3
South Dade Busway Park-and-Ride Lots Capacity and Utilization
Spatial Distribution
June 2006 - June 2007



Dadeland North Metrorail Park-and-Ride Utilization

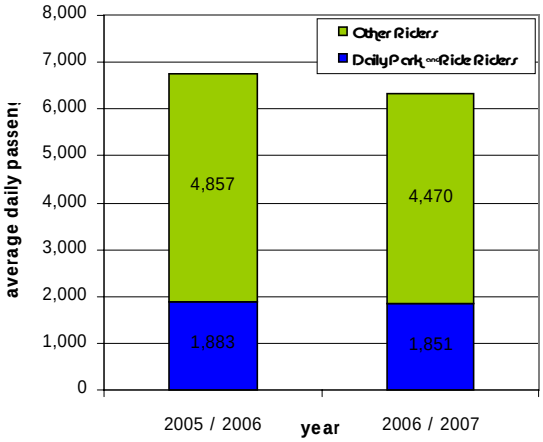
The Dadeland North Metrorail Station provides park and ride capacity for transit riders from a service area including Kendall to the west and Pinecrest to the southeast. It is a Metrorail facility with bus transfers to six Busway routes: 1, 52, 88, 104, Sunset KAT, Kendall KAT, and the Killian KAT. Only Route 1 and Route 52 are Busway Routes.

The station is integral with major mixed-use development, including 850,000 square feet of "big box" retail in a 3-level structure, an additional 15,700 square feet of ground-level retail, and 168 market-rate apartments. The park-and-ride facility is structured, and contains approximately 1,950 available spaces.

Figure 2-4
Dadeland North Metrorail Station Aerial

Based on Metrorail station boarding counts, and parking utilization data, park-and-ride vehicles average 29% of the average daily Metrorail station boardings for the period from July 2006 through June 2007. For the same period in the 2005/2006 year, parking counts equal 28% of the Metrorail station ridership. The bar chart graphically compares average weekday park and ride usage (vehicles) to average weekday boardings at the station. Note1

Figure 2-5
Dadeland North Passengers that Park & Ride



At 95% utilization, the Dadeland North Station should be considered at its functional capacity, and in need of relief from additional on-site capacity, or to the extent that its patrons are from the Busway service area, then additional off-site capacity via feeder bus services.

In addressing this need, MDT together with South Florida Commuter Services (SFCS) has initiated a preferential parking program in the facility by allocating preferential spaces to vehicles with three or more occupants.

Note 1: In comparing park-and-ride vehicles to station passengers, an assumption of 1 occupant per vehicle is necessary. Neither MDT park-and-ride data nor park-and-ride data taken for this study included vehicle occupancy; however, passenger drop-off (kiss-and-ride) data taken for this study did include vehicle occupancy data. The kiss-and-ride data shows an average vehicle occupancy of 2.05 for the Dadeland North Station. (153 samples), and 2.05 for Dadeland South Station.(162 samples)

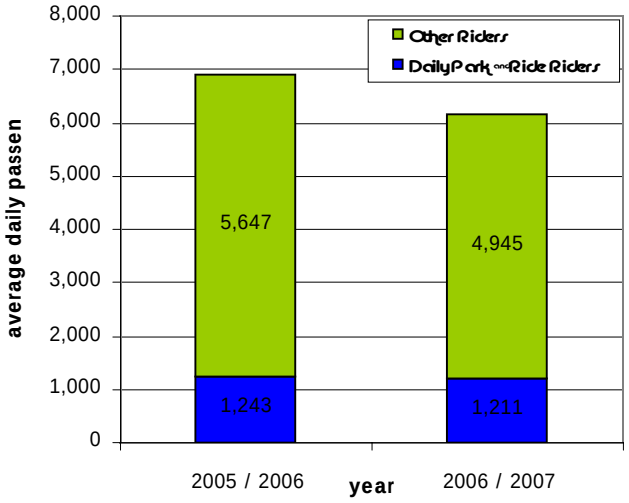
Dadeland South Metrorail / Busway Park-and-Ride Utilization

The Dadeland South Metrorail Station, near the intersection of Dadeland Boulevard and Datran Boulevard, provides park and ride capacity for transit riders also from a service area including Kendall to its west and Pinecrest to the southeast. It is the south endpoint of Metrorail and the northern starting point of the South Dade Busway. It is intended to be the primary transfer for Busway passengers to transfer to Metrorail. Transfers can be made to nine Busway routes, including: Route 1, the Busway Local (31), the Busway Flyer (34), the Busway MAX (38), Route 52, Route 65, Route 136, the Coral Reef MAX (252), and the Saga Bay MAX (287). Four other MDT routes meet at the station: Route 73, and the Midnight Owl (500).

Figure 2-6
Dadeland South Busway/Metrorail Station Aerial

The station is integral with the Datran Center, a major mixed-use development that includes three office buildings totaling 600,000 square feet, along with 35,000 square feet of retail space, and a 305-room hotel. The park-and-ride facility is structured facility, containing 3,500 parking spaces, of which 1,100 are designated for MDT patron usage.

Figure 2-7
Dadeland South Passengers that Park & Ride



Based on Station boarding counts and parking utilization data, park-and-ride vehicles average to 20% of the average Metrorail station boardings for the period from July 2006 through June 2007. For the same period in the 2005/2006 year, parking counts equal 18% of the station's ridership. The bar chart graphically compares average weekday park and ride usage (vehicles) to average weekday boardings at the station. [Note1] At 100% utilization, the Dadeland South Station is at its functional capacity, and in need of relief from additional on-site capacity, or off-site capacity via feeder bus services.

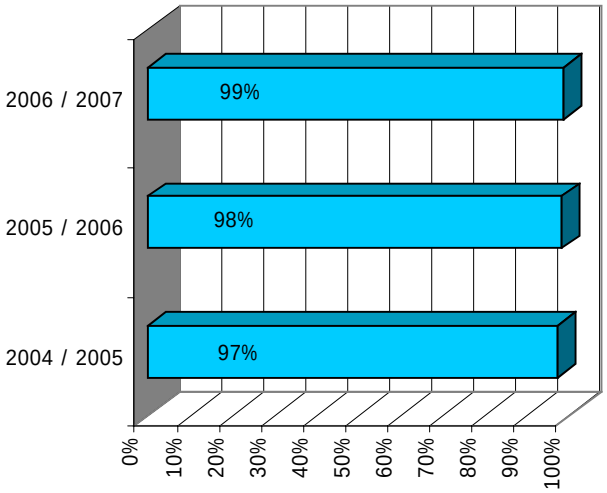
SW 152nd Street Busway Park-and-Ride Utilization

The SW 152nd Street Park-and-Ride provides park and ride capacity for Busway passengers to access the express transit bus service at Coral Reef Drive. It is the ninth (9th) station from the Busway's starting point at Dadeland South, and its service area includes Palmetto Bay, Perrine, and the Richmond and Metro Zoo areas.

Figure 2-8
SW 152nd Street Busway Station Aerial

It is intended to function primarily as a park-and-ride and kiss-and-ride access point to the Busway. Other modes to the station may include walking or bicycle. Seven Busway routes are available at this station, including: Route 1, the Busway Local (31), the Busway Flyer (34), the Busway MAX (38), Route 52, the Coral Reef MAX (252), and the Saga Bay MAX (287). Transfers are also facilitated at the station. One other MDT route stops adjacent to the station: Route 57.

Figure 2-9
SW 152nd Street Park & Ride Utilization



For the past three years of parking utilization data, the SW 152nd Street facility has been at 97% to 99% of capacity, assuming that there is generally one turnover per space per day. Having been in continuous operation since 2001, the facility is mature in terms of its place in its market life cycle. At this rate of utilization, the SW 152nd Street Busway Park-and-Ride should be considered at its functional capacity. There is good potential for additional Busway usage from this park-and-ride's service area, as demand has fully saturated available capacity. The facility is in need of relief from additional on-site capacity, or off-site capacity via feeder bus services. The locations for potential off-site capacity can be determined by defining the actual service area for this facility by the park-and-ride and kiss-and-ride survey results contained in Section 4.

SW 152nd Street Busway Park-and-Ride Existing Conditions

Figure 2-10
SW 152nd Street Station Park-and-Ride

General Location:

The lot is adjacent to the Busway, on the southwest corner of US-1 and SW 152nd Street. The lot is the east part of the parking lot for the Palmetto Golf Course, with the entrance from the south side of SW 152nd Street. It is 11 ½ miles from the Dadeland South Metrorail Station

Observed Utilization:

Wednesday, Sep. 5, 2007, mid-morning: approximately 3 spaces vacant. This is consistent with MDT utilization data.
Thursday, October 4, 2007, mid-morning: approximately 2 spaces vacant. This is consistent with MDT utilization data.

Visibility, Information:

The lot is not easily seen from US-1, although there is signage on US-1. Although there is signage to differentiate the Busway parking aisles from the golf course, it could be more clear.

Safety / Security:

The park-and-ride lot does not have a security guard or attendant. An attendant for the golf course part of the lot was observed.

Figure 2-11
SW 152nd Street Busway Station

Lighting:

The lot has permanent lighting

Pedestrian Access:

There is not a covered walk or protected pedestrian way from the end of the lot. Pedestrians walk across parking drive aisles.

Bicycle Facilities:

There are no bicycle facilities.

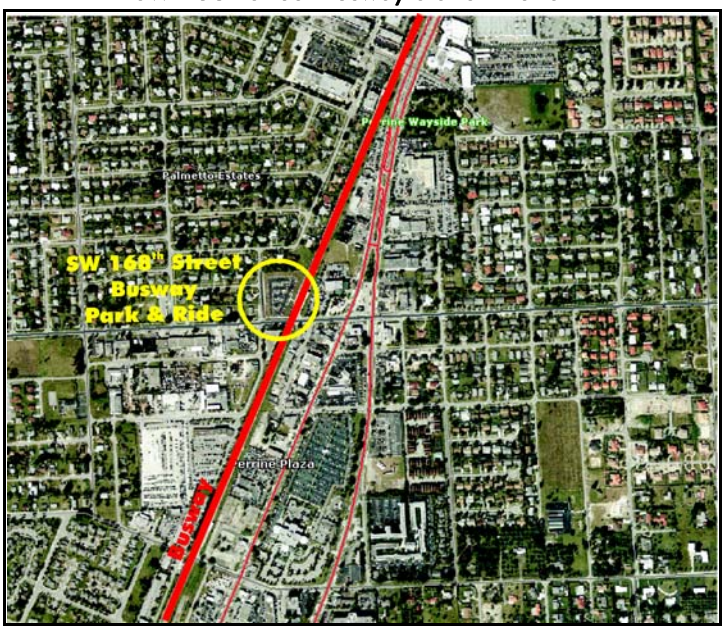
Busway Station:

The Busway station is one of the older designs. Weather protection is not adequate: the roof is high, and missing back panels have not been replaced. Passenger information is minimal: there are route diagrams and schedules, but no system map, system information, or real-time arrival information. Amenities include only a telephone and two trash receptacles.

SW 168th Street Busway Park-and-Ride Utilization

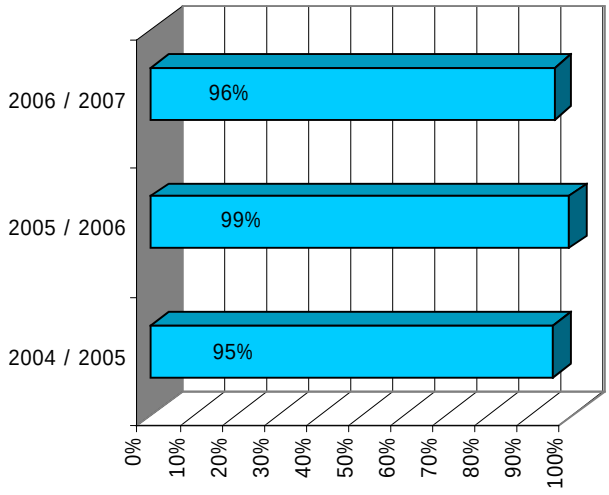
The SW 168th Street Park-and-Ride provides park and ride capacity for Busway passengers to access the express transit bus service at Richmond Drive. It is the eleventh (11th) station from the Busway's starting point at Dadeland South. Its service area includes Palmetto Bay, Palmetto Estates, Perrine, and the Richmond and Metro Zoo areas.

Figure 2-12
SW 168th Street Busway Station Aerial



It is intended to function primarily as a park-and-ride and kiss-and-ride access point to the Busway. Other modes to the station may include walking or bicycle. Six Busway routes are available at this station, including: Route 1, the Busway Local (31), the Busway Flyer (34), the Busway MAX (38), Route 52, and the Saga Bay MAX (287). Transfers are also facilitated at the station; however, there are no cross-town, non-Busway MDT routes that stop here

Figure 2-13
SW 168th Street Park & Ride Utilization



For the past three years of parking utilization data, the SW 168th Street facility has been at 95% to 99% of capacity, assuming that there is generally one turnover per space per day. Having been in continuous operation since 2003, the facility is mature in terms of its place in its market life cycle. At this rate of utilization, the SW 168th Street Busway Park-and-Ride should be considered at its functional capacity. There is good potential for additional Busway usage from this park-and-ride's service area, as demand has fully saturated available capacity. The facility is in need of relief from additional on-site capacity, or off-site capacity via feeder bus services. The locations for potential off-site capacity can be determined by defining the actual service area for this facility by the park-and-ride and kiss-and-ride survey results contained in Section 4.

SW 168th Street Busway Park-and-Ride Existing Conditions

General Location:

The lot is adjacent to the Busway, on the northwest corner of US-1 and SW 168th Street. The lot is fenced in and on two sides single-family homes are adjacent. It is 13 miles from the Dadeland South Metrorail Station

Figure 2-14
SW 168th Street Park-and-Ride

Observed Utilization:

Wednesday, Sept. 5, 2007, late-morning: cars parked in circulation aisles
This is consistent with MDT utilization data.
Thursday, October 4, 2007, mid-morning: 2 spaces vacant, but vehicles still parked in aisle, suggesting short-term usage

Visibility, Information:

The lot is not easily seen from US-1, although there is signage on US-1.

Safety / Security:

The lot has is fenced by chain-link fencing, but these is no security guard or attendant. While the fencing provides security, it also creates a more hostile appearance.

Figure 2-15
SW 168th Street Park-&-Ride Bike Rack

Lighting:

The lot has permanent lighting.

Pedestrian Access:

There is not a covered walk or protected pedestrian way from the end of the lot. Pedestrians walk across parking drive aisles. The lot has perimeter landscaping and landscaping at the ends of the aisles.

Bicycle Facilities:

There is one bicycle rack that is open to weather. It was observed to be used by 2 or 3 bicycles.

Busway Station:

The Busway station is one of the older designs. Weather protection is not adequate: the roof is high, and missing back panels have not been replaced. Passenger information is minimal: there are route diagrams and schedules, but no system map, system information, or real-time arrival information. Amenities include only a telephone and two trash receptacles.

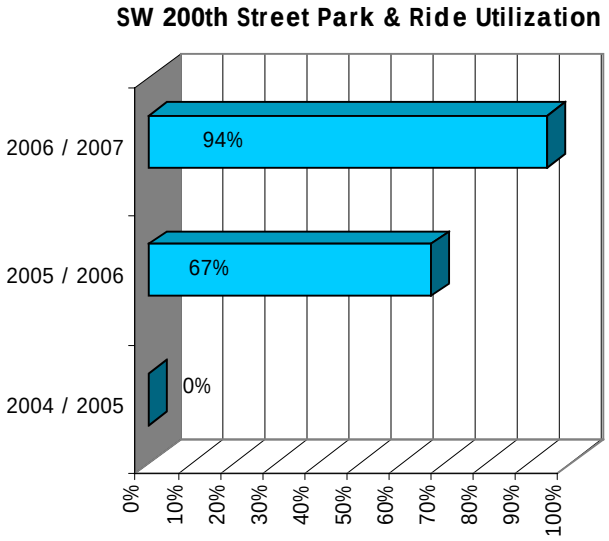
SW 200th Street Busway Park-and-Ride Utilization

The SW 200th Street Park-and-Ride provides park and ride capacity for Busway passengers to access the express transit bus service at 200th Street. It is the eleventh (15th) station from the Busway's starting point at Dadeland South. The location of the station is just south of the intersection of US-1 and the Florida Turnpike. The station is across US-1 from the Southland Mall (formerly Cutler Ridge Mall), which includes over 700,000 square feet of regional retail space. The location is also within a ½-mile of the South Dade Government Center, and the planned Cutler Ridge Urban Center. Its service area includes Cutler Ridge, the Goulds, and Franjo.

Figure 2-16
SW 200th Street Busway Station Aerial

This facility is intended to function primarily as a park-and-ride and kiss-and-ride access point to the Busway; however, it may also function as a destination station for the Mall, Government Center, and the planned Cutler Ridge Urban Center with adequate connections. Other modes to the station may include walking or bicycle. Four Busway routes are available at this station, including: Route 1, the Busway Local (31), the Busway Flyer (34), and the Busway MAX (38). Transfers are also facilitated at the station; including Route 1, Route 35, Route 70, and the Goulds Connection (216).

Before 2005, there was a park-and-ride operated from parking space at the Southland Mall, that included 50 spaces. The leased operation was in effect from 2001 to August 2006. In October 2004, MDT began operation of its owned lot along the Busway, on the west side of US-1. During the 5 years of operation at the Southland Mall, that lot was generally at capacity; however, the data shows that it was utilized with more than one turnover per day, so there are possibilities that it was also used



for other bus routes, or other purposes. As an alternative for the Southland Mall lot, the SW 200th Street facility has quickly matured in its market life cycle, having an average utilization of 67% in its first year with the Mall lot still open, and then saturating capacity quickly after the Mall lot operation ceased. This year's average utilization was 94%.

Assuming that this is generally representative of a use pattern of one turnover per space per day, at its current utilization rate, the SW 200th Street Busway Park-and-Ride should be considered at its functional capacity. There is good potential for additional Busway usage from this park-and-ride service area, as demand has fully saturated available capacity. The facility is in need of relief from additional on-site capacity.

Miami Dade Transit plans include the expansion and improvement of the Busway Park-and - Ride at SW 200th Street. The current lot was opened in 2005 on a temporary basis. Expansion plans are for a facility of up to 362 spaces.

Additional relief from overcapacity as well as enhanced service may be accomplished through off-site capacity via feeder bus services. The locations for potential off-site capacity can be determined by defining the actual service area for this facility by the park-and-ride and kiss-and-ride survey results contained in Section 4. In addition, this station's role as a destination facility for the Southland Mall, South Dade Government Center, and the Cutler Ridge Urban Center, its local service area should also be considered for park-and-ride and feeder service potentials.

SW 200th Street Busway Park-and-Ride Existing Conditions

General Location:

The lot is adjacent to the Busway, on the northwest corner of US-1 and SW 200th Street. The lot is fenced in and multi-family buildings are to its north, west, and south. SW 200th Street, where the entrance is, is on its south perimeter. Abutting the east side, is an access road to the condominium to the north. It is 16 miles from the Dadeland South Metrorail Station.

Figure 2-18
SW 200th Street Park-&-Ride Puddling

Observed Utilization:

Wednesday, Sept. 5, 2007, noon:
over 10 spaces were observed to be available
Thursday, October 4, 2007, late morning:
Much of the lot was available, especially in the areas of puddles. This is generally not consistent with the MDT utilization data that shows an average of 94% utilization.

Visibility, Information:

The lot is not easily seen from US-1, although there is signage on US-1.

Safety / Security:

The lot has is fenced by chain-link fencing, but these is no security guard or attendant. While the fencing provides security, it also creates a more hostile appearance.

Figure 2-19
SW 200th St. Park-&-Ride Lighting

Lighting:

The lot has only temporary lighting on a trailer at one location.

Pedestrian Access:

There is not a covered walk or protected pedestrian way from the end of the lot. Pedestrians can not directly access the Busway station from the north end of the lot, having to walk first to the south end of the lot to exist the fencing. Pedestrian access is further impeded by the need to cross the SW 200th Drive to reach the Busway station. Large areas of puddling where noted in the lot on October 4th after rain the day before.

Bicycle Facilities:

A bicycle rack was not observed.

Busway Station:

The Busway station is one of the older designs. Weather protection is not adequate: the roof is high, and missing back panels have not been replaced. Passenger information is minimal: there are route diagrams and schedules, but no system map, system information, or real-time arrival information. Amenities include only a telephone and two trash receptacles.

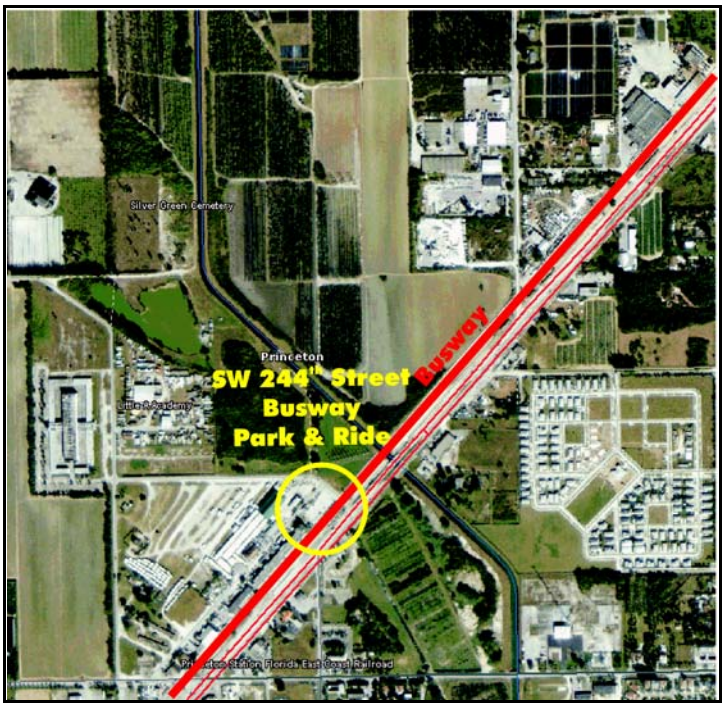
Figure 2-20
SW 200th Street Busway Station

Figure 2-21
SW 200th Street Busway Station Amenities

SW 244th Street Busway Park-and-Ride Utilization

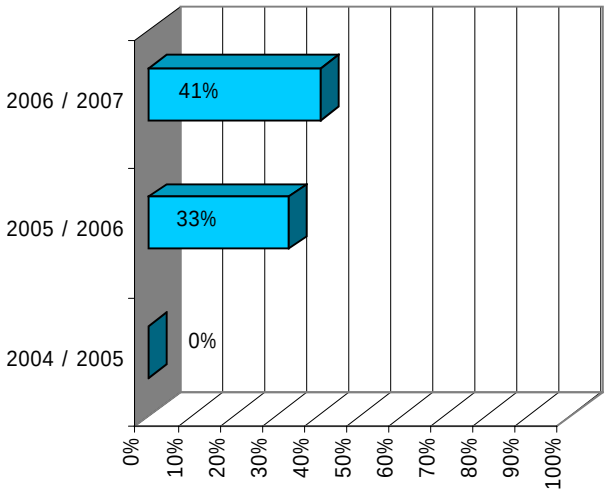
The SW 244th Street Park-and-Ride provides park and ride capacity for Busway passengers to access the express transit bus service from just north of Coconut Palm Drive (SW 248th Street). It is the twentieth (20th) station from the Busway's starting point at Dadeland South. Its service area includes Princeton, Naranja, Leisure City, South Allapattah, and the Redlands

Figure 2-22
SW 244th Street Busway Station Aerial



The lot is leased from the owners of the adjacent Bargain Town. It is intended to function primarily as a park-and-ride and kiss-and-ride access point to the Busway. Other modes to the station may include walking or bicycle. Two Busway routes are available at this station: the Busway Flyer (34), and the Busway MAX (38). Transfers are also facilitated at the station to MDT Route 35.

Figure 2-23
SW 244th Street Park & Ride Utilization



The 95-space SW 244th Street park and-ride has been in operation for just over two years. For the two complete years of parking utilization data, the SW 244th Street facility has started at 33%of capacity, and has risen to 41%. Having been in operation for two years, its utilization rate has not yet stabilized. It's location in its market life cycle is before maturity, and continued growth is expected. At this time, and possibly for the next year or two, the rate of utilization of the SW 244th Street Busway Park-and-Ride does not provide evidence that additional capacity in necessary for this service area. This does not preclude that survey results contained in Sections 4 and 5 may show a need for other off-site capacity.

SW 244th Street Busway Park-and-Ride Existing Conditions

General Location:

The lot is adjacent to the Busway, on the southwest corner of US-1 and SW 244th Street. It is part of the north-side parking for the Bargain Town / Redland Market Village. It is 32 miles from the Dadeland South Metrorail Station.

Observed Utilization:

Wednesday, Sept. 5, 2007, early afternoon: 2 to 3 spaces available

Thursday, October 4, 2007, mid afternoon: 4 spaces were available. The observed utilization is not consistent with the MDT utilization data that shows an average of 41% utilization, in which around 55 spaces should be available. This may be caused by the possibility of shoppers parking in the MDT portion of the lot. Demarcation of the Busway park-and-ride lot is by signage, and there is no observable barrier to shoppers using the Busway spaces.

Figure 2-24
SW 244th Street Busway Park-and-Ride

Visibility, Information:

The lot is very visible from US-1, and there is also signage on US-1.

Safety / Security:

The lot is not fenced-in;however, since it is part of a very active retail center, the facility has a good perception of security, and it is inviting to use.

Lighting:

The facility has permanent lighting.

Pedestrian Access:

There is not a covered walk or protected pedestrian way from the end of the lot. Pedestrians can not directly access the Busway station from the south side of the lot. Chain-link fencing separates the lot from the Busway station, with only one opening at the north side. There is a sidewalk, and ADA accessibility appears to be good.

Bicycle Facilities:

A bicycle rack was not observed.

Busway Station:

The Busway station is a new design. Weather protection is good. There is passenger information: there are route diagrams and schedules, but no system map, system information, or real-time arrival information. Amenities include only a trash receptacles, but no telephone.

Figure 2-25
SW 244th Street Busway Station

SW 296th Street Busway Park-and-Ride Utilization

The SW 296th Street Park-and-Ride provides park and ride capacity for Busway passengers to access the express transit bus service from just south of Avocado Drive (SW 294th Street). It is the twenty-fourth (24th) station from the Busway's starting point at Dadeland South. Its service area includes Homestead, and Leisure City. It is located 37 miles from the Dadeland South Station.

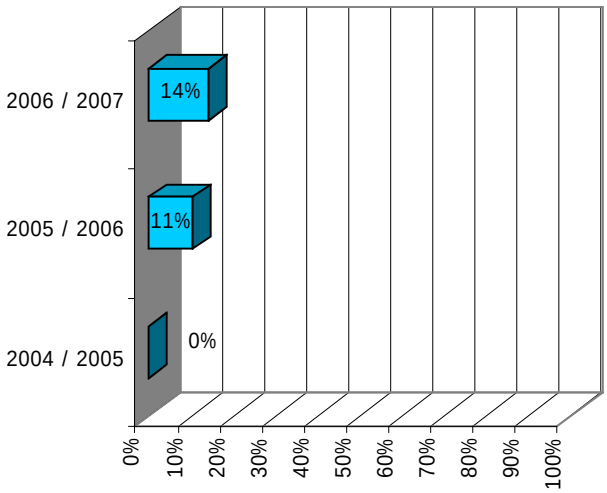
It is intended to function primarily as a park-and-ride and kiss-and-ride access point to the Busway. Other modes to the station may include walking or bicycle. Two Busway routes are available at this station: the Busway Flyer (34), and the Busway MAX (38). Transfers are also facilitated at the station to MDT Route 70.

Figure 2-26
SW 296th Street Busway Station Aerial

The SW 296th Street park-and-ride has been in operation for two years. It was open on a temporary basis, and then closed for the construction of a new, larger lot.

For its first year, the SW 296th Street facility has had a utilization rate of only 11% of capacity. The second year of operation has not shown a significant increase, with only14% utilization. While it is still a new facility, its utilization rate is very low, and not yet showing a significant trend of increase. When the Phase II of the Busway Extension opens and is in regular service in this area, and when the new lot is finished, utilization is expected to increase.

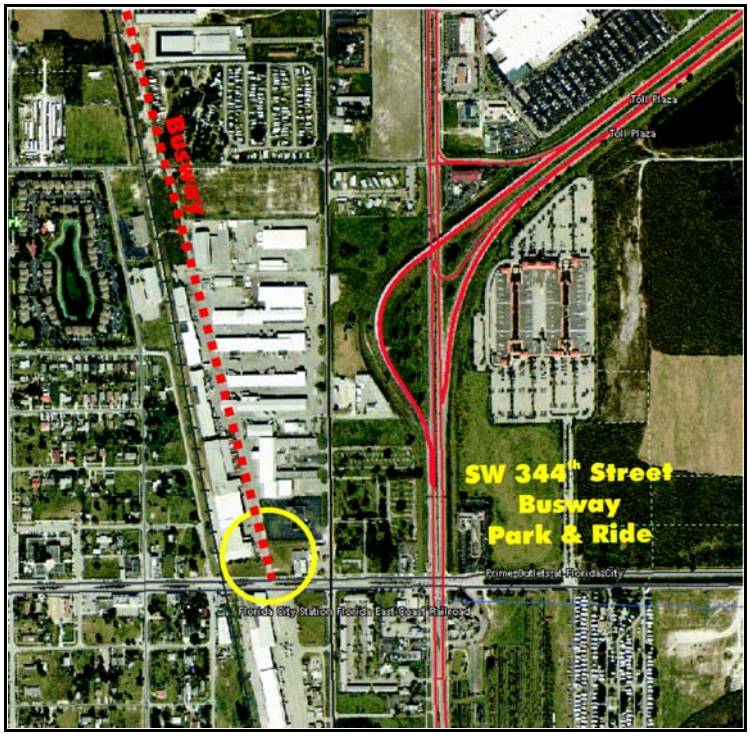
Figure 2-27
SW 296th Street Park & Ride Utilization



SW 344th Street Busway Park-and-Ride

The SW 344th Street Park-and-Ride will provide park and ride capacity for Busway passengers to access the express transit bus service. It will be the last twenty-fourth (29th) station from the Busway's starting point at Dadeland South. Its service area will include Homestead, and Florida City. It is also located near the Prime Factory Outlets at Florida City, a regional shopping center of 234,000 square feet.

Figure 2-28
SW 344th Street Busway Station Aerial



It is intended to function primarily as a park-and-ride and kiss-and-ride access point to the Busway. Other modes to the station may include walking or bicycle. Two Busway routes will be available at this station: the Busway Flyer (34), and the Busway MAX (38). Transfers are also facilitated at the station to MDT Route 70 and Route 344. Transfers will also be facilitated at this location to the Dade-Monroe Express (301), providing express service to mile marker 50 in Marathon in the Florida Keys.

The SW 344th Street park-and-ride facility has not begun service; there is no utilization data at this time.

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South Dade Busway Feeder Study

Section 3

(Task 4)

South Dade Busway Transit Riders' Travel Behavior

Existing Transit Patrons:

- South Dade Park-and-Ride Patrons
- South Dade Kiss-and-Ride Patrons
- South Dade Busway Passengers
- South Dade Metrorail Passengers

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South Dade Busway Existing Passengers Travel Behavior

The South Dade Transit Feeder Study is based on data and analysis concerning three markets: 1) existing transit users whose needs are represented by parking utilization data, the park-and-ride license plate survey, the park-and-ride kiss-and-ride license plate survey, and the Metrorail and Metrobus passenger surveys; 2) potential transit users from existing South Dade residents, represented by the County Commission District 8 and 9 telephone survey; and 3) potential transit users from among future South Dade residents.

South Dade Transit Passenger Segmentation

This section looks at existing transit users, and at minimum defines their travel behavior in terms of spatial patterns of their home origins and end destinations, one or both of which will be in South Dade. Existing transit have been classified into four groups for the purposes of this study.

1. Park-and-Ride Busway Passengers
   The component considers the travel patterns of passengers that currently use the Busway on their weekday commute trip, and arrive at the Busway by means of driving their own car and parking it at one of the five existing Busway Park-and-ride facilities.
2. Kiss-and-Ride Busway Passengers
   These passengers currently use the Busway on their weekday commute trip, and arrive at the Busway by means of riding in another person's vehicle and being dropped off for their transit trip at one of the Busway station kiss-and-ride lanes.
3. Busway Transit Passengers
   These passengers currently use one of the Busway routes on their weekday commute trip, but arrive at the Busway route by MDT transit system transfer, by walking, or by other public transportation.
4. Metrorail Transit Passengers
   These passengers currently use Metrorail on their weekday commute trip, and arrive at the Metrorail station by MDT transit system transfer, by walking, or by other public transportation.

South Dade Transit Passenger Segments and their Significance

By looking at the home origins or final destinations of each type of traveler, patterns can be identified that can lead to a clear understanding of where and to what extent additional park-and-ride capacity with transit feeder services are needed. For each of these groups, the patterns have different interpretations for the recommendation of this study.

1. Park-and-Ride Busway Passengers
   For existing park-and-ride passengers, the South Dade travel patterns are analyzed by each park-and-ride facility. For each facility, it is expected to see home origins in Dade County that represent the station that is the shortest path for the traveler. If there are significant groupings of travelers going to a more distant station to park, that indicates a potential shortage in the closer station, and signals a need for additional capacity. Similarly if the distance, even to the nearest station is long, for example for travelers from far west in South Dade, there is an indication of potential need.
2. Kiss-and-Ride Busway Passengers
   For existing kiss-and-ride passengers, the South Dade travel patterns are also analyzed by each park-and-ride facility. The presence of kiss-and-ride passengers at a station is not a direct indication of the need for more park-and-ride capacity there; however, to the extent that some kiss-and-ride passengers may use this means as a replacement for park-and-ride travel, it is a weak indicator of need. It must also be considered that many kiss-and-ride passengers make this mode choice for convenience other reasons internal to their own situation. Further, while providing additional convenience is always a goal, it is not generally desirable to motivate kiss-and-ride passengers (a mode combination of car pooling with transit) to park-and-ride choices (a mode combination of single-occupant vehicle use with transit). Kiss-and-ride travel is generally more efficient in terms of congestion, fuel usage, emissions, and public infrastructure investment.
3. Busway Transit Passengers
   Busway transit passengers (that do not use park-and-ride or kiss-and-ride) are analyzed by the geographic location of their home origin within analysis areas developed for this study. For each analysis areas, clusters of home origins will be identified. If the clusters are not directly accessible to the Busway by a single route, a feeder service with a remote park-and-ride may be considered for the area.
4. Metrorail Transit Passengers
   Metrorail transit passengers (that do not use park-and-ride or kiss-and-ride) are analyzed by the geographic location of their home origin within analysis areas developed for this study. For each analysis areas, clusters of home origins will be identified. If the clusters are not directly accessible to Metrorail by a single route, a feeder service with a remote park-and-ride may be considered for the area.

South Dade Transit Passenger Segments Data Sources

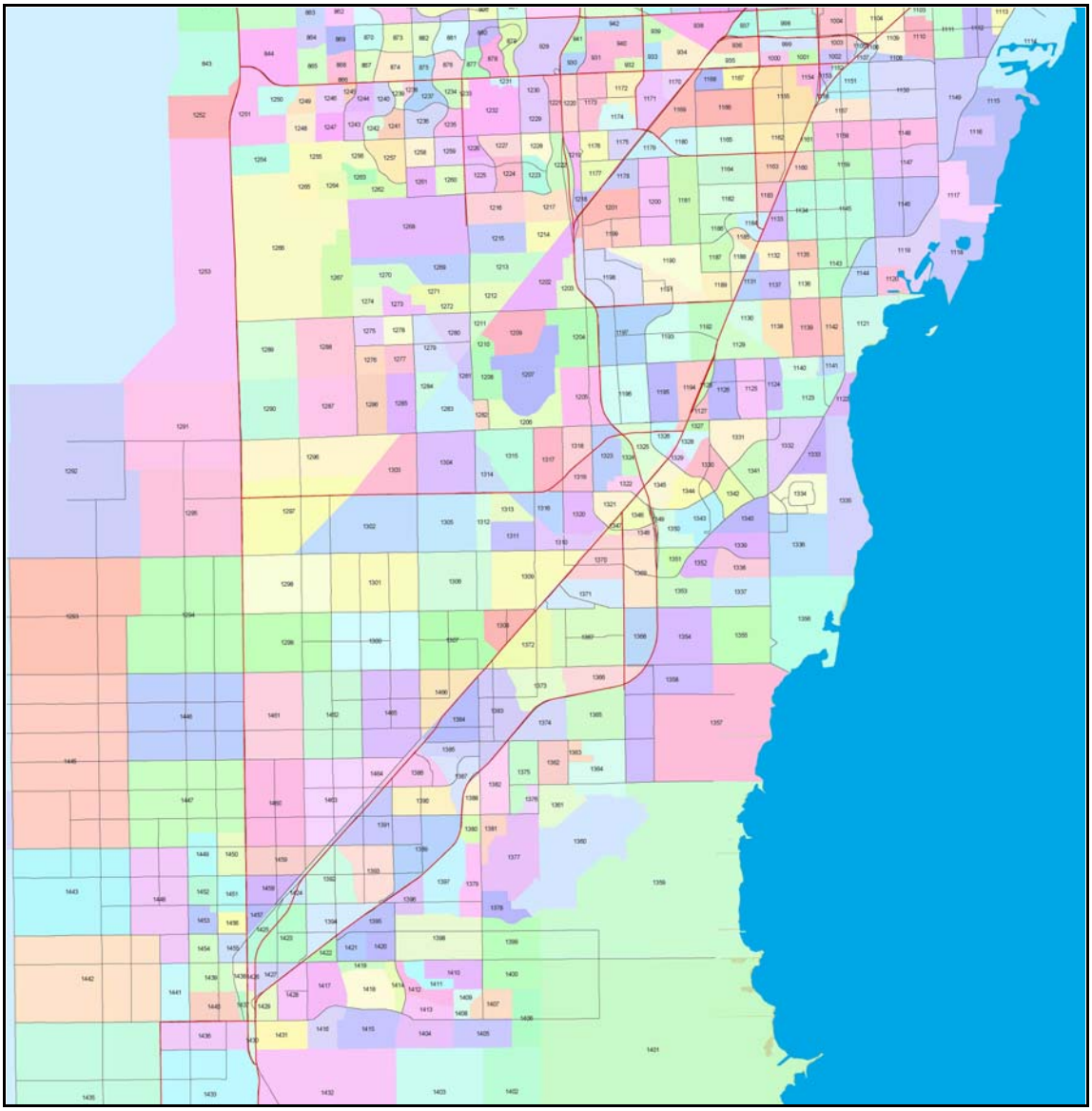
The data collection sources for each of the travel behavior components for the South Dade Busway service area are different. Two of the sources are data collection that was performed specifically for this study. The other two are existing recent data sources.

1. Park-and-Ride Busway Passengers
   Park-and-ride data is based on a license plate survey that was performed at the five Busway station park-and-ride lots, as well as the Dadeland South and Dadeland North Metrorail station garages. License plate numbers of vehicles parked after 9:00 a.m. were collected in electronic format, and the consultant in coordination with the Florida Department of Motor Vehicles obtained the address associated with the license plates. The addresses were coded and mapped by TAZ. The database contains 2,365 records among the seven surveyed locations. The survey was performed in February 2007.
2. Kiss-and-Ride Busway Passengers
   Kiss-and-ride data is based on a pick-up and drop-off intercept license plate surveys that were performed at all operating Busway stations and the Dadeland South and Dadeland North Metrorail stations. The surveys were based on random sampling with a total sample of 400 surveys collected among all of the Busway stations. The surveys were performed on Tuesday, Wednesday, and Thursday from 6:00 am to 9:00 am, with one day assigned to each station randomly. Addresses obtained were coded and mapped by TAZ. Other collected data includes how many people were dropped off, and whether any were mobility impaired. The database contains 390 good records among the surveyed locations. The survey was performed in February 2007.
3. Busway Transit Passengers
   Busway transit passenger data is based on the system-wide bus on-board survey that was performed in April and May 2003 for the Comprehensive Bus Operations Analysis (CBOA). Bus passengers were surveyed system-wide, and requested to state their trip characteristics, preferences, and other information. The surveys were performed for every route, on weekdays, Saturdays, and Sundays from 5:00 am to 8:00 p.m. except for Night Owl routes. The sampling (number of surveys) was at a level to provide an error level of +/- 5% at a confidence interval of 95% when analyzed by route and day of week. The database includes approximately 27,000 bus rider surveys.
4. Metrorail Transit Passengers
   Metrorail transit passenger data is based on the system-wide (all station) bus on-station platform survey that was performed 2004.). Metrorail passengers were surveyed at each station, and requested to state their trip characteristics, preferences, and other information. The surveys were collected on weekdays, Saturdays, and Sundays. The sampling (number of surveys) was at a level to provide an error level of +/- 5% at a confidence interval of 95% when analyzed by station and day of week. The database includes approximately 8,000 Metrorail rider surveys.

Analysis, Mapping, and Presentation

The travel patterns of each of these categories of South Dade Commuters have been geographically mapped out by transportation analysis zone (TAZ). A TAZ is the smallest geographic unit used for transportation modeling by the Miami Dade MPO in its Miami Urbanized Area Transportation System (MUATS) travel model for the County. TAZs vary in size with intensity of land uses and intensity of trip productions, and can range from a small as a two city blocks in Downtown Miami to as large as a square mile section or more in large areas of open space or agricultural areas. They are generally areas or communities of homogeneous land use. The MPO's TAZ map for Dade County is shown below.

Figure 3-1
South Dade TAZ Map Excerpt



The analysis that follows provides mapped out results for each of the South Dade Busway service area traveler segments.

1. Park-and-Ride Busway Passengers
   For park-and-ride results, a map is provided for each station showing the origin and destination results, with a short narrative explaining conclusions.
2. Kiss-and-Ride Busway Passengers
   For kiss-and-ride results, a map is provided for each station showing the origin and destination results, with a short narrative explaining conclusions.
3. Busway Transit Passengers
   For the MDT bus results, a map is provided for each Busway route illustrating the origin and destination results, and a short narrative explaining conclusions is included. In addition, for each route, a tabular summary of passenger demographics, trip purpose, modes to and from the bus, and attitudinal results from the 2003 on-board survey.
4. Metrorail Transit Passengers
   For the Metrorail results, a map is illustrates the origin and destination results, with a short narrative explaining conclusions. In addition, a tabular summary of passenger demographics, trip purpose, modes to and from the bus, and attitudinal results from the 2004 on-board survey.

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Park-and-Ride Busway Passenger Travel Pattern Analysis

The geographic distribution of home origins for South Dade Metrorail and South Dade Busway Station Park-and-Ride passengers are provided in the following section. The results, shown by TAZ, have been weighted by the number of vehicles surveyed from each TAZ and the population of the TAZ to provide a meaningful predictor for remote park-and-ride facilities and feeder services. The results are graded from red for the strongest potential, through orange, gold, and to yellow for the lowest potential. White has not potential users. Generally, the strongest potential areas, red, orange-red, and dark orange have been used in this analysis.

Analysis tables based on the GIS-based maps for each station, provide aggregated clusters of potential into the various municipalities, districts, and neighborhoods in South Dade. The aggregations are based on clustering, and nearly match the boundaries of these neighborhoods and districts, but may not always be exact matches. For each area the locations are also described to clarify the boundaries, and the TAZ numbers are also provided.

Using the GIS-coded number of park-and-ride vehicles from each TAZ (survey sample weighted by TAZ population), the aggregated areas are given "Market Potential Score" to provide a relative scoring system for ranking the potential for each of the areas. While proving useful indicators for prioritization, the scores are not to be interpreted as forecasts for the number of vehicles that may use a recommended facility or improvement in Section 6 of this report.

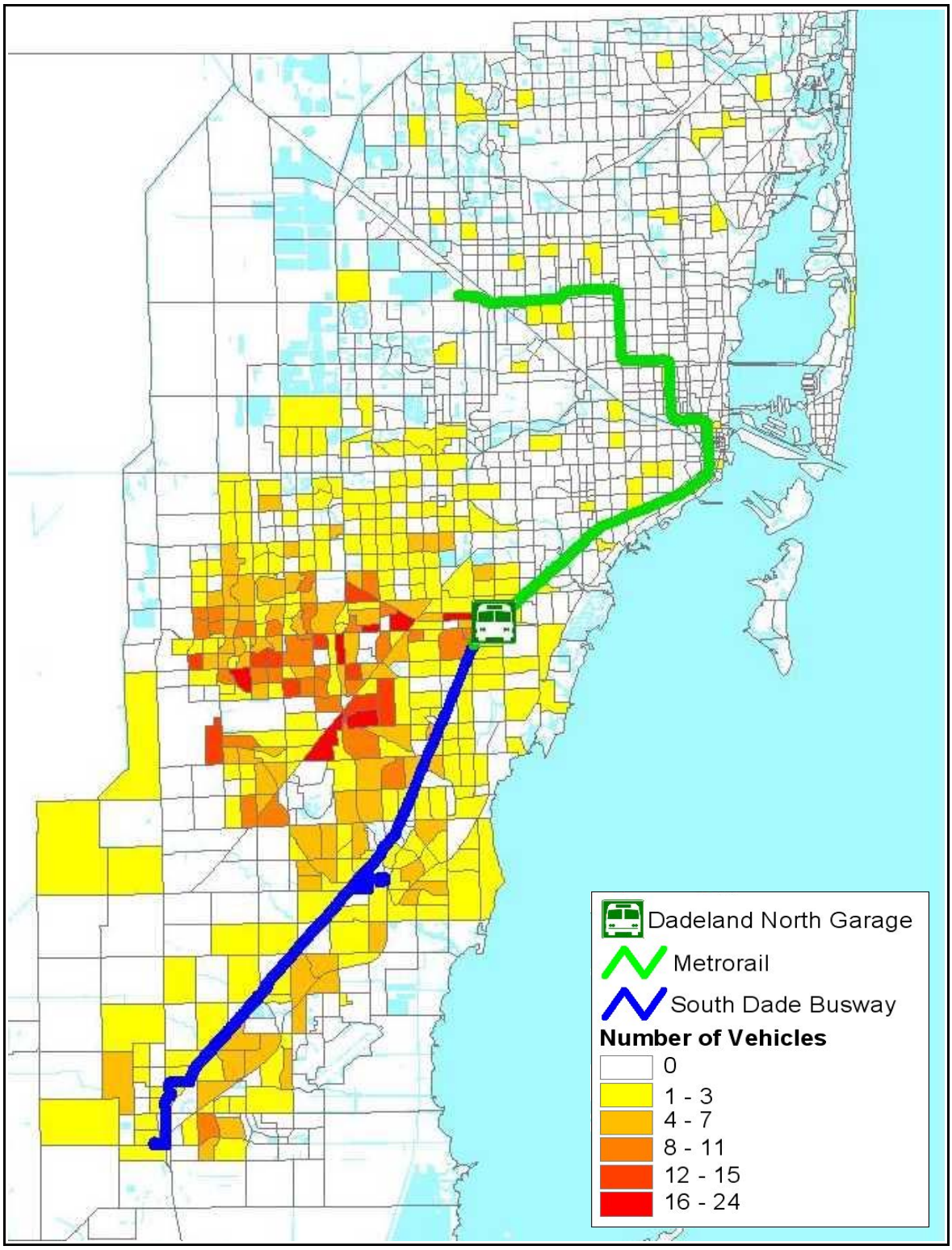
Park-and-Ride Busway Passenger Travel Pattern Analysis
Dadeland North Metrorail Station

The geographic distribution of home origins for the Dadeland North Metrorail Station Park-and-Ride is illustrated in Figure 3-2, and the areas with strong potentials for remote park-and-ride facilities and feeder services are provided in Table 3-1.

Table 3-1
Dadeland North Metrorail Station Remote Park-and-Ride Potentials

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
East Kendall	Just west of station	1003	High-Density Residential	Red	20
The Crossings	Northwest of SW 104th St and SW 137th Av.	1236, 1236	Single-Family Residential	Orange-red	28
The Hammocks	Northwest of SW 104th St and SW 157th Av.	1248, 1257	Medium-Density Residential	Red	20
Kendall West	Northwest of SW 88th St and SW 157th Av.	864-869, 874	Medium-Density Residential	Orange	10
Richmond Heights, East	East of Turnpike northeast of Tpk and SW 136th St	1199, 1200, 1201	Single-Family & Estate-Density Residential	Red (1199) Orange-red	38
Richmond Heights, West	west of Turnpike east of SW 122/127 Av.	1202	Medium-Density & Single-Family Residential	Red	20
Richmond West	Northeast of SW 152nd St. and SW 157th Av.	1267	Single-Family Res., commercial at SE corner	Red	20

Figure 3-2
Dadeland North Station Park & Ride Spatial Distribution of Home Origins



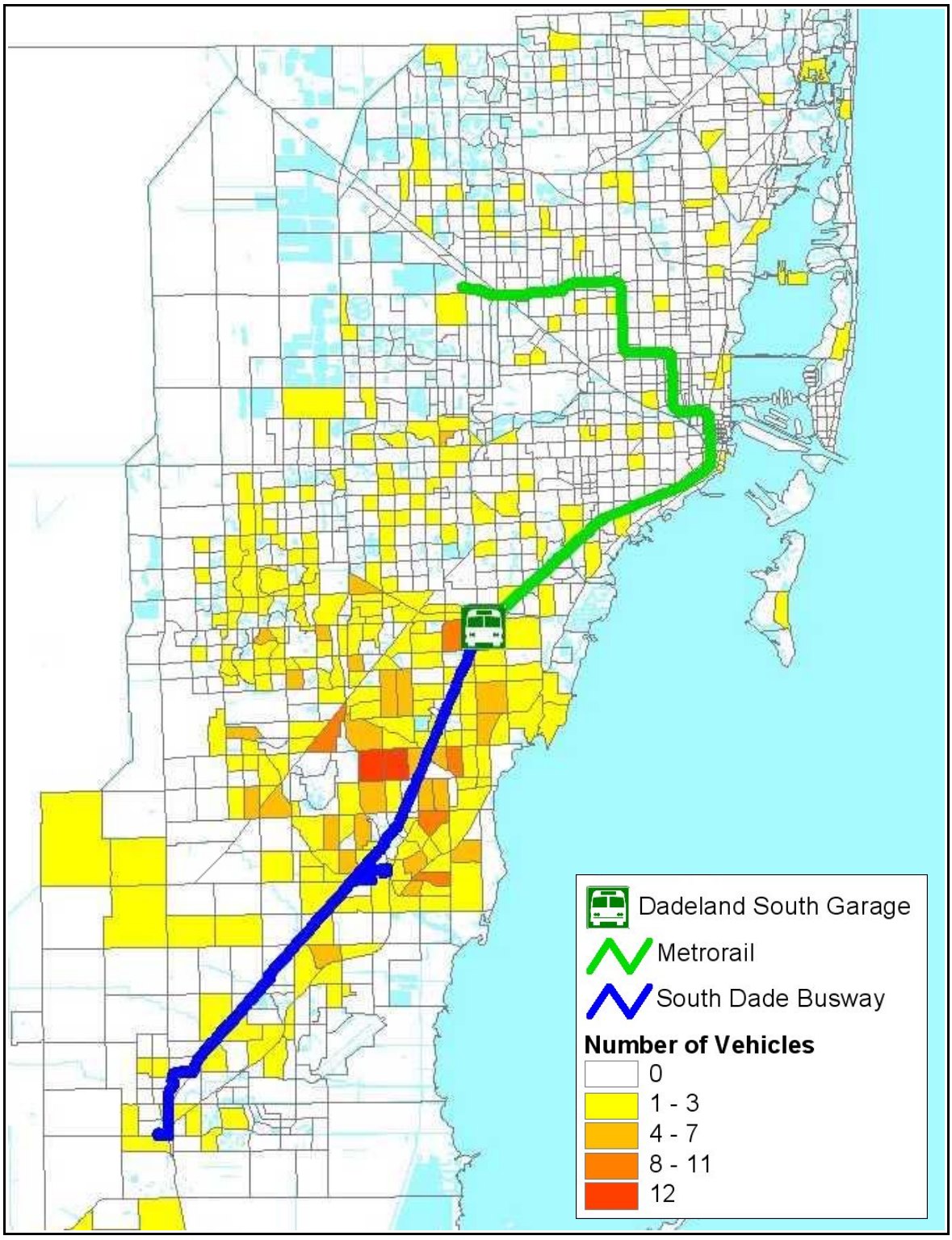
Park-and-Ride Busway Passenger Travel Pattern Analysis
Dadeland South Metrorail Station

The geographic distribution of home origins for the Dadeland South Metrorail Station Park-and-Ride is illustrated in Figure 3-3, and the areas with strong potentials for remote park-and-ride facilities and feeder services are provided in Table 3-2.

Table 3-2
Dadeland South Metrorail Station Remote Park-and-Ride Potentials

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
East Kendall	Just west of station	1154, 1155	High-Density & Single-Family Residential	Dark Orange	20
Pinecrest	SW 120 to SW 152 St, west of Old Cutler Rd.	1143, 1145	Estate-Density Residential	Dark Orange	20
The Hammocks	Northwest of SW 104th St and SW 157th Av.	1248, 1257	Medium-Density Residential	Red	24
Richmond Heights / Howard	Northwest of SW 136th St & SW 102nd Av	1200, 1181	Estate-Density Residential	Orange	12
Richmond Heights, East	Northeast of Turnpike & SW 152nd St	1198	Medium-Density Residential	Orange	6
Palmetto Estates	Southeast of Turnpike & SW 152nd St	1197, 1193, 1192	Single-Family Residential	Red (97,93) Orange	30
Richmond Heights, West	West of Turnpike east of SW 122/127 Av.	1202	Medium-Density & Single-Family Residential	Dark Orange	10
West Perrine	Northwest of Turnpike & SW 184th St	1196	Single-Family Residential	Orange	6
South Miami Heights	SW 184th St to SW 200th St West of US-1	1318, 1319, 1320, 1323	Medium-Density & Single-Family Residential	Orange	24

Figure 3-3
Dadeland South Station Park & Ride Spatial Distribution of Home Origins



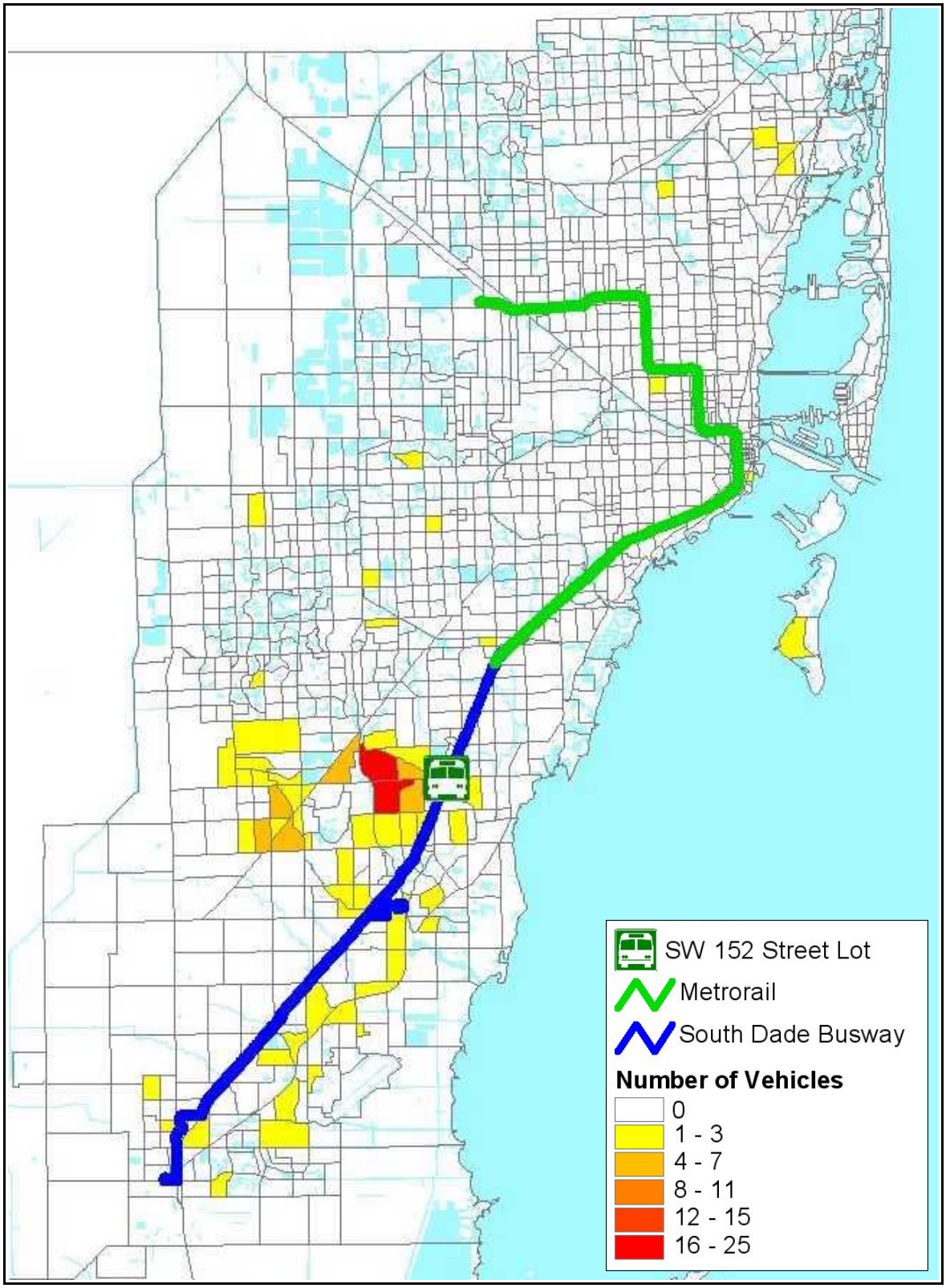
Park-and-Ride Busway Passenger Travel Pattern Analysis
SW 152nd Street Busway Station Park-and-Ride

The geographic distribution of home origins for the SW 152nd Street Busway Station Park-and-Ride is illustrated in Figure 3-4, and the areas with strong potentials for remote park-and-ride facilities and feeder services are provided in Table 3-3.

Table 3-3
SW 152nd Street Busway Station Remote Park-and-Ride Potentials

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
Richmond Heights, East	Northwest of Turnpike & SW 152nd St	1190, 1191, 1198, 1199	Medium-Density Residential	Red (98) Orange(91) Yellow	35
Palmetto Estates	Southwest of Turnpike & SW 152nd St	1197, 1193, 1192	Single-Family Residential	Red (97) Orange	41
Richmond Heights, West	West of Turnpike east of SW 122/127 Av.	1202	Medium-Density & Single-Family Residential	Orange	10
Country Walk	SW 136th St to SW 168th St and west of 137th Av	1267,79,80 1270 - 1274	Single-Family & Medium-Density Residential	Orange(79) Yellow	24
Richmond West	Southwest of SW 168th St and west of 137th Av	1281, 1283-1286	Single-Family & Medium-Density Residential	Orange (83,85) Yellow	26
West Perrine	US-1 to Turnpike SW 168th St to SW 184th St	1194-1196, 1205	Medium-Density & Single-Family Residential	Yellow	8
South Miami Heights	SW 184th St to SW 200th St West of US-1	1310, 1316, 1320	Medium-Density & Single-Family Residential	Yellow	6

Figure 3-4
SW 152nd Street Station Park & Ride Spatial Distribution of Home Origins



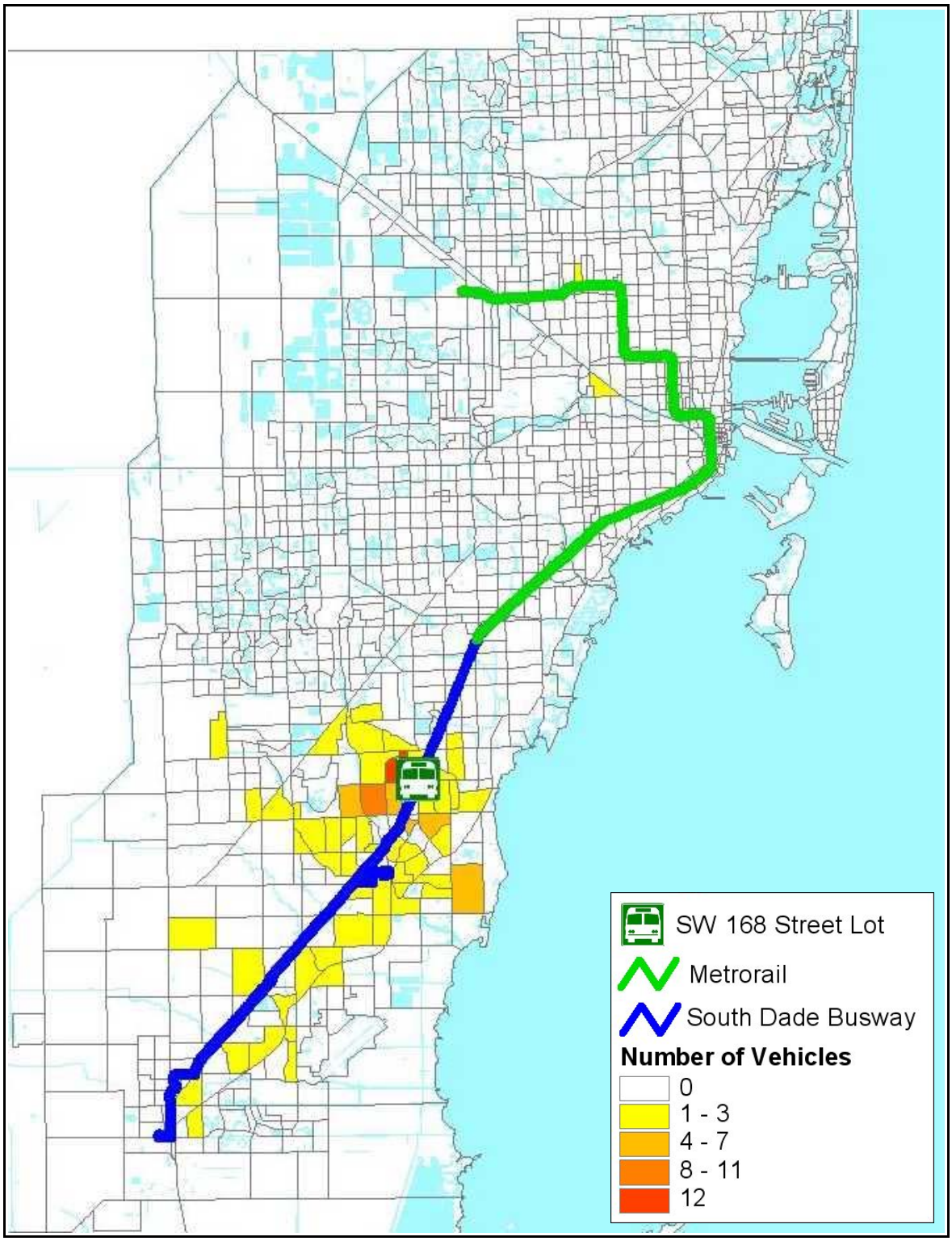
Park-and-Ride Busway Passenger Travel Pattern Analysis
SW 168th Street Busway Station Park-and-Ride

The geographic distribution of home origins for the SW 168th Street Busway Station Park-and-Ride is illustrated in Figure 3-5, and the areas with strong potentials for remote park-and-ride facilities and feeder services are provided in Table 3-4.

