WORK ORDER #GPC V-32

MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION

GUIDELINES FOR

MUNICIPAL TRANSIT PROGRAMS

IN MIAMI-DADE COUNTY

Kimley»Horn

Miami-Dade Metropolitan Planning Organization

presents

Guidelines for Municipal Transit Programs in Miami-Dade County

Prepared by:

Kimley-Horn and Associates, Inc.

"The preparation of this report has been financed in part from the U.S. Department of Transportation (USDOT) through the Federal Highway Administration (FHWA) and/or the Federal Transit Administration (FTA), the State Planning and Research Program (Section 505 of Title 23, U.S. Code) and Miami-Dade County, Florida. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation."

Kimley»Horn

March 2016

040829046

(This page intentionally blank)

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

APPENDICES

(This page intentionally blank)

1 BACKGROUND

In 2002, the Miami-Dade Public Transportation Plan (PTP) was adopted and provides funds to municipalities. Local municipalities are required to dedicate 20 percent of their share of the PTP funds to transit, para-transit, and on-demand services. Using these funds, several municipalities, such as the City of Miami, City of Doral, City of Coral Gables, City of Homestead, etc., have developed Municipal Transit Programs (MTPs) to provide more localized transit services to their residents. However, there exists limited published guidance often coupled with limited local resources and transit experience to design and implement these services. The lack of unifying countywide guidance has resulted in ad-hoc coordination and decision making by local municipalities, often resulting in inefficient utilization of transit services.

As additional municipalities are designing and implementing MTPs, there is a need to provide unifying guidance and increase local transit planning capacity to achieve the ultimate goal of an integrated countywide transit system. The objective of these guidelines is to provide the basic service and design guidelines for the MTPs in Miami-Dade County to facilitate safe, secure, reliable, attractive, efficient, and integrated transit services. Within this document guidelines are provided for the following areas:

- System Facts and Performance Measures Guidelines
- Policy and Service Guidelines
- Route Design Guidelines
- Station and Terminal Design Guidelines

This document outlines the purpose of the guidelines and provides an overview of MTPs in Miami-Dade County. An analysis of existing MTPs is provided, from which performance thresholds are developed. Guidelines regarding policy, service planning, and route design are then provided.

2 PURPOSE OF GUIDELINES

The *Guidelines for Municipal Transit Programs in Miami-Dade County* is intended to provide the basic service and design guidelines for MTPs in Miami-Dade County and to facilitate safe, secure, reliable, attractive, efficient, and integrated transit services. There are three key purposes for the guidelines:

1. Identify and promote best practices
2. Provide tools and framework for more integration with Miami-Dade Department of Transportation and Public Works (DTPW) services to better serve community needs
3. Assist Citizens' Independent Transportation Trust (CITT) and local jurisdictions with knowledge dissemination

The guidelines identify best practices of the MTP by analyzing the existing systems, developing performance measures, and generating recommended thresholds for the performance measures. The existing MTPs were evaluated through an extensive data collection effort that included an online survey and research of publicly available data, and is summarized in the following sections. Using the collected data, performance measures were identified and thresholds were established to promote best practices. These performance measures were then developed into recommended service and design guidelines, and are summarized within later chapters of this document to facilitate information sharing and knowledge dissemination.

2.1 INTENDED USAGE

Although the individual municipalities or jurisdictions are the primary beneficiaries of these guidelines, there are other stakeholders who may use and benefit from the guidelines. Municipalities will use the guidelines as they look to implement a MTP. Municipalities can use these guidelines as a resource when they consider expanding service, adding routes, or implementing other improvements to their existing MTPs.

Since the ultimate goal is an integrated transit system at the county-level, DTPW will also use these guidelines. Throughout the study process, DTPW has been a partner and has provided input to the guidelines. Their involvement provides input to the municipalities as to the specific Miami-Dade requirements and criteria, and provides consistency with DTPW service and design guidelines. In some instances, DTPW provides the vehicles for the MTPs so this partnership with DTPW is critical in these guidelines.

Finally, the CITT is another user of these guidelines. The CITT manages the PTP funding and as such provides the jurisdictions with the funding for their MTPs. CITT will benefit from the performance measures and thresholds developed through these guidelines to help evaluate the effectiveness, opportunities, and challenges with the ongoing MTP.

In summary, anticipated uses of these guidelines may include:

- Planning/implementation of new systems and/or routes
- Identification and implementation of opportunities for route/system improvement
- Identification of channels for improved cooperation with other agencies/jurisdictions
- Provide an overview of county, state, and federal requirements
- Evaluation of existing system and identification of opportunities for improvement

2.2 METHODOLOGY

2.2.1 DATA COLLECTION

To gather data to inform the guidelines a data collection effort was initiated. There were three primary sources of data for these guidelines:

1. Online survey
2. Publicly available websites
3. CITT documents

2.2.1.1 Online Survey

An online survey was developed and distributed to the jurisdictions for their feedback and input. The online survey included the following sections:

- Identification of Need for Service: existence of shuttle, trolley, or other transit service; future plans for shuttle, trolley, or other transit service; and current and future use of CITT funding
- Organization and Institutional Information: Department/Division in charge of MTP; operator of shuttle, trolley, or other transit service; coordination and cooperation with other agencies or jurisdictions; and agency satisfaction with current operations
- Financial Information: capital, operational, and maintenance costs; fare for service
- System Information: connections to other transit infrastructure (DTPW, Tri-Rail, etc.); available facilities, improvements desired; information, branding, marketing; ridership information (number, trends, etc.); and fleet information (age, number, size, etc.)
- Title VI Information: prevents discrimination by government agencies that receive federal funds

2.2.1.2 Public Information

The survey data gathered was complemented with data readily available from websites or other on-line searches and published studies. Information such as published schedules or headways, routes, stations, etc. is often available online.

The public information was added to the survey data to provide a more comprehensive database of information. A summary of the published studies is provided in Appendix A.

2.2.1.3 CITT Documents

The CITT documents were also requested and included Geographic Information Systems (GIS) shape files and other information that documented the MTPs.

2.2.1.4 Data Collection Results

The consolidated data was used to provide a comprehensive database of system facts and profile the existing MTP through performance measures. The resulting performance measures and system facts are summarized in Chapter 4 System Facts and MTP Profile Sheets.

2.2.2 AGENCY COORDINATION

The approach to developing these guidelines involved significant feedback and input from the stakeholders. The Study Advisory Committee (SAC) was created with representatives from the following agencies:

- Citizens' Independent Transportation Trust (CITT)
- Florida Department of Transportation (FDOT), District 6
- South Florida Regional Transportation Authority (SFRTA)
- Miami-Dade Department of Transportation and Public Works (DTPW), formerly Miami-Dade Transit (MDT)
    - Planning and Development
    - Operations
    - Construction
    - Design and Engineering
    - Facilities Maintenance
    - Information Technology
    - Office of Civil Rights
    - Marketing
    - Performance Analysis
    - Public Relations
    - Quality Assurance
    - Rail Services
    - Right-of-Way and Property Management
    - Safety and Security
    - Service Planning and Scheduling
- Other County Departments
    - Miami-Dade MPO
    - Miami-Dade Regulatory and Economic Resources (RER) Department
- Local Jurisdictions
    - City of Aventura
    - Bal Harbour Village
    - Town of Bay Harbor Islands
    - Village of Biscayne Park
    - City of Coral Gables
    - Town of Cutler Bay

- Local Jurisdictions (continued)
  - City of Doral
  - Village of El Portal
  - City of Florida City
  - Town of Golden Beach
  - City of Hialeah
  - City of Hialeah Gardens
  - City of Homestead
  - Village of Key Biscayne
  - Town of Medley
  - City of Miami
  - City of Miami Beach
  - City of Miami Gardens
  - Town of Miami Lakes
  - Village of Miami Shores
  - City of Miami Springs
  - City of North Bay Village
  - City of North Miami
  - City of North Miami Beach
  - City of Opa-Locka
  - Village of Palmetto Bay
  - Village of Pinecrest
  - City of South Miami
  - City of Sunny Isles Beach
  - Town of Surfside
  - City of Sweetwater
  - Village of Virginia Gardens
  - City of West Miami

A full list of the stakeholders along with their contact information is provided in the Appendix B. Jurisdictions that currently have a MTP as well as jurisdictions without a MTP were asked to participate in the SAC and complete the survey, as they may desire MTP in the future and can offer meaningful input into the process.

The issue-based guidelines were customized for local conditions based on feedback from the municipalities through the SAC Meetings in a "listen and respond" type approach. The kick-off meeting of the SAC was held on June 24, 2015. The SAC meeting provided an initial forum to exchange ideas and best practices as well as providing a forum/foundation for on-going coordination amongst the municipalities. The final SAC meeting was held on February 16, 2016. The SAC meeting provided the guidelines, a summary of the system profile sheets, and recommendations on baseline thresholds for performance measures. Copies of the SAC presentations, meeting notes, and the sign-in sheets are included in Appendix C.

2.3 EXPECTED FUTURE WORK

During the establishment of the SAC, it was determined that there are no regularly scheduled meetings or coordination opportunities for the local jurisdictions. Although the SAC was developed specifically for the MPO project and the development of these guidelines, it is anticipated that the forum used for the SAC meetings may continue after the MPO study is completed. The vision is to provide regularly scheduled meetings with CITT, DTPW, MPO, and the local jurisdictions to coordinate MTP planning, service, and design efforts. The ongoing coordination can build capacity at the local-level for more efficient decision-making.

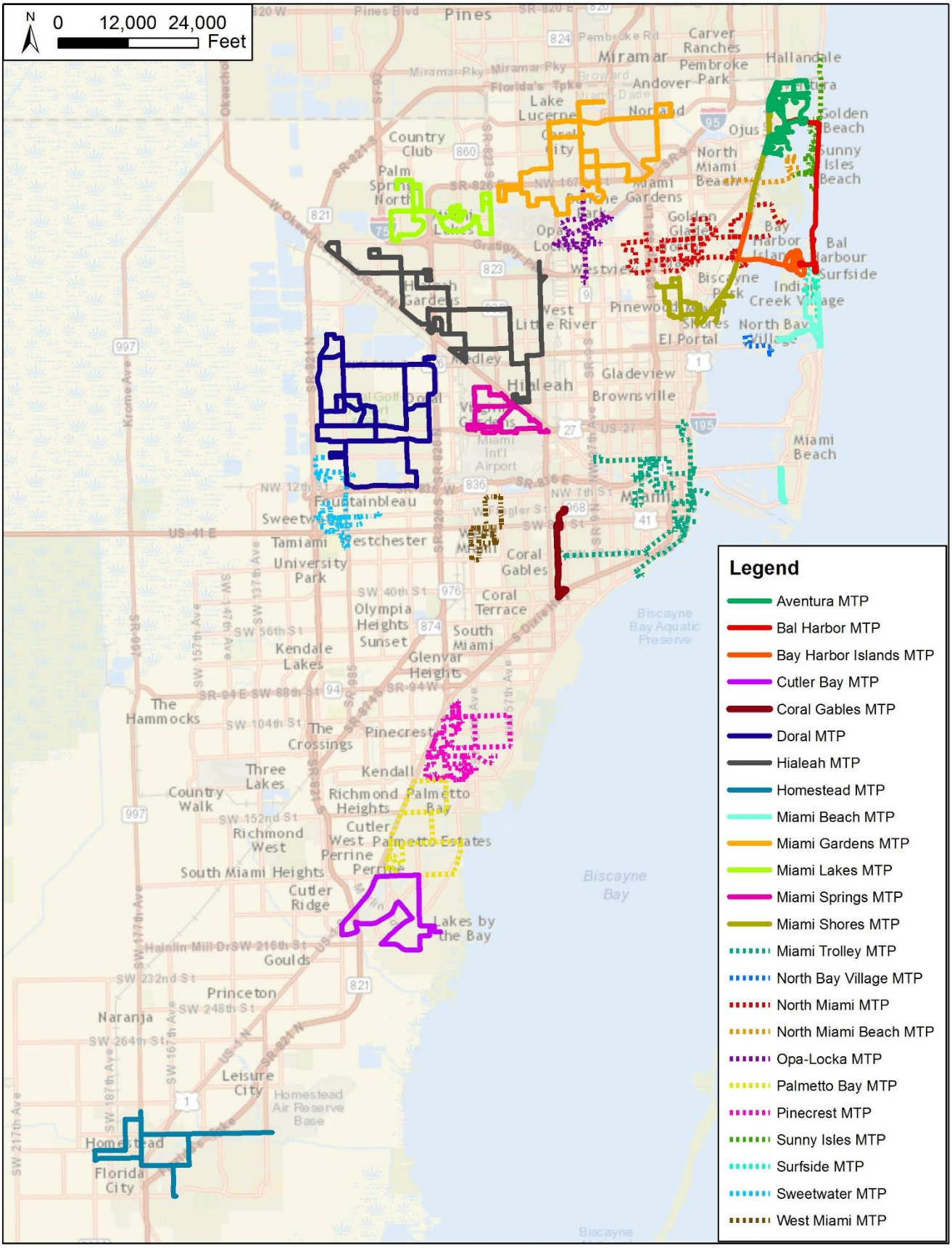
3 MUNICIPAL TRANSIT PROGRAMS IN MIAMI-DADE COUNTY

3.1 OVERVIEW OF MUNICIPAL TRANSIT PROGRAMS

There are currently 34 separate jurisdictions in Miami-Dade County of which 28 currently receive funds to operate a MTP. Each participating municipality is required by the PTP governing ordinance 02-116 to develop and submit to CITT a Five-Year Transportation Plan and to update these plans annually. The Transportation Plans can be found on the CITT website, http://www.miamidade.gov/citt/municipal-transportation-plans.asp.

As a part of Ordinance 02-117 that established the half-penny transportation surtax, 20 percent of the funds distributed to municipalities must be used for transit. Currently 24 MTPs operate and are serving 26 municipalities. The City of Hialeah Gardens has partnered with the City of Hialeah, and the Village of Virginia Gardens has partnered with the City of Miami Springs to provide municipal transit service. The municipalities not currently receiving funds for a municipal transit service include: Indian Village, City of South Miami, Town of Golden Beach, City of Florida City, Village of Key Biscayne, and Village of El Portal. A map of the existing MTPs in Miami-Dade County is provided in Figure 1, on the following page.

Figure 1: System Overview Map



3.2 FUNDING SOURCES

3.2.1 COUNTY FUNDING SOURCES

Miami-Dade County general funds and PTP funds are the primary source of county funding for transit. Typically, transit funds are allocated via a DTPW operated program (i.e., DTPW's Municipal Transit Service) based on annual budget requests to the County Commission and available funds. The PTP ordinance calls for 20 percent of surtax proceeds to be distributed directly to municipalities on a pro rata basis for use on local transportation and transit projects. Municipalities must apply at least 20 percent of their share of surtax proceeds toward transit uses and must submit their transportation plans to the County according to established deadlines. Florida Statue 212, Title XIV (http://www.miamidade.gov/citt/library/2004/Ordinances/Title-XIV1.pdf) defines the purposes for which surtax proceeds may be expended.

In addition to the PTP funds, there are funding opportunities such as public private partnerships, marketing, and advertising. Although most of the municipalities rely strictly on the PTP funds, there are also opportunities for Federal or State funding. But as transit funding is limited, municipalities planning new transit service will most likely have to implement the new service utilizing a mixture of the types of funds. The following sections summarize the available transit programs that jurisdictions may consider in addition to the PTP funds.

3.2.2 STATE TRANSIT PROGRAMS

The following summarizes the available state transit programs:

- Commuter Assistance Program
- County Incentive Grant Program
- Intermodal Development Program
- (State) New Starts Transit Program
- Park and Ride Lot Program
- Public Transit Block Grant Program
- Public Transit Service Development Program
- Transit Corridor Program
- Toll Revenue Credit Program

3.2.3 FEDERAL TRANSIT PROGRAMS

The following summarizes the available federal transit programs:

- Bus and Related Facilities Program (Section 5339)
- Enhanced Mobility of Seniors and Individuals with Disabilities (Section 5310)
- (Federal) New Starts Program (Section 5309)
- Small Starts Program (Section 5309)
- Surface Transportation Program (STP)
- Transportation Alternatives Program (TAP)
- Transportation Investment Generating Economic Recovery (TIGER)
- Urbanized Area Formula Program (Section 5307)
- Tri-Rail Shuttles
- DTPW's Municipal Transit Service

3.2.4 ALTERNATE FUNDING SOURCES

With limited traditional transportation funds available to satisfy the public need for effective public transportation (particularly operations and maintenance), municipalities have the option to turn to alternative forms of funding. Below is a list of common alternative forms of funding.

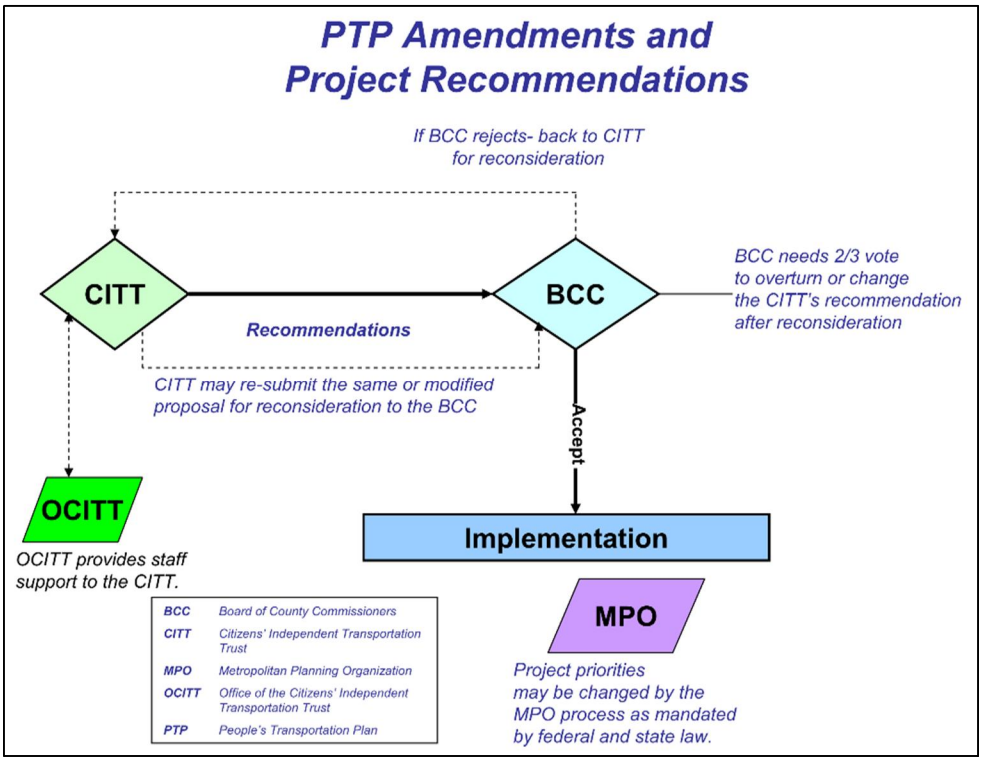
- Tax Increment Financing (TIF)
- Special Assessments
- In-Kind Matches
- Public-Private Partnerships (P3s)
- Advertising
- Non-Transportation Grants

3.3 ROLE OF THE CITT

The PTP is a half-penny surtax used for transportation and transit projects within Miami-Dade County and is managed by the CITT, a 15 member body created to monitor the PTP. The PTP includes funding for the Metrorail system, the Metrobus system, improving traffic signalization, improving major and neighborhood roads and highways, and the funding of municipalities for road and transportation projects. Jurisdictions within Miami-Dade County which operate or plan to implement a transit system may be qualified to receive financial assistance from the PTP. In order to receive PTP funding, the CITT must recommend and receive approval from the Miami-Dade County Board of County Commissioners, as illustrated in Figure 2.

All jurisdictions which receive PTP funding will be audited by the CITT to ensure that the funds are being managed correctly. Prior to obtaining PTP funding, an interlocal agreement must be established with Miami-Dade County. A more detailed description of an interlocal agreement is provided in Section 6.3 Coordination.

Figure 2: PTP Amendments and Project Recommendations



Source: Miami-Dade County (http://www.miamidade.gov/citt/library/reports/project-recommendations.pdf)

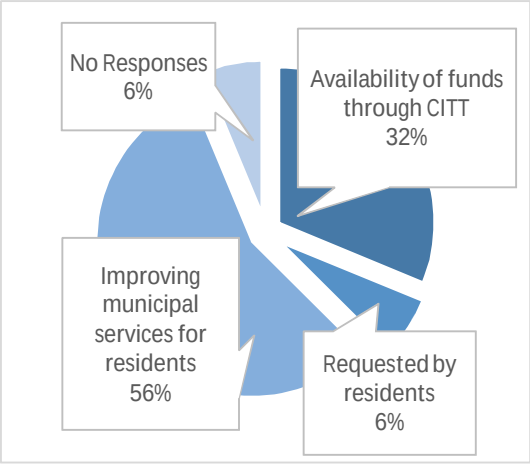
3.4 KEY DRIVERS OF MTP

As previously mentioned, one of the goals of implementing a MTP is to achieve an integrated transit system at the county-level. Although DTPW provides comprehensive coverage, there are often local needs that can be more appropriately provided by the local jurisdiction. Key purposes of MTPs include:

- Providing last mile connectivity
- Extend reach of regional transit system
- Provide lifeline services to key trip generators
- Serve as a community circulator that connects neighborhoods with local attractions

How these purposes inform route design are discussed in Section 7.2 Determination of Service Purpose.

Figure 3: Reasons for Service Initiation

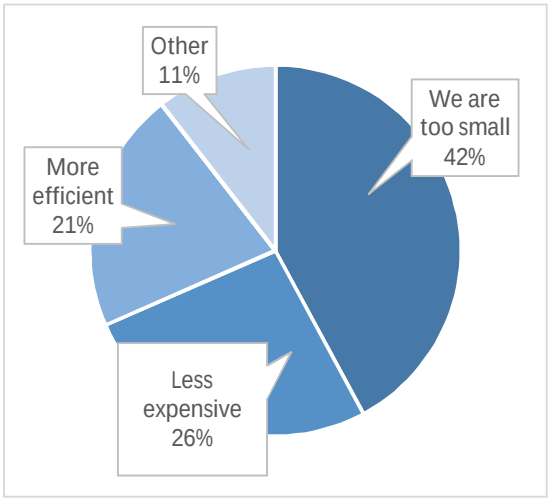


Municipalities were surveyed to identify what were primary factors that lead them to initiate a MTP. Of the respondents, more than half stated that the primary reason for initiating service was to improve municipal services for residents. The next most common factor was the availability of funds through the half-penny surtax. A graph depicting the survey responses is provided in Figure 3.

3.5 PRESENT INSTITUTIONAL MECHANISMS

There are various methods by which municipalities operate their services. Some municipalities operate their own MTP by using their own drivers, vehicles, etc. Others chose to contract out service to Miami-Dade Department of Transportation and Public Works (DTPW) (formerly MDT), another jurisdiction, or to a private contractor. When contracting service out, municipalities have the option to provide their own vehicles or for the contractor to provide vehicles. When surveyed, the majority of municipalities contracted their service to a private contractor. The most commonly used service operator is Limousines of South Florida, Inc. (SFL). When asked why municipalities chose to contract out to a private service provider, several reasons were provided, including: they are too small to operate their own service, it is cheaper to contract operation and maintenance to SFL, and that larger operations such as DTPW and SFL are able to provide more reliability as they have back-up drivers and buses available around the clock. The summary of the responses is provided graphically in Figure 4.

Figure 4: Reasons for Contracting Services



Municipalities were also asked which department oversees and is responsible for managing the MTP. The majority of municipalities responded that the Transportation Department or the Department of Public Works oversees the program. One municipality had a Transit Department, and two of the municipalities responded that the MTP was managed by the Town/Village/City Manager's office. Other departments that oversaw MTPs include Recreation, and Planning and Zoning Department. The number of employees that managed the MTP vary depending on the size of the municipality and the system. Bal Harbour has one part-time employee that oversees the program, while the City of Miami Beach has two full-time employees and five or more part-time employees.

Some municipalities may own and maintain their own vehicles while contracting out service to a private operator. Five of the municipalities surveyed stated they owned a municipal vehicle maintenance facility.

3.6 EXISTING PROCESSES

As previously mentioned in Section 3.3, the CITT requires audits to ensure funds are being managed correctly. The audits provided to the CITT are uploaded to their website at http://www.miamidade.gov/citt/municipal-county-audits.asp. Outside of the CITT requirements, transportation planning has some inherent processes in place that can be used to leverage the growth and planning of future MTP.

According to the United States Department of Transportation (USDOT), transportation planning is a cooperative process designed to foster involvement by all users of the system, such as the business community, community groups, environmental organizations, freight operators, as well as the traveling and general public through a proactive public participation process. USDOT, FDOT, and the Miami-Dade MPO ensure respective parties' participation through consistency in adopted planning documents. The commonly referenced plans are Miami-Dade Long Range Transportation Plan (LRTP), Transportation Improvement Program (TIP), Statewide Transportation Improvement Program (STIP), Congestion Management Process (CMP), Transit Development Plan (TDP), Transportation Disadvantaged Service Plan (TDSP), County and City Comprehensive Plans, area, sub-areas and neighborhood master plans and plans of action.

Planning documents should include performance measures by which the plans themselves or related components thereof are gauged. Moving Ahead for Progress in the 21st Century Act, or MAP-21, requires that the LRTP include local goals, strategies, projects and corresponding performance measures, by which the MPO is held accountable in regular federal and state certification reviews. Municipalities should ensure that their transportation needs are reflected in the adopted LRTP to maximize their chances of receiving federal and state transportation funding.

In addition, the previous MPO effort *Local Municipal Transit Circulator Policy Study,* completed in 2002, provides an excellent resource summarizing the role of municipal circulator services, interlocal agreements, risk management, federal/state regulations, 13(c) labor protection, and Americans with Disabilities Act (ADA). Key requirements summarized in the prior study include:

1. Municipalities should provide localized services and DTPW will provide broader countywide service.
2. Municipalities that establish circulator service must enter into an interlocal agreement with Miami-Dade County.
3. Municipalities must be aware of the liability associated with operating a municipal circulator service and hold harmless the County from liabilities and claims. If the circulator service is contracted to a private transportation provider, the County must be named as an additional insured on the policy.
4. Municipalities must comply with all federal, state, and local regulations regarding the provision of transit services.
5. Municipal circulator service should complement - not compete with DTPW service, so as not to endanger Section 13(c) protected employees.
6. All transit circulator vehicles must be ADA compliant.

The *Local Municipal Transit Circulator Policy Study* also recommended a two-step planning process. The first step was an initial service proposal evaluation. This was followed by a detailed feasibility assessment framework evaluating direct routes, headways, coordinated schedules and transfer times, identity and branding, and the recommendation for post-implementation monitoring.

4 SYSTEM FACTS AND MTP PROFILE SHEETS

4.1 SYSTEM FACTS

An analysis of all municipal transit systems in Miami-Dade County was conducted to develop benchmarking through which municipalities may compare their performance. The purpose of this benchmarking is not to evaluate whether a municipality's circulator system is more or less efficient, but rather to provide an overview of the data available. Data for benchmarking was obtained through sources described in Section 2.2.1 Data Collection.

Raw data provides an overview of the various scales and ranges of services that are being provided by municipalities in Miami-Dade County. The data is summarized into 'absolute' results, which are dependent on unique factors for each municipalities and may not be comparable between municipalities with significantly different characteristics. Some of the factors that impact the data discussed in this section include size of the municipality (both in terms of land area and population), land use, and other socio-economic factors. Some of the system facts from the raw data were used to develop 'normalized' results, which may be used for improved comparison among differing municipalities. The normalized results are used to develop performance thresholds, and are discussed in Section 4.2 Development of Performance Thresholds.

Of the municipalities in Miami-Dade County, the following 24 were taken into consideration for the benchmarking analysis:

- Aventura – Aventura Express
- Bal Harbour – Bal Harbour Express
- Bay Harbor Islands – Bay Harbor Islands Minibus
- Coral Gables – Coral Gables Trolley
- Cutler Bay – Cutler Bay Circulator
- Doral – Doral Trolley
- Hialeah – Hialeah Transit Systems
- Homestead – Homestead Transit Systems
- Miami – Miami Trolley
- Miami Beach – Miami Beach Trolley
- Miami Gardens – Miami Gardens Express
- Miami Lakes – Miami Lakes Moover
- Miami Shores – Miami Shores Shuttle
- Miami Springs – Free-Bee Shuttle
- North Bay Village – North Bay Village Minibus
- North Miami – NOMI Express
- North Miami Beach – B-Line
- Opa-Locka – Opa-Locka Express
- Palmetto Bay – I-Bus
- Pinecrest – Pinecrest People Mover
- Sunny Isles Beach – Community Shuttle
- Surfside – Surfside Minibus
- Sweetwater – Sweetwater Trolley
- West Miami – West Miami Hour Loop

System facts can be categorized into service area, service supplied, service consumed, financial information, and safety. A brief description of the findings as they relate to each of the benchmarking measures is provided below. A summary of

ranges for these benchmarks is provided in Table 1. The characteristics provided in the table, as well as the methodology used to calculate these performance measures, are discussed in more detail in the following sections.

Table 1: System Facts

System Fact	Range (estimate)	Average (rounded)
Service Area		
Population Being Served	2,300 – 399,000	54,800
Service Supplied		
Service Frequency	10 minutes – 120 minutes	50 minutes
Number of Vehicles in Service	1 vehicle – 26 vehicles	4 vehicles
Annual Service Miles	19,000 – 902,600	138,750
Annual Service Hours	1,950 – 134,500	16,100
Number of Routes	1 – 7	2
Service Consumed		
Annual Boardings	7,300 – 3,600,000	455,900
Financial Information		
Total Capital Costs (to date)	$5,000 - $6,800,000	$1,270,800
Annual O&M Costs	$89,500 - $4,575,000	$762,800

More detailed system profile sheets summarizing system facts for each municipality are discussed in Section 4.3 System Profile Sheets.

4.1.1 SERVICE AREA

4.1.1.1 Population Being Served

Geographical Information Systems (GIS) software was used to analyze the potential ridership served by a municipal transit route. The analysis used population data obtained from the 2010 US Census, and considered residents within a quarter-mile of the route alignment. The quarter-mile distance was selected because it represents approximately a five-minute walk from the route, which is a typical distance considered for ease of accessibility. For the purpose of this analysis, only residents within the municipal boundary were considered. An analysis was also conducted to evaluate service coverage of the MTPs. The percent of municipal residents living within a quarter-mile of the alignment was used as a measure of system coverage. Such a measure may be used as a tool to evaluate Title VI compliance, which is discussed in Section 6.5 Title VI Considerations.

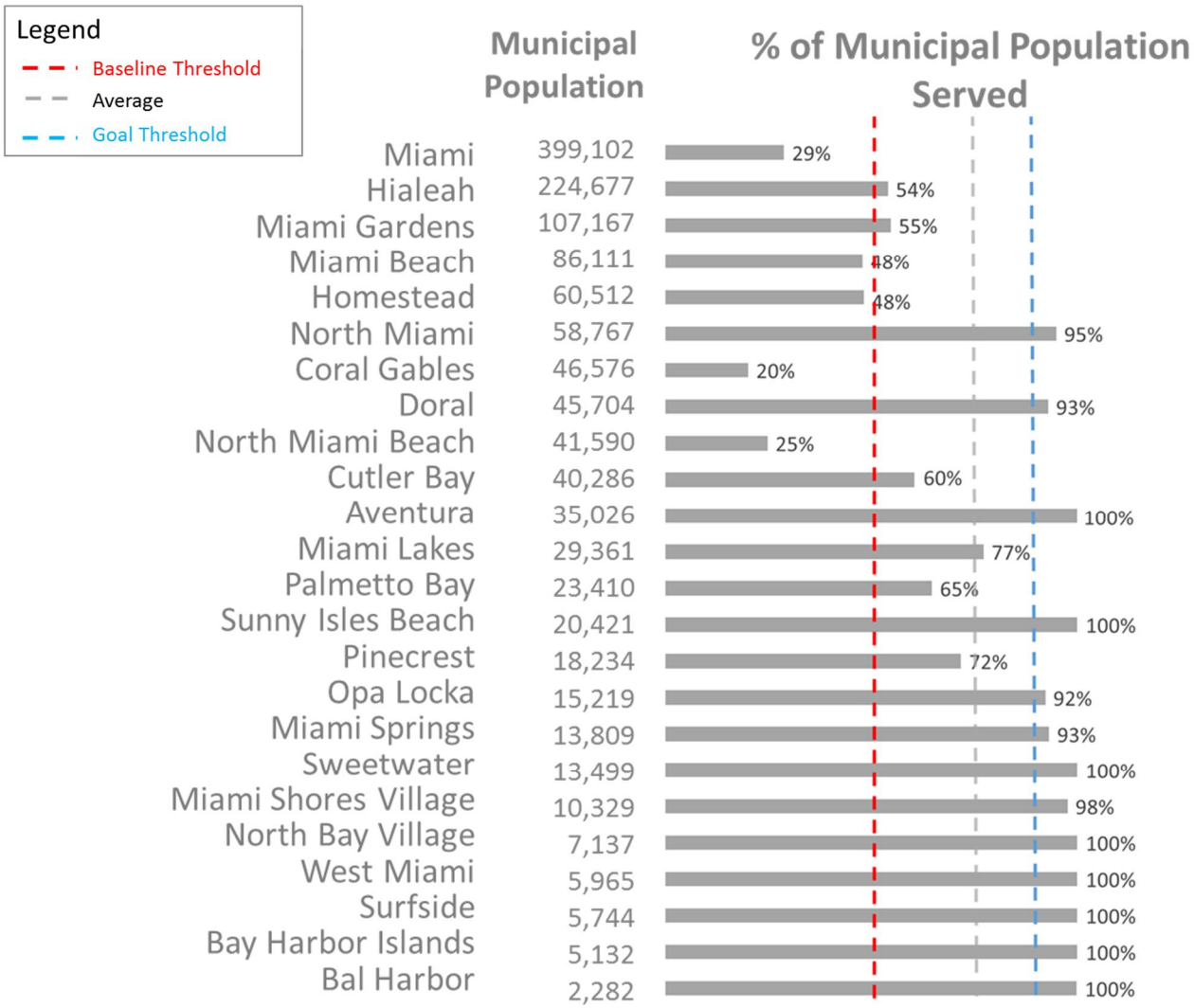
Smaller municipalities (by area) generally have higher system coverage than those with larger areas. Coverage ranges from approximately 20 percent to 100 percent. This is not a direct indication of actual system usage, but does provide insight as to the population that is being reached by the system. A summary of the systems analyzed is provided below in

Table 2. A graphical representation of system coverage, listing municipalities by total population, is also provided in Figure 5.

Table 2: Population Served and System Coverage

Local Jurisdiction	Municipal Population within 1/4 Mile of Route	Total Municipal Population	Percent of Municipal Population Served
Aventura	35,026	35,026	100%
Bal Harbour	2,277	2,282	100%
Bay Harbor Islands	5,132	5,132	100%
Coral Gables	9,385	46,576	20%
Cutler Bay	24,324	40,286	60%
Doral	42,453	45,704	93%
Hialeah	121,413	224,677	54%
Homestead	29,154	60,512	48%
Miami	115,145	399,102	29%
Miami Beach	41,265	86,111	48%
Miami Gardens	58,651	107,167	55%
Miami Lakes	22,675	29,361	77%
Miami Shores Village	10,080	10,329	98%
Miami Springs	12,863	13,809	93%
North Bay Village	7,137	7,137	100%
North Miami	55,745	58,767	95%
North Miami Beach	10,327	41,590	25%
Opa Locka	14,032	15,219	92%
Palmetto Bay	15,151	23,410	65%
Pinecrest	13,089	18,234	72%
Sunny Isles Beach	20,421	20,421	100%
Surfside	5,744	5,744	100%
Sweetwater	13,499	13,499	100%
West Miami	5,965	5,965	100%
Summary			
Minimum	2,277	2,282	20%
Maximum	121,413	399,102	100%
Mean	28,789	54,835	76%
Percentiles			
25th Percentile	9,560	11,120	54%
75th Percentile	39,705	55,720	100%

Figure 5: System Coverage



4.1.2 SERVICE SUPPLIED

4.1.2.1 Service Frequency and Service Span

Service frequency is an important factor, as it relates to service attractiveness. More frequent service is more attractive to riders; however, frequency impacts operating costs. Service frequency is dependent on route length and available fleet size. Longer routes typically require more vehicles to achieve the same level of service frequency as a shorter route. Frequency is reported in minutes between buses, and often varies between weekdays, week nights, and weekends. Frequency may also vary by time of day depending on trip demand and ridership characteristics. While many locations nationwide have peak-service (higher frequency) during the morning (6:00 A.M. – 9:00 A.M.) and evening peak hours (4:00 P.M. – 6:00 P.M.), Miami-Dade County often has an even distribution of ridership throughout the day. Therefore, most municipalities offer constant frequency of service throughout the day.

Service span refers to the hours of operation for a route or system. These are typically determined by the type of route and the purpose of trips that the system is serving. Municipalities that primarily provide commuter service typically operate from morning peak hours to evening peak hours on weekdays. Routes serving recreational and convenience trips, such as shopping and other recreational activities, will often provide service on weekends in addition to weekdays.

4.1.2.2 Number of Vehicles

Typically, a distinction is made between the number of buses used during peak service (maximum number of buses) and buses used during off-peak service, or base service. However, as discussed in the previous section, municipalities in Miami-Dade County typically do not adjust service frequency during the day and therefore the number of buses required for system operation is equal to that required for base service.

The fleet size is dependent on the number of buses required to provide a certain frequency. On average, one vehicle is sufficient to provide 45- to 60-minute frequency for a single route, two vehicles are provided for routes that offer frequencies between 30- and 45- minutes, and three or more vehicles are provided for routes that offer greater frequency. The City of Miami, which offers seven routes with 15- to 20-minute frequency, has a 26 vehicles in operation.

The peak-to-base vehicle ratio is a measure of how service varies during peak times. In most municipalities, this ratio remains as 1:1 since service frequency does not change throughout the day. Spare-to-peak vehicle ratio is a measure of the number of spare vehicles available during peak service and plays a role in service reliability. This is an important factor in service reliability, and a minimum of 0.2 is required for routes receiving funds from the Federal Transit Administration (FTA). Many municipalities contract service to a private provider or to DTPW and therefore are not aware of a spare-to-peak ratio.

The average fleet age is also of importance as it will have an impact on ridership comfort as well as operating and maintenance costs. Older vehicles will typically require greater maintenance, be more likely to break down, and are not as attractive to riders.

4.1.2.3 Annual Service Hours

Annual service hours is a measure of service availability. Factors that impact total annual service hours include service span as well as the number of buses in service.

Annual operating hours are calculated by multiplying daily hours of operation (provided by the municipalities or on their websites) by the number of days the route operated. This value is then multiplied by the number of vehicles that was required to meet service frequency (provided) to yield annual service hours. The equation is as follows:

$$Annual\ service\ hours = \frac{operating\ hours}{day} \times \frac{days}{year} \times buses$$

Annual service hours range from approximately 1,000 service hours per route to nearly 29,000 hours per route. The City of Miami MTP provides over 134,000 total service hours per year, with five routes providing over 20,000 annual service hours per route.

4.1.2.4 Annual Service Miles

Annual service miles refers to the amount of miles that the municipal transit vehicles travel in a year. The total service mileage was calculated using available information for service frequency, service spans (hours of service), length of route, and the number of buses in service. The number of routes offered by a municipal transit system also had a significant impact.

Daily service miles were calculated by multiplying the length of the route by the number of times the route is served each day. This is the multiplied by the number of service days in a year to obtain annual service miles. The equation is provided below:

$$Annual\ service\ miles = \frac{miles}{run} \times \frac{runs}{hour} \times \frac{hours}{day} \times \frac{days}{year}$$

To calculate runs per hour, service frequency was taken into account. The value is obtained using the following equation:

$$\frac{runs}{hour} = \frac{60\ minutes}{hour} \times \frac{1}{frequency}$$

Therefore, a route that provides service every 20 minutes will have three runs per hour.

Annual service miles range from approximately 9,100 miles per route to over 244,000 miles per route. The City of Miami MTP provides a total of over 902,000 service miles per year, with five routes providing over 100,000 annual service miles per route.

4.1.2.5 Number of Routes

The number of routes in a system is dependent on both geographical area and demographic characteristics. Larger municipalities tend to offer more routes to cover the entire area, while municipalities with greater population will offer more routes to meet the different needs of their residents.

4.1.3 SERVICE CONSUMED

4.1.3.1 Annual Boardings

Total annual boardings is a measure of how well used the service is. Factors that attribute to higher ridership include demographic information of the area being served, route destinations/stops, service frequency, and service span. While providing more routes may correlate to greater total boardings for a system, this is not always the case.

Annual boardings were typically provided by the municipalities. In cases where municipalities reported average daily boardings, the value was multiplied by the number of days the route operated for the year. Generally, it was assumed that municipalities operated their MTPs 52 weeks of the year. For the Village of Pinecrest, which gears their MTP mostly towards serving their public schools, service was assumed to operate only while school is in session (approximately 39 weeks). For the purpose of this calculation, holidays were ignored.

Annual boardings for MTPs in Miami-Dade County vary from approximately 7,300 to 3,600,000. Many municipalities do not report annual boardings for individual routes. Based on route-specific ridership reported, annual boardings may be as low as 4,800 per route (Village of Miami Shores) or as high as 1,160,000 boardings per route (City of Coral Gables).

4.1.4 FINANCIAL INFORMATION

4.1.4.1 Capital Cost to Date

The total capital investment that is made by a municipality is an important measure to report. Investment on infrastructure, such as vehicles, stop amenities, and ADA compliance and accessibility often have an impact on ridership. Greater investment in infrastructure correlates closely to more attractive service. Municipal programs that were established more recently will likely have lower capital investment to date as a result of reduced need for replacement of vehicles and other infrastructure.

Reported capital investment to date varied greatly among municipalities from approximately $5,000 to $6,800,000.

4.1.4.2 Annual Operating and Maintenance Costs

Annual operating and maintenance costs are used to develop performance measures that can comparatively evaluate how each system or route is performing. Most municipalities have maintenance costs equal to, or below the funding available through the CITT. Operating and maintenance costs are directly linked to service frequency and service span. The most significant component of operating and maintenance cost is the operator costs. Therefore, increasing the number of vehicles in service will result in a similar increase in operating and maintenance costs.

Operating and maintenance costs range from approximately $87,300 per service vehicle to over $325,000 per service vehicle.

4.1.4.3 Other Revenue Sources

In addition to funding from the CITT, considered to be a subsidy to the operation of a MTP, municipalities may charge a fare per boarding or may supplement the CITT funding through advertising or other means. Municipalities were surveyed and asked if a fare was charged. Only Hialeah and Cutler Bay currently charge for boarding ($2.25 and $0.25 respectively).

Municipalities were also asked if they accepted advertising on their buses or shelters. Five of the municipalities surveyed responded that they accepted advertising, but did not provide revenue obtained from advertisers.

4.1.5 SAFETY

Safety is an important aspect of transit and must be reported. Although incident data was not provided as a part of the survey, this information should be collected by municipal transit operators and reported regularly. The following performance measures should be reported.

Number of Incidents – Incidents to be considered include accidents with other vehicles, pedestrians, or bicyclists, as well as bus breakdowns. Typically, the performance measure is normalized by reporting the number of incidents that occur per 100,000 miles.

Number of Reported Injuries – Injuries to be consider include both passenger and operator injuries that occurred on a bus. These should include injuries that occurred while boarding and alighting.

Number of Fatalities – Similar to injuries, fatality statistics should include both operator and passenger fatalities, and should consider those related to boarding and alighting as well as on the vehicle.

4.2 DEVELOPMENT OF PERFORMANCE THRESHOLDS

Performance measures are developed from the system facts in order to evaluate system performance. Often jurisdictions are required to report performance to funding entities or management. Furthermore establishing and tracking performance measures can help monitor and optimize service; trouble points or areas of concern can be easily identified and compared. Consistent and uniform performance measures also help ease communication between jurisdictions. The system performance measures fall into several categories and can incorporate a variety of different individual measures.

- Service Effectiveness
- Service Efficiency

- Service Reliability
- Safety and Security
- Customer Service

Not all of the above performance measures were requested from the survey or obtained from the municipalities. For purposes of these guidelines performance measures in four main categories were summarized: service effectiveness, service efficiency, service reliability, and safety.

4.2.1 METHODOLOGY

The data collected from different MTPs through surveys and research was analyzed as described in the following section. The goal of this analysis was to obtain an overview of the measures currently implemented by the different municipalities and to classify and identify target performance thresholds through benchmarking the results. This section explains the importance of each benchmark and provides the range based on the samples analyzed. After analyzing the data, guidelines are offered for recommended performance thresholds based on a quantitative analysis of the current situation. In this way, guidelines are identified in order to create or improve a municipal transit system based on the data collected and on professional judgement.

The performance thresholds were established based on the data obtained through the survey and other data collection efforts. Not all data was provided by the jurisdictions. The data provided is summarized in a spreadsheet and included in Appendix D. To calculate the performance measures the following inputs were obtained or derived:

- Percentage of population served
- Annual boardings
- Annual service hours
- Annual service miles
- Annual operating and maintenance costs

4.2.1.1 Annual Boardings per Population Reached

The values for population reached in each municipality were calculated with GIS software using data obtained from the 2010 US Census. Average annual boardings were provided in the web-survey responses.

4.2.1.1 Annual Boardings

4.2.1.1.1 *Boardings per Service Hour*

Boardings per hour were calculated by dividing annual boardings by annual service hours.

4.2.1.1.2 *Boardings per Mile*

Boardings per mile was calculated by dividing annual boardings by annual service miles.

4.2.1.2 Percent Overlap with Other Services

Overlap with between services was calculated using GIS software to identify segments of routes that operate on the same roadways. The analysis conducted only accounts for physical overlap of the alignment and does not take into consideration service overlap, which include fares, hours and frequency of operation, stop frequency and location, and demographics or trip purposes being served.

4.2.1.3 Annual Operating and Maintenance Costs

The annual Operating and Maintenance (O&M) costs were typically provided by the municipalities. In some cases, municipalities provided the hourly rate they pay their contractor to operate the service. In this case, the annual costs are obtained by multiplying the hourly rate by the number of annual service hours.

4.2.1.3.1 *O&M Expense per Hour*

O&M expense per hour was calculated by dividing the annual O&M costs by the total number of service hours. However, this value has been provided for the majority of municipalities. It should be noted that some municipalities provided costs that included vehicle maintenance and fuel costs, while others did not include fuel and/or maintenance.

4.2.1.3.2 *O&M Expense per Mile*

O&M expense per mile was calculated by dividing annual O&M costs by the total number of service miles.

4.2.1.3.3 *Operating & Maintenance Expense per Boarding*

O&M expense per boarding as calculated by dividing annual O&M costs by annual boardings.

4.2.1.3.4 *Subsidy per Boarding*

Very similar to O&M expense per boarding, subsidy per boarding takes into account additional funds that are not provided directly through public funds. This includes advertising and farebox revenue. Most municipalities did not provide farebox revenue, and advertisement revenue was not provided. Therefore, for the purpose of this document, almost all municipalities will have a subsidy per boarding equal to their O&M expense per boarding. However, in the future, subsidy per boarding should be considered.

4.2.2 SERVICE EFFECTIVENESS

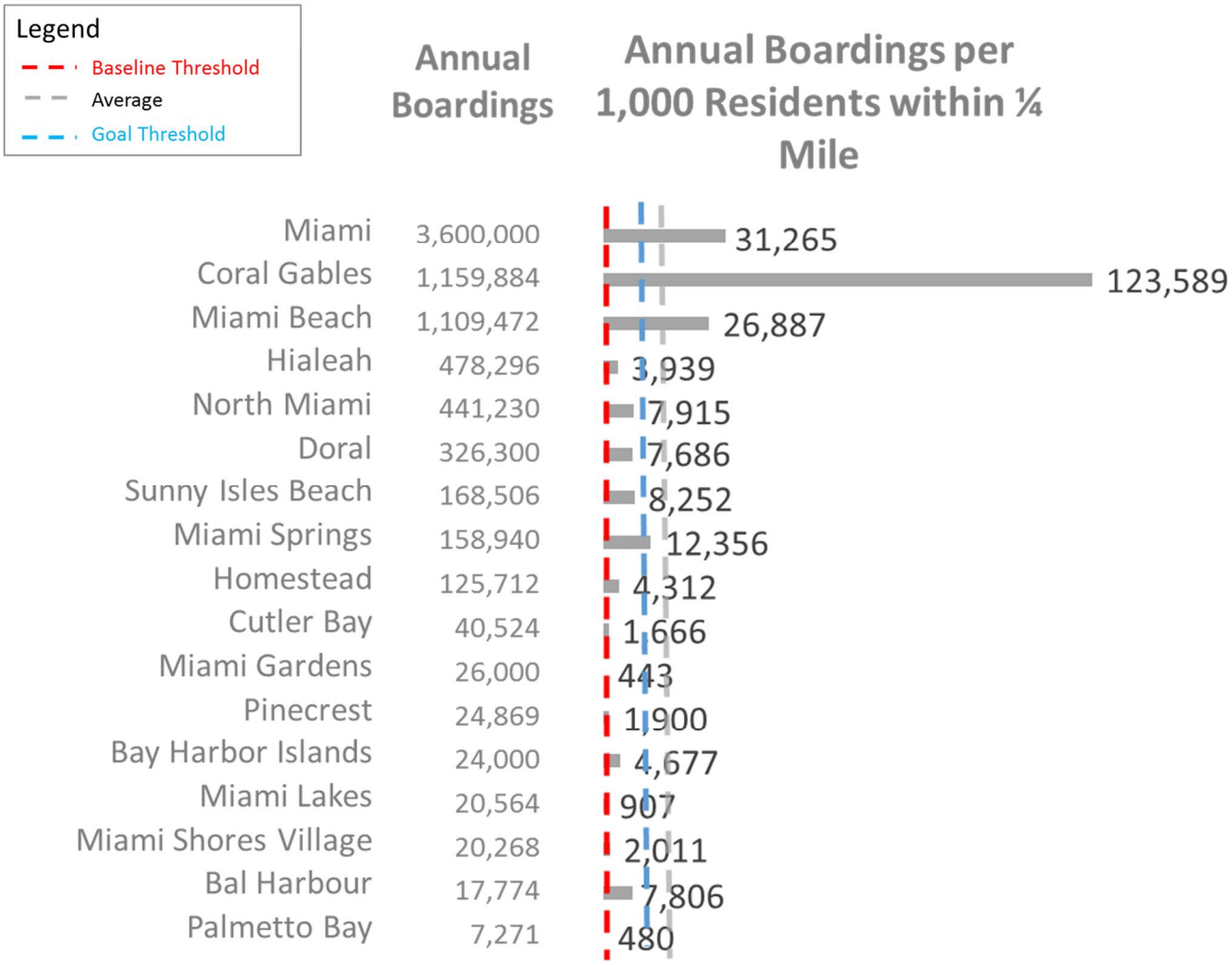
Service effectiveness is a measure of how well the circulator routes serve the community. One measure of such is service effectiveness through the American Community Survey (ACS). The ACS is conducted annually and, among other measures, provides estimates of percent of population that uses transit to go to work at a municipal level. Data published can be compared to see if there is an increase in percent of people that use transit.

Another indicator of service effectiveness is the number of boardings per 1,000 residents within a specified distance of the route or bus stops along the route. Unlike the ACS data, analyzing boardings per 1,000 residents can provide an effectiveness measure on a per-route basis, as well as on a system-wide scale. Table 3 includes the calculated annual boardings per 1,000 residents in each municipality, and annual boardings per 1,000 residents living within a quarter-mile of the municipality's transit service. While boardings per 1,000 residents provides an overview of system coverage, the total number of boardings per 1,000 residents living within a quarter-mile is a representation of actual system usage. The City of Coral Gables has the highest system usage, with 123,356 boardings per 1,000 residents located within a five-minute walk of the system. The City of Miami Gardens, which recently initiated its service, currently has the lowest system usage with only 443 boardings per 1,000 residents located within walking distance of the route. Figure 6 shows boardings per residents within a 1/4 mile of the MTP routes. The baseline threshold is based on the 25th percentile (1,785 boardings), while the goal threshold (10,305 boardings) is based on the 75th percentile of municipalities.

Table 3: Boardings per Population Reached

Local Jurisdiction	Total Municipal Population	Municipal Population within 1/4 Mile	Total Annual Boardings	Boardings per 1,000 Residents	Boardings per 1,000 Residents within 1/4 Mile
Bal Harbour	2,282	2,277	17,774	7,789	7,806
Bay Harbor Islands	5,132	5,132	24,000	4,677	4,677
Coral Gables	46,576	9,385	1,159,884	24,903	123,589
Cutler Bay	40,286	24,324	40,524	1,006	1,666
Doral	45,704	42,453	326,300	7,139	7,686
Hialeah	224,677	121,413	478,296	2,129	3,939
Homestead	60,512	29,154	125,712	2,077	4,312
Miami	399,102	115,145	3,600,000	9,020	31,265
Miami Beach	86,111	41,265	1,109,472	12,884	26,887
Miami Gardens	107,167	58,651	26,000	243	443
Miami Lakes	29,361	22,675	20,564	700	907
Miami Shores Village	10,329	10,080	20,268	1,962	2,011
Miami Springs	13,809	12863	158,940	11,510	12,356
North Miami	58,767	55745	441,230	7,508	7,915
Palmetto Bay	23,410	15151	7,271	311	480
Pinecrest	18,234	13089	24,869	1,364	1,900
Sunny Isles Beach	20,421	20421	168,506	8,252	8,252
Summary					
Minimum	2,282	2,277	7,271	243	443
Maximum	399,102	121,413	3,600,000	24,903	123,589
Mean	54,836	28,790	455,859	6,087	14,476
Percentiles					
25th Percentile	16,020	11,470	22,280	1,185	1,785
75th Percentile	73,310	49,100	459,765	8,635	10,305

Figure 6: Boardings per Resident within 1/4 Mile

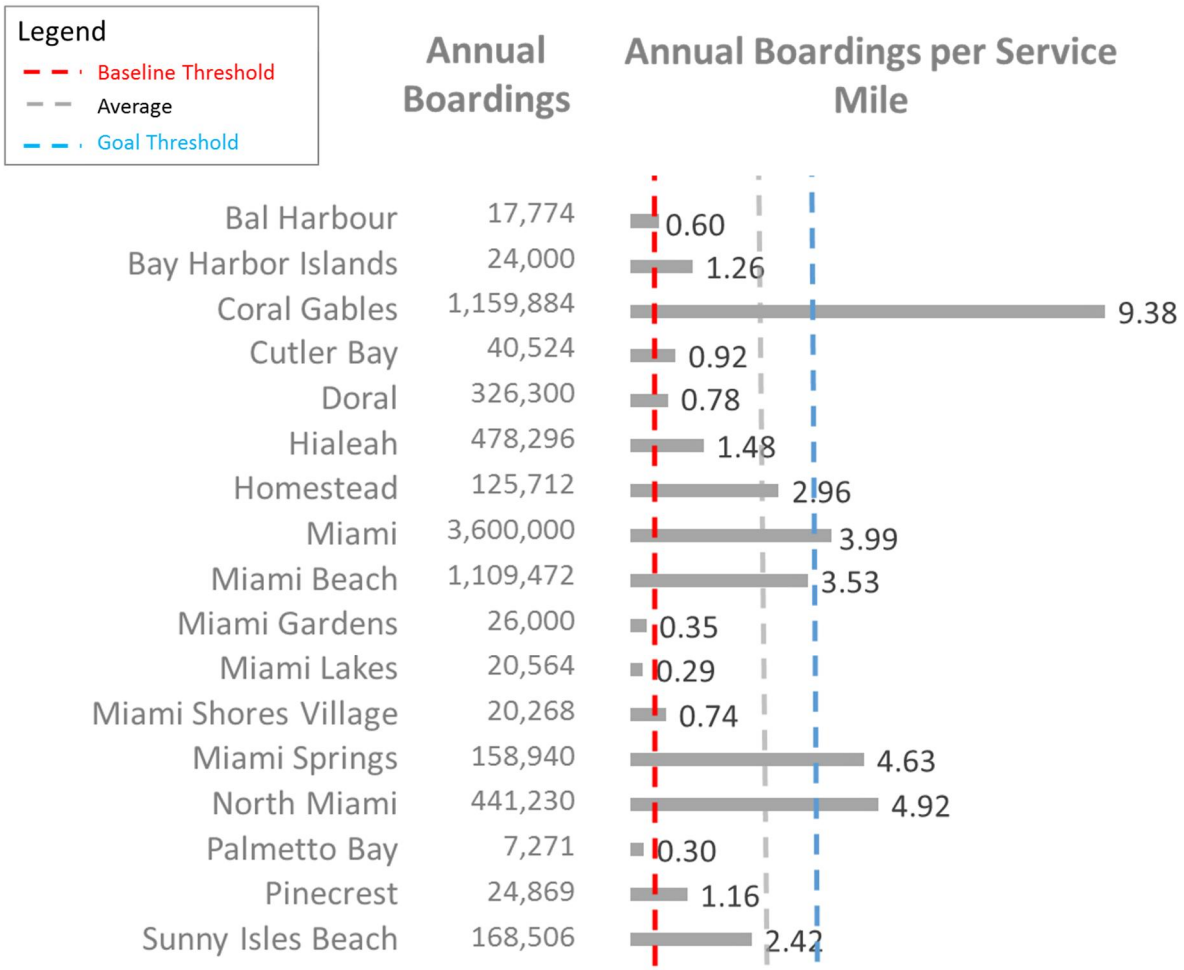


Boardings per service mile and boardings per service hour are also measures of route effectiveness. Boardings per service mile may be more beneficial for evaluating route alignment, while boardings per service hour may aid more in evaluating frequency and span of service. Both boardings per service hour and boardings per service mile provide a measure of service consumption versus service supplied. As summarized in Table 4, the average boardings per service hour is 21.30 while the average boardings per service mile is 2.34. Figure 7, on page 28, displays annual boardings per service mile. It should be noted that the municipal service in Miami has the fourth largest annual boardings per service hour, despite having the highest average annual boardings. The baseline threshold (0.67 boardings per service mile) is based on the 25th percentile of values, while the goal threshold (3.76 boardings per service mile) is calculated based on the 75th percentile of municipalities.

Table 4: Boardings per Service Hour and Boardings per Service Mile

Local Jurisdiction	Total Annual Boardings	Annual Service Hours	Annual Service Miles	Annual Boardings per Service Hour	Annual Boardings per Service Mile
Bal Harbour	17,774	3,055	29,539	5.82	0.60
Bay Harbor Islands	24,000	1,950	19,032	12.31	1.26
Coral Gables	1,159,884	14,136	123,690	82.05	9.38
Cutler Bay	40,524	2,864	43,811	14.15	0.92
Doral	326,300	27,456	420,613	11.88	0.78
Hialeah	478,296	32,266	323,930	14.82	1.48
Homestead	125,712	5,928	42,500	21.21	2.96
Miami	3,600,000	134,472	902,590	26.77	3.99
Miami Beach	1,109,472	34,944	314,496	31.75	3.53
Miami Gardens	26,000	6,240	73,882	4.17	0.35
Miami Lakes	20,564	4,550	71,435	4.52	0.29
Miami Shores Village	20,268	2,184	27,430	9.28	0.74
Miami Springs	158,940	2,860	34,320	55.57	4.63
North Miami	441,230	11,180	89,731	39.47	4.92
Palmetto Bay	7,271	2,470	23,855	2.94	0.30
Pinecrest	24,869	3,120	21,456	7.97	1.16
Sunny Isles Beach	168,506	9,685	69,602	17.40	2.42
Summary					
Min	7,271	1,950	19,032	2.94	0.29
Max	3,600,000	134,472	902,590	82.05	9.38
Mean	455,859	16,078	138,740	21.30	2.34
Percentiles					
25th Percentile	22,280	2,860	28,485	6.89	0.67
75th Percentile	459,765	20,795	219,095	29.26	3.76

Figure 7: Boardings per Service Mile



Another measure unique to Miami-Dade County is evaluating the MTP coverage related to the DTPW coverage by calculating the DTPW-to-MTP service stop ratio and the number of stops at Metrorail, Metromover, Busway, and Tri-Rail stations. Due to lack of available information with regards to MTP stop locations, a service overlap analysis was conducted to evaluate how systems integrate with adjacent municipalities and DTPW routes. As provided in Table 5, alignment overlap with adjacent services is typically between 40 percent and 80 percent. The City of Miami and the Village of Bal Harbour have over 90 percent overlap with other systems. Bal Harbour experiences this level of overlap due to geographic location and the limited arterials that are used for connections to key destinations. The City of Miami experiences a significant overlap with DTPW services because many DTPW routes serve Miami's downtown core.

Figure 8 – 12 provide maps of system overlap with other municipal systems (shown in color) and with DTPW (Metrobus) routes (represented by the grey dotted lines).