Table 3-4
SW 168th Street Busway Station Remote Park-and-Ride Potentials

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
Richmond Heights, East	Northeast of Turnpike & SW 152nd St	1191, 1198	Medium-Density Residential	Yellow	4
Palmetto Estates	Southeast of Turnpike & SW 152nd St	1197, 1193, 1192	Single-Family Residential	Red (92) Yellow	16
West Perrine	US-1 to Turnpike SW 168th St to SW 184th St	1194, 1195, 1196	Medium-Density & Single-Family Residential	Dark Orange(95) , Orange	22
East Perrine	East of US-1 SW 168th St to SW 184th St	1123, 1124, 1125, 1128	Single-Family Residential	Yellow	8
Franjo	SW 184th St to CaribbeanBlvd. East of Franjo Rd	1328, 1331, 1341	Single-Family Residential	Orange, Yellow (41)	14
Cutler Ridge, East Goulds	East of US-1, west of Turnpike, no. of SW 232 St	1338,39,43, 48,50,51,53 67,68,69,70	Medium-Density & Single-Family Residential	Yellow	22

Figure 3-5
SW 168th Street Station Park & Ride Spatial Distribution of Home Origins



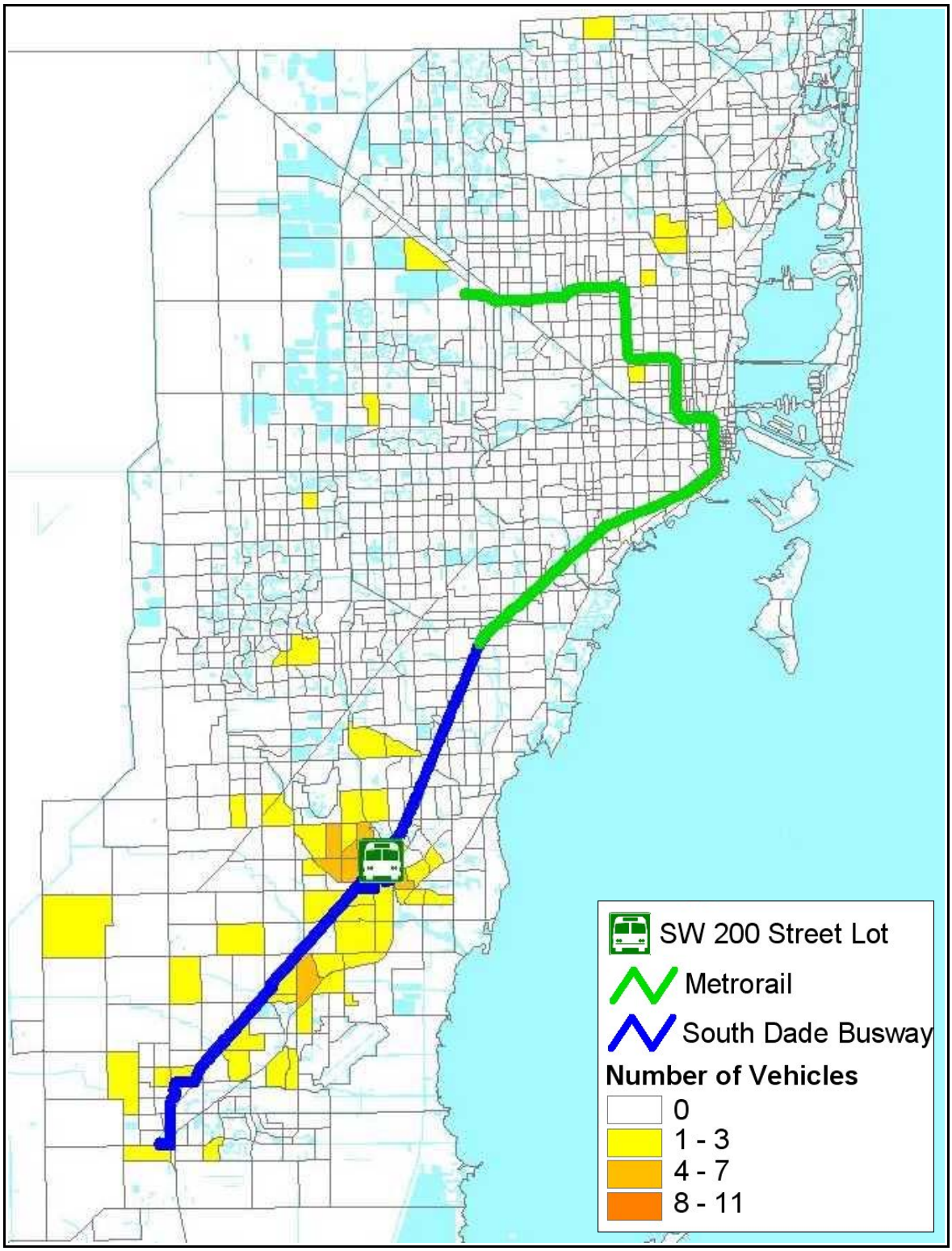
Park-and-Ride Busway Passenger Travel Pattern Analysis
SW 200th Street Busway Station Park-and-Ride

The geographic distribution of home origins for the SW 200th Street Busway Station Park-and-Ride is illustrated in Figure 3-6, and the areas with strong potentials for remote park-and-ride facilities and feeder services are provided in Table 3-5.

Table 3-5
SW 200th Street Busway Station Remote Park-and-Ride Potentials

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
West Perrine	US-1 to Turnpike SW 168th St to SW 184th St	1196, 1205	Medium-Density & Single-Family Residential	Dark Orange(95), Orange	16
South Miami Heights	West of Turnpike South of Metro Zoo	1315-1320, 1323	Medium-Density & Single-Family Residential	Orange, Yellow (15,18)	34
Saga Bay	South of CaribbeanBlvd. East of US-1	1342, 1343, 1350, 1351	Medium-Density & Single-Family Residential	Orange(50) Yellow	12
Cutler Ridge	East of US-1 SW 168th St to SW 184th St	1347, 1368-1371	Medium-Density & Single-Family Residential	Yellow	10
East Goulds	SW 211th St to SW 232 Street, east of US-1	1366, 1367, 1368, 1373	Single-Family Residential	Orange, Yellow (41)	20
Princeton	SW 232 Street to SW 268th Street, east of US-1	1383, 1384, 1385	Medium-Density & Single-Family Residential	Orange(83) Yellow	10
Leisure City	East of US-1, west of Turnpike, no. of SW 232 St	1391,1393, 1397, 1379	Medium-Density & Single-Family Residential	Yellow	8

Figure 3-6
SW 200th Street Station Park & Ride Spatial Distribution of Home Origins



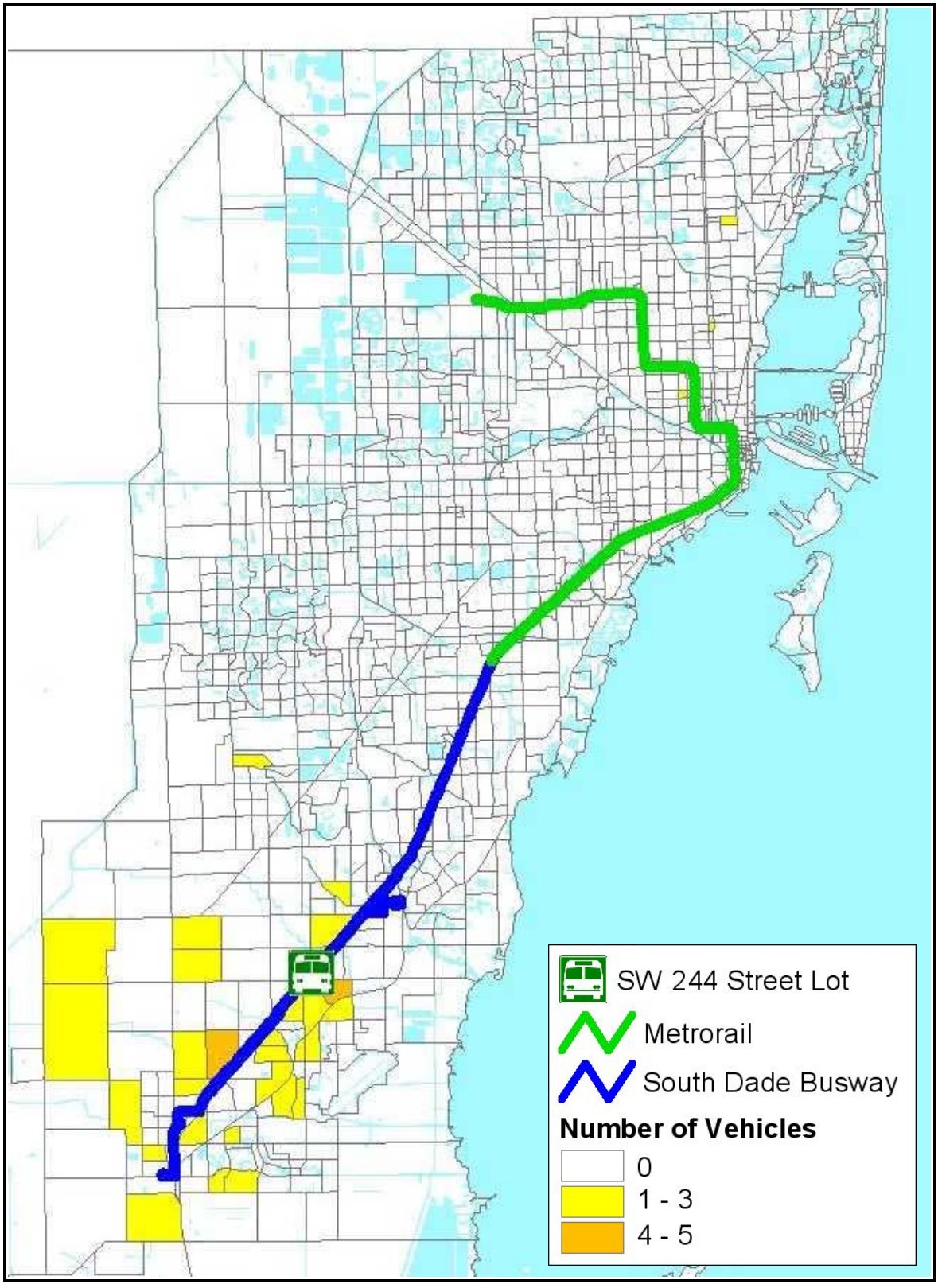
Park-and-Ride Busway Passenger Travel Pattern Analysis
SW 244th Street Busway Station Park-and-Ride

The geographic distribution of home origins for the SW 244th Street Busway Station Park-and-Ride is illustrated in Figure 3-7, and the areas with strong potentials for remote park-and-ride facilities and feeder services are provided in Table 3-6.

Table 3-6
SW 244th Street Busway Station Remote Park-and-Ride Potentials

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
Princeton	SW 232 Street to SW 268th Street, east of US-1	1373-1375, 1382-1384	Medium-Density & Single-Family Residential	Orange(73) Yellow	15
Naranja, East	East of US-1 SW 268th Street to SW 296th St.	1379, 1386, 1389, 1390, 1397	Medium-Density & Single-Family Residential	Yellow	10
Naranja, West	West of US-1, SW 270th Street to SW 296th St.	1459, 1463,1459	Single-Family Residential & Agricultural	Orange(63) Yellow	9

Figure 3-7
SW 244th Street Station Park & Ride Spatial Distribution of Home Origins



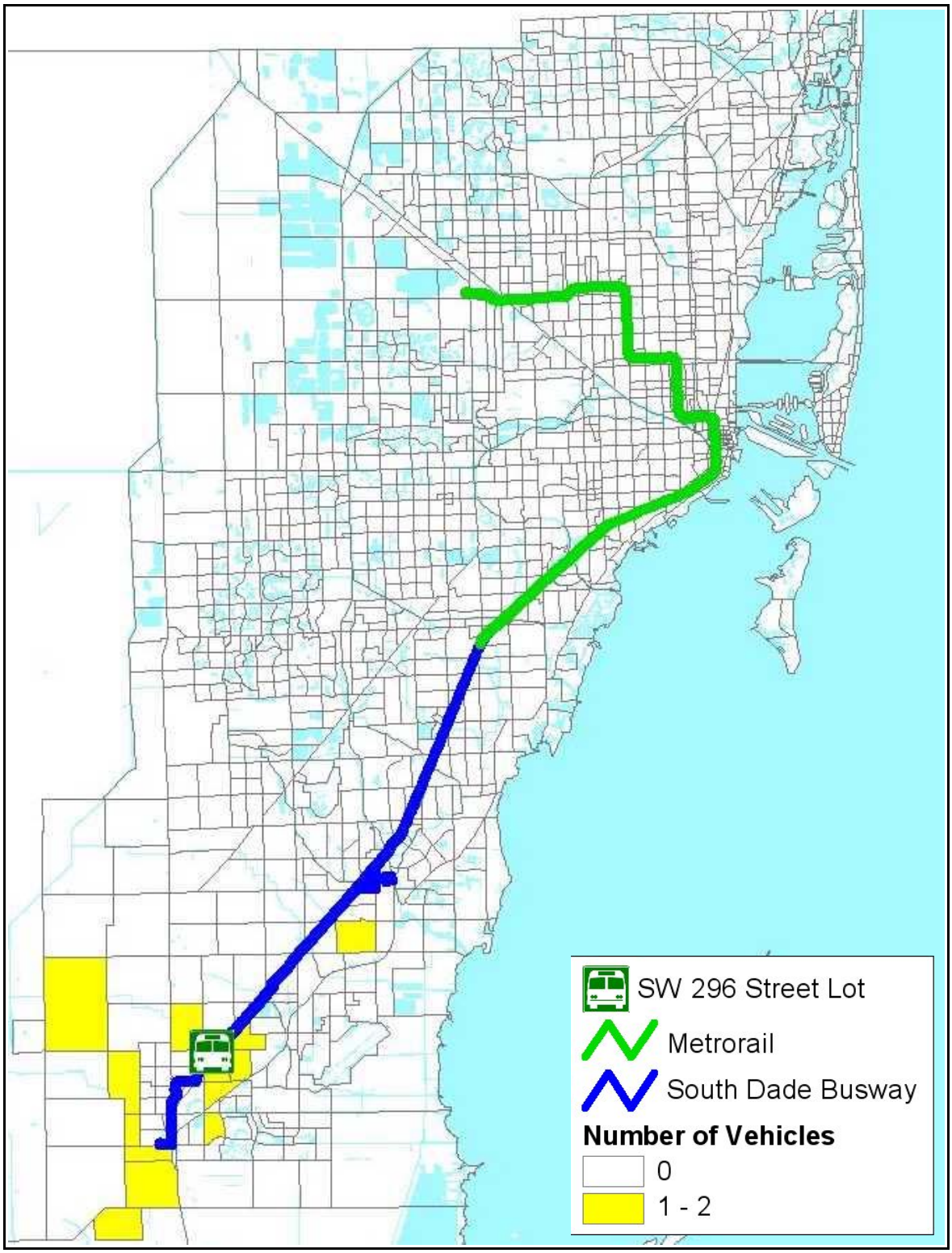
Park-and-Ride Busway Passenger Travel Pattern Analysis
SW 296th Street Busway Station Park-and-Ride

The geographic distribution of home origins for the SW 296th Street Busway Station Park-and-Ride is illustrated in Figure 3-8, and the areas with strong potentials for remote park-and-ride facilities and feeder services are provided in Table 3-7.

Table 3-7
SW 296th Street Busway Station Remote Park-and-Ride Potentials

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
Leisure City	SW 288th Street to SW 312th Street,	1391, 1392, 1393, 1394, 1460	Medium-Density & Single-Family Residential	Yellow	10
Homestead, West	North of Palm Dr West of SW 187th Avenue	1441, 1448	Medium-Density & Single-Family Residential	Yellow	4
Florida City	South of Palm Drive (SW 344th St.)	1433, 1436	Single-Family Residential & Agricultural	Yellow	4

Figure 3-8
SW 296th Street Station Park & Ride Spatial Distribution of Home Origins



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Kiss-and-Ride Busway Passenger Travel Pattern Analysis

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Kiss-and-Ride Busway Passenger Travel Pattern Analysis
General Methodology

The geographic distribution of home origins for South Dade Metrorail and South Dade Busway Station Kiss-and-Ride passengers are provided in the following section. The results, shown by TAZ, have been weighted by the number of vehicles surveyed from each TAZ and the population of the TAZ to provide a meaningful predictor for remote park-and-ride facilities and feeder services. The results are graded from red for the strongest potential, through orange, gold, and to yellow for the lowest potential. White has not potential users. Generally, the strongest potential areas, red, orange-red, and dark orange have been used in this analysis.

Analysis tables based on the GIS-based maps for each station, provide aggregated clusters of potential into the various municipalities, districts, and neighborhoods in South Dade. The aggregations are based on clustering, and nearly match the boundaries of these neighborhoods and districts, but may not always be exact matches. For each area the locations are also described to clarify the boundaries, and the TAZ numbers are also provided.

Using the GIS-coded number of park-and-ride vehicles from each TAZ (survey sample weighted by TAZ population), the aggregated areas are given "Market Potential Score" to provide a relative scoring system for ranking the potential for each of the areas. While proving useful indicators for prioritization, the scores are not to be interpreted as forecasts for the number of vehicles that may use a recommended facility or improvement in Section 6 of this report.

Overall, the Kiss-and-Ride data shows far less clustering patterns than do the Park-and-Ride data. This is not unexpected. While park-and-ride passenger tend to attempt to make more predictable, unilateral decisions based on perception of automobile travel time and transit travel time, the same is not true of kiss-and-ride passengers. The patterns of passengers that are dropped off by another driver are also dependent on the trip characteristics and travel time perceptions of the driver, and so trip patterns are more of a negotiated choice. They are therefore far less predictable, based on unilateral traveler trip time concepts, and, therefore; show far less clustering, and generally wider dispersions of home origins for each station.

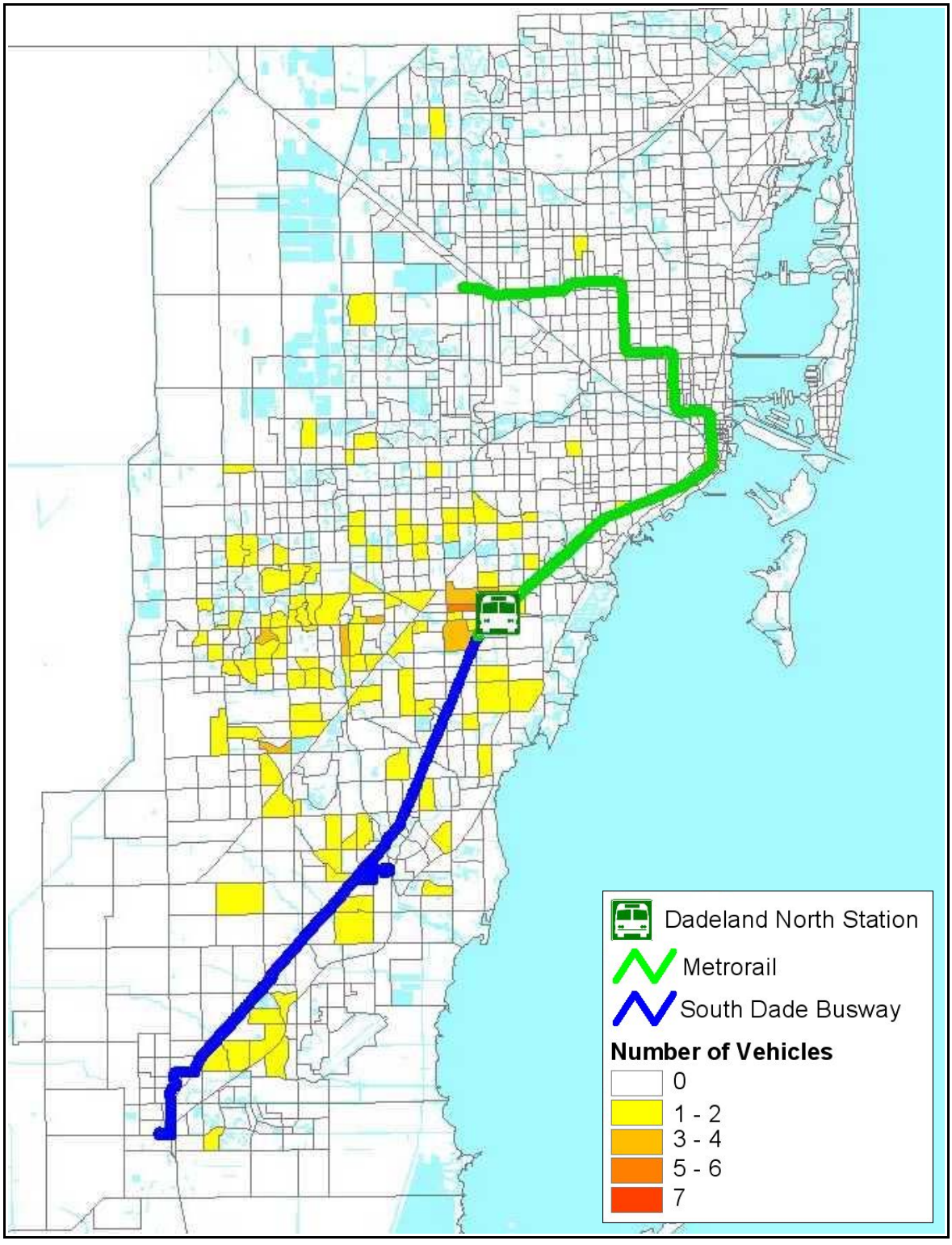
Kiss-and-Ride Busway Passenger Travel Pattern Analysis
Dadeland North Metrorail Station

The geographic distribution of home origins for the Dadeland North Metrorail Station Kiss-and-Ride is illustrated in Figure 3-9, and the areas with strong potentials for remote park-and-ride facilities and feeder services are provided in Table 3-8.

Table 3-8
Dadeland North Metrorail Station Remote Kiss-and-Ride Potentials

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
East Kendall	Just west of station	998,999,1000, 1004,1005,1009,1154,1155	Single-Family, Med, High-Density Residential	Dk Orange, Orange Yellow	26
Kendall Lakes	Northwest of SW 88th St and SW 117th Av.	1219-1222, 1175, 1176	Single-Family Residential	Orange(21) Yellow	14
The Crossings	Northwest of SW 104th St and SW 117th Av.	875-880, 929, 1234, 36, 37, 56, 57, 58	Single-Family Residential	Orange(37) Yellow	30
Pinecrest	SW 120 to SW 152 St, west of Old Cutler Rd.	1159, 1145, 1146	Single-Family & Estate-Density Residential	Yellow	6
Country Walk, Richmond West	West of SW 137th Av, SW 136th St to SW 168th St	1252,1267, 1270, 1272, 1279,1283	Single-Family & Estate-Density Residential	Orange(72) Yellow	14
South Miami Heights	west of Turnpike SW 184th St to SW 216th St	1310, 1316, 1317, 1319, 1323	Medium-Density & Single-Family Residential	Yellow	10
Goulds, East	west of Turnpike east of SW 122/127 Av.	1367, 1371	Medium-Density & Single-Family Residential	Yellow	4
Leisure City	Northeast of SW 152nd St. and SW 157th Av.	1387,1389,1390 392,1393,1397, 1427	Medium-Density & Single-Family Residential	Yellow	14

Figure 3-9
Dadeland North Station Kiss & Ride Spatial Distribution of Home Origins



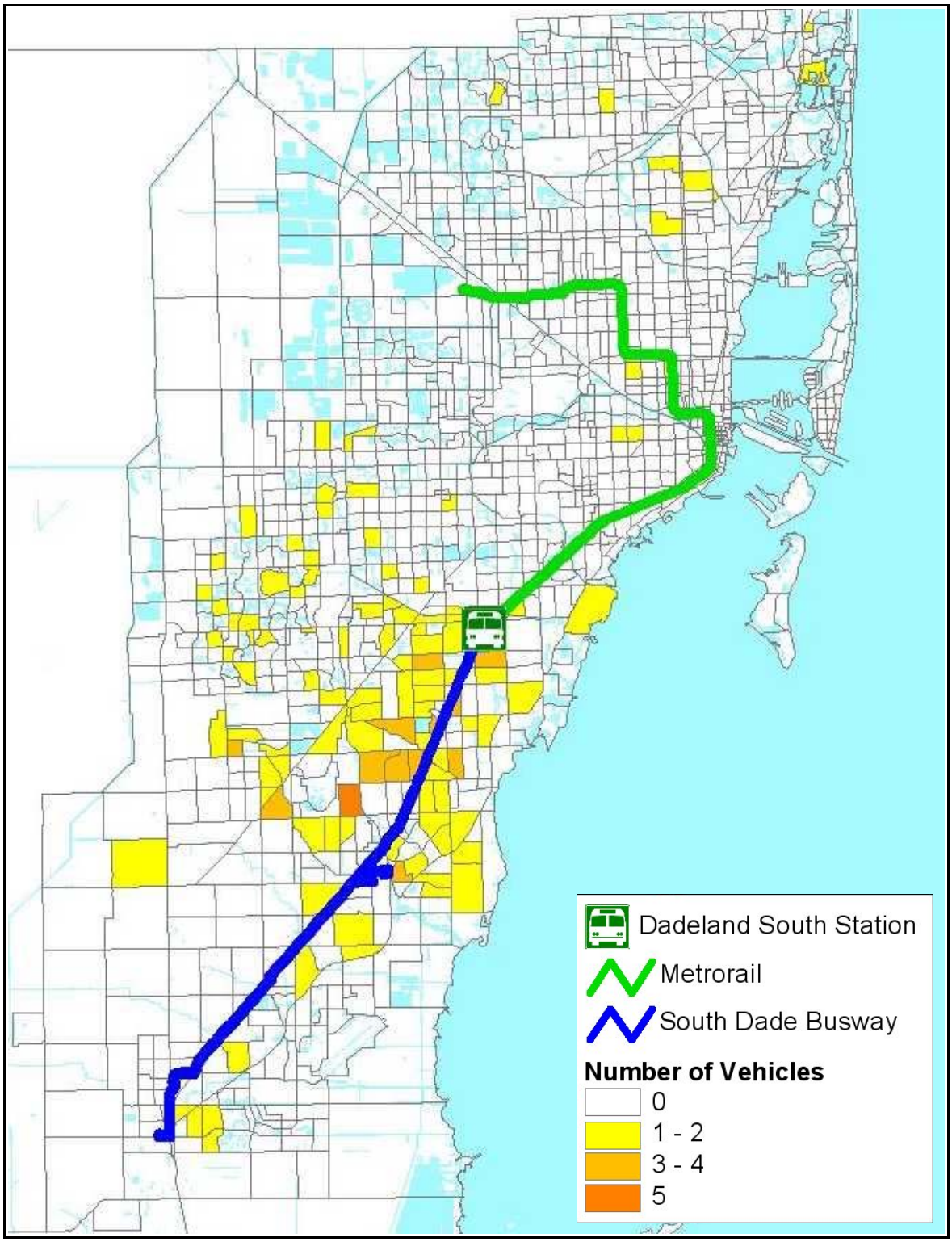
Kiss-and-Ride Busway Passenger Travel Pattern Analysis
Dadeland South Metrorail Station

The geographic distribution of home origins for the Dadeland South Metrorail Station Kiss-and-Ride is illustrated in Figure 3-10, and the areas with strong potentials for remote park-and-ride facilities and feeder services are provided in Table 3-9.

Table 3-9
Dadeland South Metrorail Station Remote Kiss-and-Ride Potentials

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
East Kendall	Just west of station	1154, 1165, 1166, 1168, 1180	Single-Family, Med, High-Density Residential	Orange(65) Yellow	12
Pinecrest	SW 104th to SW 136th St, west of Old Cutler Rd.	1146, 1158, 1159	Single-Family & Estate-Density Residential	Orange(58) Yellow	8
Howard	West of US-1 SW 112th St to SW 136th Street	1164, 1181, 1182, 1186	Single-Family & Estate-Density Residential	Yellow	8
Richmond Heights, East & West	West of Metrozoo north of SW 152nd Street	1190, 1198, 1201, 1202	Medium-Density & Single-Family Residential	Orange(90) Yellow	10
Country Walk, Richmond West	West of SW 137th Av, SW 136th St to SW 168th St	1267,1270, 1272,1274, 1279,1280, 1283,1284	Single-Family Residential	Orange (74,83), Yellow	24
Palmetto Estates	West of US-1 SW 152nd St to SW 168th Street	1192, 1193, 1197	Single-Family Residential	Orange	12
South Miami Heights, West Perrine	west of Turnpike SW 184th St to SW 216th St	1205, 1315, 1317, 1318	Medium-Density & Single-Family Residential	Yellow	8
East Perrine, Franjo	US-1 - SW 87 Av SW 168th St to Caribbean	1129, 1130, 1138, 1125, 1128	Medium-Density & Single-Family Residential	Yellow	10
Cutler Ridge	East of US-1, north of Caribbean Blvd.	1331, 1332, 1341, 1343, 1350	Medium-Density & Single-Family Residential	Yellow	10
Palmetto Bay, Saga Bay	South of SW 184th St, east of SW 87th Avenue	1333, 1334, 1336, 1338, 1339	Medium-Density & Single-Family Residential	Yellow	10

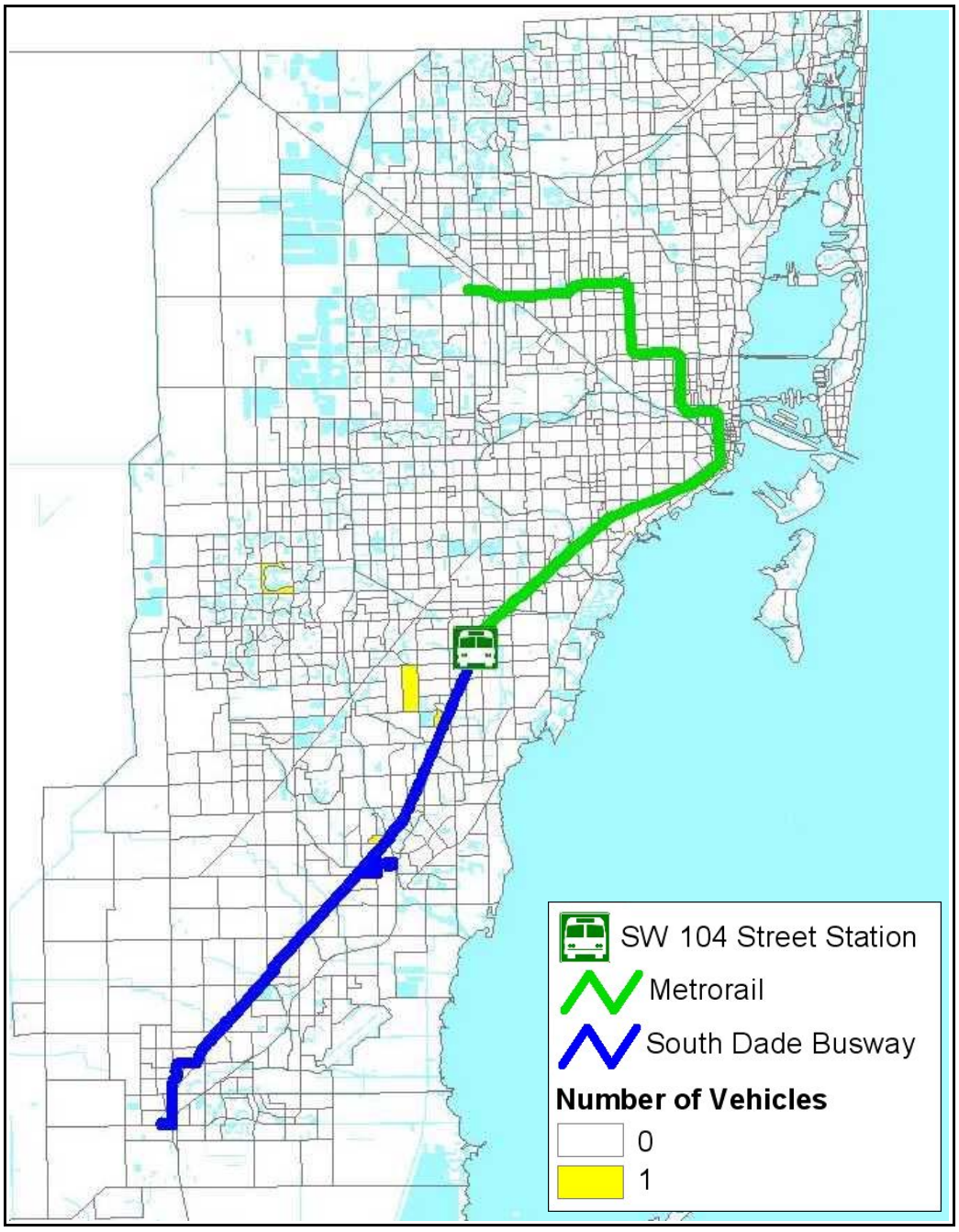
Figure 3-10
Dadeland South Station Kiss & Ride Spatial Distribution of Home Origins



Kiss-and-Ride Busway Passenger Travel Pattern Analysis
SW 104th Street Busway Station Park-and-Ride

The geographic distribution of home origins for the SW 104th Street South Dade Busway Station Kiss-and-Ride is illustrated in Figure 3-11. There are no clusters with strong potentials for remote park-and-ride facilities and feeder services for this location's data.

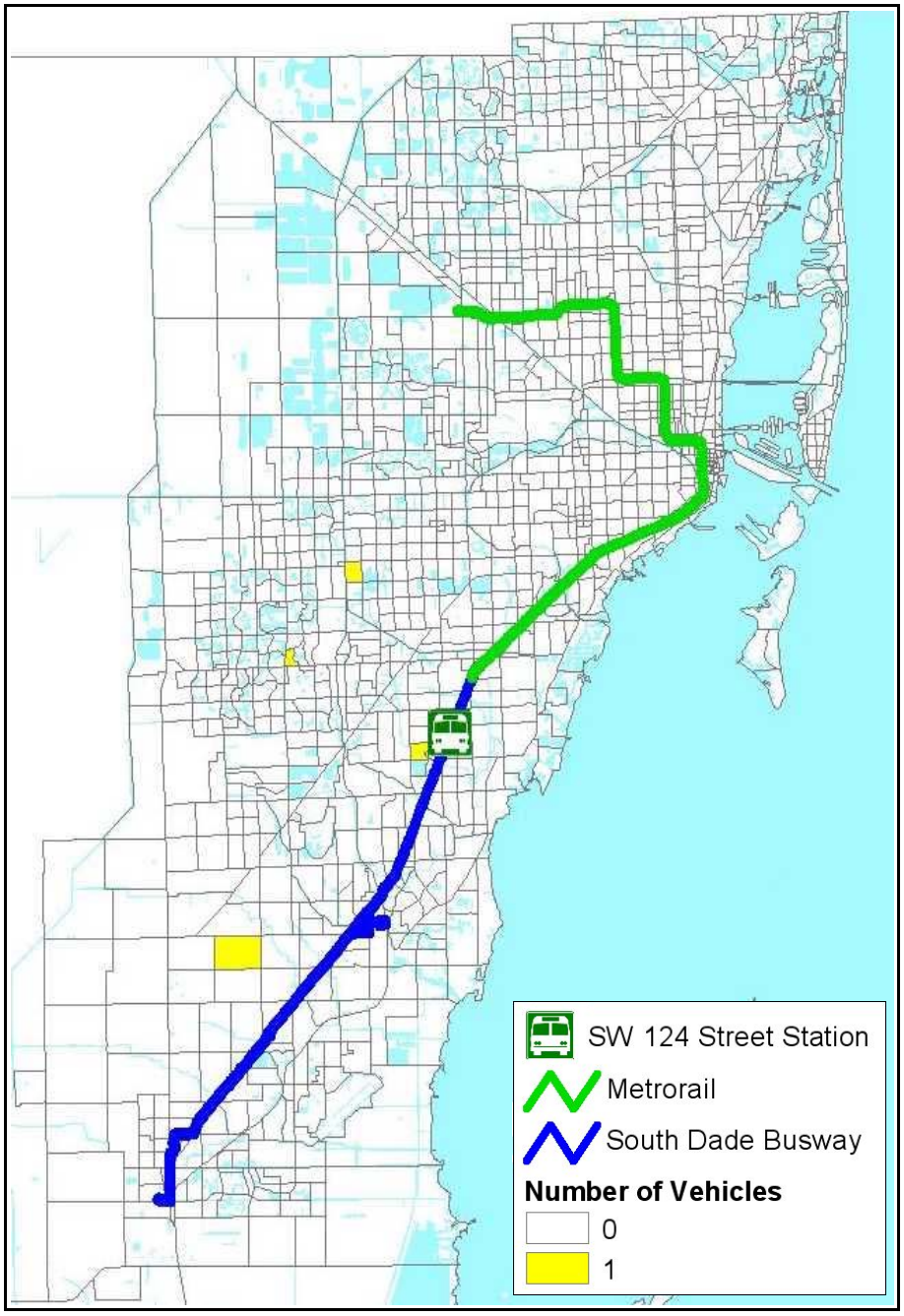
Figure 3-11
SW 104th Street Station Kiss & Ride Spatial Distribution of Home Origins



Kiss-and-Ride Busway Passenger Travel Pattern Analysis
Chapman Field Drive (SW 124th Street) Busway Station Park-and-Ride

The geographic distribution of home origins for the Chapman Field Drive (SW 124th St.) South Dade Busway Station Kiss-and-Ride is illustrated in Figure 3-12. There are no clusters with strong potentials for remote park-and-ride facilities and feeder services for this location's data.

Figure 3-12
Chapman Field Drive Station Kiss & Ride Spatial Distribution of Home Origins



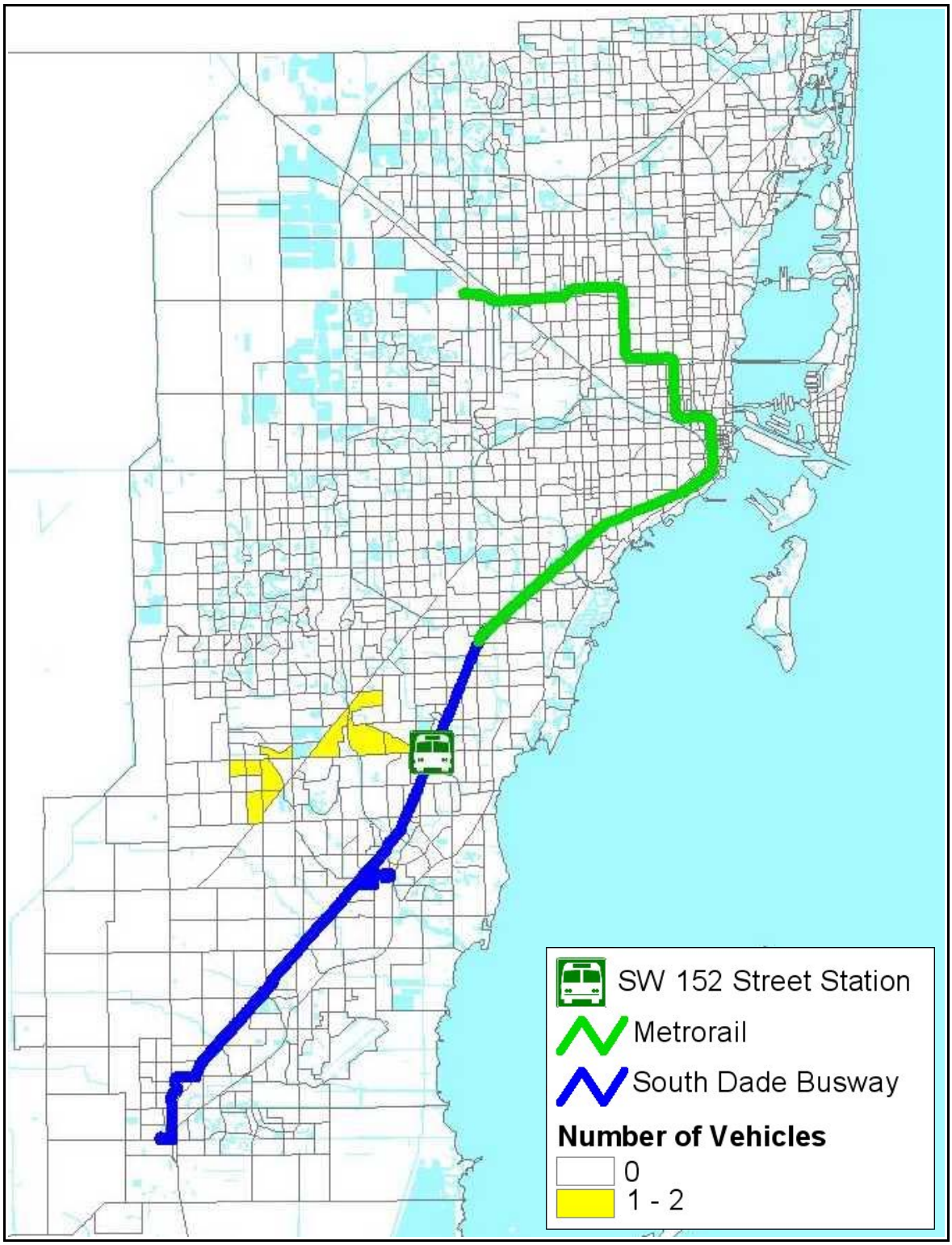
Kiss-and-Ride Busway Passenger Travel Pattern Analysis
SW 152nd Street Busway Station Park-and-Ride

The geographic distribution of home origins for the SW 152nd Street South Dade Busway Station Kiss-and-Ride is illustrated in Figure 3-13, and the areas with strong potentials for remote park-and-ride facilities and feeder services are provided in Table 3-10.

Table 3-10
SW 152nd Street Busway Station Remote Kiss-and-Ride Potentials

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
Richmond Heights, East & West	West of Metrozoo north of SW 152nd Street	1191, 1198, 1201, 1202	Medium-Density & Single-Family Residential	Yellow	8
Country Walk, Richmond West	West of SW 137th Av, SW 136th St to SW 168th St	1272, 1275, 1278, 1279, 1284, 1285	Single-Family Residential	Yellow	12

Figure 3-13
SW 152nd Street Station Kiss & Ride Spatial Distribution of Home Origins



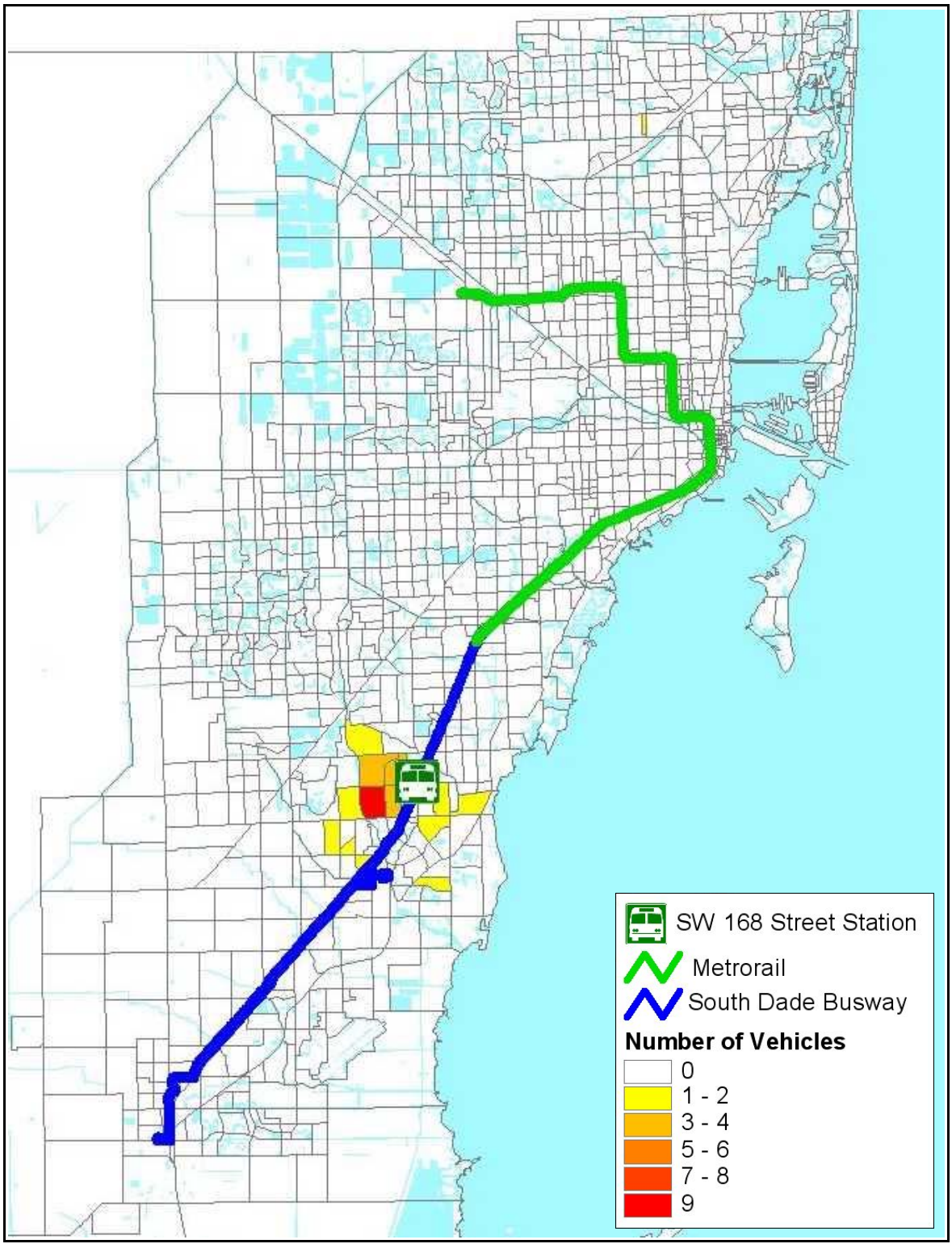
Kiss-and-Ride Busway Passenger Travel Pattern Analysis
SW 168th Street Busway Station Park-and-Ride

The geographic distribution of home origins for the SW 168th Street South Dade Busway Station Kiss-and-Ride is illustrated in Figure 3-14, and the areas with strong potentials for remote park-and-ride facilities and feeder services are provided in Table 3-11.

Table 3-11
SW 168th Street Busway Station Remote Kiss-and-Ride Potentials

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
Richmond Heights, Palmetto Est.	East of Metrozoo north and south of SW 152nd St	1193, 1197, 1198	Medium-Density & Single-Family Residential	Orange, Yellow(98)	10
West Perrine	West of US-1, south of SW 168th Street	1194, 1195, 1196, 1205, 1371, 1319	Medium-Density & Single-Family Residential	Red (96) Orange(9596) Yellow	23
Franjo, Palmetto Bay	East of US-1, North of Caribbean Blvd.	1223, 1225, 1331	Single-Family & Estate Density Residential	Yellow	6

Figure 3-14
SW 168th Street Station Kiss & Ride Spatial Distribution of Home Origins



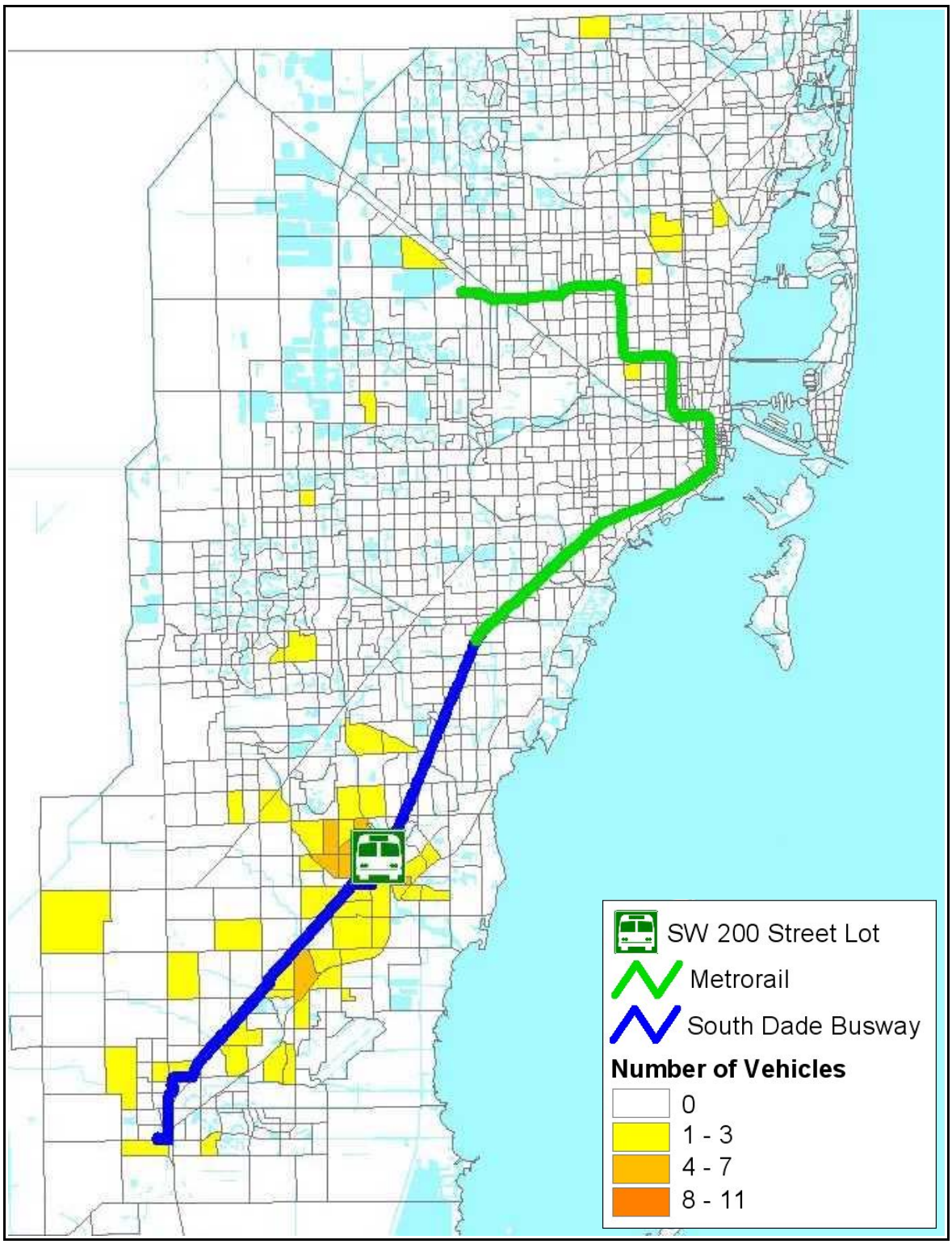
Kiss-and-Ride Busway Passenger Travel Pattern Analysis
SW 200th Street Busway Station Park-and-Ride

The geographic distribution of home origins for the SW 200th Street South Dade Busway Station Kiss-and-Ride is illustrated in Figure 3-15, and the areas with strong potentials for remote park-and-ride facilities and feeder services are provided in Table 3-12.

Table 3-12
SW 200th Street Busway Station Remote Kiss-and-Ride Potentials

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
West Perrine	US-1 to Turnpike SW 168th St to SW 184th St	1196, 1205	Medium-Density & Single-Family Residential	Dark Orange(95), Orange	16
South Miami Heights	West of Turnpike South of Metro Zoo	1315-1320, 1323	Medium-Density & Single-Family Residential	Orange, Yellow (15,18)	34
Saga Bay	South of CaribbeanBlvd. East of US-1	1342, 1343, 1350, 1351	Medium-Density & Single-Family Residential	Orange(50) Yellow	12
Cutler Ridge	East of US-1 SW 168th St to SW 184th St	1347, 1368-1371	Medium-Density & Single-Family Residential	Yellow	10
East Goulds	SW 211th St to SW 232 Street, east of US-1	1366, 1367, 1368, 1373	Single-Family Residential	Orange, Yellow (41)	20
Princeton	SW 232 Street to SW 268th Street, east of US-1	1383, 1384, 1385	Medium-Density & Single-Family Residential	Orange(83) Yellow	10
Leisure City	East of US-1, west of Turnpike, no. of SW 232 St	1391,1393, 1397, 1379	Medium-Density & Single-Family Residential	Yellow	8

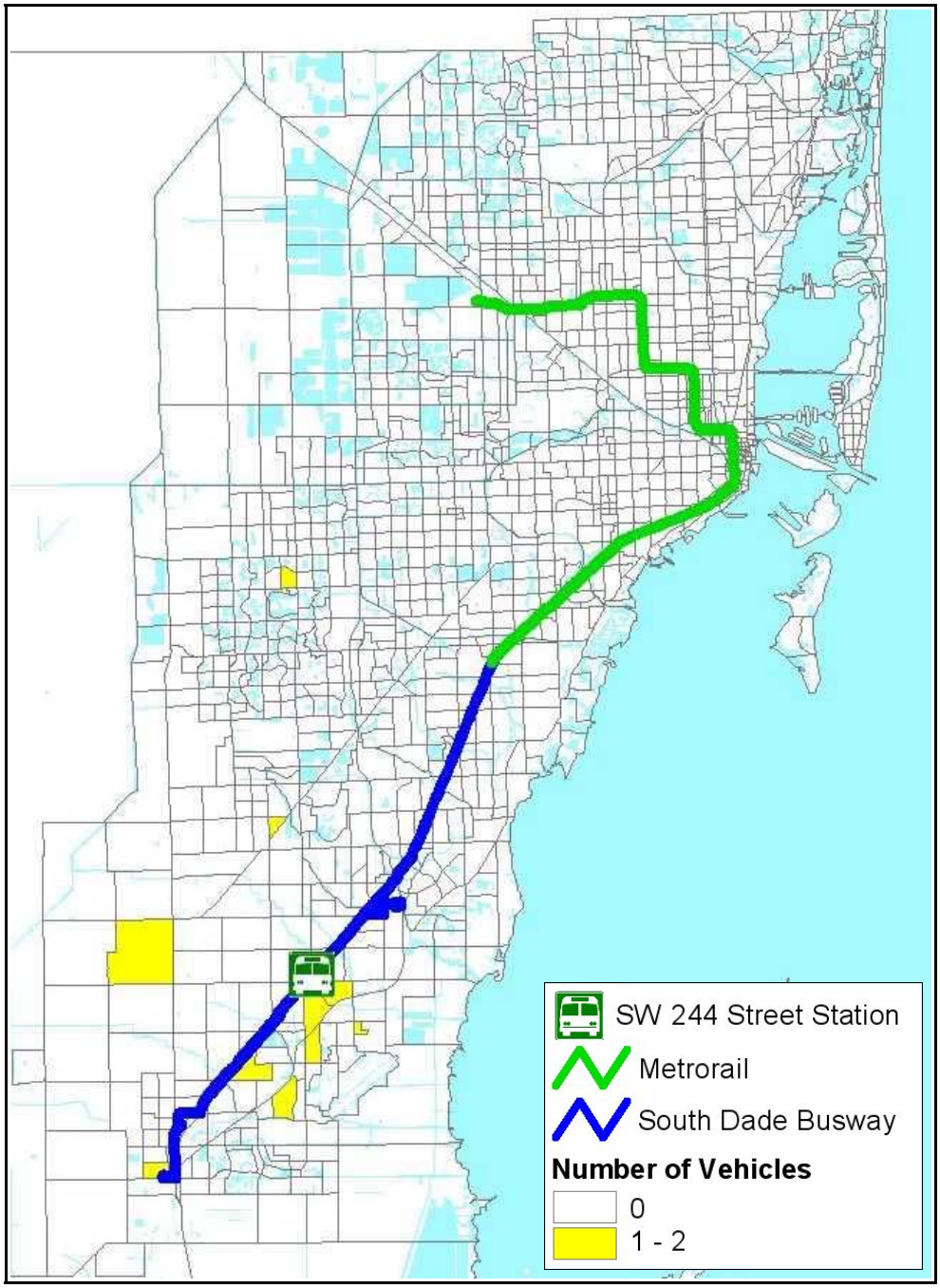
Figure 3-15
SW 200th Street Station Kiss & Ride Spatial Distribution of Home Origins



Kiss-and-Ride Busway Passenger Travel Pattern Analysis
SW 244th Street Busway Station Park-and-Ride

The geographic distribution of home origins for the SW 244th Street South Dade Busway Station Kiss-and-Ride is illustrated in Figure 3-16. There are no clusters with strong potentials for remote park-and-ride facilities and feeder services for this location's data.

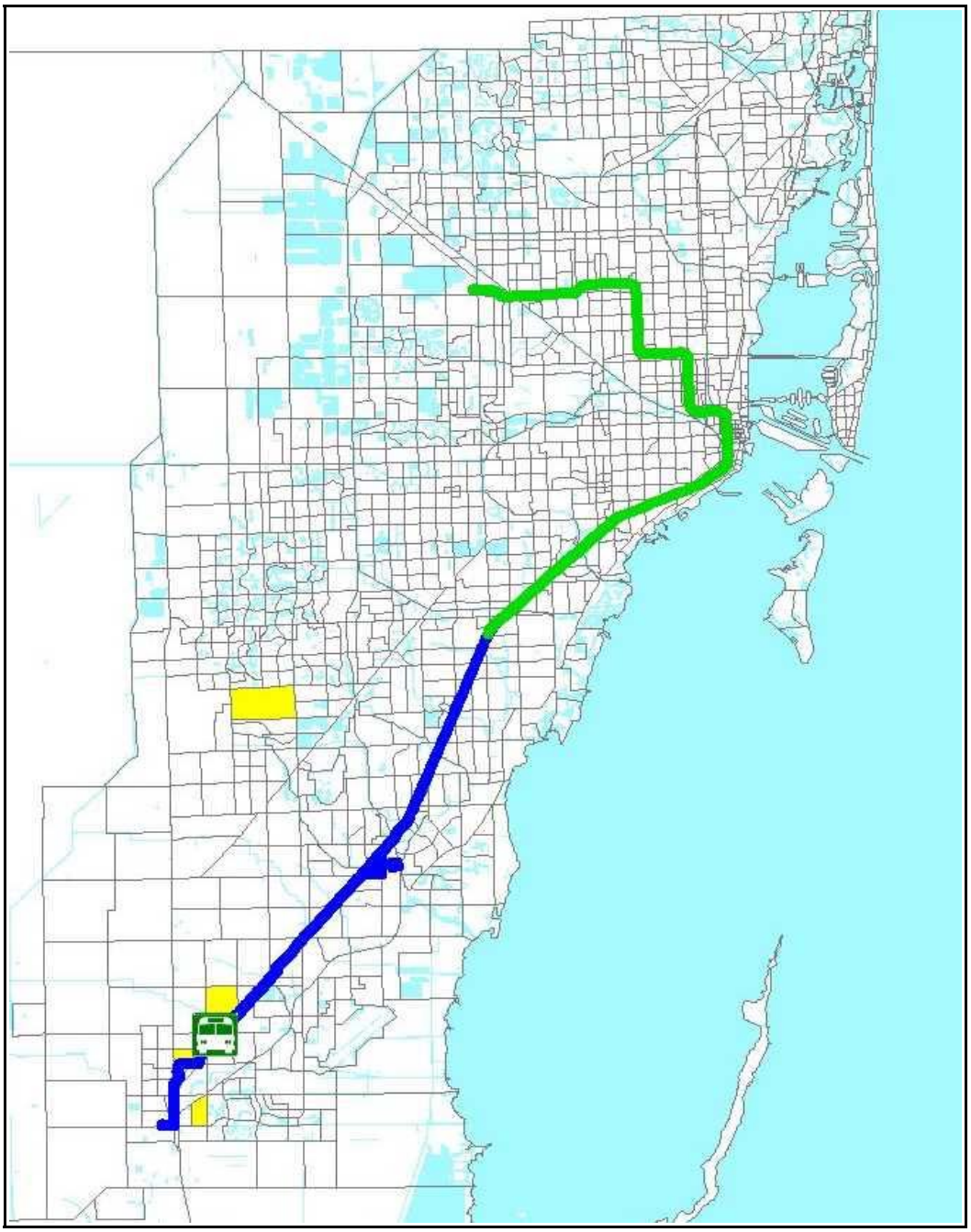
Figure 3-16
244th Street Station Kiss & Ride Spatial Distribution of Home Origins



Kiss-and-Ride Busway Passenger Travel Pattern Analysis
SW 296th Street Busway Station Park-and-Ride

The geographic distribution of home origins for the SW 296th Street South Dade Busway Station Kiss-and-Ride is illustrated in Figure 3-17. There are no clusters with strong potentials for remote park-and-ride facilities and feeder services for this location's data.