Table 5: Percent Overlap with Other Services

Local Jurisdiction	Overlap with Other Services
Aventura	47%
Bal Harbour	94%
Bay Harbor Islands	68%
Coral Gables	30%
Cutler Bay	82%
Doral	38%
Hialeah	59%
Homestead	64%
Miami	90%
Miami Beach	89%
Miami Gardens	67%
Miami Lakes	44%
Miami Shores Village	83%
Miami Springs	41%
North Bay Village	41%
North Miami	60%
North Miami Beach	68%
Opa Locka	62%
Palmetto Bay	53%
Pinecrest	35%
Sunny Isles Beach	68%
Surfside	65%
Sweetwater	77%
West Miami	55%
Summary	
Min	30%
Max	94%
Mean	62%

Figure 8: Route Overlap Map

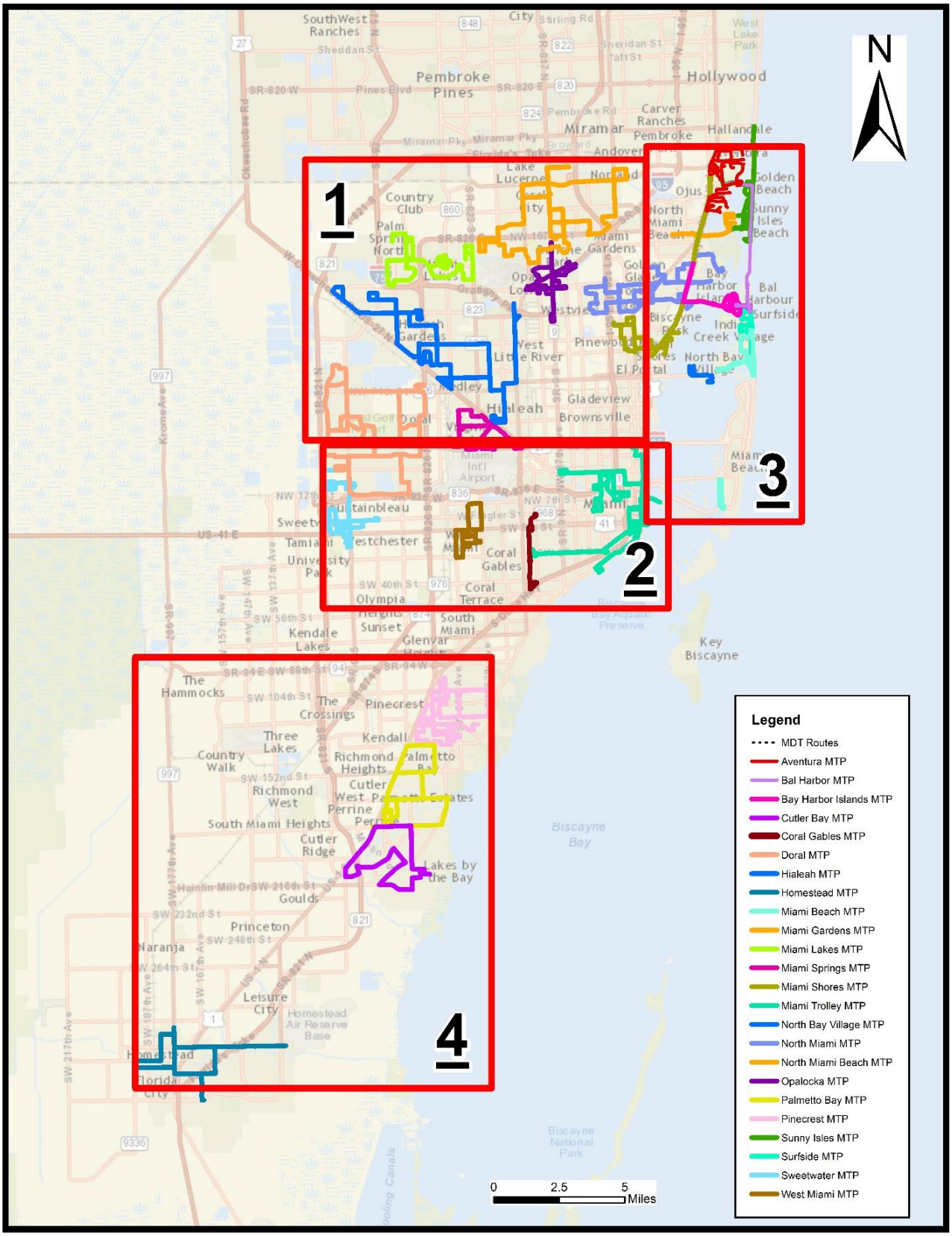


Figure 9: Route Overlay Map, Zoom 1

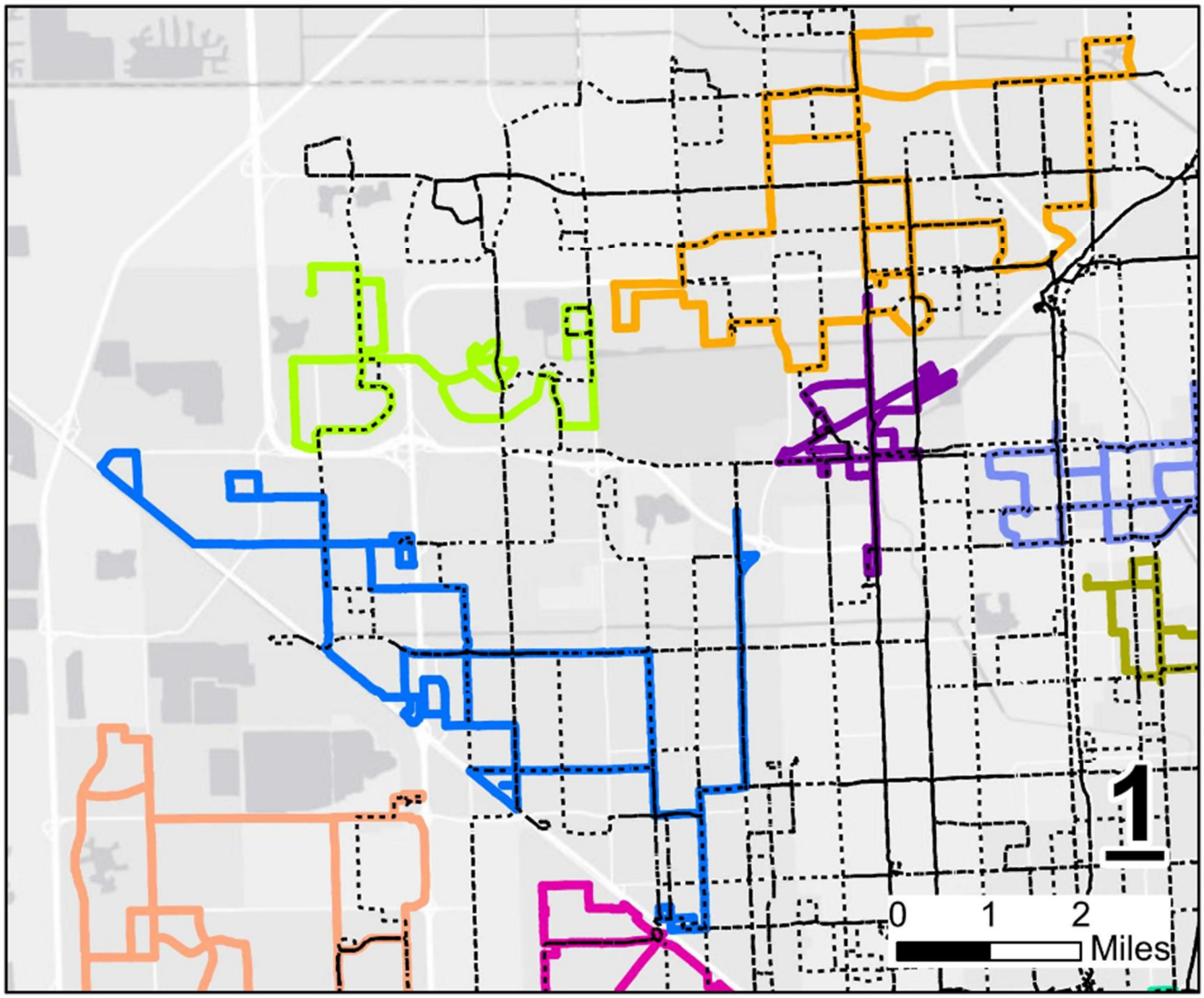


Figure 10: Route Overlay Map, Zoom 2

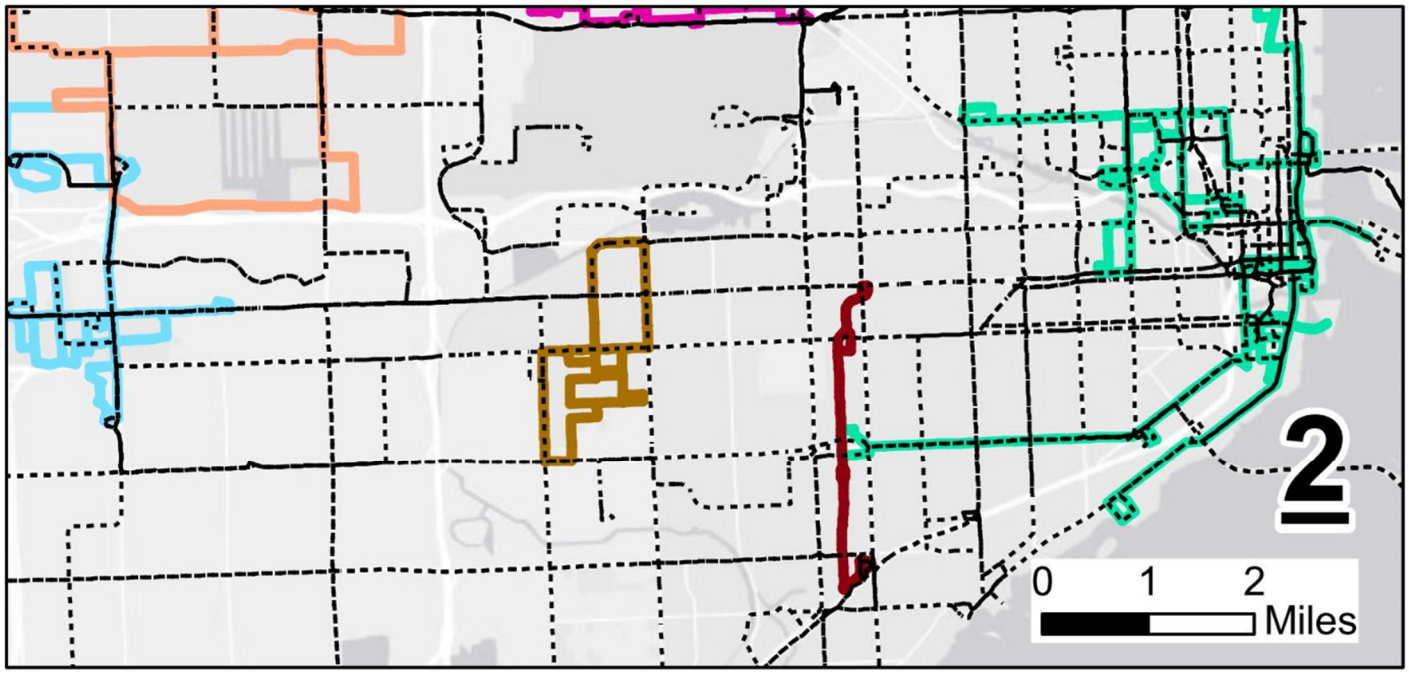


Figure 11: Route Overlay Map, Zoom 3

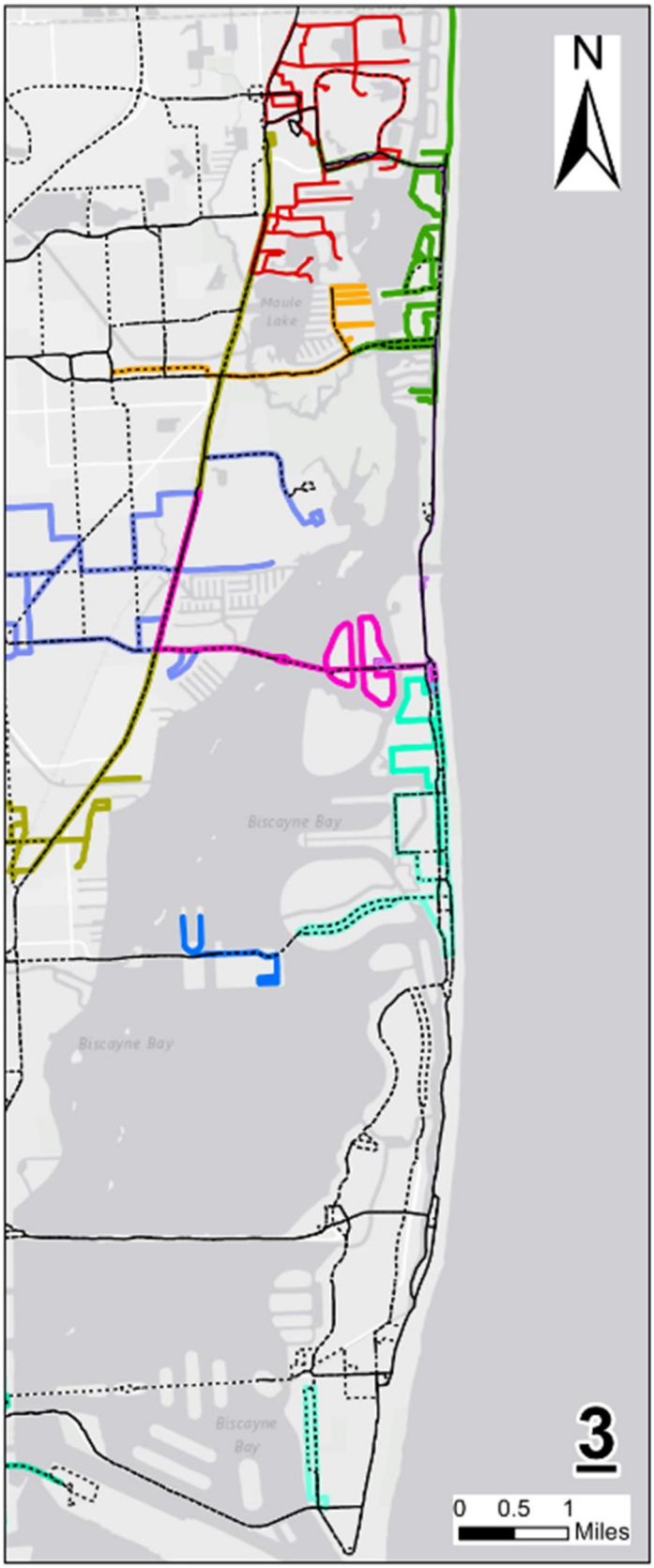
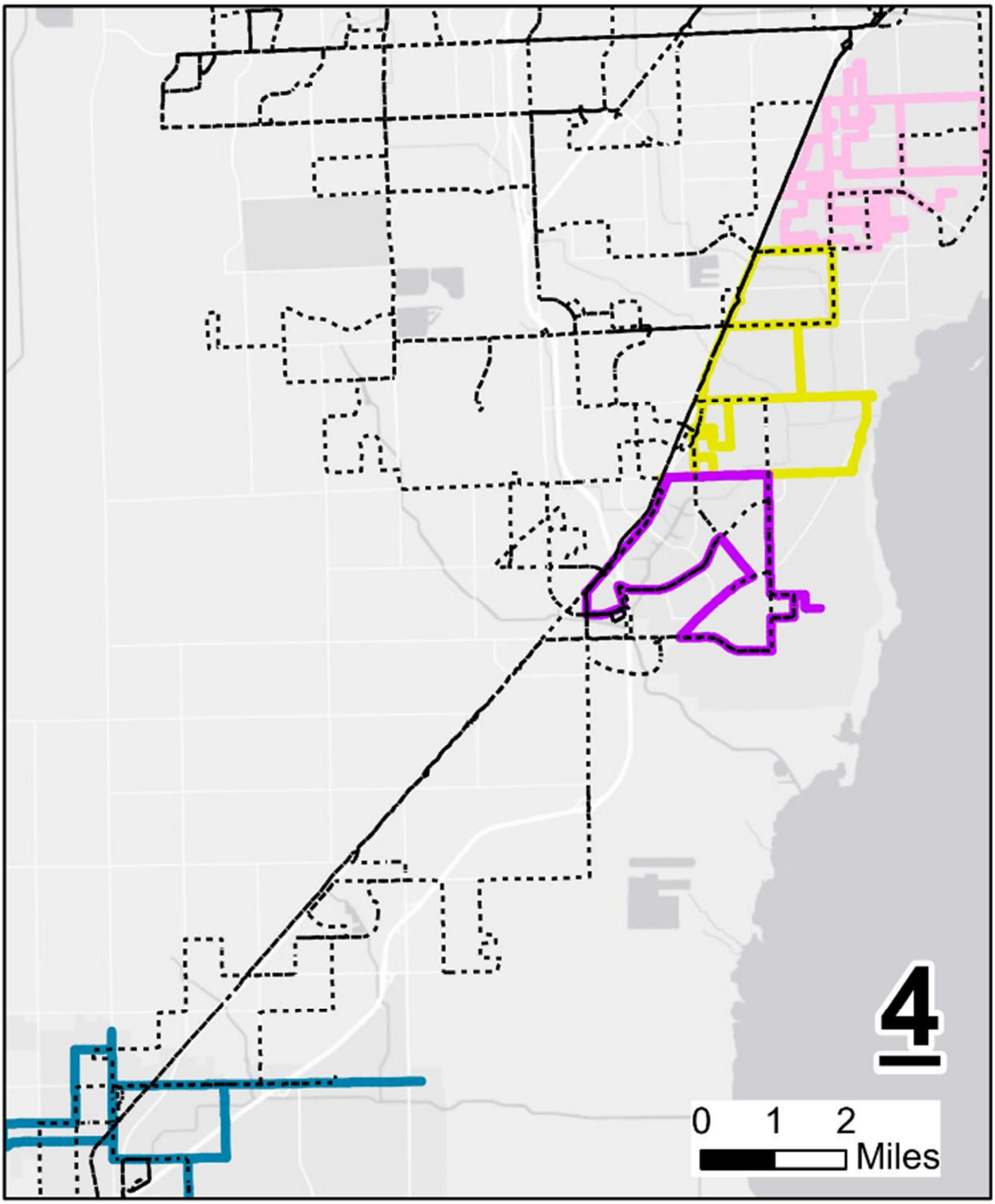


Figure 12: Route Overlay Map, Zoom 4



The overlap analysis provided considers only alignment overlap, and does not take into consideration other system characteristics that determine service overlap such as: fare, potential ridership, service purpose, frequency and span of service, and more. Due to the complexity of service overlap, a threshold, or 'baseline' recommendation is not made for this performance measure. A higher level of overlap is not necessarily preferable to a low level of overlap, and vice versa. However, having zero overlap not recommended as it limits riders' trip options potentially resulting in reduced ridership. Additional details regarding route and system overlap are provided in Section 6.2.1.1 Avoiding Redundancy and Competition.

4.2.3 SERVICE EFFICIENCY

Service efficiency quantifies how efficiently the service uses the funds available. Key measures of service efficiency include O&M expense per boarding, O&M expense per service hour, and O&M expense per mile. These can be calculated on a route-specific level, or on a system-wide level. O&M expense per boarding is also a good indicator of service effectiveness, as it relates to ridership. The three efficiency measures are summarized below in Table 6. O&M per service hour and O&M per service mile represent how direct a route is and how efficiently service is provided. O&M per boarding provides the most complete and important measure of system performance. O&M per boarding is an indication of how well service meets demand. Based on reported values, O&M per boarding varies from $0.85 (Miami Springs) to $20.96 (Palmetto Bay). It should be noted that the City of Miami Springs also operates service for the Village of Virginia Gardens.

On average, O&M expense per boarding is around $5.30. With the exception of Sunny Isles Beach, systems with ridership greater than 100,000 boarding per year have an average operating expense per boarding of $3.00 or less.

Additionally, O&M expense per resident is also considered, as this performance measure evaluates how efficiently the MTP is serving the entire municipality. However, this performance measure is greatly impacted by the coverage of the MTP and therefore for systems that do not cover a significant portion of their municipality, it may provide an incomplete representation of service efficiency.

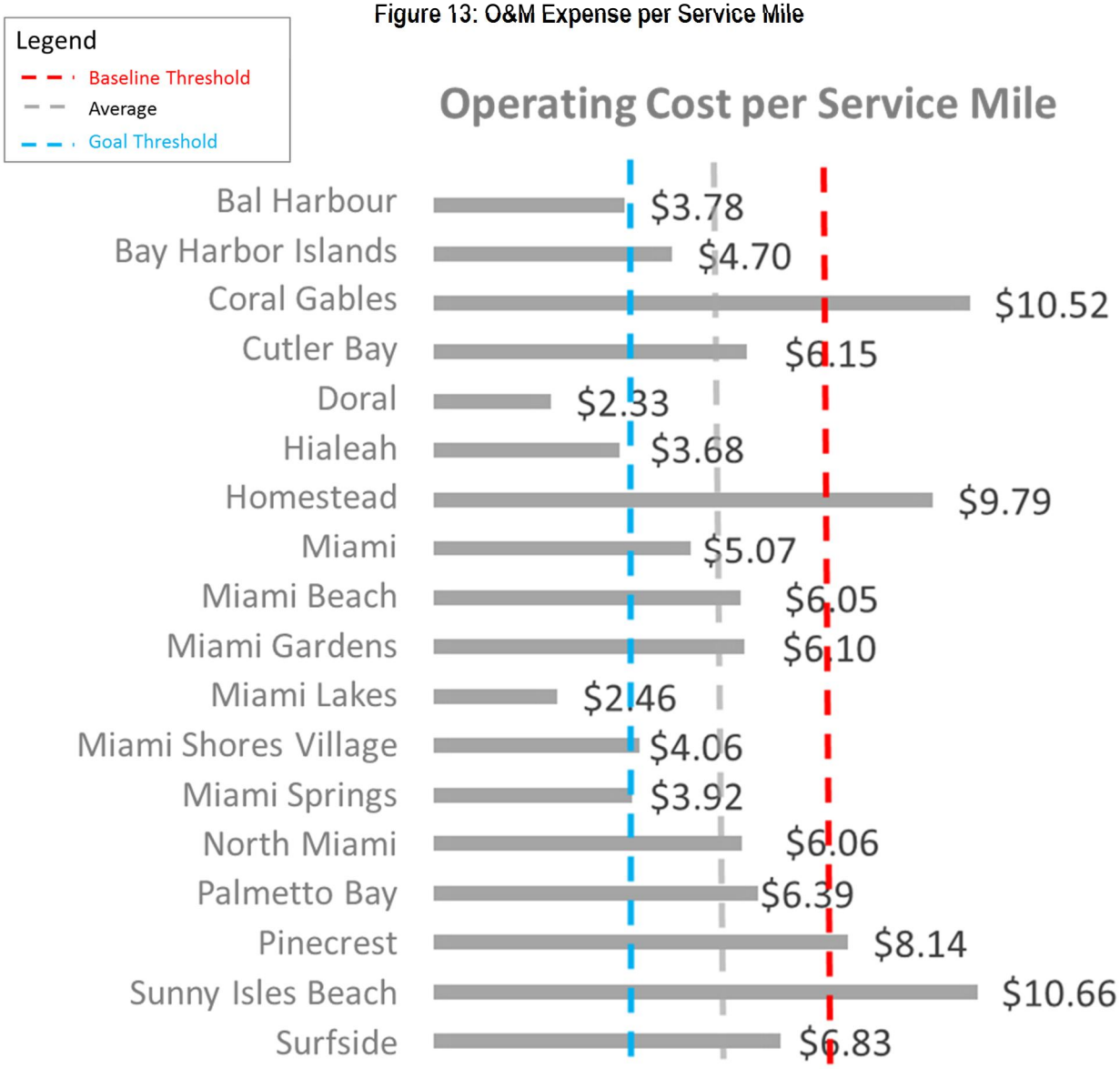
Figure 7, Figure 8, and Figure 13 display O&M expense per service mile, O&M expense per service hour, and O&M expense per boarding, respectively.

Table 6: Cost per Service Mile, Cost per Service Hour, and Cost per Boarding

Local Jurisdiction	Operating Expense per Service Mile	Operating Expense per Service Hour	Operating Expense per Boarding	Operating Expense per Resident
Bal Harbour	$ 3.78	$ 32.25	$ 6.27	$ 48.87
Bay Harbor Islands	$ 4.70	$ 40.76	$ 3.73	$ 17.44
Coral Gables	$ 10.52	$ 92.01	$ 1.12	$ 27.93
Cutler Bay	$ 6.15	$ 94.09	$ 6.65	$ 6.69
Doral	$ 2.33	$ 35.72	$ 3.01	$ 21.46
Hialeah	$ 3.68	$ 36.91	$ 2.49	$ 5.30
Homestead	$ 9.79	$ 70.18	$ 3.31	$ 6.87
Miami	$ 5.07	$ 34.02	$ 1.27	$ 11.46
Miami Beach	$ 6.05	$ 69.49	$ 1.71	$ 22.09
Miami Gardens	$ 6.10	$ 72.28	$ 17.35	$ 4.21
Miami Lakes	$ 2.46	$ 38.60	$ 8.54	$ 5.98
Miami Shores Village	$ 4.06	$ 51.00	$ 5.50	$ 10.78
Miami Springs	$ 3.92	$ 47.08	$ 0.85	$ 9.75
North Miami	$ 6.06	$ 48.63	$ 1.23	$ 9.25
Palmetto Bay	$ 6.39	$ 61.70	$ 20.96	$ 16.32
Pinecrest	$ 8.14	$ 55.95	$ 7.02	$ 9.57
Sunny Isles Beach	$ 10.66	$ 76.58	$ 4.40	$ 36.32
Surfside	$ 6.83	$ 63.81	N/A	$ 31.34
Summary				
Min	$ 2.33	$ 32.25	$ 0.85	$ 4.21
Max	$ 10.66	$ 94.09	$ 20.96	$ 48.87
Mean	$ 5.93	$ 56.72	$ 5.30	$ 16.76
Percentiles				
25th Percentile	$ 3.89	$ 38.17	$ 1.26	$ 6.83
75th Percentile	$ 7.15	$ 70.70	$ 6.83	$ 23.55

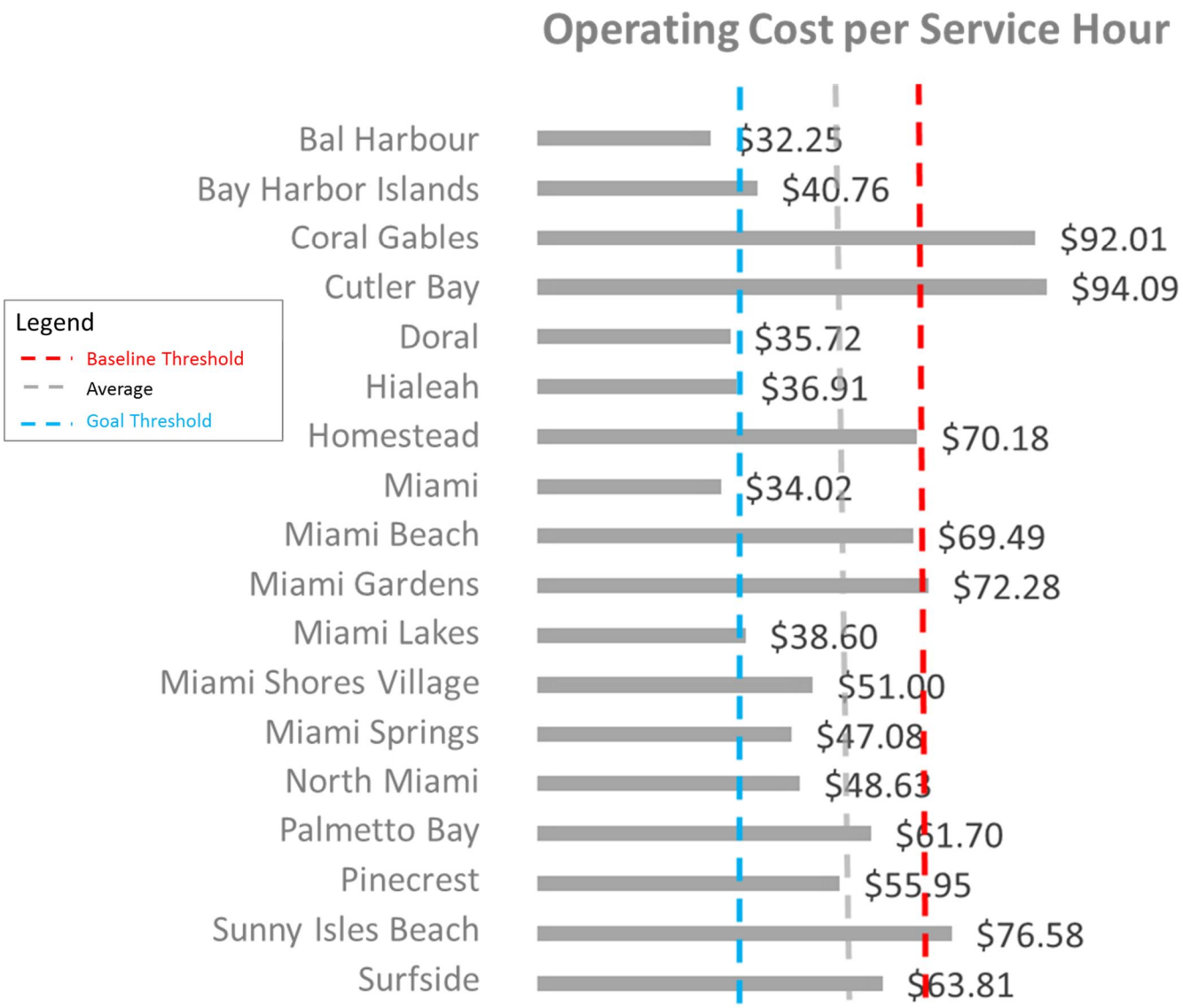
The baseline threshold is $7.15, based on the 75th percentile of MTPs that operate least efficiently with regards to cost per service mile. The goal threshold of $3.90 is based on the 25th percentile of municipalities that operate most efficiently with regards to cost per service mile.

Figure 13: O&M Expense per Service Mile



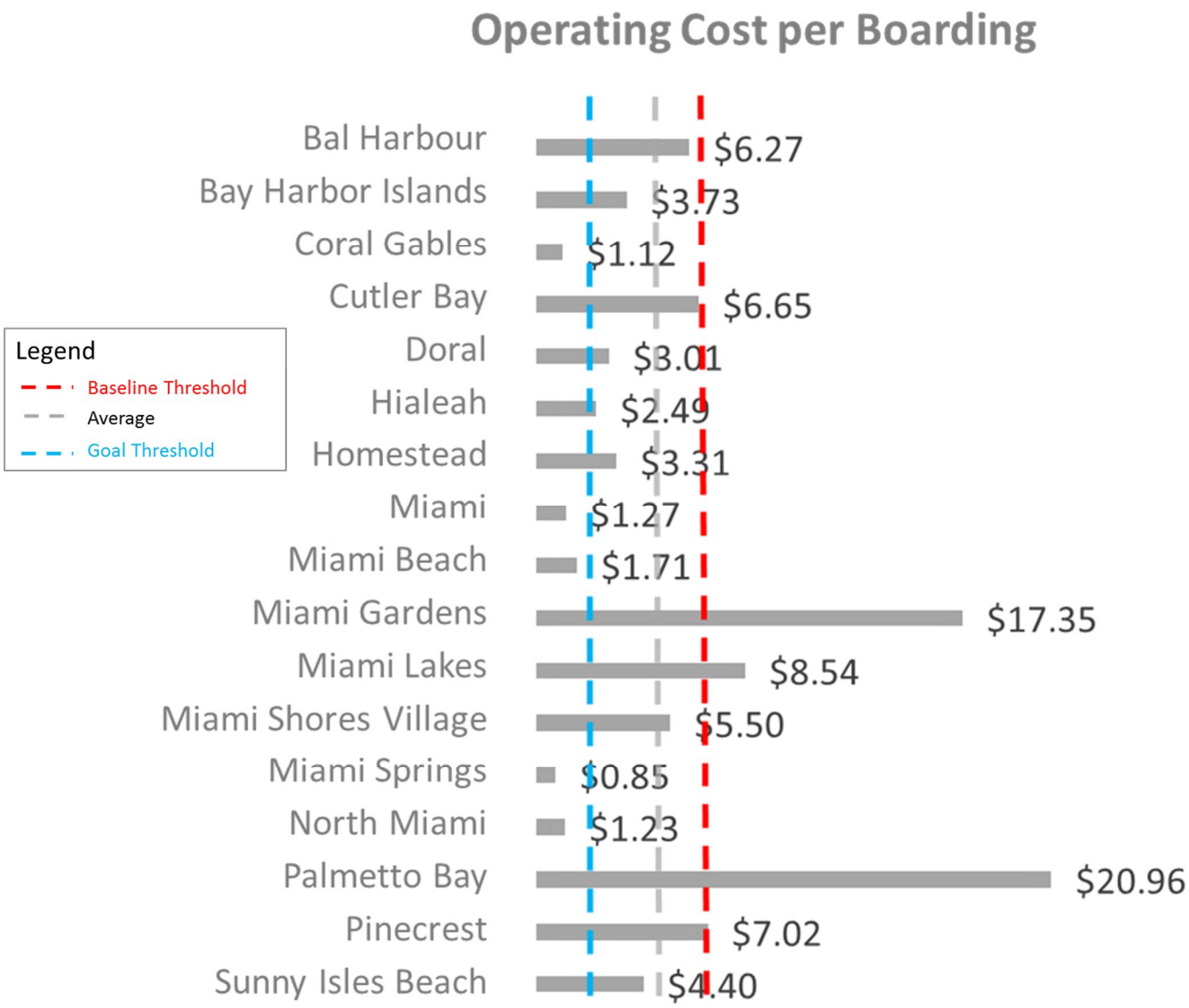
The baseline threshold is $70.70, based on the highest 25th percentile of MTPs that operate least efficiently with regards to cost per service mile. The goal threshold of $38.20 is based on the 25th percentile of municipalities that operate most efficiently with regards to cost per service mile.

Figure 14: O&M Expense per Service Hour



The baseline threshold is $6.85, based on the highest 25th percentile of MTPs that operate least efficiently with regards to cost per service mile. The goal threshold of $2.00 rounded up from the 25th percentile of municipalities that operate most efficiently with regards to cost per service mile.

Figure 15: O&M Expense per Passenger Boarding



4.2.4 SERVICE RELIABILITY

Service reliability is a measure of how reliable and how safe the service is. One method of measuring performance is to evaluate on-time performance, number of missed boardings per service mile, and breakdowns per 100,000 miles. On-time performance (OTP) is one of the most critical aspects of providing a service and failing to meet user expectations for reliability will result in decreased ridership. Asset management can be included as a part of reliability, as it has a direct impact on ensuring breakdowns are mitigated.

4.2.5 SAFETY

The number of incidents, reporting injuries, and fatalities can be normalized into safety performance measures. These measures gauge the comfort and safety of the system. Typical methods of measuring safety include: number of injuries per 100,000 miles, number of fatalities per 100,000 miles, and number of incidents per 100,000 miles.

4.2.6 RECOMMENDED PERFORMANCE THRESHOLDS

The recommended (baseline) performance thresholds are provided in Table 7. Further discussion on the development of the recommendations is provided in the subsections below.

Table 7: Recommended Performance Thresholds

Performance Measure	Baseline Threshold
Service Efficiency	
O&M Expense per Resident	$ 23.55
O&M Expense per Passenger Boarding	$ 6.85
Subsidy per Passenger Boarding	$ 6.20
O&M Expense per Service Mile	$ 7.15
O&M Expense per Service Hour	$ 70.70
Service Effectiveness	
Boardings per Service Mile	0.67
Boardings per Service Hour	6.90
Asset Management (Reliability)	
Peak-to-Base Vehicle Ratio	1.2
Spare-to-Peak Vehicle Ratio	0.2
Average Vehicle Fleet Age	3 years / 75,000 miles
Oldest Vehicle Age	6 years / 150,000 miles

4.2.6.1 Service Efficiency and Service Effectiveness

Thresholds for service efficiency and service effectiveness were determined as summarized in Section 4.2.2 Service Effectiveness and 4.2.3 Service Efficiency. As most municipalities do not have external revenue (such as fare, or allowing publicity on their system) to offset the costs of their MTP, subsidy per passenger boarding was calculated by taking the 33rd percentile of operating expense per passenger boarding. This was done to account for potential revenue that could be obtained through various methods, but is not currently being captured It is important to note that the benchmark thresholds are based only on the municipalities for which data was available.