Figure 3-17
SW 296th Street Station Kiss & Ride Spatial Distribution of Home Origins



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Busway Metrobus Routes Passenger Travel Pattern Analysis

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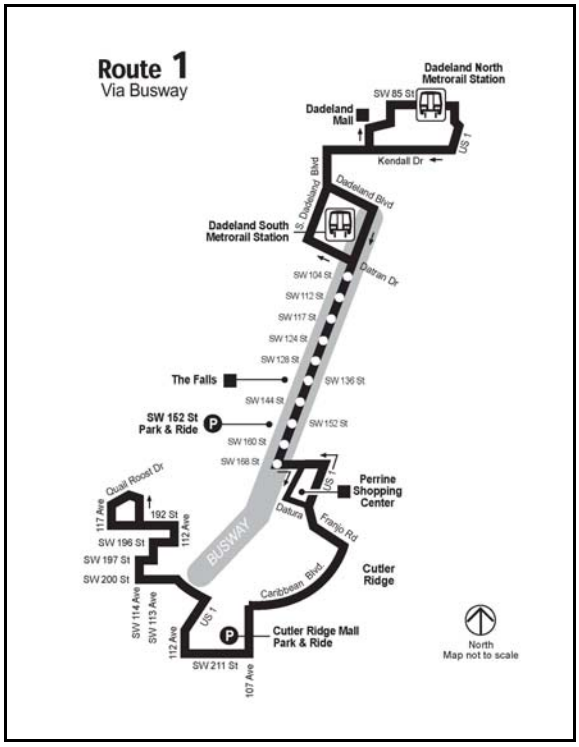
Metrobus Busway Passenger Travel Pattern Analysis
Route 1

Figure 3-18
Route 1 Alignment Diagram



Route 1 is a Busway Route that provides express service along the South Dade Busway from the Dadeland North Metrorail station to the SW 168th Street Busway Park-and-Ride Station. South of this point, Route 1 is provides local circulation service through the Franjo and Quail Roost single-family residential areas, connecting them to the Busway and the Cutler Ridge Metropolitan Center and Southland Mall.

Based on the 2003 CBOA ride-check data and updated ridership data, the route's productivity is acceptable along the Busway, but declines on some of the local circulation segments.

The 2003 on-board passenger survey origin-destination analysis, illustrated in Figure 3-19, shows that the route mostly serves South Dade residents that are directly along the route's service area, the Franjo area, Cutler Ridge, and South Miami Heights being the most dense sources of ridership for this route.

Off the route's alignment, there are small concentrations of passengers from just north of Coral Reef Drive (SW 152nd Street) and west of the Turnpike, as well as some from the Howard area that use this route via transfers from other MDT bus routes.

Route 1 is primarily used as a work-commute route (36%), and 22% of the passengers use the route to reach and transfer to Metrorail. Fifty-three percent (53%) of the passengers walk to the bus, 8% come from or go to another Metrobus route, 7% are dropped off (kiss-and-ride), and 5% use park-and-ride lots.

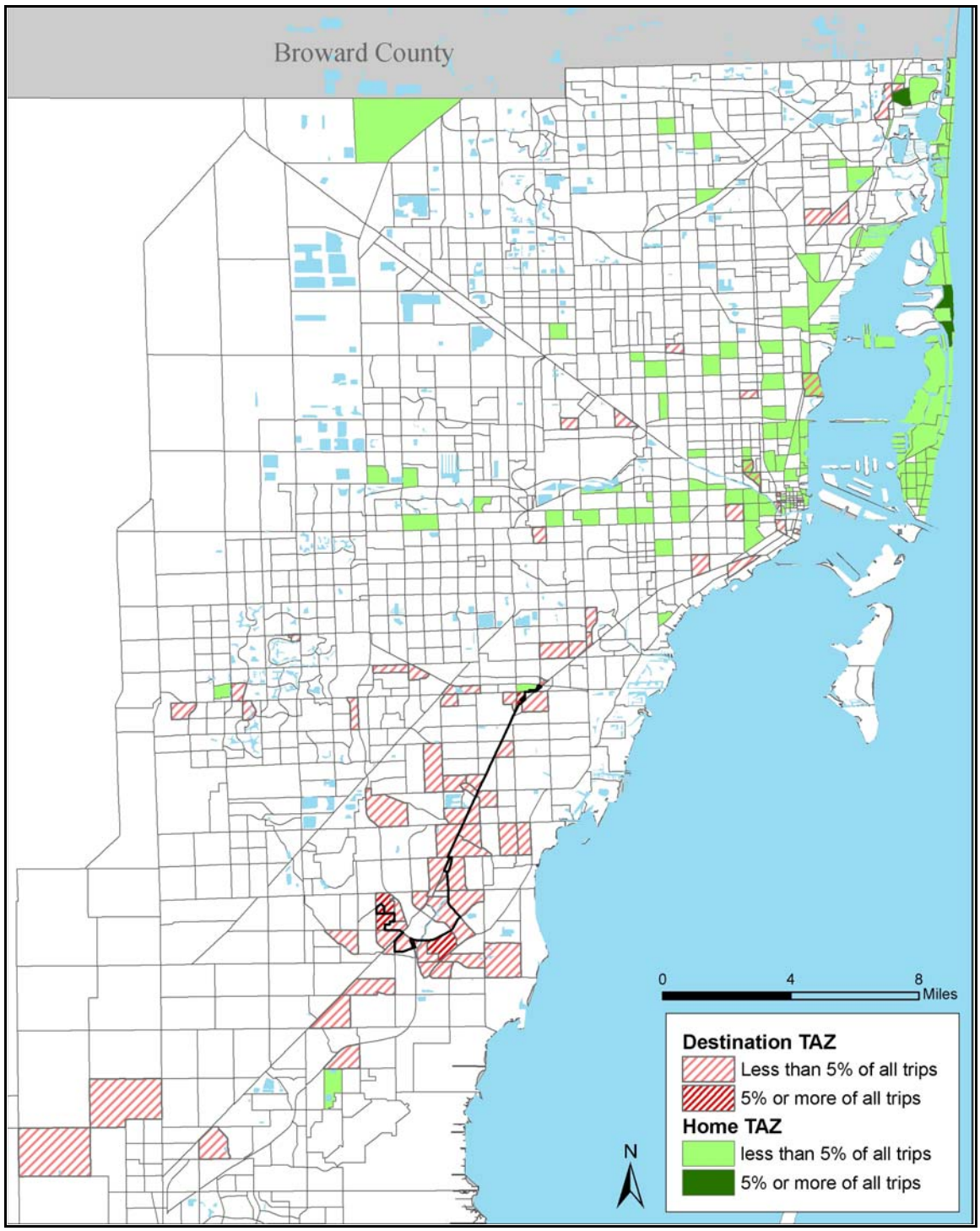
Table 3-13
Route 1 Outside Service Area Passenger Home-Origin Clusters

Area Name	Location	TAZ	General Land Use
Howard	West of US-1 SW 104th St – SW 136th St	1181, 1186, 1184	Medium-Density & Single-Family Residential
Richmond Heights	East of Turnpike, north of SW 152nd Street	1191, 1198, 1201, 1202	Medium-Density & Single-Family Residential

Table 3-14
Route 1
Passenger and Trip Characteristics

Route 1 Passenger & Trip Characteristics	Weekday	Saturday	Sunday	Daily Average
Household Demographics				
Average Age	39	43	N.S.	39
Percent with Disability	8.4%	0.0%	N.S.	7.0%
Number in Household	3.0	2.6	N.S.	2.9
Number of Vehicles in Household	1.0	0.9	N.S.	1.0
Vehicles per Person in Household	0.35	0.36	N.S.	0.35
Household Income (average)	$19,916	$16,538	$0	$19,353
Transit Use Patterns				
Average Frequency of MetroBus Use	4.4	3.8	N.S.	4.3
Tenure of MetroBus Use	2.8	2	N.S.	2.6
Trip Purpose				
Home-Based Destination Trips:				
Home-Based Work	36.5%	34.6%	N.S.	36.2%
Home-Based School	10.1%	0.0%	N.S.	8.4%
Home-Based Medical	4.5%	0.0%	N.S.	3.7%
Home-Based Shopping / Errands	5.1%	30.8%	N.S.	9.3%
Home-Based Visiting / Recreation	1.7%	0.0%	N.S.	1.4%
Home-Based Hotel	0.0%	0.0%	N.S.	0.0%
Home-Based Other	10.1%	7.7%	N.S.	9.7%
Home Based - No Destination Type Given	1.1%	0.0%	N.S.	0.9%
Transportation Mode Used To and From Bus and MDT System Transfers				
Intermodal Combinations (to and from):				
Walk 0 to 3 blocks *(approx. 1/4 mile)*	37.4%	44.2%	N.S.	38.5%
Walk More than 3 blocks	16.0%	7.7%	N.S.	14.6%
Kiss-and-Ride (dropped off)	5.9%	13.5%	N.S.	7.2%
Park-and-Ride (drove self)	6.2%	0.0%	N.S.	5.1%
MetroRail	22.2%	23.1%	N.S.	22.3%
MetroBus	8.4%	3.8%	N.S.	7.7%
Average Number of MDT System Tranfers Reported	0.6	0.5	N.S.	0.6
Transfer Attitude:				
Transfering Does Not Bother Passenger	44.9%	92.3%	N.S.	52.8%
One is Acceptable, But No More	26.4%	7.7%	N.S.	23.3%
Prefer Not to Make Any Transfers	15.7%	0.0%	N.S.	13.1%
Will Not Use Transit If Need to Transfer	1.7%	0.0%	N.S.	1.4%

Figure 3-19
Route 1
Home Origins and Destinations



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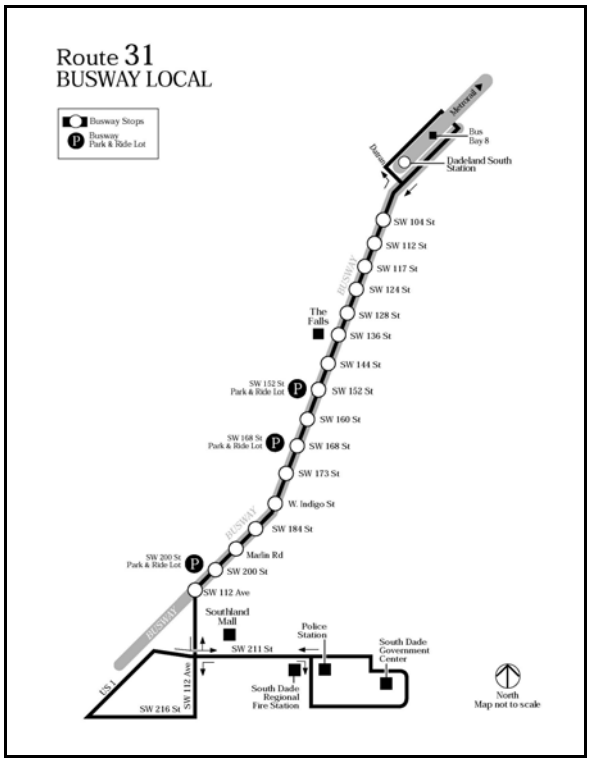
Metrobus Busway Passenger Travel Pattern Analysis
Busway Local, Route 31

Figure 3-20
Route 31 Alignment Diagram



Route 31 is the Busway Local. It provides express service along the South Dade Busway, stopping at each Busway stop, from the Dadeland North Metrorail station to the Cutler Ridge Metropolitan Center, the Southland Mall, and the South Dade Government Center. Since the on-board passenger survey was taken in 2003, the route's alignment has been modified south of SW 200th Street. In 2003, the park-and-ride facility was located in the Southland Mall parking lot. Since that time, the SW 200th Street Busway Station Park-and-ride lot has come into operation, and construction of the South Dade Performing Arts Center has also begun. With these changes, the route now stops at the 200th Street Busway Station, and then after stopping along SW 112th Avenue and the Southland Mall, continues west along SW 211th Street to the South Dade Government Center

Based on the 2003 CBOA ride-check data and updated ridership data, the route's productivity is very high along the Busway. There is no updated data for the SW 211th Street segment.

Route 31 is primarily used as a work-commute route (33%), and 21% of the passengers use the route to reach and transfer to Metrorail. Fifty percent (50%) of the passengers walk to the bus, 12% come from or go to another Metrobus route, 9% are dropped off (kiss-and-ride), and 5% use park-and-ride lots.

The 2003 on-board passenger survey origin-destination analysis, illustrated in Figure 3-21, shows that the route mostly serves South Dade residents that are directly along the route's service area, with the Southland Mall being the highest concentration among destinations.

Off the route's alignment, there are several concentrations of passengers from: parts of Naranja and Leisure City, the western parts of Perrine, and Kendall Lakes. Since the Busway Extension was not yet open when the survey was taken, passengers using this Route 31 via a transfer from Naranja or Leisure City will have either found more efficient alternatives, or if they are using a park-and-ride facility, can now park-and-ride at the SW 296th Street Busway Station, or the SW 244th Street Busway Station. The small concentration of origins from Kendall Lakes is out of the study area, and is most likely traveling a reverse commute along the Busway. The concentration from western Perrine may access the

Busway as park-and-riders or be dropped off at either the Richmond Drive (SW 168th Street) Station or the Coral Reef Drive (SW 152nd Street) Station.

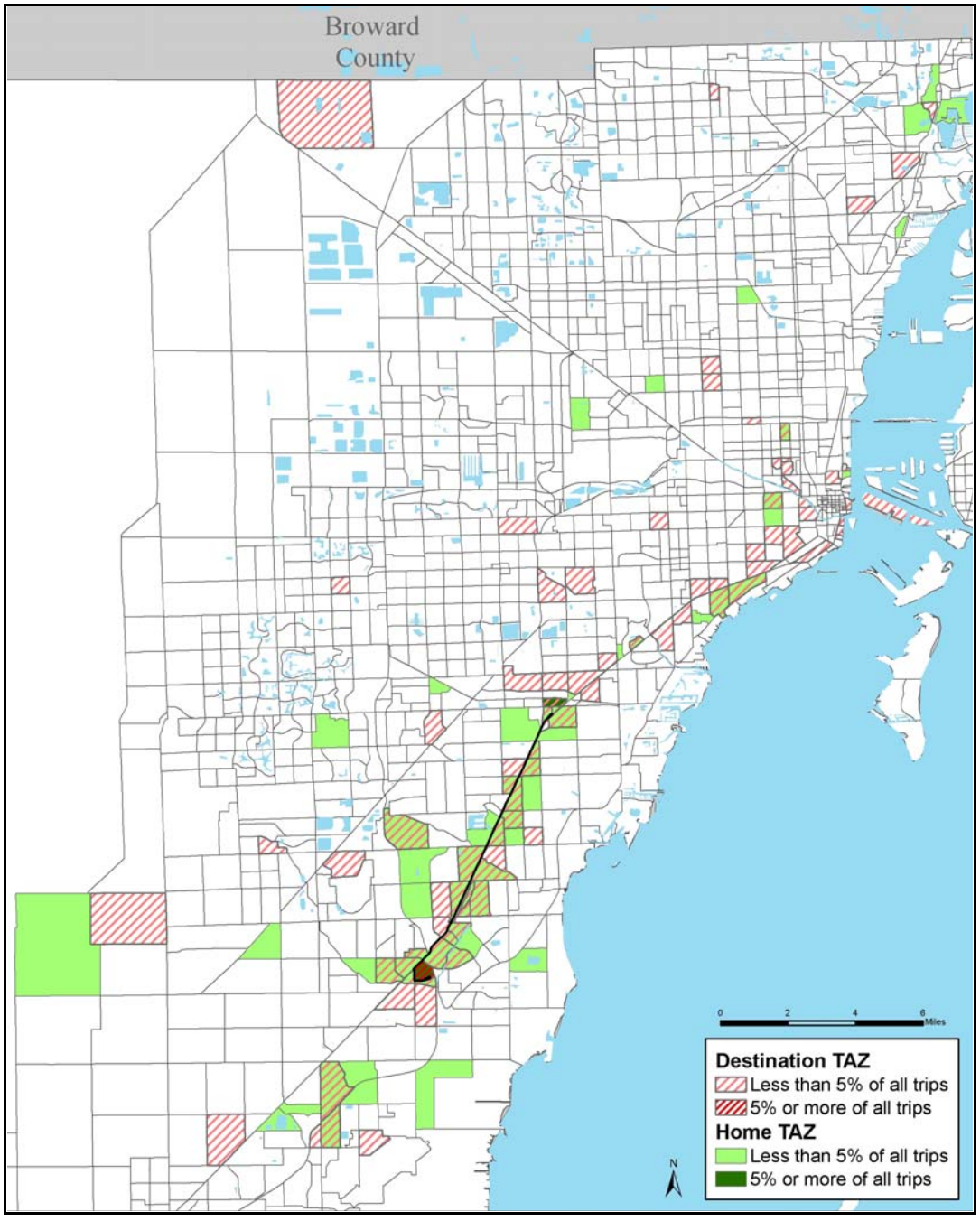
Table 3-15
Route 31
Outside Service Area Passenger Home-Origin Clusters

Area Name	Location	TAZ	General Land Use
West Kendall, The Crossings	South of SW 88th Street east of SW 147th Avenue	1232	Medium-Density Residential
Richmond Heights	East of Turnpike, north of SW 152nd Street	1198	Medium & Low-Density Residential
Palmetto Estates	East of Turnpike, south of SW 152nd Street	1197	Single-Family Residential
Perrine	East of Turnpike, south of SW 168th Street	1196	Single-Family Residential
South Miami Heights	West of Turnpike & US-1	1385, 1386	Medium & Low-Density Residential
Leisure City	East of US-1 SW 268th – SW 288th Street	1316, 320	Medium & Low-Density Residential

Table 3-16
Route 31
Passenger and Trip Characteristics

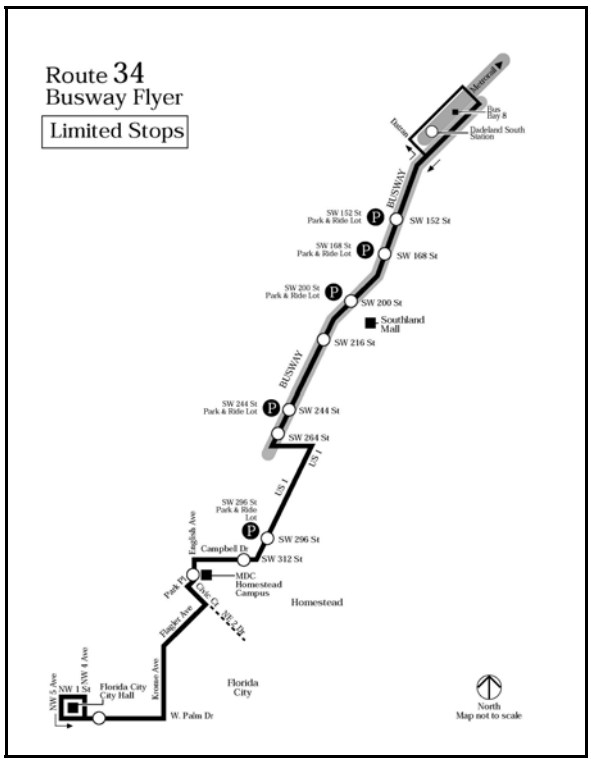
Route 31 Passenger & Trip Characteristics	Weekday	Saturday	Sunday	Daily Average
Household Demographics				
Average Age	35	24	N.S.	33
Percent with Disability	6.1%	0.0%	N.S.	5.1%
Number in Household	3.1	3.2	N.S.	3.1
Number of Vehicles in Household	1.2	1.1	N.S.	1.2
Vehicles per Person in Household	0.38	0.35	N.S.	0.38
Household Income (average)	$22,358	$15,556	$0	$21,224
Transit Use Patterns				
Average Frequency of MetroBus Use	4.2	3.7	N.S.	4.1
Tenure of MetroBus Use	2.4	3.3	N.S.	2.6
Trip Purpose				
Home-Based Destination Trips:				
Home-Based Work	34.1%	29.6%	N.S.	33.4%
Home-Based School	7.3%	0.0%	N.S.	6.1%
Home-Based Medical	4.1%	0.0%	N.S.	3.4%
Home-Based Shopping / Errands	5.3%	25.9%	N.S.	8.7%
Home-Based Visiting / Recreation	0.8%	0.0%	N.S.	0.7%
Home-Based Hotel	0.4%	0.0%	N.S.	0.3%
Home-Based Other	9.8%	11.1%	N.S.	10.0%
Home Based - No Destination Type Given	1.6%	0.0%	N.S.	1.4%
Transportation Mode Used To and From Bus and MDT System Transfers				
Intermodal Combinations (to and from):				
Walk 0 to 3 blocks *(approx. 1/4 mile)*	33.7%	48.1%	N.S.	36.1%
Walk More than 3 blocks	14.0%	11.1%	N.S.	13.5%
Kiss-and-Ride (dropped off)	9.3%	5.6%	N.S.	8.7%
Park-and-Ride (drove self)	6.3%	0.0%	N.S.	5.3%
MetroRail	23.4%	7.4%	N.S.	20.7%
MetroBus	8.3%	27.8%	N.S.	11.6%
Average Number of MDT System Tranfers Reported	0.7	0.7	N.S.	0.7
Transfer Attitude:				
Transfering Does Not Bother Passenger	57.3%	96.3%	N.S.	63.8%
One is Acceptable, But No More	20.3%	0.0%	N.S.	16.9%
Prefer Not to Make Any Transfers	13.0%	0.0%	N.S.	10.8%
Will Not Use Transit If Need to Transfer	3.3%	0.0%	N.S.	2.7%

Figure 3-21
Route 31
Home Origins and Destinations



Metrobus Busway Passenger Travel Pattern Analysis
Busway Flyer, Route 34

Figure 3-22
Route 34 Alignment Diagram



Route 34 is the Busway Flyer. It provides limited stop express service along the South Dade Busway, stopping at major stops from the Dadeland South Metrorail Station to the SW 264th Street Busway Station. South of here, it follows South Dixie Highway (US-1)to Campbell Drive (SW 312th Street) and Flagler Avenue in Homestead, and then to Florida City via Krome Avenue (SW 177th Avenue). Upon the completion of the Busway Extension to Florida Cit, The Flyer will follow the Busway to its last station at Palm Drive (SW 344th Street).

The Busway Flyer began service in 2005, after the system-wide on-board passenger survey was taken in 2003. There are no passenger data, nor origin-destination travel pattern data that is available at this time for the Busway Flyer. The Busway MAX (Route 38) for which passenger data is available, provides a very similar service, and should be a good proxy.

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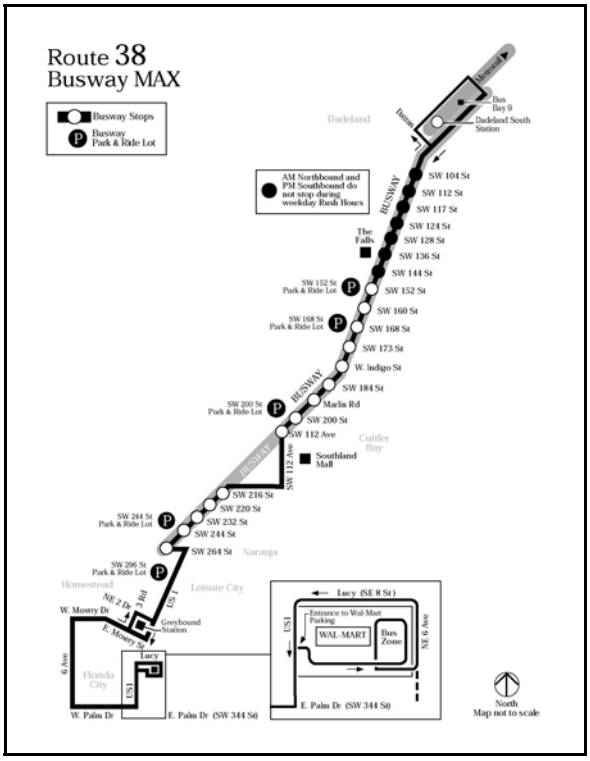
Metrobus Busway Passenger Travel Pattern Analysis
Busway MAX, Route 38

Figure 3-23
Route 38 Alignment Diagram



Route 38 is the Busway MAX. In the morning and afternoon peaks, it provides limited stop express service along the South Dade Busway, stopping at major stops from the Dadeland South Metrorail Station to the SW 264th Street Busway Station. In the off-peak times, it follows the same alignment; however, it then stops at all Busway Stations. South of here, it follows South Dixie Highway (US-1)to Campbell Drive (SW 312th Street) and Flagler Avenue in Homestead, and then to Florida City via Krome Avenue (SW 177th Avenue). Upon the completion of the Busway Extension to Florida Cit, The Busway MAX will follow the Busway to its last station at Palm Drive (SW 344th Street).

Based on 2003 CBOA ride-check data and updated ridership data, the route's productivity is very high along the Busway.

Route 31 is primarily used as a work-commute route (39%), and 9% of the passengers use the route to reach and transfer to Metrorail. Sixty-nine percent (69%) of the passengers walk to the bus, 5% come from or go to another Metrobus route, 4% are dropped off (kiss-and-ride), and 1% use park-and-ride lots.

The 2003 on-board passenger survey origin-destination analysis, illustrated in Figure 3-24, shows that the route mostly serves South Dade residents that are directly along the route's service area, with the Southland Mall being the highest concentration among destinations.

The Busway MAX route serves its local service area; however also provides a significant connection to residents and businesses all along Flagler Street via transfers to Metrorail and MDT Route 11 from downtown Miami.

Off the route's alignment within South Dade, there are several concentrations of passengers from: parts of eastern Homestead's single family residential area; Richmond Heights east of the Tamiami Airport; Countrywalk along Coral Reef Drive and south of Tamiami Airport; and a small section of Pinecrest west of Old Cutler Road and south of SW 112th Street. I addition several agricultural areas in the Redlands are also shown as both home origins and destinations, indicating that the route may also be used by agricultural workers. Among the concentrations of passengers from home-origins away from the route's service area, all four: east Homestead, Richmond Heights, Country Walk, and the

section of Pinecrest are all single-family or lower density residential areas. Still, they should be considered in the evaluation for park-and-rides and feeder services if other needs point to this area as well.

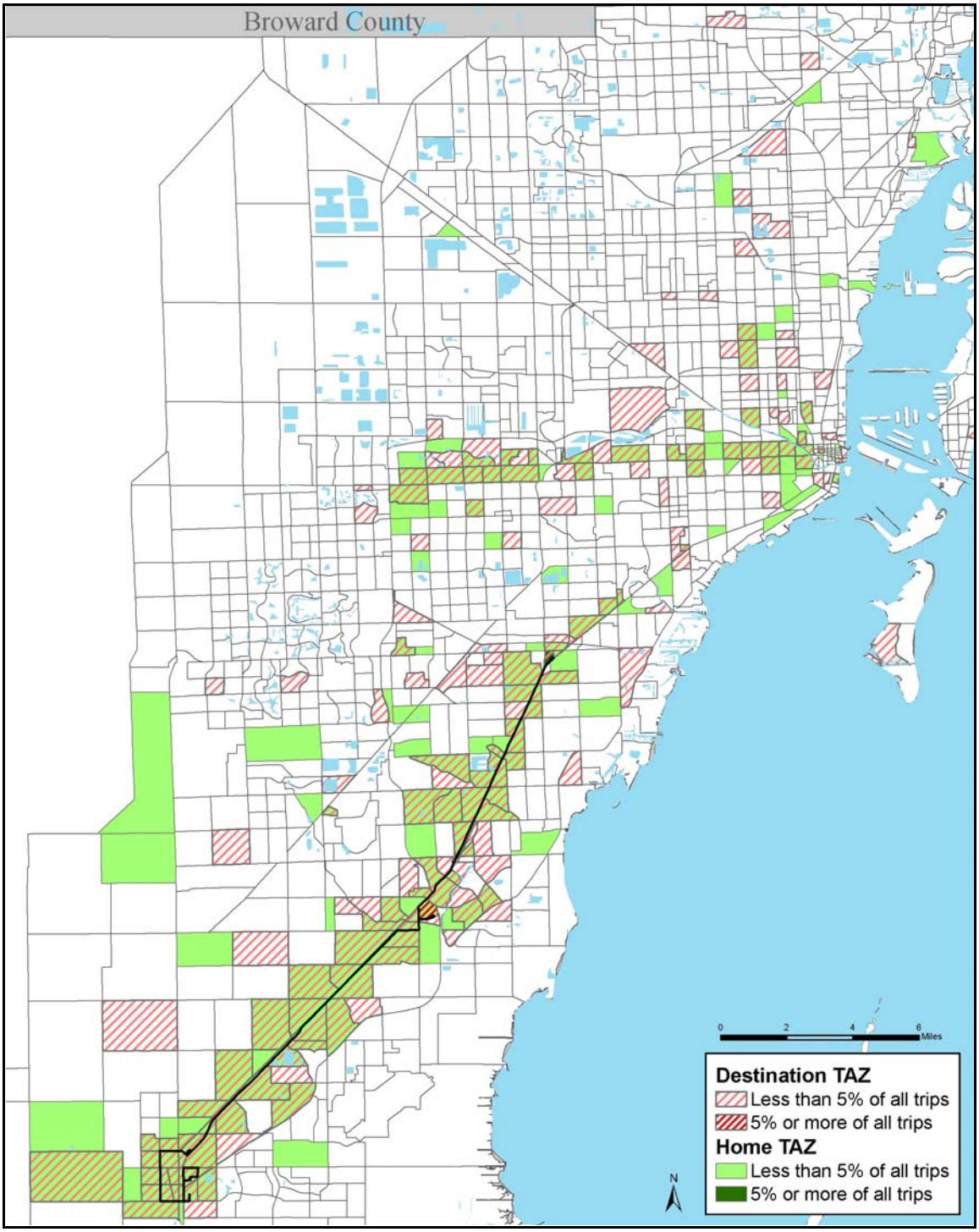
Table 3-17
Route 38
Outside Service Area Passenger Home-Origin Clusters

Area Name	Location	TAZ	General Land Use
Pinecrest	South of SW 112th Street, West of Red Road	1147	Low-Density Residential
Richmond Heights	East of Turnpike, north of SW 152nd Street	1190, 1198	Medium & Low-Density Residential
Palmetto Estates	East of Turnpike, south of SW 152nd Street	1192, 1193, 1197	Single-Family Residential
Perrine	East of Turnpike, south of SW 168th Street	1196	Single-Family Residential
Palmetto Bay	West of Old Cutler Road, South of SW 184th Street	1123	Estate-Density Residential
Homestead, East	East of SW 142nd Street North of SW 328th Street	1398	Low-Density Residential

Table 3-18
Route 38
Passenger and Trip Characteristics

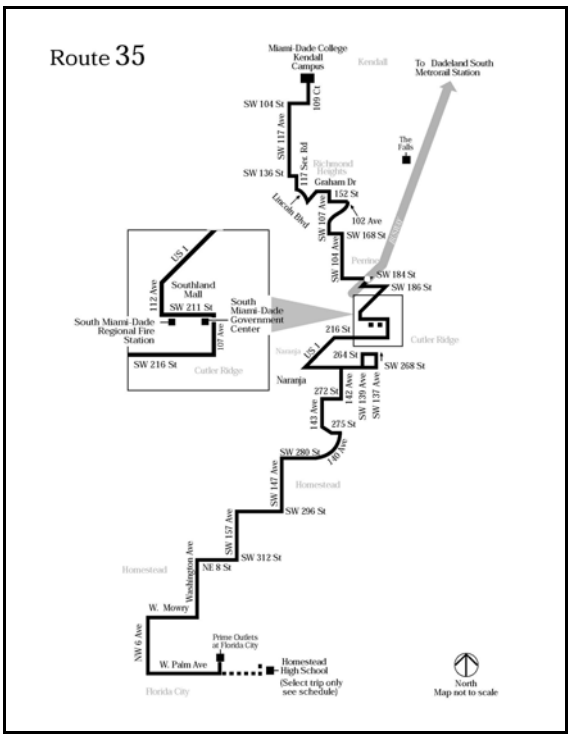
Route 38 Passenger & Trip Characteristics	Weekday	Saturday	Sunday	Daily Average
Household Demographics				
Average Age	32	38	40	34
Percent with Disability	7.2%	2.9%	3.4%	6.1%
Number in Household	2.7	3.3	3.1	2.8
Number of Vehicles in Household	0.7	0.5	0.4	0.7
Vehicles per Person in Household	0.27	0.16	0.14	0.24
Household Income (average)	$14,564	$11,777	$12,747	$13,906
Transit Use Patterns				
Average Frequency of MetroBus Use	3.9	4.7	4.6	4.1
Tenure of MetroBus Use	2.3	3.3	3.2	2.6
Trip Purpose				
Home-Based Destination Trips:				
Home-Based Work	36.0%	47.5%	43.3%	38.7%
Home-Based School	10.2%	1.0%	0.0%	7.5%
Home-Based Medical	2.8%	1.0%	0.4%	2.2%
Home-Based Shopping / Errands	6.6%	13.7%	17.6%	9.2%
Home-Based Visiting / Recreation	1.4%	1.0%	1.7%	1.4%
Home-Based Hotel	0.3%	0.5%	0.9%	0.4%
Home-Based Other	7.5%	15.2%	9.0%	8.8%
Home Based - No Destination Type Given	5.0%	3.9%	2.6%	4.5%
Transportation Mode Used To and From Bus and MDT System Transfers				
Intermodal Combinations (to and from):				
Walk 0 to 3 blocks *(approx. 1/4 mile)*	46.4%	76.0%	76.6%	54.9%
Walk More than 3 blocks	17.3%	7.4%	4.9%	14.1%
Kiss-and-Ride (dropped off)	4.3%	2.5%	1.5%	3.6%
Park-and-Ride (drove self)	1.0%	0.0%	0.4%	0.8%
MetroRail	10.4%	8.1%	5.8%	9.4%
MetroBus	5.8%	3.4%	1.9%	4.9%
Average Number of MDT System Tranfers Reported	0.4	0.2	0.2	0.3
Transfer Attitude:				
Transfering Does Not Bother Passenger	55.1%	81.9%	82.4%	62.8%
One is Acceptable, But No More	14.7%	5.9%	4.3%	11.9%
Prefer Not to Make Any Transfers	10.5%	2.5%	3.0%	8.3%
Will Not Use Transit If Need to Transfer	2.8%	1.5%	0.9%	2.3%

Figure 3-24
Route 38
Home Origins and Destinations



Metrobus Busway Passenger Travel Pattern Analysis
Route 35

Figure 3-25
Route 35 Alignment Diagram



Route 35 is a very minor Busway Route. It uses the Busway only for a very small segment south of SW 184th Street and then returns again to South Dixie Highway (US-1) to head to Cutler Ridge and the Southland Mall. The route again parallels the Busway, as it runs along South Dixie Highway again from Hainlin Mill Drive (SW 216th Street) to Moody Drive (SW 268th Street). As such, its analysis is weighted with less importance.

Based on 2003 CBOA ride-check data and updated ridership data, the route's productivity is slightly low overall for a regional service.

Route 35 is primarily used as a work-commute route (38%), to serve local needs. Only 2% of the passengers use the route to reach and transfer to Metrorail. Eighty-five percent (85%) of its passengers walk to the bus, 4% come from or go to another Metrobus route, 3% are dropped off (kiss-and-ride), and 1% use park-and-ride lots.

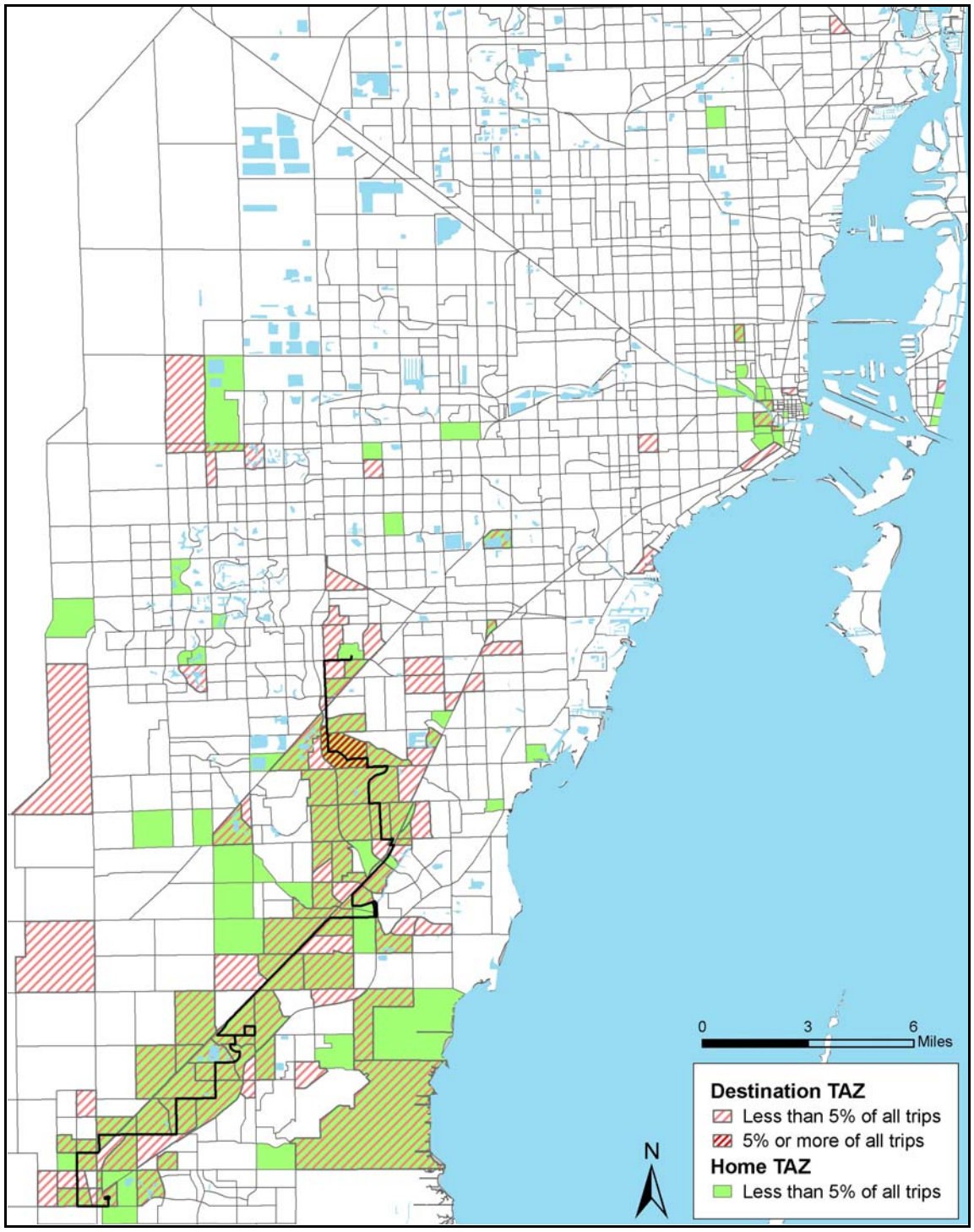
The 2003 on-board passenger survey origin-destination analysis, as illustrated in Figure 3-26, shows that the route mostly serves South Dade residents that are directly along the route's service area.

Off the route's alignment within South Dade, there are only concentrations of origins from agricultural areas, in which there are also reported destinations. It is likely that the route is utilized by agricultural workers to these areas, however, because of the nature of the route, and the extremely low density of these uses, these areas are not significant toward the identification of Busway park-and-ride or transit feeder needs.

Table 3-19
Route 35
Passenger and Trip Characteristics

Route 35 Passenger & Trip Characteristics	Weekday	Saturday	Sunday	Daily Average
Household Demographics				
Average Age	35	31	29	34
Percent with Disability	5.6%	5.6%	10.3%	6.2%
Number in Household	3.3	3.1	3.1	3.3
Number of Vehicles in Household	0.7	0.8	0.9	0.8
Vehicles per Person in Household	0.23	0.27	0.29	0.24
Household Income (average)	$14,651	$14,444	$12,019	$14,246
Transit Use Patterns				
Average Frequency of MetroBus Use	4.7	3.5	3.7	4.4
Tenure of MetroBus Use	3	1.7	2.4	2.7
Trip Purpose				
Home-Based Destination Trips:				
Home-Based Work	43.8%	24.1%	23.1%	38.0%
Home-Based School	10.8%	13.0%	1.3%	9.7%
Home-Based Medical	0.8%	1.9%	0.0%	0.8%
Home-Based Shopping / Errands	6.8%	11.1%	15.4%	8.6%
Home-Based Visiting / Recreation	1.2%	1.9%	1.3%	1.3%
Home-Based Hotel	0.0%	1.9%	1.3%	0.4%
Home-Based Other	12.4%	20.4%	23.1%	15.0%
Home Based - No Destination Type Given	5.6%	3.7%	5.1%	5.2%
Transportation Mode Used To and From Bus and MDT System Transfers				
Intermodal Combinations (to and from):				
Walk 0 to 3 blocks *(approx. 1/4 mile)*	75.3%	71.3%	73.7%	74.5%
Walk More than 3 blocks	9.4%	7.4%	14.1%	9.8%
Kiss-and-Ride (dropped off)	3.4%	4.6%	2.6%	3.4%
Park-and-Ride (drove self)	1.2%	0.9%	0.6%	1.1%
MetroRail	1.6%	2.8%	0.0%	1.5%
MetroBus	4.0%	3.7%	2.6%	3.7%
Average Number of MDT System Tranfers Reported	0.1	0.1	0.1	0.1
Transfer Attitude:				
Transfering Does Not Bother Passenger	77.3%	70.4%	60.3%	73.9%
One is Acceptable, But No More	10.4%	9.3%	21.8%	11.8%
Prefer Not to Make Any Transfers	7.2%	7.4%	6.4%	7.1%
Will Not Use Transit If Need to Transfer	1.2%	1.9%	1.3%	1.3%

Figure 3-26
Route 35
Home Origins and Destinations



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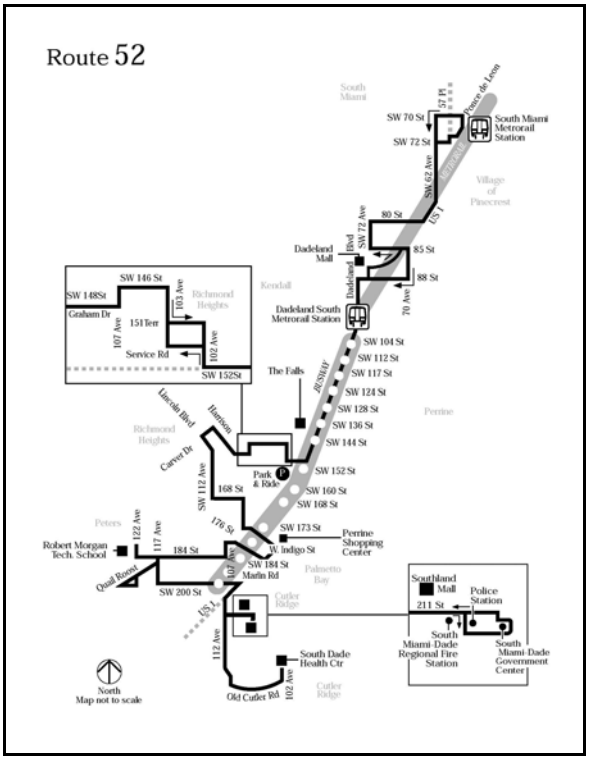
Metrobus Busway Passenger Travel Pattern Analysis
Route 52

Figure 3-27
Route 52 Alignment Diagram



Route 52 is a partial Busway Route. It provides some local service in South Miami, particularly to the South Miami Hospital, from the South Miami Metrorail Station to the Dadeland South Metrorail Station, after which it provides regular service along the Busway to Coral Reef Drive (SW 152nd Street). South of Coral Reef Drive, Route 52 provides local circulation service to Perrine west of the Busway. After Perrine, the route continues to the Cutler ridge Metropolitan Center and the Southland Mall, and then ends along Old Cutler Road in the Goulds, at the South Dade Health Center.

Based on 2003 CBOA ride-check data and updated ridership data, the route's productivity is low overall for a regional service; however, the segments from the South Dade Health Center to Cutler ridge, and from South Miami Hospital to Dadeland South have much higher productivity.

Route 35 is primarily used as a work-commute route (29%), to serve local needs; however, 11% of the trips are also to schools. Seventeen (17%) percent of its passengers use the route to transfer to Metrorail. Sixty-eight percent (68%) of its passengers walk to the bus, 7% come from or go to another Metrobus route, 3% are dropped off (kiss-and-ride), and none use park-and-ride lots.

The 2003 on-board passenger survey origin-destination analysis, as illustrated in Figure 3-28, shows that the route mostly serves South Dade residents that are directly along the route's service area. Off the route's alignment within South Dade, there are small concentrations of origins from, a small section of Howard/Richmond Heights, Deering Estates, and a few agricultural areas, in which there are also reported destinations. The Howard section is fairly close to the route's service area. The Deering Estates concentration of home origins is, given the demographic profile of the ridership, a misreporting by domestic employees that work at homes. It is likely that the route is also utilized by agricultural workers.

Among these, only the Howard and Richmond Heights area may be further considered toward planning for additional Busway park-and-ride facilities and transit feeder services.

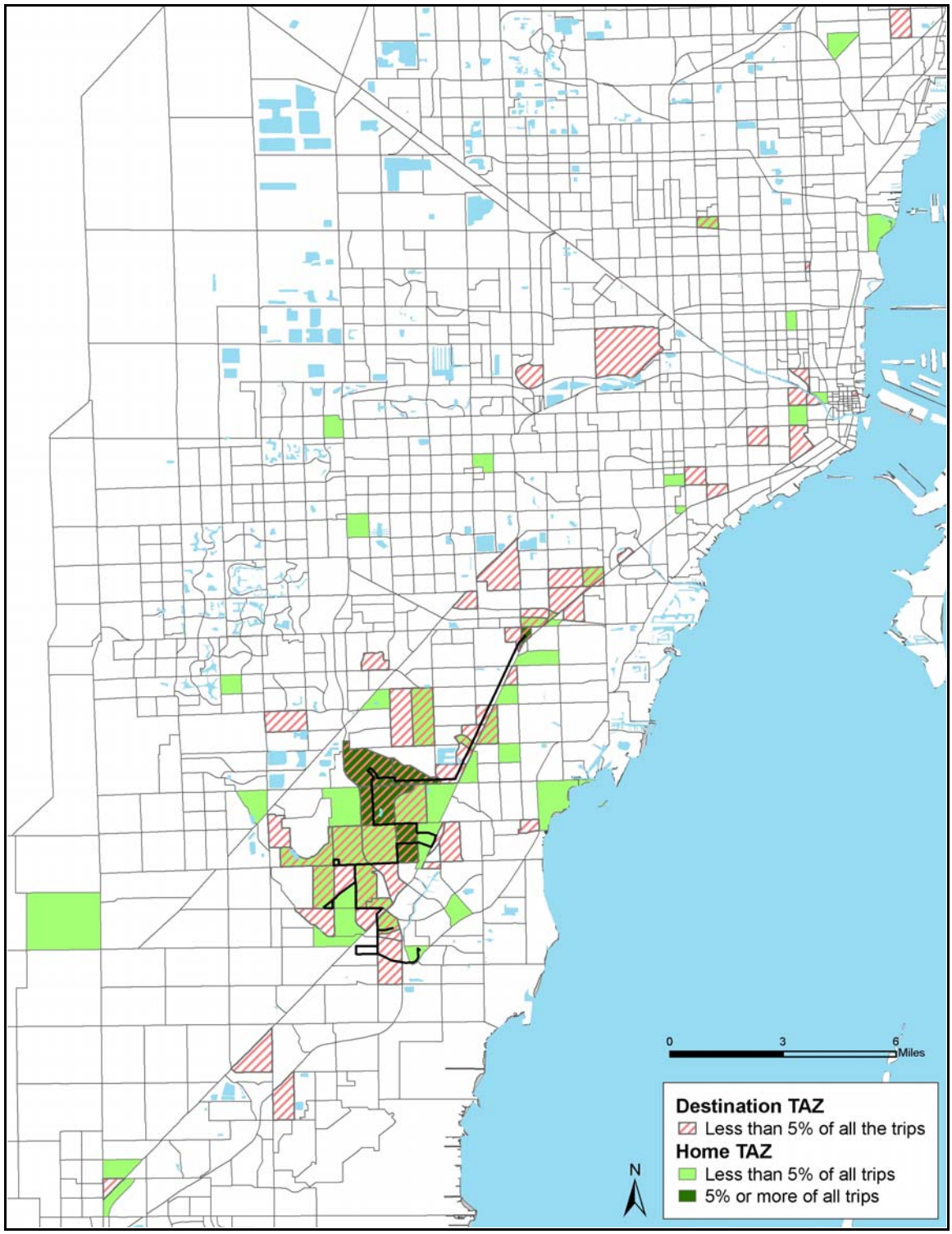
Table 3-20
Route 52 Outside Service Area Passenger Home-Origin Clusters

Area Name	Location	TAZ	General Land Use
Howard, Richmond Heights	South of SW 112th Street, West of US-1	1181, 1178	Estate-Density Residential

Table 3-21
Route 52 Passenger and Trip Characteristics

Route 52 Passenger & Trip Characteristics	Weekday	Saturday	Sunday	Daily Average
Household Demographics				
Average Age	34	28	N.S.	33
Percent with Disability	7.4%	3.3%	N.S.	6.7%
Number in Household	3.1	3.0	N.S.	3.1
Number of Vehicles in Household	0.8	1.0	N.S.	0.8
Vehicles per Person in Household	0.26	0.32	N.S.	0.27
Household Income (average)	$14,832	$19,180	$0	$15,557
Transit Use Patterns				
Average Frequency of MetroBus Use	4	3.5	N.S.	4
Tenure of MetroBus Use	2.7	2.6	N.S.	2.7
Trip Purpose				
Home-Based Destination Trips:				
Home-Based Work	28.9%	27.9%	N.S.	28.7%
Home-Based School	12.8%	3.3%	N.S.	11.2%
Home-Based Medical	4.0%	8.2%	N.S.	4.7%
Home-Based Shopping / Errands	5.4%	14.8%	N.S.	6.9%
Home-Based Visiting / Recreation	0.7%	1.6%	N.S.	0.8%
Home-Based Hotel	0.0%	0.0%	N.S.	0.0%
Home-Based Other	15.4%	19.7%	N.S.	16.1%
Home Based - No Destination Type Given	2.7%	3.3%	N.S.	2.8%
Transportation Mode Used To and From Bus and MDT System Transfers				
Intermodal Combinations (to and from):				
Walk 0 to 3 blocks *(approx. 1/4 mile)*	49.7%	46.7%	N.S.	49.2%
Walk More than 3 blocks	17.4%	23.0%	N.S.	18.4%
Kiss-and-Ride (dropped off)	3.7%	1.6%	N.S.	3.3%
Park-and-Ride (drove self)	0.0%	0.0%	N.S.	0.0%
MetroRail	16.8%	18.9%	N.S.	17.1%
MetroBus	7.4%	5.7%	N.S.	7.1%
Average Number of MDT System Tranfers Reported	0.5	0.5	N.S.	0.5
Transfer Attitude:				
Transfering Does Not Bother Passenger	54.4%	55.7%	N.S.	54.6%
One is Acceptable, But No More	18.1%	14.8%	N.S.	17.6%
Prefer Not to Make Any Transfers	15.4%	14.8%	N.S.	15.3%
Will Not Use Transit If Need to Transfer	3.4%	3.3%	N.S.	3.3%

Figure 3-28
Route 52
Home Origins and Destinations



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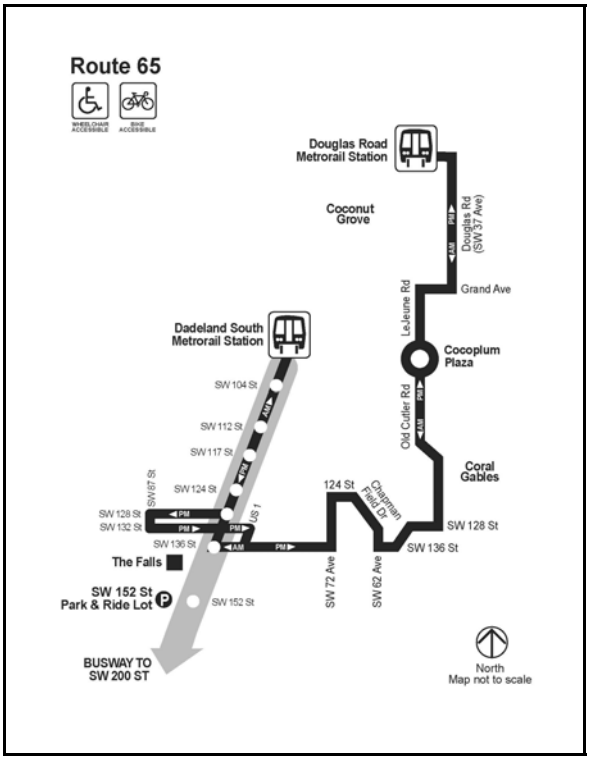
Metrobus Busway Passenger Travel Pattern Analysis
South Dade Express, Route 65

Figure 3-29
Route 65 Alignment Diagram



The South Dade Express, Route 65 is a partial Busway Route that runs along the Busway only in the morning and afternoon peak periods. It provides regional service through Coconut Grove (Miami) and Coral Gables, from the Douglas road Metrorail Station, along Douglas Road (SW 37th Avenue), LeJuene Road (SW 42nd Avenue), Old Cutler road, and then along Chapman Field Drive (SW 124th Street), and Howard Drive (SW 136th Street). The South Dade Express runs only on weekdays.

Based on 2003 CBOA ride-check data and updated ridership data, the route's productivity is low overall for a regional service.

Route 35 is primarily used as a work-commute route (62%). Thirty-six (36%) percent of its passengers use the route to reach and transfer to Metrorail. Fifty-six percent (56%) of its passengers walk to the bus, 4% come from or go to another Metrobus route, and none are dropped off (kiss-and-ride), or use park-and-ride lots.

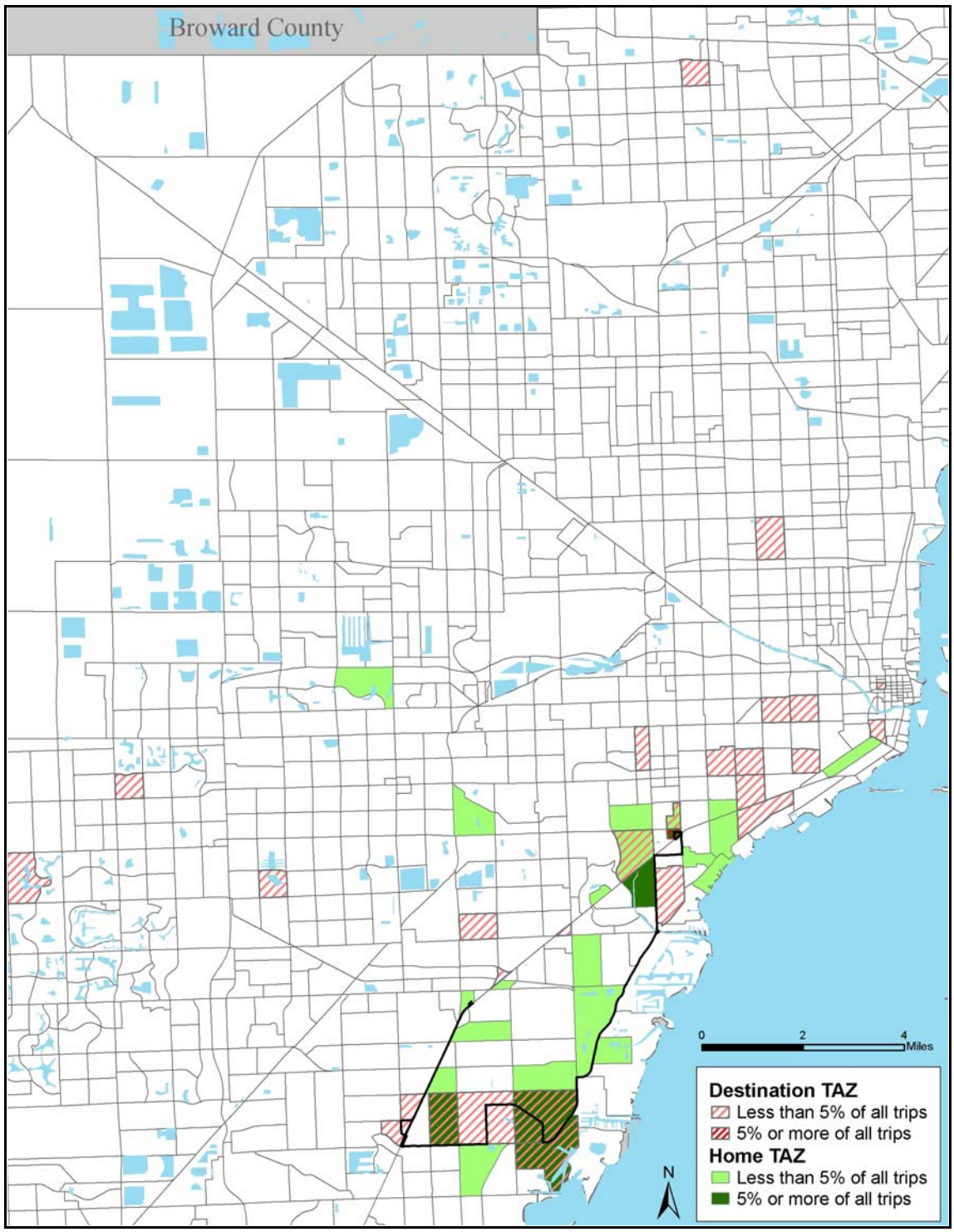
The 2003 on-board passenger survey origin-destination analysis, as illustrated in Figure 3-30, shows that the route mostly serves South Dade residents that are directly along the route's service area.

Within South Dade, there are no concentrations of home-origins that are off the route's alignment. The small sections of Coconut Grove, Coral Gables, and west Flagler are out of the South Dade study area.

Table 3-22
Route 65
Passenger and Trip Characteristics

Route 65 Passenger & Trip Characteristics	Weekday	Saturday	Sunday	Daily Average
Household Demographics				
Average Age	43	N.S.	N.S.	43
Percent with Disability	5.5%	N.S.	N.S.	5.5%
Number in Household	2.8	N.S.	N.S.	2.8
Number of Vehicles in Household	0.5	N.S.	N.S.	0.5
Vehicles per Person in Household	0.19	N.S.	N.S.	0.19
Household Income (average)	$9,364	$0	$0	$9,364
Transit Use Patterns				
Average Frequency of MetroBus Use	4.4	N.S.	N.S.	4.4
Tenure of MetroBus Use	2.6	N.S.	N.S.	2.6
Trip Purpose				
Home-Based Destination Trips:				
Home-Based Work	61.8%	N.S.	N.S.	61.8%
Home-Based School	0.0%	N.S.	N.S.	0.0%
Home-Based Medical	1.8%	N.S.	N.S.	1.8%
Home-Based Shopping / Errands	0.0%	N.S.	N.S.	0.0%
Home-Based Visiting / Recreation	0.0%	N.S.	N.S.	0.0%
Home-Based Hotel	0.0%	N.S.	N.S.	0.0%
Home-Based Other	7.3%	N.S.	N.S.	7.3%
Home Based - No Destination Type Given	3.6%	N.S.	N.S.	3.6%
Transportation Mode Used To and From Bus and MDT System Transfers				
Intermodal Combinations (to and from):				
Walk 0 to 3 blocks *(approx. 1/4 mile)*	39.1%	N.S.	N.S.	39.1%
Walk More than 3 blocks	17.3%	N.S.	N.S.	17.3%
Kiss-and-Ride (dropped off)	0.0%	N.S.	N.S.	0.0%
Park-and-Ride (drove self)	0.0%	N.S.	N.S.	0.0%
MetroRail	35.5%	N.S.	N.S.	35.5%
MetroBus	3.6%	N.S.	N.S.	3.6%
Average Number of MDT System Tranfers Reported	0.8	N.S.	N.S.	0.8
Transfer Attitude:				
Transfering Does Not Bother Passenger	58.2%	N.S.	N.S.	58.2%
One is Acceptable, But No More	16.4%	N.S.	N.S.	16.4%
Prefer Not to Make Any Transfers	12.7%	N.S.	N.S.	12.7%
Will Not Use Transit If Need to Transfer	1.8%	N.S.	N.S.	1.8%

Figure 3-30
Route 65
Home Origins and Destinations



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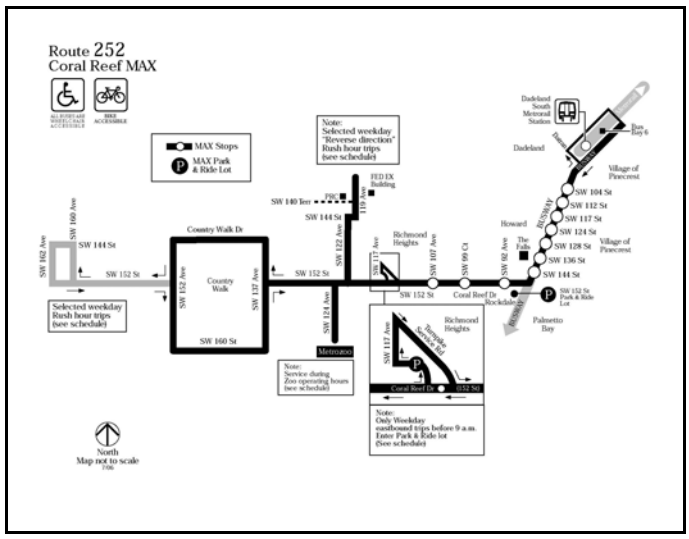
Metrobus Busway Passenger Travel Pattern Analysis
Coral Reef MAX, Route 252

Figure 3-31
Route 252 Alignment Diagram



The Coral Reef MAX (Route 252) is a partial Busway Route. It provides regular, regional service along Coral Reef Drive (SW 152nd Street) to the Country Walk area, Richmond Heights area along SW 122nd Avenue, and Miami Metrozoo. East of SW 107th Avenue, the Coral Reef MAX provides limited stop service along Coral Reef Drive to the Busway, and then regular express service along the Busway to the Dadeland South Metrorail Station.

Based on 2003 CBOA ride-check data and updated ridership data, the route's productivity is low overall for a regional service; however, the segments along the Busway and around Country Walk have much higher productivity. IT should also be noted that the Route has many different patterns (variations of the alignment in which various segments of the alignment but not all, are used at different times of the day) and this can cause a loss of route identity in some of the segments where productivity is low.

The Coral Reef MAX is primarily used as a work-commute route (48%), to serve regional needs. Seventeen (17%) percent of its passengers use the route to transfer to Metrorail. Sixty-two percent (62%) of its passengers walk to the bus, 8% come from or go to another bus, 5% are dropped off (kiss-and-ride), and less than 1% use park-and-ride lots.

The 2003 on-board passenger survey origin-destination analysis, as illustrated in Figure 3-32, shows that the route mostly serves South Dade residents that are directly along the route's service area. Off the route's alignment within South Dade, there are two small concentrations of origins from: the South Miami Heights area near Larry & Penny Thompson Park; and an agricultural area west of Homestead. The area near Larry & Penny Thompson Park will soon be served by the PTP-programmed Quail Roost MAX that will provide limited stop, Busway access from Quail Roost Drive (SW 168th Street). The area west of Homestead is most likely erroneous.

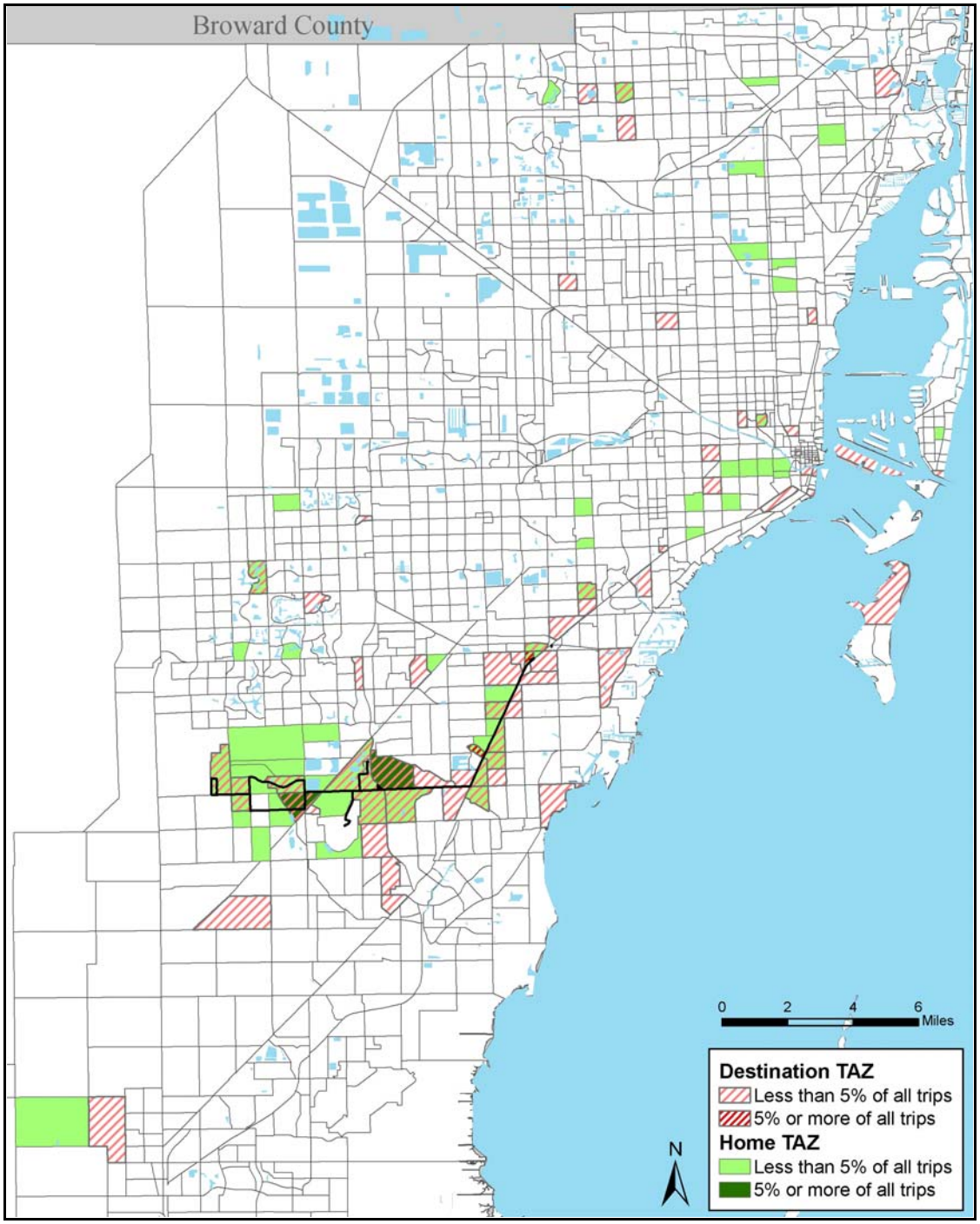
Table 3-23
Route 252 Outside Service Area Passenger Home-Origin Clusters

Area Name	Location	TAZ	General Land Use
South Miami Heights	South of Miami Metrozoo North of SW 184th Street	1206	Low-Density Residential

Table 3-24
Route 252
Passenger and Trip Characteristics

Route 252 Passenger & Trip Characteristics	Weekday	Saturday	Sunday	Daily Average
Household Demographics				
Average Age	39	38	33	38
Percent with Disability	7.9%	12.9%	0.0%	7.5%
Number in Household	3.2	2.6	2.7	3.1
Number of Vehicles in Household	1.2	0.9	0.8	1.1
Vehicles per Person in Household	0.39	0.35	0.30	0.37
Household Income (average)	$21,488	$15,565	$15,769	$19,825
Transit Use Patterns				
Average Frequency of MetroBus Use	4.5	4.6	4.3	4.5
Tenure of MetroBus Use	2.5	2.1	2.5	2.4
Trip Purpose				
Home-Based Destination Trips:				
Home-Based Work	44.4%	64.5%	46.2%	47.6%
Home-Based School	9.5%	0.0%	3.8%	7.4%
Home-Based Medical	1.6%	3.2%	0.0%	1.6%
Home-Based Shopping / Errands	4.0%	6.5%	7.7%	4.9%
Home-Based Visiting / Recreation	1.6%	12.9%	0.0%	3.0%
Home-Based Hotel	0.0%	0.0%	0.0%	0.0%
Home-Based Other	9.5%	6.5%	7.7%	8.8%
Home Based - No Destination Type Given	0.0%	0.0%	7.7%	1.1%
Transportation Mode Used To and From Bus and MDT System Transfers				
Intermodal Combinations (to and from):				
Walk 0 to 3 blocks *(approx. 1/4 mile)*	41.7%	46.8%	44.2%	42.8%
Walk More than 3 blocks	19.4%	25.8%	9.6%	18.9%
Kiss-and-Ride (dropped off)	5.6%	1.6%	5.8%	5.0%
Park-and-Ride (drove self)	0.4%	0.0%	0.0%	0.3%
MetroRail	19.0%	16.1%	9.6%	17.3%
MetroBus	8.3%	4.8%	7.7%	7.7%
Average Number of MDT System Tranfers Reported	0.6	0.5	0.6	0.6
Transfer Attitude:				
Transfering Does Not Bother Passenger	42.1%	74.2%	65.4%	50.0%
One is Acceptable, But No More	28.6%	9.7%	11.5%	23.4%
Prefer Not to Make Any Transfers	22.2%	9.7%	11.5%	18.9%
Will Not Use Transit If Need to Transfer	2.4%	0.0%	3.8%	2.3%

Figure 3-32
Route 252
Home Origins and Destinations



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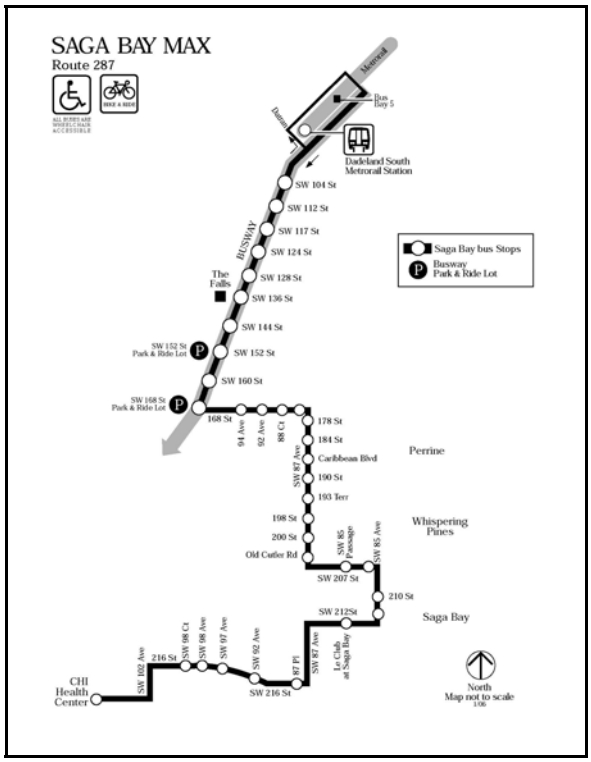
Metrobus Busway Passenger Travel Pattern Analysis
Saga Bay MAX, Route 287

The Saga Bay MAX (Route 287) is a partial Busway Route. The route provides regular Busway service from the Dadeland South Metrorail Station to Eureka Drive (SW 168th Street), and then provides regular regional service along Eureka Drive and south along Galloway Road (SW 87th Avenue) through the east Perrine area, Whispering Pines, and Saga Bay. It terminates in Saga Bay at SW 212th Street.

The Saga Bay MAX began service in 2004, after the system-wide on-board passenger survey was taken in 2003. There is no passenger data, nor origin-destination travel pattern data that is available at this time for the Saga Bay MAX.

Figure 3-33
Route 287 Alignment Diagram



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Metrorail Passenger Travel Pattern Analysis

Dadeland South Station
Dadeland North Station

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Metrorail Passenger Travel Pattern Analysis
Dadeland South Station and Dadeland North Station

Figure 3-34
Metrorail Alignment Diagram

Metrorail passenger and trip characteristics data is based on the Metrorail passenger survey, performed in 2004 on the platforms of each of the 22 Metrorail Stations. Pertinent to this study, the Dadeland South Station data, and the Dadeland North Station data are used. Dadeland South is the southern terminus of Metrorail as well as the northern terminus of the South Dade Busway. Dadeland North is included because it is very close to Dadeland South, contains a very large park-and-ride facility, and is considered to functionally be a part of the South Dade transit system for park-and-ride commuters.

The Dadeland South Station Metrorail passenger survey includes 1,673 responses, while the Dadeland North Station Metrorail passenger survey includes 1,576 responses. Passenger and trip characteristics are summarized in Tables 3-7 and 3-8 respectively for the Dadeland South Station and the Dadeland North Station. Figures 3-35 and 3-36 illustrate the spatial pattern of home-origins and destinations of the total passenger trips for each station.

These two Metrorail stations are primarily used as a work-commute route (42%). Metrobus transfers reported represent a small component of the ridership (4% for Dadeland North, 3% for Dadeland South). Arrival by car to the Metrorail stations is a much higher proportion, averaging for the two stations at 17% for park-and-ride passengers, and 8% for kiss-and-ride passengers.

Of great interest to understanding South Dade Commuters, are the responses to the question that asked why riders use Metrorail. On any day of the week, the most prevalent reason is convenience (easy to use for this destination), so as for buses, station location, travel time, wait time, and ease of accessing the station count for more than anything else.

The two second-place answers imply very different passengers. Those who answered, "more economical than driving" are choice travelers that own and have access to a car but choose transit based on the relative cost of the alternatives. They are more prevalent on weekdays, when congestion along South Dixie Highway is worse, and parking in downtown areas is generally less available and more expensive.

Those that answered that they had "no car available" are likely to be transit dependent, and these passengers are more prevalent on weekends when traffic along South Dixie highway is less congested.

The important conclusion is that on weekdays, because of greater roadway congestions, and possibly more expensive parking, Metrorail functions competitively with other travel choices for South Dade travelers.

The travel patterns for the two stations are very different, based on the Metrorail passenger survey home-origin-destination analysis.

The Dadeland South Metrorail Station, not unexpectedly, has a very strong pattern of origins and destinations along the Busway from the station south to Cutler Ridge. The strongest areas are generally in East Kendall, Perrine, Richmond Heights, and the Cutler Ridge Metropolitan Center. The primary bus route for transfers to complete this pattern is the Busway MAX (Route 38) (see Table 3-9).

Markedly different is the Dadeland North Metrorail Station, which has almost no pattern of origins and destinations south of SW 112th Street. The strong pattern in this case is west along Kendall Drive (SW 88th Street, SW 104th Street, and Killian Drive (SW 112th Street), through the communities of East Kendall, Howard, and Kendall Lakes. The primary bus routes for transfers to complete this pattern are Route 88 and the Killian KAT (Route 104) (see Table 3-9).

Table 3-25
Dadeland South Metrorail Station
Outside Service Area Passenger Home-Origin Clusters

Area Name	Location	TAZ	General Land Use
East Kendall	East of Station, South of SW 88th Street	1165	Low-Density Residential
Howard	West of US-1, north of SW 124th Street	1182	Low-Density Residential
Richmond Heights	East of Turnpike, south of SW 168th Street	1191, 1198	Single-Family Residential
Palmetto Estates	East of Turnpike, south of SW 152nd Street	1192, 1193, 1197	Single-Family Residential
Perrine	South of SW 168th Street, US-1 to Metrozoo	1194, 1196, 1205	Mid & Low Density Residential
Cutler Ridge	North of Caribbean Blvd. both sides of US-1	1322, 1323, 1344, 1346	Low-Density Residential

Table 3-26
Dadeland South Station
Passenger and Trip Characteristics

Station TAZ 1153 Passenger & Trip Characteristics	Weekday	Saturday	Sunday	Daily Average
Household Demographics				
Average Age	37	33	33	36
Number in Household	2.8	2.5	2.4	2.7
Number of Vehicles in Household	0.8	0.5	0.5	0.7
Vehicles per Person in Household	0.28	0.21	0.19	0.26
Household Income (average)	$32,709	$19,754	$20,490	$29,113
Transit Use Patterns				
Average Frequency of MetroRail Use	4.3	3.2	3.2	4
Trip Purpose				
Home-Based Destination Trips:				
Home-Based Work	50.2%	26.8%	18.8%	42.4%
Home-Based School	7.6%	3.4%	1.4%	6.1%
Home-Based Medical	4.1%	1.7%	3.1%	3.6%
Home-Based Shopping / Errands	4.1%	14.5%	11.8%	6.7%
Home-Based Visiting / Recreation	0.8%	3.4%	8.7%	2.3%
Home-Based Hotel	0.1%	0.7%	0.6%	0.3%
Home-Based Other	7.8%	19.0%	18.5%	10.9%
Home Based - No Destination Type Given	0.0%	0.0%	0.0%	0.0%
Transportation Mode Used To and From Bus and MDT System Transfers				
Intermodal Combinations (to and from):				
Walk 0 to 3 blocks *(approx. 1/4 mile)*	26.0%	24.8%	19.5%	24.9%
Walk More than 3 blocks	8.5%	11.3%	9.4%	9.0%
Kiss-and-Ride (dropped off)	6.1%	11.1%	9.9%	7.4%
Park-and-Ride (drove self)	18.4%	7.3%	9.5%	15.5%
MetroBus	2.4%	3.9%	1.5%	2.5%
MetroMover	0.5%	1.4%	2.2%	0.9%
Number of Transfers				
1 Transfer	17%	16%	18%	17%
2 Transfers	1%	2%	1%	1%
3 or more Transfers	0%	0%	0%	0%
Why Metrorail?				
Reason To Use MetroRail:				
No car available	28.4%	40.4%	45.9%	32.6%
More economical than driving	27.5%	14.0%	14.6%	23.7%
Easy to Use for this destination	40.5%	38.2%	32.2%	39.0%
Other	8.5%	7.4%	7.3%	8.1%

Figure 3-35
Dadeland South Station
Home Origins and Destinations

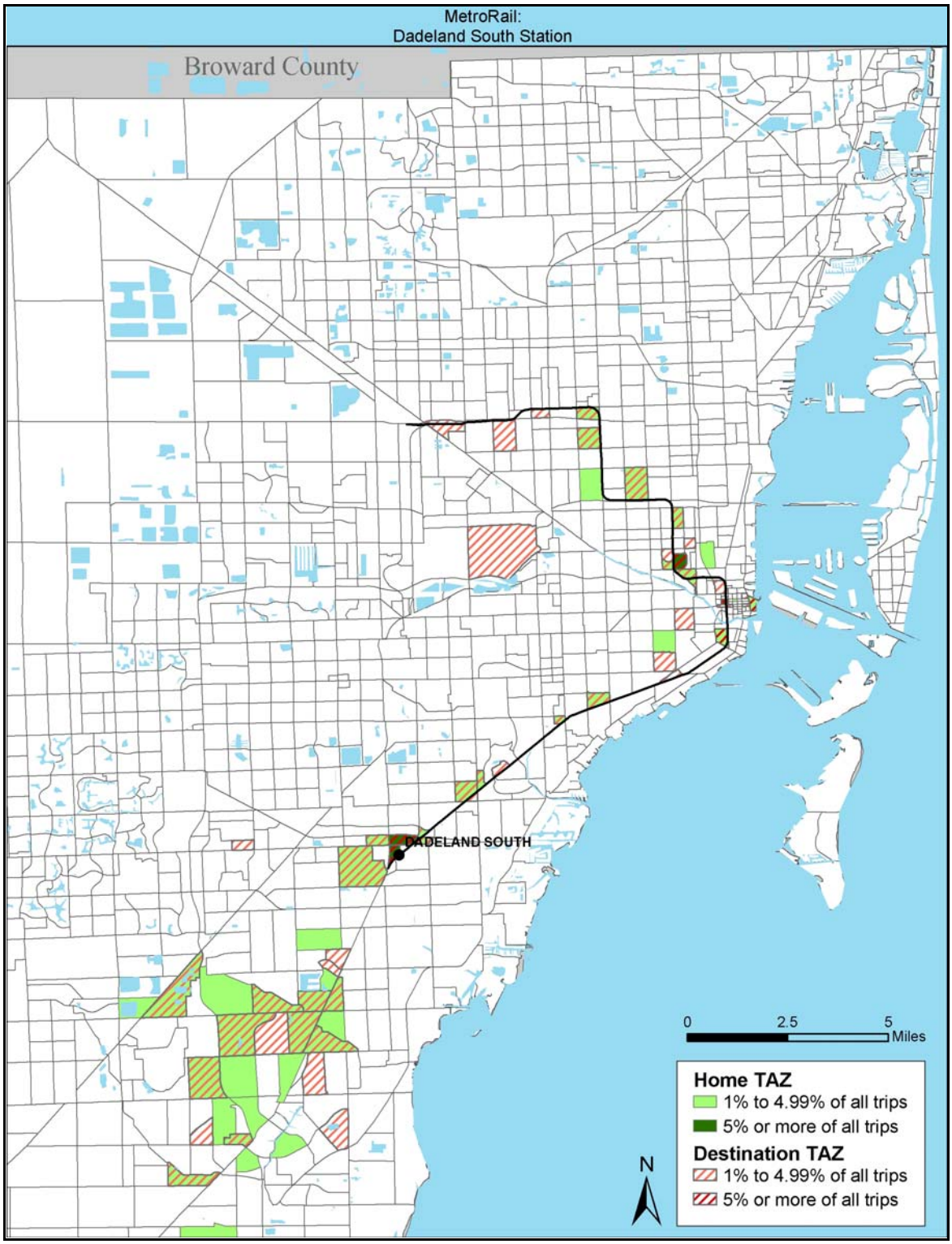

Table 3-27
Dadeland North Metrorail Station
Outside Service Area Passenger Home-Origin Clusters

Area Name	Location	TAZ	General Land Use
East Kendall	East of Station, both sides of SW 88th Street	935, 1002, 1004 1104,1153,1155	Low- to High-Density Residential
Kendall Lakes	North of SW 88th Street West of SW 127th Av	932, 933, 934	Low and Medium Density Residential
The Crossings	South of SW 88th Street West of SW 127th Av	1176, 1232, 1233, 1234	Low and Medium Density Residential
Kendall West	North of SW 88th Street West of SW 147th Av	867, 870, 874, 875, 877, 878	Low and Medium Density Residential
Richmond Heights	West of Turnpike, north of SW 152nd Street	1202	Single & Multi-Family Residential

Table 3-28
Dadeland North Station
Passenger and Trip Characteristics

Station TAZ 1105 Passenger & Trip Characteristics	Weekday	Saturday	Sunday	Daily Average
Household Demographics				
Average Age	35	34	36	35
Number in Household	2.8	2.5	2.4	2.7
Number of Vehicles in Household	0.9	0.5	0.4	0.8
Vehicles per Person in Household	0.33	0.21	0.17	0.29
Household Income (average)	$35,809	$23,836	$21,778	$32,094
Transit Use Patterns				
Average Frequency of MetroRail Use	4.5	3	2.7	4
Trip Purpose				
Home-Based Destination Trips:				
Home-Based Work	48.6%	22.8%	18.3%	40.6%
Home-Based School	13.1%	3.2%	1.6%	10.1%
Home-Based Medical	4.5%	2.1%	0.8%	3.6%
Home-Based Shopping / Errands	3.4%	19.3%	22.0%	8.3%
Home-Based Visiting / Recreation	1.2%	4.2%	6.5%	2.4%
Home-Based Hotel	0.2%	2.1%	0.8%	0.6%
Home-Based Other	4.0%	10.3%	12.2%	6.1%
Home Based - No Destination Type Given	0.0%	0.0%	0.0%	0.0%
Transportation Mode Used To and From Bus and MDT System Transfers				
Intermodal Combinations (to and from):				
Walk 0 to 3 blocks *(approx. 1/4 mile)*	27.2%	28.0%	30.1%	27.7%
Walk More than 3 blocks	5.8%	9.3%	11.4%	7.1%
Kiss-and-Ride (dropped off)	8.1%	9.3%	8.9%	8.4%
Park-and-Ride (drove self)	22.8%	9.7%	11.2%	19.3%
MetroBus	3.9%	1.1%	2.0%	3.2%
MetroMover	0.6%	1.2%	1.0%	0.7%
Number of Transfers				
1 Transfer	22%	19%	20%	21%
2 Transfers	2%	1%	1%	2%
3 or more Transfers	0%	0%	0%	0%
Why Metrorail?				
Reason To Use MetroRail:				
No car available	22.0%	49.7%	39.0%	28.4%
More economical than driving	28.9%	14.3%	15.9%	24.9%
Easy to Use for this destination	45.5%	34.7%	39.4%	43.1%
Other	11.2%	4.8%	5.3%	9.5%

Figure 3-36
Dadeland North Station
Home Origins and Destinations

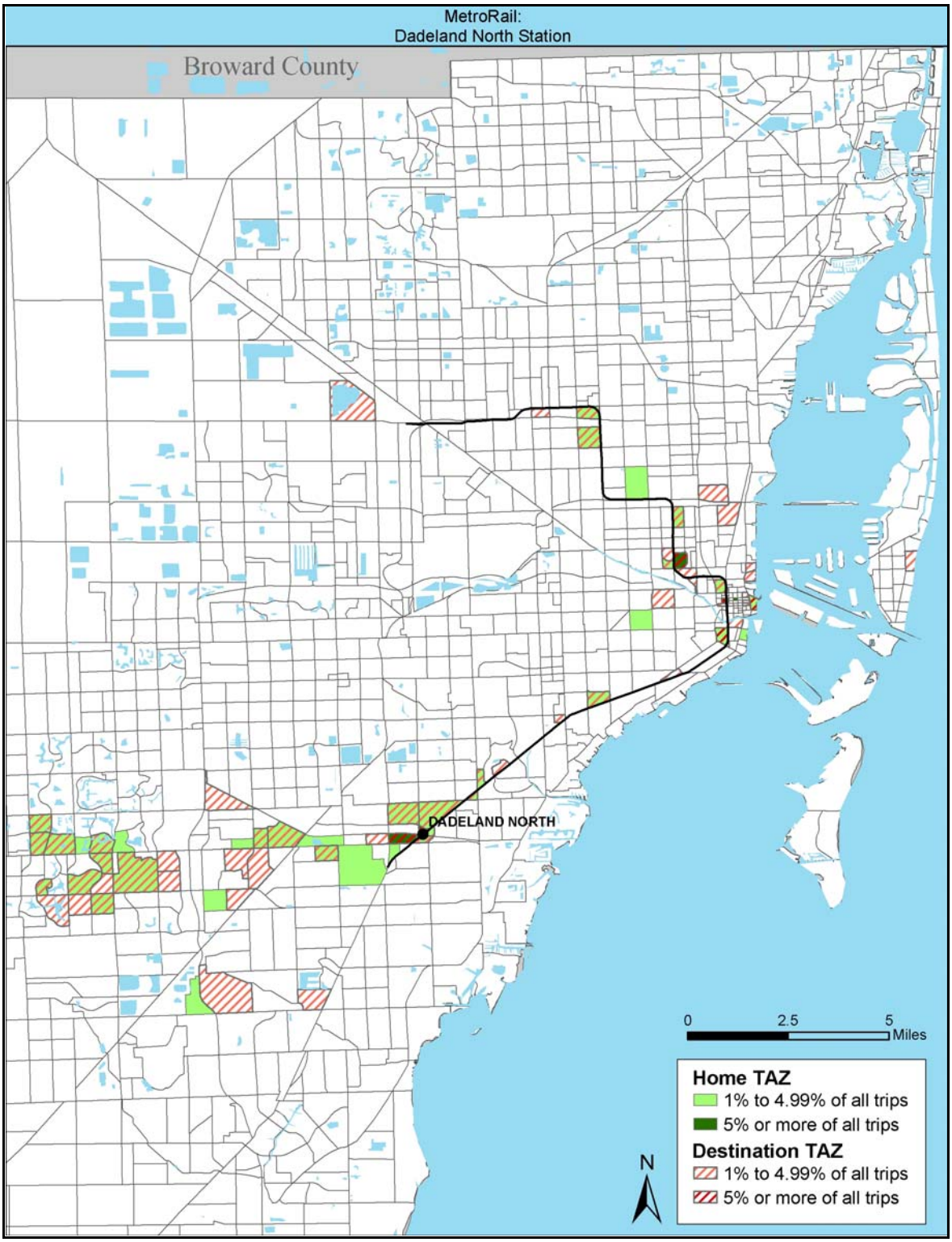

Table 3-29
South Dade
Metrorail – Bus Transfer Matrix by Bus Station and Bus Route

MetroRail Station:		All MetroRail Stations	Dadeland North Station	Dadeland South Station
	Surveyed at sration	375	1,007	1,101
	Total Transfers:	22%	25%	28%
Metrobus Route:				
1		4.0%	0.4%	2.5%
31	Busway Local	4.9%	0.1%	4.4%
34	Busway Flyer			
35				
35/52				
35/70				
38	Busway MAX	**11.3%**	0.2%	**8.8%**
52		**6.1%**	0.3%	3.2%
57		1.2%	0.2%	
57/72		1.1%		0.1%
65	South Dade Express	1.3%		0.1%
70		0.5%		0.5%
88		**13.9%**	**10.2%**	1.6%
104		0.5%		0.2%
137	West Dade Connection	0.7%	0.1%	
147	Kendall			
204	Killian KAT	**6.6%**	**6.0%**	0.3%
252	Coral Reef Max	2.9%		2.9%
272	Sunset KAT	1.5%	1.2%	
287	Saga Bay Max	0.5%		0.5%
288	Kendall KAT	2.0%	1.7%	0.1%
301	Dade Monoe Express			
302	Card Sound Express			

South Dade Busway Feeder Study

Section 4

(Task 5)

South Dade Residents' Travel Behavior & Transit Attitudes

County Commission Districts 8 & 9

Travel Behavior Telephone Survey

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South Dade Residents' Travel Behavior & Transit Attitudes

The goals of the south Dade Busway Transit Feeder Study are two-fold.

1. First is to identify improvements to park-and-ride capacity and associated service improvements to meet the needs of the existing Busway, Metrorail, and other transit users.
2. Second is to improve facilities and service to attract new South Dade commuters and traveler to use public transportation for their daily commute, and relieve some congestion along South Dixie Highway and other parts of the South Dade roadway network.

To this end, the South Dade Transit Feeder Study uses data and analysis concerning three markets: 1) existing transit users whose needs are represented by parking utilization data, the park-and-ride license plate survey, the park-and-ride kiss-and-ride license plate survey, and the Metrorail and Metrobus passenger surveys; 2) potential transit users from existing South Dade residents, represented by the County Commission District 8 and 9 telephone survey; and 3) potential transit users from among future South Dade residents.

This is the section that considers attracting single-occupant vehicle (SOV) travelers in South Dade to use transit for their commute trips instead of their vehicles. It is well understood that it is easier to attract SOV commuter to transit by providing premium services such as Metrorail and the South Dade Busway; however, these premium, highly visible modes are not enough. Most of South Dade is developed as single-family residential communities at low densities. It is nearly impossible, a very inefficient use of public resources, and often undesirable by the community to provide door-to-door service or even transit service accessible within a 5-minute walk in this type of landscape. Considering this, this effort looks to provide convenient park-and-ride service to the South Dade Busway or Metrorail. The compromise allows commuters to enable their own door-to-door service by their own vehicle or a friend's, and then use the parts of the South Dade roadway network that are not congested to reach a park-and-ride facility. The rest of the trip is then by transit, moving the passenger past the most congested roadways in convenience, comfort, and safety, while reducing vehicle congestion along the worst roadways.

To plan facilities and services to attract these "choice" travelers, information about them and their needs is required. This section approaches this using survey data from the general population of South Dade. The survey was conducted in March 2007 by Amplitude Research, Inc., under contract with Miami-Dade County. The survey was conducted for County Commission Districts 8 and 9, and was performed as randomly dialed telephone interviews with a sample size of 1,000 interviews. The sample size provides a confidence level of 95% with an average margin of error at 3%.

The survey data has been organized around three basic questions:

1. Who the resident respondents are: These are mostly qualifying questions and data points, and include what district the person lives in, whether they are a voter or not (both questions from source list for calling), the respondent's gender, and their stated age.
2. Resident's Current Travel Behavior and Travel Patterns: These questions include asking for the resident's home-origin location, the destination of their trip, what the purpose of the trips is, what mode of transportation they use, if it is transit how they get to their first transit stop, and what times of the day they travel to and from their destination.
3. Resident's Attitudes To Using Transit: these are the most critical questions, in which respondents are asked if they have used transit before, and if they do not any more, why they don't. The question provides very useful insight into what are the most important characteristics of transit service to focus on. The respondents were then, after the concept of transit feeder service was explained, asked if they would be willing to use the Busway of Metrorail if such a service were offered.
4. Using the travel patterns given by their stated origins and destinations, the patterns were parsed for those respondents that would be willing to use transit feeders from park-and-ride facilities, and the home-origin locations were mapped out to perform a cluster analysis and develop recommendations as to the location for potential community park-and-ride facilities with transit feeder services.

The residents and their survey responses have also been geographically parsed into two categories relating to the Busway:

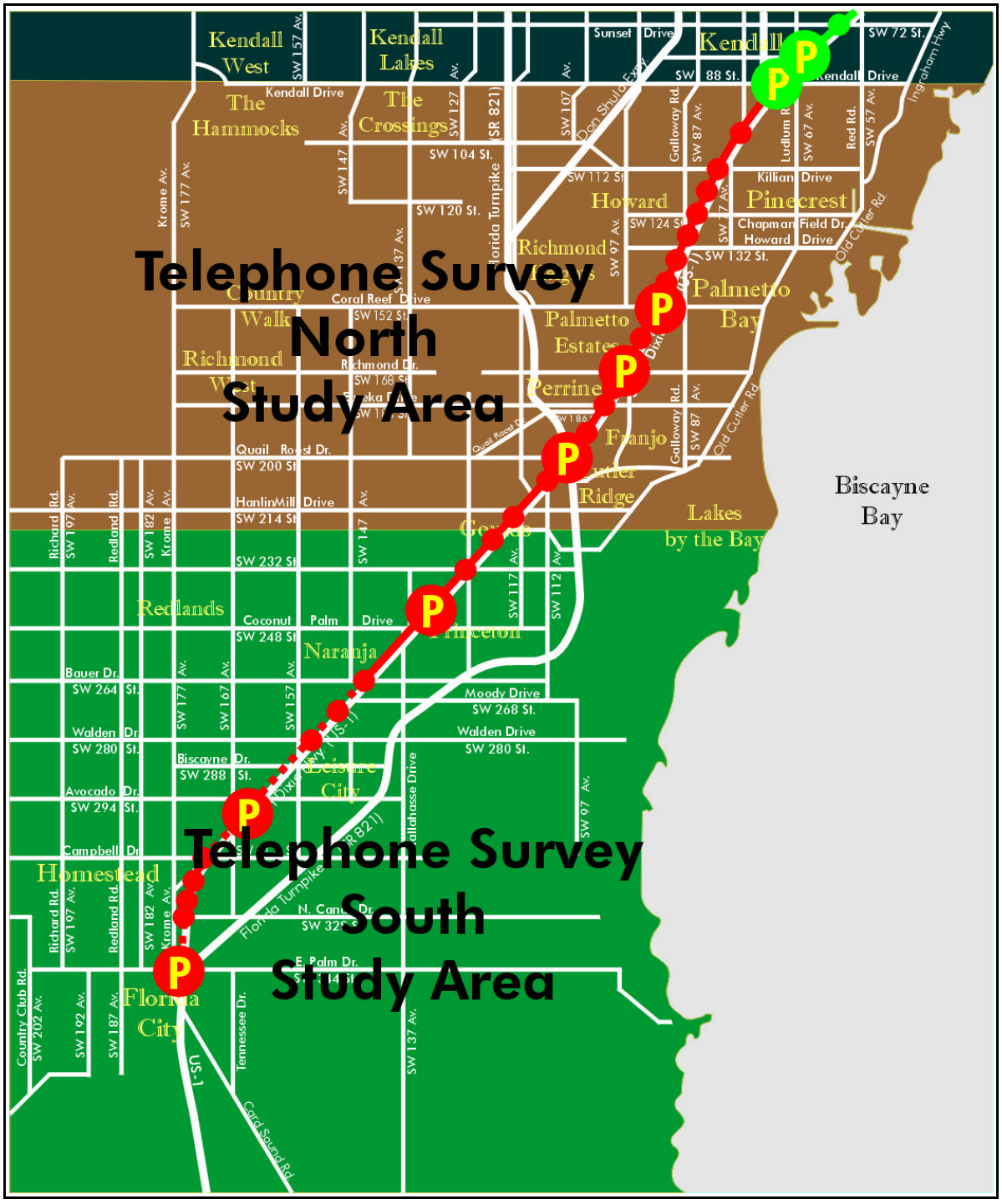
North Study Area:

The north half of the Study Area, includes all of South Dade within the Urban Development Boundary from Kendall Drive (SW 88th Street) to SW 216th Street. The north half of the Study Area is considered separately as it approximates the service area of the Phase I implementation of the South Dade Busway for which service generally ended at the park-and-ride lot of the Cutler Ridge Mall (now Southland Mall). It is presumed that its role in the transportation mix of this area is mature.

South Study Area:

The south half of the Study Area includes all of South Dade within the Urban Development Boundary from SW 216th Street to the end of developed lands in Florida City (south of SW 344th Street). The south half of the Study Area is considered separately as it approximates the service area of the Phase II implementation of the South Dade Busway, and it is presumed that its role in the transportation mix of this area is not fully developed.

Figure 4-1
Telephone Survey South Dade Study Areas



Survey Sample Demographics

The survey sample demographics provides a qualify overview of the interviewees as a group, and of the quality of homogeneity between the samples for the North Study Area and South Study Area. Although the population of the South Study Area is almost half that of the north Study Area, the survey sample under-represents the South Study Area compared to the North Study Area. Still, the sample size (244) is sufficient to keep the error at 6% for a 95% confidence interval.

Table 4-1
Telephone Survey Respondent Demographics by Study Area

Demographics	North Study Area north of SW 216th Street	South Study Area south of SW 216th Street	All South Dade south of Kendall Drive
Analysis Zone			
Population (current MUATS by TAZ)	345,651	142,282	487,933
Percent of Study Area	71%	29%	100%
Sample	756	244	1,000
Percent Population	0.22%	0.17%	0.20%
Percent Sample	76%	24%	100%
Statistical sample error at 95% con	4%	6%	3%
Passenger Demographics			
Respondent's Age			
18 to 24	5%	8%	5%
25 to 39	16%	20%	17%
40 to 59	46%	44%	45%
60+	30%	26%	29%
Refused Answer	4%	2%	3%
40 to 59	52	49	51
Respondent's Gender			
Female	51%	50%	51%
Male	49%	50%	49%

The distribution of respondent by Commission District is very consistent, and the distribution of the sample by gender is also satisfactorily well balanced. The distribution of the sample among age groups is slightly skewed to higher ages. The overall average age for the sample is 51 years old, whereas the average age found in most Metrobus and Metrorail samples is in the thirties. Similarly, the expectation for travelers of all modes throughout South Dade, particularly commuters, would be expected to be in the high thirties to low forties. Given this, the effect of the skew will be two-fold. 1) First, this sample should be expected to slightly under-represent transit users in South Dade. Transit users generally have

higher percentages in the twenties and thirties age cohorts. 2) Second, the older population of the sample may have either a more conservative or more willing attitude towards trying transit instead of their current mode. There are factors that could suggest either way, an it is difficult to say what direction the skew may actually be in; however, it is important to note that there may be some skew in attitudes between the survey sample and the South Dade population.

Table 4-2
Telephone Survey Respondent Demographics by Commission District

Demographics	Commission District 8	Commission District 9	All South Dade
Analysis Zone			
Population (Year 2007 projection)	206,622	203,989	410,611
Percent of Study Area	50%	50%	100%
Sample	546	454	1,000
Percent Population	0.26%	0.22%	0.24%
Percent Sample	55%	45%	100%
Statistical sample error at 95% con	4%	5%	3%

Current Travel Behavior and Patterns

The first purpose of the telephone survey is to identify the characteristics and patterns of how South Dade residents are currently traveling on their daily primary trip (commute). Table 4-3 summarizes the pertinent trip characteristics by Study Area.

Table 4-3
Telephone Survey Respondent Travel Behavior Characteristics by Study Area

Current Travel Behavior	North Study Area (north of SW 216th St.)	South Study Area (south of SW 216th St.)	All South Dade (south of Kenadall Dr.)
Trip Purpose			
Home-Based Destination Trips			
Home-Based Work	70%	74%	71%
Home-Based School	6%	5%	6%
Home-Based Shopping / Errands	24%	21%	24%
Do Not Typically Travel	0%	0%	0%
Refused Answer	0%	0%	0%
Travel Mode			
Primary Travel Mode			
Drive Self (SOV)	85%	81%	84%
Carpool	1%	2%	1%
Walk or Bicycle	4%	7%	5%
Transit	9%	9%	9%
Refused Answer	0%	1%	0%
Travel Mode to Transit: Percentage Transit Users {Percentage of Total}			
Car	46% {4%}	39% {4%}	44% {4%}
Bus	16% {1%}	13% {1%}	15% {1%}
Bicycle	1% {0%}	0% {0%}	1% {0%}
Walk	33% {3%}	52% {5%}	38% {4%}
Refused Answer	3% {0%}	0% {0%}	2% {0%}
Travel Route			
Use South Dixie Highway (US-1)			
All Travelers	46%	46%	46%
Single Occupant Driver	46%	46%	46%
Carpooler	0%	0%	0%
Bicycle or Walking	0%	0%	0%
Transit	0%	0%	0%

Not unexpectedly, by far the primary mode of transportation is a single-occupant vehicle (84% overall). Transit use is 9% in both the North and South Study Areas.

Notably, the use of bicycles and walking as a primary transportation mode, is significantly (60%) higher in the South Study Area than the North Study Area. The bicycle and walking mode share for each study area is 7% and 4% respectively. With respect to Busway planning, this may suggest a greater importance on bicycle storage facilities at Busway stations that are in the South Study Area (south of SW 216th Street).

Although in each case a very small component of the travel mode mix, it is noteworthy that car pooling is 72% more frequent in the South Study Area than the North Study Area. Perhaps in response to longer driving distances, and generally lower household incomes for this area, it should be considered regarding expectations for the use of kiss-and-ride facilities at Busway stations south of SW 216th Street.

As is typical, the primary trip purpose is to go from home to work (71%), with errands and shopping the second most frequent trip purpose (24%), and trips from home to school being the third (6%). Variations between the South Study Area and north Study Area are not significant.

Among those that use transit as their primary mode of transportation, the most prevalent way of getting to transit is by car (44%). This is uniquely a characteristic of the Busway and Metrorail. For all other components of the transit system in Dade County, the most prevalent mode of getting to and from transit is always walking. This is very important to recognize that park-and-ride and kiss-and-ride facilities are the primary access points to the South Dade Busway and South Dade Metrorail Stations. Walking is the second most frequent way of getting to transit. Bicycle riding is more slightly more frequently used to get to transit in the North Study Area, than in the South Study Area.

A characteristic that is very much a part of life in South Dade is the reliance on South Dixie Highway for many non-local trips. The survey supports the commonly felt perception. Almost half (46%) of the vehicular commute trips in South Dade use South Dixie Highway (US-1). The statistic is the same whether in the South Study Area or North Study Area.

As part of the survey, respondents were asked where they lived and where the destination of their commute trip is. Based on these questions, the geographic pattern of the existing home origins and commute destinations has been mapped out and is provided in Figures 4-2 and 4-3.

Figure 4-2
Telephone Survey Respondent Existing Commute Home Origins

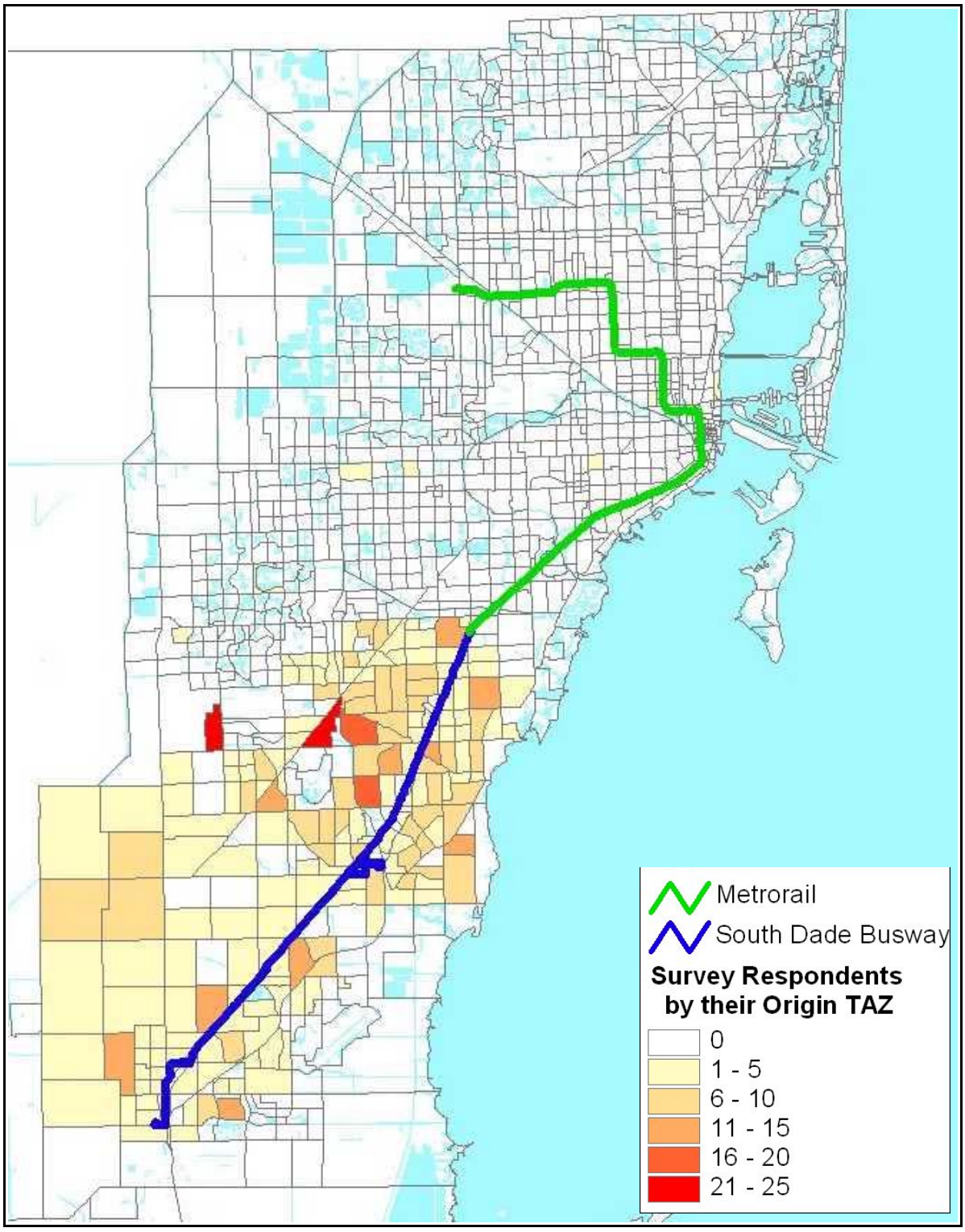
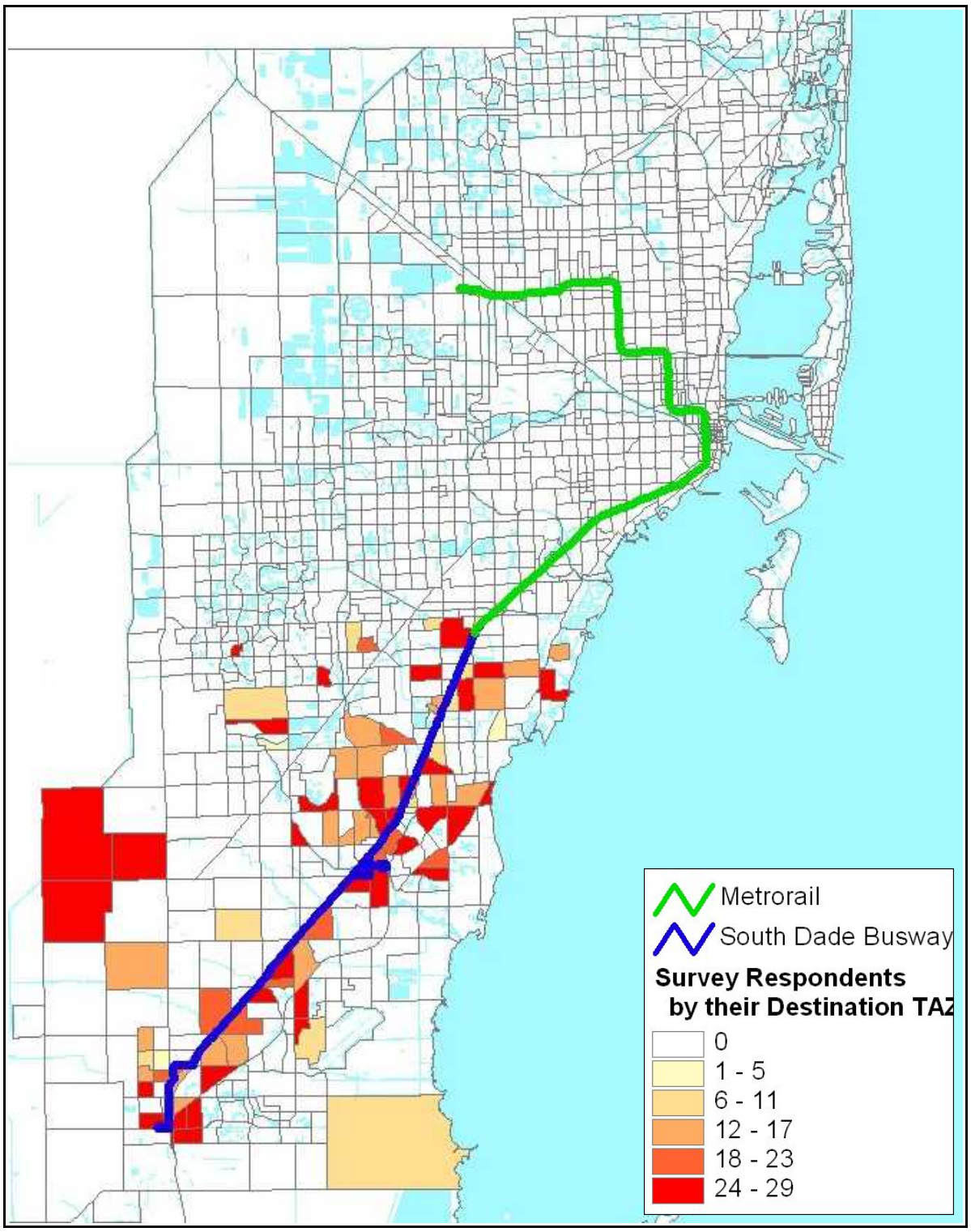


Figure 4-3
Telephone Survey Respondent Existing South Dade Commute Destinations



Transit Experience and Attitudes

As part of identifying the characteristics of how South Dade residents travel on their daily commute, they asked whether they ever tried transit, and if not, their reason for not doing so. The responses are summarized in Table 4-4 by Study Area.

Table 4-4
Telephone Survey Respondent Transit Experience and Attitudes

Transit Experience	North Study Area (north of SW 216th St.)	South Study Area (south of SW 216th St.)	All South Dade (south of Kenadall Dr.)
Metrorail			
Ever Used Metrorail			
Yes	49%	50%	49%
If Not, Why Not?			
Does not go where I need to go	65%	62%	64%
Need car for personal business	11%	11%	11%
No need, Have a car	8%	8%	8%
Takes too long to get to station from home	6%	7%	6%
Trip takes too long	3%	2%	3%
Other	2%	2%	2%
New to Area	2%	2%	2%
Insufficient parking at station	1%	1%	1%
Complicated scheduling	1%	0%	1%
Safety, security, strange peole	1%	1%	1%
Don't like buses - never tried it	0%	0%	0%
Refused	1%	2%	1%
Total Responses	384	122	506
Busway			
Ever Used Busway			
Yes	27%	30%	28%
If Not, Why Not?			
Does not go where I need to go	51%	42%	49%
Need car for personal business	14%	17%	15%
No need, Have a car	9%	12%	10%
Takes too long to get to station from home	8%	12%	9%
Trip takes too long	5%	5%	5%
Don't like buses - never tried it	3%	1%	3%
Other	2%	3%	3%
Safety, security, strange peole	2%	2%	2%
Insufficient parking at station	2%	2%	2%
New to Area	1%	1%	1%
Complicated scheduling	0%	1%	0%
Refused	1%	1%	1%
Total Responses	553	172	725

The interesting aspect of the transit experience data is the unexpectedly large proportion of residents that report having tried transit. While only 9% currently use transit for their commute trip, 49% have tried Metrorail, and 25% have tried the South Dade Busway. On one hand, this belies a strong willingness to try different modes, and suggests that much of the South Dade population is available to new alternatives. On the other hand, it also shows that if those needs are not met, they will return to their former means of traveling, as 82% of those did who tried Metrorail, and 32% of those who tried the Busway.

If transit failed to meet their needs, the next question is why it did not meet their needs. Insight into this is provided by the follow-up question that was asked during the survey that ask of those who did not try transit, the reason why they did not. For both the case of Metrorail and the Busway, the top five reasons are the same, in the same order, and represent the reasoning for approximately 90% of the respondents (92% for Metrorail, 88% for the Busway). They area:

1. Does not go where I need it to
2. Need a personal car for business
3. No need, have a car
4. Takes too long to get to the station
5. Trip takes too long

Among the reasons, for #2 and #3, there is little that can be done at the transit service planning level to address the needs of these commuters.

For reason #1, changes in bus alignments can be made to address major destinations and major residential concentrations; however, for the most part addressing these needs can not be done efficiently in a primarily low density land use environment like South Dade.

The 4th reason, "takes too long to get to the station from home", represents 8% of those who don't use Metrorail, and 9% of those who don't use the Busway. To the extent that these are the only reason that these people have, this is the issue that is to be addressed in this study. The purpose of looking for new locations for community-located park-and-rides with feeder services is to bring transit conveniently closer to South Dade residents, and shortening their travel time, distance, and inconvenience of getting to the transit station.

The next question of the survey provides an additional insight into meeting the needs of commuters that don't use transit, and ask what might convince them to use Metrorail or the Busway. The responses are summarized in Table 4-5.

Again, 90% of the respondents are represented by the top 5 answers. They area:

1. New routers to meet my needs
2. Nothing could convince me
3. Convenient stops
4. Better frequency, schedule, less wait time

5. Other not counted as a reason
5. More parking at stations

Table 4-5
Telephone Survey Respondent Willingness to Use Transit Attitudes

Willingness to Use Transit Attitude	North Study Area (north of SW 216th St.)	South Study Area (south of SW 216th St.)	All South Dade (south of Kenadall Dr.)
Characteristics to Improve			
What Might Convince Person to Use Metrorail or the Busway			
New routes to meet my needs / airport / Metrorail	40%	28%	37%
Nothing could convince me	20%	24%	21%
Convenient stops, express routes	17%	17%	17%
Better frequency / schedule (less wait time)	9%	15%	10%
Other	6%	2%	5%
More parking at stations	2%	6%	3%
Better security	2%	7%	3%
Better on-time reliability	1%	0%	1%
Luxurious bus	1%	0%	1%
More information via we or phone	1%	2%	1%
Van door-to-door service to Busway	0%	0%	0%
Don't know	0%	0%	0%
Total Responses	213	54	267

Among the reasons, for #2 here is little that can be done at the transit service planning level to address the needs of these commuters.

Reasons #1 and #3 are similar to the people who answered that the reason that they do not use transit is that it does not go where they need to go. The reasons can be addressed, but in a relatively low-density land use environment as South Dade is, the efficiency of incrementally doing it by public transportation is generally very poor.

Better frequency and less wait time can be addressed at the service planning level; however, again, if utilization and transit vehicle loads are already not very high, then addressing this need results in greater inefficiency of public resources.

The 5th reason (number 6) is that more parking at stations could convince the person to use Metrorail or the Busway. This attitude was provided by 2% of the respondents in the North Study Area, and 6% of the respondents in the South Study Area. This would represent a population of 4,121 persons in the North Study Area, and 3,952 persons in the South Study Area. Providing better resources to meet their need is the purpose of this study.

Transit Feeder Bus Attitudes

The next question of the survey simply asks the "what-if" question.

If 8% of those who don't use Metrorail, and 9% of those who don't use the Busway state that their reason is that it takes too long to get tot the station, the next question ask if they would use transit if this inconvenience were reduced. The question was, if they would be willing to use a feeder bus to get to the Busway, or to Metrorail, then what travel time to the bus would be expected, and what amenities would be expected at the station. The responses are summarized in Table 4-6 by Study Area.

Table 4-6
Telephone Survey Respondent Transit Feeder Attitudes

Willingness to Use Transit Attitude	North Study Area (north of SW 216th St.)	South Study Area (south of SW 216th St.)	All South Dade (south of Kenadall Dr.)
Use of a Feeder Bus			
Would Use Feeder Bus from Neighborhood to Busway			
Yes	45%	52%	46%
Would Use Feeder Bus from Neighborhood to Metrorail			
Yes	54%	53%	54%
If Would Use Feeder Bus, Time Willing to Get To Feeder Bus			
Less than 5 minutes	44%	41%	44%
5 to 10 minutes	41%	43%	41%
More than 10 minutes	10%	13%	11%
Don't know	4%	3%	4%
Total Responses	453	150	603
Busway Stations			
Park-and-Ride Facility Amenities that are Expected			
Security, lighting	34%	45%	31%
Convenience item sales kiosks	9%	7%	8%
Shelter, benches, covered walkway	9%	8%	8%
Parking Improvements, Bicycle parking	4%	3%	3%
More passenger information	3%	2%	2%
Restrooms	3%	2%	2%
Telephones, Emergency phones	2%	2%	2%
Other	2%	1%	2%
Fair parking price, ticketing convenience	1%	0%	1%
Trash cans	1%	1%	1%
Don't know	32%	27%	26%

Over half of the respondents, state that they are willing to use a feeder bus if takes them to Metrorail, and just under half state that they would be willing to use a feeder bus if it takes them to the South Dade Busway. The sample response translates to a significant population, as shown below:

Willing to use feeder bus to Metrorail	54%	population of 257,045 to 273,486
Willing to use feeder bus to Metrorail	46%	population of 211,390 to 224,910

It is important to remember that this is a state preference, not a predictor of the actual market to use feeder service. For example, say if the same 9% transit mode split applies, and the same sub-mode split of 44% transit users that use park-and-ride or kiss-and-rides also applies to those who state that they would use transit, then the population of actual potential users might be:

Willing to use feeder bus to Metrorail	2.2%	population of 8,995 to 9,570
Willing to use feeder bus to Metrorail	1.9%	population of 10,487 to 11,158

Even with this factoring down, a potential population of 10-thousand to 11-thousand (populations can not be added, as there are a large percent of members common to both) that may be attracted away from their private vehicles to public transit, is very encouraging.

The follow-up questions help to understand the level-of-service in terms of station proximity, and level-of-amenities at the stations. The first question looks at the location of station relative to the respondents' homes. Although the actual question was asked as a walking time, it is reasonable to use the interpretation of driving time as it relates better to the location of park-and-ride lots. Eighty-five percent (85%) would be satisfied with a 10-minute or less journey from their home to the park-and-ride station, or park-and-ride feeder station. This can be interpreted that each station along Metrorail, or along the Busway, or in the community using a feeder route, should be expected to have a functional service area of 5 miles (10 minutes at 30 mph average driving speed).

For the purposes of park-and-ride facility planning, it is important to understand what amenities are expected by these potential patrons. The top four items in order provide the following list of amenities, in addition to adequate parking and adequate transit service:

- Good security at the station and in the parking area
- Safe, well-lit station area and parking lot
- Weather protection at the station
- Weather protection in the parking area, at least along walkways leading to the station
- Benches
- Convenience sales kiosks (newspapers, snacks, etc.)