4.2.6.2 Asset Management (Service Reliability)

For asset management, thresholds were determined based on best practices, as well as based on feedback from the municipalities' experience with breakdowns and maintenance costs. Some municipalities reported an increase in breakdowns after three years of service. Additionally, one municipality noted that they have an agreement with their contracted service provider to replace buses once they reach 50,000 miles.

The Federal Transit Administration (FTA) published a report titled *Useful Life of Transit Buses and Vans*, in which minimum useful life is provided for various vehicle sizes. These are reported in Table 8, below.

Table 8: Minimum Service-life Categories for Buses and Vans

Category	Typical Length	Typical Seating Capacity	Minimum Life Years / Miles
Heavy-Duty Large Bus	35 to 48 feet	27 to 40	12 years / 500,000 miles
Heavy-Duty Small Bus	30 feet	26 to 35	10 years / 350,000 miles
Medium-Duty and Purpose-Built Bus	30 feet	22 to 30	7 years / 200,000 miles
Light-Duty Mid-Sized Bus	25 to 35 feet	16 to 25	5 years / 150,000 miles
Light-Duty Small Bus, Cutaways, and Modified Van	16 to 28 feet	10 to 22	4 years / 100,000 miles

Source: Useful Life of Transit Buses and Vans, Report No. FTA VA-26-7229-07.1, April 2007

Most municipalities operate light-duty vehicles, for which FTA recommends a minimum life of 4-5 years. Based on this guideline, it is recommended that on average municipalities should replace their vehicles every six years (150,000 miles) or less. Municipalities may refer to the aforementioned FTA report for more details.

4.2.7 INTENDED USAGE

Performance measures are intended to serve as a basis for monitoring and optimizing service. System monitoring can be used by the jurisdiction themselves, or to ensure the contracted service meets certain criteria. The performance measures can be used to improve consistent and effective communication amongst jurisdictions. The individual municipalities can see what aspects of their systems are efficient and areas for improvements. Municipalities should strive to exceed the goal

threshold of the performance measures when compared to other jurisdictions. MTPs below the baseline thresholds should evaluate the need/ purpose/ effectiveness of system and may consider reaching out for help from MDT, the CITT, or other consultant.

For the CITT, the performance measures and System Profile Sheets discussed in the next section will be useful for auditing purposes. The performance measures are not envisioned to be used for enforcement, but to better evaluate the efficiency of how funds are being used.

When reviewing the performance measures it is also important to consider what is applicable and different with an MTP versus standard transit associations (i.e. special event services versus CBD type services related to schedule, performance, ridership, etc.).

4.3 SYSTEM PROFILE SHEETS

The profile sheets provide a summary of the system performance compared to the thresholds identified in this document. System Profile Sheets have been prepared for each municipality. The following pages provide the System Profile Sheets for all the municipalities analyzed in this study.

(This page intentionally blank)

Municipal Transit Program

1. General Information	(a) Year Established	N/A
	(b) Population within 1/4 Mile of Routes	35,026
	(c) % of Municipal Population within 1/4 Mile of Routes	100%
	(d) Overlap with Other Transit Services (Directional Route Miles)	11.10
	(e) Fare Charged	N/A
	(f) Fare Amount	N/A
	(g) Accept Advertising	N/A
	(h) Dedicated Website	N/A
	(i) Mobile App	N/A

2. Organizational Info	(a) Responsible Department	N/A
	(b) Service Operator	N/A
	(c) Hourly Rate	N/A
	(d) Number of Full-time Employees Assigned	N/A
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	N/A

4. Services Supplied	(a) Average Vehicles in Operation	5
	(b) Annual Vehicle Service Miles	85,261
	(c) Annual Vehicle Service Hours	N/A
	(d) Vehicles Operated in Maximum Service	N/A
	(e) Vehicles Available for Maximum Service	N/A
	(f) Vehicles Required for Minimum Service	N/A

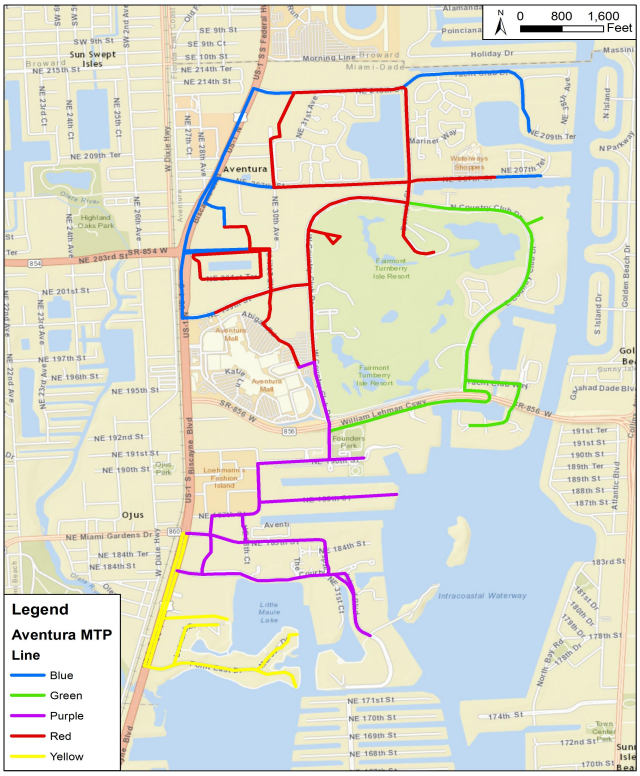
4. Services Consumption	(b) Boardings per Service Mile	N/A
	(c) Boardings per Service Hour	N/A
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	N/A

5. Financial Info	(a) Annual O&M Expenses	N/A
	(b) Total Capital Expenditure to Date	N/A
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	N/A
	(e) Operating Expense per Service Hour	N/A

Profile Sheet: Aventura

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	N/A	N/A
Operating Expense per Passenger Boarding	N/A	N/A
Subsidy per Passenger Boarding	N/A	N/A
Operating Expense per Service Mile	N/A	N/A
Operating Expense per Service Hour	N/A	N/A
Service Effectiveness		
Boardings per Service Mile	N/A	N/A
Boardings per Service Hour	N/A	N/A

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✔
50% - 75%	↗
25% - 50%	!
Bottom 25%	✖



Asset Management			
Item	**Local Jurisdiction**	**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	N/A	1.2	
Spare-to-Peak Vehicle Ratio	N/A	0.2 - 0.5	
Average Fleet Age (years)	N/A	3	
Oldest Vehicle Age (years)	N/A	6	

System Detail								
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Blue	8.1	60	-	60	-	9.75	11.75	-
Green	6.5	60	-	60	-	9.75	11.75	-
Red	7.2	60	-	60	-	9.75	11.75	-
Yellow	6.5	60	-	60	-	8.75	11.75	-
Purple	6.0	60	-	60	-	9.75	11.75	-
System Total / Maximum Service Span	34.30					9.8	11.8	0.0

Municipal Transit Program

1. General Information	(a) Year Established	2004
	(b) Population within 1/4 Mile of Routes	2,277
	(c) % of Municipal Population within 1/4 Mile of Routes	100%
	(d) Overlap with Other Transit Services (Directional Route Miles)	8.81
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	No
	(h) Dedicated Website	Yes
	(i) Mobile App	No

2. Organizational Info	(a) Responsible Department	Public Works
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$32.25
	(d) Number of Full-time Employees Assigned	N/A
	(e) Number of Part-time Employees Assigned	1
	(f) Local Jurisdiction Owned Maintenance Facility	Yes

4. Services Supplied	(a) Average Vehicles in Operation	1
	(b) Annual Vehicle Service Miles	29,539
	(c) Annual Vehicle Service Hours	3,055
	(d) Vehicles Operated in Maximum Service	1
	(e) Vehicles Available for Maximum Service	2
	(f) Vehicles Required for Minimum Service	1

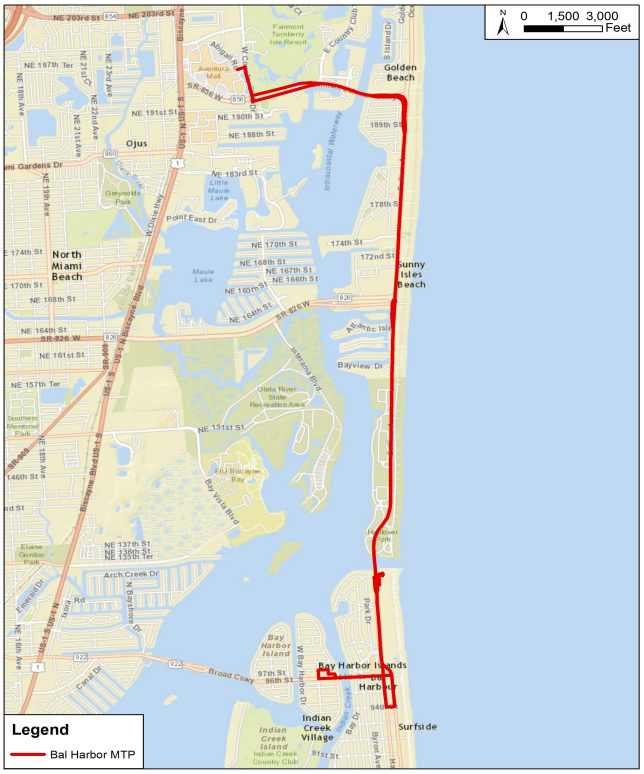
4. Services Consumption	(b) Boardings per Service Mile	0.60
	(c) Boardings per Service Hour	6
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	17,774

5. Financial Info	(a) Annual O&M Expenses	$111,524
	(b) Total Capital Expenditure to Date	$250,000
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$3.78
	(e) Operating Expense per Service Hour	$32.25

Profile Sheet: Bal Harbour

Comparative Assessment			
Item	Local Jurisdiction	Percentile	
Service Efficiency			
Operating Expense per Resident	$48.87	✖	5%
Operating Expense per Passenger Boarding	$6.27	✖	24%
Subsidy per Passenger Boarding	$6.27	!	33%
Operating Expense per Service Mile	$3.78	↗	60%
Operating Expense per Service Hour	$32.25	↗	72%
Service Effectiveness			
Boardings per Service Mile	0.60	!	44%
Boardings per Service Hour	5.82	!	44%

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✔
50% - 75%	↗
25% - 50%	!
Bottom 25%	✖



Asset Management				
Item	Local Jurisdiction		Recommended Threshold	
Peak-to-Base Vehicle Ratio	✖	1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✖	1.00	0.2 - 0.5	*Doesn't Meet Recommended Threshold*
Average Fleet Age (years)		N/A	3	
Oldest Vehicle Age (years)	✖	8	6	*Doesn't Meet Recommended Threshold*

System Detail								
Route Name	Directional Length (miles)	Frequency (minutes)				Service Span (hours)		
		Weekday	Weeknight	Saturday	Sunday	Weekday	Saturday	Sunday
Bal Harbour Express	14.0	80	90	90	80	7.25	11.25	7.25
System Total / Maximum Service Span	14.00					7.3	11.3	7.3

Municipal Transit Program

1. General Information	(a) Year Established	N/A
	(b) Population within 1/4 Mile of Routes	5,132
	(c) % of Municipal Population within 1/4 Mile of Routes	100%
	(d) Overlap with Other Transit Services (Directional Route Miles)	6.60
	(e) Fare Charged	N/A
	(f) Fare Amount	N/A
	(g) Accept Advertising	N/A
	(h) Dedicated Website	N/A
	(i) Mobile App	N/A

2. Organizational Info	(a) Responsible Department	N/A
	(b) Service Operator	N/A
	(c) Hourly Rate	$40.76
	(d) Number of Full-time Employees Assigned	N/A
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	N/A

4. Services Supplied	(a) Average Vehicles in Operation	1
	(b) Annual Vehicle Service Miles	19,032
	(c) Annual Vehicle Service Hours	1,950
	(d) Vehicles Operated in Maximum Service	N/A
	(e) Vehicles Available for Maximum Service	N/A
	(f) Vehicles Required for Minimum Service	N/A

4. Services Consumption	(b) Boardings per Service Mile	1.26
	(c) Boardings per Service Hour	12
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	24,000

5. Financial Info	(a) Annual O&M Expenses	$89,482
	(b) Total Capital Expenditure to Date	$60,000
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$4.70
	(e) Operating Expense per Service Hour	$40.76

Profile Sheet: Bay Harbor Islands

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$17.44	37%
Operating Expense per Passenger Boarding	$3.73	36%
Subsidy per Passenger Boarding	$3.73	50%
Operating Expense per Service Mile	$4.70	48%
Operating Expense per Service Hour	$40.76	52%
Service Effectiveness		
Boardings per Service Mile	1.26	64%
Boardings per Service Hour	12.31	60%

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	
50% - 75%	
25% - 50%	
Bottom 25%	

Asset Management			
Item	**Local Jurisdiction**	**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	N/A	1.2	
Spare-to-Peak Vehicle Ratio	N/A	0.2 - 0.5	
Average Fleet Age (years)	N/A	3	
Oldest Vehicle Age (years)	N/A	6	

System Detail								
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Bay Harbor Islands Shuttle	12.2	75	-	-	-	7.5	-	-
System Total / Maximum Service Span	12.20					7.5	0.0	0.0

Municipal Transit Program

1. General Information	(a) Year Established	2004
	(b) Population within 1/4 Mile of Routes	9,385
	(c) % of Municipal Population within 1/4 Mile of Routes	20%
	(d) Overlap with Other Transit Services (Directional Route Miles)	1.30
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	No
	(h) Dedicated Website	Yes
	(i) Mobile App	No

2. Organizational Info	(a) Responsible Department	Transportation Dept. & Parking
	(b) Service Operator	Municipal Employees
	(c) Hourly Rate	$92.01
	(d) Number of Full-time Employees Assigned	2
	(e) Number of Part-time Employees Assigned	1
	(f) Local Jurisdiction Owned Maintenance Facility	N/A

4. Services Supplied	(a) Average Vehicles in Operation	4
	(b) Annual Vehicle Service Miles	123,690
	(c) Annual Vehicle Service Hours	14,136
	(d) Vehicles Operated in Maximum Service	6
	(e) Vehicles Available for Maximum Service	6
	(f) Vehicles Required for Minimum Service	4

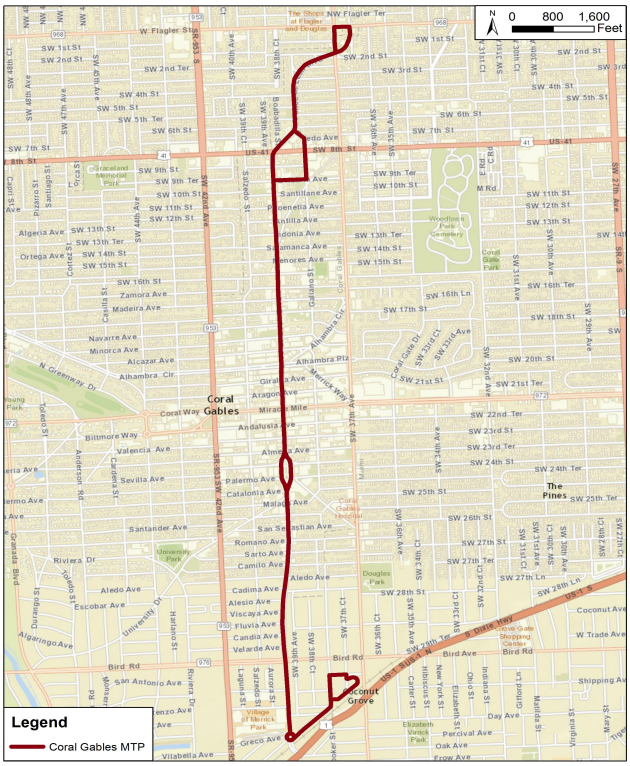
4. Services Consumption	(b) Boardings per Service Mile	9.38
	(c) Boardings per Service Hour	82
	(d) Average Weekday Boardings	4700
	(e) Average Saturday Boardings	-
	(f) Average Sundays Boardings	-
	(g) Average Annual Boardings	1,159,884

5. Financial Info	(a) Annual O&M Expenses	$1,300,682
	(b) Total Capital Expenditure to Date	$375,000
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$10.52
	(e) Operating Expense per Service Hour	$92.01

Profile Sheet: Coral Gables

Comparative Assessment		
Item	Local Jurisdiction	Percentile
Service Efficiency		
Operating Expense per Resident	$27.93	✗ 21%
Operating Expense per Passenger Boarding	$1.12	↗ 64%
Subsidy per Passenger Boarding	$1.12	✓ 89%
Operating Expense per Service Mile	$10.52	✗ 8%
Operating Expense per Service Hour	$92.01	✗ 8%
Service Effectiveness		
Boardings per Service Mile	9.38	✓ 96%
Boardings per Service Hour	82.05	✓ 96%

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗



Asset Management			
Item	Local Jurisdiction	Recommended Threshold	
Peak-to-Base Vehicle Ratio	✓ 1.5	1.2	*Meets Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✗ 0.00	0.2 - 0.5	*Doesn't Meet Recommended Threshold*
Average Fleet Age (years)	✗ 8.0	3	*Doesn't Meet Recommended Threshold*
Oldest Vehicle Age (years)	✗ 11	6	*Doesn't Meet Recommended Threshold*

System Detail								
Route Name	Directional Length (miles)	Frequency (minutes)				Service Span (hours)		
		Weekday	Weeknight	Saturday	Sunday	Weekday	Saturday	Sunday
Ponce De Leon	7.0	12	-	-	-	13.5	-	-
System Total / Maximum Service Span	7.00					13.5	0.0	0.0

Municipal Transit Program

1. General Information	(a) Year Established	2012
	(b) Population within 1/4 Mile of Routes	24,324
	(c) % of Municipal Population within 1/4 Mile of Routes	60%
	(d) Overlap with Other Transit Services (Directional Route Miles)	11.30
	(e) Fare Charged	Yes
	(f) Fare Amount	$0.25
	(g) Accept Advertising	Yes
	(h) Dedicated Website	Yes
	(i) Mobile App	No

2. Organizational Info	(a) Responsible Department	Public Works
	(b) Service Operator	Miami-Dade Transit
	(c) Hourly Rate	$94.09
	(d) Number of Full-time Employees Assigned	2
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	N/A

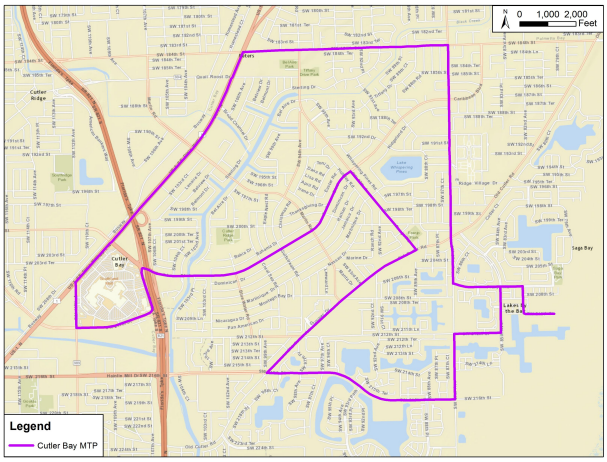
4. Services Supplied	(a) Average Vehicles in Operation	1
	(b) Annual Vehicle Service Miles	43,811
	(c) Annual Vehicle Service Hours	2,864
	(d) Vehicles Operated in Maximum Service	1
	(e) Vehicles Available for Maximum Service	1
	(f) Vehicles Required for Minimum Service	1

4. Services Consumption	(b) Boardings per Service Mile	0.92
	(c) Boardings per Service Hour	14
	(d) Average Weekday Boardings	130
	(e) Average Saturday Boardings	130
	(f) Average Sundays Boardings	-
	(g) Average Annual Boardings	40,524

5. Financial Info	(a) Annual O&M Expenses	$269,500
	(b) Total Capital Expenditure to Date	$395,348
	(c) Farebox Revenue	$10,131.00
	(d) Operating Expense per Service Mile	$6.15
	(e) Operating Expense per Service Hour	$94.09

Profile Sheet: Cutler Bay

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$6.69	✓ 79%
Operating Expense per Passenger Boarding	$6.65	✗ 20%
Subsidy per Passenger Boarding	$6.40	! 28%
Operating Expense per Service Mile	$6.15	! 28%
Operating Expense per Service Hour	$94.09	✗ 4%
Service Effectiveness		
Boardings per Service Mile	0.92	↗ 56%
Boardings per Service Hour	14.15	↗ 64%



Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗

Asset Management				
Item	**Local Jurisdiction**		**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	✗	1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✗	0.00	0.2 - 0.5	*Doesn't Meet Recommended Threshold*
Average Fleet Age (years)	✗	4.0	3	*Doesn't Meet Recommended Threshold*
Oldest Vehicle Age (years)	✓	4	6	*Meets Recommended Threshold*

System Detail									
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**			
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Cutler Bay Local	13.8	55	-	50	-	9.18	9.15	-
System Total / Maximum Service Span	13.80					9.2	9.2	0.0

Municipal Transit Program

1. General Information	(a) Year Established	2008
	(b) Population within 1/4 Mile of Routes	42,453
	(c) % of Municipal Population within 1/4 Mile of Routes	93%
	(d) Overlap with Other Transit Services (Directional Route Miles)	16.50
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	No
	(h) Dedicated Website	Yes
	(i) Mobile App	Yes

2. Organizational Info	(a) Responsible Department	Transportation Dept. & Public Works
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$35.72
	(d) Number of Full-time Employees Assigned	2
	(e) Number of Part-time Employees Assigned	4
	(f) Local Jurisdiction Owned Maintenance Facility	Yes

4. Services Supplied	(a) Average Vehicles in Operation	7
	(b) Annual Vehicle Service Miles	420,613
	(c) Annual Vehicle Service Hours	27,456
	(d) Vehicles Operated in Maximum Service	7
	(e) Vehicles Available for Maximum Service	10
	(f) Vehicles Required for Minimum Service	7

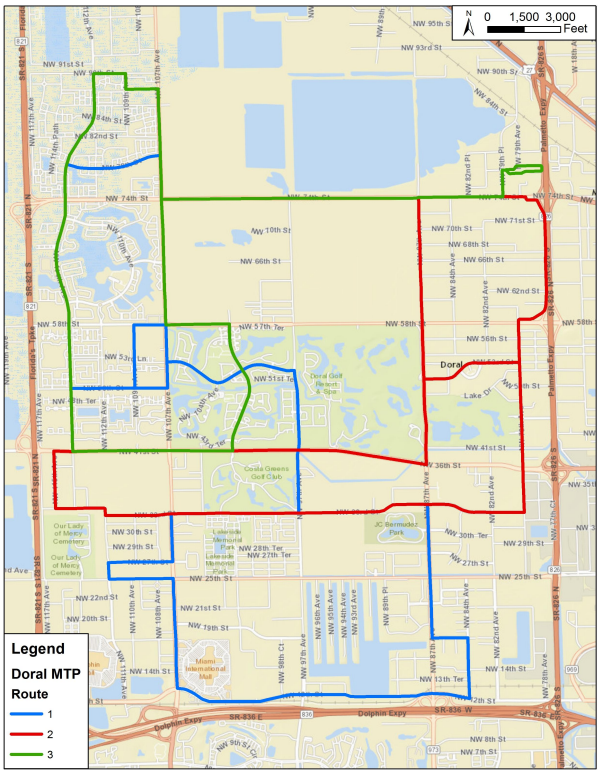
4. Services Consumption	(b) Boardings per Service Mile	0.78
	(c) Boardings per Service Hour	12
	(d) Average Weekday Boardings	1255
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	326,300

5. Financial Info	(a) Annual O&M Expenses	$980,759
	(b) Total Capital Expenditure to Date	$4,008,720
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$2.33
	(e) Operating Expense per Service Hour	$35.72

Profile Sheet: Doral

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$21.46	32%
Operating Expense per Passenger Boarding	$3.01	44%
Subsidy per Passenger Boarding	$3.01	61%
Operating Expense per Service Mile	$2.33	72%
Operating Expense per Service Hour	$35.72	64%
Service Effectiveness		
Boardings per Service Mile	0.78	52%
Boardings per Service Hour	11.88	56%

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗



Asset Management				
Item	**Local Jurisdiction**		**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	✗	1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✓	0.43	0.2 - 0.5	*Meets Recommended Threshold*
Average Fleet Age (years)	✗	4.0	3	*Doesn't Meet Recommended Threshold*
Oldest Vehicle Age (years)	✗	8	6	*Doesn't Meet Recommended Threshold*

System Detail									
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Route 1	21.4	20	45	30	60	15.5	12.5	12
Route 2	15.4	60	60	-	-	13.75	-	-
Route 3	14.7	30	30	60	-	15.25	12.25	-
System Total / Maximum Service Span	51.50					15.5	12.5	12.0

Municipal Transit Program

1. General Information	(a) Year Established	2002
	(b) Population within 1/4 Mile of Routes	121,413
	(c) % of Municipal Population within 1/4 Mile of Routes	54%
	(d) Overlap with Other Transit Services (Directional Route Miles)	19.35
	(e) Fare Charged	Yes
	(f) Fare Amount	$2.25
	(g) Accept Advertising	Yes
	(h) Dedicated Website	Yes
	(i) Mobile App	No

2. Organizational Info	(a) Responsible Department	Transit Dept.
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$21.00
	(d) Number of Full-time Employees Assigned	2
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	Yes

4. Services Supplied	(a) Average Vehicles in Operation	9
	(b) Annual Vehicle Service Miles	323,930
	(c) Annual Vehicle Service Hours	32,266
	(d) Vehicles Operated in Maximum Service	9
	(e) Vehicles Available for Maximum Service	11
	(f) Vehicles Required for Minimum Service	9

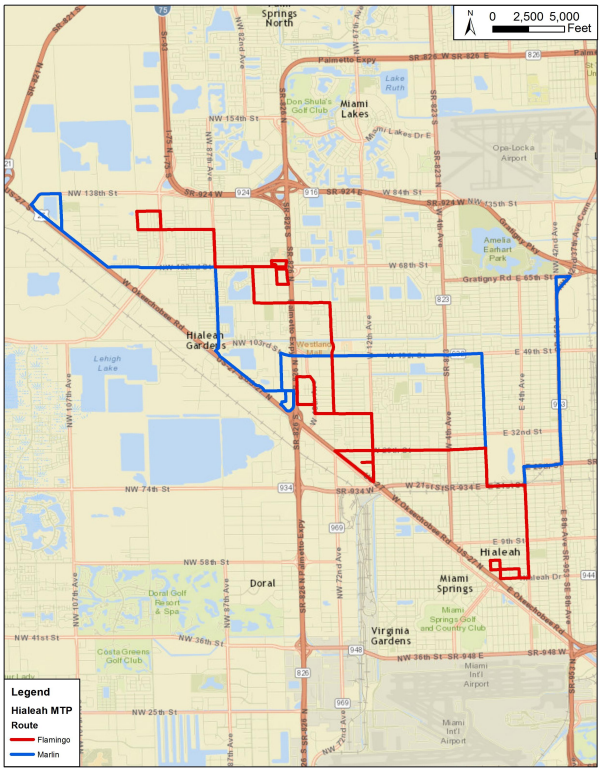
4. Services Consumption	(b) Boardings per Service Mile	1.48
	(c) Boardings per Service Hour	15
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	478,296

5. Financial Info	(a) Annual O&M Expenses	$1,191,000
	(b) Total Capital Expenditure to Date	$3,500,000
	(c) Farebox Revenue	$400,572.90
	(d) Operating Expense per Service Mile	$3.68
	(e) Operating Expense per Service Hour	$36.91

Profile Sheet: Hialeah

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$5.30	✓ 90%
Operating Expense per Passenger Boarding	$2.49	! 48%
Subsidy per Passenger Boarding	$1.65	↗ 72%
Operating Expense per Service Mile	$3.68	↗ 64%
Operating Expense per Service Hour	$36.91	↗ 60%
Service Effectiveness		
Boardings per Service Mile	1.48	↗ 68%
Boardings per Service Hour	14.82	↗ 68%

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗



Asset Management				
Item	**Local Jurisdiction**		**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	✗	1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✓	0.22	0.2 - 0.5	*Meets Recommended Threshold*
Average Fleet Age (years)	✗	4.0	3	*Doesn't Meet Recommended Threshold*
Oldest Vehicle Age (years)	✗	8	6	*Doesn't Meet Recommended Threshold*

System Detail									
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**			
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Marlin	29.1	40	40	40	-	13.5	6.5	-
Flamingo	27.1	40	40	40	-	13.5	6.5	-
System Total / Maximum Service Span	56.12					13.5	6.5	0.0

Municipal Transit Program

1. General Information	(a) Year Established	2011
	(b) Population within 1/4 Mile of Routes	29,154
	(c) % of Municipal Population within 1/4 Mile of Routes	48%
	(d) Overlap with Other Transit Services (Directional Route Miles)	9.50
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	No
	(h) Dedicated Website	Yes
	(i) Mobile App	No

2. Organizational Info	(a) Responsible Department	Public Works
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$70.18
	(d) Number of Full-time Employees Assigned	2
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	No

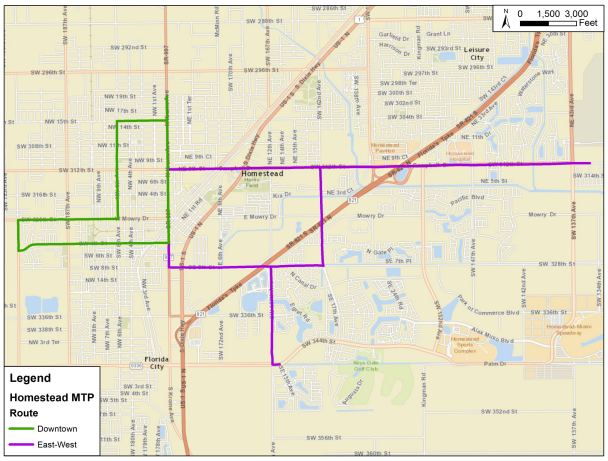
4. Services Supplied	(a) Average Vehicles in Operation	2
	(b) Annual Vehicle Service Miles	42,500
	(c) Annual Vehicle Service Hours	5,928
	(d) Vehicles Operated in Maximum Service	2
	(e) Vehicles Available for Maximum Service	4
	(f) Vehicles Required for Minimum Service	2

4. Services Consumption	(b) Boardings per Service Mile	2.96
	(c) Boardings per Service Hour	21
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	125,712

5. Financial Info	(a) Annual O&M Expenses	$416,000
	(b) Total Capital Expenditure to Date	N/A
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$9.79
	(e) Operating Expense per Service Hour	$70.18

Profile Sheet: Homestead

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$6.87	74%
Operating Expense per Passenger Boarding	$3.31	40%
Subsidy per Passenger Boarding	$3.31	56%
Operating Expense per Service Mile	$9.79	12%
Operating Expense per Service Hour	$70.18	20%
Service Effectiveness		
Boardings per Service Mile	2.96	76%
Boardings per Service Hour	21.21	76%



Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	
50% - 75%	
25% - 50%	
Bottom 25%	

Asset Management			
Item	**Local Jurisdiction**	**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	1.00	0.2 - 0.5	*Doesn't Meet Recommended Threshold*
Average Fleet Age (years)	3.0	3	*Near Recommended Threshold*
Oldest Vehicle Age (years)	3	6	*Meets Recommended Threshold*

System Detail								
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
East-West	12.7	100	-	100	100	10	4	4
Downtown	6.2	55	-	55	55	11	5	5
System Total / Maximum Service Span	18.90					11.0	5.0	5.0

Municipal Transit Program

1. General Information	(a) Year Established	2014
	(b) Population within 1/4 Mile of Routes	41,265
	(c) % of Municipal Population within 1/4 Mile of Routes	48%
	(d) Overlap with Other Transit Services (Directional Route Miles)	8.99
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	Yes
	(h) Dedicated Website	Yes
	(i) Mobile App	Yes

2. Organizational Info	(a) Responsible Department	Transportation Dept.
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$69.49
	(d) Number of Full-time Employees Assigned	2
	(e) Number of Part-time Employees Assigned	5 or more
	(f) Local Jurisdiction Owned Maintenance Facility	No