The second priority of expectations at the stations are:

- Passenger information

- Bicycle storage
- Restrooms
- Telephones

The last, but one of the most important analyses performed was to obtain the home locations of the respondents that answered that they would be willing to try a feeder bus from a community park-and-ride to the Busway or Metrorail. Home locations are based on the respondents' stated home address which was then coded to TAZs. After assigning to TAZs, the percentages of survey respondents that answered "yes' to these questions was weighted by the respective TAZ population to provide an expected number for each TAZ that may answer yes to this question. This provides a useful score value by which to grade clusters with the highest potential of park-and-ride or kiss-and-ride use. The locations are mapped out and illustrated in Figure 4-4 for Feeders to Metrorail, and Figure 4-5 for feeders to the South Dade Busway.

A cluster analysis on this data, similar to those contained in Section 3, the communities that have high potential for park-and-ride / kiss-and-ride feeder services are provided in Table 4-7 for Metrorail, and Table 4-8 for the South Dade Busway.

Figure 4-4
Willingness to Use a Feeder Bus to Metrorail by Home Origins

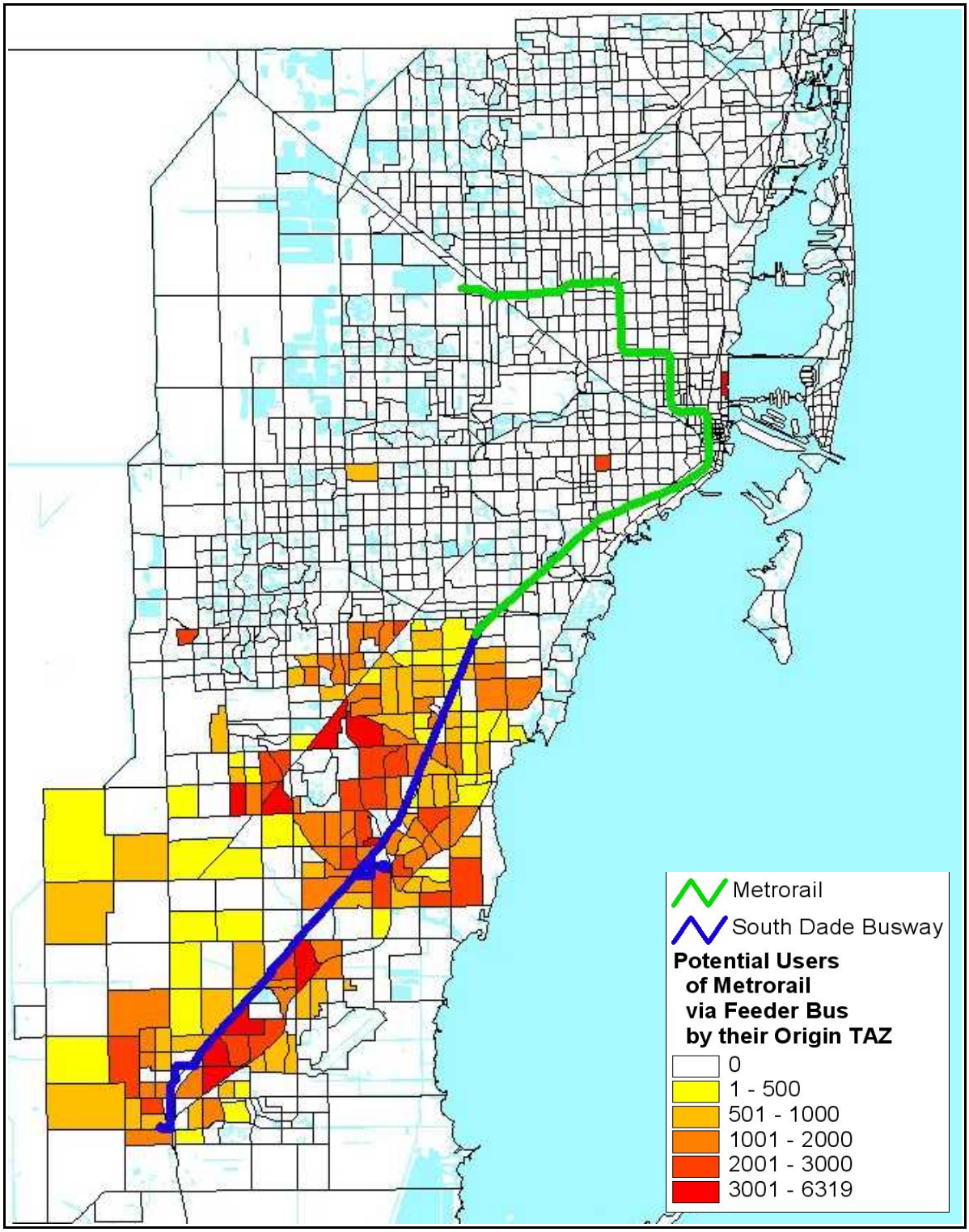


Figure 4-5
Willingness to Use a Feeder Bus to the South Dade Busway by Home Origins

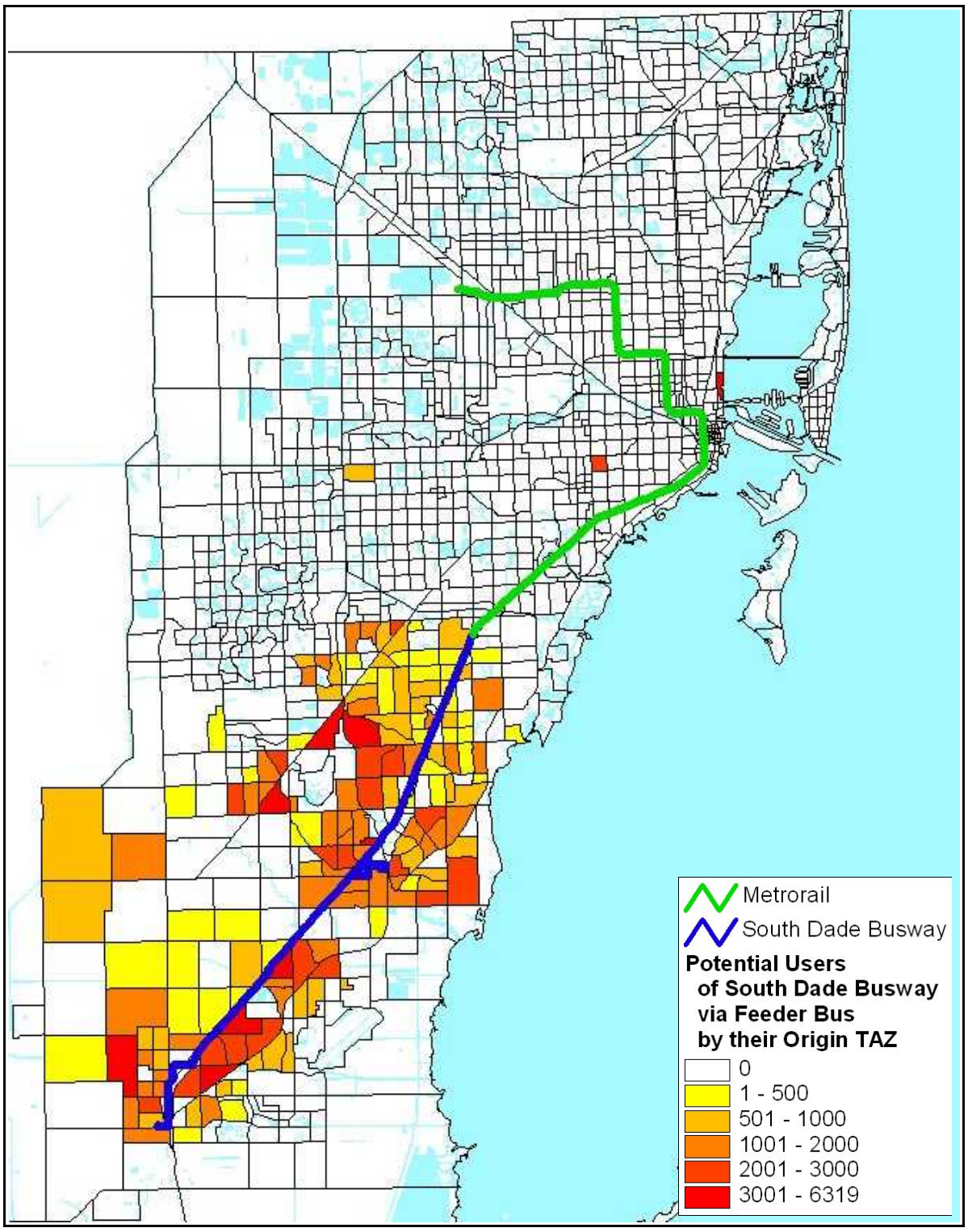


Table 4-7
Stated Willingness to Use Metrorail if by a Feeder Bus – Potential by Community

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
West Kendall	Kendall to Killian Dr., and SR 874 to SW 147th Av.	1168, 1169, 1170-1173, 1176, 1177, 1217, 1219, 1222, 1224, 1225, 1227, 1228	Medium & Low-Density Residential	Red, Orange, Lt. Orange	386
Pinecrest, Palmetto Bay	SW 104th Street to SW 184th Street Old Cutler Rd to US-1	1132, 1135, 1136, 1137, 1138, 1139, 1142, 1145, 1146, 1158, 1159, 1160	Estate-Density Residential	Orange, Lt. Orange	176
Howard	SW 112th Street to SW136th Street US-1 to SW 107th Av	1163, 1164, 1178, 1181, 1182, 1183, 1200	Estate-Density Residential	Orange, Lt. Orange	93
Richmond Heights	SW 136th Street to SW 152nd Street US-1 to SW 127th Av	1190, 1191, 1198, 1199, 1201, 1202	Medium, Low, & Estate-Density Residential	Red, Orange, Lt. Orange	294
Palmetto Estates	SW 152nd Street to SW 168th Street US-1 to Turnpike	1192, 1193, 1197	Low-Density Residential	Orange, Dk.Orange	134
Country Walk, West Richmond	South of Tamiami Airport, west of Metrozoo	1267, 1275, 1276, 1277, 1279, 1280, 1282, 1283, 1284, 1285, 1286	Medium, Low, & Estate-Density Residential	Orange, Lt. Orange Yellow	536
West Perrine	SW 168th Street to SW 184th Street US-1 to Turnpike	1194, 1195, 1196	Medium & Low-Density Residential	Orange, Lt. Orange	77
East Perrine	SW 168th Street to SW 184th Street SW87th Av to US-1	1124, 1125, 1126, 1127	Low-Density Residential	Lt. Orange Yellow	52
South Miami Heights	SW 184th Street to SW 216th Street SW 127th Av to US-1	1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324	Medium & Low-Density Residential	Red, Dk.Orange Orange	381
Cutler Ridge / Franjo	SW 184th Street to SW 216th Street Old Cutler Rd to US-1	1327, 1328, 1329, 1330, 1331, 1332, 1341, 1342, 1343, 1344, 1345, 1349, 1350	Low-Density Residential	Dk.Orange Orange, Lt. Orange	319
Saga Bay	Old Cutler Rd to SW 216th St, SW 87th Avenue to Bay	1328, 1334, 1336, 1338, 1339, 1340	Medium & Low-Density Residential	Dk.Orange Lt. Orange Yellow	139
Goulds	SW 216th Street to SW 232nd Street, SW 87th to SW 137th Av	1309, 1310, 1311, 1351, 1352, 1353, 1369, 1370, 1371	Medium & Low-Density Residential	Dk.Orange Orange, Lt. Orange	237
Princeton	SW 240th Street to SW 256th Street, SW SW127thto SW 137th Av	1363, 1373, 1374, 1375, 1376, 1382, 1383, 1384, 1385, 1387	Medium & Low-Density Residential	Red, Dk.Orange Lt. Orange	314
Naranja, Leisure City	SW 256th Street to SW 288th Street, US-1 to SW 137th Av.	1379, 1389, 1391, 1392, 1393, 1394, 1397, 1398, 1423	Medium & Low-Density Residential	Red, Dk.Orange Lt. Orange	458
Homestead, Florida City	SW 296th Street to SW 360th Street, SW147th to SW 197th Av	1431, 1436, 1439, 1440, 1441, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455	Medium & Low-Density Residential	Dk.Orange Orange, Lt. Orange	366

Table 4-8
Stated Willingness to Use the Busway if by a Feeder Bus – Potential by Community

Area Name	Location	Transportation Analysis Zone (TAZ)	General Land Use	Map Color	Market Potential Score
West Kendall	Kendall to Killian Dr., and SR 874 to SW 147th Av.	1168, 1169, 1170-1173, 1176, 1177, 1217, 1219, 1222, 1224, 1225, 1227, 1228	Medium & Low-Density Residential	Red, Orange, Lt.Orange	350
Pinecrest, Palmetto Bay	SW 104th Street to SW 184th Street Old Cutler Rd to US-1	1132, 1135, 1136, 1137, 1138, 1139, 1142, 1145, 1146, 1158, 1159, 1160	Estate-Density Residential	Lt.Orange Orange, Yellow	165
Howard	SW 112th Street to SW136th Street US-1 to SW 107th Av	1163, 1164, 1178, 1181, 1182, 1183, 1200	Estate-Density Residential	Lt.Orange Orange, Yellow	77
Richmond Heights	SW 136th Street to SW 152nd Street US-1 to SW 127th Av	1190, 1191, 1198, 1199, 1201, 1202	Medium, Low, & Estate-Density Residential	Red, Orange, Lt.Orange	263
Palmetto Estates	SW 152nd Street to SW 168th Street US-1 to Turnpike	1192, 1193, 1197	Low-Density Residential	Dk.Orange Lt.Orange	134
Country Walk, West Richmond	South of Tamiami Airport, west of Metrozoo	1267, 1275, 1276, 1277, 1279, 1280, 1282, 1283, 1284, 1285, 1286	Medium, Low, & Estate-Density Residential	Dk.Orange Orange, Yellow	288
West Perrine	SW 168th Street to SW 184th Street US-1 to Turnpike	1194, 1195, 1196	Medium & Low-Density Residential	Orange, Lt.Orange	77
East Perrine	SW 168th Street to SW 184th Street SW87th Av to US-1	1124, 1125, 1126, 1127	Low-Density Residential	Lt.Orange, Yellow	26
South Miami Heights	SW 184th Street to SW 216th Street SW 127th Av to US-1	1315, 1316, 1317, 1318, 1319, 1320, 1321, 1322, 1323, 1324	Medium & Low-Density Residential	Dk.Orange Orange, Yellow	319
Cutler Ridge / Franjo	SW 184th Street to SW 216th Street Old Cutler Rd to US-1	1327, 1328, 1329, 1330, 1331, 1332, 1341, 1342, 1343, 1344, 1345, 1349, 1350	Low-Density Residential	Dk.Orange Orange, Lt.Orange	206
Saga Bay	Old Cutler Rd to SW 216th St, SW 87th Avenue to Bay	1328, 1334, 1336, 1338, 1339, 1340	Medium & Low-Density Residential	Dk.Orange Lt.Orange	98
Goulds	SW 216th Street to SW 232nd Street, SW 87th to SW 137th Av	1309, 1310, 1311, 1351, 1352, 1353, 1369, 1370, 1371	Medium & Low-Density Residential	Orange, Lt.Orange, Yellow	237
Princeton	SW 240th Street to SW 256th Street, SW SW127thto SW 137th Av	1363, 1373, 1374, 1375, 1376, 1382, 1383, 1384, 1385, 1387	Medium & Low-Density Residential	Red, Orange, Lt.Orange	299
Naranja, Leisure City	SW 256th Street to SW 288th Street, US-1 to SW 137th Av.	1379, 1389, 1391, 1392, 1393, 1394, 1397, 1398, 1423	Medium & Low-Density Residential	Red, Dk.Orange Lt.Orange	397
Homestead, Florida City	SW 296th Street to SW 360th Street, SW147th to SW 197th Av	1431, 1436, 1439, 1440, 1441, 1447, 1448, 1449, 1450, 1451, 1452, 1453, 1454, 1455	Medium & Low-Density Residential	Dk.Orange Orange, Lt.Orange	355

The "market potential score" is a relative measure of the probability of Busway transit feeder bus utilization by the residents of a transportation analysis zone (TAZ) if the Busway feeder were to serve the community. The score is the sum of the product of the percentage of people who answered "yes" to the question 14 or question 15 on the phone survey, weighted (multiplied by) by the population[1] for each TAZ. Question 14 and 15 are:

Question 14:
A "feeder" bus is a bus that travels through neighborhoods and drops passengers off at major bus and rail transit stops. If such a route existed in your neighborhood, would you be willing to use it to go to the South Dade Busway?

Question 15:
What about to Metrorail?

The response possibilities were: 1) yes, 2) no, 3) maybe, and 4) don't know / refused. Only the "yes" responses were used.

Algebraically, the score can be written as below. The first two terms are for "yes" responses to question 14 or 15, with the last term subtracting out the double counting for people that would be willing to use a feeder to reach the Busway or Metrorail (answered "Yes" to both questions).

$$\text{Market Potential Score}_{TAZ} = (Q14^{YES}_{TAZ} \times \text{population}_{TAZ}) + (Q15^{YES}_{TAZ} \times \text{population}_{TAZ}) - (Q14^{YES}_{TAZ} \text{ and } Q15^{YES}_{TAZ} \times \text{population}_{TAZ})$$

Each municipality or community is geographically comprised of several TAZs. Having the market potential score for each TAZ, the scores were summed to provide scores by communities.

This is considered a score as it should not be considered actual potential ridership. The number of persons that would make a change in travel behavior is a smaller part of the number that state that they would when asked in a survey.

Note 1: Only resident populations were used. The TAZ-level population data is based on the MPO's Miami Urbanized Area Transportation System model data. Employment populations ere not used since the survey was conducted for households and targets only residents.

South Dade Busway Feeder Study

Section 5

(Task 3)

South Dade Planned Developments

Future Major Development in the South Dade Busway Service Area:

Downtown Kendall

East Kendall

Miami Metro Zoo

Perrine / Quail Roost Transit Village

Cutler Ridge Urban Center

Old Cutler Road Charrette Area

Goulds

Princeton

Naranja

Leisure City

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South Dade Planned Developments

The South Dade Transit Feeder Study is based on data and analysis concerning three markets: 1) existing transit users whose needs are represented by parking utilization data, the park-and-ride license plate survey, the park-and-ride kiss-and-ride license plate survey, and the Metrorail and Metrobus passenger surveys; 2) potential transit users from existing South Dade residents, represented by the County Commission District 8 and 9 telephone survey; and 3) potential transit users from among future South Dade residents.

This section looks at long-range land use plans and other development initiatives that have been identified by the County and private business interests. For the purposes of the South Dade Busway Transit Feeder Study, the interest in these plans is three-fold:

1. Identify future transportation potential in South Dade in terms of their orientation toward a greater transit utilization (mode split).
2. Identify major changes in future land use, or major planned developments that create significant geographical aggregations of future residents or that create significant trip attractions such as employment centers or retail centers.
3. Identify plans that include recommendations that directly effect infrastructure or urban design aspects of the South Dade Busway.

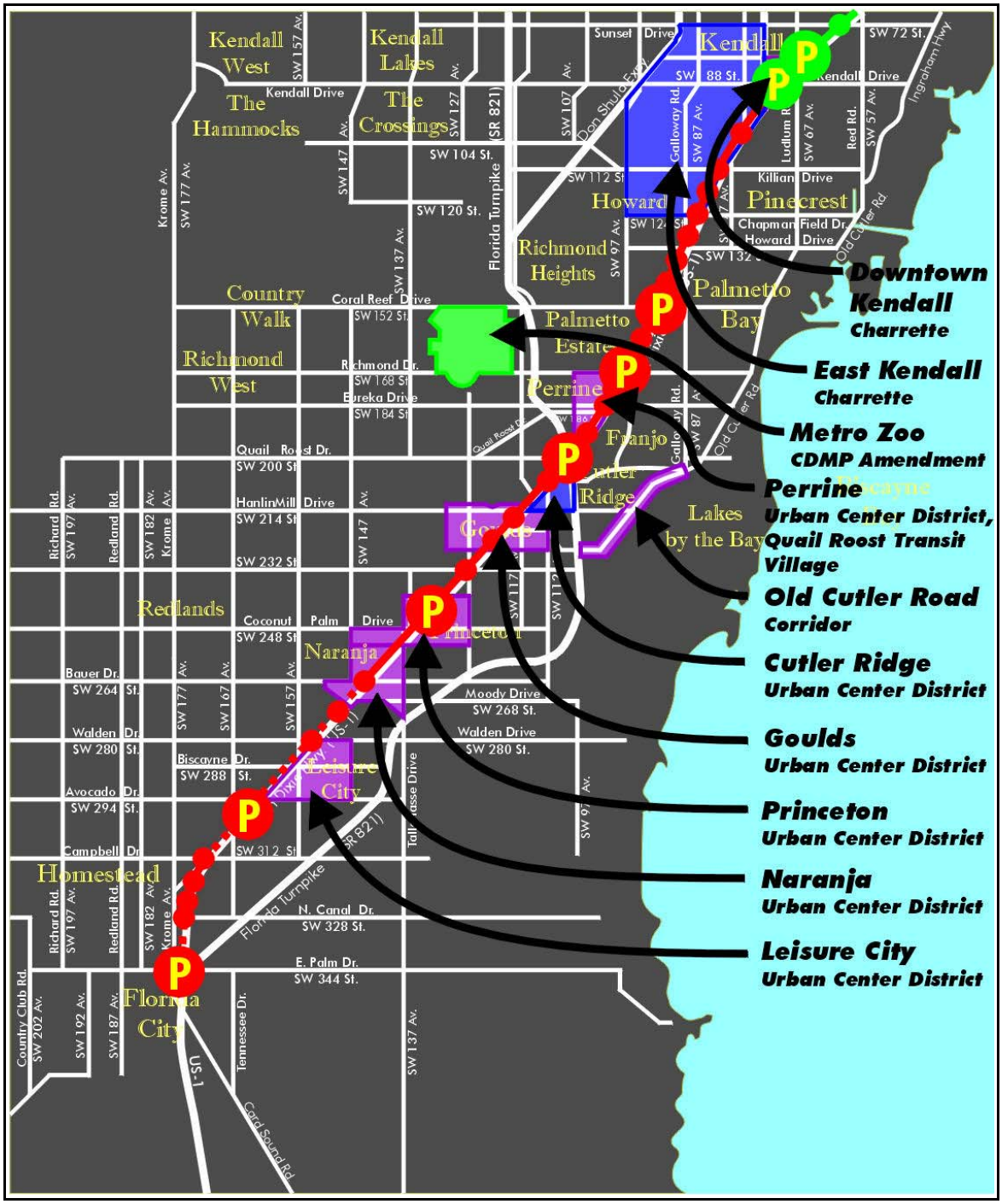
Ultimately, the purpose is to integrate Busway Feeder transit planning with these proposals to provide infrastructure to reduce the potential single-occupant vehicle trip generation of these plans. The major development initiatives have been identified by the Dade County Department of Planning and Zoning, and incorporated into several charrette planning process to direct growth consistent with community desires, the ability to provide infrastructure, and good planning principals. The development initiatives include:

- Downtown Kendall (1998)
- East Kendall Charrette (2006)
- Miami Metro Zoo CDMP Land Use Amendment and Development Order
- Perrine Charrette and Urban Center Zoning District (2003), and the the 2005 proposal for the Quail Roost Transit Village
- Downtown Cutler Ridge Charrette and Metropolitan Urban Center Zoning District (2002)
- Old Cutler Road Charrette (2002)
- Goulds Charrette and Urban Center Zoning District (1999)
- Princeton Charrette and Urban Center Zoning District (2003)
- Discover Naranja Charrette and Urban Center Zoning District (2001)
- Leisure City / Naranja Lakes Charrette and Urban Center Zoning District (2004)

For each of these planning initiatives, a section is included hereto describe the development initiative in general and its location, describe the design proposals to improve transit use,

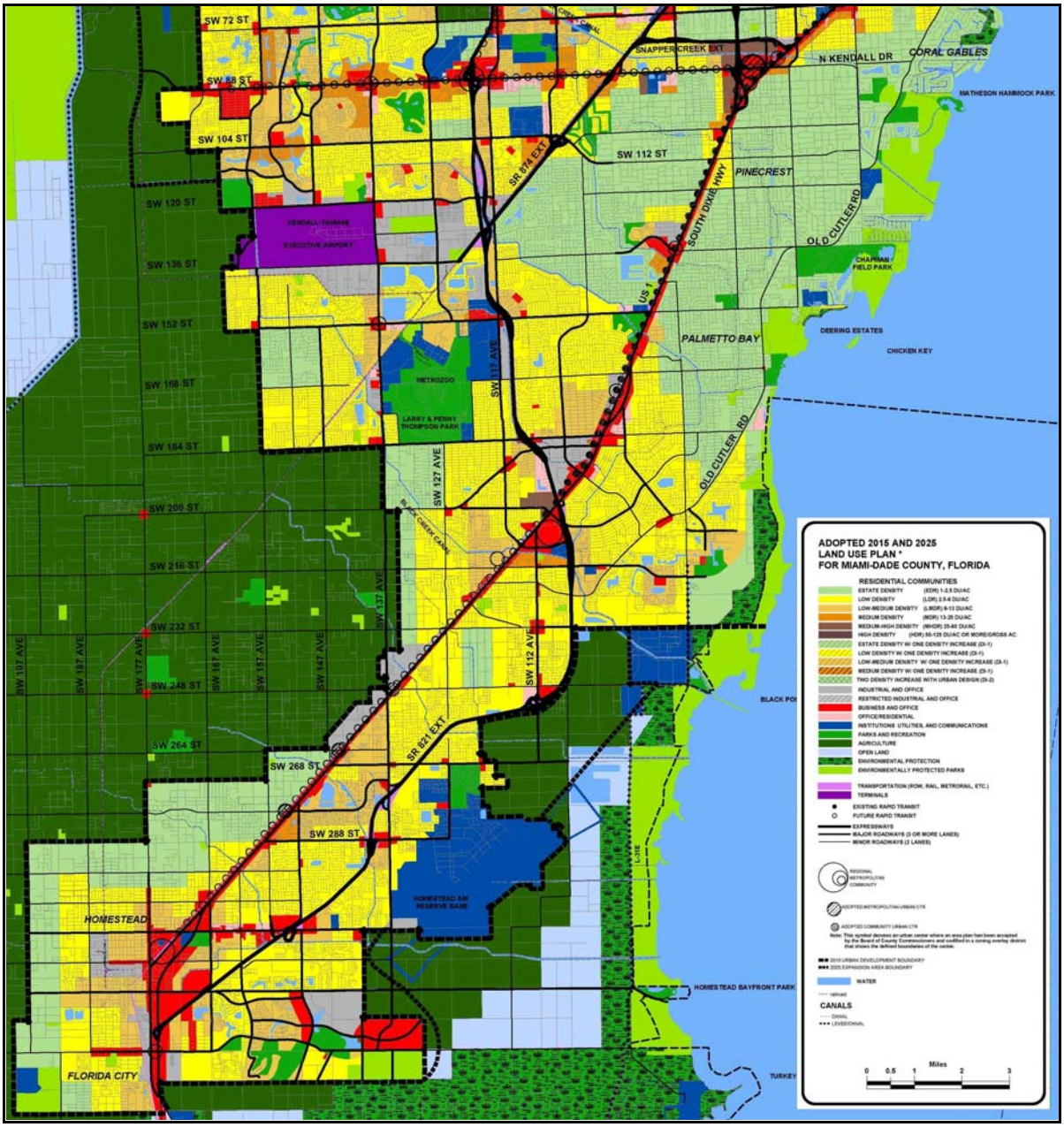
identify development proposals and their impact on trip generation, and summarize their impact or affect on planning for park-and-ride and feeder services to the South Dade Busway. Figure 5-1 shows the location of each of the development initiatives, relative to the South Dade Busway.

Figure 5-1
South Dade Development Initiatives



Also relevant to the evaluation of future transportations needs are the planned land uses and land use densities, populations, and employment levels. The future land uses and densities are studied and updated periodically by the Dade County Department of Planning and Zoning (DPZ), and included in the Future Land Use Element of the Dade County Comprehensive Development Master Plan (CDMP) the map component of this plan is called the Future Land Use Map (FLUM). The current FLUM for the horizon years 2015 to 2025 has been excerpted as Figure 5-2 to show the South Dade area land uses.

Figure 5-2
South Dade Future Land Use Map, 2015-2025



Populations and employment figures are maintained by the Miami-Dade Metropolitan Planning Organization (MPO) and included as an input (z-data0 to the County's transportation network travel demand model (Miami Urbanized Area Transportation System, MUATS). As part of the MUATS model, population and employment are geographically maintained by Transportation Analysis Zones (TAZ). Figure 5-3 provides population densities by TAZ. Figure 5-4 provides employment densities by TAZ.

Figure 5-3
South Dade Urbanized Area Future Population Density by TAZ, 2015-2025 Model
(Flagler Street to SW 344th Street, to Urban Development Line)

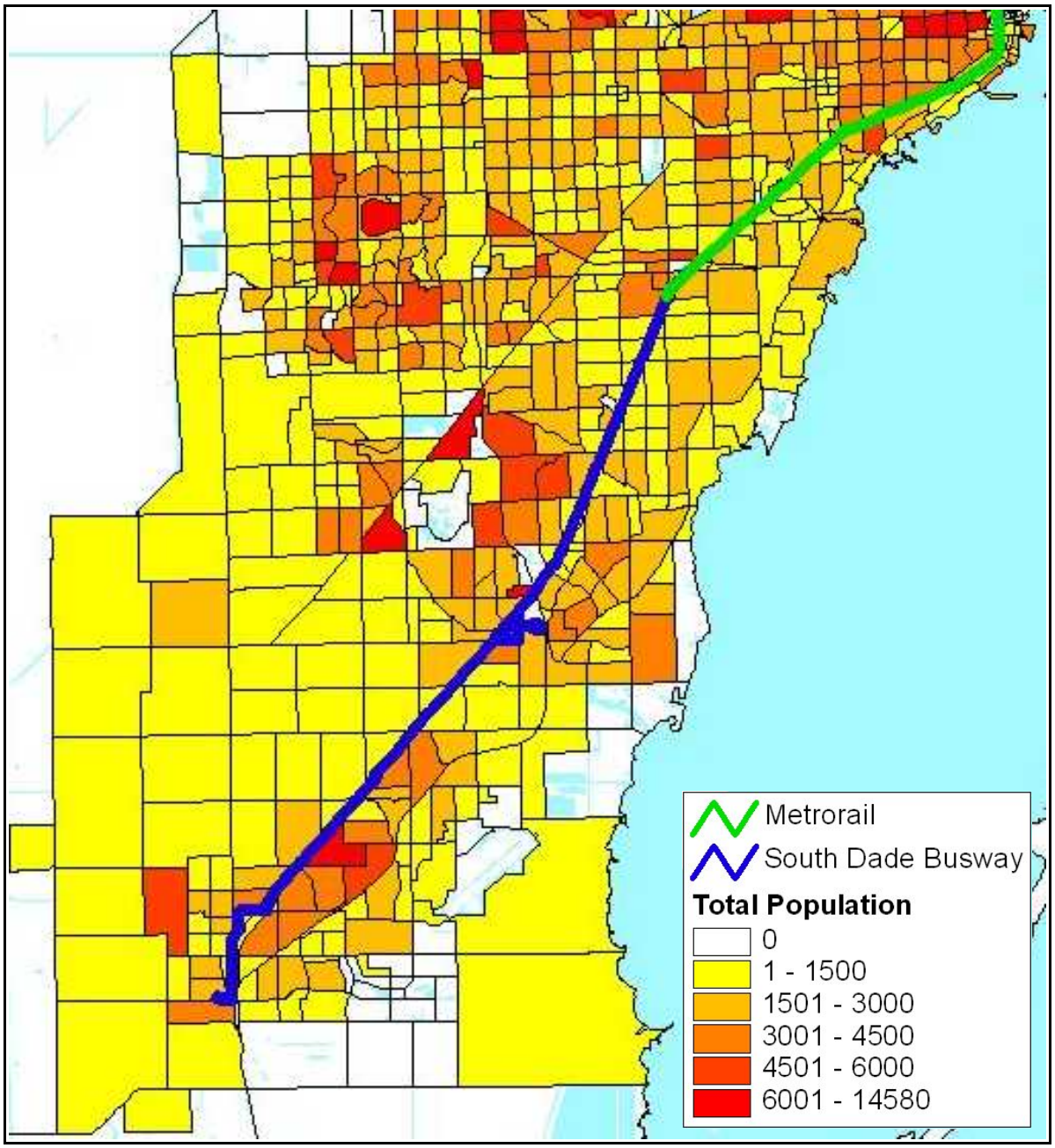
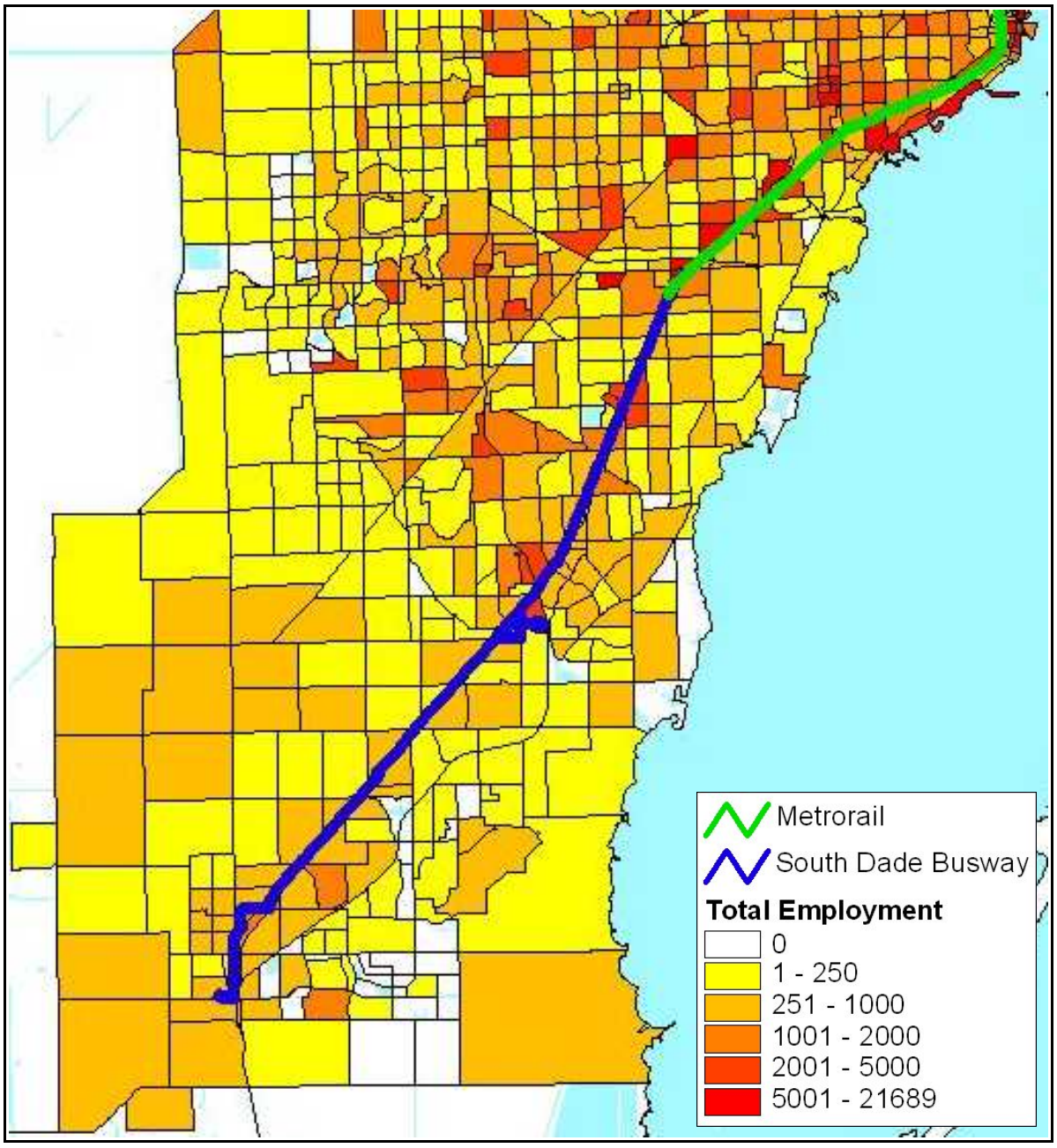


Figure 5-4
South Dade Urbanized Area Future Employment Density by TAZ, 2015-2025 Model
(Flagler Street to SW 344th Street, to Urban Development Line)



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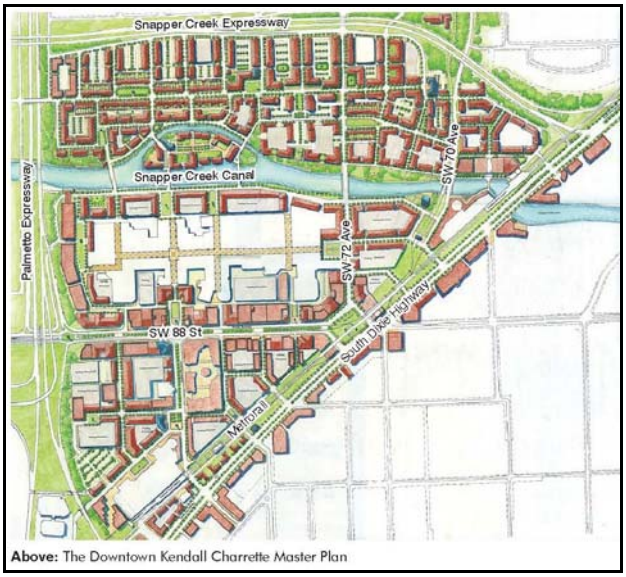
Downtown Kendall

The Downtown Kendall Charrette completed in1998 to respond to Citizens' requests to build consensus to the Dadeland - Datran area vision. The Board of County Commissioners subsequently approved and adopted the Downtown Kendall Charrette Master Plan (DKMP) and the Downtown Kendall Urban Center District (DKUCD) as the land use ordinance (Sec. 33-284.5-.65) that implements the plan.

Figure 5-5
Downtown Kendall Master Plan



Above: The Downtown Kendall Charrette Master Plan

The Master Plan and the DKUCD ordinance focus primarily on design of the infrastructure and the built environment. The focus is two-fold: 1) to reinforce the establishment of the role Kendall Drive as the community's main street; and 2) to establish Dadeland Boulevard as the downtown cross-street to Kendall Drive that will serve the increasingly important and vital role of connecting Metrorail and the Busway at the Dadeland South Station.

The recommendations of the downtown Kendall Master Plan include:

- Locating all parking either behind buildings or on-street
- Locating building frontage along the street edge
- Achieving the correct relationship of building height to the street to create a sense of enclosure
- Accommodate pedestrian activity with wider sidewalks, and colonnades or arcades
- Providing that street-fronting uses are active with doors and windows at the sidewalk.
- Provide that buildings along the streets have a vertical mix of uses, with offices or residences on upper floors to increase the vitality of the neighborhood.

The recommendations of the Master Plan do not identify specific development, land use changes, or land use intensity changes that would measurably impact trip generation to the area or mode split into and out of the area.

The impact of the Downtown Kendall Master Plan is to promote that future development be pedestrian oriented, mixed uses, with the reasonable expectation that transit mode share to trips originating or destined to the area grow as a percentage of total trips.

At this time, with the area already containing over 3,000 park-and-ride spaces at the Metrorail stations, there is no justification by the Downtown Kendall Master Plan to consider the area for specific transit feeder services for the South Dade Busway.

Drawing source: Downtown Kendall Charrette Master Plan Report, 1998, Duany, Plater-Zyerk & Company, Dover, Kohl & Partners

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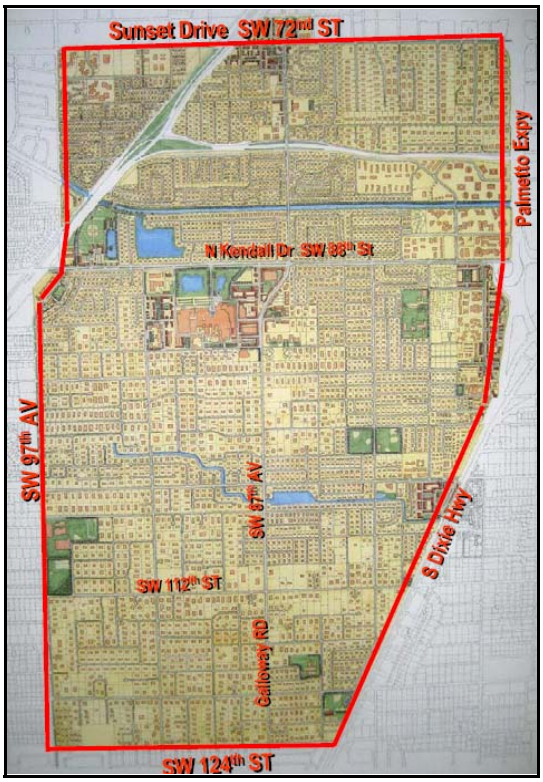
East Kendall

The East Kendall Master Plan (EKMP) was performed in 2006. The Master Plan is a current planning effort, and has not been approved at this time. Adoption by the Board of County Commissioners, and subsequent development and adoption of an implementing East Kendall Urban Center Zoning District Regulations can be anticipated.

Figure 5-6
East Kendall Master Plan



The East Kendall Area is located directly to the west of and abutting the Downtown Kendall Area. It is bound by Sunset Drive (SW 72nd Street) to the north, the Palmetto Expressway and South Dixie Highway (US-1) to the east, SW 97th Avenue to the west, and Chapman Field Drive (SW 124th Street) to the south.

The East Kendall Master Plan responds to community needs, and provides specific recommendations in three areas:

1) Public infrastructure improvements;

2) Major redevelopments, and

3) Transit improvements.

Infrastructure improvements recommended in the EKMP include:

- Numerous traffic calming measures in the residential neighborhoods and other traffic management recommendations for specific trouble spots along Kendall Drive, South Dixie Highway, SW 97th Avenue, and Galloway Road (SW 87th Avenue);
- Additional green spaces, existing park improvements, green streetscapes using medians and planting areas, and improved, more complete greenways connections;
- Monuments and other "signature" entryway features to define the area

Regulatory improvements recommended in the EKMP include:

- Means to address parking deficiencies in the medical office area along the SW 87th Avenue Mixed Use District / Medical Office Area

T
he major redevelopments identified or recommended in the EKMP include:

- Baptist Hospital Expansion

The Baptist Hospital currently employs 4,200 persons. Its on-going expansion will include 600,000 square feet of medical and related office space. As part of its expansion plan, the hospital has recently constructed a 984-space garage.

- Mission Bell Site
  The site is a vacant parcel south of the Kendall Hotel, and is recommended to be developed as a mixed-use development area with business and office uses at the ground floor, and residential spaces above. The site is approximately 2-blocks and the recommendation is for medium intensity structures of approximately 3 stories. The recommendation does not include the number of residential units, nor commercial floor area estimates.

- Kendall Hotel
  The Kendall hotel was approved in 2005 for an expansion including 210 additional hotel rooms and a 2-story parking structure in a 9-story building. Since then, a modification has been requested for the expansion to include 308 condo-hotel units and 4 parking levels in a 9-story structure.

- SW 87th Avenue Mixed Use District / Medical Office Area
  In addition to regulatory means to address the parking deficiencies in this area EKMP also identified potential redevelopment of the area as medium intensity structures of approximately 3 stories. The recommendation does not include the number of residential units, nor commercial floor area estimates.

- Sunset Business Area
  Located at the corner of sunset Drive and SW 87th Avenue, this shopping center is anchored by a Winn Dixie. The Master plan recommends redeveloping it as a more pedestrian oriented business center by adding additional habitable space in the parking lot near the street corner. Additional retail space would be added to the shopping center as well as the blocks to the north and west; however, the Plan does not provide an estimate of added space.

- K-Land Area
  Originally the location of the Dade County Youth Fair, the site has been a park since the 70s. The Master Plan recommends renovation of the park, but to retain its use as a park. Redevelopment of the business buildings to the west is also recommended.

- Suniland Area
  At the corner of SW 120th Street and the Busway, this is the site of the former paint testing facility, and has been for sale. The Master Plan recommends a County purchase, and creating a park, community pool, and public library branch at the location.

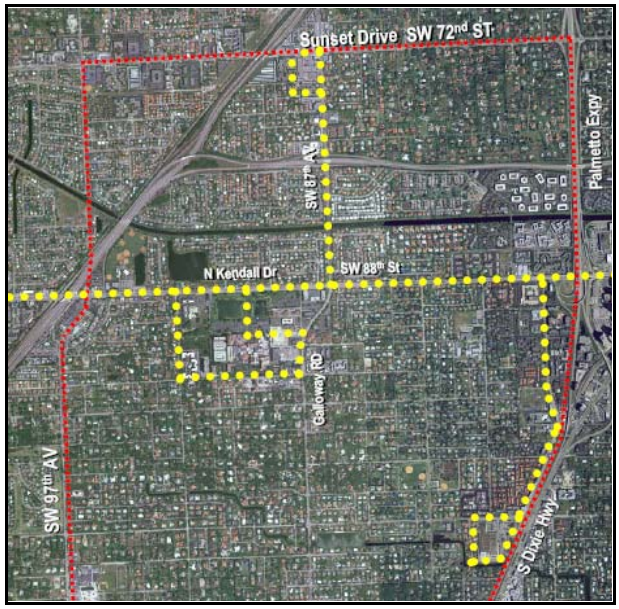
The transit improvements recommended in the EKMP include:

- Metrorail Extension:
  Following the completion of the South Link Alternatives Analysis, the Miami-Dade MPO selected the Bus Rapid Transit (BRT) alternative that includes extension of Metrorail from Dadeland South, past the Palmetto Expressway, to a new station to be located just south of SW 104th Street. The tracks would be extended at grade along the Busway right-of-way from SW 98th Street, rising again to cross SW 104th Street. The EKMP recommends the extension of Metrorail with a station area redevelopment to South Dixie Highway and SW 104th Street. The Master Plan does not identify an estimate of additional redevelopment floor are or residential units.

Figure 5-7
Killian Drive Metrorail Station Proposal

- East Kendall Streetcar Route:
  The Master Plan, in response to stated community desires, recommends a streetcar / bus trolley route (shown) to connect locations along east Kendall Drive with Baptist Hospital, the Sunset Business Area, and the Busway or future Metrorail extension at the 104th Street Station.

Figure 5-8
East Kendall Streetcar Route Alignment Proposal



Impacts to South Dade Busway Feeder Service Planning:

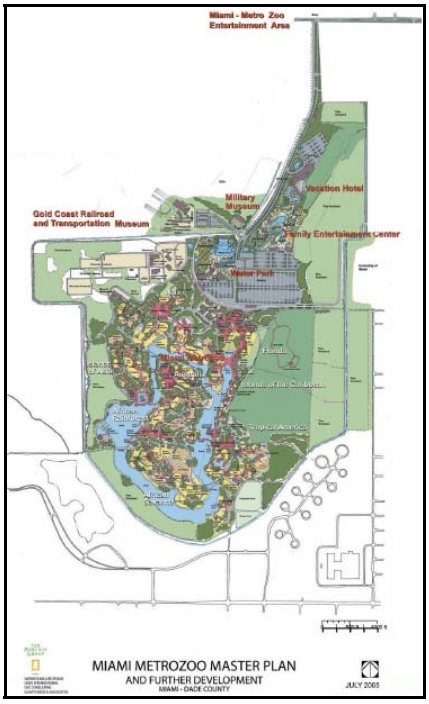
The East Kendall Master Plan includes several significant redevelopment initiatives or private redevelopments that are underway. Among them the Sunset Business Area, Baptist Hospital expansion, 87th Avenue Mixed-Use District, Mission Bell Site, and Kendall Hotel expansion could create significantly improved and more intense mixed use areas, that with the stimulation of greater pedestrian activity could justify feeder service to these areas. The Master Plan has already identified the potential for transit use by these developments and suggested a service. The circulator / feeder service that is recommended in the EKMP is more properly a feeder to Metrorail; however, due to the inclusion of the 104th Street Station, it will for the short to medium-term time horizon be considered for Busway feeder service.

The Metrorail extension to SW 104th Street is of significant importance to considering Busway feeder services in this area; however, the time horizon for the extension is temporally beyond the scope of considerations for this study.

Miami Metro Zoo

In June 2007, an application was filed for a Development of Regional Impact (DRI) and concurrent amendment of the Dade County Comprehensive development Master Plan (CDMP) that proposes redevelopment of parts of the Metro zoo property.

Figure 5-9
Metrozoo Master Plan



The site of the Miami Metro Zoo application is generally bound by Coral Reef Drive (SW 152nd Street) to the north, SW 117th Avenue to the east, SW 137th Avenue to the west, and Eureka Drive (SW 184th Street) to the south.

The application proposes to add 193 acres to the original DRI increasing it from 1,010 acres to 1,203 acres, and to develop the Miami Metro Zoo Entertainment Area that may include:

- Water park
- Family entertainment center
- Gold Coast Railroad and Museum, and
- Vacation hotel

With regard to transit service needs, the application provides that existing service to the Metro Zoo, provided by Route 52, the West Dade connection (Route 137). Neither Route 52, nor the West Dade Connection provide direct service at this time. The Coral Reef MAX (Route 152) will provide service given programmed improvements in the 2006 Transit Development Plan (TDP) and People's Transportation Plan (PTP). in addition, a new bus route in the TDP, the Quail Roost MAX would provide limited-stop, peak service along Quail Roost Drive (SW 184th Street).

The application submits that the project meets transit concurrency and would not warrant additional changes to existing or planned transit service improvements. Still, while the trip generation impact of the proposal is measured against the Original DRI, actual trip generation for the proposal above the existing trips generated by Metro Zoo are significant. Table 5-1 summarizes the trip impact, and potential transit impact at a mode split of 5%. The potential for transit trips by the Miami Metro Zoo expansion warrants consideration of feeder services as part of this study.

Table 5-1
Miami Metro Zoo Expansion Trip Impacts

	Weekday	Weekday AM Peak	Weekday PM Peak	Sunday	Sunday Peak
Additional Trips above Existing Trips	6,948	210	470	10,507	1,102
Transit Mode Share of Additional Trips	347	10	24	525	55

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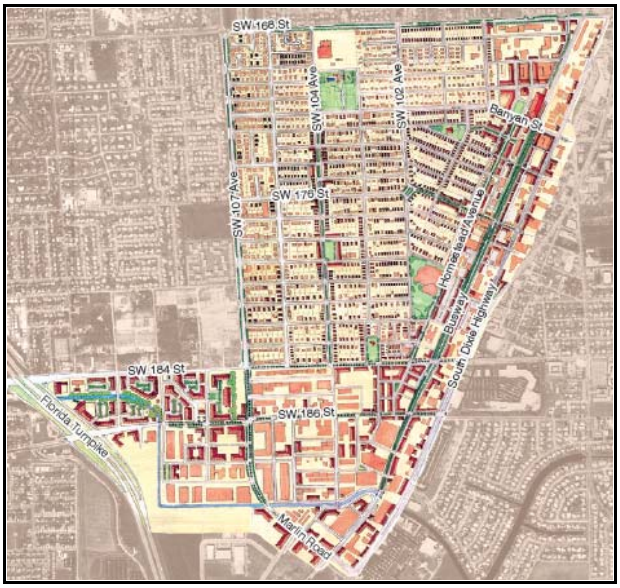
Perrine

The Perrine Charrette Area Plan (PCAP) was performed in 2003. The Area Plan is complete and has been adopted: however, while the implementing ordinance for the Perrine Community Urban Center Zoning district Regulations has been prepared, it has not yet been adopted as ordinance.

Figure 5-10
Perrine Charrette Area Plan



The Perrine Area is located on the west side of the South Dade Busway. It is bound by Quail Roost Drive (SW 168th St.) to the north, South Dixie Highway (US-1) to the east, SW 107th Avenue and the Florida Turnpike to the west, and Marlin Road to the south.

The Perrine Charrette Area Plan responds to community needs, and provides recommendations in five areas:

- Develop Homestead Avenue as the main street to the community, and reposition Hibiscus Street as a residential boulevard;
- Improve vehicular circulation and transit in a manner that is supportive of a pedestrian environment;
- Transform the US-1 Corridor as a signature boulevard with new mixed-use buildings along the Busway;
- Develop a station area mixed-use development as part of a proposal to extend Metrorail to Perrine;
- Create new infill housing and convert or replace public housing with affordable single-family owned homes;
- Improve the infrastructure and appearance of the industrial district between Eureka Drive and Quail Roost Drive.

Pertinent to planning for park-and-ride facilities and complementary transit feeders to the South Dade Busway are the proposal for greater mixed use development along the Busway, and for a station area development.

Of interest to transit feeder planning is the development of more mixed use buildings along the Busway; however, the recommendation does not include specifics to gauge the intensity of the potential development. The development of a more pedestrian-oriented street environment also has the potential to improve transit mode share from and to the community; however, at this level of planning detail it is not a measurable effect, and cannot

be utilized independently of other data to suggest planning for transit feeder services for the Busway.

The long-term station area development that is proposed is based on the extension of Metrorail to Perrine. The proposal recommends the location of the station area at the intersection of the Busway / Homestead Avenue and Banyan Street.

The proposal suggests a highly urban station area with illustratives that show significant redevelopment intensities of use; however, specific floor areas on residential densities are not provided. The time horizon of the potential Metrorail extension to Perrine is beyond the time-line of this study.

In the short term, the Charrette recommendation are the subject of the 2005 Quail Roost Transit Village, that has been proposed for the station area.

Figure 5-11
Perrine Station Area Development

Figure 5-12
Perrine Station Area Street Elevations and Sections

Quail Roost Transit Village

The Quail Roost Transit Village is a unsolicited proposal that was received by Miami Dade Transit in 2005 from the West Perrine Community Development Corporation (WPCDC) in partnership with their developer, Transordev, LLC. Subject to successful negotiations the developer proposes to develop a transit-oriented development (TOD), to be called Quail Roost Transit Village, on the 8.51 acres that are immediately west of the Busway and between SW 184th Street and 186th Street. The mixed-use project is proposed to include:

- a 500-space parking garage for Busway transit riders;
- 3 bus bays to the west of the transit parking for transfers to non-Busway routes (Busway station is east of parking;
- 16 small (less than 4,000 s.f.) and 4 large (4,000 s.f. or more) retail and commercial spaces on the ground floor, totaling approximately 72,000 square feet of floor space
- affordable housing, including 264 multi-family residential units (based on 5 story heights), with 12 townhouse units;
- over 1,000 parking spaces for the private uses included within the project.

The current status of the proposal is that it is still in planning permitting. During 2006 and 2007, the developer was been working with the County staff to obtain a small-scale amendment to the County's CDMP, to allow the uses. The amendment was approved in 2007. The subsequent zoning change, that is required was applied for in 2007.

MDT has received preliminary cost estimates of $12,760,049 ($25,520 /parking space) to build the parking facility, and is in the process of securing funds for the project. The County is in the process of identifying full funding for the project. $2,458,000 has been identified from federal sources as of July 2007.

Figure 5-13
Quail Roost Transit Village Proposal
Typical Floor Plan

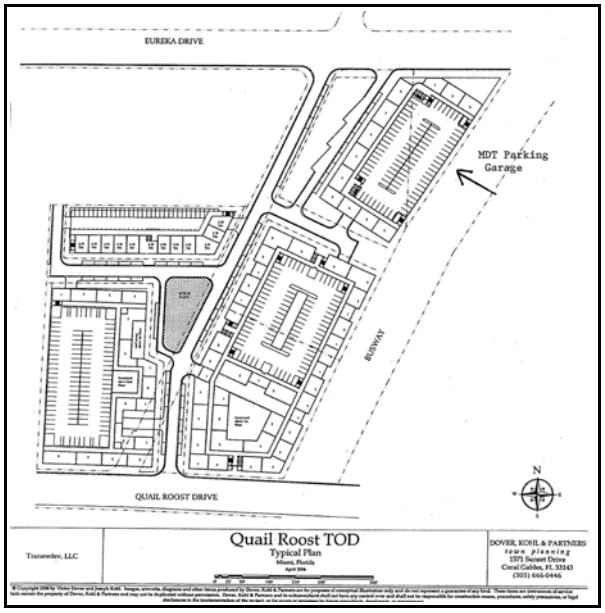
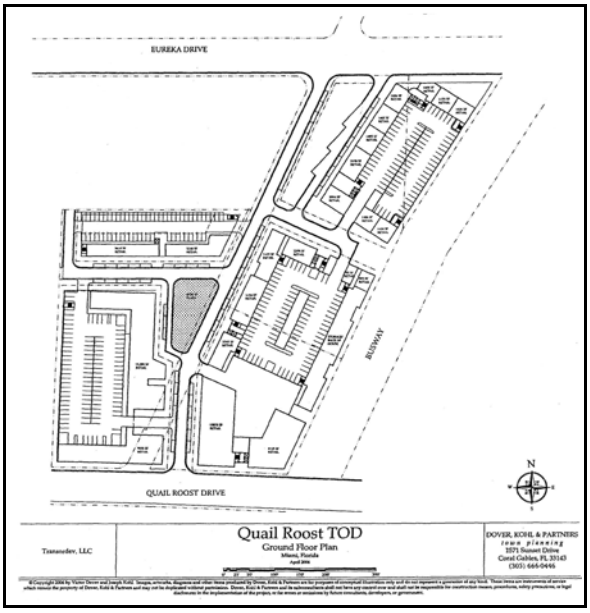


Figure 5-14
Quail Roost Transit Village Proposal
Ground Floor Plan



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Cutler Ridge

The Cutler Ridge Master Plan (CRMP) was performed in 2002. The Master Plan is complete and has been adopted by the Board of County Commissioners (BCC). Subsequently the BCC approved and adopted the Cutler Ridge Metropolitan Urban Center District (CRMUCD) as the land use ordinance (Sec.33-284.99.23 – 99.30) that implements the plan.

The Cutler Ridge Master Plan district is located on the east side of the South Dade Busway ad US-1. It is a triangular-shaped area of 220 acres, and it is bound by South Dixie Highway (US-1) to the northwest, the Florida Turnpike to the northeast, and Black Creek Canal to the south.

Figure 5-15
Cutler Ridge Master Plan

The goal of the Cutler Ridge Master Plan responds is to create a framework to develop Southland Mall's underutilized land into a recognizable center for the community, and complement substantial government investments along SW 211th Street. There are three groups of recommendations:

1) Private redevelopment,
2) Publicly owned / funded redevelopment,
3) Regulatory improvements, and
4) Public infrastructure improvements.

Private redevelopment recommends in the CRMP include:

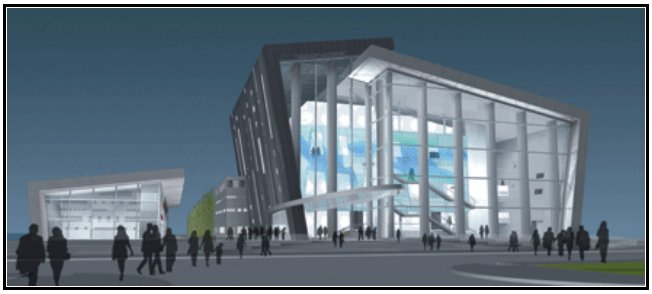
- Southland Mall, Sears, the Ocean Federal Bank, Suntrust Bank, and other out-parcels together contain approximately 1,119,000 square feet of retail and other commercial space on approximately 100 acres of land. The CRMP recommends redeveloping the mall as a pedestrian-friendly mixed-use redevelopment, incorporating retail and business uses, possibly residential uses or other flex space. The Master Plan does not include in its recommendations an estimated build-out in terms of additional square feet of commercial space or number of residential units; however, the core area of the redevelopment will be permitted to a 10 to 12 stories. The

periphery of the mall area will be developable to 3 stories of residential at 52 dwelling units per acre (DU/Ac) (or 60 with purchase of Severable Use Rights (SUR))

Public redevelopment recommends in the CRMP include:

- The South Dade Government Center is located on the south side of SW 211th Street, at the southeast corner of the Cutler Ridge Metropolitan Area. The South Dade Government Center includes 156,000 square feet of office and public meeting space o 12.5-acre site. The site includes expansive surface parking which is shown in the Master Plan as built environment.
- Abutting and to the west of the Government Center, is the Library and Fire Rescue Station site. Both are County-owned. The 28,000 square-foot regional library and the fire station will be redeveloped and integrated with the future development. Most of the 17.4 acres of land upon which these are sited is being redeveloped (under construction) as the south Dade Performing Arts Center (SDPAC). SDPAC is a 1,000-seat, multi-story performance space, that will include an orchestra pit, performance support facilities, ad administrative spaces, as well as expansive outdoor plaza and outdoor performance spaces.

Figure 5-16
South Dade Performing Arts Center Rendering



- West of the SDPAC, will be joint venture development(s), partially on GSA-owned property, of approximately 400 to 500 market-rate residential units at 52 to 60 DU/Ac. the development will be designed as a pedestrian and transit-oriented mixed use development with ground floor retail / business uses, sidewalks, curbing, and parking within the interior of the blocks, or on-street. The development will be designed to create a highly urban environment served by urban streets with continuous, active, pedestrian paths.

Figure 5-17
Cutler Ridge Residential Area Proposal

- The existing County mosquito control facility, County animal control facility, and GSA vehicle pool facility will be relocated.

Regulatory improvements recommended in the EKMP include:

- In addition to public and market-motivated private development initiatives, the Cutler Ridge Master Plan, is implemented and the scale, shape, and public realm environment of the development is controlled by the adopted Cutler Ridge

Metropolitan Urban Center District (CRMUCD) as an amendment to the County's land use ordinance (Sec.33-284.99.23 – 99.30). The ordinance provides the framework and standards for all future development in the Master Plan area.

Infrastructure improvements recommended in the CRMP include:

- Enhancement of US-1 to provide a gateway to announce arrival into Downtown Cutler Ridge;
- Improvement of public open spaces

Impacts on South Dade Busway Park-and-Ride Transit Feeder Planning:

With regard to the impacts of CRMP to planning for potential feeder services to the South Dade Busway, the redevelopment initiatives of the CRMP are very significant. The CRMP area abuts US-1, and is across US-1 from the Busway. In expanding the variety and intensity of retail, recreation, and employment destinations, external trips and their proportional share of transit trips to the Master Plan area can be expected to increase significantly. In creating a high-density residential district, even after expected higher rates of internal capture, a significant number of new trips will be generated, a share of which will utilize the Busway. Further, that the development provides an environment that promotes pedestrianism and the use of public transportation, will increase the modal share of trips that utilize transit; however the impact of this will not be measurable until after the development is substantially complete.

Based on a rough estimate of potential external trips, there is a significant justification to consider the CRMP area for Busway transit feeder services.

Further, the scale of the development, and their largely public/private participation provides good opportunities to incorporate off-site park-and-ride facilities for regional commuters (outside of residents of the CRMP area) to access the nearby South Dade Busway via transit feeder services.

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Old Cutler Road

The Old Cutler Road Master Plan (OCRMP) charrette was performed in 2002. The Master Plan is complete and has been adopted by the Board of County Commissioners in April 2004 as Resolution #R-439-04.

The Old Cutler Road Charrette included a study area that is on either side of Old Cutler Road from SW 200th Street to SW 224th Street. This corridor and study area address where the historic corridor ends and the developing commercial corridor begins. The commercial corridor has grown to serve the needs of the 3,000 new homes in communities to the southeast of the Corridor.

Figure 5-18
Old Cutler Road Master Plan

The goal of the Old Cutler Road Master Plan is to address the growing development needs with retaining the historic character of the corridor while creating a greater sense of place with the creation of a civic district / town center. Recommendations of the OCRMP include:

- Improve the triangular green along Old Cutler Road to create a center green for the creation of a town center district;
- Provide alternate connections to new committed developments, including connections to the street network east of 87th Avenue, including: at SW 212th Street, SW 97th Avenue, SW 92nd Avenue, SW 224th Street, Franjo Road, and SW 85th Avenue;
- Implement roundabouts at the intersections with SW 87th Avenue, and SW 97th Avenue to provide for traffic calming, more efficient intersection traffic operations, and to provide gateway opportunities to signal the change from the historic corridor to the commercial corridor;
- Implement other traffic calming techniques to support the establishment of a pedestrian town center district, and increase pedestrian and bicycle safety;
- Provide additional green space in medians and along Old Cutler Road;
- Improve sidewalks, drainage and other infrastructure;
- Relocate the Khoury League baseball fields;
- Consolidate driveways and parking lots;
- Create architectural guidelines for future development.

The Old Cutler Road Master Plan does not include any significant redevelopment recommendations, infrastructure improvement, parking opportunities, or recommendations for transit service enhancements that would measurably impact planning for transit feeder services to the South Dade Busway.

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Goulds

The Goulds Community Urban Center (GCUC) charrette was performed in 1999. The Master Plan is complete and has been adopted by the Board of County Commissioners (BCC) in December 2003 as Resolution #R-1321-03. The implementing land development codes have also been amended to the County's land development code as Sec. 33-284.91 through 33-284.99.

Figure 5-19
Goulds Community Urban Center Master Plan

Goulds is just to the south, across Black Creek of the Cutler Ridge Metropolitan Center, and is on both sides of South Dixie Highway (US-1) and the South Dade Busway. The boundaries of the GCUC are Black Creek to the north, SW 120th Avenue to the west, SW 113th Avenue and SW 114th Avenue to the east, and SW 220th Avenue to the south.

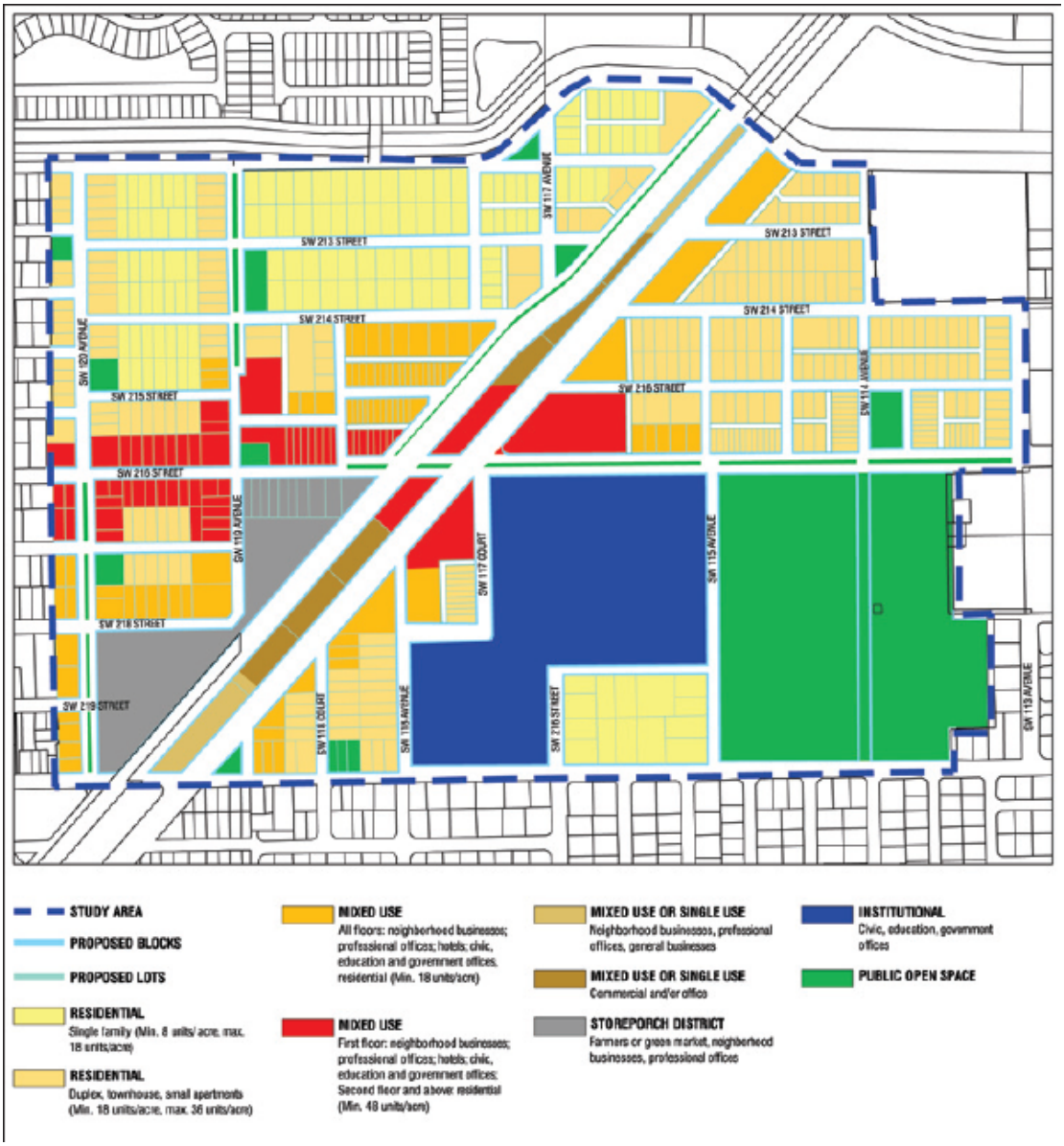
Whereas Cutler Ridge Metropolitan Center just to the north is designated as a regional missed-use live-work commercial center, Goulds is designated as a Community Urban Center to serve a more local service area. Still planned as an urban center, it is planned to be a place where people can live, work, and shop within a convenient walking distance, and have regional access via the South Dade Busway or future rapid transit alternatives. The goals of the GCUC charrette were to address the role of the Goulds CUC within the context of other planned urban centers and its position as a place on the South Dade Busway, to create a small, mixed-use, transit-oriented urban village.

Recommendations of the GCUC include:

- To create a nucleus of the community, Goulds Square at the corner of SW 216th Street and SW 119th Avenue is recommended for revitalization and surrounding redevelopment.
- The plan recommends to position Hainlin Mill Drive (SW 216th Street) as the Goulds main street, to be developed an appropriate scale for comfortable pedestrian activity with fronting mixed-use buildings.
- Implement other traffic calming techniques to support the establishment of a pedestrian town center district, and increase pedestrian and bicycle safety,
- Provide additional, and improved green space
- Improve sidewalks, drainage and other infrastructure;
- Create architectural guidelines for future development;

- Create a land use plan that clusters mixed-use developments around the Hainlin Mill Drive (SW 216th Street) Busway Station. The plan recommends a more intense development around the station of first floor retail and business establishments with residential uses above at a minimum density of 48 units per acre. The transition area around this also includes mixed uses, but a lower intensity, and with the minimum residential density at 18 units per acre.
- The Busway station at SW 200th Street is not emphasized in the plan, and recommendations call for a storefront porch district in that area.

Figure 5-20
Goulds Community Urban Center Land Use Plan



Pertinent to planning for park-and-ride facilities and complementary transit feeders to the South Dade Busway, the recommendation for greater mixed use development in the SW 216th Street Station area is important; however, the recommendation does not include specifics to gauge the intensity of the potential development. To some extent, the development of a more pedestrian-oriented street environment has the potential to improve transit mode share from and to the community; however, at this level it is not a measurable effect, and cannot be utilized independently of other data to suggest planning for transit feeder services for the Busway.

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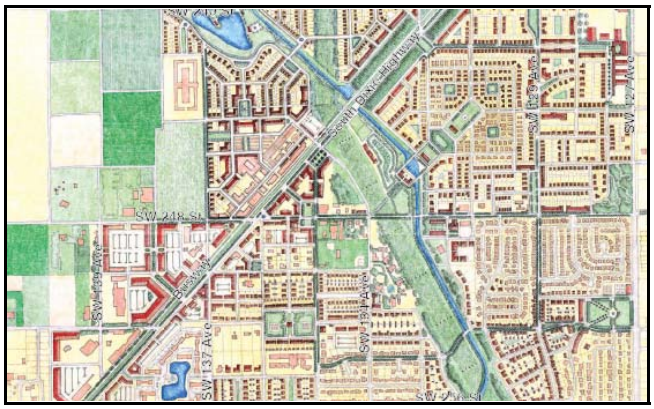
Princeton

The Princeton Citizens' Charrette Area Plan was performed in 2003. The Master Plan is complete and has been adopted by the Board of County Commissioners (BCC). The implementing land development codes have also been amended to the County's land development code as Sec. 33-284.98 through 33-284.99.5.

Figure 5-21
Princeton Charrette Area Master Plan



Princeton, centered along Coconut Palm Drive (SW 248th Street) is on both sides of South Dixie Highway (US-1) and the South Dade Busway. It is located at the SW 248th Street Busway Station Park-and-Ride facility. The boundaries of Princeton are: SW 240th Street to the north, SW137th Avenue and SW 139th Avenue to the west, SW 127th Avenue to the east, and SW 256th Street to the south.

Located at approximately the midpoint between Homestead and the Cutler Ridge Metropolitan Center, Princeton is designated as a Community Urban Center to serve a more local service area as a place where people can live, work, and shop within a convenient walking distance, and have regional access via the South Dade Busway or future rapid transit alternatives.

Princeton is distinguished by several existing features that make it unique: US-1, the C-102 canal, and FPL power transmission lines. The goal of the Princeton Citizens' Charrette Area Plan was to address the role of the Princeton Community Urban Center (PCUC) within the context of these environmental features, and its position as a place on the South Dade Busway, to create a small, mixed-use, transit-oriented, town center that retains its agricultural character.

Recommendations of the PCUC include:

- To create a nucleus of the community, create a new town center by the redevelopment of a new post office, and a new school located around a village green. This center point will be along Coconut Palm Drive (SW 248th Street), which will be improved to become the new main street for Princeton.
- Additional neighborhood centers are recommended near Jordan commons and Princetonian Park.
- A greenway system is proposed along the C-102 canal to provide passive recreational space in addition to other new neighborhood parks.
- New roads are recommended to enhance connectivity throughout Princeton's neighborhoods, along with improved sidewalks, drainage and other infrastructure.

- The segment of South Dixie Highway (US-1) that passes through Princeton is recommended to be improved with a new median and median landscaping, as well as curbing, sidewalk, and tree groves on both sides of US-1.
- Renovate the Bargain town Flea Market at SW 244th Street and US-1 to reposition it as more viable business, and more attractive community establishment.
- Create architectural guidelines for future development.

The Master Plan for the Princeton CUC does not include any redevelopment proposals that would create significant impacts on the need for transit feeder services to the South Dade Busway; however, because the Princeton's Busway station is the SW 248th Street Station, the recommendation to center the community around Coconut Palm Drive (SW 248th Street) as a main street is important.

The charrette for the Princeton CUC may have predated some of the planning and design for the SW 248th Street Busway Station. Additional consideration needs to be given to the impact and benefit of the Princeton town center location near the Busway Station, as well as the need for possible transit feeder or circulator connections from the SW 248th Street Busway Station along the main street and to the proposed school.

Figure 5-22
Princeton Master Plan

Naranja

The Naranja Master Plan was performed in 2001. The Master Plan is complete and has been adopted by the Board of County Commissioners (BCC) by Resolution R-945-03 in September 2003. The implementing land development codes have also been amended to the County's land development code as Sec. 33-284.55 through 33-284.65.

Naranja, centered along Bauer Drive (SW 264th Street) is on both sides of South Dixie Highway (US-1) and the South Dade Busway. It is located at the SW 264th Street Busway Station. The boundaries of Naranja are: SW 256th Street to the north, a diagonal line approximately ¼-mile northwest of US-1 on the west, SW 137th Avenue to the east, and SW 272nd Street to the south.

Figure 5-23
Naranja Master Plan

Naranja is designated as a Community Urban Center to serve the local service area as a place where people can live, work, and shop within a convenient walking distance, and have regional access via the South Dade Busway or future rapid transit alternatives.

The goal of the Naranja Master Plan was to address the role of the Naranja Community Urban Center (NCUC) within the context of its position as a place on the South Dade Busway, to promote a transit-oriented community, with a mixed-use village center that preserves the community's heritage.

Recommendations of the NCUC include:

- To create a nucleus of the community, create a new town center by the redevelopment of the area east of US-1 and between SW 264th Street and SW 268th Street.
- Provide additional and improved community green space, pocket parks, and pedestrian plazas.
- Improve neighborhood infrastructure, including streets, sidewalks, street furniture, and landscaping to create a safe and comfortable pedestrian realm.
- The segment of South Dixie Highway (US-1) that passes through Princeton is recommended to be improved with a new median and median landscaping, as well as curbing, sidewalk, and tree groves on both sides of US-1.

- Encourage development that promotes transit use.
- Attract additional business uses to increase the employment base for the area.
- Promote local ownership of properties, businesses, and development.
- Create architectural guidelines for future development.

The Master Plan for the Naranja CUC does not include any redevelopment proposals that would create significant and measurable impacts on the need for transit feeder services to the South Dade Busway. This does not preclude other factors and findings from other data used in this study that may suggest the need for additional park-and-ride capacity or transit feeder services in the area.

Leisure City – Naranja Lakes

The Leisure City – Naranja Lakes Community Urban Center Master Plan was performed in 2004. The Master Plan is complete and has been adopted by the Board of County Commissioners (BCC). The implementing land development codes to amend to the County's land development code are currently in draft form.

The Leisure City – Naranja Lakes communities are on the east side of South Dixie Highway (US-1) and the South Dade Busway. The north end of the area includes the SW 280th Street Busway Station, and the south end includes the SW 296th Street Busway Station Park-and Ride. The boundaries are: SW 272nd Street to the north, Old Dixie Highway on the west, SW 147th Avenue to the east, and SW 296th Street to the south.

Figure 5-24
Leisure City – Naranja Lakes Master Plan

Leisure City / Naranja Lakes is designated as a Community Urban Center to serve the local service area as a place where people can live, work, and shop within a convenient walking distance, and have regional access via the South Dade Busway or future rapid transit alternatives.

The goal of the Master Plan was to address the role of the Leisure City / Naranja Lakes Community Urban Center within the context of its position as a place on the South Dade Busway, to promote a transit-oriented community, with a mixed-use village center that preserves the community's heritage.

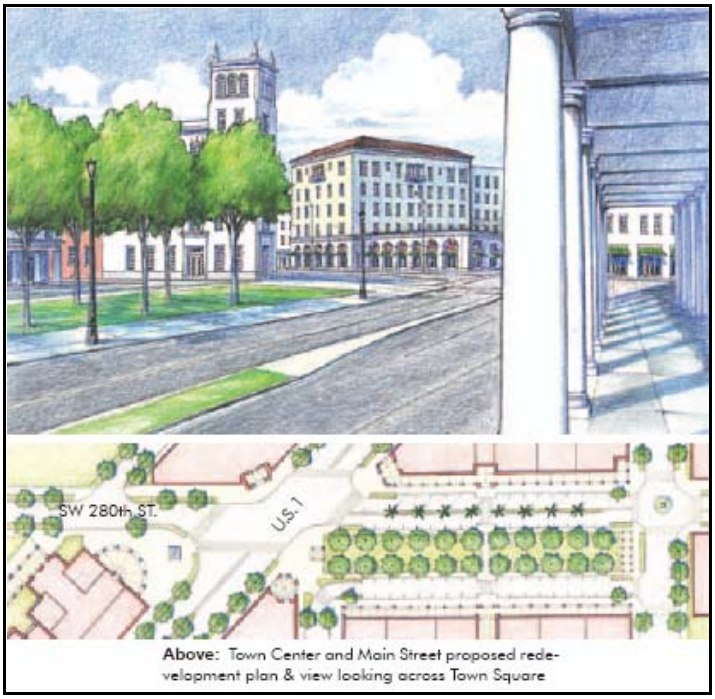
Recommendations of the Leisure City / Naranja Lakes Community Urban Center Master Plan include:

- Create a nucleus of the community, by developing a new town center at the Busway station at the intersection of SW 280th Street and South Dixie Highway (US-1).
- Within proximity to the Busway, establish a new mixed-use, transit-oriented development (TOD) district.
- Redevelop or restore obsolete and dilapidated structures in a manner that responds to the community's vision.
- Redevelop the Royal Colonial Park area as a campus with affordable housing, a library, school, and recreational building within walking distance.
- Redevelop the Naranja Shopping Center area into a regional waterfront entertainment district.

- Create additional and enhanced green spaces and pocket parks.
- Improve neighborhood infrastructure, including streets, sidewalks, street furniture, and landscaping to create a safe and comfortable pedestrian realm.
- Create architectural guidelines for future development.

The Master Plan for the Leisure City and Naranja Lakes CUC does not include redevelopment proposals that would create significant and measurable impacts on the need for transit feeder services to the South Dade Busway; however, the recommendation to develop its town center at the SW 280th Street Busway Station and the recommendation to develop a TOD in proximity to the Busway are both important to planning for Busway feeder services. Opportunities for enhanced coordination are clear, since the Master Plan for the Leisure City / Naranja Lakes CUC recommends that the town center and TOD development focus on the Walden Drive SW 280th Street Station, while the Busway design emphasizes the SW 296th Street Station as the park-and-ride.

Figure 5-25
Leisure City / Naranja Lakes Town Center Proposal



Above: Town Center and Main Street proposed redevelopment plan & view looking across Town Square

South Dade Busway Feeder Study

Section 6

Public Involvement

Overview

First Series of Meetings:

Locations & Dates

Presentation

Comments

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Public Involvement - Overview

No plan that affects a community is complete without hearing from the community. The South Dade Busway Transit Feeder Study was initially motivated by community concerns voiced through the offices of the District 8 and District 9 Dade County Commissioners.

It is important to listen to the community early in the process, and shortly after the survey data was collected, initial community meetings were held at locations in South Dade. The Study has included as part of its workplan, two series of meetings. The first series of meetings are intended to inform the community about the undertaking of the study, and collect initial input regarding concerns and issues with transit, the Busway, Metrorail, and park-and-ride facilities in South Dade. The second series of meetings is to occur following submittal of the final draft of the Study, and is intended to present the recommendations, and record reactions to the recommendations, and respond to community comments as appropriate in the final submittal.

Public Involvement – First Meeting Series

Initially, three public meetings were to be scheduled; however, low turnouts motivated the addition of three other venues to the first meeting series. In total, six meetings were convened. The locations and dates of the Meetings are listed below, and their geographic locations are also illustrated by the yellow stars in Figure 6-1.

1.	April 24th 2007	South Dade Economic Development Council 900 Perrine Avenue, Palmetto Bay, Florida
2.	May 8th 2007	General Advertised Public Meeting for the Study 900 Perrine Avenue Palmetto Bay, Florida
3.	May 9th 2007	General Advertised Public Meeting for the Study South Dade Government Center, Room 203 10710 SW 211th Street, Cutler Bay, Florida
4.	May 10th 2007	General Advertised Public Meeting for the Study Miami Dade College, Homestead Campus, Rm. 222 500 College Terrace, Homestead, Florida
5.	June 5th 2007	Concerned Citizens of Cutler Ridge Cutler Ridge Park, Meeting Room 10100 SW 200th Street, Cutler ridge, Florida
6.	June 8th 2007	Chamber South Transportation Committee 900 Perrine Avenue Palmetto Bay, Florida

Figure 6-1
South Dade Busway Transit Feeder Study First Series Meetings Locations

At each of the meetings, a Powerpoint-aided presentation was made to introduce the Study. The presentation discussed:

- The goals of the project
- Transit feeder service concepts
- The four markets that would be studied in the surveys
- Some highlights from initial analysis results from the surveys
- Request for citizens input
- Status of the study, next steps, and when the draft recommendations would be presented

The presentation slides and handouts that were available at the meeting are included in the appendices.

After the presentation, input was taken from citizen. Comments ranged from requests to clarify parts of the presentation, to comments regarding taxes. Those comments that were received that are pertinent to this Study are summarized below.

- On at least two occasions, when the different structures for transit feeder services were presented, citizens made a point that having to take a circulator or feeder bus from their community to the Busway, change to a Busway express route, and then transfer again at the Dadeland South Metrorail Station would be unacceptable. Any new feeder services should leave the community park-and-ride, and then continue on the Busway to the Dadeland South Station. A transfer to Metrorail is okay, but a transfer between buses is not.

- Community leaders, particularly from the Village of Palm Bay and from Village of Pinecrest expressed their desire to be able to route their own PTP-funded community shuttle buses to function as feeder buses, possibly using the Busway to bring their residents to a Metrorail station.

- In the Cutler Ridge area, there is a strong sentiment that there should be Metrorail service, instead of a Busway.

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South Dade Busway Feeder Study

Section 7

Recommendations

Methodology
Evaluation
Feeder Transit Design Concepts
Recommendations:

Dadeland South & North: Kendall, Pinecrest, and Howard
Miami Metro Zoo Park & Ride and Feeder Services
Richmond Drive Busway Station Park & Ride Improvements
Cutler Ridge Park & Ride Expansion
Princeton, Naranja, Leisure City
Homestead, Florida City

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South Dade Busway - Recommendations

Recommendations Development

Organization:
The organization of this section contains three basic components:

1. An overview of methodology, and general discussion of recommendation strategies;
2. Quantitative evaluations of geographic groupings of South Dade communities to determine the need for community-located, reliever park-and-ride facilities with feeder services;
3. Recommendations for the geographic groupings of South Dade communities that include facility locations approximate parking capacity, amenities, and feeder service routes.

Recommendations Development – Goals, Data, and Analysis

To recap, the purpose of the study is to evaluate and recommend improved and new transit feeders for the purposes of:

- Their potential to reduce single occupant automobile trips;
- Their potential to reduce parking demand at the Busway stations;
- Attracting new riders to the Busway

In addressing these goals, the data and analysis of the South Dade Transit Feeder Study has been designed to identify the needs of three markets of existing and potential Busway passengers:

1. Existing transit users whose needs are represented by parking utilization data, the park-and-ride license plate survey, the park-and-ride kiss-and-ride license plate survey, and the Metrorail and Metrobus passenger surveys;
2. Potential transit users from existing South Dade residents, represented by the County Commission District 8 and 9 telephone survey; and
3. Potential transit users from among future South Dade residents.

The tasks of the study each address one or more of these needs.

Task 1, in addition to building consensus for the study's recommendations, public involvement provides direct contact with the community regarding their concerns, needs, and ultimately in vetting the recommendations of this section. The findings of the public involvement meetings have been verified by subsequent data collection and analysis. While these findings don't quantitatively add to these recommendations, the overall concepts

expressed have been adhered with regard to feeder design. This effort is summarized in Section 6 of this report.

Task 2 verified customer concerns regarding over-capacity park-and-rides along the Busway, and identified utilization trends. A significant trend was found that utilization appears to be linked to the amount of time that Busway has been in service. While facilities along Metrorail of the Phase I Busway are at or near capacity, those along the Busway Extension are significantly below capacity. The parking data has been directly used in the quantitative evaluation to determine recommendations. The parking utilization analysis is contained in Section 2 of this report.

Task 3 of the Study involves integration of the long-range land use plans and major development initiatives in South Dade. Nine master planning initiatives and the expansion of the Miami Metrozoo DRI have been reviewed, and the pertinent aspects were identified as they relate to this Study. Again, while these findings are not quantitatively figured into the evaluations of this section, the opportunities to integrate Busway park-and-rides and feeder services with new developments and redevelopments is noted. This turns out to be of particular importance in the cases of the Cutler Ridge Metropolitan Center, and the Miami Metrozoo DRI. The long-range planning analysis is contained in Section 5 of this report.

Task 4 of the Study directly addresses existing use and patterns with Busway and Metrorail use by the residents of South Dade. License plate surveys for both park-and-ride and kiss-and-ride facilities along the Busway, at Dadeland South Metrorail Station, and at Dadeland North Metrorail Station provide data that is directly used in the quantitative evaluation for recommendations. In addition, data from recent passengers surveys on Metrorail, and Metrobus has been incorporated. All of this data has been geo-coded by TAZ, and cluster analysis performed for each data set. The cluster analysis has been used to determine the home origins of each of these populations, and identify potential markets for additional park-and-ride facilities and associated transit feeder services. The analysis was also used to verify expectations of what the park-and-ride services areas are. Finally, the cluster analysis was aggregated into established South Dade communities, and it is the community aggregations that are brought forward for evaluations in this section. The existing user planning analysis is contained in Section 3 of this report.

Task 5 of the Study addresses increasing transit use in South Dade by identifying potential markets. Data collection included a telephone survey was performed of County Commission Districts 8 and 9. The analysis organized the data to understand the potential component of the population that may use transit if more convenient park-and-rides and feeder services are implemented in their communities. Among those that stated that they would be willing to try transit, their home origins were mapped out by TAZ, and a cluster analysis was performed to determine the communities with the greatest potential for new transit ridership by the implementation of community park-and-ride and complimentary transit feeders. This analysis is contained in Section 4 of this report.

Recommendations Development – Busway Transit Feeder Concepts

From the outset, when the concept of feeder services was presented to the community, there was strong indication of the community's preference for feeder transit design.

Overall, the concept of a feeder transit service is to allow the use of park-and-ride facilities that are located within communities, and remotely from the South Dade Busway. The purpose of feeders is therefore to:

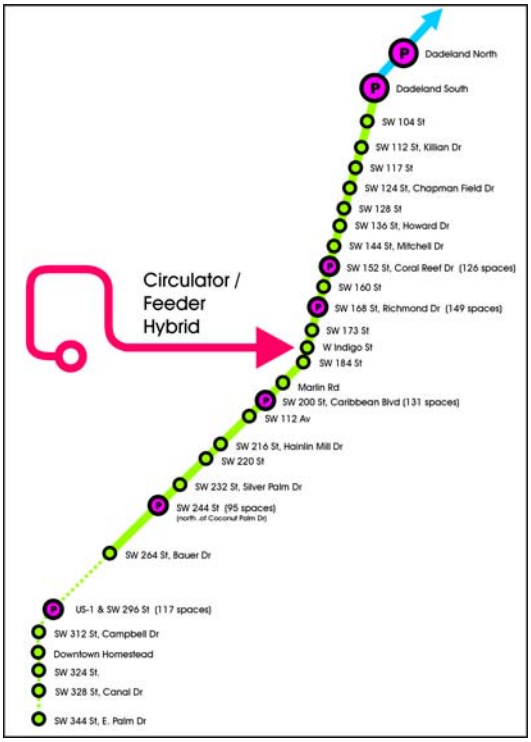
- Relieve existing park-and-ride facilities, to allow them to absorb new potential users that may be turning away now;
- Locate park-and-ride capacity to balance use of park-and-ride capacity along the Busway
- More directly and conveniently connect residential communities to the Busway
- Increase transit ridership in South Dade

To accomplish this, there can be three basic types of feeder service designs:

Feeder-Circulator Hybrid

The transit service may provide local service to one or several communities, and then connect to the Busway at the nearest station. Passengers may then transfer to an express of MAX service along the Busway to continue their commute. This design is a hybrid, in that it is a community circulator and a feeder service. Although it provides a good option for transit dependent populations, the local circulation component of the route is a very significant deterrent to attracting automobile commuters that place very high value on travel time and schedule reliability. Generally, this type can work well only in areas with large populations of transit dependent people, and where the community in which the route circulates is close to the Busway.

Figure 7-1
Feeder-Circulator Hybrid Route Diagram



Direct Feeder

A feeder service includes a park-and-ride facility sized for several near-by communities, and located near their center, in which the transit feeder connects the park-and-ride facility to the Busway at the nearest station. Passengers may then transfer to an express of MAX service along the Busway to continue their commute. This design allows for efficient scheduling for the feeder service; however, it requires an extra transfer at the Busway: possibly more for those passengers that continue along Metrorail. Schedule coordination becomes important to reduce transfer wait time, and maintain the service as a reliable transportation option to its passengers. In community meetings, it was strongly expressed that this type of feeder is of little interest to the community, because they do not want to transfer at the Busway, and then again to Metrorail. Survey data generally supports this, in that twice as many SOV commuters will take a feeder to Metrorail, as would take a feeder to a Busway route. Transit passenger survey also strongly supports the concept of minimizing transfers. This type of service may be more appropriate for locations south of SW 200th Street, where lower ridership would make this type of service more efficient than the hybrid below.

Figure 7-2
Direct Feeder Route Diagram

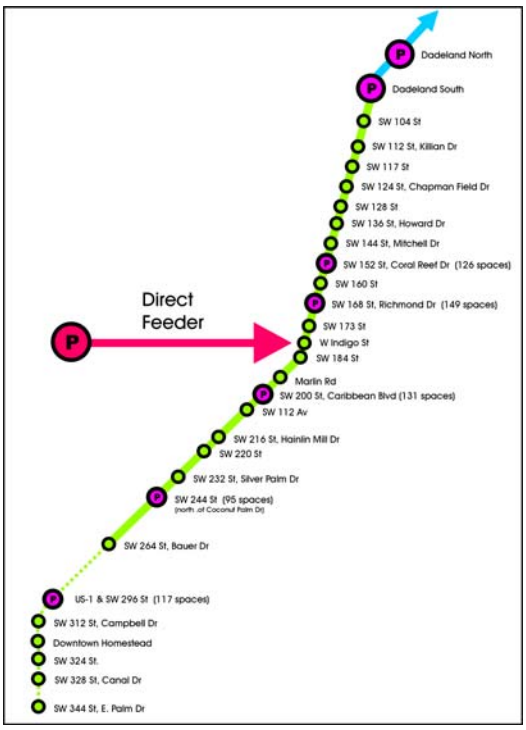
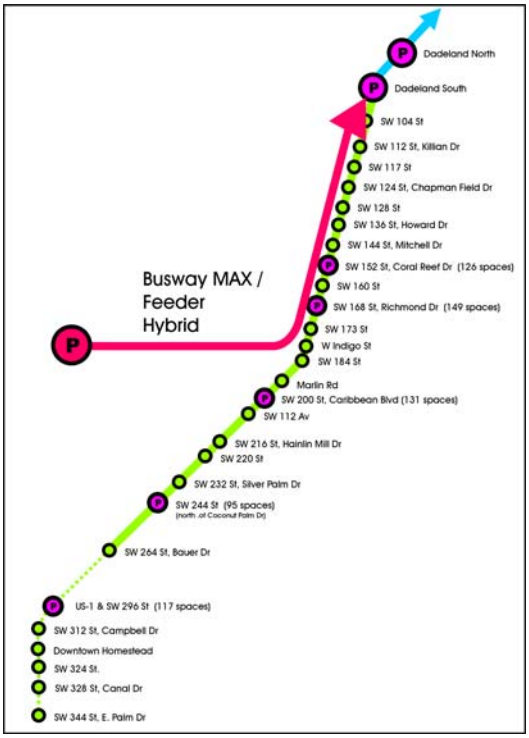


Figure 7-3
Feeder Busway MAX Hybrid Route Diagram



Feeder-Busway MAX Hybrid

A Feeder-Busway MAX service includes a park-and-ride facility sized for several near-by communities, and located near their center; however, the transit feeder connects the park-and-ride facility directly to Metrorail, via limited stop service (MAX) along the Busway. Passengers may then transfer directly to Metrorail to continue their commute, or stop at major destinations and employment centers along the Busway. It is a more difficult service to schedule since the operational characteristics of the Busway segment and the "cross-town" segments in mixed traffic differ greatly. The over-riding advantage is that a

bus-to-bus transfer is not required. Passengers transfer wait time is reduced, and the perception of schedule reliability greatly increased. In community meetings, it was strongly expressed that this is the only type of feeder desired for many areas. Again, survey data generally supports this, in that twice as many SOV commuters will take a feeder to Metrorail, as would take a feeder to a Busway route. This type of service may be more appropriate for locations north of SW 200th Street. South of this location, low land use density and lower expected ridership would make this type of service too inefficient.

Recommendations Development – Park-and-Ride Service Areas

The license plate data, as well as the telephone survey data provide indications of actual and desired service areas.

The actual service areas are skewed by the strong attraction for passengers to uses park-and-ride facilities at Metrorail stations. Further, there is also a notable tendency for commuters to by-pass their nearest Busway stations in favor of Metrorail stations. This plays a large part in causing the more northerly stations to be near or at capacity, while those further south tend to have unused capacity. The South Dadeland and North Dadeland Metrorail stations have uniquely different service areas even though they are quite close to each other.

The Dadeland North Metrorail Station primarily serves Kendall and west Kendall, with a service area reaching west along Kendall Drive and southwest towards Tamiami Airport and Richmond Heights north of Metrozoo. Its service area reaches about 11 miles to the west, decreasing to about 7 miles southwest along US-1, and directly south.

The Dadeland South Metrorail Station primarily serves part of the Busway's service area, attracting significant levels of commuters from up to 9 to 10 miles southwest and south in Howard, Richmond Heights, Palmetto Estates, Perrine, Country Walk, Cutler Ridge/Cutler Bay, and Saga Bay.

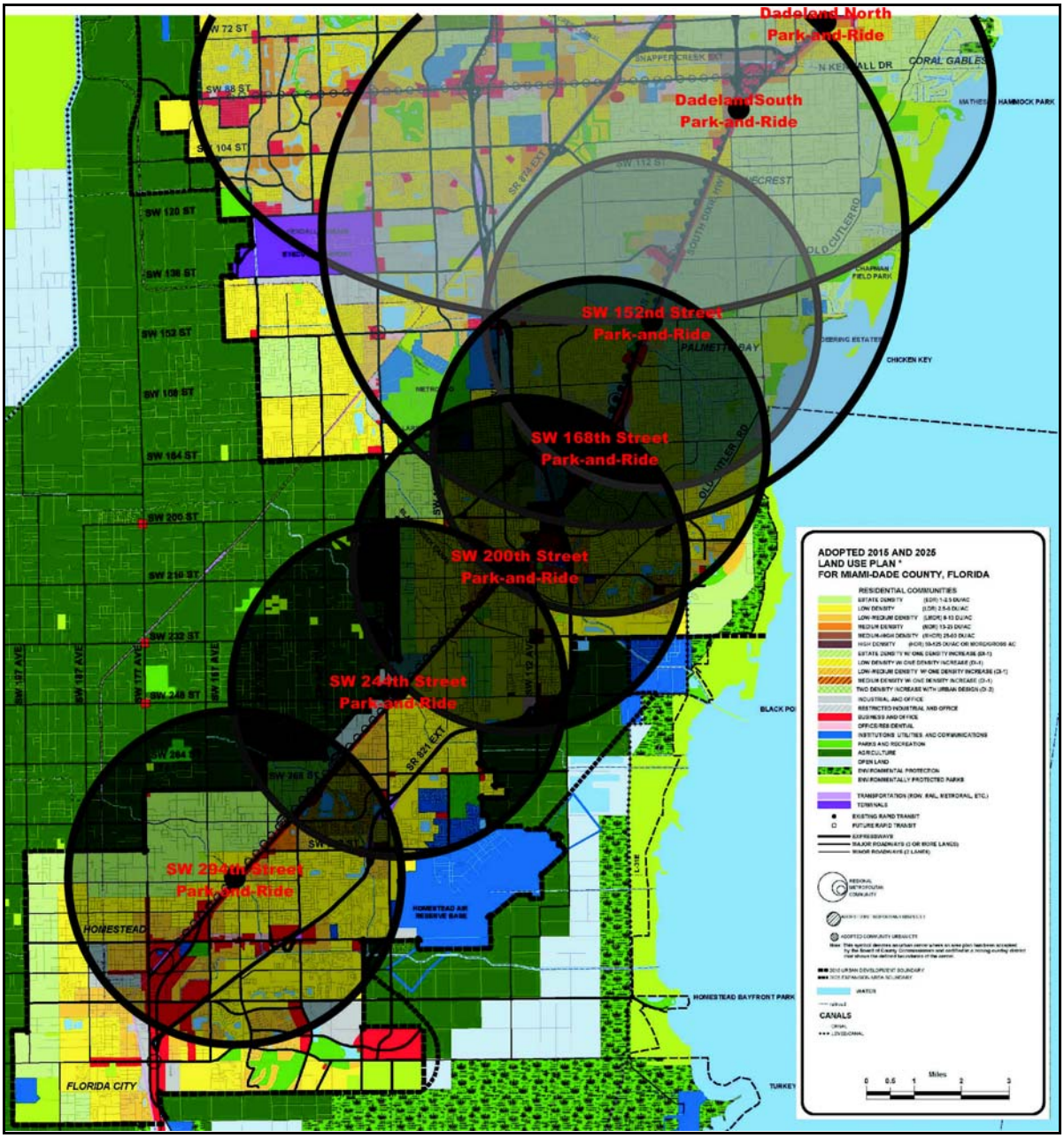
The telephone survey addressed the questions of time people are willing to travel to a park-and-ride. More than 10 minutes, only 11% would be willing to travel to the park-and-ride. If a 5 to 10-minute service area is considered, then 53% state that they would be willing to travel that far. If a 5-minute or less service area is used, then 96% of those willing to use a transit feeder service are captured. For general purposes, a 5-minute park-and-ride service area can be considered 2 to 3 miles (driving).

Using a 3-mile radius for the service areas for each Busway park-and-ride, and the service areas for the Metrorail stations, Figure 7-4 overlays the service areas on the South Dade Future Land Use Map. There are three important characteristics:

1. Most of the developed residential areas in South Dade are covered by the Metrorail and Busway park-and-ride lots
2. The Metrorail park-and-ride lots significantly overlap the Busway park-and-ride service areas

3. Along the Busway, parts of Richmond Heights, Country Walk, and Richmond West comprise the largest in population of developed areas outside of these service areas.

Figure 7-4
Busway Park-and-Ride, Dadeland South, and Dadeland North Service Areas



Recommendations Development – Evaluation Methodology

Taking the findings of the community comments, parking utilization analysis, transit passenger surveys, park-and-ride surveys, kiss-and-ride surveys, and South Dade household travel telephone survey, recommendations for additional park-and-ride capacity and Busway transit feeder services have been developed using the following steps.

1. Using the cluster analysis in previous sections, and definitions of established communities and planning areas in South Dade, analysis clusters were aggregated into meaningful communities for analysis. Each community is consistently analyzed and defined by name, land use density where appropriate, specific boundaries, and the inclusion of specific whole TAZs. The communities, their boundaries, and their land uses are illustrated in Figure 7-5.

2. Communities are assigned to specific park-and-ride facilities, based on where residents from the respective communities should travel to, based on shortest paths in a northerly direction. Clearly commuters travel to further stations, due to overcrowding and a bias toward directly access Metrorail; however, these assignments are necessary, to rationalize and balance use of the park and ride system.

3. Based on the data and analysis of the park-and-ride survey, and the kiss-and-ride survey, specific estimates of existing park-and-ride and kiss-and-ride trips generation are made for each community. Estimates use the percent of each sample from a specific community, which is weighted by the higher of total daily utilization for the facility, or facility capacity.

4. The community park-and-ride generations are compared to the capacity of communities' respective assigned park-and-ride facility, and the facility is determined to by over-capacity or as having a surplus, and the amount of the deficit or surplus is estimated.

5. Significant levels of kiss-and-ride can be considered a latent demand for park-and-ride. At facilities where surplus park-and-ride exists, the trend shows that kiss-and-ride commuters are lower (about 4.4% of park-and-ride numbers) that are at or near capacity (about 9.4% of park-and-ride numbers). In general, kiss-and-ride commuters above the average for facilities that are not full are considered a latent demand for park-and-ride use. This number is added to the existing demand as a potential demand.

6. Finally, South Dade household travel telephone survey was used to determine the number of passengers that may use each facility if there are better feeder services. These percentages are then weighted by the general population for each TAZ, and then the transit travel mode split determined by the survey, and then the park-and-ride sub-mode split, also determined by the household telephone survey. The sum of all increases is limited to the Busway passenger capacity for a 2-hour peak period, which is set at 4,800 passengers per hour in one direction. (9,600 for the peak).

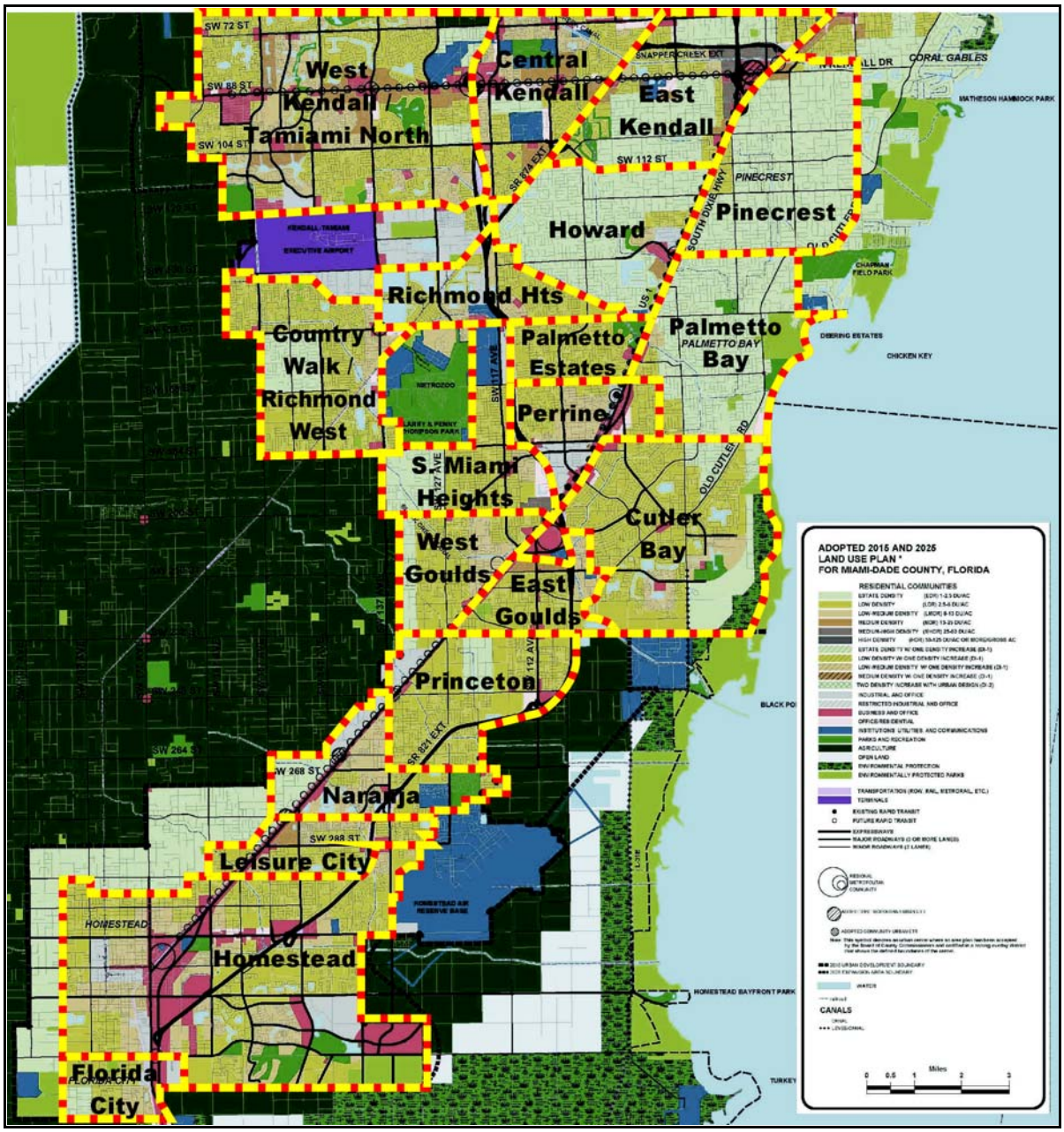
7. This is essentially an overlay technique to determine the relative potential for each South Dade community, and balanced load that should be on each facility. Where sufficient potential is identified, and comparison to the park-and-ride utilization data shows no or little excess capacity at the nearest Busway facility, then a recommendation is made to locate an additional park-and-ride in the community with a feeder service. Locations for new facilities are made based on an identification of the park-and-ride service area, service area coverage, and from development partnering opportunities identified from the identification of long-range redevelopment plans and development initiatives, that are covered in Section 5 of this report.

8. Once the lot location is determined, a short-range capacity, and long-range capacity are recommended, based on existing need, and estimated need to fulfill the stated preference in the household telephone survey.

9. Feeder routes are based on Feeder / Busway MAX hybrid alignments, using the most direct path from the park-and-ride facility to the Busway. Alignment diagrams are provided, and service characteristics are defined.

Steps 1 through 6 are summarized and provided as tabular data for each section.

Figure 7-5
South Dade Communities as Analyzed



Recommendations Summary

Recommendations for each Busway Station service area are provided in detail in the following section along with cost estimates where applicable. The recommendations have been summarized in Table 7-1, and the program shown in Table 7-2.

Table 7-1
Recommendations Summary

Recommendation	Source	Type	Participation	South Dade Busway Feeder Study Recommendations		Other Planned Improvements	
				Capital Cost Impact	Annual Operational Cost Impact	Capital Cost Impact	Annual Operational Cost Impact
More Marketing Improvements in South Dade	SDBWFS	marketing	Miami-Dade County	In-house MDT			
Dadeland North and Dadeland South Expansions	MDT TDP	Park-&-Ride Expansion	Miami-Dade County			$12,700,000	
Dadeland North and Dadeland South Pedestrian Bridges	MPO TIP	Pedestrian Connections	Miami-Dade County			$6,828,000	
Palmetto Bay, Pinecrest Feeder Bus	SDBWFS	coordination	Village of Palmetto Bay, Village of Pinecrest, MDT		$20,000		
Palmetto Bay, Pinecrest Feeder Bus	SDBWFS	New Feeder Route	Village of Palmetto Bay, Village of Pinecrest, MDT		$260,000		
Metrozoo Park-&-Ride	SDBWFS	New Park & Ride (land)	Miami-Dade County				
Metrozoo Park-&-Ride Initial Implementation (325 spaces)	SDBWFS	Park-&-Ride Improvement	Miami-Dade County	$987,500			
Metrozoo Park-&-Ride Initial Implementation (650 spaces)	SDBWFS	Park-&-Ride Improvement	Miami-Dade County	$487,500			
Coral Reef MAX Initial Service Improvements (325 spaces)	SDBWFS	Service Improvement	Miami-Dade County		$130,694		
Coral Reef MAX Full Service Improvements (650 spaces)	SDBWFS	Service Improvement	Miami-Dade County		$130,694		
Coral Reef Flyer Initial Implementation (325 spaces)	SDBWFS	New Feeder Route	Miami-Dade County		$386,959		
Coral Reef Flyer Full Implementation (650 spaces)	SDBWFS	New Feeder Route	Miami-Dade County		$193,479		
Quail Roost Transit Village	Planned Development	New Park & Ride	Transordev, Miami Dade County			$12,500,000	
SW 112th Avenue Park-&-Ride	SDBWFS	New Park & Ride	Miami-Dade County	$1,641,356			
Cutler Ridge Metropolitan Ctr Park-&-Ride Phase I	Planned Development	New Park & Ride	private developer, GSA, Miami-Dade County			$7,500,000	
Cutler Ridge Metropolitan Ctr Park-&-Ride Phase II	Planned Development	New Park & Ride	private developer, GSA, Miami-Dade County			$7,500,000	
Busway Flyer Service Improvement	SDBWFS	Service Improvement	Miami-Dade County		$631,019		
SW 244th Street Park-&-Ride Improvements	SDBWFS	Amenities	Miami-Dade County	$142,500			
Princeton Town Center Park-and-Ride	SDBWFS	New Park & Ride	private developer, Miami-Dade County	$7,500,000			
Coconut Palm Connection Feeder Initial Implementation	SDBWFS	New Feeder Route	Miami-Dade County		$986,562		
Coconut Palm Connection Feeder Full Implementation	SDBWFS	New Feeder Route	Miami-Dade County		$591,937		
Homestead Trolley East West Route	Planned PTP Improvement	coordination	City of Homestead, Miami-Dade County				Homestead PTP
Route 35 Extension to 296th St Busway Station	SDBWFS	Existing Route Extension	Miami-Dade County		$297,144		
Route 70 Extension to 296th St Busway Station	SDBWFS	Existing Route Extension	Miami-Dade County		$163,018		
Route 344 Extension to 312th St Busway Station	SDBWFS	Existing Route Extension	Miami-Dade County		$272,695		
Total				**$10,758,856**	**$4,064,201**	**$47,028,000**	**$0**

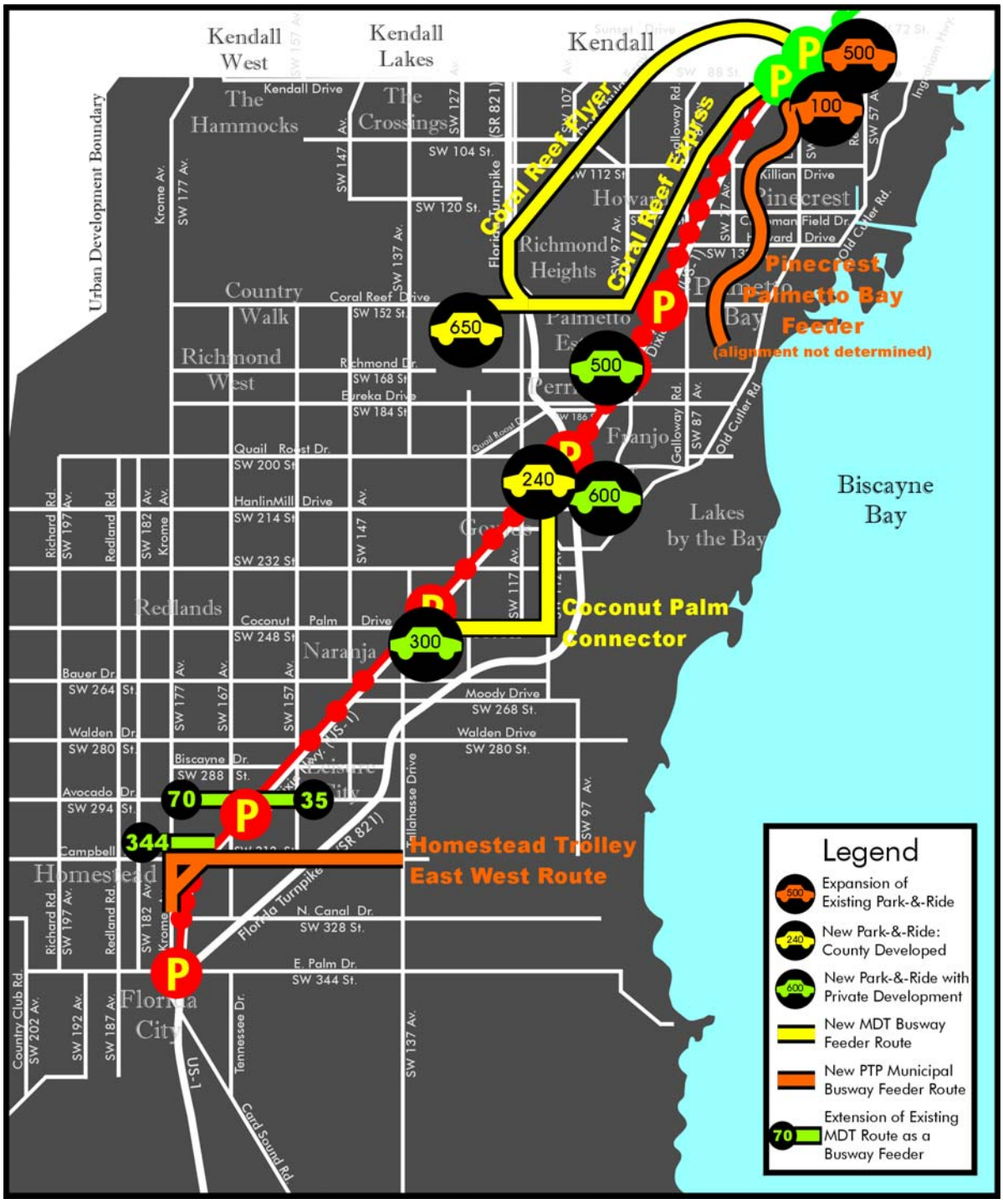
SDBWFS = South Dade Busway Feeder Study Recommendation
MPO TIP = Miami-Dade Metropolitan Planing Organization Transportation Improvement Program
MDT TDP = Miami-Dade Transit 2007 Transit Development Program
PTP = People's Transportation Plan

Table 7-2
Implementation Plan

Recommendation	Participation	Type	Improvement Schedule				
			FY 08/09	FY 09/10	FY 10/11	FY 11/12	FY 12/13
More Marketing Improvements in South Dade	Miami-Dade County	administrative					
Develop "upstream" Park-&-Ride Capacity along Busway	Miami-Dade County	coordinating					
Dadeland North and Dadeland South Expansions	Miami-Dade County			$200,000	$12,500,000		
Dadeland North and Dadeland South Pedestrian Bridges	Miami-Dade County			$2,414,000		$4,414,000	
Palmetto Bay, Pinecrest Feeder Bus	Village of Palmetto Bay, Village of Pinecrest, MDT	administrative	$20,000				
Palmetto Bay, Pinecrest Feeder Bus	Village of Palmetto Bay, Village of Pinecrest, MDT	operating		$267,800	$275,834	$284,109	$292,632
Metrozoo Park-&-Ride (land)	Miami-Dade County	capital					
Metrozoo Park-&-Ride Initial Implementation (325 spaces)	Miami-Dade County	capital	$987,500				
Metrozoo Park-&-Ride Initial Implementation (650 spaces)	Miami-Dade County	capital			$517,189		
Coral Reef MAX Initial Service Improvements (325 spaces)	Miami-Dade County	operating	$130,694	$134,615	$138,653	$142,813	$147,097
Coral Reef MAX Full Service Improvements (650 spaces)	Miami-Dade County	operating			$138,653	$142,813	$147,097
Coral Reef Flyer Initial Implementation (325 spaces)	Miami-Dade County	operating	$386,959	$398,568	$410,525	$422,841	$435,526
Coral Reef Flyer Full Implementation (650 spaces)	Miami-Dade County	operating			$205,262	$211,420	$217,762
Quail Roost Transit Village	Transordev, Miami Dade County		$12,500,000				
SW 112th Avenue Park-&-Ride	Miami-Dade County	capital		$1,690,597			
Cutler Ridge Metropolitan Ctr Park-&-Ride Phase I	private developer, GSA, Miami-Dade County					$8,195,453	
Cutler Ridge Metropolitan Ctr Park-&-Ride Phase II	private developer, GSA, Miami-Dade County						$8,441,316
Busway Flyer Service Improvement	Miami-Dade County	operating	$631,019	$649,950	$669,448	$689,531	$710,217
SW 244th Street Park-&-Ride Improvements	Miami-Dade County	operating				$155,714	
Princeton Town Center Park-and-Ride	private developer, Miami-Dade County					$8,195,453	
Coconut Palm Connection Feeder Initial Implementation	Miami-Dade County	operating		$1,016,159	$1,046,644	$1,078,043	$1,110,384
Coconut Palm Connection Feeder Full Implementation	Miami-Dade County	operating				$646,826	$666,230
Homestead Trolley East West Route	City of Homestead, Miami-Dade County						
Route 35 Extension to 296th St Busway Station	Miami-Dade County	operating		$306,058	$315,240	$324,697	$334,438
Route 70 Extension to 296th St Busway Station	Miami-Dade County	operating		$167,909	$172,946	$178,134	$183,478
Route 344 Extension to 312th St Busway Station	Miami-Dade County	operating		$280,876	$289,302	$297,981	$306,921
Total			**$2,156,172**	**$2,156,172**	**$4,912,530**	**$4,179,696**	**$4,574,921**

Coordinating Improvements that are not part of the South Dade Busway Feeder Study are shaded gray, and are NOT included in total costs for each year.

Figure 7-6
Recommendations Summary

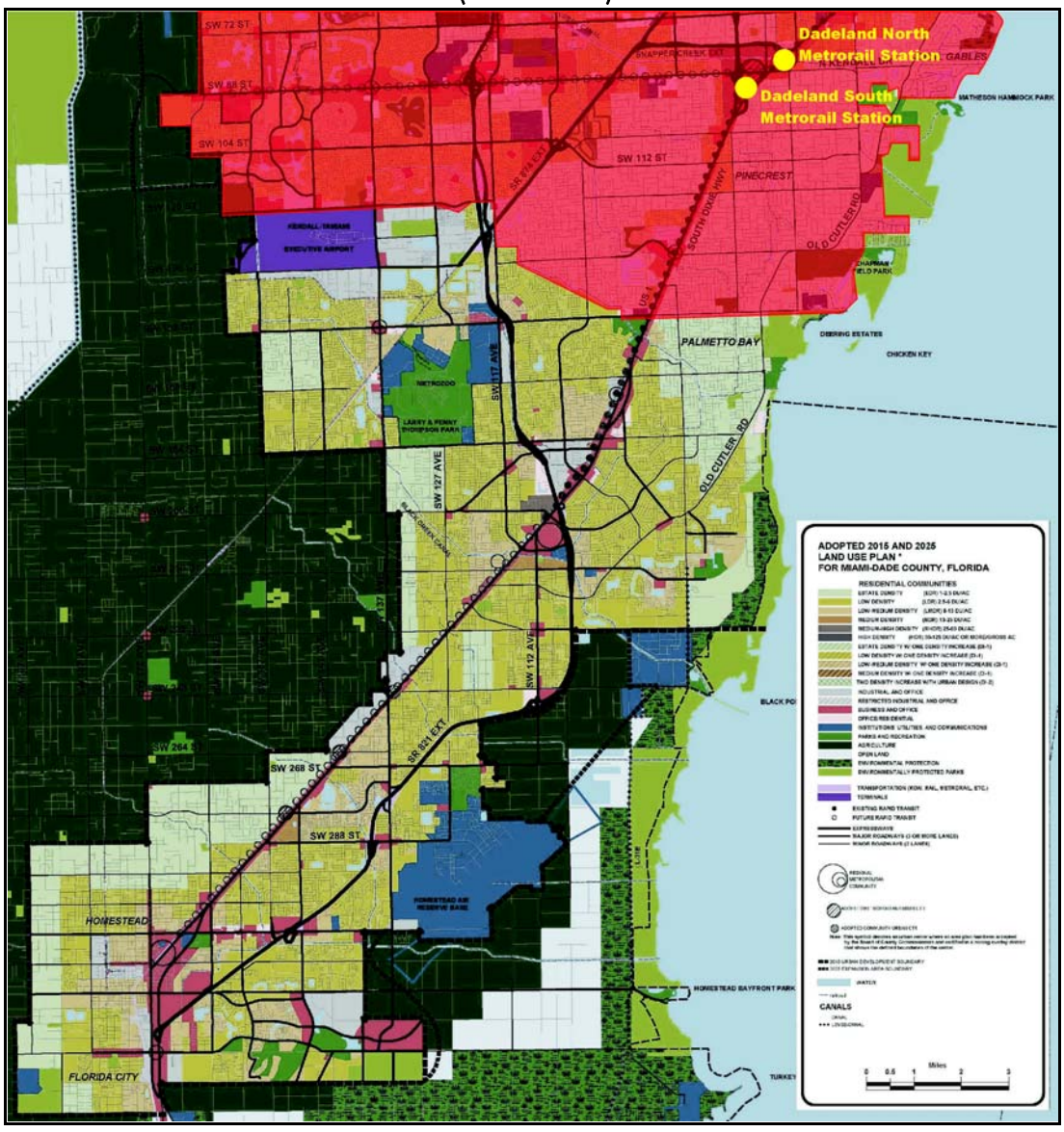


Recommendations: Dadeland North & Dadeland South Kendall, Tamiami North, Howard, Pinecrest, Palmetto Bay

Service Area

East Kendall, Central Kendall, West Kendall, and the areas south of West Kendall and north of Tamiami Airport (The Hammocks and The Crossings) Pinecrest, and the northern part of Palmetto Bay (north of SW 152nd Street) are part of the service area for the park-and-ride garages of the Dadeland North Metrorail Station and Dadeland South Metrorail Station.