4. Services Supplied	(a) Average Vehicles in Operation	6
	(b) Annual Vehicle Service Miles	314,496
	(c) Annual Vehicle Service Hours	34,944
	(d) Vehicles Operated in Maximum Service	6
	(e) Vehicles Available for Maximum Service	8
	(f) Vehicles Required for Minimum Service	6

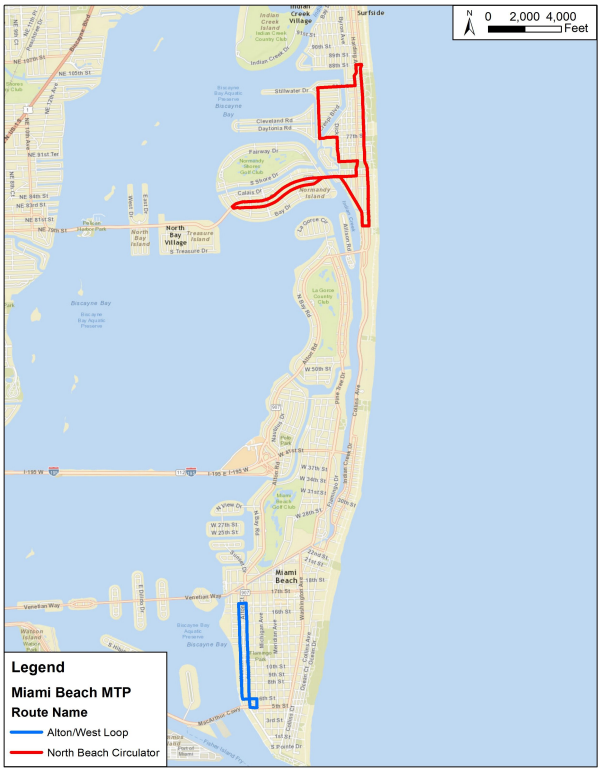
4. Services Consumption	(b) Boardings per Service Mile	3.53
	(c) Boardings per Service Hour	32
	(d) Average Weekday Boardings	3048
	(e) Average Saturday Boardings	3048
	(f) Average Sundays Boardings	3048
	(g) Average Annual Boardings	1,109,472

5. Financial Info	(a) Annual O&M Expenses	$1,902,000
	(b) Total Capital Expenditure to Date	$5,000
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$6.05
	(e) Operating Expense per Service Hour	$69.49

Profile Sheet: Miami Beach

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$22.09	26%
Operating Expense per Passenger Boarding	$1.71	52%
Subsidy per Passenger Boarding	$1.71	67%
Operating Expense per Service Mile	$6.05	40%
Operating Expense per Service Hour	$69.49	24%
Service Effectiveness		
Boardings per Service Mile	3.53	80%
Boardings per Service Hour	31.75	84%

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗



Asset Management				
Item	**Local Jurisdiction**		**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	✗	1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✓	0.33	0.2 - 0.5	*Meets Recommended Threshold*
Average Fleet Age (years)	✓	1.0	3	*Meets Recommended Threshold*
Oldest Vehicle Age (years)	✓	4	6	*Meets Recommended Threshold*

System Detail									
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Alton/West Loop	2.5	12.5	12.5	12.5	12.5	16	16	16
North Beach Trolley	7.0	10	10	10	10	16	16	16
System Total / Maximum Service Span	9.50					16.0	16.0	16.0

Municipal Transit Program

1. General Information	(a) Year Established	2015
	(b) Population within 1/4 Mile of Routes	58,651
	(c) % of Municipal Population within 1/4 Mile of Routes	55%
	(d) Overlap with Other Transit Services (Directional Route Miles)	21.90
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	Yes
	(h) Dedicated Website	Yes
	(i) Mobile App	No

2. Organizational Info	(a) Responsible Department	Public Works
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$72.40
	(d) Number of Full-time Employees Assigned	1
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	No

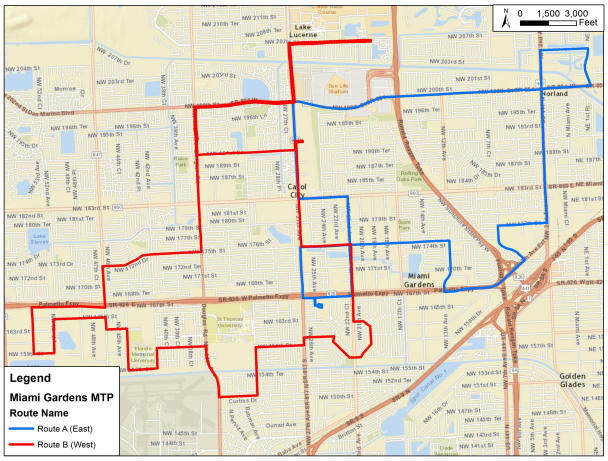
4. Services Supplied	(a) Average Vehicles in Operation	2
	(b) Annual Vehicle Service Miles	73,882
	(c) Annual Vehicle Service Hours	6,240
	(d) Vehicles Operated in Maximum Service	2
	(e) Vehicles Available for Maximum Service	4
	(f) Vehicles Required for Minimum Service	2

4. Services Consumption	(b) Boardings per Service Mile	0.35
	(c) Boardings per Service Hour	4
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	26,000

5. Financial Info	(a) Annual O&M Expenses	$451,000
	(b) Total Capital Expenditure to Date	$16,000
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$6.10
	(e) Operating Expense per Service Hour	$72.28

Profile Sheet: Miami Gardens

Comparative Assessment			
Item	Local Jurisdiction	Percentile	
Service Efficiency			
Operating Expense per Resident	$4.21	✔	95%
Operating Expense per Passenger Boarding	$17.35	✖	8%
Subsidy per Passenger Boarding	$17.35	✖	11%
Operating Expense per Service Mile	$6.10	!	32%
Operating Expense per Service Hour	$72.28	✖	16%
Service Effectiveness			
Boardings per Service Mile	0.35	!	40%
Boardings per Service Hour	4.17	!	36%



Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✔
50% - 75%	↗
25% - 50%	!
Bottom 25%	✖

Asset Management				
Item	Local Jurisdiction		Recommended Threshold	
Peak-to-Base Vehicle Ratio	✖	1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✖	1.00	0.2 - 0.5	*Doesn't Meet Recommended Threshold*
Average Fleet Age (years)		N/A	3	
Oldest Vehicle Age (years)		N/A	6	

System Detail									
Route Name	Directional Length (miles)	Frequency (minutes)				Service Span (hours)		
		Weekday	Weeknight	Saturday	Sunday	Weekday	Saturday	Sunday
East (A)	13.6	75	-	-	-	12	-	-
West (B)	19.2	90	-	-	-	12	-	-
System Total / Maximum Service Span	32.80					12.0	0.0	0.0

Municipal Transit Program

1. General Information	(a) Year Established	2012
	(b) Population within 1/4 Mile of Routes	22,675
	(c) % of Municipal Population within 1/4 Mile of Routes	77%
	(d) Overlap with Other Transit Services (Directional Route Miles)	6.98
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	No
	(h) Dedicated Website	Yes
	(i) Mobile App	Yes

2. Organizational Info	(a) Responsible Department	Planning & Zoning Dept.
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$34.34
	(d) Number of Full-time Employees Assigned	1
	(e) Number of Part-time Employees Assigned	1
	(f) Local Jurisdiction Owned Maintenance Facility	Yes

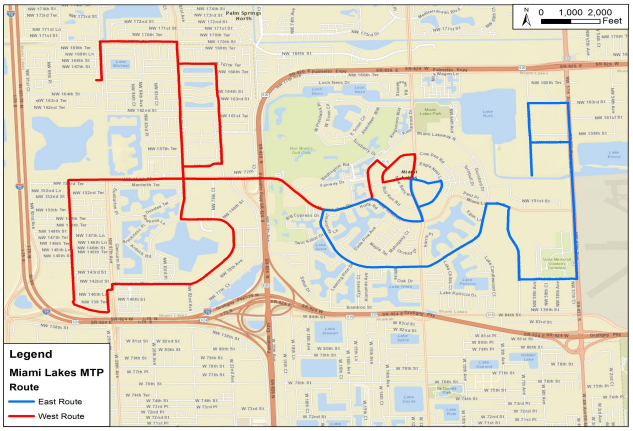
4. Services Supplied	(a) Average Vehicles in Operation	2
	(b) Annual Vehicle Service Miles	71,435
	(c) Annual Vehicle Service Hours	4,550
	(d) Vehicles Operated in Maximum Service	2
	(e) Vehicles Available for Maximum Service	2
	(f) Vehicles Required for Minimum Service	2

4. Services Consumption	(b) Boardings per Service Mile	0.29
	(c) Boardings per Service Hour	5
	(d) Average Weekday Boardings	79
	(e) Average Saturday Boardings	-
	(f) Average Sundays Boardings	-
	(g) Average Annual Boardings	20,564

5. Financial Info	(a) Annual O&M Expenses	$175,608
	(b) Total Capital Expenditure to Date	$798,510
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$2.46
	(e) Operating Expense per Service Hour	$38.60

Profile Sheet: Miami Lakes

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$5.98	✓ 84%
Operating Expense per Passenger Boarding	$8.54	✗ 12%
Subsidy per Passenger Boarding	$8.54	✗ 17%
Operating Expense per Service Mile	$2.46	↗ 68%
Operating Expense per Service Hour	$38.60	↗ 56%
Service Effectiveness		
Boardings per Service Mile	0.29	! 32%
Boardings per Service Hour	4.52	! 40%



Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗

Asset Management			
Item	**Local Jurisdiction**	**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	✗ 1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✗ 0.00	0.2 - 0.5	*Doesn't Meet Recommended Threshold*
Average Fleet Age (years)	N/A	3	
Oldest Vehicle Age (years)	✓ 4	6	*Meets Recommended Threshold*

System Detail								
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
East Route	6.4	30	-	-	-	8.75	-	-
West Route	9.2	30	-	-	-	8.75	-	-
System Total / Maximum Service Span	15.57					8.8	0.0	0.0

Municipal Transit Program

1. General Information	(a) Year Established	N/A
	(b) Population within 1/4 Mile of Routes	10,080
	(c) % of Municipal Population within 1/4 Mile of Routes	98%
	(d) Overlap with Other Transit Services (Directional Route Miles)	0.00
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	No
	(h) Dedicated Website	Yes
	(i) Mobile App	No

2. Organizational Info	(a) Responsible Department	Public Works
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$51.00
	(d) Number of Full-time Employees Assigned	2
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	No

4. Services Supplied	(a) Average Vehicles in Operation	1
	(b) Annual Vehicle Service Miles	27,430
	(c) Annual Vehicle Service Hours	2,184
	(d) Vehicles Operated in Maximum Service	1
	(e) Vehicles Available for Maximum Service	1
	(f) Vehicles Required for Minimum Service	1

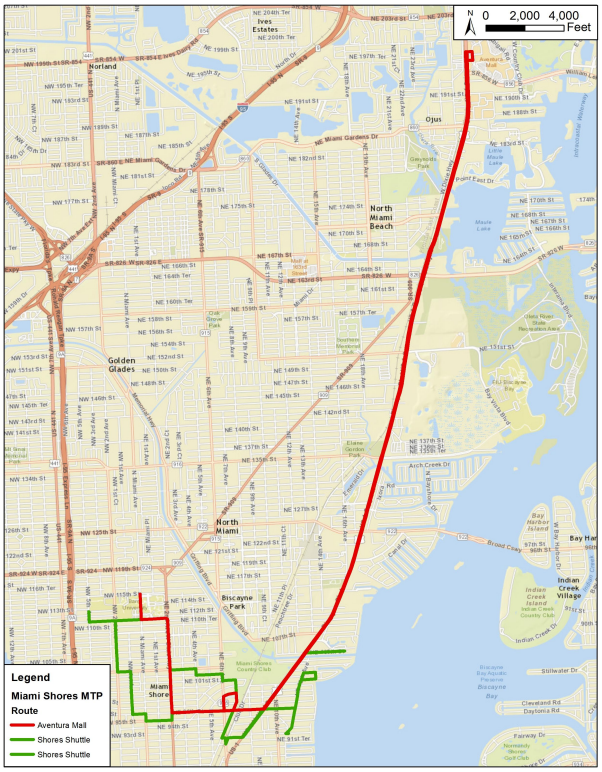
4. Services Consumption	(b) Boardings per Service Mile	0.74
	(c) Boardings per Service Hour	9
	(d) Average Weekday Boardings	83
	(e) Average Saturday Boardings	31
	(f) Average Sundays Boardings	31
	(g) Average Annual Boardings	20,268

5. Financial Info	(a) Annual O&M Expenses	$111,384
	(b) Total Capital Expenditure to Date	N/A
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$4.06
	(e) Operating Expense per Service Hour	$51.00

Profile Sheet: Miami Shores Village

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$10.78	53%
Operating Expense per Passenger Boarding	$5.50	28%
Subsidy per Passenger Boarding	$5.50	39%
Operating Expense per Service Mile	$4.06	52%
Operating Expense per Service Hour	$51.00	40%
Service Effectiveness		
Boardings per Service Mile	0.74	48%
Boardings per Service Hour	9.28	52%

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗



Asset Management			
Item	**Local Jurisdiction**	**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	✗ 1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✗ 0.00	0.2 - 0.5	*Doesn't Meet Recommended Threshold*
Average Fleet Age (years)	✗ 4.0	3	*Doesn't Meet Recommended Threshold*
Oldest Vehicle Age (years)	N/A	6	

System Detail									
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Shores Shuttle	13.0	90	-	-	-	4	-	-
Aventura	32.0	-	120	120	130	6.5	6.5	9
System Total / Maximum Service Span	45.00					6.5	6.5	9.0

Municipal Transit Program

1. General Information	(a) Year Established	2008
	(b) Population within 1/4 Mile of Routes	12,863
	(c) % of Municipal Population within 1/4 Mile of Routes	93%
	(d) Overlap with Other Transit Services (Directional Route Miles)	4.90
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	No
	(h) Dedicated Website	No
	(i) Mobile App	No

2. Organizational Info	(a) Responsible Department	City Manager's Office
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$47.08
	(d) Number of Full-time Employees Assigned	1
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	No

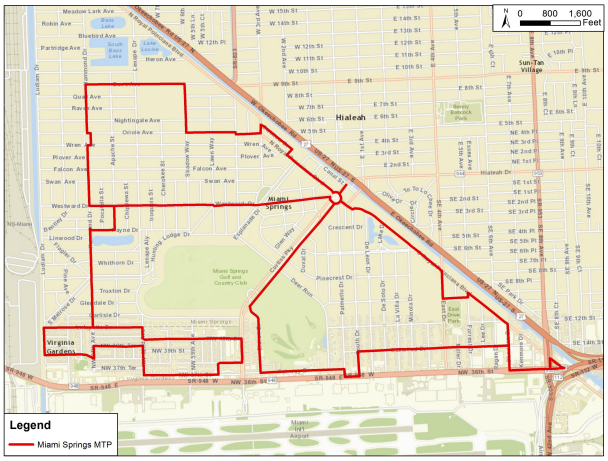
4. Services Supplied	(a) Average Vehicles in Operation	1
	(b) Annual Vehicle Service Miles	34,320
	(c) Annual Vehicle Service Hours	2,860
	(d) Vehicles Operated in Maximum Service	1
	(e) Vehicles Available for Maximum Service	2
	(f) Vehicles Required for Minimum Service	1

4. Services Consumption	(b) Boardings per Service Mile	4.63
	(c) Boardings per Service Hour	56
	(d) Average Weekday Boardings	611
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	158,940

5. Financial Info	(a) Annual O&M Expenses	$134,655
	(b) Total Capital Expenditure to Date	-
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$3.92
	(e) Operating Expense per Service Hour	$47.08

Profile Sheet: Miami Springs

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$9.75	58%
Operating Expense per Passenger Boarding	$0.85	68%
Subsidy per Passenger Boarding	$0.85	95%
Operating Expense per Service Mile	$3.92	56%
Operating Expense per Service Hour	$47.08	48%
Service Effectiveness		
Boardings per Service Mile	4.63	88%
Boardings per Service Hour	55.57	92%



Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗

Asset Management				
Item	**Local Jurisdiction**		**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	✗	1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✗	1.00	0.2 - 0.5	*Doesn't Meet Recommended Threshold*
Average Fleet Age (years)	✗	4.0	3	*Doesn't Meet Recommended Threshold*
Oldest Vehicle Age (years)	✓	4	6	*Meets Recommended Threshold*

System Detail									
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Free-Bee	12.0	60	-	-	-	11	-	-
System Total / Maximum Service Span	12.00					11.0	0.0	0.0

Municipal Transit Program

1. General Information	(a) Year Established	2012
	(b) Population within 1/4 Mile of Routes	115,145
	(c) % of Municipal Population within 1/4 Mile of Routes	29%
	(d) Overlap with Other Transit Services (Directional Route Miles)	33.35
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	Yes
	(h) Dedicated Website	Yes
	(i) Mobile App	Yes

2. Organizational Info	(a) Responsible Department	Transportation Dept. & Capital Improvements Program
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$29.39
	(d) Number of Full-time Employees Assigned	2
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	Yes

4. Services Supplied	(a) Average Vehicles in Operation	26
	(b) Annual Vehicle Service Miles	902,590
	(c) Annual Vehicle Service Hours	134,472
	(d) Vehicles Operated in Maximum Service	26
	(e) Vehicles Available for Maximum Service	34
	(f) Vehicles Required for Minimum Service	26

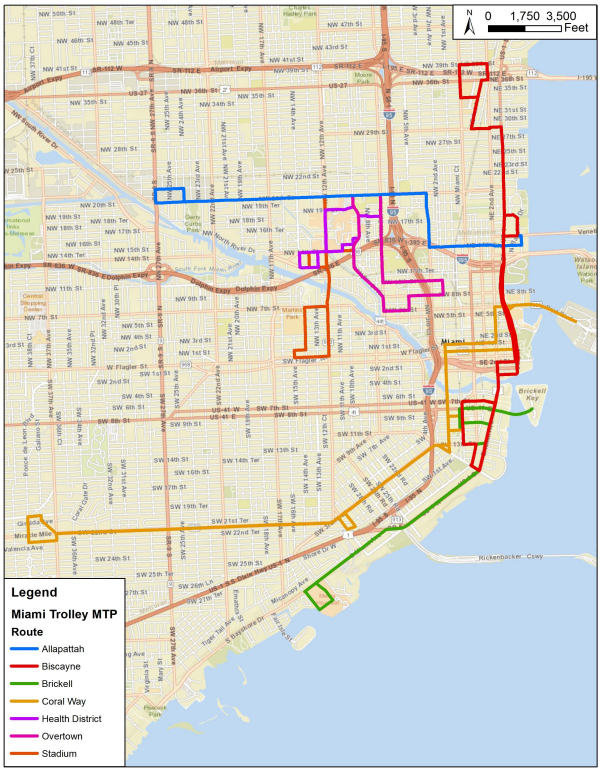
4. Services Consumption	(b) Boardings per Service Mile	3.99
	(c) Boardings per Service Hour	27
	(d) Average Weekday Boardings	-
	(e) Average Saturday Boardings	-
	(f) Average Sundays Boardings	-
	(g) Average Annual Boardings	3,600,000

5. Financial Info	(a) Annual O&M Expenses	$4,574,532
	(b) Total Capital Expenditure to Date	$6,800,000
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$5.07
	(e) Operating Expense per Service Hour	$34.02

Profile Sheet: Miami

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$11.46	47%
Operating Expense per Passenger Boarding	$1.27	56%
Subsidy per Passenger Boarding	$1.27	78%
Operating Expense per Service Mile	$5.07	44%
Operating Expense per Service Hour	$34.02	68%
Service Effectiveness		
Boardings per Service Mile	3.99	84%
Boardings per Service Hour	26.77	80%

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗



Asset Management				
Item	**Local Jurisdiction**		**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	✗	1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✓	0.31	0.2 - 0.5	*Meets Recommended Threshold*
Average Fleet Age (years)	✗	4.0	3	*Doesn't Meet Recommended Threshold*
Oldest Vehicle Age (years)	✓	4	6	*Meets Recommended Threshold*

System Detail									
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Coral Way	14.2	20	20	20	-	13.5	13.5	-
Brickell	7.5	15	15	15	15	16.5	16.5	12
Stadium	4.9	15	15	15	15	16.5	16.5	16.5
Health District	2.8	15	15	15	-	17.5	17.5	-
Overtown	5.5	20	20	20	-	12.5	12.5	-
Allapattah	8.0	15	15	15	-	12.5	12.5	-
Biscayne	7.8	15	15	15	15	16.5	16.5	12
System Total / Maximum Service Span	34.94					17.5	17.5	16.5

Municipal Transit Program

1. General Information	(a) Year Established	N/A
	(b) Population within 1/4 Mile of Routes	7,137
	(c) % of Municipal Population within 1/4 Mile of Routes	100%
	(d) Overlap with Other Transit Services (Directional Route Miles)	0.90
	(e) Fare Charged	N/A
	(f) Fare Amount	N/A
	(g) Accept Advertising	N/A
	(h) Dedicated Website	N/A
	(i) Mobile App	N/A

2. Organizational Info	(a) Responsible Department	N/A
	(b) Service Operator	N/A
	(c) Hourly Rate	N/A
	(d) Number of Full-time Employees Assigned	N/A
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	N/A

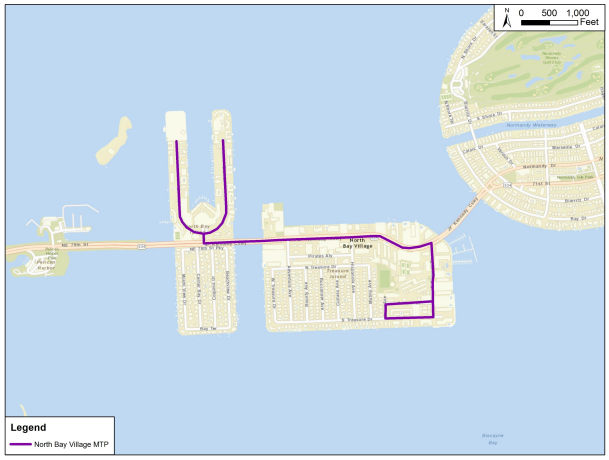
4. Services Supplied	(a) Average Vehicles in Operation	N/A
	(b) Annual Vehicle Service Miles	N/A
	(c) Annual Vehicle Service Hours	N/A
	(d) Vehicles Operated in Maximum Service	N/A
	(e) Vehicles Available for Maximum Service	N/A
	(f) Vehicles Required for Minimum Service	N/A

4. Services Consumption	(b) Boardings per Service Mile	N/A
	(c) Boardings per Service Hour	N/A
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	N/A

5. Financial Info	(a) Annual O&M Expenses	N/A
	(b) Total Capital Expenditure to Date	N/A
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	N/A
	(e) Operating Expense per Service Hour	N/A

Profile Sheet: North Bay Village

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	N/A	N/A
Operating Expense per Passenger Boarding	N/A	N/A
Subsidy per Passenger Boarding	N/A	N/A
Operating Expense per Service Mile	N/A	N/A
Operating Expense per Service Hour	N/A	N/A
Service Effectiveness		
Boardings per Service Mile	N/A	N/A
Boardings per Service Hour	N/A	N/A



Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗

Asset Management			
Item	**Local Jurisdiction**	**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	N/A	1.2	
Spare-to-Peak Vehicle Ratio	N/A	0.2 - 0.5	
Average Fleet Age (years)	N/A	3	
Oldest Vehicle Age (years)	N/A	6	

System Detail								
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
North Bay Village Minibus	3.9	-	0	0	0	0	0	0
System Total / Maximum Service Span	3.94					0.0	0.0	0.0

Municipal Transit Program

1. General Information	(a) Year Established	N/A
	(b) Population within 1/4 Mile of Routes	10,327
	(c) % of Municipal Population within 1/4 Mile of Routes	25%
	(d) Overlap with Other Transit Services (Directional Route Miles)	5.92
	(e) Fare Charged	N/A
	(f) Fare Amount	N/A
	(g) Accept Advertising	N/A
	(h) Dedicated Website	N/A
	(i) Mobile App	N/A

2. Organizational Info	(a) Responsible Department	N/A
	(b) Service Operator	N/A
	(c) Hourly Rate	N/A
	(d) Number of Full-time Employees Assigned	N/A
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	N/A

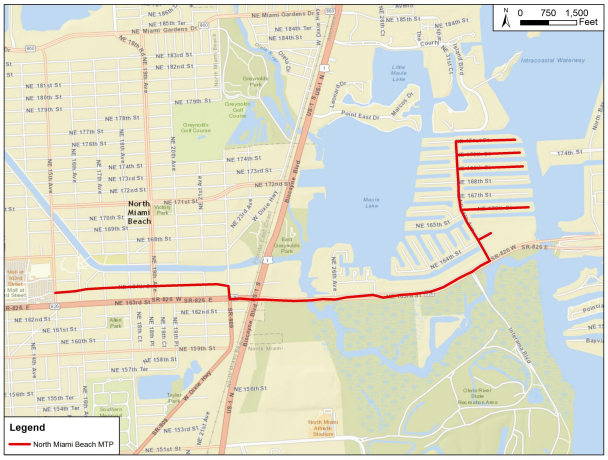
4. Services Supplied	(a) Average Vehicles in Operation	N/A
	(b) Annual Vehicle Service Miles	N/A
	(c) Annual Vehicle Service Hours	N/A
	(d) Vehicles Operated in Maximum Service	N/A
	(e) Vehicles Available for Maximum Service	N/A
	(f) Vehicles Required for Minimum Service	N/A

4. Services Consumption	(b) Boardings per Service Mile	N/A
	(c) Boardings per Service Hour	N/A
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	N/A

5. Financial Info	(a) Annual O&M Expenses	N/A
	(b) Total Capital Expenditure to Date	N/A
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	N/A
	(e) Operating Expense per Service Hour	N/A

Profile Sheet: North Miami Beach

Comparative Assessment		
Item	Local Jurisdiction	Percentile
Service Efficiency		
Operating Expense per Resident	N/A	N/A
Operating Expense per Passenger Boarding	N/A	N/A
Subsidy per Passenger Boarding	N/A	N/A
Operating Expense per Service Mile	N/A	N/A
Operating Expense per Service Hour	N/A	N/A
Service Effectiveness		
Boardings per Service Mile	N/A	N/A
Boardings per Service Hour	N/A	N/A



Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	
50% - 75%	
25% - 50%	
Bottom 25%	

Asset Management			
Item	Local Jurisdiction	Recommended Threshold	
Peak-to-Base Vehicle Ratio	N/A	1.2	
Spare-to-Peak Vehicle Ratio	N/A	0.2 - 0.5	
Average Fleet Age (years)	N/A	3	
Oldest Vehicle Age (years)	N/A	6	

System Detail								
Route Name	Directional Length (miles)	Frequency (minutes)				Service Span (hours)		
		Weekday	Weeknight	Saturday	Sunday	Weekday	Saturday	Sunday
NMB-Line Shuttle	8.6	60	-	60	60	7	7	7
System Total / Maximum Service Span	8.64					7.0	7.0	7.0

Municipal Transit Program

1. General Information	(a) Year Established	2004
	(b) Population within 1/4 Mile of Routes	55,745
	(c) % of Municipal Population within 1/4 Mile of Routes	95%
	(d) Overlap with Other Transit Services (Directional Route Miles)	19.38
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	No
	(h) Dedicated Website	Yes
	(i) Mobile App	No

2. Organizational Info	(a) Responsible Department	Public Works
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$44.60
	(d) Number of Full-time Employees Assigned	N/A
	(e) Number of Part-time Employees Assigned	1
	(f) Local Jurisdiction Owned Maintenance Facility	No

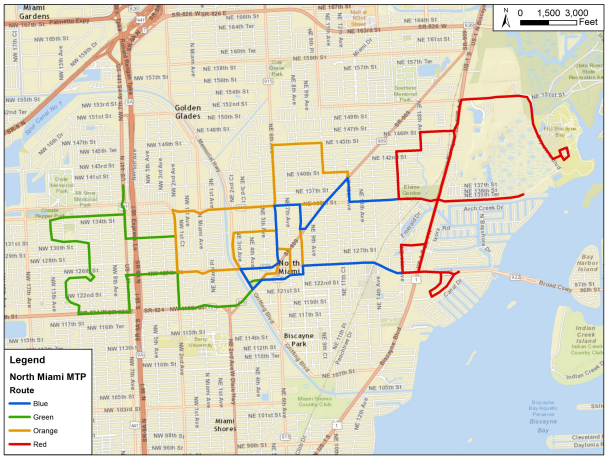
4. Services Supplied	(a) Average Vehicles in Operation	4
	(b) Annual Vehicle Service Miles	89,731
	(c) Annual Vehicle Service Hours	11,180
	(d) Vehicles Operated in Maximum Service	4
	(e) Vehicles Available for Maximum Service	6
	(f) Vehicles Required for Minimum Service	4

4. Services Consumption	(b) Boardings per Service Mile	4.92
	(c) Boardings per Service Hour	39
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	441,230

5. Financial Info	(a) Annual O&M Expenses	$543,628
	(b) Total Capital Expenditure to Date	$400,000
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$6.06
	(e) Operating Expense per Service Hour	$48.63

Profile Sheet: North Miami

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$9.25	69%
Operating Expense per Passenger Boarding	$1.23	60%
Subsidy per Passenger Boarding	$1.23	83%
Operating Expense per Service Mile	$6.06	36%
Operating Expense per Service Hour	$48.63	44%
Service Effectiveness		
Boardings per Service Mile	4.92	92%
Boardings per Service Hour	39.47	88%



Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	
50% - 75%	
25% - 50%	
Bottom 25%	

Asset Management				
Item	**Local Jurisdiction**		**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	1.0		1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	0.50		0.2 - 0.5	*Meets Recommended Threshold*
Average Fleet Age (years)	4.0		3	*Doesn't Meet Recommended Threshold*
Oldest Vehicle Age (years)	8		6	*Doesn't Meet Recommended Threshold*

System Detail								
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Green	8.5	60	-	-	-	12	-	-
Orange	8.0	60	-	-	-	12	-	-
Blue	7.1	60	-	-	-	12	-	-
Red	8.8	60	-	-	-	7	-	-
System Total / Maximum Service Span	32.42					12.0	0.0	0.0

Municipal Transit Program

1. General Information	(a) Year Established	N/A
	(b) Population within 1/4 Mile of Routes	14,032
	(c) % of Municipal Population within 1/4 Mile of Routes	92%
	(d) Overlap with Other Transit Services (Directional Route Miles)	8.73
	(e) Fare Charged	N/A
	(f) Fare Amount	N/A
	(g) Accept Advertising	N/A
	(h) Dedicated Website	N/A
	(i) Mobile App	N/A

2. Organizational Info	(a) Responsible Department	N/A
	(b) Service Operator	N/A
	(c) Hourly Rate	N/A
	(d) Number of Full-time Employees Assigned	N/A
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	N/A

4. Services Supplied	(a) Average Vehicles in Operation	N/A
	(b) Annual Vehicle Service Miles	N/A
	(c) Annual Vehicle Service Hours	N/A
	(d) Vehicles Operated in Maximum Service	N/A
	(e) Vehicles Available for Maximum Service	N/A
	(f) Vehicles Required for Minimum Service	N/A

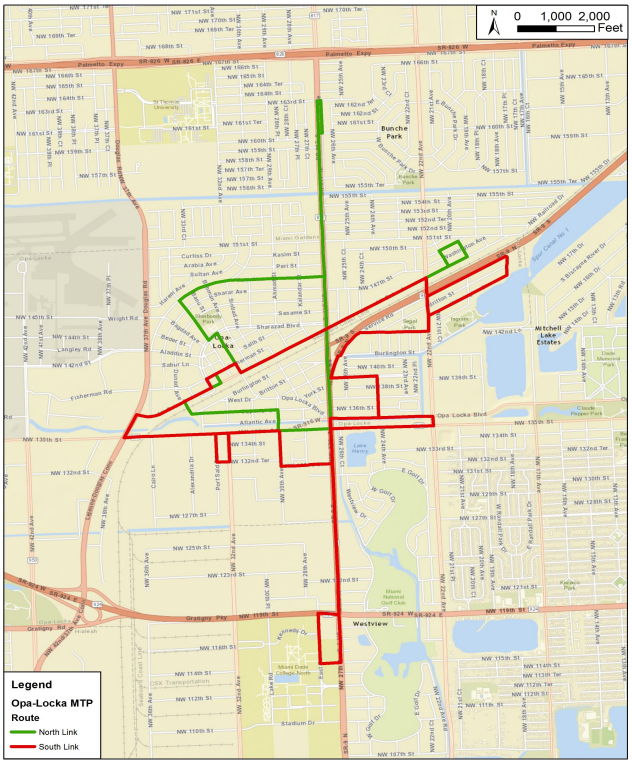
4. Services Consumption	(b) Boardings per Service Mile	N/A
	(c) Boardings per Service Hour	N/A
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	N/A