Figure 7-7
Dadeland North & Dadeland South Recommendation Service Area
(shaded red)



With regard to accessing Metrorail via their park-and-ride facilities, the areas close to the station are well served by Sunset Drive (SW 72nd Street), Kendall Drive (SW 88th Street), and Killian Drive (SW 104th Street). For the areas further away in West Kendall, the Snapper Creek Expressway provides fast roadway access right to the Dadeland North Station.

The MDT KAT Routes: the Sunset KAT (272), Kendall KAT (288), and Killian KAT (204) provide the fastest-currently possible bus to and from Metrorail using the shoulders along the Don Shula Expressway (SR-874) and Snapper Creek Expressway (SR-878). For non-driving commuters, commuters that use their own car or ride in a carpool to Metrorail there is currently no better comparable public transportation alternative to attract them in terms of travel time or perceived reliability, given the highway network and its termination right at the station. For these commuters, their current choice is their best one in the near term since there is currently not a Busway or similar Bus Rapid Transit from this area to Metrorail or to their destinations. To address some of these needs, the Kendall bus Rapid Transit (BRT) is planned for 2010. To serve other needs or more immediate, or needs beyond the planned capacity of the planned Kendall BRT, more space needs to be made available at the Metrorail stations for additional park-and-ride commuters. This can be through parking inventory increases at the stations, or by addressing park-and-ride needs further "upstream" (South) along the Busway.

Pinecrest and Howard are both areas that are predominantly made up of estate-density, residential communities. Both communities abut the Busway; however, attempting to serve these areas via a community-located park-and-ride lot to the Busway would not be very marketable. In addition to the usual bias toward Metrorail, the use of the Busway for these communities would be a very short distance, and the real and perceived time associated with the extra transfer (park-and-ride to bus, bus to Metrorail) would not position this as an attractive service. It is best to continue to support that these communities directly access Metrorail via park-and-ride or kiss-and-ride, and to continue to support those commuters that use buses to reach their homes or destinations within the communities.

The Village of Pinecrest expressed an interest in developing PTP-funded park-and-ride solutions; however, due to the very low density in the community, potential incompatibilities caused by locating a park-and-ride within the community, its proximity to Dadeland South and Dadeland North, and the relatively small number of Metrorail park-and-ride and kiss-and-ride commuters from Pinecrest (132 daily), it may be comparatively inefficient to serve this need without the Village having a community circulator in operation.

The Village of Palmetto Bay provides circulator service with its IBUS north route that covers the part of the Village from Howard Drive (SW 136th Street) to Coral Reef Drive (SW 152nd Street). The circulator may be utilized to establish a small park-and-ride location within the Village; however, the scale of this service will be small, and more appropriate for the Village to implement than MDT.

Park-and-Ride Utilization

Averaging the last three years of data, the Dadeland North Station park-and-ride is at 95% utilization, while the Dadeland South Station park-and-ride averages 110% utilization. While both of these facilities together provide over 3,000 park-and-ride spaces, their capacity has been absorbed by demand. While expanding the facilities may be one solution, there is another in which South Dade park-and-ride demand is better balanced among the facilities.

At the Dadeland North Station, 64% of the park-and-ride commuters are from the service area that does not overlap with Busway service areas. Thirty-seven percent (37%) of this demand should be met at a Busway lot, and if it was, would make available to new commuters approximately 726 of the existing spaces

Similarly, at the Dadeland South Station, only 40% of the park-and-ride commuters are from the service area that does not overlap with Busway service areas. Sixty-percent (60%) are overflow from commuters that either cannot find space at an "upstream" Busway lot, or prefer not to use the Busway. If the demand is met at a Busway facility, it would make available to new commuters approximately 694 of the existing spaces

Service Area Demand and Capacity

If improved park-and-ride alternatives are provided to Busway service areas, and the service area for the is limited only to Kendall, Pinecrest, and Howard, then 1,879 spaces that are currently occupied by commuters from service areas of the Busway south of SW168th Street and SW 152nd Street would be available after meeting the demand of Kendall, Pinecrest, and Howard area commuters. Allowing for improvements in service and based on the stated responses from the South Dade telephone household travel survey, there is an estimated latent demand for Metrorail travel via park-and-ride in this area of 1,729. Adding also the number of kiss-and-ride commuters that may switch to park-and-ride if spaces are more available, the total demand then becomes 2,932, which is still within the capacity of these two facilities.

Opportunities

In its original configuration, the Dadeland North parking garage contained 1,970 spaces. In the Year 2000, the facility reached 100% utilization, and later in 2000, the garage was reconfigured to provide 89 more spaces for a total of 2,059. Presently, it still fills up before 8:30, forcing potential transit riders to try or South Miami, or continue their commute by car. To alleviate this overcapacity, MDT has contacted the Florida East Coast Railway, LLC (FEC) regarding the acquisition of property located adjacent to the Metrorail right-of-way and between SW 70th Avenue and SW 85th Street (per 2007 Transit Development Program (TDP)). If the property is acquired, MDT and FEC will enter into a joint development agreement, under which a private developer would provide a minimum of 500 park-and-ride spaces. The MPO Transportation Improvement Program (TIP) notes that a pedestrian overpass over US-1 connecting the east side of South Dixie Highway and Dadeland North

will be constructed in FY 2010. Costs have not been identified in the TDP for the parking expansion; however, approximately $25,000 per structured space provides an estimate of $12,500,0000 for the improvements without the land. The pedestrian overpass cost is $2,414,000. At this time, the project does not meet warrant requirements, and is on hold.

At Dadeland South, the TDP notes that 100 additional parking spaces are being added to the existing facility. Costs have not been identified in the TDP; however, and estimate of $2,000 per surface space provides that the improvement is in the range of $200,000 without land costs. As with Dadeland North, a pedestrian overpass connecting the east side of South Dixie Highway with the station is programmed for Dadeland South. Construction is to be after 2011. The cost is $4,414,000. This project also does not meet warrant criteria at this time, and is on hold.

At one of the public meetings, the Village of Palmetto Bay expressed their interest in using its PTP-funded I-Bus community circulator service to provide its residents with access to the Busway or Metrorail. Within the north part of the Village, the I-Bus North Route A provides service to the SW 152nd Street Busway Station. The survey findings indicate a population of 4 existing users from this area that use the Busway park-and-ride lot. The demand is very small; however, the City may be able to locate an existing public parking lot at one of the schools or parks along the circulator's route that has some additional capacity and may start a Village to Busway pilot program using its circulator.

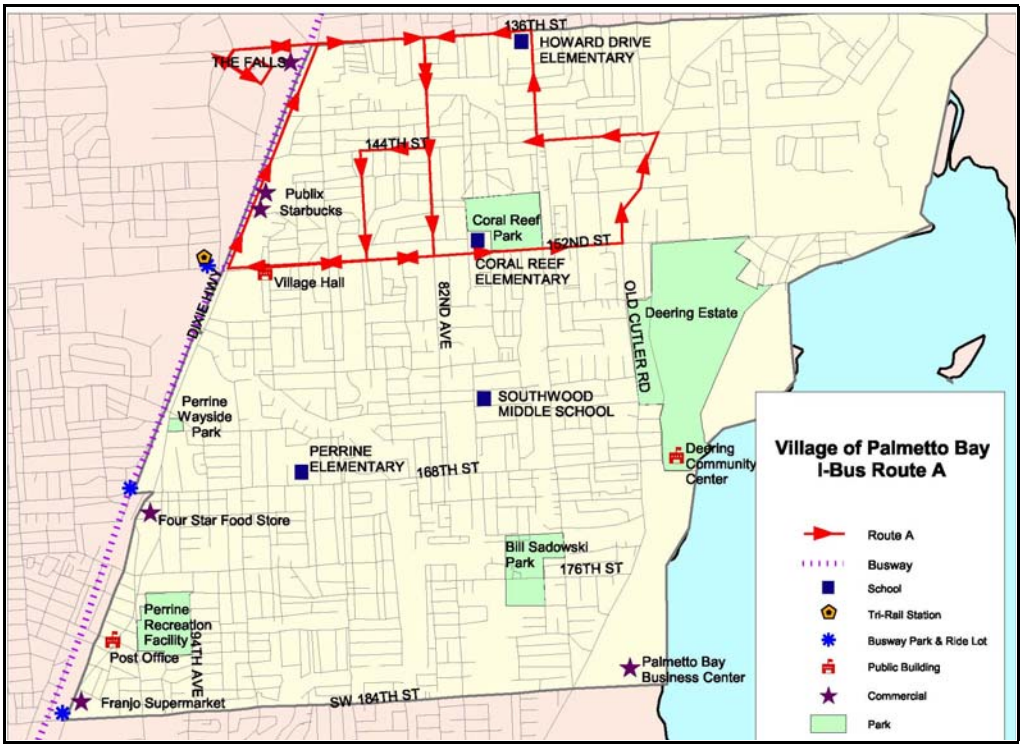
Fifty-one (51) other park-and-ride users go to a Metrorail station and it is not expected that these commuters would accept the use of the shuttle and the additional transfer. If the circulator can use the Busway, then it may be feasible to establish a larger park-and-ride within the Village to relieve MDT facilities, and bring its residents conveniently and directly to Metrorail.

Table 7-3
Metrorail Stations Balanced Service Area Supply & Demand

Area Name		Boundaries	Existing Metrorail Park & Ride Patrons	Existing Busway Park & Ride Patrons	Existing Metrorail Kiss & Ride Patrons	Existing Busway Kiss & Ride Patrons	Kiss & Ride to Park & Ride Ratio	Potential Park & Ride Use based on Household Survey
East Kendall	N	Snapper Creek Expy	132	1	32	0	24%	114
	S	SW 112th Street						
	E	US-1						
	W	Shula Expressway						
Central Kendall	N	Snapper Creek Expy	192	0	8	0	4%	362
	S	SW 120th Street						
	E	Shula Expressway						
	W	Florida Turnpike						
West Kendall to North of Tamiami Airport)	N	approx Sunset Dr.	630	3	22	3	4%	426
	S	SW 120th Street						
	E	Florida Turnpike						
	W	Krome Avenue						
Pinecrest	N	Kendall Drive	99	1	32	0	32%	358
	S	SW 152nd Street						
	E	Old Cutler Road						
	W	US-1						
Howard	N	SW 112th Street	135	4	19	5	17%	469
	S	Richmond Heights						
	E	US-1						
	W	Shula Expressway						
Service Area Demand			1,196		121		Future Demand	2,932
Park and Ride Capacity		Dadeland North, Dadeland South	3,075		Kiss & Ride Ratio to Park & Ride	10.1%	Future Capacity	3,075
Surplus / Defecit			1,879		Kiss&Ride >4.4% to Use Future Park&Ride	7	Future Surplus / Defecit	143

Note: Potential Park & Ride is the expected increase in park-and-ride use based on survey data.

Figure 7-8
Palmetto Bay I-Bus North Route A Alignment



Metrorail Stations Service Area Recommendations

Upstream Park-and-Ride Facility Capacity.

The overall recommendation for this area is to continue to support the current transit travel patterns by making available more of the existing capacity of the Metrorail station park-and-rides by improving Busway operations and capturing the large number of park-and-ride patrons at these facilities that should use the Busway. If all of the park-and-ride patrons from outside of the Metrorail Stations' service areas were captured along the Busway, 1,879 additional spaces would be freed. It is unrealistic to to expect this much shift in travel pattern, especially since neither parking nor transit service capacity may be sufficient along the Busway. However, if only 10% of this shift is achieved through park-and-ride expansions and transit service improvements along the Busway, then 188 spaces at Dadeland South and Dadeland North would be available for use by Kendall, Howard, and Pinecrest area commuters

Planned Dadeland North and Dadeland South Expansion

Per the 2007 TDP, MDT is currently considering the acquisition of Florida East Coast Rail, LLC (FEC) property near Dadeland North in which to construct 500 additional parking spaces in a garage to built under a joint development agreement. Dadeland South Expansion is planned to include a 100-space increase in capacity. Together, an additional 600 spaces would become available; however, at this time. Planning staff at MDT advises that this project is no longer feasible.

This study, through survey data, and utilization data, has determined that while both facilities are practically at capacity, only about 40% of this demand is from within the service area, and recommendations to capture more of the demand "upstream" will help to alleviate the current condition. If the upstream demand is captured at facilities closer to the commuters' homes, it is also clear that any excess capacity at Dadeland North or Dadeland South will be quickly absorbed by an estimated latent demand of nearly 3,000 vehicles from the service area based on weighted survey responses. Given this, and the strong preference of surveyed potential park-and-ride commuters to directly access Metrorail, it is vital to increase park-and-ride capacity at both of these stations.

Palmetto Bay and Pinecrest Park-and-Ride

As a potentially more efficient alternative, the Village of Pinecrest and the Village of Palmetto Bay should coordinate to use their municipal PTP funds jointly to fund a single circulator / feeder transit service for connecting communities from both municipalities directly to Metrorail. Palmetto Bay currently operates the I-Bus, but due in part to the very low residential density in the Village, captures very low ridership. The Village of Pinecrest, being much closer to the Metrorail stations, and along the travel path of a Palmetto Bay feeder, does not operate any local-government transit service at all.

Both villages are characterized by mostly estate-density residential uses, and neither can achieve an efficiency of scale for operating local circulator or feeder transit; however combined, survey data shows that there is sufficient potential demand from a combined service. Existing transit park-and-ride and kiss-and-ride patrons from the Village of Palmetto Bay number 61, while the same for Pinecrest is 132. Together, 193 existing transit patrons could be served by such a service. In addition, a portion of the potential 201 riders from Palmetto Bay, and 358 from Pinecrest make this service more viable.

At this time, the recommendation is to determine if both municipalities will coordinate and contribute fair shares of their PTP allocations back to MDT to operate the service. The village of Pinecrest had considered a park-an-ride in 2006; however, there were strong community concerns. Recognizing the sensitivity of these communities to park-and-ride locations, data from this study will need to be augmented with needed data from the existing I-Bus service, and local public meetings to plan a detailed route alignment, and service characteristics.

It is expected that this would provide a superior service from an operational standpoint as well as offering enhanced service characteristics to the residents of Pinecrest and Palmetto Bay by providing secure, community parking within the respective villages at locations subject to public input, and direct, fast service to a Metrorail station.

Very generally, for an eight-hour per day service span for peak service on weekends, the shared annual operational cost for such a service would be in the range of $200,000 to $250,000. This would not include soft costs, monitoring, or planning.

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Recommendations: Metrozoo Park-and-Ride and Feeder: Richmond Heights, Country Walk, Richmond West Palmetto Estates, Palmetto Bay, South MiamiHeights

Service Area

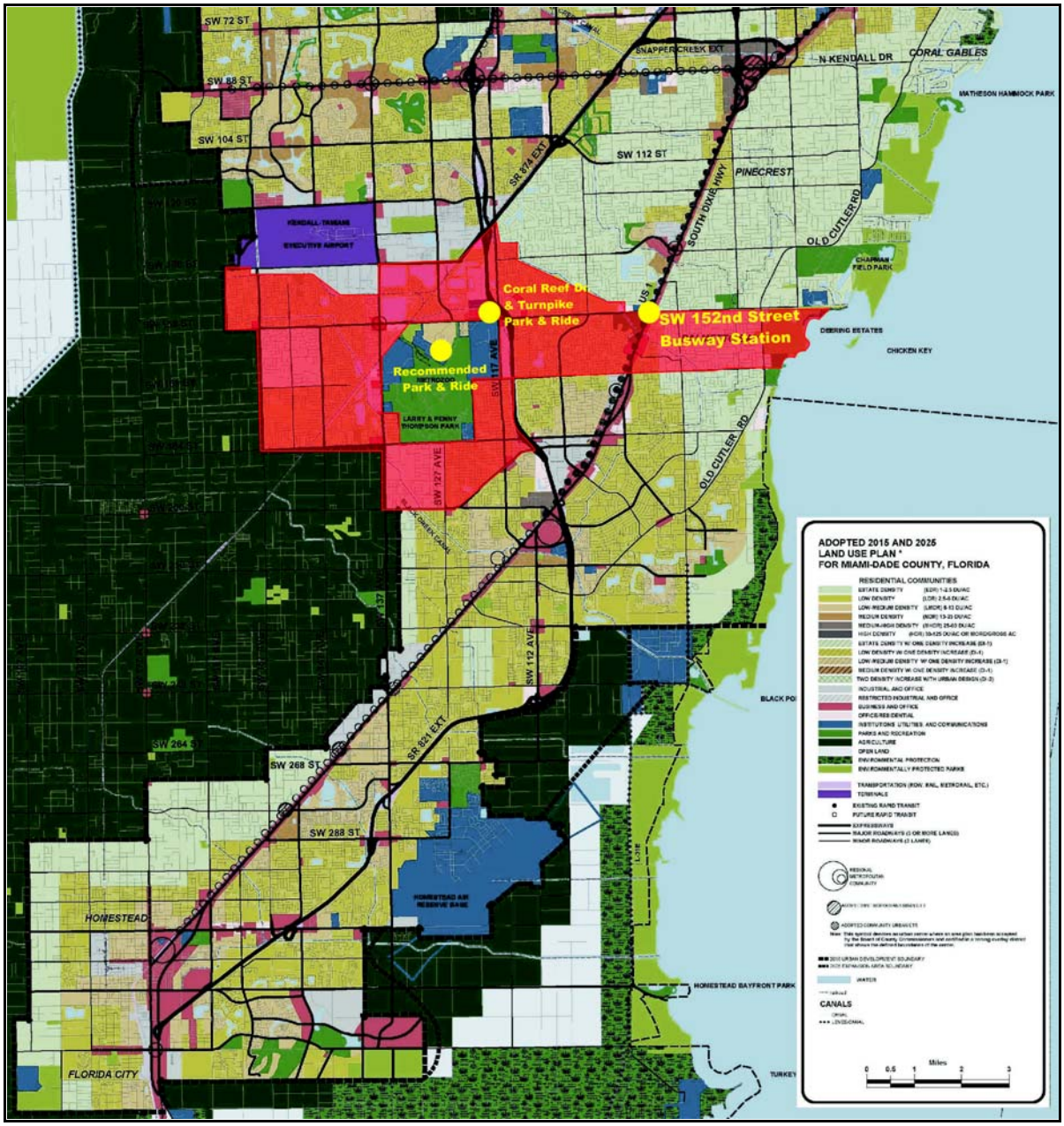
The service areas for the SW 152nd Street Busway Station park-and-ride includes: Richmond Heights, Palmetto Estates, Country Walk, and Richmond West, the northwest parts of South Miami Heights (northwest of Quail Roost Drive), and the central part of Palmetto Bay from SW 152nd Street to SW 168th Street. Perrine is not included in this service area as it incorporates within its boundaries the Richmond Drive (SW 168th Street) Busway Station park-and-ride.

These communities still have good vehicular access to the Metrorail stations via the Florida Turnpike, Don Shula Expressway, and Snapper Creek Expressway; however, this area should be within the Busway's service area, and it is the goal of this recommendation to meet the park-and-ride needs of these communities within the service area.

For commuters traveling by transit without automobile connections, the area is served primarily by three Busway routes, Route 52, the Coral Reef MAX (Route 252), and Route 136 through Richmond Heights. At the SW 152nd Street Busway Station, access is provided to other Busway Routes, including the Busway Local (Route 31), the Busway MAX (Route 38), the Busway Flyer (Route 34), Route 1, and the Saga Bay MAX (Route 287). The area is also served by Routes 35, 65, and the West Dade Connection. The Village of Palmetto Bay also operates the PTP-funded I-Bus Circulator.

Unlike most of the SW 152nd Street Station service area, the Village of Palmetto Bay is predominantly made up of estate-density, residential communities on the east side of the Busway and US-1. The community abuts the Busway; however, attempting to serve this part that is included in this service area with an internal park-and-ride facility on the east side of US-1 would be inefficient due to the very small numbers of expected users, and its close proximity to the Coral Reef Drive Busway Station park-and-ride. The parts of the Village that are south of this line are included in the Richmond Drive Busway Station park-and-ride service area.

Figure 7-9
Coral Reef Drive Station and Recommended Metrozoo Park-&-Ride Service Area
(shaded red)



Park-and-Ride Utilization

Averaging the last three years of data, the SW 152nd Street Busway Station park-and-ride is at 98% utilization. The facility's capacity of 126 spaces has been effectively absorbed by demand. Seventy-four percent (74%) of its vehicles are from within the service area as defined, while 21% are from areas south of the service area, indicating that is receiving some, but relatively low overflow from full park-and-rides that are further south.

The SW 152nd Street Busway Station is served by 7 MDT Busway routes. None of the routes originate at the station, so buses can be expected to be partially full when arriving at the park-and-ride. In total, with an average of 23½ buses per hour, the peak hour bus capacity at the station is 940 seated passengers in the peak direction at the peak hour. Assuming 3/4-full buses, together, they provide a throughput of 235 passengers per hour, which is enough to move all of the park-and-ride passengers (assuming auto occupancy rate of 1.2) in 39 minutes.

In addition to the SW 152nd Street Busway Station park-and-ride, there is an MDT park-and-ride at Coral Reef Drive and the Florida Turnpike. This facility has a capacity of 95 spaces. The utilization for this facility has been slowly increasing by about 20% per year. Over the last year, utilization averaged 62%, leaving 36 spaces available. This facility is served only by the Coral Reef MAX. Its peak period 15-minute headway provides a transit capacity of 80 passengers per hour (assuming ½ full buses). This is enough to move all of the park-and-ride passengers (assuming auto occupancy rate of 1.2) in about 1 hour and 15 minutes.

Service Area Demand and Capacity

The SW 152nd Street Busway Station is practically at capacity, yet the demand for park-and-ride facilities in this service area far exceeds the combined capacity of the Busway and Turnpike park-and-ride lots. Table 7-4 shows that based on the license plate surveys, par-and-ride demand for this service area is currently at 674 vehicles. Currently, 74% of this demand is being met by commuters driving all the way to the Dadeland North or Dadeland South Metrorail stations. The demand of 674 is 35% of the capacity of both park and rides.

Additional park-and-ride use from latent demands identified by the South Dade household transportation telephone survey indicate that potential future demand could increase to 3,014 commuters for this service area.

It is clear that additional parking capacity is needed in this area in the short term, with room to expand for the future potential market. In addition, transit service from the park-and-ride lots would be very inadequate if peak period frequencies are not significantly increased to match additional parking capacity.

Table 7-4
SW 152nd Street Busway Station Balanced Service Area Supply & Demand

Area Name		Boundaries	Existing Metrorail Park & Ride Patrons	Existing Busway Park & Ride Patrons	Existing Metrorail Kiss & Ride Patrons	Existing Busway Kiss & Ride Patrons	Kiss & Ride to Park & Ride Ratio	Potential Park & Ride Use based on Household Survey
Palmetto Bay (north of 168th St)	N	SW 152nd Street	51	4	6	0	11%	201
	S	Old Cutler Rd / 168						
	E	Old Cutler Rd / Bay						
	W	US-1 / Galloway Rd						
Richmond Heights	N	Howard Airport Indus	108	35	3	5	6%	439
	S	SW 152nd Street						
	E	SW 107th Avenue						
	W	SW 137th Avenue						
Palmetto Estates	N	SW 152nd Street	83	45	9	7	12%	343
	S	SW 168th Street						
	E	US-1						
	W	Florida Turnpike						
South Miami Heights (not including southeast part)	N	SW 184th Street	77	48	5	3	6%	478
	S	SW 200th Street						
	E	US-1 & Turnpike						
	W	SW 137th Avenue						
Country Walk & Richmond West	N	Tamiami Airport	182	41	13	8	9%	874
	S	SW 168th Street						
	E	Metrozoo						
	W	SW 157th Avenue						

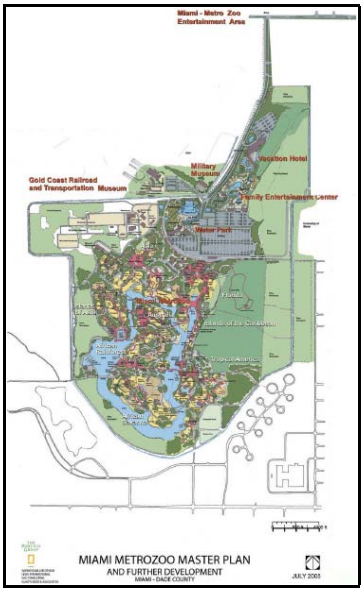
Service Area Demand		674	59	Future Demand	3,014
Busway Park and Ride Capacity	Coral Reef Drive (SW 150th St.) Busway Station	126	Kiss & Ride Ratio to Park & Ride 8.8%	Future Capacity: Busway	126
Other MDT Park and Ride Capacity	Turnpike & SW 152nd Street (available spaces of 115)	36		Future Capacity: Turnpike	36
Recommended Park and Ride Capacity	Miami Metrozoo	0		Future Capacity: Recommendation	0
Surplus / Defecit		-512	Kiss&Ride >4.4% to Use Future Park&Ride 5	Future Surplus / Defecit	-2,852

Note: Potential Park & Ride is the expected increase in park-and-ride use based on survey data.

Opportunities

Reviewing long range plans and major development initiatives, there is a significant opportunity that is located ideally near the center of this service is to increase park-and-ride capacity. In June 2007, an application was filed for a Development of Regional Impact (DRI) and concurrent amendment of the Dade County Comprehensive Development Master Plan (CDMP) that proposes redevelopment of parts of the Miami Metrozoo property. The application proposes to add 193 acres to the original DRI increasing it from 1,010 acres to 1,203 acres, and to develop the Miami Metro Zoo Entertainment Area. The application submits that the project meets transportation concurrency and would not warrant additional changes to existing or planned transit service improvements. The project proposes to expand and redevelop a facility that currently includes large, under-utilized areas of surface parking, and when developed would clearly be a major generator of trips by all modes, and more particularly a source for reverse commute trips in a residential area.

Figure 7-10
Metrozoo Master Plan



Coral Reef Drive - Miami Metrozoo Park-and-Ride Recommendations

New Metrozoo Transit Park-and-Ride Facility

The recommendation is to coordinate with the Miami Metrozoo DRI process to include a large, new MDT park-and-ride facility within the Miami Metrozoo property. since the Metrozoo's proposed entertainment development generates peak trips and parking requirements on the weekends that greatly exceed those on the weekdays (see Table in Section 5), there are good opportunities for the allocation of shared parking spaces for use as weekday park-and-ride spaces.

Metrozoo Transit Park-and-Ride Capacity

Based on the analysis contained in Table 7-2, a facility of 550 spaces would be needed to satisfy existing latent demand (allowing for 5% empty and handicap spaces), if the SW 152nd Street Busway Station park-and-ride lot and the Coral Reef Drive and Turnpike park-and-ride are both maintained. It may be more efficient from an operational standpoint, and less confusing to commuters to replace the Turnpike lot with additional capacity at the Metrozoo property, bringing capacity to 650. An inventory of 650 surface parking spaces is equivalent to about 5 acres of surface parking, not including circulation and the feeder bus station itself.

The arrangement should allow for room for expansion, either as surface parking or by programming for a parking deck, again exploring the potential for shared use as both a commuter facility by weekday, and for the Miami Metro Zoo Entertainment Area on weekends. The future estimate shows that demand could be up to 3,241 spaces (assuming Turnpike lot is closed). This would require a parking ramp on the same land of approximately 6 levels, or 25 acres of surface lots. After the facility is operating, utilization monitoring and periodic study using license plate surveys should provide a better guide as to actual future needs.

The short-term recommendation is to arrange through the DRI approval process if possible, to use part of the existing over-capacity of parking at Metrozoo, and construct a covered platform with amenities for passengers to wait for and board the recommended services. The platform should be located centrally in the parking area, with walking distance from the furthest space not to exceed 500 feet. Initially, about ½ of the forecast capacity should be implemented, and then after monitoring the rest of the capacity obtained as warranted. Therefore, the recommendation is for 325 spaces located around the station platform, such that additional spaces would not be further than 500 feet from the platform when expanded.

Metrozoo Transit Park-and-Ride Amenities

The park-and-ride facility should include amenities that are normal for this type of facility, as well as those indicated by the South Dade household transportation survey. These amenities must include:

- Shelter for all bus stop platforms
- Covered walkways leading from the ends of the parking area to the feeder bus platform
- Landscaping in the surface lot consistent with Dade County requirements
- Adequate seating at all bus stop platforms
- Bright lighting at platforms and bright, even lighting in the parking area
- Security during operating hours, both at the platform and in the parking area
- Secure bicycle storage and bicycle lanes or paths on site
- Electronic, real-time passenger information that fully utilizes MDT's contemporary AVL or APT system information regarding bus arrivals and schedules
- Convenience item sales kiosk(s) on the bus platform
- Trash cans

Additional items may include:

- Telephones
- Restrooms (secure, and clean)

Metrozoo Transit Park-and-Ride Feeder Services

The 650-space park-and-ride facility would require substantially more transit service than the Coral Reef MAX provides to Metrozoo. Based on parking surveys from other Busway stations, most facilities fill or empty in a 2-hour peak period for morning and evening commutes.

For the fully-implemented proposed Metrozoo 650-space park-and-ride, feeder transit service would need to have peak period capacity of about 341 passenger seats per hour[1]. This would require and average of eight 40-seat buses (7.5-minute headways) per hour in the peak periods.

For the initial implementation of 325 spaces, feeder transit service would need to have peak period capacity of about 171 passenger seats per hour[2]. This would require and average of four 40-seat buses, arriving every 15 minutes.

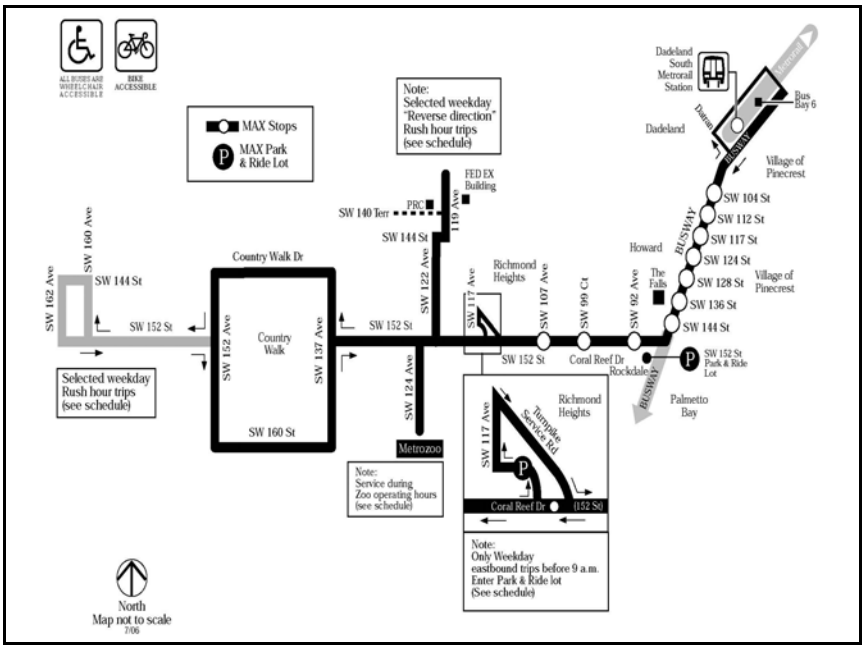
Two routes are proposed to provide feeder services for this lot. The Coral Reef MAX, Route 252, already provides service to Metrozoo, and can serve the market of park-and-riders that are heading to destinations along the Busway. For park-and-ride patrons that are usingthe park-and-ride to reach Metrorail, a new feeder service is proposed called the Coral Reef Flyer. The Flyer would provide non-stop service from the proposed Metrozoo park-and-ride lot to the Dadeland North Metrorail Station.

1. 650 spaces * 1.05 auto occupancy / 2 hour peak period = 341.25
2. 325 spaces * 1.05 auto occupancy / 2 hour peak period = 170.63

Coral Reef MAX (Route 252) Feeder

Of the forecast utilization for the Metrozoo Park-and-Ride shown in Table 7-4, 27% use the Busway, presumably to reach a destination or transfer south of Metrorail, while the other 73% are Metrorail riders that don't use the Busway. The Coral Reef MAX (Route 252) (Figure 7-11) can be used as a feeder service to meet the needs of the 27% that would use the Busway. This would require additional transit feeder capacity to move 46 more passengers per peak hour.

Figure 7-11
Coral Reef MAX (Route 252) Alignment Diagram



As it is currently scheduled, the Coral Reef MAX does not have the capacity to meet the peak needs for providing feeder service, in part because the frequency of service in the peak is inadequate, in part because it begins and ends well west of the proposed park-and-ride lot.

The limited stop service of the route begins east of SW 107th Avenue, with a long deviation along SW 122nd Avenue to SW 140th Street. The deviation primarily serve the reverse commute needs of employees of the commercial and industrial uses on the east side of SW 122nd Avenue. The deviation is scheduled for "reverse direction" trips; therefore, it does not affect primary direction commute trips (eastbound AM peak, and westbound PM peak).

The recommendation includes replacement of the Turnpike Park-and-Ride lot with capacity at the Metrozoo lot. Closing the Turnpike lot would eliminate the necessity for having an eastbound deviation, left into the lot. The mileage and time savings would be approximately 2,200 feet in one direction, and a time savings of about 2 to 5 minutes, including the stop.

The recommendation is to improve peak hour service on the Coral Reef MAX from 15-minute headway to 12-minute headway, proving 1 additional peak hour, peak direction bus to meet the additional demand of 46 per peak hour. Operational characteristics, operational costs, and operational performance characteristics are shown in Table 7-5 and Table 7-6. The additional annual operating cost is estimated to be $130,694. With the additional ridership, weekday boardings per hour would decrease slightly from 18.9 to 18.6, and operating cost per passenger would increase slightly from $5.20 to $5.27.

Table 7-5
Proposed Coral Reef MAX Service Change Operating Characteristics and Costs

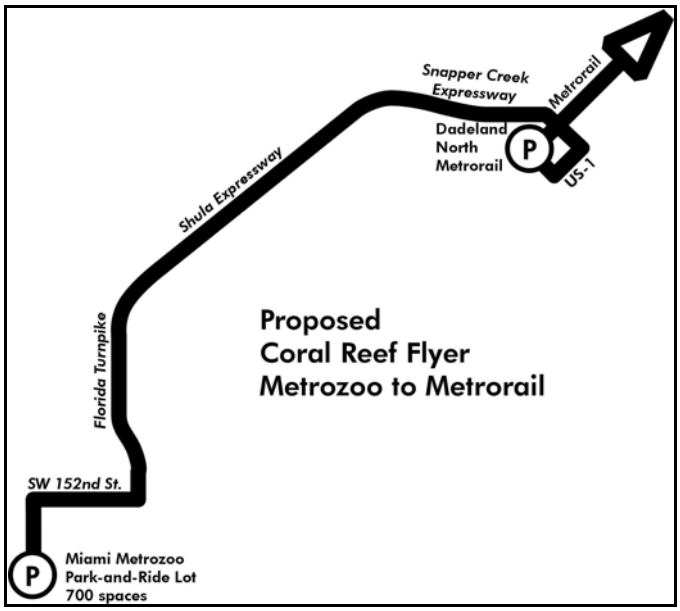
Operational Characteristics	Existing Service			Proposed Service		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Trip Length						
Total 1-way miles	14.0	15.5	15.5	13.8	15.5	15.5
Schedule:						
AM Peak (5:30 am – 10:00 am)						
Headway	15	40	60	12	40	60
One-Way Running Time (minutes)	60	60	60	59	60	60
Schedule Average Speed (mph)	14.0	15.4	15.4	14.0	15.4	15.4
Schedule Recovery Time (minutes)	12	19	22	12	19	22
Service Span (hours)	4.50	3.50	3.50	3.50	3.50	3.50
Revenue Hours	43.04	13.79	9.62	41.24	13.79	9.62
One Way Trips	36.0	10.5	7.0	35.0	10.5	7.0
Vehicle Requirement	8	3	2	10	3	2
Midday (10 am – 3 pm)						
Headway	30	40	60	30	40	60
One-Way Running Time (minutes)	60	60	60	59	60	60
Schedule Average Speed (mph)	14.0	15.4	15.4	14.0	15.4	15.4
Schedule Recovery Time (minutes)	12	19	22	12	19	22
Service Span (hours)	5.00	6.00	6.00	6.00	6.00	6.00
Revenue Hours	23.91	23.64	16.49	28.28	23.64	16.49
One Way Trips	20.0	18.0	12.0	24.0	18.0	12.0
Vehicle Requirement	4	3	2	4	3	2
PM Peak (3 pm – 7:30 pm)						
Headway	15	40	60	12	40	60
One-Way Running Time (minutes)	60	60	60	59	60	60
Schedule Average Speed (mph)	14.0	15.4	15.4	14.0	15.4	15.4
Schedule Recovery Time (minutes)	12	19	22	12	19	22
Service Span (hours)	4.50	4.00	4.00	4.00	4.00	4.00
Revenue Hours	43.04	15.76	11.00	47.14	15.76	11.00
One Way Trips	36.0	12.0	8.0	40.0	12.0	8.0
Vehicle Requirement	8	3	2	10	3	2
Night (7:30 pm – 9:15 pm)						
Headway	45	0	0	45	0	0
One-Way Running Time (minutes)	60	0	0	59	0	0
Schedule Average Speed (mph)	14.0	0.0	0.0	14.0	0.0	0.0
Schedule Recovery Time (minutes)	12	0	0	12	0	0
Service Span (hours)	1.75	0.00	0.00	1.75	0.00	0.00
Revenue Hours	5.58	0.00	0.00	5.50	0.00	0.00
One Way Trips	4.7	0.0	0.0	4.7	0.0	0.0
Vehicle Requirement	4	0	0	4	3	2
Total Service Span (hr.s)	15.75	13.50	13.50	15.25	13.50	13.50
Peak Vehicle Requirement (both directions)	8	3	2	10	3	2
Total 1-Way Trips	97	46	32	104	41	27
Daily Revenue Miles (2-Way)	1,353	711	494	1,431	626	417
Daily Revenue Hours	115.6	53.2	37.1	122.2	53.2	37.1
Daily Recovery Hours	11.6	5.3	3.7	12.2	5.3	3.7
Daily Operating Hours	127.1	58.5	40.8	134.4	58.5	40.8
Daily Direct Operating Cost	$11,351.98	$5,625.33	$3,918.11	$12,000.10	$5,237.84	$3,565.85
Annual Direct Operating Cost		$3,459,125			$3,589,819	

Table 7-6
Proposed Coral MAX Service Change Operational Performance

Operational Performance	Existing Service			Proposed Service		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Utilization:						
Average Annual Daily Boardings	2,183	592	412	2,183	592	412
Additional Expected Boardings	0	0	0	92	0	0
New Annual Average Daily Boardings	2,183	592	412	2,275	592	412
Efficiency:						
Operational Cost / Revenue Hour	$98.23	$105.76	$105.58	$98.23	$98.47	$96.09
Operational Cost / Revenue Mile	$8.39	$7.92	$7.92	$8.39	$8.37	$8.55
Operational Cost / Seat Mile	$0.21	$0.20	$0.20	$0.21	$0.21	$0.21
Productivity:						
Boardings / Revenue Hour	18.9	11.1	11.1	18.6	11.1	11.1
Boardings / Revenue Mile	1.6	0.8	0.8	1.6	0.9	1.0
Operational Cost per Passenger	$5.20	$9.51	$9.52	$5.27	$8.85	$8.66

Coral Reef Flyer

Figure 7-12
Coral Reef Flyer Alignment Diagram



The Coral Reef Flyer would meet the needs of Metrozoo park-and-ride passengers that commute by direct connection to Metrorail. The Flyer would provide non-stop service from the Metrozoo park-and-ride directly to the Dadeland North Metrorail Station. Figure 7-12 provides an alignment diagram. The alignment uses the Florida Turnpike (SR-821), the Don Shula Expressway (SR-834), and the Snapper Creek Expressway to reach Metrorail in the shortest possible time, using the highway shoulders where possible.

The forecast utilization for the Metrozoo Park-and-Ride shown in Table 7-4 shows that 73% are Metrorail riders that don't use the Busway. The Coral Reef Flyer addresses the needs of this market. This would require additional transit feeder capacity for the Flyer to move 125 more passengers per peak hour. At full implementation with the 650-space park-and-ride facility, this demand would more than double.

The recommendation is to initially implement the Coral Reef Flyer as a peak period service with a 30-minute peak headway, providing 2 buses per peak hour. Upon expansion of the parking facility to the full 650 spaces, and as demand warrants, the Coral Reef Flyer service should be improved to provide 20-minute peak headways, and 3 buses per hour. Operational characteristics, operational costs, and operational performance characteristics are shown in Table 7-7 and Table 7-8. For the initial implementation, annual operating cost is estimated to be $386,959, with 25.3 boardings per hour, and operating cost per passenger would of $5.[94]. For the initial implementation, annual operating cost would increase by $193,479 to $580,438, with 33.7 boardings per hour, and operating cost per passenger would of $4.[45].

Table 7-7
Proposed Coral Reef Flyer Operating Characteristics and Costs

Operational Characteristics	Initial Implementation			Full Implementation		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Trip Length						
Total 1-way miles	9.5	0.0	0.0	9.5	0.0	0.0
Schedule:						
AM Peak (6:00 am – 9:00 am)						
Headway	30	0	0	20	0	0
One-Way Running Time (minutes)	19	0	0	19	0	0
Schedule Average Speed (mph)	30.0	0.0	0.0	30.0	0.0	0.0
Schedule Recovery Time (minutes)	6	0	0	6	0	0
Service Span (hours)	3.00	0.00	0.00	3.00	0.00	0.00
Revenue Hours	4.94	0.00	0.00	7.41	0.00	0.00
One Way Trips	12.0	0.0	0.0	18.0	0.0	0.0
Vehicle Requirement	2	0	0	3	0	0
Midday (9 am – 4 pm)						
Headway	0	0	0	0	0	0
One-Way Running Time (minutes)	0	0	0	0	0	0
Schedule Average Speed (mph)	0.0	0.0	0.0	0.0	0.0	0.0
Schedule Recovery Time (minutes)	0	0	0	0	0	0
Service Span (hours)	0.00	0.00	0.00	0.00	0.00	0.00
Revenue Hours	0.00	0.00	0.00	0.00	0.00	0.00
One Way Trips	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Requirement	0	0	0	0	0	0
PM Peak (4 pm – 7 pm)						
Headway	30	0	0	20	0	0
One-Way Running Time (minutes)	19	0	0	19	0	0
Schedule Average Speed (mph)	30.0	0.0	0.0	30.0	0.0	0.0
Schedule Recovery Time (minutes)	6	0	0	6	0	0
Service Span (hours)	3.00	0.00	0.00	3.00	0.00	0.00
Revenue Hours	4.94	0.00	0.00	7.41	0.00	0.00
One Way Trips	12.0	0.0	0.0	18.0	0.0	0.0
Vehicle Requirement	2	0	0	3	0	0
Night (7 pm to 8 pm)						
Headway	0	0	0	0	0	0
One-Way Running Time (minutes)	0	0	0	0	0	0
Schedule Average Speed (mph)	0.0	0.0	0.0	0.0	0.0	0.0
Schedule Recovery Time (minutes)	0	0	0	0	0	0
Service Span (hours)	0.00	0.00	0.00	0.00	0.00	0.00
Revenue Hours	0.00	0.00	0.00	0.00	0.00	0.00
One Way Trips	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Requirement	0	0	0	0	0	0
Total Service Span (hr.s)	6.00	0.00	0.00	6.00	0.00	0.00
Peak Vehicle Requirement (both directions)	2	0	0	3	0	0
Total 1-Way Trips	24	46	32	36	46	32
Daily Revenue Miles (2-Way)	228	0	0	342	0	0
Daily Revenue Hours	9.9	0.0	0.0	14.8	0.0	0.0
Daily Recovery Hours	1.0	0.0	0.0	1.5	0.0	0.0
Daily Operating Hours	10.9	0.0	0.0	16.3	0.0	0.0
Daily Direct Operating Cost	$1,482.60	$0.00	$0.00	$2,223.90	$0.00	$0.00
Annual Direct Operating Cost	$386,959			$580,438		

Table 7-8
Proposed Coral Reef Flyer Operational Performance

Operational Performance	Initial Implementation			Full Implementation		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Utilization:						
Average Annual Daily Boardings	250	0	0	250	0	0
Increase	0	0	0	250	0	0
New Annual Average Daily Boardings	250	0	0	499	0	0
Average Bus Loading	10	0	0	14	0	0
Average Bus Load w/ 1-Way Commute	21	0	0	28	0	0
Efficiency:						
Operational Cost / Revenue Hour	$150.06	$0.00	$0.00	$150.06	$0.00	$0.00
Operational Cost / Revenue Mile	$6.50	$0.00	$0.00	$6.50	$0.00	$0.00
Operational Cost / Seat Mile	$0.16	$0.00	$0.00	$0.16	$0.00	$0.00
Productivity:						
Boardings / Revenue Hour	25.3	.0	.0	33.7	.0	.0
Boardings / Revenue Mile	1.1	0.0	0.0	1.5	0.0	0.0
Operational Cost per Passenger	$5.94	$0.00	$0.00	$4.45	$0.00	$0.00

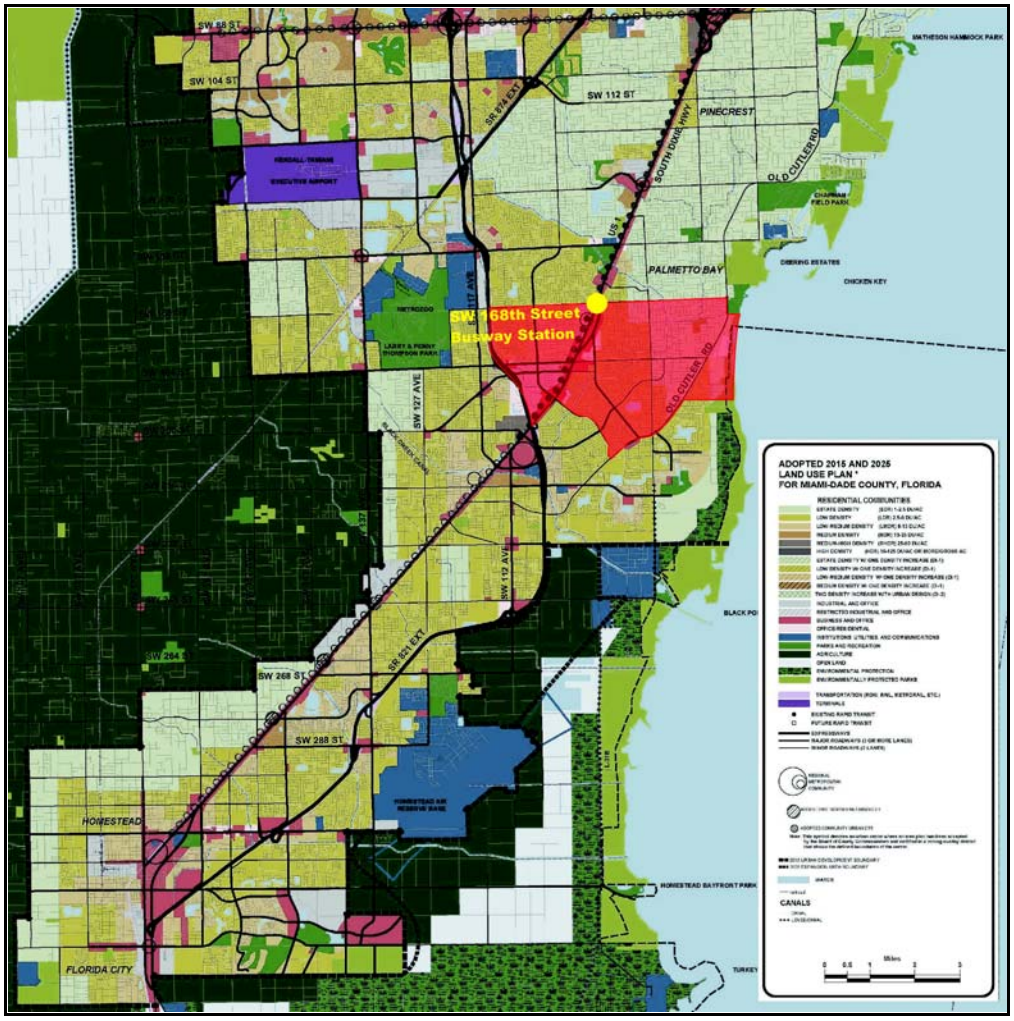
Recommendations: Richmond Drive Busway Station Park-and-Ride: Perrine, Palmetto Bay, Cutler Bay

Service Area

The service area for the Richmond Drive (SW 184th Street) Busway Station park-and-ride includes Perrine, the south part of Village of Palmetto Bay (south of 168th Street), and the area on both sides of Franjo Road in the north part of the Town of Cutler Bay The map of Figure 7-12 shows the Richmond Drive Busway Station service area.

Busway transit service into the service area is provided by is Route 1, and the Saga Bay MAX (Route 287). At the Busway Station, access is provided to other Busway Routes, including the Busway Local (Route 31), the Busway MAX (Route 38), and the Busway Flyer (Route 34). Additional transit routes covering parts of the service area but not providing Busway service are Routes 35 and 52.

Figure 7-13
Richmond Drive Busway Station Service Area
(shaded red)



Park-and-Ride Utilization

Averaging the last three years of data, the Richmond Drive (SW 168th Street) Busway Station park-and-ride is at 97% utilization. The facility's capacity of 149 spaces has been effectively absorbed by demand. Only thirty-one percent (31%) of its vehicles are from within the service area as defined, while 29% are from areas south of the service area, and 32% are overflow from areas north of the service area. This indicates that the facility is receiving a significant level of overflow from park-and-ride facilities that are at or near capacity.

The Richmond Drive Busway Station is served by 5 MDT Busway routes. None of the routes originate at the station, so buses can be expected to be partially full when arriving at the park-and-ride. In total, with 17½ buses per hour, the peak hour bus capacity at the station is 700 seated passengers in the peak direction at the peak hour. Assuming 3/4-full buses, together, they provide a throughput of 175 passengers per hour, which is enough to move all of the park-and-ride passengers (assuming auto occupancy rate of 1.2) in 59 minutes.

Service Area Demand and Capacity

At average utilization of 97% for the past three years, the Richmond Drive Busway Station park-and-ride is practically at capacity, yet the demand for park-and-ride facilities in this service area still slightly exceeds its capacity. Table 7-9 shows that based on the license plate surveys, park-and-ride demand for this service area is currently at 172 vehicles for the 149-space facility. Although over-capacity, the current margin is very small

Table 7-9
Richmond Drive Busway Station Balanced Service Area Supply & Demand

Area Name	Boundaries	Existing Metrorail Park & Ride Patrons	Existing Busway Park & Ride Patrons	Existing Metrorail Kiss & Ride Patrons	Existing Busway Kiss & Ride Patrons	Kiss & Ride to Park & Ride Ratio	Potential Park & Ride Use (based on Household Survey)
Palmetto Bay (south of 168th St)	N SW 168th Street S SW 184th Street E Old Cutler Rd / Bay W US-1 / Galloway Rd	8	8	4	0	25%	125
West Perrine	N SW 168th Street S US-1/Tpk Intersection E US-1 W Florida Turnpike	34	36	5	13	26%	316
East Perrine	N SW 168th Street S SW 184th Street E SW 87th Avenue W US-1	23	6	3	1	14%	119
Franjo	N SW 184th Street S Old Cutler Road E Old Cutler / 87th Av W Marlin Road	42	15	3	1	7%	362

Service Area Demand		172	30	Future Demand	1,098
Park and Ride Capacity	Richmond Drive Station Park-&-Ride	149	Kiss & Ride Ratio to Park & Ride	17.5%	Future Capacity	149
Surplus / Defecit		-23	Kiss&Ride >4.4% to Use Future Park&Ride	5	Future Surplus / Defecit	-949

Note: Potential Park & Ride is the expected increase in park-and-ride use based on survey data.

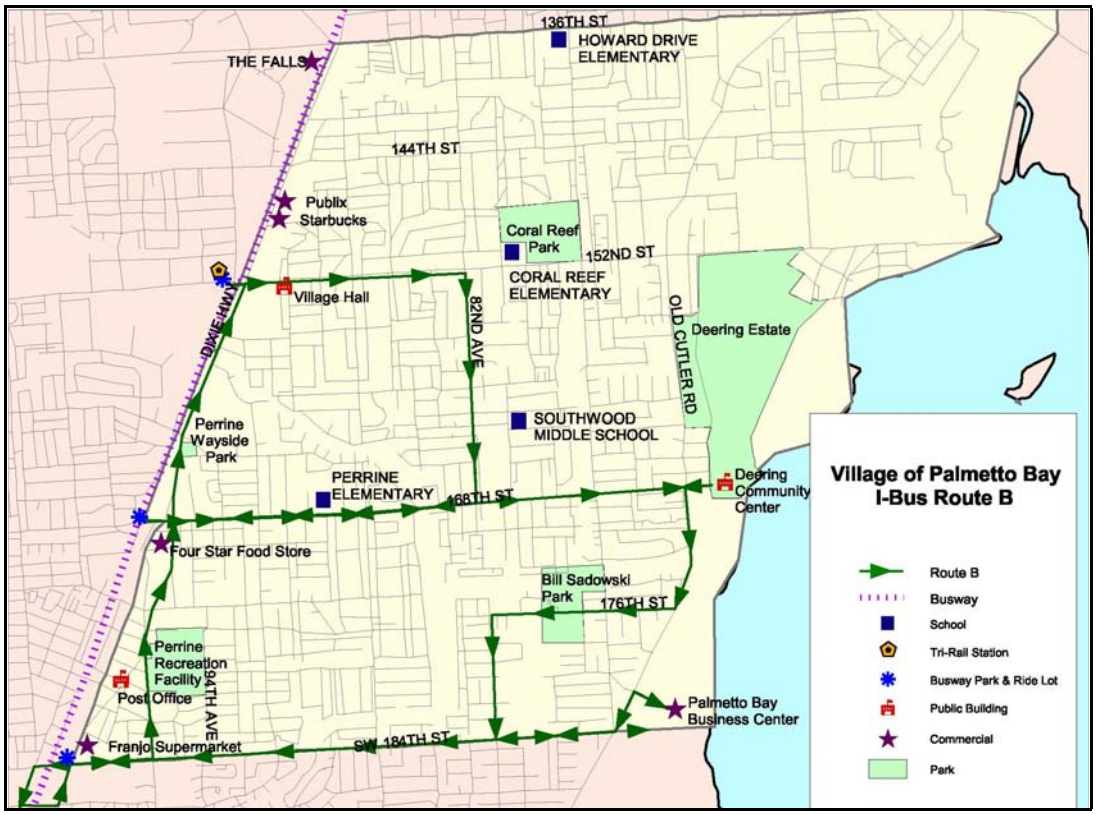
Additional park-and-ride use from latent demands identified by the South Dade household transportation telephone survey indicate that potential future demand could increase to 3,014 commuters for this service area.

In the short-term, this facility needs a small amount of additional capacity. Ideally, the increase should be the sum of the deficit of additional capacity plus an additional 5%: about 31 spaces to create a 180-space facility. Although the need is small, at the current site, there is no additional space for expansion. The lot is surrounded by abutting residences to its west and north, by the Busway to the east, and by Richmond Drive to the south.

Opportunities

At least six (6) additional spaces are needed at the Richmond Drive Busway Station. Table 7-9 shows that a demand of eight (8) spaces originates in the Village of Palmetto Bay. At one of the public meetings, the Village of Palmetto Bay expressed their interest in using its PTP-funded I-Bus community circulator service to provide to its residents access to the Busway or Metrorail. Within the south part of the Village, the I-Bus South Route B provides service to the Richmond Drive Busway Station., and the Coral Reef Drive Station.

Figure 7-14
Palmetto Bay I-Bus North Route B Alignment



The survey findings indicate a population of 8 existing users from this area that use the Busway park-and-ride lot. Since the demand is very small the Village may be able to locate an existing public parking lot at one of the schools or parks along the circulator's route that has some additional capacity and may start a Village to Busway pilot program using its circulator. This recommendation is similar to that for the I-Bus Route A, and the two recommendations should be combined into a single pilot program by the Village.

Much more significant than the I-Bus, there is the potential for expansion of park-and-ride capacity at this Station through implementation of the Quail Roost Transit Village. If implemented, the large mixed-use project between SW 184th Street and SW 186th Street, just west of the Busway would provide 500 Busway park-and-ride spaces in an active, secure environment that would itself be a transit destination. The public-private participation project is currently going through planning approvals.

Richmond Drive Busway Station Park-and-Ride Recommendations

Quail Roost Transit Village Additional Parking Capacity

Based on the analysis contained in Table 7-9, a small increase in park-and-ride capacity is required for this service area. There is a demand for 172 spaces, and an inventory of 149. If the suggested 23 to 30 additional spaces are added, this small increase could be costly on a per space basis since it would be such a small construction project.

Instead of expanding the current site which is leased by MDT from a private owner, and cannot be expanded without encroaching on residential uses; additional parking demand for this service area should be met by the proposed Quail Roost Transit Village project that is currently in the process of receiving planning approvals. This project wold provide 500 dedicated park-and-ride spaces.

The recommendation to address expanding of parking capacity for this service area, is to fully support the approval of the Quail Roost Transit Village, and when constructed and opened, terminate the lease for the current park-and-ride site. This would provide opening day utilization for the proposed parking facility.

Quail Roost Transit Village Amenities

Amenities at the Quail Roost Transit Village should to be consistent with the amenities indicated by the South Dade household transportation survey, and consistent with the scale of the facility. These may include:

- Adequate platform area, shelter, and seating
- Covered walkways leading from the parking area to the Busway platform
- Bright, even pedestrian and security lighting

- Security during operating hours for the platform and in the parking area
- Secure bicycle storage
- Electronic, real-time passenger information that fully utilizes MDT's contemporary AVL or APT system information regarding bus arrivals and schedules

As proposed, and based on very general schematic plans, the Quail Roost Transit Village, provides adequate area, shelter, and parking, with urban lighting. As the proposal moves forward, it is recommended that MDT assure that seating and shelters for waiting for buses are adequate. As part of the recommendation to support the project, MDT should seek conditions of approval that include: adequate seating and comfort amenities, bicycle storage, and electronic passenger information equipment.

Palmetto Bay and Pinecrest Park-and-Ride Feeder

There is a small demand of 8 Busway park-and-ride commuters that could be served along the route of the Village of Palmetto Bay's I-Bus Route B. To the extent that the service is already in operation, and that such a small inventory of parking may be easily provided near Perrine Recreational center or Bill Sadowski Park, the Village may implement a pilot program to provide park-and-ride capacity to its residents to reach the Busway.

There are also 8 more commuters from this area that use park-and-rides at Metrorail. It is the recommended that the Village integrates this effort with the similar recommendation for the I-Bus Route A, and coordinates with MDT to provide the driver training and certification for the Village to run its I-Bus service along the Busway to Metrorail. This would provide a very attractive service to Palmetto Bay residents by providing secure, community parking within the Village, and direct, fast service to a Metrorail station. If combined with the Route A recommendation, the park-and-ride feeder could expect to serve 71 commuters from the Village with this service.

This recommendation is provided as an alternative to the combined Pinecrest & Palmetto Bay feeder recommendation, which is the preferred alternative.

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Recommendations: Cutler Ridge Park-and-Ride and Feeder: Cutler Bay, Goulds

Service Area

The service area for the SW 200th Street Busway Station park-and-ride shown in Figure 7-15, includes the south part of the Town of Cutler Bay, and Goulds, and the southeast part of South Miami Heights. The southeast part of South Miami Heights is southeast of Quail Roost Drive, and abutting the station to the west is also in this service area. The north parts of Cutler Bay, on both sides of Franjo Road are included in the Richmond Drive Busway Station service area. Perrine, almost abutting this station, is to the north but it is only the south industrial area of Perrine that is near this station. The residential parts of Perrine are better served by the Richmond Drive Busway Station park-and-ride.