5. Financial Info	(a) Annual O&M Expenses	N/A
	(b) Total Capital Expenditure to Date	N/A
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	N/A
	(e) Operating Expense per Service Hour	N/A

Profile Sheet: Opa-Locka

Comparative Assessment		
Item	Local Jurisdiction	Percentile
Service Efficiency		
Operating Expense per Resident	N/A	N/A
Operating Expense per Passenger Boarding	N/A	N/A
Subsidy per Passenger Boarding	N/A	N/A
Operating Expense per Service Mile	N/A	N/A
Operating Expense per Service Hour	N/A	N/A
Service Effectiveness		
Boardings per Service Mile	N/A	N/A
Boardings per Service Hour	N/A	N/A

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✔
50% - 75%	↗
25% - 50%	!
Bottom 25%	✖



Asset Management			
Item	Local Jurisdiction	Recommended Threshold	
Peak-to-Base Vehicle Ratio	N/A	1.2	
Spare-to-Peak Vehicle Ratio	N/A	0.2 - 0.5	
Average Fleet Age (years)	N/A	3	
Oldest Vehicle Age (years)	N/A	6	

System Detail								
Route Name	Directional Length (miles)	Frequency (minutes)				Service Span (hours)		
		Weekday	Weeknight	Saturday	Sunday	Weekday	Saturday	Sunday
North Link	6.9	45	60	60	-	12.75	10	-
South Link	10.3	45	60	60	-	13.75	10	-
System Total / Maximum Service Span	17.23					13.8	10.0	0.0

Municipal Transit Program

1. General Information	(a) Year Established	2006
	(b) Population within 1/4 Mile of Routes	15,151
	(c) % of Municipal Population within 1/4 Mile of Routes	65%
	(d) Overlap with Other Transit Services (Directional Route Miles)	9.20
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	No
	(h) Dedicated Website	Yes
	(i) Mobile App	No

2. Organizational Info	(a) Responsible Department	Public Works
	(b) Service Operator	Village
	(c) Hourly Rate	$61.70
	(d) Number of Full-time Employees Assigned	4
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	N/A

4. Services Supplied	(a) Average Vehicles in Operation	1
	(b) Annual Vehicle Service Miles	23,855
	(c) Annual Vehicle Service Hours	2,470
	(d) Vehicles Operated in Maximum Service	1
	(e) Vehicles Available for Maximum Service	3
	(f) Vehicles Required for Minimum Service	1

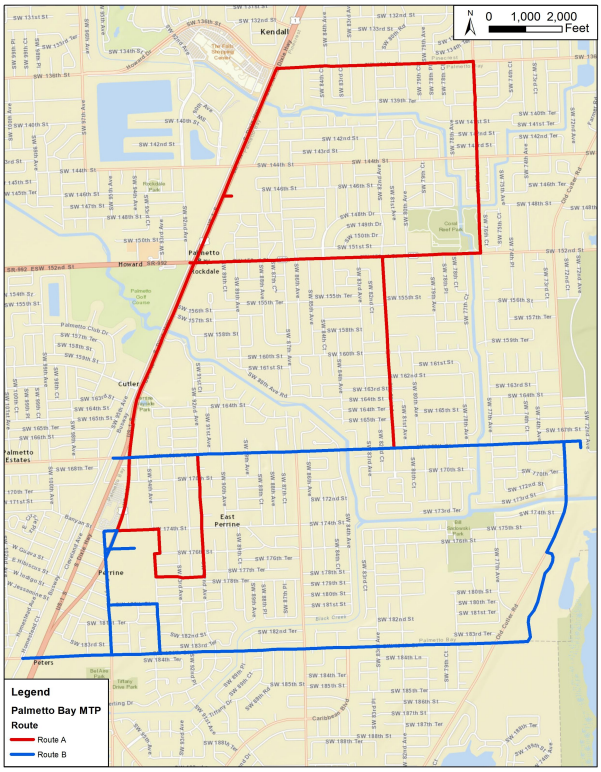
4. Services Consumption	(b) Boardings per Service Mile	0.30
	(c) Boardings per Service Hour	3
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	7,271

5. Financial Info	(a) Annual O&M Expenses	$382,000
	(b) Total Capital Expenditure to Date	$382,000
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$6.39
	(e) Operating Expense per Service Hour	$61.70

Profile Sheet: Palmetto Bay

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$16.32	42%
Operating Expense per Passenger Boarding	$20.96	4%
Subsidy per Passenger Boarding	$52.54	6%
Operating Expense per Service Mile	$6.39	24%
Operating Expense per Service Hour	$61.70	32%
Service Effectiveness		
Boardings per Service Mile	0.30	36%
Boardings per Service Hour	2.94	32%

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗



Asset Management			
Item	**Local Jurisdiction**	**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	✗ 1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✗ 2.00	0.2 - 0.5	*Doesn't Meet Recommended Threshold*
Average Fleet Age (years)	✗ 8.7	3	*Doesn't Meet Recommended Threshold*
Oldest Vehicle Age (years)	✗ 9	6	*Doesn't Meet Recommended Threshold*

System Detail								
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Route A	10.7	60	-	-	-	4	-	-
Route B	8.9	60	-	-	-	5.5	-	-
System Total / Maximum Service Span	19.60					5.5	0.0	0.0

Municipal Transit Program

1. General Information	(a) Year Established	2012
	(b) Population within 1/4 Mile of Routes	13,089
	(c) % of Municipal Population within 1/4 Mile of Routes	72%
	(d) Overlap with Other Transit Services (Directional Route Miles)	11.17
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	No
	(h) Dedicated Website	Yes
	(i) Mobile App	Yes

2. Organizational Info	(a) Responsible Department	Village Manager's Office
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$55.95
	(d) Number of Full-time Employees Assigned	1
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	No

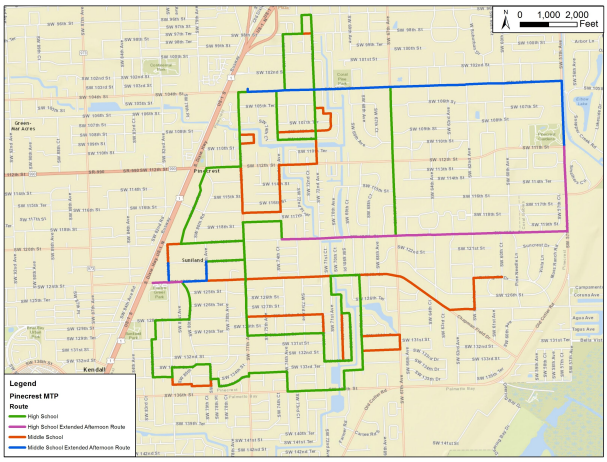
4. Services Supplied	(a) Average Vehicles in Operation	2
	(b) Annual Vehicle Service Miles	21,456
	(c) Annual Vehicle Service Hours	3,120
	(d) Vehicles Operated in Maximum Service	2
	(e) Vehicles Available for Maximum Service	2
	(f) Vehicles Required for Minimum Service	2

4. Services Consumption	(b) Boardings per Service Mile	1.16
	(c) Boardings per Service Hour	8
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	24,869

5. Financial Info	(a) Annual O&M Expenses	$174,564
	(b) Total Capital Expenditure to Date	$5,000
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$8.14
	(e) Operating Expense per Service Hour	$55.95

Profile Sheet: Pinecrest

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$9.57	63%
Operating Expense per Passenger Boarding	$7.02	16%
Subsidy per Passenger Boarding	$7.02	22%
Operating Expense per Service Mile	$8.14	16%
Operating Expense per Service Hour	$55.95	36%
Service Effectiveness		
Boardings per Service Mile	1.16	60%
Boardings per Service Hour	7.97	48%



Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	
50% - 75%	
25% - 50%	
Bottom 25%	

Asset Management			
Item	**Local Jurisdiction**	**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	0.00	0.2 - 0.5	*Doesn't Meet Recommended Threshold*
Average Fleet Age (years)	N/A	3	
Oldest Vehicle Age (years)	N/A	6	

System Detail								
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Middle School	17.2	0	0	0	0	0	0	0
High School	13.6	0	0	0	0	0	0	0
MS Extended Afternoon	5.3	0	0	0	0	0	0	0
HS Extended Afternoon	5.3	0	0	0	0	0	0	0
System Total / Maximum Service Span	41.43					0.0	0.0	0.0

Municipal Transit Program

1. General Information	(a) Year Established	1999
	(b) Population within 1/4 Mile of Routes	20,421
	(c) % of Municipal Population within 1/4 Mile of Routes	100%
	(d) Overlap with Other Transit Services (Directional Route Miles)	23.80
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	No
	(h) Dedicated Website	No
	(i) Mobile App	No

2. Organizational Info	(a) Responsible Department	Transportation Dept.
	(b) Service Operator	Municipal Employees
	(c) Hourly Rate	$76.58
	(d) Number of Full-time Employees Assigned	1
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	N/A

4. Services Supplied	(a) Average Vehicles in Operation	4
	(b) Annual Vehicle Service Miles	69,602
	(c) Annual Vehicle Service Hours	9,685
	(d) Vehicles Operated in Maximum Service	4
	(e) Vehicles Available for Maximum Service	6
	(f) Vehicles Required for Minimum Service	4

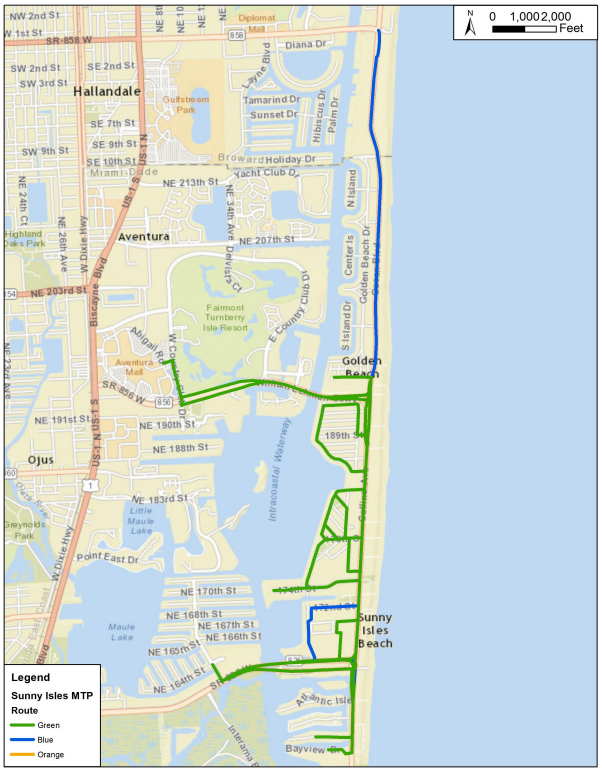
4. Services Consumption	(b) Boardings per Service Mile	2.42
	(c) Boardings per Service Hour	17
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	168,506

5. Financial Info	(a) Annual O&M Expenses	$741,696
	(b) Total Capital Expenditure to Date	$796,000
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$10.66
	(e) Operating Expense per Service Hour	$76.58

Profile Sheet: Sunny Isles Beach

Comparative Assessment			
Item	Local Jurisdiction	Percentile	
Service Efficiency			
Operating Expense per Resident	$36.32	✗	11%
Operating Expense per Passenger Boarding	$4.40	!	32%
Subsidy per Passenger Boarding	$4.40	!	45%
Operating Expense per Service Mile	$10.66	✗	4%
Operating Expense per Service Hour	$76.58	✗	12%
Service Effectiveness			
Boardings per Service Mile	2.42	↗	72%
Boardings per Service Hour	17.40	↗	72%

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗



Asset Management				
Item	Local Jurisdiction		Recommended Threshold	
Peak-to-Base Vehicle Ratio	✗	1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✓	0.50	0.2 - 0.5	*Meets Recommended Threshold*
Average Fleet Age (years)	✗	4.0	3	*Doesn't Meet Recommended Threshold*
Oldest Vehicle Age (years)	✗	8	6	*Doesn't Meet Recommended Threshold*

System Detail									
Route Name	Directional Length (miles)	Frequency (minutes)				Service Span (hours)		
		Weekday	Weeknight	Saturday	Sunday	Weekday	Saturday	Sunday
Orange	13.5	120	120	-	-	11.5	-	-
Blue	17.1	120	-	120	-	8	6.5	-
Green	13.5	120	-	120	120	11.75	11.75	11.75
System Total / Maximum Service Span	44.04					11.8	11.8	11.8

Municipal Transit Program

1. General Information	(a) Year Established	2011
	(b) Population within 1/4 Mile of Routes	5,744
	(c) % of Municipal Population within 1/4 Mile of Routes	100%
	(d) Overlap with Other Transit Services (Directional Route Miles)	3.40
	(e) Fare Charged	No
	(f) Fare Amount	N/A
	(g) Accept Advertising	No
	(h) Dedicated Website	No
	(i) Mobile App	No

2. Organizational Info	(a) Responsible Department	Public Works
	(b) Service Operator	Private Contractor
	(c) Hourly Rate	$63.81
	(d) Number of Full-time Employees Assigned	1
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	No

4. Services Supplied	(a) Average Vehicles in Operation	1
	(b) Annual Vehicle Service Miles	26,364
	(c) Annual Vehicle Service Hours	2,821
	(d) Vehicles Operated in Maximum Service	1
	(e) Vehicles Available for Maximum Service	2
	(f) Vehicles Required for Minimum Service	1

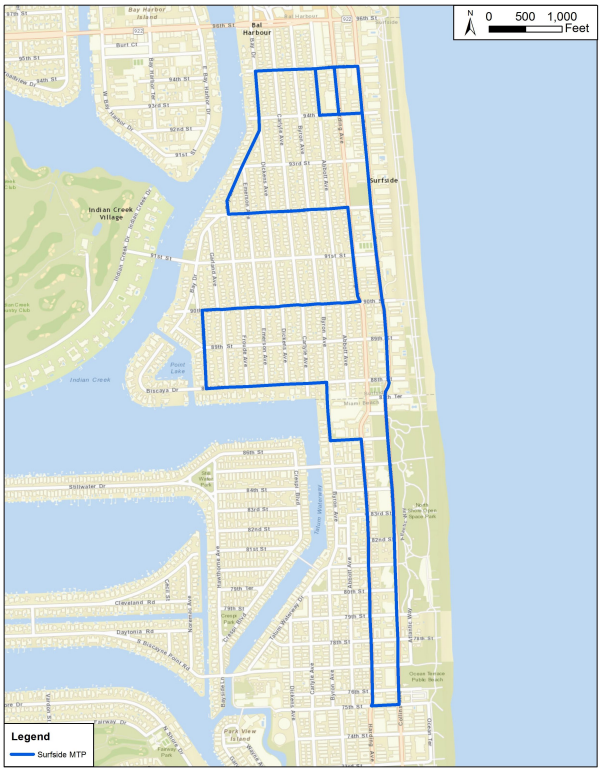
4. Services Consumption	(b) Boardings per Service Mile	N/A
	(c) Boardings per Service Hour	N/A
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	N/A

5. Financial Info	(a) Annual O&M Expenses	$180,000
	(b) Total Capital Expenditure to Date	N/A
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	$6.83
	(e) Operating Expense per Service Hour	$63.81

Profile Sheet: Surfside

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	$31.34	✗ 16%
Operating Expense per Passenger Boarding	N/A	N/A
Subsidy per Passenger Boarding	N/A	N/A
Operating Expense per Service Mile	$6.83	✗ 20%
Operating Expense per Service Hour	$63.81	! 28%
Service Effectiveness		
Boardings per Service Mile	N/A	N/A
Boardings per Service Hour	N/A	N/A

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✓
50% - 75%	↗
25% - 50%	!
Bottom 25%	✗



Asset Management				
Item	**Local Jurisdiction**		**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	✗	1.0	1.2	*Doesn't Meet Recommended Threshold*
Spare-to-Peak Vehicle Ratio	✗	1.00	0.2 - 0.5	*Doesn't Meet Recommended Threshold*
Average Fleet Age (years)	✓	1.0	3	*Meets Recommended Threshold*
Oldest Vehicle Age (years)	✓	1	6	*Meets Recommended Threshold*

System Detail									
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**			
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Surfside Shuttle	5.2	30	-	30	-	9.75	5.5	-
System Total / Maximum Service Span	5.20					9.8	5.5	0.0

Municipal Transit Program

1. General Information	(a) Year Established	N/A
	(b) Population within 1/4 Mile of Routes	13,499
	(c) % of Municipal Population within 1/4 Mile of Routes	100%
	(d) Overlap with Other Transit Services (Directional Route Miles)	12.66
	(e) Fare Charged	N/A
	(f) Fare Amount	N/A
	(g) Accept Advertising	N/A
	(h) Dedicated Website	N/A
	(i) Mobile App	N/A

2. Organizational Info	(a) Responsible Department	N/A
	(b) Service Operator	N/A
	(c) Hourly Rate	N/A
	(d) Number of Full-time Employees Assigned	N/A
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	N/A

4. Services Supplied	(a) Average Vehicles in Operation	1
	(b) Annual Vehicle Service Miles	31,269
	(c) Annual Vehicle Service Hours	3,302
	(d) Vehicles Operated in Maximum Service	N/A
	(e) Vehicles Available for Maximum Service	N/A
	(f) Vehicles Required for Minimum Service	N/A

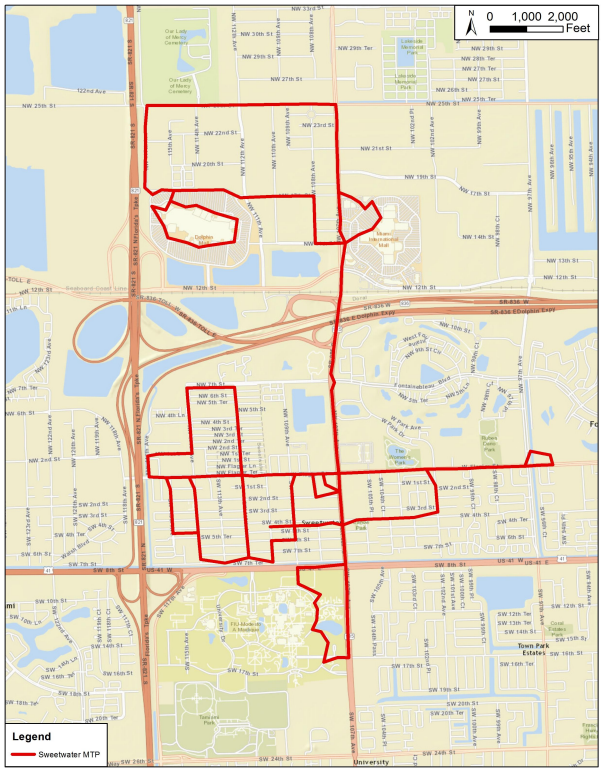
4. Services Consumption	(b) Boardings per Service Mile	N/A
	(c) Boardings per Service Hour	N/A
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	N/A

5. Financial Info	(a) Annual O&M Expenses	N/A
	(b) Total Capital Expenditure to Date	N/A
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	N/A
	(e) Operating Expense per Service Hour	N/A

Profile Sheet: Sweetwater

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	N/A	N/A
Operating Expense per Passenger Boarding	N/A	N/A
Subsidy per Passenger Boarding	N/A	N/A
Operating Expense per Service Mile	N/A	N/A
Operating Expense per Service Hour	N/A	N/A
Service Effectiveness		
Boardings per Service Mile	N/A	N/A
Boardings per Service Hour	N/A	N/A

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✔
50% - 75%	
25% - 50%	
Bottom 25%	✖



Asset Management			
Item	**Local Jurisdiction**	**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	N/A	1.2	
Spare-to-Peak Vehicle Ratio	N/A	0.2 - 0.5	
Average Fleet Age (years)	N/A	3	
Oldest Vehicle Age (years)	N/A	6	

System Detail								
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
Sweetwater Trolley	16.4	90	90	90	90	11	8.5	8.5
System Total / Maximum Service Span	16.40					11.0	8.5	8.5

Municipal Transit Program

1. General Information	(a) Year Established	N/A
	(b) Population within 1/4 Mile of Routes	5,965
	(c) % of Municipal Population within 1/4 Mile of Routes	100%
	(d) Overlap with Other Transit Services (Directional Route Miles)	4.73
	(e) Fare Charged	N/A
	(f) Fare Amount	N/A
	(g) Accept Advertising	N/A
	(h) Dedicated Website	N/A
	(i) Mobile App	N/A

2. Organizational Info	(a) Responsible Department	N/A
	(b) Service Operator	N/A
	(c) Hourly Rate	N/A
	(d) Number of Full-time Employees Assigned	N/A
	(e) Number of Part-time Employees Assigned	N/A
	(f) Local Jurisdiction Owned Maintenance Facility	N/A

4. Services Supplied	(a) Average Vehicles in Operation	N/A
	(b) Annual Vehicle Service Miles	N/A
	(c) Annual Vehicle Service Hours	N/A
	(d) Vehicles Operated in Maximum Service	N/A
	(e) Vehicles Available for Maximum Service	N/A
	(f) Vehicles Required for Minimum Service	N/A

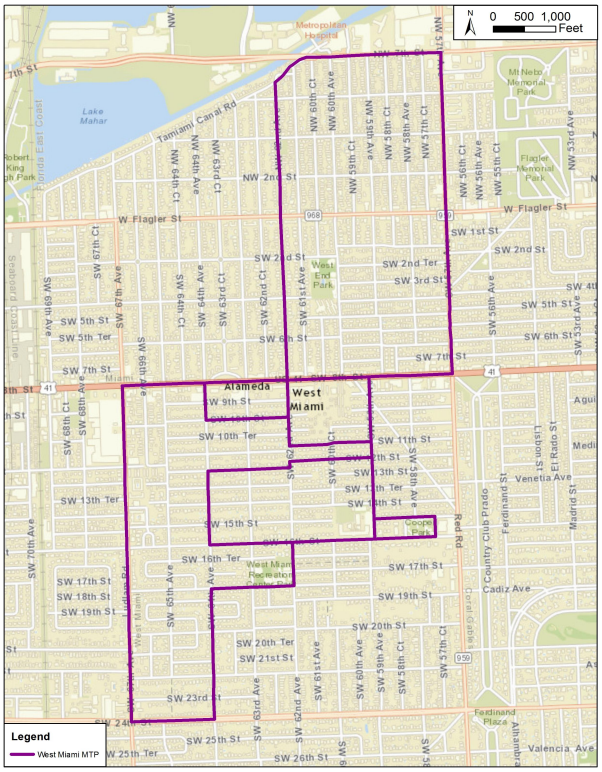
4. Services Consumption	(b) Boardings per Service Mile	N/A
	(c) Boardings per Service Hour	N/A
	(d) Average Weekday Boardings	N/A
	(e) Average Saturday Boardings	N/A
	(f) Average Sundays Boardings	N/A
	(g) Average Annual Boardings	N/A

5. Financial Info	(a) Annual O&M Expenses	N/A
	(b) Total Capital Expenditure to Date	N/A
	(c) Farebox Revenue	N/A
	(d) Operating Expense per Service Mile	N/A
	(e) Operating Expense per Service Hour	N/A

Profile Sheet: West Miami

Comparative Assessment		
Item	**Local Jurisdiction**	**Percentile**
Service Efficiency		
Operating Expense per Resident	N/A	N/A
Operating Expense per Passenger Boarding	N/A	N/A
Subsidy per Passenger Boarding	N/A	N/A
Operating Expense per Service Mile	N/A	N/A
Operating Expense per Service Hour	N/A	N/A
Service Effectiveness		
Boardings per Service Mile	N/A	N/A
Boardings per Service Hour	N/A	N/A

Comparative Assessment Legend	
Percentile	*Symbol*
Top 25%	✔
50% - 75%	↗
25% - 50%	!
Bottom 25%	✖



Asset Management			
Item	**Local Jurisdiction**	**Recommended Threshold**	
Peak-to-Base Vehicle Ratio	N/A	1.2	
Spare-to-Peak Vehicle Ratio	N/A	0.2 - 0.5	
Average Fleet Age (years)	N/A	3	
Oldest Vehicle Age (years)	N/A	6	

System Detail								
Route Name	**Directional Length (miles)**	**Frequency (minutes)**				**Service Span (hours)**		
		Weekday	**Weeknight**	**Saturday**	**Sunday**	**Weekday**	**Saturday**	**Sunday**
West Miami Hour Loop	8.5	-	0	0	0	0	0	0
System Total / Maximum Service Span	8.52					0.0	0.0	0.0

5 IDENTIFIED CHALLENGES AND OPPORTUNITIES

5.1 POLICY AND PROCEDURAL METHODS

5.1.1 DATA COLLECTION AND REPORTING

One of the critical areas of identified challenges and opportunities is in the area of data collection and reporting. Many municipalities collect limited data. For example, many municipalities do not provide ridership by route. A thorough understanding of the boarding activity is critical in determining system performance. The more detail about ridership that is collected and analyzed, the better the municipality is able to refine the service it provides.

Furthermore, there is no current reporting requirement by the municipalities. Future reporting to the CITT is recommended as a part of the auditing process; not for enforcement, but to allow the CITT to collect a database of performance measure information for future comparisons and assessments.

5.1.2 MTP PERFORMANCE

System profile sheets were developed to help ease of reporting and comparisons between systems. For example, by using the system profile sheets it is easily noted that Miami Springs, Miami Beach, the City of Miami, and Coral Gables have the highest ridership, which correlate to the lowest cost per ridership. This is likely due to the high density in these municipalities. However, it is important to recognize that performance varies significantly with the service purpose. It is recommended that the automated profile sheets be used and frequently updated by the municipalities to facilitate in data sharing.

5.2 LOCAL TRANSIT PLANNING CAPACITY

During the coordination with municipalities it was noted that many municipalities lack personnel resources to provide transit planning support. Often the MTP is overseen by a larger transportation, or sometimes parking division that may have limited experience with route design or transit systems in general. In addition, municipalities may entirely rely on a system provider to implement, operate, manage, and maintain their MTP. This often leads to challenges in efficient route design, schedule development, branding consistency, implementation of mapping and other services required by MTPs. During the SAC meetings, DTPW voiced their desire to serve as a resource for jurisdictions to help supplement the jurisdiction's resources.

5.3 EXISTING BARRIERS TO INTEGRATED TRANSIT SYSTEM

As previously mentioned, the ultimate goal of an integrated transit system at the county-level is desired by the County. Based on the survey, there is a range of desire to provide integrated systems, but there is an overall desire to "complement but not compete". However, due to the independent nature of each individual municipality, full integration of MTPs is a challenge. During the development of these guidelines, one challenge identified was maintaining the balance between the desire of municipalities and their leadership to have their own "brand," while making the service recognizable to users (both residents, and tourists/non-residents). To facilitate in this recognition and integration, some common branding elements may be beneficial.

Another aspect of integrated transit systems is the integration of information. One challenge noted by the municipalities is the ability to make information available in a single location that covers all municipalities. This challenge was also noted during the extended data collection effort used to complement the on-line survey tool. Online resources and mapping websites may prove useful, but coordination on the minimum requirements for information displayed must be agreed to by the individual municipalities so the level of information detail is consistent among jurisdictions.

Additional discussion on service integration is provided in Section 6.2 System and Service Integration.

6 POLICY GUIDELINES

6.1 PERFORMANCE MONITORING

6.1.1 DATA COLLECTION FOR PERFORMANCE MONITORING

Each funding program has its own reporting requirements, which are detailed in the individual grant agreements. If a particular agreement includes funds from more than one funding program, the agreement may include requirements from each funding source. Reporting requirements typically include the type and amount of information that is required to be submitted to the grantor and frequency of reports and requests for payment. A sample of information that the funding agency might require reports are as follows:

- Number of boardings by:
  - Day of week (weekday versus weekend)
  - Route
  - Time of day (used to identify need for higher frequency)
  - Location (used to improve station spacing)
- Missed boardings:
  - Due to inability to accommodate special needs
  - Due to limited vehicle capacity
- Operating cost per passenger trip and mile
- Operating cost per vehicle hour and mile
- Passenger revenue per total operating cost or fare recovery ratio
- Passenger trips per vehicle hour and miles
- Accidents per 100,000 miles
- No-shows per scheduled trips
- On-time pick-ups to total pick-ups (on-time performance)
- Complaints per 1,000 passenger trips
- Average trip length
- Hours of operation
- Average vehicle travel time
- System speed
- Response time
- Trip denials per trip requested
- Gallons of fuel used
- Hours of idle time
- Date, time, locations of incidents (e.g. crash, injuries, fatalities)

The data identified above can be used to develop key performance measures that can be used to evaluate specific routes or the system as a whole.

6.1.2 TYPES OF PERFORMANCE MEASURES

Performance monitoring can be broken down into the following categories: service efficiency, service effectiveness, and service reliability. Each category is comprised of one or two key performance measures that are capable of summarizing performance for an individual route or for the system as a whole. Discussion on performance measures was previously provided in Section 4.2 Development of Performance Thresholds.

6.1.3 EVALUATING SERVICE THROUGH PERFORMANCE THRESHOLDS

Performance measures are used to evaluate opportunities for improvement and to compare similar services provided by municipalities. Service efficiency is a comprehensive form of evaluation and considers several aspects of service performance and service effectiveness. However, all measures should be considered when evaluating service.

It is recommended that the municipality sets goals as they relate to the performance measures discussed in Section 4.2 Development of Performance Thresholds. Goals may be based on how other municipalities perform, as these provide a medium for comparison. If a municipality finds that its performance is in the bottom quartile among its peers, there should be policies set to identify and address the issues. Recommended performance measures were summarized in Section 4.2.6 Recommended Performance Thresholds. The below sections summarize mitigation measures for municipalities if the performance thresholds are not being reached.

6.1.3.1 Service Effectiveness

Boardings per service mile should be more than 0.67. If boardings per service mile are below 0.67 for a specific route, the municipality may want to consider re-evaluating the route alignment. The low number may indicate that the route may not be serving locations that attract enough riders, or may be attempting to cover greater distance trips. For municipal services, shorter routes are preferable.

Boardings per service hour should be more than 6.9. If boardings per service hour are below 6.9 for a specific route, the municipality should consider evaluating the route alignment, frequency, or span of service. Low boardings per service hour could be a result of inefficient service planning (service frequency and span of service are too high), or an ineffective route alignment (provides service where it is not desired).

6.1.3.2 Service Efficiency

O&M expense per service hour should be less than $70.70. If cost per service hour exceeds $70.70 for a specific route, the municipality should consider evaluating the route and/or their service provider. Most municipalities currently have their

services contracted out to a private provider (most commonly South Florida Limousines). While not all contracts include a provision for maintenance and fuel, this should be considered.

O&M expense per service mile should be less than $7.15. If cost per service mile exceeds $7.15 for a specific route, the municipality should consider evaluating the route and/or service provider. A high cost per service mile may be an indicator of inefficient routes, whether as a result of congestion resulting in low travel speeds, or as a result of the route having too many stops. One cause may also be inefficient scheduling, if a route spends a significant percent of time at a layover facility rather than on the road. Other reasons for having a high operating costs per mile may include whether the vehicles are owned and maintained by the municipality or by a contracted service, the type of vehicles used, or the maintenance of amenities at bus stops. Additionally, marketing and communication materials such as dedicated websites, mobile applications, and bus tracking may increase operating costs.

O&M expense per passenger boarding should be less than $6.85. If O&M expense per boarding goes above $6.85 for a specific route, the municipality should consider evaluating the route. This measure is able to identify inefficiencies in service operation (impacting operating costs) as well as service alignment and performance (impacting ridership). Additionally, the municipality is encouraged to find additional funding that may help subsidize service, such as charging a fare.

6.1.3.3 Mitigation Measures

There may be several reasons for routes to exceed the identified thresholds. The service design guidelines provided in Chapter 7 Route Design Guidelines may be beneficial in identifying issues that are present. Additionally, there may be some design considerations that impact ridership discussed in Chapter 8 Design Guidelines. A list of potential service-related issues and mitigation measures is provided below:

1. Ridership is too low. The route does not serve dense enough development, serves an area in which demographics do not make use of transit, or does not serve key trip generators. In this case, ridership is too low to support such a route, and the municipality may want to rethink providing this circulator service. If the route alignment and area being served seem to support such a route, the municipality may need to evaluate the facilities (bus stops, amenities, vehicle type) to ensure the service is attractive to riders.

2. The route alignment is not direct enough. This impacts O&M expense per boarding in two ways. First, it increases operating costs due to additional distance traveled or additional travel time due to unnecessary stops. Secondly, the lack of directness and additional travel time make the route less attractive to ridership, resulting in fewer boardings. In this case the municipality is encouraged to modify the route alignment to better serve key trip generators, or reducing number of stops in an attempt to provide more attractive travel time.

3. The route is too long. If a route is too long, there may be portions of the route that are under-utilized, resulting in rising operating costs without increasing ridership. This may be addressed by reducing route length or by tailoring the service type to meet trip demands.

4. The route does not offer enough stops. This may occur along longer routes in an attempt to reduce travel time. However, not providing sufficient stops reduces accessibility, resulting in lower ridership. In this case, it is recommended that the municipality consider adding more stops along the corridor in an attempt to improve accessibility and attractiveness of the service. If the addition of stops results in increased travel time to an extent that the service becomes unattractive to users, the municipality may also consider relocating stops to more effective locations (larger trip generators).

5. The route operates more frequently than needed. While higher frequency of service makes a route more convenient to ridership, it also increases operating costs. Where ridership demand and passenger loads do not support service frequencies, it is recommended that the municipality consider reducing the frequency.

6. Service span (hours of operation) are inefficient. This results in higher operating costs than can be supported by the ridership. This may be more noticeable for routes that serve time-specific trips, such as home-based-work trips that largely occur in the mornings and evenings, but have reduced ridership during mid-day. It is recommended that the municipality evaluate the primary trip that is being served by the route, and modify or reduce operating times accordingly.

It is important to note that service performance may vary significantly based on the type of service that is being provided. For example, lifeline services may operate less efficiently than other circulator services, but the municipality may decide that such a service is a necessity nonetheless.

6.2 SYSTEM AND SERVICE INTEGRATION

6.2.1 SERVICE INTEGRATION

To maximize the potential ridership and benefits that a transit service can provide, it is critical that the MTP be well integrated within a larger transit system. Within a single municipality, routes should have a few key bus stop that can serve as a transfer point between circulator routes. However, integration with other municipalities and county or regional transit systems should also be pursued: a route that is well integrated and provides connections to other services is more attractive to riders as it provides greater choice for trips.

6.2.1.1 Avoiding Redundancy and Competition

Although municipalities should strive to integrate their services with adjacent municipalities and nearby systems, it is important that these services complement, not compete with, each other. Service overlap is most commonly identified when two routes have similar alignments. Routes that share a significant portion of an alignment with each other may provide redundant services that result in inefficiency in the combined system. However, the nature of the routes should be taken into consideration in order to determine if this results in competition: one route may provide more frequent stops and serves shorter trips, while another route along the same alignment may provide an 'express' service intended for more direct and often longer trips. In this case, the two routes may have similar alignment, but do not necessarily serve the same demographics. In addition to stop frequency, other characteristics that may help determine if two or more routes compete with each other include service span, service frequency, service purpose, and fare to ride the service. There are several methods to reduce undesired overlap through route planning policies and guidance.

6.2.1.1.1 *Minimizing Overlap with Other Municipal Services*

One policy that is in effect in Miami-Dade County to minimize service overlap requires that "at least seventy (70%) of the [circulator] route is within one municipality", as stated in the Code of Metropolitan Miami-Dade County, Chapter 31, Article III, Section 31-113. This policy ensures that circulator services from different municipalities, which may have similar ridership and characteristics, do not overlap more than necessary. Exceptions may be made to Section 31-113 for certain municipalities.

It is encouraged that municipal routes overlap with other nearby routes to provide the greatest level of connectivity to riders. However, to ensure that service does not become redundant, it is recommended that municipal routes share three or fewer consecutive stops with the same route. It is also recommended that municipal routes share less than one continuous mile of alignment with another route. In some cases, where routes travel along highways or arterials to access major destinations, this may not apply.

6.2.1.1.2 *Minimizing Overlap with DTPW Services (Metrobus)*

While it may not be possible to avoid physical overlap with a Metrobus route, there are ways to avoid service overlap. As discussed above, service overlap refers to the characteristics of the service and the ridership that the route serves. When establishing a route, municipalities should consider the following:

- Routes should cater to local community needs and local trips;
- Routes should serve areas not currently reached by other transit systems;
- Routes should provide service to demographics that are not well served by other transit systems; and
- Routes could provide service hours not being provided by other systems.

6.2.2 IMPROVING SYSTEM INTEGRATION

Effective system integration provides users with a seamless transit system that gives potential riders a variety of choices with regards to trip purpose and destination. This, in turn, has the potential to increase the modal share that transit holds in the county as a whole, not just within a municipality. The following are guidelines that will improve system integration.

6.2.2.1 Maximize Connections

As long as service does not provide undesired overlap resulting in competition, municipalities are encouraged to share stops and facilities with other services. Integrated connections allows multiple systems to leverage the strengths and resources of adjacent systems and services. The more transfer points available, the more convenient it will be for the users of the system. Transfer centers should be established at locations that are large trip generators.

6.2.2.2 Optimize Transfer Schedules

In addition to maximizing the number of connections, it is also important to coordinate schedules to be convenient with riders. This may mean increasing layover at key transfer stations to facilitate transfer from one service to another. Schedule-based services are ideal to ensure that service providers are able to coordinate. Municipalities are also encouraged to use "clockface" schedules to provide a consistent time each hour that the bus will arrive at a stop. More details regarding scheduling are provided in Section 7.3.2 Service Frequency and Scheduling.

6.2.2.3 Fare Consistency

Riders want to be able to easily transfer from one service onto another. This may include consistent fares among similar types of services. It is also encouraged that the fare collection system be consistent across different programs to facilitate transfers. Interoperability of fare collection between other local and regional services should be implemented as much as possible. Currently most municipalities do not charge a fare, but if changes are to be made they should be coordinated with adjacent services. In the event that a fare is implemented, agreements should be made with DTPW and other municipalities as to how fare revenue is distributed for eligible transfers between systems.

6.2.2.4 Develop Common Minimum Standards

Minimum standards should be adopted in order to make service more recognizable and more comfortable for users unfamiliar with a specific system. These may include bus stop design (amenities, signs, etc.), vehicle type/design (identify a variety of buses that may be used for various services), and branding. Design considerations are provided in Chapter 8 Design Guidelines, and a brief discussion on branding can be found in Section 6.2.4 Communication. Standards should also be developed for providing information to riders, such as map formats and timetables.

6.2.2.5 Information Sharing

Sharing information with other municipalities, as well as with the general public is a critical aspect of service integration. At minimum, municipal transit services should direct riders to where they may find information on linked services. Websites should provide links to transit pages of adjacent municipalities, and bus schedules should provide users with a list of what other services share a specific stop. Providing schedule timetables also allows municipalities to upload their information to Google Transit®, which provides a useful tool for trip planning to tourists and other riders not familiar with the area.

6.2.3 TECHNOLOGY

Technology may be leveraged to improve integration of various services. Automatic Vehicle Location (AVL) technology can be used to track buses along the route and provide real-time information to riders. AVL is often coupled with Computer Aided Dispatch (CAD) to coordinate bus dispatches and improve schedule adherence. These technologies are beneficial for drivers and schedulers, who may make on-the-spot adjustments to ensure that key transfers are met (i.e., a bus may dwell at a station a little longer if another route that has a lot of transfer passengers is running a little behind). Bus tracking also generally encourages potential riders to use transit, as it provides an increased level of reliability.

Mobile applications and/or websites providing bus routes, schedules, and live tracking should be developed. Some municipalities already have such applications, as does DTPW. However, it is encouraged that all information be provided on a single platform/application to make it more accessible and convenient for riders that intend on using multiple systems. As previously mentioned, Google Transit is a tool that would be able to provide such service. At a minimum, mobile applications and websites should provide links guiding users to websites and applications of other municipal services as well as DTPW.

6.2.4 COMMUNICATION

6.2.4.1 Branding

Branding is key to ensuring that municipal systems are recognizable. However, with 34 different municipalities with their own distinct identity and brands, uniformity can be a challenge. While municipalities want to maintain their unique identity and branding, they are encouraged to collaborate and develop some minimum common elements to help users not familiar with the municipality (tourists, travelers, residents from other parts of the County) identify the route as a municipal circulator. This applies to bus design (bus wraps, logos, etc.), bus stop design, and uniformity on bus stop infrastructure. One common requirement is that all buses serving municipal circulator routes must display a CITT logo. However, additional branding should be implemented.

Branding the service includes but goes significantly further than establishing a catchy name and attractive logo for the service. The Marketing Institute, Florida State University College of Business stated in a 2012 TDM Branding guide "The term 'brand' refers to, arguably, the most vital aspect of any organization's operations." Successful branding evokes a positive emotional response to exposure to said brand. The image the brand intends on portraying must be evident in, not only the advertising, but how the service is carried out as well. This requires continued coordination between the service development, operations and marketing departments.

Regarding the physical brand, the municipality should ensure that the bus and all related marketing and informational pieces have a common theme, look or mark that causes the public to immediately associate one with the other. Wrapping the transit vehicle can be very effective (depending on the design), but might not be an option or might be a limited option if the municipality plans to reserve exterior space for advertising or even naming rights for a premium price.

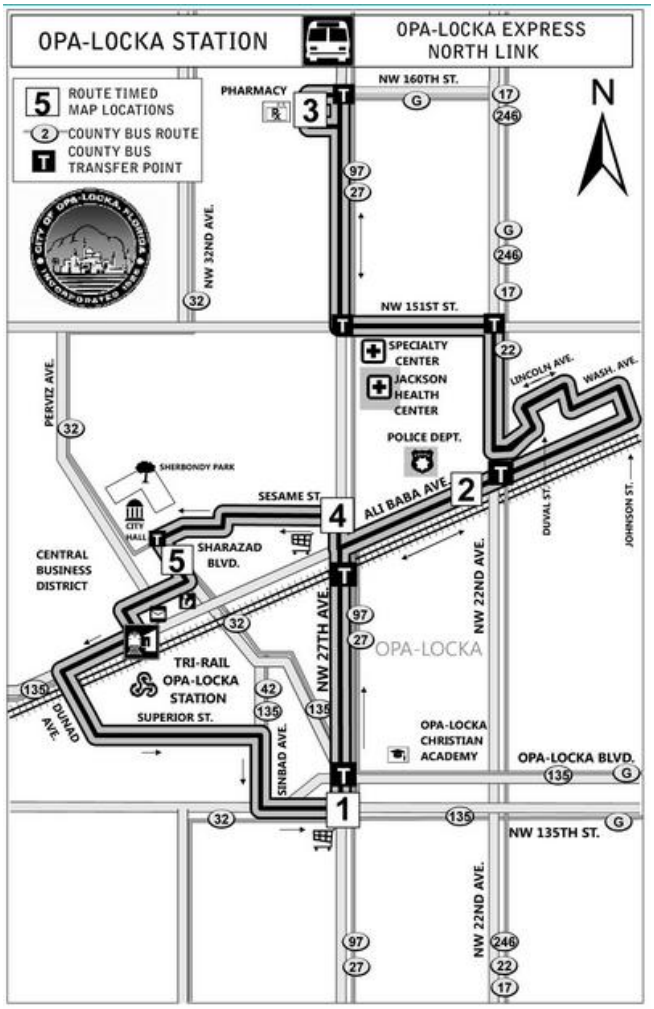
6.2.4.2 System Map and Schedule

6.2.4.2.1 *Design*

To maximize limited marketing resources, municipalities should design and print one system map and schedule that serves two purposes: (1) makes the public aware of the new service, and (2) provides enough details to give prospective customers a thorough understanding of the service. All marketing efforts should begin with the question "who is the target audience?" The look and feel, colors, size, weight of the paper, images etc. must be selected based on the target audience. Graphic design is an art, which is subjective by nature, and no two graphic designers will take the same target audience and service information and create the same design. But municipalities can ensure that it maximizes the marketing pieces' attractiveness and effectiveness by adhering to the following recommendations:

- Always design marketing pieces with your target market in mind; use full color designs, if feasible
- The cover page or initial impression should not appear wordy
- The route map(s) should include popular destinations, points of interests and connections with other transportation services (see Figure 16)
- Column format is recommended for the schedule

Figure 16: Opa-Locka Express Route Map (North Link)



6.2.4.2.2 *Availability and Visibility*

Typically, municipal transit services are limited in their geographical coverage. Mass media (radio and television) advertising would prove wasteful for such a service. Grassroots advertising has proven to be very cost effective at promoting MTPs. Marketing pieces should be distributed at all popular destinations impacted by the service. Marketing pieces should also be distributed at other popular locations within the municipality that may not directly be impacted by the service but whose patrons might still use the service. Locations such as existing transit stations and stops, city hall, shopping centers, recreational facilities, gyms, medical facilities, restaurants, movie theaters and libraries are locations that should be targeted.

Functions with large engaged audiences are ideal for an announcements to be made about the new municipal transit service. The person(s) leading those functions usually have some form of influence over the audience members, and their announcement has a reasonable chance of being properly received by the audience. Examples of these types of functions

are home owners and other civic association meetings, religious services, and elected officials and advisory board meetings.

The municipality should also inquire with the South Florida Regional Transportation Authority (SFRTA), DTPW, the Miami-Dade MPO, and other known transportation entities for opportunities to "cross-promote." It will allow one entity to piggyback on its marketing activity, allowing the second entity to leverage on the first entity's already established brand equity. Figure 17 shows an example of cross-promoting between the Fantastic Four movie and Crush Soda.

Figure 17: Cross-Promoting Example

6.2.5 PROCUREMENT OF VEHICLES

Of the municipalities that responded to the survey, five stated that they procured their vehicles through a stand-alone bid. Other municipalities stated that they procured their vehicles in conjunction with other contracts, such as through FDOT grants or through the American Recovery and Reinvestment Act (ARRA) of 2009 in coordination with DTPW, or through other means in coordination with DTPW.

6.3 COORDINATION PROCESSES

Coordination with DTPW and adjacent municipalities is key to ensuring a successful municipal transit program. The coordination can relate to bus stop sharing, making use of shared facilities, overlapping routes, sharing information for riders, or improved schedule coordination. The coordination is best documented through Interlocal Agreements.

An Interlocal Agreement (ILA) is a contract between public agencies where all parities mutually benefit. These shared agreements are highly effective ways for local entities to work together towards a common goal and save money at the same time. There are no set guidelines explaining how and when an ILA should be considered; instead, local jurisdictions

should ensure that an agreed ILA is legal and follows the guidelines set in the Florida Interlocal Cooperation Act of 1969. Some items to consider before the negotiation of an ILA are:

- Roles, responsibilities, and commitments;
- Liability, damages, overhead, property disposition at the termination of agreement;
- Procedures for amending and monitoring the agreement;
- Termination of agreement; and
- If additional review and/or approval by another local or state agency is required.

As stated previously, in order to receive PTP funding, a jurisdiction must establish an ILA with Miami-Dade County. In addition to an ILA with Miami-Dade County, there are opportunities to form agreements with other jurisdictions and agencies in order to benefit a community.

6.3.1 JURISDICTION TO JURISDICTION ILA

These agreements typically involve one jurisdiction providing a portion or all of its PTP funding to an adjacent jurisdiction in exchange for transit services. For example, the Village of Virginia Gardens and the City of Miami Springs currently have an ILA where the City of Miami Springs extends its transit circulator services to and throughout the Village of Virginia Gardens. In return, the Village of Virginia Gardens yields its entire PTP funding to the City of Miami Springs.

6.3.2 JURISDICTION TO DTPW ILA

DTPW is responsible for acquiring additional public transit funding sources for the jurisdictions throughout Miami-Dade County; some additional public transit funding sources are discussed in Section 3.2 Funding Sources. A jurisdiction interested in additional funding would have an ILA with DTPW, and where DTPW will apply for funding on behalf of the jurisdiction. The jurisdiction benefits by having an increased chance of winning additional funding and DTPW benefits indirectly by having Miami-Dade County receiving additional funding for more and improved transit projects. In addition to funding, jurisdictions can have ILAs where DTPW will provide transit services to the jurisdiction in exchange for PTP funding; similar to the jurisdiction to jurisdiction ILA.

6.4 IMPLEMENTATION GUIDELINES

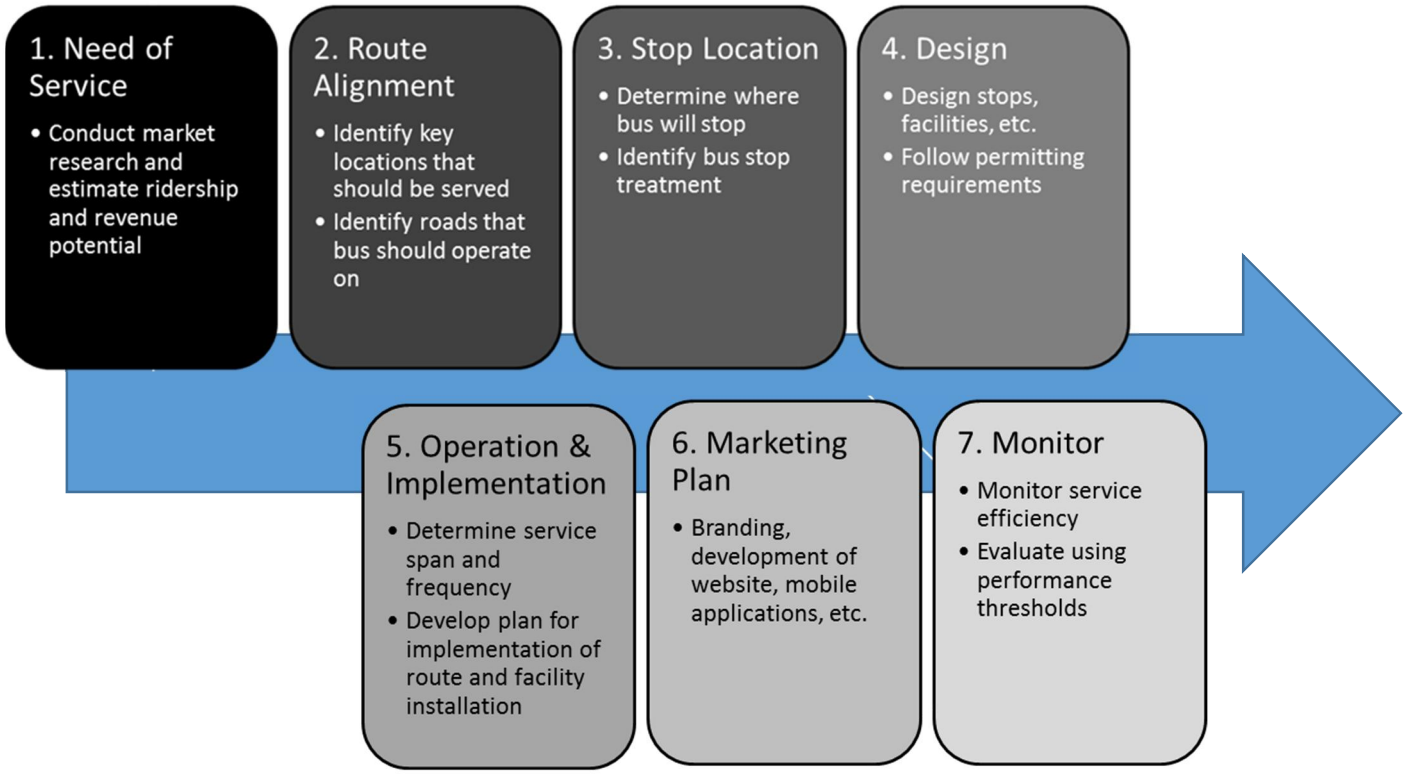
6.4.1 SERVICE IMPLEMENTATION PROCESS

The municipality wishing to implement new service must remain mindful of the purpose of the new service – satisfying a transportation need. As such, included in the planning process should be considering if it is more feasible to request that DTPW adds new or modifies existing route(s) to satisfy the municipality's transportation need rather than the municipality

taking steps to implement its own service (possibly with DTPW funding). DTPW has identified specific steps that should be followed if an entity (or the public) is requesting new or modified service. Early coordination with DTPW is highly recommended once a transportation need is identified.

If a municipality wishes to implement their own service, there are seven general steps that should be followed, as shown in Figure 18.

Figure 18: Route Planning and Implementation Process



6.4.2 FEDERAL, STATE, AND LOCAL REGULATIONS

6.4.2.1 Federal Requirements

Consistent with MAP-21's requirement for general transportation planning, federal guidelines for transit encourage local entities to identify their needs and to find their own solutions using funding from FTA, if applicable. FTA monitors how well the local entities are performing by requiring them to ensure all projected outcomes are measurable. FTA enforces transit providers' meeting their own goals through its ability to withhold funding or deny grant requests. In addition to identifying and meeting measurable service performance goals, FTA has strict requirements that, at a minimum, must be met to receive any federal transit funding. Details on the FTA requirements can be found by accessing the links below:

- Title VI (http://www.fta.dot.gov/civilrights/12328.html)
- Disadvantaged Business Enterprises (http://www.fta.dot.gov/civilrights/12326.html)
- Agency Safety Plans (http://www.fta.dot.gov/tso_15038.html)
- ADA (http://www.fta.dot.gov/civilrights/12325.html)
- Drug and Alcohol Program (http://transit-safety.volpe.dot.gov/DrugAndAlcohol/default.aspx)

6.4.2.2 State Requirements

In May 2015, FDOT adopted the *State Management Plan* (SMP) for transit programs, which details requirements, roles and responsibilities of all federal and state transit funding and oversight programs available through FDOT. Included in the SMP are the state and federal requirements listed above and presented relative to their respective funding programs. The complete SMP can be found at http://www.dot.state.fl.us/transit/Pages/SMP20150501.pdf.

The SMP introduced a state mandated triennial review of any system that provides public transportation in the State of Florida. The review covers at a minimum:

- Maintenance activities
- Single audit compliance
- ADA compliance
- DBE program compliance (if FTA funded)
- Title VI Program compliance (if FTA funded)
- Procurement compliance
- Charter and School Bus Program compliance
- Reporting (Progress/Quarterly and National Transit Database (NTD))
- Safety/Security
- Drug and Alcohol
- Financial Compliance

Any agency receiving federal or state funds to operate public transit service must have adopted policies and procedures addressing each item listed above. The triennial review will assess the policies and procedures as well as how well the agency is abiding by them. Guidelines to formulate plans and policies listed above are also included in the SMP.

6.4.2.3 County Requirements

Miami-Dade County, a designated FTA recipient and Community Transportation Coordinator (CTC) has an oversight role in any transit service providing the funds (regardless of the source) passes through the County. DTPW is expected to carry-out safety and other compliance reviews of its contractors and sub-recipients and will be held accountable by FDOT and

FTA for any noncompliance per respective funding program requirements. DTPW is expected to include conditions in sub-recipients agreements that allows them to fully carry out its oversight role.

6.5 TITLE VI CONSIDERATIONS

In accordance with the Title VI of the Civil Rights Act of 1964, no person shall, on the grounds of race, color, or national origin be excluded from participation in, or be denied the benefits of, or be otherwise subject to discrimination under any program or activity receiving federal financial assistance. Along with the Civil Rights Act, Executive Order 12898 (Environmental Justice) ensures that minority and/or low-income households are neither disproportionately adversely impacted by major transportation projects, nor denied reasonable access to them by excessive costs or physical barriers (United States Environmental Protection Agency [EPA], 1994).

Jurisdictions with/or considering a MTP must adhere to Title VI and Executive Order 12898. In order to ensure nondiscrimination, transit services shall be available for minority and low-income household communities equally to other communities. To guarantee adherence to Title VI regulations, each jurisdiction should assign a Title VI Coordinator to oversee compliance. In addition, triennial review of the level and quality of public transportation service within predominately minority areas should be conducted to ensure impartial transit serves. Continued coordination with DTPW should be maintained throughout the longevity of the transit service and all discriminatory acts, intentional or unintentional, shall be reported to DTPW and corrected.

7 ROUTE DESIGN GUIDELINES

This section outlines some of the major decisions that need to be made for planning a new route or system. The first step is to evaluate the need for service and the potential for a successful circulator service. Next, the primary purpose of the service needs to be identified. Once primary service purpose has been identified, it is then possible to determine the service span (hours of operation) and frequency required for the route to be successful. Route purpose is also a key factor in determining the alignment that will best serve the perspective ridership. Lastly, bus stop frequency and location is established depending on the conditions surrounding the alignment.

The guidelines that follow are intended to provide an overview of considerations and best practices for each of the steps that are essential to route planning.

7.1 EVALUATION OF SERVICE NEED

The primary step in planning a bus route is identifying if there is a need for service. The Miami-Dade MPO *Local Municipal Transit Circulator Policy Study*, published in June 2002, developed an evaluation form to determine if a community is a good candidate for circulator service. The form assigns a point value to various demographic data including population density, age of residents, household income, and automobile ownership. Additional criteria include the existence and limitations of existing service in the community, as well as stated support and commitment by community members. The evaluation form is provided in Figure 19.

Using this evaluation form, municipalities scoring above 60 points are identified as good candidates for circulator services. Municipalities that score between 40 and 60 points are identified as potential candidates for circulator services, while municipalities with scores below 40 points are classified as poor candidates for circulator services. It should be noted that since the development of this evaluation form, the CITT has begun providing funding through the half-penny tax approved in 2002.

Figure 19: Evaluation Scorecard

1. Indicators of transit dependency or the propensity to use circulator services. (50 points maximum for A through D)

(a) Population density less than 3,000 persons per square mile. (0 points)
Population density between 3,000 and 7,500 persons per square mile. (5 points)
Population density between 7,500 and 10,000 persons per square mile. (10 points)
Population density greater than 10,000 persons per square mile. (15 points)

(b) Less than 20 percent of residents aged 65 and older. (0 points)
Greater than 20 percent of residents aged 65 and older. (5 points)
Greater than 25 percent of residents aged 65 and older. (10 points)
Greater than 30 percent of residents aged 65 and older. (15 points)
Greater than 35 percent of residents aged 65 and older. (20 points)

(c) Median household income greater than $30,000. (0 points)
Median household income between $20,000 and $30,000. (5 points)
Median household income less than $20,000. (10 points)

(d) Greater than 10 percent of households with zero automobiles. (5 points)

2. Recognizable gaps (defined as outside a ¼-mile walking distance from a transit stop) in the community where MDT does not provide transit service.
(Yes = 15 points, No = 0 points)

3. Presence of specific activity centers in the community that are not serviced by MDT.
(Yes = 10 points, No = 0 points)

4. Often obtain requests for circulator service from citizens, employers, employees, etc.
(Yes = 10 points, No = 0 points)

5. Commitment of the municipality to partially or completely fund a feasibility study.
(Yes = 10 points, No = 0 points)

6. Identification of a detailed local funding source for the transit circulator service.
(Yes = 5 points, No = 0 points)

Source: Local Municipal Transit Circulator Policy Study

7.2 DETERMINATION OF SERVICE PURPOSE

A driving factor in route design is to determine the purpose of a new service. Though a service may serve several purposes, there is a primary objective that guides the route design. The purpose of a transit system is often based on location and demographic characteristics. It is important to identify early on what need is to be met, as this may result in very different types of service. Below are a few common roles of MTPs:

7.2.1 PROVIDE FIRST/LAST MILE CONNECTIVITY

This type of service aims to provide users with a connection between their origin or destination and another transportation service. Often this type of service would be provided at locations where other transit systems have limited access to the community. Examples may include providing access to/from a Metrorail or Tri-Rail station, or a Park-and-Ride. This type of service will best serve commuters that will use the transit for home-based-work trips.

7.2.2 EXTEND REACH OF REGIONAL AND COUNTY TRANSIT SYSTEM

Although similar to the previous, the purpose of this type of route is to provide service to areas that are not being reached by the regional or county transit system. In addition to serving residential and employment areas, this type of route would provide connections to other key attractions such as recreational and shopping areas. This type of service can meet the demands of home-based-other trips as well as home-based-work trips.

7.2.3 PROVIDE CIRCULATOR SERVICES WITHIN A COMMUNITY

This type of service differs from the previous two in that it operates independently of other transit systems. Rather than connecting on a county or regional scale, this service aims to assist with trips located within a community or within the municipality. This type of route may have a variety of uses and typically serve shopping and recreational trips, though they may also provide service to commuters that live and work within the community.

7.2.4 PROVIDE LIFELINE SERVICES

The primary purpose of a lifeline service is to provide connectivity for those with no alternative mode of transportation. This type of service may have similar destinations to the circulator service, but is aimed at demographics that often cannot walk, bike, or drive. The goal is to provide improved accessibility to those that have limited mobility: whether they be younger children, disabled, or elderly.

7.3 SERVICE CHARACTERISTICS

The three types of service characteristics discussed in this section include hours of service, or service span, frequency, and scheduling. All of these characteristics are dependent on service purpose and type of ridership.

7.3.1 SERVICE SPAN

The hours of operation are a critical factor that can impact whether or not a service is successful. Typically, the more service provided, the more attractive it will be for riders. However, it is not feasible or prudent to provide service at times where ridership volumes do not support it. Therefore, a thorough understanding of potential ridership is beneficial in determining what span of service is required for a particular route.

Services aimed at providing first/last mile connectivity primarily serve commuters going to/from a transit station to get to work. Therefore, for this type of service to be successful, hours of operation should at minimum include morning and evening peak-hours. To best serve these commuters, it is recommended that service begins prior to the morning peak-hour, and terminate after the afternoon peak-hour. Typically, services that offer first/last mile connectivity should operate between the hours of 6:00 A.M. and 8:00 P.M. However, depending on the demographics and the service hours provided by the transit systems to which the route connects, service hours may need to be longer. Although the majority of ridership on this type of route will be commuting in the mornings and evenings, it may still be necessary to provide some level of service during the day. This type of service typically would only operate on weekdays, and may have reduced hours on Fridays.

Bus routes that primarily serve as an extension of a regional or county transit system will typically operate within the hours of service provided by the transit system to which they are connecting. It is also important to consider the nature of the attractions or destinations that the route is reaching. Routes that primarily serve recreational or shopping destinations will typically provide service starting in the late morning. Routes whose primary destination is a city center may need to offer all-day service. It should be noted that these types of routes may, and often will, serve multiple destinations that attract trips at different times of day. Such routes may have extended service on Fridays, Saturdays, and Sundays to better recreational and shopping trips.

Community circulator routes typically serve non-commuter trips and are geared more towards shopping and other "home-based-other" trips. For this reason, community circulators may have similar operating hours to those provided by routes that serve as an extension to larger transit systems. However, community circulators are not necessarily linked to other transit providers and therefore may extend beyond the service hours set by other transit systems. Depending on the specific purpose, this type of service typically operates seven to nine hours per day (9:00 A.M. – 5:00 P.M., for example), and may or may not provide service on weekends.

Lifeline services typically provide service where no alternative is available. The primary riders for this type of service include elderly and disabled. Hours of operation vary depending on the type of lifeline service. This type of service may operate on a fixed route, as a flexible route, or as an on-demand (paratransit) service.

7.3.2 SERVICE FREQUENCY AND SCHEDULING

Service frequency, or headway, is a key factor in the level of service provided by a route. Headway is defined as the time between buses. Longer headways (lower frequency) have a negative impact on ridership. Though some types of circulator services may require shorter frequency than others, all circulators are encouraged to maintain a headway of 30 minutes or less. Higher service frequencies will be more attractive to riders as they allow for greater flexibility. However, frequency is directly related to cost and therefore financial considerations should be made with regards to headway. Frequency may be varied by time of day depending on peak ridership. This is particularly true for routes that provide first/last mile connectivity and will require greater levels of service in the morning and evening peak-hours than they do during the day.

There are two methods of providing a circulator service: headway-based service and schedule-based service. Users of the service may not notice a difference between a schedule-based and a headway-based schedule, as the user experience is still largely based on frequency. However, there are advantages and disadvantages associated with each. In both cases, it is very important for buses to be as on-time and reliable as possible, or riders will become frustrated and may be deterred from using the service.

7.3.2.1 Schedule-Based Service

Schedule-based service means that a bus will be at a given location at a specified time. This is particularly useful to users when service is occurs at lower frequencies (15 or more minutes between buses) as they are able to determine what time the bus will be at the stop and can schedule accordingly. Ideally, a bus should pass a location at the same time every hour, this is known as a “clockface” schedule. Route schedules should be coordinated with the schedules of other transit providers to provide “timed-transfer networks”. This is particularly important for routes that primarily offer first/last mile connectivity and those that serve as an extension of a larger transit system.