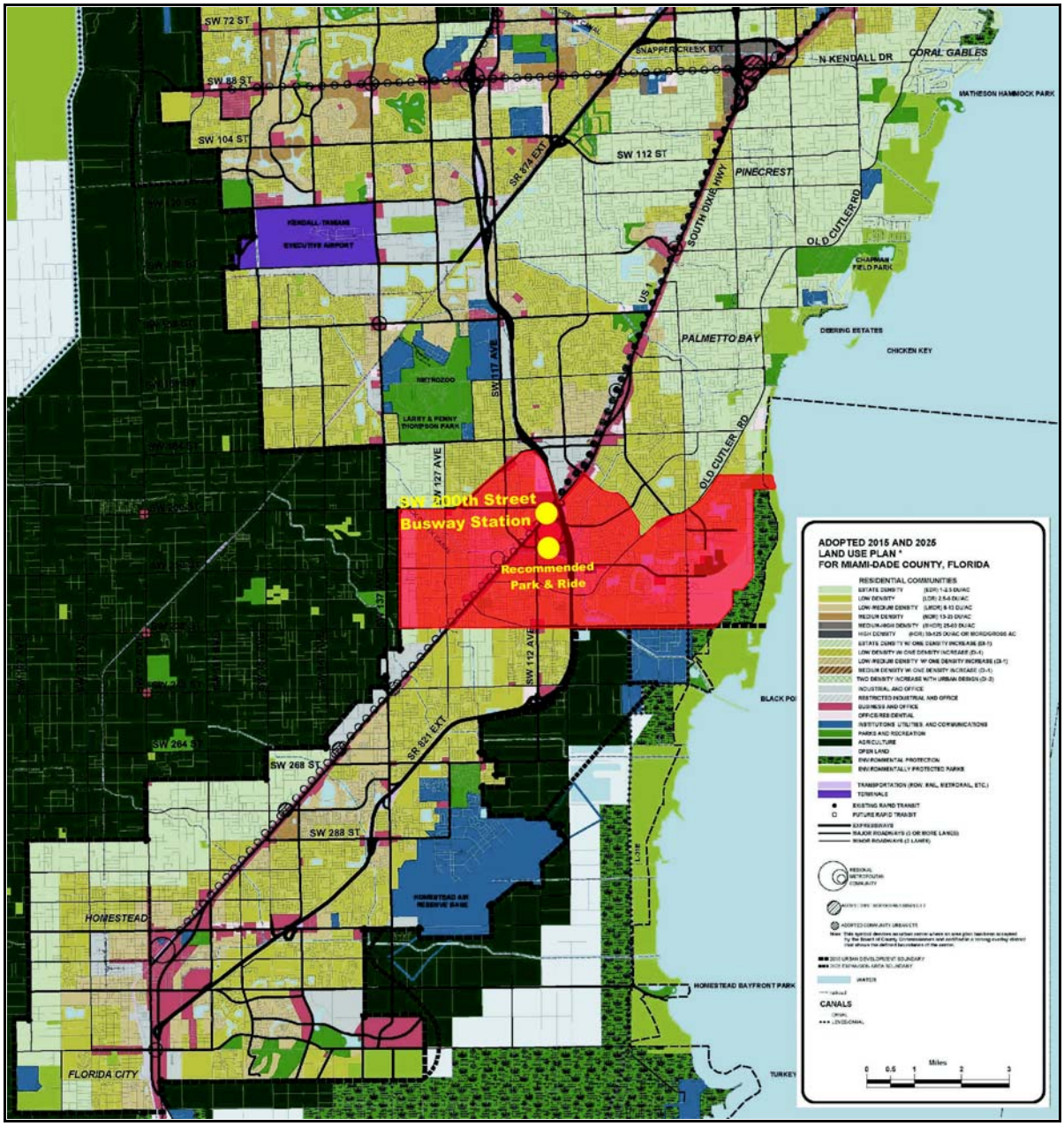
These communities have reasonable alternative (to US-1) vehicular access to the Metrorail stations via the Florida Turnpike, Shula Expressway, and Snapper Creek Expressway; however, this area is well within the Busway's service area, and it is the goal of this recommendation to meet the park-and-ride needs of these communities within the service area.

For commuters traveling by transit without automobile connections, the area is served by three Busway routes, the Busway Local (Route 31), Busway MAX (Route 38), and Busway Flyer (Route 34). Route 1 and Route 52 also serve the SW 200th Street Busway Station, but do not return to the Busway until SW 168th Street (Route 1), and SW 152nd Street (Route 52). At the Southland Mall, Route 37, Route 70, and the West Dade Connection (Route 137), and the Goulds Connection (Route 216) are also available. The Busway Local, West Dade Connection, and the Goulds Connection all terminate at the Mall.

While most of this service area is characterized by low density and low–medium density residential uses (2.5 to 13 dwelling units per acre (DU/Ac.)), the area at the intersection of the Florida Turnpike and US-1 is a significantly more intensely developed and planned area. With the Southland Mall at the center, incorporating over 1.1-million square feet of retail floor area on 100 acres, there are medium-high density residential (25 to 60 DU/Ac.) located in the southeast corner of South Miami Heights, just across US-1 and the Busway. Just south of the Mall, mixed-use major redevelopment is planned for the area between SW 211th Street and the Black Creek Canal.

The service area ends at SW 232nd Street which is the southern limit of the Goulds for the purposes of this analysis. South of this point, the character of development, and development intensity, are significantly different from the areas north of here. Most importantly, the geographic width of the Busway service area corridor through Princeton, Naranja, and Leisure City is considerably smaller at about 3 miles. Just north of SW 232nd Street, the corridor is about 5 miles wide, and continuously increasing to the north.

Figure 7-15
SW 200th Street Busway Station and Recommended Cutler Ridge Park-&-Ride Service Area (shaded red)



Park-and-Ride Utilization

The park-and-ride lot at the SW 200th Street Busway Station has only been in operation for two years since opening in October 2005. The 3.4-acre site was purchased by MDT in 2002 to replaced the leased MDT park-and-ride spaces from the Cutler Ridge Mall (now Southland Mall). When the facility opened in 2005, it was on a temporary basis with 131 spaces. Plans call for expansion to 362 spaces. Per the 2007 Transit Development Program (TDP), public hearings and the zoning approval process is complete, and bids are out for the two-phased construction. The existing lot will not be closed during construction. MDT staff has added that the expansion plans have been changed to a joint development with the number of park-and-ride spaces remaining the same.

The Cutler Ridge Mall park-and-ride operated continuously until August 2006, overlapping the operation of the replacement park-and-ride at 200th Street for 11 months (October 2005 to August 2006). The Cutler Ridge Mall, having a capacity of 50 spaces, operated either continuously over-capacity for a commuter park-and-ride, or with higher turn-over suggesting other transit or non-transit uses. The lot averaged 136% utilization for its last three years of operation.

The replacement facility at 200th Street and the Busway saw relatively low utilization of 67% for its first year of operation. During this time, the Southland Mall park-and-ride was still in operation. After September 2006, when the Southland Mall park-and-ride was discontinued, and park-and-ride capacity for the service area shrank from 181 spaces to 131 spaces, utilization at the 200th Street Busway Station facility rose to an average of 94% for the year. The capacity of the facility has essentially been absorbed by demand.

Thirty-eight percent (38%) of its vehicles are from within the service area as defined, while 23% are from areas south of the service area, and 39% are from areas north of the service area. This indicates that the facility is receiving a significant proportion of overflow park-and-ride commuters from park-and-rides that are at or near capacity.

The SW 200th Street Busway Station park-and-ride is served by three MDT Busway routes, the Busway Local, Busway MAX, and the Busway Flyer. In peak periods, their combined service provides a transit frequency of 13 buses per hour, or an average headway of just less than 5 minutes. The routes do not originate at the park-and-ride, so buses can be expected to be partially full when arriving at the park-and-ride. Assuming 3/4-full buses, together, they provide a throughput of 130 passengers per hour, which is enough to move all of the park-and-ride passengers (assuming auto occupancy rate of 1.2) in about 1 hour and 12 minutes.

Service Area Demand and Capacity

The SW 200th Street Busway Station is practically at capacity. Still, the demand for park-and-ride facilities in this service area far exceeds the combined capacity of the 200th Street facility. Table 7-10 shows that, based on the license plate surveys, park-and-ride demand for this service area is currently at 216 vehicles. With a capacity of 131 spaces at the 200th Street lot there is a deficit of 85 spaces.

Additional park-and-ride use from latent demands identified by the South Dade household transportation telephone survey indicate that potential future demand could increase to 1,445 commuters for this service area.

Additional parking capacity in the range of 85 to 95 spaces is needed in this area in the short term, with room to expand for the future potential market. In addition, transit service to the facility would not have adequate capacity to move all park-and-ride passengers within 1 hour, and schedule improvements are needed.

Figure 7-10
SW 200th Street Busway Station Balanced Service Area Supply & Demand

Area Name		Boundaries	Existing Metrorail Park & Ride Patrons	Existing Busway Park & Ride Patrons	Existing Metrorail Kiss & Ride Patrons	Existing Busway Kiss & Ride Patrons	Kiss & Ride to Park & Ride Ratio	Potential Park & Ride Use based on Household Survey
South Miami Heights (southeast part)	N	Quail Roost Drive	5	1	0	0	0%	82
	S	SW 200th Street						
	E	US-1 & Turnpike						
	W	Quail Roost Drive						
Cutler Ridge, Cutler Bay	N	SW 184th Street	41	21	7	0	11%	302
	S	SW 216th Street						
	E	Marlin Road						
	W	US-1						
Saga Bay	N	Old Cutler Road	55	6	4	1	8%	203
	S	SW 216th Street						
	E	Bay						
	W	Old Cutler Road						
East Goulds	N	SW 216th Street	42	23	1	0	2%	464
	S	SW 232nd Street						
	E	SW 87th Avenue						
	W	US-1						
West Goulds	N	SW 216th Street	18	4	1	0	5%	177
	S	SW 232nd Street						
	E	US-1						
	W	SW 137th Avenue						

Service Area Demand		216	14	Future Demand	1,445
Busway Park and Ride Capacity	SW 200th St. Busway Station	131	Kiss & Ride Ratio to Park & Ride 6.5%	Future Capacity: Busway	131
Recommended Park and Ride Capacity	Cutler Ridge Metropolitan Center	0		Future Capacity: Recommendation	0
Surplus / Defecit		-85	Kiss&Ride >4.4% to Use Future Park&Ride 1	Future Surplus / Defecit	-1,531

Note: Potential Park & Ride is the expected increase in park-and-ride use based on survey data.

Opportunities

The adopted Cutler Ridge Master Plan (CRMP) proposes the development of the Cutler Ridge Metropolitan Urban Center District (CRMUCD) on the east side of the South Dade Busway and US-1, in the triangular-shaped area of 220 acres, bound by US-1, the Florida Turnpike, and Black Creek Canal.

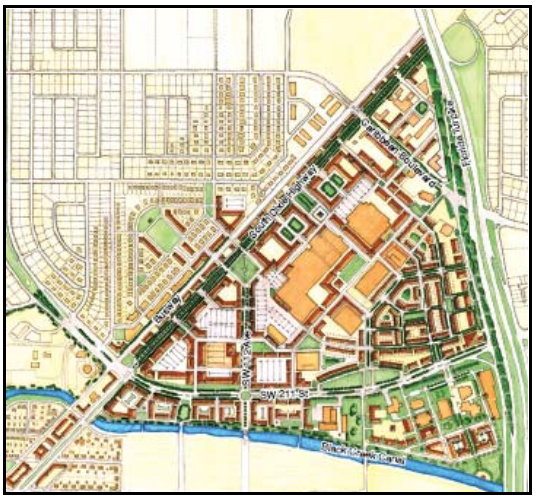
Private redevelopment recommendations in the CRMP includes the redevelopment of the 100-acre, 1.1-million square feet in the commercial center as a pedestrian-oriented mixed-use redevelopment, incorporating retail and business uses, possibly residential uses or other

flex space. The plan allows the core area of the redevelopment to be built to 10 to 12 stories. The periphery of the mall area will be developable to 3 stories of residential at 52 to 60 DU/ Ac.

Between SW 211th Street and the Black Creek Canal, redevelopment is to include:

- The existing South Dade Government Center, which includes 156,000 square feet of office and public meeting space;
- Expanded and redeveloped regional public library;
- South Dade Performing Arts Center (SDPAC), a 1,000-seat, multi-story performance space;
- West of the SDPAC, will be joint venture development(s) of approximately 400 to 500 market-rate residential units at 52 to 60 DU/Ac. It will be designed as a pedestrian and transit-oriented mixed-use development with ground floor retail / business uses, sidewalks, curbing, and parking within the interior of the blocks, or on-street. The development will be designed to create a highly urban environment served by urban streets with continuous, active, pedestrian path.

Figure 7-16
Cutler Ridge Master Plan



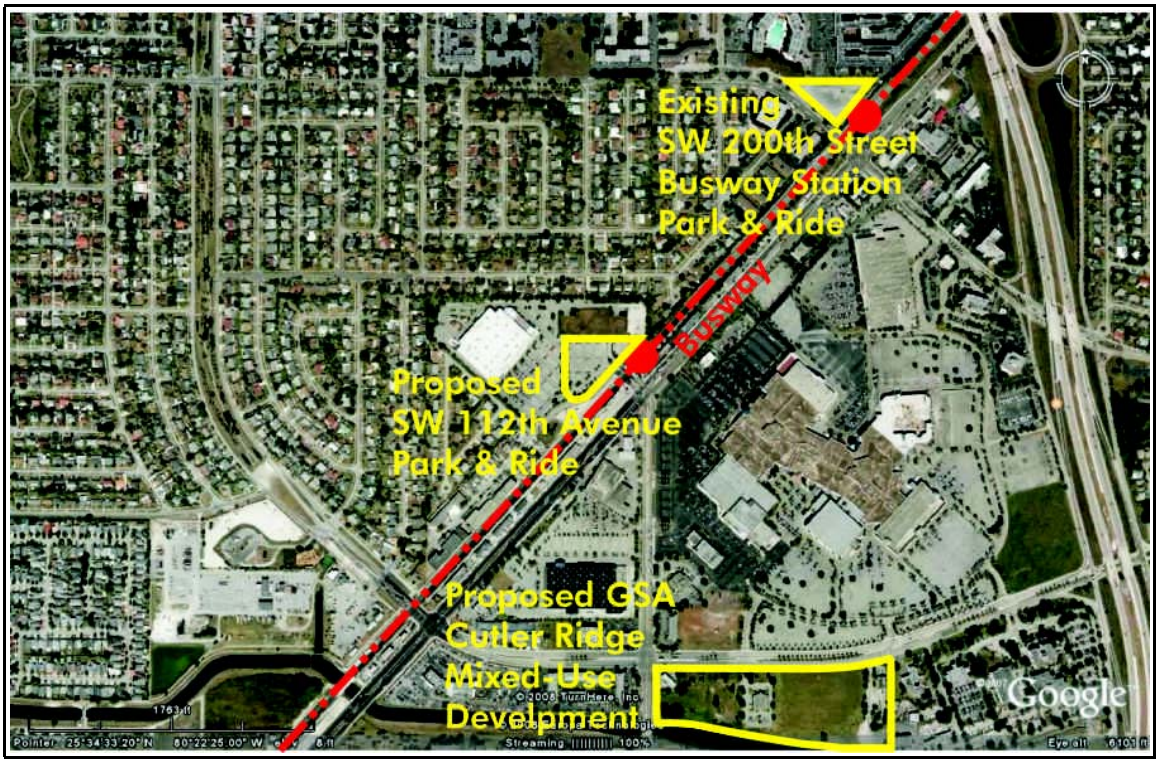
The mixed use development to the south of Cutler Ridge Boulevard (SW 211th Street) will provide a medium density environment that can produce both home origin and destination trips ends (two-way commutes at peak periods), and because of the urban character, will be easy to serve efficiently by transit. This development alone could produce in the range of 180 to 460 additional daily, external transit trips. The redevelopment north of Cutler Ridge Boulevard could produce many more transit trips. There will be enough transit trips to warrant circulating a route through the Cutler Ridge Metropolitan Urban Center. This circulator can provide service to the SW 200th Street Busway Station.

If current commute patterns are an indicator, about 46% of the new residents will commute along US-1, probably north. With the potential for up to 1,000 employees, 460 of which may have commute patterns along US-1, there will also be good justification for an Express or MAX Busway route to serve these needs. If there is to be established a Busway route that terminates at the CRMUCD, then it is logical to also co-locate park-and-ride facilities for other South Dade residents within the CRMUCD.

To meet short-term needs, MDT staff is considering an unused parking lot adjacent to Target at SW 112th Avenue and the Busway. The site is shown in the aerial to below. This lot includes approximately 240 unused spaces, and is adjacent to the SW 112th Avenue Busway Station. The site, if a lease can be obtained, may be used temporarily until a permanent

facility is possible in the Cutler Ridge Master Plan area. Since the site offers substantial capacity, and is ideally located to a Busway station, arrangements for a more permanent or long term tenure should be considered.

Figure 7-17
Cutler Ridge Area Aerial
Existing SW 200th Street Park-and-Ride Facility, Proposed SW 112th Avenue Facility, and Cutler Ridge Master Plan Area



Cutler Bay, Goulds Park-and-Ride Recommendations

New SW 112th Avenue Busway Station Park-and-Ride Facility: Short-Term

The short-term recommendation is to support MDT in obtaining long-term use, ownership, or a joint venture to develop the unused lot in front of Target, at the SW 112th Street Busway Station. This lot can provide 240 additional spaces, and is preferable to expanding the SW 200th Street site since this spreads station passenger loads as well as traffic impacts. Based on the analysis contained in Table 7-10, initially a facility of 95 spaces (85 plus 5% more for empty and handicap spaces). This capacity will be more than satisfied by the proposed facility at the SW 112th Avenue Busway Station.

SW 112th Avenue Busway Station Park-and-Ride Amenities

The initial park-and-ride facility at the SW 112th Avenue Busway Station should include amenities that are normal for this type of facility, as well as some of those indicated by the South Dade household transportation survey. The Busway Station already includes shelter, seating, trash cans, a telephone, and newspaper racks. Other amenities should include:

- Covered walkway from the parking area to the bus stop with lighting
- Security during operating hours in the parking area
- Adequate lighting in the parking area
- Landscaping in the parking area (maintain and improve existing)
- Trash cans in the parking area
- Secure bicycle storage, and bicycle lanes or paths in the redevelopment
- Electronic, real-time passenger information that fully utilizes MDT's contemporary AVL or APT system information regarding bus arrivals and schedules

Cutler Ridge Metropolitan Center Transit Park-and-Ride Facility: Long-Term

The long-term recommendation is to coordinate with the County Department of Planning and Zoning, and with Government Services Administration (GSA) that administers part of the redevelopment, to incorporate a substantial, new MDT park-and-ride facility within parking facilities of the CRMUCD. Park-and-ride development should initially occur within the primarily residential mixed-use developments south of Cutler Ridge Boulevard; however, a second facility may be warranted to meet future needs, and space should be reserved for additional park-and-ride capacity in the commercial core area as well. Based on survey data, a total future demand of 1,445 park-and-ride patrons is possible. About 1,200 spaces would be needed to fully meet this demand, in at least two phases of about 500 to 600 spaces each. As planning and permitting for these components of the CRMUCD

development occur, future demand estimates should be re-evaluated in greater detail to determine contemporary needs at the time.

Cutler Ridge Metropolitan Center Park-and-Ride Amenities

The new park-and-ride facilities in the CRMUCD should include amenities that are normal for this type of facility, as well as those indicated by the South Dade household transportation survey. The amenities should also respond to their urban setting. These amenities include:

- Shelter for all bus stop platforms
- Parking areas will be in off-street multi-level garages, so covered walkway will not be needed; however, bus stops should be located near the pedestrian access points to these garages.
- Adequate seating at all bus stop platforms
- Security during operating hours in the parking area
- Secure bicycle storage, and bicycle lanes or paths in the redevelopment
- Electronic, real-time passenger information that fully utilizes MDT's contemporary AVL or APT system information regarding bus arrivals and schedules
- Trash cans

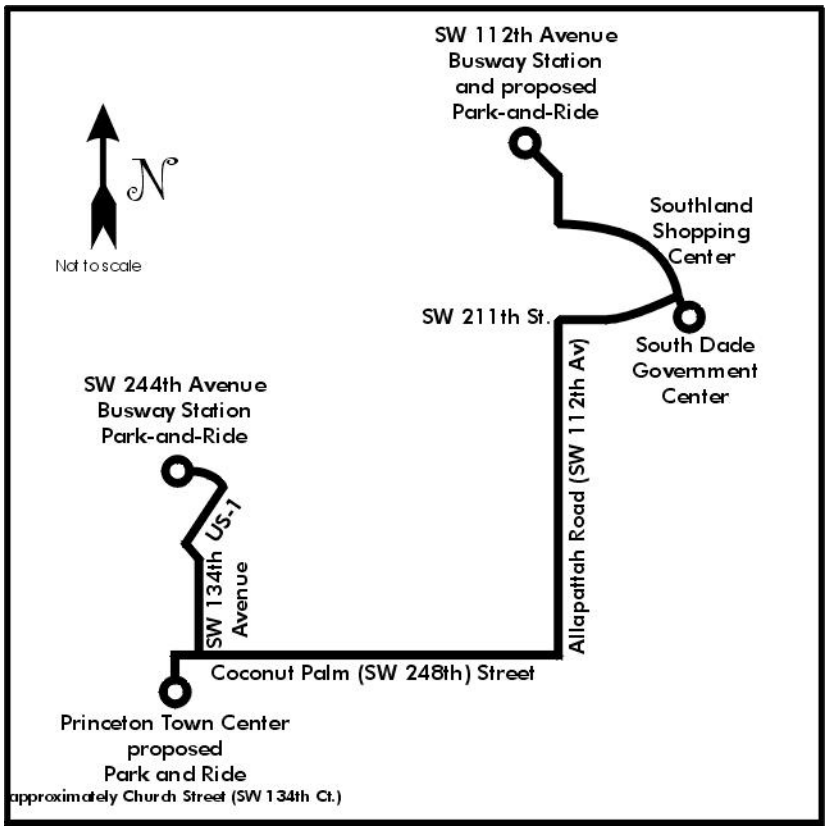
Transit Feeder Services

The long-term expansion facility in the Cutler Ridge Master Plan area would require the establishment of a stop within the residential, mixed-use development, south of SW 211th Street.

Busway service to this location was provided by the Busway Local (Route 31) on a 15-minute headway during peak hours. This diversion has been removed from the route for the December 2006 line-up because boardings are not sufficient on this diversion to justify it. Understandably, there are few existing transit trip generating uses along this segment, other than the South Dade Government Center.

In the following section, there is a coordinating recommendation to implement the Coconut Palm Connection as a feeder transit service from Princeton, through the new residential development north of Coconut Palm Drive (SW 248th Street) and west of the Turnpike. The Coconut Palm Connection is recommended to deviate from its route at SW 112th Avenue and SW 211th Street. At this point, it is to provide service to the South Dade Government Center, South Dade Performing Arts Center, and the planned Cutler Ridge Metropolitan Center residential area south After making a stop in the Southland Mall, it would terminate at the new SW 211th Street Busway Station Park-and-ride. Details are in the Princeton, Naranja, Leisure City Recommendations section.

Figure 7-18
Proposed Coconut Palm Connection Feeder Service Alignment Diagram



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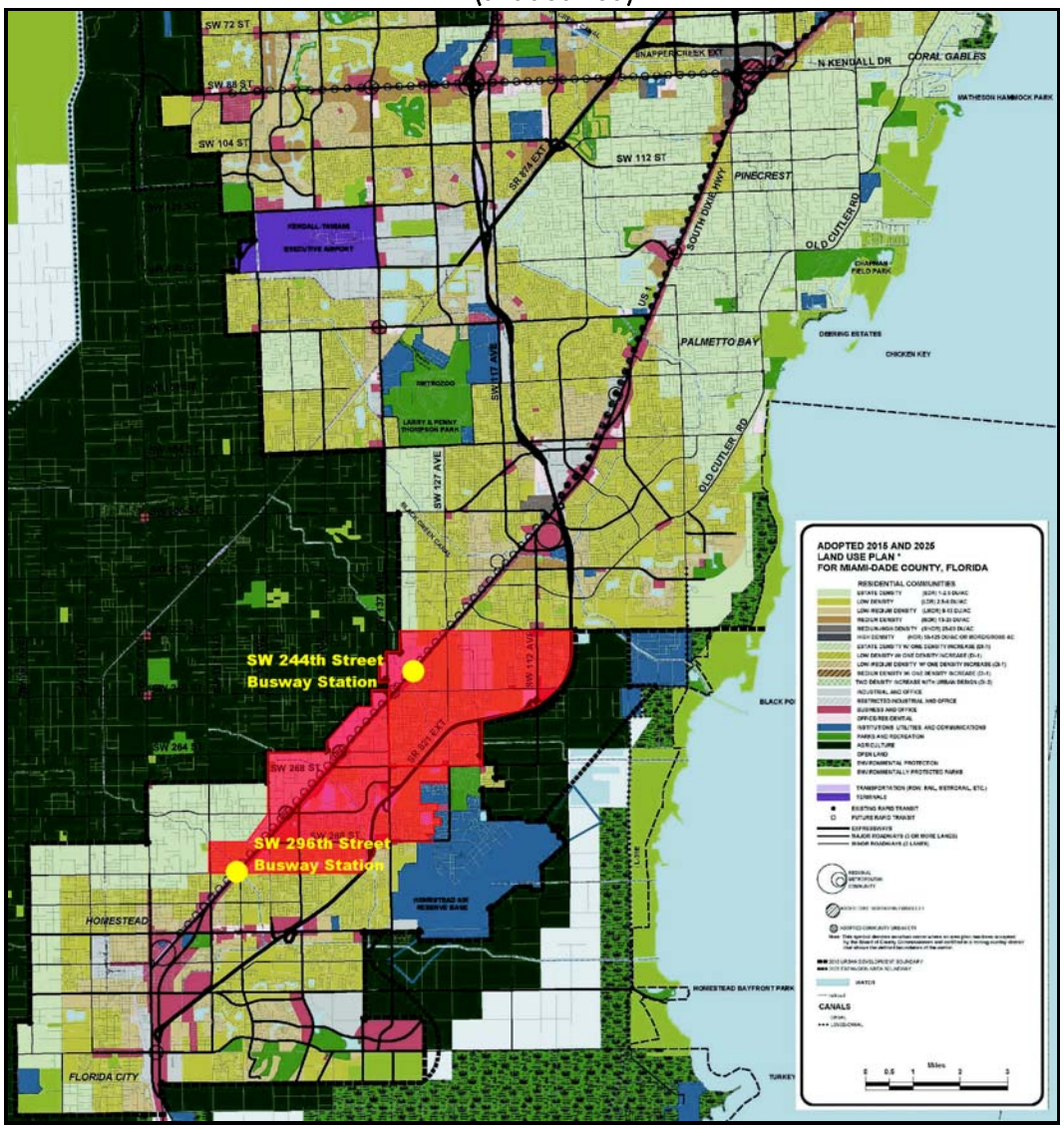
Recommendations: Princeton Town Center Park-and-Ride & Coconut Palm Connection Busway Feeder: Princeton, Naranja, Leisure City

Service Area

The service area for the SW 244th Street Busway Station park-and-ride includes Princeton, Naranja, and Leisure City. This Busway service area is very narrow, approximately 3 or less mile from east to west. Most of the land to the west of the Busway in this area is either agricultural or very low density, rural residential. Here, the Busway service area exists mostly to the east side of US-1.

Figure 7-19
Princeton, Naranja, and Leisure City Busway Service Area
(shaded red)



The 296th Street Station is at the south edge of this service area. Its service area includes Leisure City; however the park-and-ride survey data shows that this service area for SW 296th Street is actually parts of Homestead and one adjacent zone in Leisure City.

Busway transit service into the service area is provided by the Busway MAX (Route 38), and the Busway Flyer (Route 34). Additional transit routes covering parts of the service area but not providing Busway service are Routes 35 and 70.

Park-and-Ride Utilization

The SW 244th Street Busway Station park-and-ride has been in continuous operation for just over 2 years, since June 2005. The lot is co-located with the north-side parking lot for the Bargain Town / Redland Market Village. The lot has a capacity of 95 spaces.

During its first year of operation, utilization was very low at only 32%. In the second year of operation, utilization rose but only very little to 39%. The survey data does not agree with observations taken in September and October 2007. The observations were made on mid-weekday afternoons, and the lot was found to be 90% to 95% full. It is possible that customers of Bargain Town are using the MDT parking.

Of the parked cars that the survey data represents, sixty-seven (67%) are from within the service area as defined, while 25% are from areas south of the service area, This indicates that the facility is receiving a small amount of overflow from the Homestead area.

The two Busway routes that serve the station provide transit capacity of 180 passenger seats per peak hour, assuming buses arrive ½ full at the station. This is enough to move all of the park-and-ride passengers if the lot is at capacity (assuming auto occupancy rate of 1.2) in 38 minutes. At its current utilization, all of the passengers can be on buses in 15 minutes.

Service Area Demand and Capacity

At a current average utilization of 39%, the SW 244th Street Busway Station park-and-ride is very under-utilized. Subsequent to data collection efforts taken for this study, recent MDT checks show an 82% increase in utilization, bring utilization to about 75%. This is most likely due to the relatively recent opening of this segment of the Busway and of this park-and-ride facility in June 2005.

While recent checks provide that there are currently about 70 vehicles using the lot, Table 7-11 shows that based on the license plate surveys and population statistics, park-and-ride demand for this service area should be at 181 vehicles. Most of the missing market, even this far south, are 82 commuters that are driving to Metrorail park-and-ride facilities at Dadeland South and Dadeland North. Busway service in this area is not a fully developed transit market.

Table 7-11
Princeton, Naranja, and Leisure City Busway Service Area Supply & Demand

Area Name	Boundaries		Existing Metrorail Park & Ride Patrons	Existing Busway Park & Ride Patrons	Existing Metrorail Kiss & Ride Patrons	Existing Busway Kiss & Ride Patrons	Kiss & Ride to Park & Ride Ratio	Potential Park & Ride Use based on Household Survey
Princeton	N	SW 232nd Street	53	50	4	3	7%	313
	S	SW 288th Street						
	E	SW 127th Avenue						
	W	SW 137th Avenue						
Naranja / Leisure City	N	SW 256th Street	29	49	0	5	6%	477
	S	SW 288th Street						
	E	SW 127th Avenue						
	W	SW 177th Avenue						
Service Area Demand			181		12		Future Demand	659
Park and Ride Capacity	SW 244th Street Busway Station		95		Kiss & Ride Ratio to Park & Ride	6.6%	Future Capacity	95
Surplus / Defecit			-86		Kiss&Ride >4.4% to Use Future Park&Ride	1	Future Surplus / Defecit	-564

Note: Potential Park & Ride is the expected increase in park-and-ride use based on survey data.

Opportunities

Princeton and Naranja with Leisure City have been the subjects of County master planning efforts for their future development as Community Urban Centers. Neither the Master Plan for the Princeton CUC nor the Naranja CUC includes any redevelopment proposals that would create significant and measurable impacts on the need for transit feeder services to the South Dade Busway.

To meet the growing needs of this area, MDT has included in its 2012 Recommended Service Plan of the Transit Development Plan (TDP), a new route called the "Coconut Palm Connection". The route is to be developed as a feeder service, from SW 248th Street into the Busway with connections to the Cutler Ridge Terminal via SW 112th Avenue.

SW 244th Street Busway Station Park-and-Ride Recommendations

Monitor Park-and-Ride Utilization

Survey data taken in the summer of 2007 indicates that the SW 244th Street Park-and-Ride is less than 40% utilized, while direct observations taken in September and October suggest that it may be over 90% utilized. Survey data was taken in the morning, and observations were made in the afternoon. Recent MDT checks show an 82% increase in utilization. It is possible that there are either late commuters using the facility, or that Bargain Town customers are using the spaces. The actual utilization and characteristics of use (time of day) are not yet stable for this newer facility on the Phase I Extension of the Busway. Utilization is growing, and it is recommended that the facility be monitored.

SW 244th Street Busway Park-and-Ride Amenity Improvements

As part of the marketing effort, improvements to the station's amenities may be made to better address the amenities indicated by the South Dade household transportation survey. The station already includes adequate platform shelter, platform seating, and lighting. Additional improvements may include:

- Covered walkways leading from the parking area to the Busway platform
- Additional seating at the bus stop platforms
- Security during operating hours for the platform and in the parking area
- Secure bicycle storage
- Electronic, real-time passenger information that fully utilizes MDT's contemporary AVL or APT system information regarding bus arrivals and schedules

Marketing Existing Busway Services

Assuming that the SW 244th Street Busway Station park-and-ride utilization is low, the recommendation is to continue, or increase marketing efforts in this area to improve Busway and park-and-ride use. Particular emphasis should go towards creating better community awareness of the Busway Flyer which provides a more attractive service to those currently driving to Metrorail.

Improve Existing Busway Services – Busway Flyer

While the recently implemented Busway Flyer (Route 34) provides an attractive transportation alternative, its appeal has also lead to reports of overcrowding. Based on the most recent available ridership reports, there has been an average increase in ridership of 23.8% over the past year (September 2005 – August 2006 through September 2006 – August 2007).

To alleviate overcrowding, improve service, and increase the attractiveness of transit as a mode alternative, the recommendation is to improve peak hour service on the Busway Flyer from 12-minute headway to 10-minute headway, proving 1 additional peak hour, peak direction bus to meet the additional demand. Operational characteristics, operational costs, and operational performance characteristics are shown in Table 7-12 and Table 7-13. The additional annual operating cost is estimated to be $631,019. If the current increase in ridership continues, weekday boardings per hour would increase slightly from 16.3 to 16.8, and operating cost per passenger would decrease slightly from $7.02 to $6.81.

Table 7-12
Recommended Busway Flyer Service Changes Operating Characteristics and Costs

Operational Characteristics	Existing Service			Proposed Service		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Trip Length						
Total 1-way miles	20.8	0.0	0.0	20.8	0.0	0.0
Schedule:						
AM Peak (5:00 am – 9:00 am)						
Headway	12	0	0	10	0	0
One-Way Running Time (minutes)	75	0	0	75	0	0
Schedule Average Speed (mph)	16.6	0.0	0.0	16.6	0.0	0.0
Schedule Recovery Time (minutes)	7	0	0	7	0	0
Service Span (hours)	4.00	0.00	0.00	4.00	0.00	0.00
Revenue Hours	54.55	0.00	0.00	65.46	0.00	0.00
One Way Trips	40.0	0.0	0.0	48.0	0.0	0.0
Vehicle Requirement	11	0	0	13	0	0
Midday (9 am – 3:45 pm)						
Headway	0	0	0	0	0	0
One-Way Running Time (minutes)	0	0	0	0	0	0
Schedule Average Speed (mph)	0.0	0.0	0.0	0.0	0.0	0.0
Schedule Recovery Time (minutes)	0	0	0	0	0	0
Service Span (hours)	5.00	0.00	0.00	5.00	0.00	0.00
Revenue Hours	0.00	0.00	0.00	0.00	0.00	0.00
One Way Trips	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Requirement	0	0	0	0	0	0
PM Peak (3:45 pm – 7:30 pm)						
Headway	12	0	0	10	0	0
One-Way Running Time (minutes)	75	0	0	75	0	0
Schedule Average Speed (mph)	16.6	0.0	0.0	16.6	0.0	0.0
Schedule Recovery Time (minutes)	7	0	0	7	0	0
Service Span (hours)	3.75	0.00	0.00	3.75	0.00	0.00
Revenue Hours	51.14	0.00	0.00	61.36	0.00	0.00
One Way Trips	37.5	0.0	0.0	45.0	0.0	0.0
Vehicle Requirement	11	0	0	13	0	0
Night (after 7:30 pm)						
Headway	0	0	0	0	0	0
One-Way Running Time (minutes)	0	0	0	0	0	0
Schedule Average Speed (mph)	0.0	0.0	0.0	0.0	0.0	0.0
Schedule Recovery Time (minutes)	0	0	0	0	0	0
Service Span (hours)	0.00	0.00	0.00	0.00	0.00	0.00
Revenue Hours	0.00	0.00	0.00	0.00	0.00	0.00
One Way Trips	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Requirement	0	0	0	0	0	0
Total Service Span (hr.s)	12.75	0.00	0.00	12.75	0.00	0.00
Peak Vehicle Requirement (both directions)	11	0	0	13	0	0
Total 1-Way Trips	78	46	32	93	46	32
Daily Revenue Miles (2-Way)	1,612	0	0	1,934	0	0
Daily Revenue Hours	105.7	0.0	0.0	126.8	0.0	0.0
Daily Recovery Hours	10.6	0.0	0.0	12.7	0.0	0.0
Daily Operating Hours	116.3	0.0	0.0	139.5	0.0	0.0
Daily Direct Operating Cost	$12,088.49	$0.00	$0.00	$14,506.19	$0.00	$0.00
Annual Direct Operating Cost	$3,155,097			$3,786,116		

Table 7-13
Recommended Busway Flyer Service Change Operational Performance

Operational Performance	Existing Service			Proposed Service		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Utilization:						
Average Annual Daily Boardings	1,721	0	0	1,721	0	0
Average Annual Increase 23.8%	0	0	0	410	0	0
New Annual Average Daily Boardings	1,721	0	0	2,131	0	0
Average Bus Loading	22	0	0	23	0	0
Average Bus Load w/ 1-Way Commute	44	0	0	46	0	0
Efficiency:						
Operational Cost / Revenue Hour	$114.38	$0.00	$0.00	$114.38	$0.00	$0.00
Operational Cost / Revenue Mile	$7.50	$0.00	$0.00	$7.50	$0.00	$0.00
Operational Cost / Seat Mile	$0.19	$0.00	$0.00	$0.19	$0.00	$0.00
Productivity:						
Boardings / Revenue Hour	16.3	.0	.0	16.8	.0	.0
Boardings / Revenue Mile	1.1	0.0	0.0	1.1	0.0	0.0
Operational Cost per Passenger	$7.02	$0.00	$0.00	$6.81	$0.00	$0.00

Princeton Town Center Park-and-Ride

The Coconut Palm Connection as described below is recommended to begin in the planned Princeton Town Center (Princeton Citizens' Charrette Area Plan, 2003). As development occurs, it is this recommendation that a park-and-ride facility be integrated with the development to include approximately 300 spaces to meet the future demand identified for the Princeton area in Table 7-11. Along with amenities as described above, two bus bays should be incorporated with a sheltered, illuminated platform, with adequate seating, security, and passenger information. The park-and-ride facility would be served by the Coconut Palm Connection as described below.

Transit Feeder Service

The Coconut Palm Connection is planned for 2012 as a Busway feeder service from locations along SW 248th Street to the Busway and Cutler Ridge. It is not planned to continue to Metrorail, and as such will be a complementary service to the Busway MAX and Busway Flyer.

The exact alignment has not been determined by MDT; however, this recommendation suggests the following 11.6-mile (one way) alignment as illustrated in Figure 7-20:

- starting at the SW 244th Street Busway Station park-and-Ride, head south along South Dixie Highway (US-1) to the left turn lane at SW 134th Avenue (0.15 mi.);
- turn south at SW 134th Avenue to SW 112th Avenue (0.31 mi.);
- at SW 112th Avenue, when implemented, turn from the intersection of SW 134th Avenue and SW 248th Street to the planned Princeton Town Center park-and-ride, which may be in the vicinity of the area just south of SW 248th Street, and along SW 134th Court (about 0.40 mi. round trip);
- head east along SW 248th Street from SW 134th Avenue to SW 112th Avenue, making only limited stops (4.58 mi.);
- head north on SW 112th Avenue making only limited stops to SW 211th Street, and deviate to provide service to the South Dade Government Center, Performing Arts Center, and future Cutler Ridge Metropolitan Center residential development south of SW 211th Street (4.72 mi.);
- from the South Dade Government Center, cross SW 211th Street to provide direct service to the mall, and return to SW 211th Street (1.20 mi.);
- Continue and terminate at the SW 112th Avenue Busway Station and recommended park-and-ride. (0.25 mi.).

Based on the potential future demand shown in Table 7-11 for both Princeton, Naranja, and Leisure City, a daily commute ridership of 1,318 trips (659 people x 2 trips each) is possible. The recommendation is to provide service along the alignment described from 5am to 8pm at 30-minute headways during peaks and at 60 minute headways during the midday period, and after 7pm. This service level meets 50% of the forecast demand potential be non-transit users, and is also a good match to the capacity of the parking garage. After an initial period of implementation with monitoring, the service frequency should be increased to meet the 100%. The new route should be initially scheduled as a weekday only route. As data is available to forecast a justifiable level or weekend ridership, a weekend schedule may be considered.

Tables 7-14 and 7-15 provide the operational characteristics, costs, and operational performance expected for both the initial implementation and full implementation. As recommended for the initial implementation, the route's annual operational cost would be $986,562, with an average utilization of 17.8 boardings per revenue hour, and average operating cost of $5.74 per passenger trip. For the full implementation, the route's annual operational cost would be $1,578,499, with an average utilization of 22.2 boardings per revenue hour, and average operating cost of $4.59 per passenger trip.

Figure 7-20
Proposed Coconut Palm Connection Busway Feeder Alignment and Stops

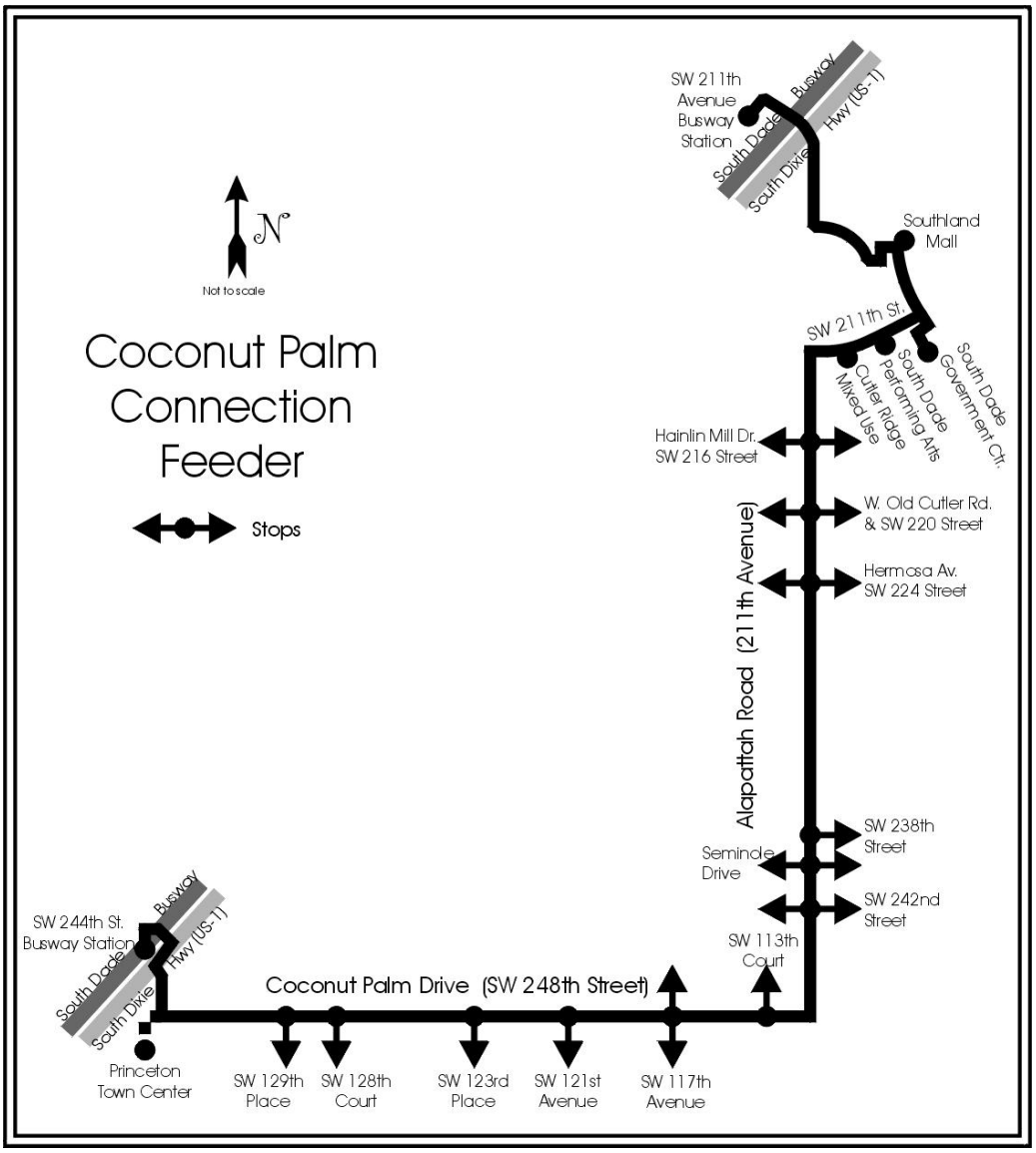


Table 7-14
Proposed Coconut Palm Connection Operating Characteristics and Costs

Operational Characteristics	Initial Implementation			Full Implementation		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Trip Length						
Total 1-way miles	11.6	0.0	0.0	11.6	0.0	0.0
Schedule:						
AM Peak (6:00 am – 9:00 am)						
Headway	30	0	0	15	0	0
One-Way Running Time (minutes)	46	0	0	46	0	0
Schedule Average Speed (mph)	15.0	0.0	0.0	15.0	0.0	0.0
Schedule Recovery Time (minutes)	9	0	0	9	0	0
Service Span (hours)	3.00	0.00	0.00	3.00	0.00	0.00
Revenue Hours	11.14	0.00	0.00	22.27	0.00	0.00
One Way Trips	12.0	0.0	0.0	24.0	0.0	0.0
Vehicle Requirement	4	0	0	8	0	0
Midday (9 am – 4 pm)						
Headway	60	0	0	60	0	0
One-Way Running Time (minutes)	46	0	0	46	0	0
Schedule Average Speed (mph)	15.0	0.0	0.0	15.0	0.0	0.0
Schedule Recovery Time (minutes)	9	0	0	9	0	0
Service Span (hours)	7.00	0.00	0.00	7.00	0.00	0.00
Revenue Hours	12.99	0.00	0.00	12.99	0.00	0.00
One Way Trips	14.0	0.0	0.0	14.0	0.0	0.0
Vehicle Requirement	2	0	0	2	0	0
PM Peak (4 pm – 7 pm)						
Headway	30	0	0	15	0	0
One-Way Running Time (minutes)	46	0	0	46	0	0
Schedule Average Speed (mph)	15.0	0.0	0.0	15.0	0.0	0.0
Schedule Recovery Time (minutes)	9	0	0	9	0	0
Service Span (hours)	3.00	0.00	0.00	3.00	0.00	0.00
Revenue Hours	11.14	0.00	0.00	22.27	0.00	0.00
One Way Trips	12.0	0.0	0.0	24.0	0.0	0.0
Vehicle Requirement	4	0	0	8	0	0
Night (7 pm to 8 pm)						
Headway	60	0	0	60	0	0
One-Way Running Time (minutes)	46	0	0	46	0	0
Schedule Average Speed (mph)	15.0	0.0	0.0	15.0	0.0	0.0
Schedule Recovery Time (minutes)	9	0	0	9	0	0
Service Span (hours)	1.00	0.00	0.00	1.00	0.00	0.00
Revenue Hours	1.86	0.00	0.00	1.86	0.00	0.00
One Way Trips	2.0	0.0	0.0	2.0	0.0	0.0
Vehicle Requirement	2	0	0	2	0	0
Total Service Span (hr.s)	14.00	0.00	0.00	14.00	0.00	0.00
Peak Vehicle Requirement (both directions)	4	0	0	8	0	0
Total 1-Way Trips	40	46	32	64	46	32
Daily Revenue Miles (2-Way)	464	0	0	742	0	0
Daily Revenue Hours	37.1	0.0	0.0	59.4	0.0	0.0
Daily Recovery Hours	3.7	0.0	0.0	5.9	0.0	0.0
Daily Operating Hours	40.8	0.0	0.0	65.3	0.0	0.0
Daily Direct Operating Cost	$3,779.93	$0.00	$0.00	$6,047.89	$0.00	$0.00
Annual Direct Operating Cost	$986,562			$1,578,499		

Table 7-15
Proposed Coconut Palm Connection Operational Performance

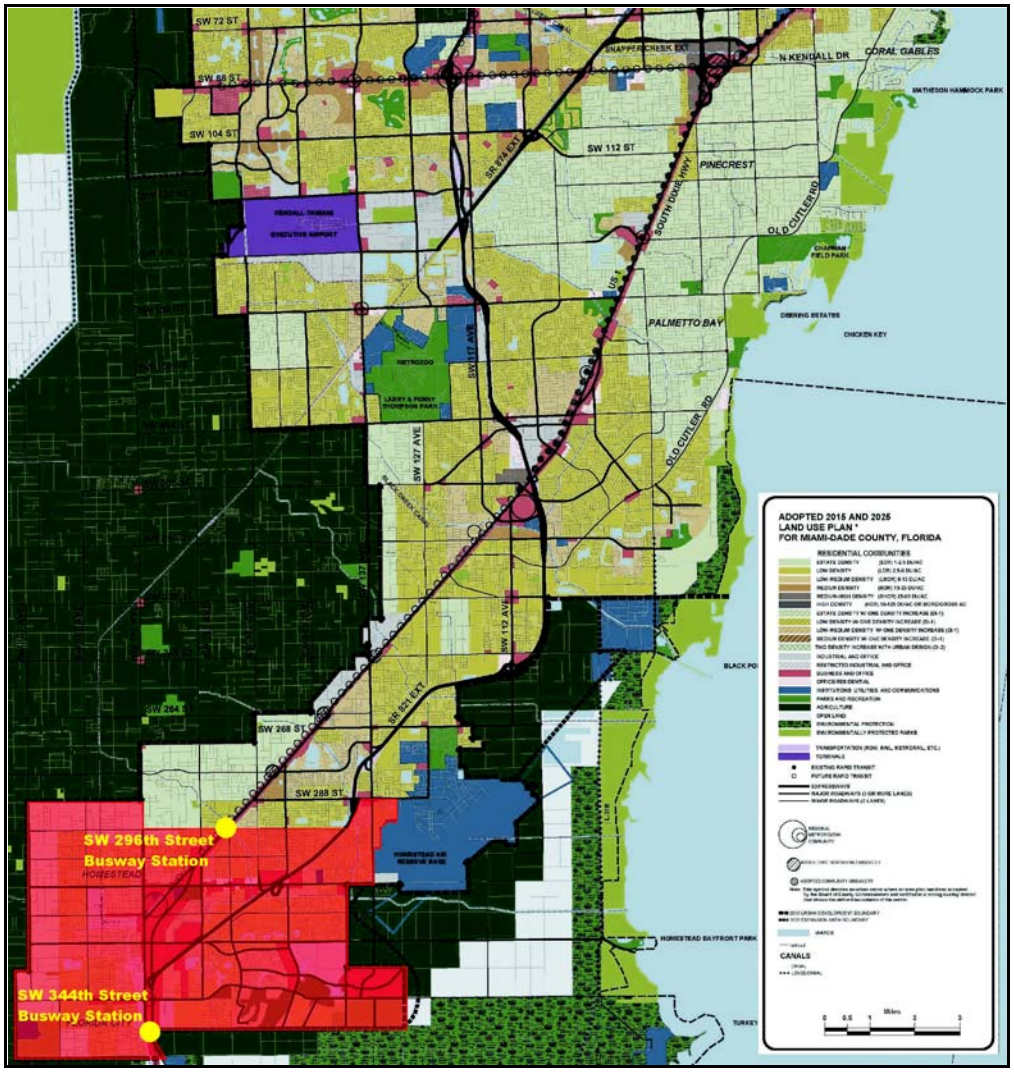
Operational Performance	Initial Implementation			Full Implementation		
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Utilization:						
Average Annual Daily Boardings	659	0	0	659	0	0
Increase	0	0	0	659	0	0
New Annual Average Daily Boardings	659	0	0	1,318	0	0
Average Bus Loading	16	0	0	21	0	0
Average Bus Load w/ 1-Way Commute	33	0	0	41	0	0
Efficiency:						
Operational Cost / Revenue Hour	$101.83	$0.00	$0.00	$101.83	$0.00	$0.00
Operational Cost / Revenue Mile	$8.15	$0.00	$0.00	$8.15	$0.00	$0.00
Operational Cost / Seat Mile	$0.20	$0.00	$0.00	$0.20	$0.00	$0.00
Productivity:						
Boardings / Revenue Hour	17.8	.0	.0	22.2	.0	.0
Boardings / Revenue Mile	1.4	0.0	0.0	1.8	0.0	0.0
Operational Cost per Passenger	$5.74	$0.00	$0.00	$4.59	$0.00	$0.00

Recommendations: SW 296th Street Busway Station Park-and-Ride & SW 344th Street Busway Station Park & Ride: Homestead, Florida City

Service Area

The service area for the SW 296h Street Busway Station park-and-ride includes the City of Homestead, and Florida City. Unlike the other service areas, the urbanized area of Homestead is geographically separate from the continuum of urban development in the rest of Dade County. To its south and west are undeveloped agricultural and environmentally protected lands. To its east are agricultural and environmentally protected lands and Homestead Air Force Base. To the north, are the less urban areas of Naranja and Princeton separating it from the more intensely developed Goulds, Cutler Bay, and South Miami Heights.

Figure 7-21
Homestead, and Florida City Busway Service Area
(shaded red)



Busway transit service into the service area is provided by the Busway MAX (Route 38), and the Busway Flyer (Route 34). Additional transit routes covering parts of the service area but not providing Busway service are Routes 35, 70, and 344 which is a community circulator in Homestead. The Dade-Monroe Express from Marathon also terminates in Homestead. At the termination point of the Busway, the last of the park-and-ride facilities is located at SW 344th Street. This facility has not yet opened.

Park-and-Ride Utilization

The 117-space SW 296th Street Busway Station park-and-ride has been in operation on a temporary basis for 2 years, since October 2005. It will be in operation until the Busway Extension is complete, and the under-construction 2.2-acre (about 240 to 320 spaces) facility at the northeast corner of SW 296th Street and the Busway is in operation.

During its first year of operation, utilization at the current lot was extremely low at only 11%. In the second year of operation, utilization rose but only to 14%. All of the vehicles are from within the service area.

The two Busway routes that serve the station provide transit capacity of 180 passenger seats per peak hour, assuming buses arrive ½ full at the station. This is enough to move all of the park-and-ride passengers if the lot is at capacity (assuming auto occupancy rate of 1.2) in 47 minutes. At its current utilization, all of the passengers can load onto one ½-full bus.

Service Area Demand and Capacity

At a current average utilization of 14%, the SW 296th Street Busway Station park-and-ride is very under-utilized. At its current rate of increase in utilization, it will take 7 years before the facility is fully utilized, not accounting for the impact of the new park-and-ride at SW 344th Street

Table 7-16
Homestead, and Florida City Busway Service Area Supply & Demand

Area Name	Boundaries	Existing Metrorail Park & Ride Patrons	Existing Busway Park & Ride Patrons	Existing Metrorail Kiss & Ride Patrons	Existing Busway Kiss & Ride Patrons	Kiss & Ride to Park & Ride Ratio	Potential Park & Ride Use (based on Household Survey)
Hometead	N SW 288th Street S SW 344th Street E SW 127th Avenue W SW 197th Avenue	115	98	6	3	4%	1,513
Florida City	N SW 344th Street S SW 360th Street E US-1 W SW 197th Avenue	3	9	0	0	0%	123

Service Area Demand		226	9	Future Demand	1,739
Park and Ride Capacity	SW 296th Street Busway Station	117	Kiss & Ride Ratio to Park & Ride 4.0%	Future Capacity	117
Surplus / Defecit		-109	Kiss&Ride >4.4% to Use Future Park&Ride 0	Future Surplus / Defecit	-1,622

Note: Potential Park & Ride is the expected increase in park-and-ride use based on survey data.

Table 7-16 shows that based on the license plate surveys, and population statistics, park-and-ride demand for this service area should be at 226 vehicles for the 117-space facility. Part of the Busway park-and-ride market that is not being retained in the service area an estimated 118 commuter that drive from Homestead to use a park-and-ride at a Metrorail station. Most of the Busway park-and-ride users are opting to use more fully occupied lots to the north. As in the Naranja and Princeton service area, Busway service in this area is far from being a fully developed transit market.

Opportunities

New Development:
A planned large-scale development of 940 homes on 119 acres west of Florida City was approved for a land use change from estate density residential to low-density residential to the County's Comprehensive Development Master Plan in March 2007. It is located between SW 336th Street and SW 344th Street, and between SW 192nd Avenue and SW 197th Avenue. It will allow 420 homes west of SW 194th Avenue and 520 homes to the east. Ten percent of the homes will be set aside as homes for workforce housing to be priced between $160,000 and $225,000. the development still needs zoning change approvals, site plan approvals, and is probably several years away. Still, especially considering the workforce housing component, the project can be expected to generate significant transit and Busway ridership.

Homestead Trolley:
In October 2007, the County Commission approved the inter-local agreement with the City of Homestead to provide community transit circulator services using People's Transportation Plan (PTP) funds. Anticipated to begin service after February 2008, the first route of the Homestead Trolley, is to be the East/West Route. The East/West Route will be a dog-legged loop to run along Campbell Drive (SW 312th Street) from Tallahassee Road (SW 137th Avenue) to Krome Avenue (SW 177th Avenue), then south along Krome Avenue to SE 4th Street, and then northeast along Flagler Street to Campbell Drive. The alignment's one-way length is 11.7 miles.

Figure 7-22
Homestead Trolley East West Route Alignment

Future routes are anticipated, and will run along Krome Avenue from approximately SW 296th Street to SW 328th Street and east to the Villages of Homestead. The circulators will use a combination of stops in common with MDT bus stops as well as their own.

SW 296th Street Busway Station Park-and-Ride Recommendations

Monitor Utilization

The survey data taken in the summer of 2007 indicates that the SW 244th Street Park-and-Ride is less than 15% utilized; however, construction of the Busway was not complete at that time, and Busway routes were at the time using US-1 to Bauer Drive (SW 264th Street) before entering the Busway. Without the Busway or the stations in place, Busway services have little visibility to potential transit riders in this area. For the purposes of determining park-and-ride improvements or transit feeder services, this data is not useful. Additional data will help to more accurately determine needs in the community.

Marketing Existing Busway Services

As part of the commencement and initial operation of the permanent SW 296th Street Busway Station and park-and-ride, the recommendation is to continue, and increase marketing efforts in this area to improve Busway and park-and-ride use. Particular emphasis should go towards creating better community awareness of the Busway Flyer, Busway MAX as direct connections to Metrorail, the recommended connections by the existing Routes 35, 70, and 344, and connection to the Busway via the Homestead Trolley East West Route.

Station Amenities

As part of the marketing effort, improvements to the station's amenities may be made to better address the amenities indicated by the South Dade household transportation survey. The station already includes adequate platform shelter, platform seating, and lighting. Additional improvements may include:

- Covered walkways leading from the parking area to the Busway platform
- Additional seating at the bus stop platforms
- Bright, even lighting in the parking area
- Security during operating hours for the platform and in the parking area
- Secure bicycle storage
- Electronic, real-time passenger information that fully utilizes MDT's contemporary AVL or APT system information regarding bus arrivals and schedules

Homestead Trolley

The first implementation of the East/West route of the Homestead Trolley runs adjacent to the Busway for part of its alignment. It is anticipated that the East West Route of the Homestead Trolley should support use of the Busway, particularly from the Villages of Homestead. Patronage should be monitored, and surveyed to determine specific needs for residents to use the service to reach the Busway, and allow more of the park-and-ride capacity to be used by residents and that are not served yet by a Homestead Trolley route or MDT route.

Feeder Services

Homestead, Florida City, and Leisure City are already provided adequate coverage by routes 35, 70, and 344. Route 344 is a community circulator for Homestead and Florida City. The Route 70 passes by the SW 296th Street Station from the west, and the Route 35 passes near the Station but does not stop there. Both should stop at the SW 296th Street Busway Station. Route 344, already providing service in downtown homestead and Florida City, should be extended from Campbell Drive (SW 312th Street) to the SW 296th Street Busway Station.

Route 35: Divert route from SW 296th Street and SW 157th Avenue, west to the SW 296th Street Busway Station and park-and-ride. The diversion is 2.5 miles, round-trip. Assuming that it does not cause another peak-hour vehicle, the annual cost increase for the diversion would be approximately $297,144. The service standards criteria can not be determined until utilization data is actually available for the Station.

Route 70: The route turns at SW 296th Street and SW 167th Avenue. Divert route from SW 296th Street and SW 167th Avenue, east to the SW 296th Street Busway Station and park-and-ride. The diversion is 1.6 miles, round-trip. Assuming that it does not cause another peak-hour vehicle, the annual cost increase for the diversion would be approximately $163,018. The service standards criteria can not be determined until utilization data is actually available for the Station.

Route 344: The route terminates at Krome Avenue (SW 177th Avenue) / English Avenue and Campbell Drive (SW 312th Street). Extend route to the Campbell Drive Busway Station. The extension is 2.3-miles, round-trip. Assuming that it does not cause another peak-hour vehicle, the annual cost increase for the diversion would be approximately $272,695. The service standards criteria can not be determined until segment ridership and survey data is available for the new route.

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