7.3.2.2 Headway-Based Service

Headway-based scheduling means that service is provided every ‘x’ minutes. For high frequency service, this is beneficial as there is no need to create and post schedules for when the bus will be at each stop. Through headway-based scheduling it is also possible to adjust service (adding a new stop, for example) more easily. However, for lower frequency, riders may not know when the next bus will come without knowing how recently the previous one passed by. It is recommended that appropriate headways (5, 10, 15, 20, 30, or 60 minute headways) be used to simulate a “clockface” schedule.

It should be noted that Google Maps® uses schedules to provide information to users. Therefore, if a municipality wishes to share their route information through Google Maps®, a schedule-based service is preferable. However, it is possible to put together a timetable for headway-based services.

7.4 ALIGNMENT

Transit circulator services, such as those provided through the MTP, will vary greatly depending on the purpose and location of the route, as well as the demographic it is serving. Some of the key aspects of the route alignment that should be considered include: travel time/route length, route destinations, and which roadways should be used. Additionally, route alignment should consider how the service will interact with other routes by analyzing route connections and route spacing. It should be noted that municipal transit routes must have at least 70% of their alignment within the municipality's boundary, as stated in Chapter 31, Article III, Section 31-113 of the Code of Metropolitan Dade County. For some municipalities, exceptions may be made in coordination with the County. This requirement ensures that routes from different municipalities complement, rather than compete, with each other.

7.4.1 TRAVEL TIME/ROUTE LENGTH

Route length and travel time are of primary importance when serving "choice riders", (i.e., riders that chose to ride the bus but have alternate modes of transportation available to them). For this demographic, it is important that the route be as short and direct as possible. However, for municipal circulators, directness may not be a priority depending on their primary purpose. Although travel time and route length are closely related, directionality of the route may be a critical consideration for routes that operate in a loop. In some instances, two destinations may be physically near each other, but the service takes a long time to get from one to the other. This should be avoided if possible as it may render the service unattractive. In addition to directionality, turning movements can have a significant impact on travel time. Minimizing the number of turning movements, and particularly left-turn movements, will reduce travel time resulting in increased attractiveness to potential riders.

7.4.2 ROUTE DESTINATIONS

The purpose of the circulator service is the driving factor for this aspect of the route alignment. While not all destinations can be reached on a single route, it is important to identify which ones will best serve the ridership demographic that is being served by the route. Key destinations may include residential areas, employment centers, recreational and shopping areas, and transfer centers to other transit services.

7.4.3 ROADWAY CHOICE

An essential part of route alignment is determining which roadway to travel on. While arterials have the advantage of improved traffic flow and travel time, they may not provide access to some destinations and ridership concentrations, such as residential neighborhoods. Furthermore, considerations should be made with regards to state and county requirements for facilities located on such roadways. Arterials, and some collector roadways, do provide the advantage of improved connectivity with other routes, as they are more likely to share segments with one or several other services.

7.4.4 RECOMMENDED ALIGNMENT BY SERVICE PURPOSE

Circulators that provide first/last mile connectivity should strive to provide a service that brings riders to/from major transit connections as directly as possible. However, it is important that the route reaches as many potential riders as possible or else it will not effectively link the first/last mile. Depending on the land use of the area, it is recommended that on average, origins/destinations be less than 15 minutes (~3 miles) from the transit station. The key destination for this type of service include residential areas and employment areas, as well as transfer centers for other transit services such as Tri-Rail and Metrorail stations and park-and-rides, or Bus Rapid Transit (BRT) stations. Most transit stations are located along arterials and major roadways. However, to best serve the riders that would use this service to get to/from their households, it may be beneficial for the route use collector and some local roads and provide more direct connection to residences.

Routes that serve as an extension of a regional or county transit system should strive to be as direct as possible. These routes may be intended to provide a connection between a larger transit system and key attractions. Depending on the attractions that are being connected and the land use of the area, route length may be as much as 10 miles. Therefore, it is recommended that such circulator service provide routes that are as direct as possible. For this purpose, it is recommended that the service operate on arterial roadways that offer the highest level of mobility. Attractions that are usually included with this type of service may include high density residential centers, large employment centers (office parks), shopping centers (malls), downtowns, and recreational destinations.

Community circulator services can vary greatly in nature and will serve a variety of riders. These routes should aim to provide connectivity to all or a portion of a municipality. Typically, these routes operate in loops that circulate though a large area rather than up and down a single corridor and as such may vary in length depending on the area of the community that is being served. For community circulators, directionality plays a key role in ensuring that the service is attractive, as described above. It is recommended that these routes remain under 5-10 miles in length. Community circulators often provide service to government buildings such as City Hall, the Library, Courthouse, as well as key recreation and shopping destinations. These types of services will often use a mix of arterial and collector roads.

Similarly to community circulators, routes that provide lifeline services can vary greatly depending on location, demographics, and land use. These routes will also often operate in a loop that serves several key destinations such as grocery stores, hospitals and/or medical clinics, schools, and assisted living facilities. For these, route length is often less of a concern as the ridership and the ridership is typically less sensitive to travel time. Typically, lifeline services will largely operate on local roadways to provide the greatest level of accessibility to those in need, and may even offer door-to-door service. In some cases lifeline services may operate as para-transit (also known as dial-a-ride) and may not follow a specific route alignment.

Table 9: Route Alignment Guidelines

Service Purpose	Route Length	Primary Route Destinations	Primary Roadway Choice
First/Last Mile Connectivity	< 5 miles	Transit Stations, Residential, Employment	Collector, Arterial
Extension of Regional Transit System	< 10 miles	Transit stations, High-density residential, Recreational/shopping, City centers	Arterials
Community Circulator	< 5-10 miles	Recreational/shopping, City centers, Government buildings	Collector, Arterial
Lifeline Services	< 10 miles	Assisted living, Medical clinics/hospitals, Government buildings, Grocery stores	Local, Collector

7.5 STOP LOCATION AND SPACING

Bus stop location and spacing will impact accessibility of transit as well as the rider experience. Generally, stops that are placed at large intervals will deter users due to reduced accessibility to destinations along the route. On the other hand, stops that are too closely spaced may provide improved accessibility, but result in additional travel time and delay experienced by the riders, reducing overall service satisfaction. This section provides some guidelines for bus stop location and frequency.

If a proposed route serves locations currently served by Metrobus or another municipal route, sharing existing stops is encouraged. Sharing stops reduces the effort required by the public to learn stop locations and identifying related stop features and provides for easier transfers. It should be noted that overuse of existing stops along a single route may be an indication of redundant or duplicative service. Details regarding bus stop design and amenities are provided in Chapter 8 Design Guidelines.

7.5.1 STOP FREQUENCY AND STOP LOCATION

Frequency of stops may vary depending on the primary purpose of the route, total distance traveled by the route, and the land use surrounding the alignment. It is recommended that bus stops in urban areas should be placed every 1/8 of a mile while routes running through suburban areas should be placed between 1/8 and 1/4 of a mile (*Guide for Geometric Design of Transit Facilities on Highways and Streets,* AASHTO 2015. Chapter 5, page 11). MDT has established guidelines for number of stops per mile based on density. A summary of stop frequency from the *Miami-Dade Transit Service Standards* (adopted November 4, 2009) is provided in Table 10, below.

Table 10: DTPW Stop Frequency Guidelines

Density	Stops per Mile
High density, Central Business District (CBD), shopping centers, special needs	5
Medium density, fully developed residential area	4
Low density, residential	3
Rural	2

Source: Miami-Dade Transit Service Standards

Stops should be located at or near key destinations. These are typically major rider generators such as shopping, employment areas, dense residential areas, and other government buildings. Stops should be located within a ¼ mile of such destinations to minimize walking distance. Because of the nature of bus services, a bus may dwell at a stop for as long or as little as is necessary. For major stops that attract larger number of ridership, such as at shopping centers, it is recommended that buses dwell for at minimum 30-45 seconds. If a schedule-driven route is operating ahead of schedule, it is recommended that it wait a bit longer at major stops/destinations to make up the time. At other stops that are not major route generators, dwell time (and any stopping) is dependent on need. In particular, if the stop is a curb-side stop, it is recommended that dwell time is kept to a minimum to ensure that the vehicle minimizes impacts on traffic flow.

On-street bus facilities may include curb-side stops, bus bulbs/ curb extensions, and bus bays. Details on the design of these various types of on-street stops are provided in Section 8.3 Design Considerations at Bus Stops.

7.5.1.1 Curb-side Stops

When possible, curb-side bus stops should be located beyond driveways. Some desirable characteristics for stop locations include:

- Nearby intersections are signalized
- No driveways or physical obstructions
- Major trip generators are nearby
- Space is available for amenities
- Curb length is adequate
- Can accommodate passengers with disabilities
- Convenient pedestrian/cyclist connections
- Street lighting is available

On-street facilities may be classified as far-side, near-side, or mid-block stops. Far-side stops are stops located at the far side (after) an intersection, while near-side stops are located at the approach to an intersection. The following characteristics primarily apply to curb-side bus stops, though some aspects may also be applicable to alternative bus stop treatments such as bus bulbs and bus bays.

- Far-side stops are preferable at locations where there are high traffic volumes, parking is prohibited, there are sight-distance limitations, and when the bus makes a left turn.
- Near-side stops may be used when on-street parking is permitted, traffic conditions are not critical, and the bus makes a right turn.
- Mid-block stops are generally used at major passenger generators or where space at adjacent intersections is insufficient.

Some advantages and disadvantages of each stop location are provided in Table 11 below.

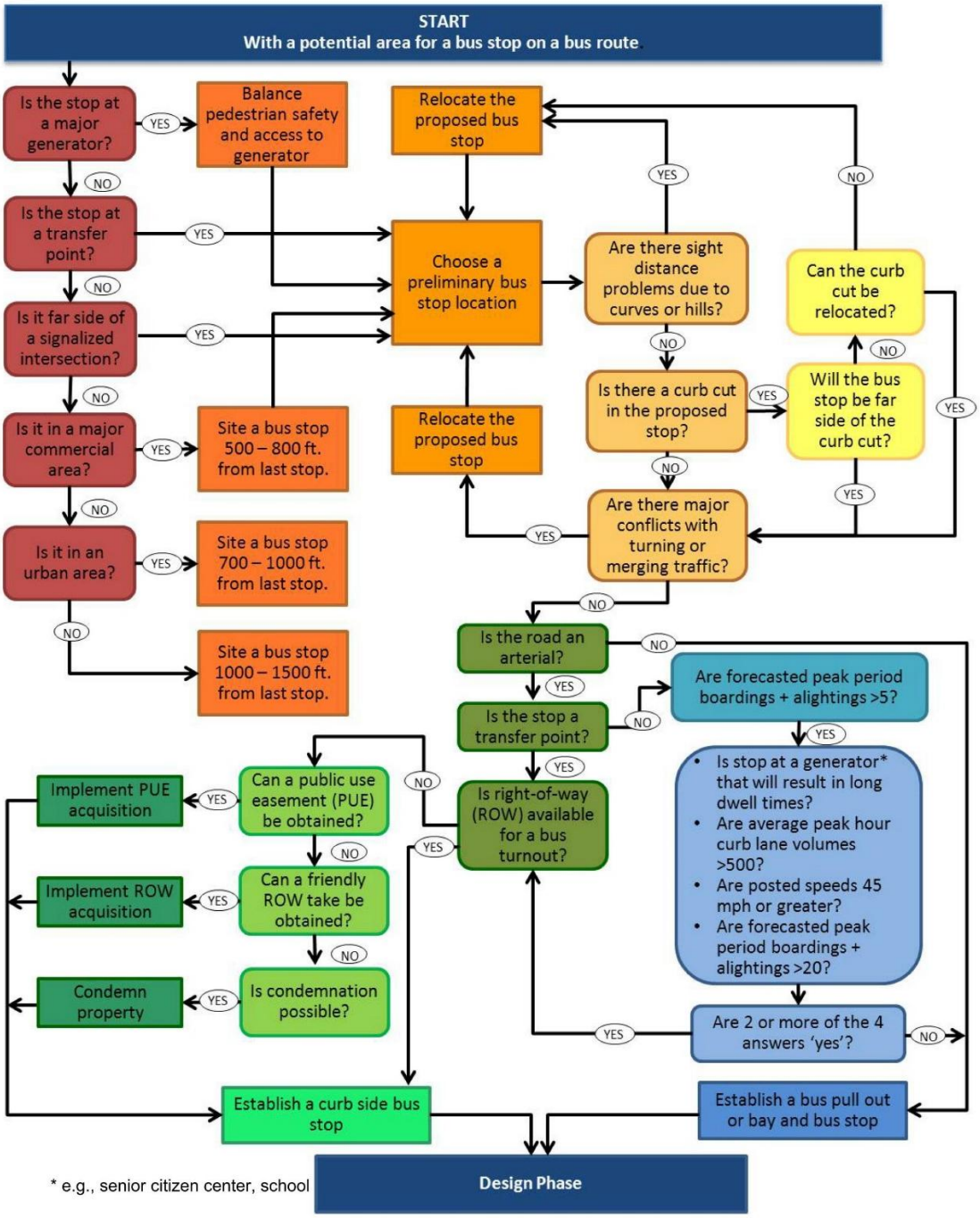
Table 11: Comparison of Far-Side, Near-Side, and Mid-Block Bus Stop Locations

Advantages	Disadvantages
Far-Side Bus Stop	
• Minimized conflict with right-turning vehicles • Minimized sight distance problems on approaches • Encourages pedestrians to cross behind the bus • Provides longer deceleration distance for bus • Allows driver to take advantage of gaps in traffic that are created by signalized intersections • Improved sight distance for pedestrians • Conducive to bus signal priorities at signalized intersections	• Could result in traffic queue into intersection • May obscure sight distance for crossing vehicles • Can cause double stopping (stop during red light and then again at far-side stop) • May increase number of rear-end accident associated with bus stopping unexpectedly (particularly if bus was already stopped at a red light)
Near-Side Bus Stop	
• Allows passengers to access buses closest to crosswalk • Allows driver to pull away from curb using the width of the intersection • Eliminates potential for double stopping • Allows boarding/alighting when stopped at a red light	• Increases conflict with right-turning vehicles • Precludes traffic signal priorities • May obstruct sight distance to vehicles approaching intersection to the right of the bus • Increases sight distance problems for crossing pedestrians • Reduces intersection capacity if stopped during green cycle
Mid-Block Stop	
• Minimizes sight distance problems for both vehicles and pedestrians • May result in passenger waiting areas experiencing less pedestrian congestion	• Encourages pedestrians to cross street mid-block • Increases walking distance for pedestrians crossing at intersections • Requires additional restrictions on parking

Additional information regarding bus stop location can be found in Chapter 5 of the AASHTO *Guide for Geometric Design of Transit Facilities on Highways and Streets*.

A planning flowchart from *Accessing Transit Design Handbook for Florida Bus Passenger Facilities, Version 2,* 2008 is provided below. The flowchart is a useful tool to aid in decision-making when considering bus stop placement along a roadway.

Figure 20: Bus Stop Placement Guidelines

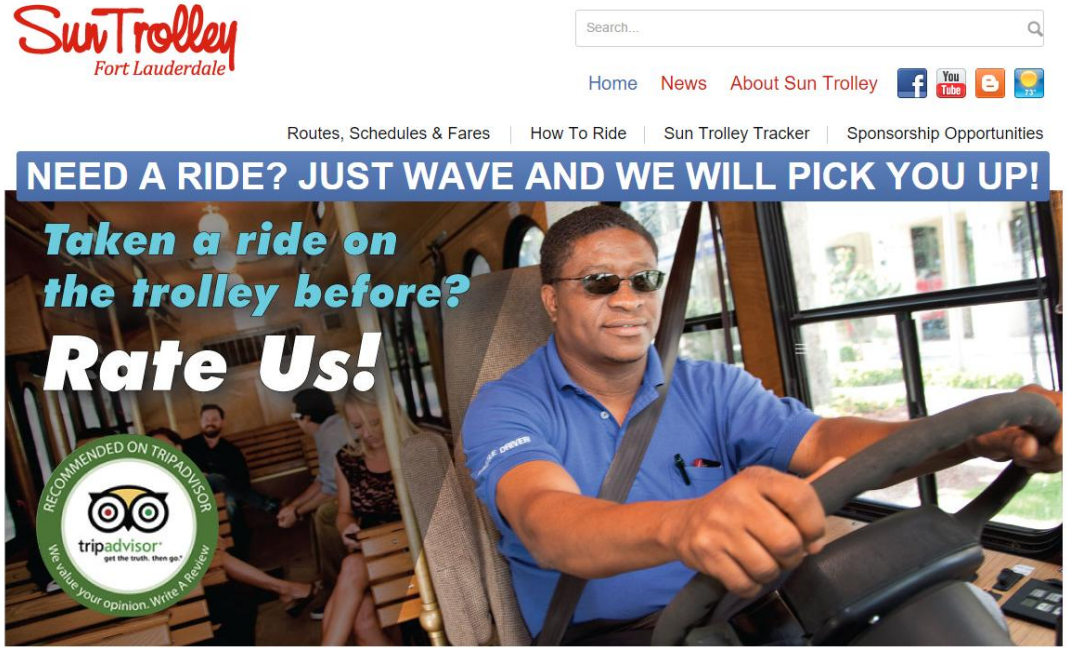


Source: Accessing Transit Design Handbook for Florida Bus Passenger Facilities, Version II, 2008

7.6 WAVE/ FLAG AND STOP SERVICE

It is not uncommon for local/community fixed route bus transit to offer "Wave and Stop" boarding services, which allows riders to stand almost anywhere along a fixed route and wave to the driver to stop and pick him/her up without the person having to wait at a designated bus stop. Some services also offer the Wave and Stop method to compliment designated, signed bus stops. The major advantage of the Wave and Stop method is that prospective passengers do not need to memorize specific stop locations or walk to a stop from their current location. Conversely, in addition to negatively impacting schedule adherence and travel time reliability, a major disadvantage is that drivers might attempt to stop when it is not necessarily safe to do so – such as when cars behind them are not expecting the bus to stop, which increases the chances of rear end collisions.

Figure 21: Sun Trolley, Fort Lauderdale, Website Advertising "Wave and Stop" Policy



Source: http://www.suntrolley.com/

Wave and Stop methods have proven to be effective in areas with relatively high pedestrian traffic and vehicles traveling at relatively low speeds. If an agency chooses to implement a Wave and Stop policy, conditions under which the driver stops for passengers should be very clearly stated. Specific conditions under which a driver should not stop because it is not safe to do so should also be very clearly defined. These conditions must consider the distance and times it takes to bring the transit vehicle to a complete stop relative to the speed of the vehicle.

8 DESIGN GUIDELINES

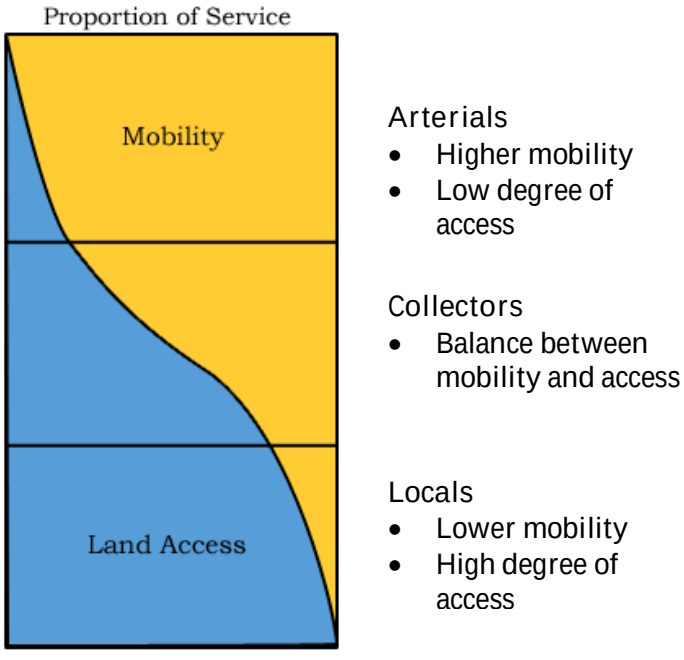
8.1 CONSIDERATIONS

When designing the stations or other physical features of MTP's, several factors will impact the design including road type, vehicle type and the overall nature of the transit stop. The factors are discussed in more detail in the following sections.

8.1.1 ROAD TYPE

For MTP's the proposed service and new facilities and/or improvements to existing facilities must consider the jurisdiction and owner of the facility (right-of-way) that will be directly and indirectly impacted. State roads are usually classified as arterial facilities with higher vehicular volumes and speeds with relatively lower direct access to land uses. Municipal and county roads are usually classified as collectors or local facilities with relatively higher direct access to land uses. The relationship between land access and mobility is shown in Figure 22 below. The entity proposing the improvements must verify ownership of the road and confirm requirements to make any modifications thereto with the owner. In some cases, the State of Florida and/or County, upon approving the proposed improvement, may elect to make the proposed improvement(s) by means of their own processes.

Figure 22: Relationship of Functional Classified Highway Systems in Serving Traffic Mobility and Land Access



Source: FHWA

Florida law (337.408 F.S.) allows certain transit amenities (i.e., bus shelters, benches) and signage to be located in the State of Florida's right-of-way (except limited access highways) via a streamlined process that does not require the entity to receive permits from the state. Permits or documentation of permission to place said amenity must come from the prevailing municipality or county if the location is an unincorporated area. If after the amenities have been installed or constructed, it hinders normal traffic operations (i.e. line of sight) or violates any applicable law or rule, the responsible party will have to remove, relocate or modify said item. Coordination with FDOT's Office of Modal Development (OMD) is encouraged prior to designing any proposed transit improvement(s) on state owned roads or facilities. Likewise, coordination with DTPW is encouraged prior to designing any proposed transit improvement(s) on county owned roads or facilities.

8.1.2 BUS TYPE

Municipalities have the freedom to purchase or lease vehicles of their choosing that they feel will best satisfy the market's needs and increase the chances of the service succeeding. The size and capacity of the bus must be able to accommodate the projected ridership. The look of the vehicle should complement the make-up of the neighborhood it will serve aesthetically and functionally. Turning radii of the streets and driveways on which the bus will operate and facilities it will enter should also be considered.

Any municipality looking to acquire transit vehicles is encouraged to check with the State of Florida's Transit Research Inspection Procurement Service (TRIPS) program. TRIPS was created in 1995 to provide agencies with a means of procuring quality vehicles at the lowest possible price. By means of an FDOT contract, TRIPS is administered and managed by the University of South Florida's (USF) Center for Urban Transportation Research (CUTR). Under the TRIPS program, vehicles' manufacturers' warranty claims are verified via rigorous quality assurance processes, and lower purchase prices are achieved via economies of scale as the State makes larger purchases on behalf of multiple agencies in Florida who would normally not qualify for volume discounts.

8.2 DESIRED AMENITIES

Research has indicated and reaffirmed the general public is more likely to ride transit when more amenities are available at bus stops. Legally, however, bus stops are not required to have amenities to increase the customer's comfort. A bus stop is simply a designated location where a bus will stop if there are passengers to board or alight the bus.

A site can be designated a bus stop without amenities to increase passenger comfort, but the operator will not be maximizing the attractiveness of the service without inclusion of as many amenities as feasibly affordable. Municipalities should be mindful of the context in which the amenities are being implemented and should attempt to construct said

amenities in a manner that complements the existing or planned neighborhood. The list below includes common amenities that may be implemented based on available right-of-way and budgets:

- Shelters*
- Benches
- System Maps / Transfer Information
- Trash Receptacles
- Bicycle Racks/Lockers
- Leaning Rails
- Landscaping
- Vehicle Locator Information
- Bollards
- Emergency Call Boxes
- Video Monitoring
- Public Art
- Vending Machines

** Shelters must be built in compliance with the Florida Building Code wind-loading criteria.*

Because of limited available resources, transit service providers must prioritize the amenities they would consider implementing and adopt policies to determine when and where certain transit amenities can be implemented. Many municipalities permit advertising agencies to place bus benches and bus shelters along bus routes in exchange for allowing the advertising agencies to place revenue generating print ads on said amenities. DTPW has a policy that a stop must have a minimum of 100 boardings before bus shelter is considered for that stop.

Per FDOT transit design guidelines, bus stop signs must be posted at all bus stops and bus passenger facilities and must include the route or routes available to passengers from that bus stop. Agencies should consider the signs' vertical clearances, integrity of the mounting, crashworthiness of signposts (i.e. breakaway when struck), and proximity to intersection and roadway features (i.e., curb, gutter other signs). ADA considerations must also be given when posting and mounting bus stops signs in addition to designing the bus stop site. Additional information on ADA bus stop requirements can be found at http://www.fta.dot.gov/civilrights/12325.html.

8.3 DESIGN CONSIDERATIONS AT BUS STOPS

8.3.1 UTILIZING EXISTING DTPW BUS STOPS

Analysis of the existing stop should be performed to confirm the stop location and features satisfy the needs of the traveling public and complement the new service. If modifications to the existing stop is required to have it adequately serve the newly proposed service, coordination with the prevailing entities (i.e., right-of-way owner, advertising agency) is required as well as with the transportation entities who currently use the stop for existing service. This coordination will ensure that the new improvements will not conflict with nor disrupt the existing services' needs.

8.3.2 DESIGNING NEW BUS STOPS

8.3.2.1 Bus Bays

A bus bay is a specially-designed or designated branch from or widening of a road at a transit stop, station, terminal, or transfer center. Bus bays provide access from travel lanes that allow the buses to stop, without obstructing traffic, while dwelling or while passengers board and alight. Bus bay designs must consider adequate distance for the bus to enter the bus bay, stopping/landing area, and adequate distance to merge back into the travel lanes. Bus bays are categorized as follows:

- Closed: Consists of a physical entrance taper, a stopping area, and a physical exit taper
- Open: Stopping area with no physical entrance or exit taper; bus exit and entrance may be identified with pavement markings

8.3.2.2 Bulb-Outs

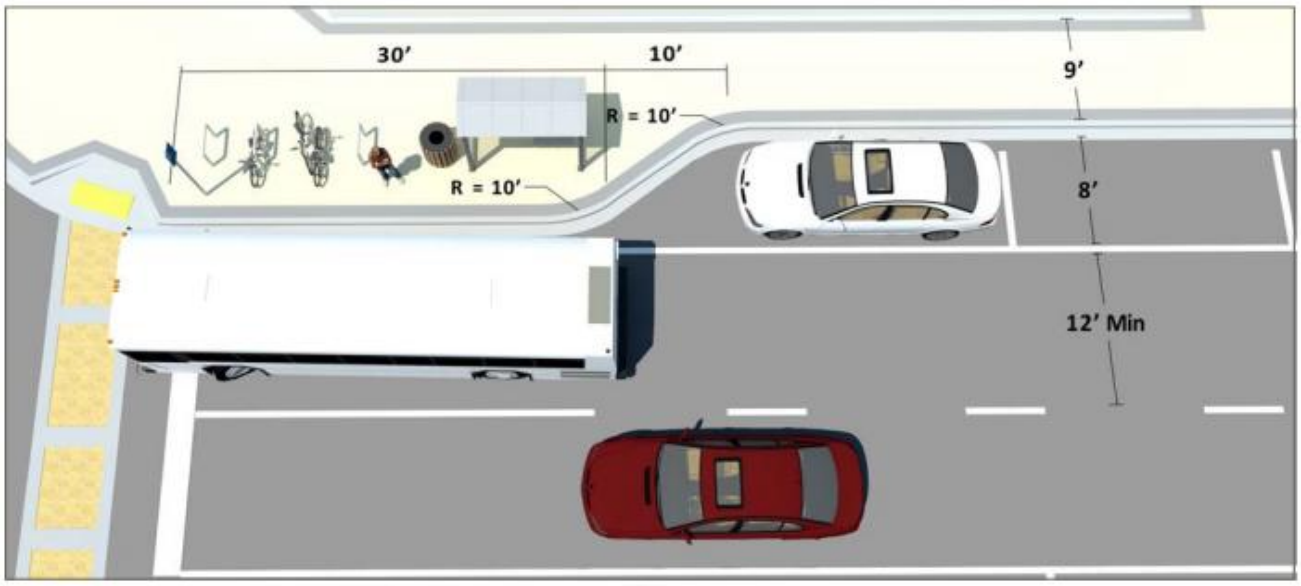
Bulb-outs are extensions of the sidewalk into the parking lane (where on-street parking is present), which allows buses to stop curb-side without weaving in and out of the travel lane. As such, they help increase travel time reliability by avoiding delays associated with buses reentering traffic lanes. Bulb-outs are often used for bus shelters, benches, and signage. The dimensions of the bus bulb-out can vary based on the neighborhood's characteristics, surrounding land-uses and site-conditions. Bulb-outs can also shorten the crossing distance for pedestrians. Connectivity between sidewalks and bulb-out and its amenities should be seamless.

It should be noted that since bulb-outs allow buses to stop in the travel lane, there may be stacking behind stopped buses. More details can be found in *TCRP Report 65: Evaluation of Bus Bulbs*.

Bulb-outs should be used:

- On streets with design speeds below 40 mph
- Near side of signalized intersections
    - Midblock is allowed where the bulb-out supports a midblock transit generator
- To compliment pedestrian and traffic calming activities
- Where on-street parking is present

Figure 23: Example of Near-Side Bus Bulb-Out



Source: 2013 Accessing Transit

8.3.3 IMPLEMENTATION GUIDELINES

When designating a bus stop, it should be explicitly stated and agreed to by all parties involved, who will perform maintenance of the bus stop and under what terms and conditions. Maintenance of a bus stop usually includes (1) trash collection, (2) litter clean-up, (32) lightbulbs replacement, (4) painting (graffiti removal) as-needed, and (5) landscape irrigation and replacement.

There are several guidelines in place for bus stop design and implementation. However, municipalities should primarily be concerned with meeting ADA and setback requirements. FDOT and County design regulations are applicable on State/County roads, and may not be required for installation on local roadways. However, these studies provide standards that may (and should) be used as guidelines.

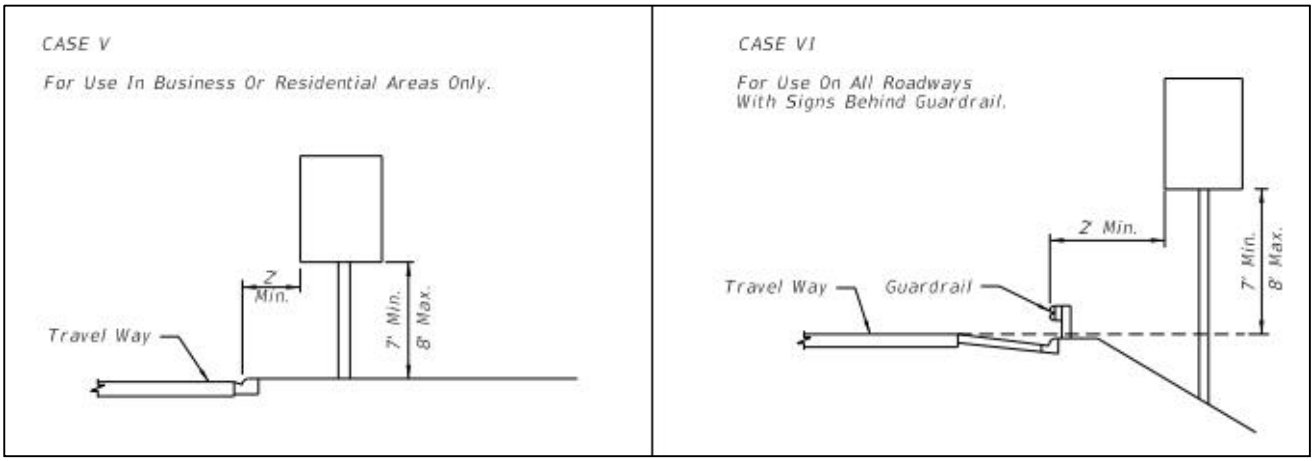
8.3.3.1 Permitting

Bus shelters, benches and other constructed transit facilities and amenities, whether located on the public right-of-way or private property, must meet all applicable local building codes, permit requirements, and land development codes (Rule 14-20, F.A.C.).

Regarding the bus operation, Rule 14-90, F.A.C. addresses the type of driver's license bus operators must possess and medical clearances required.

Typically, Florida law allows transit operators to place designated bus stops within the state right of way without a defined permitting process providing the designation and placement of sign demarking the designation can be done without compromising the safety of the traveling public. If FDOT determines that said bus stop is unsafe or not ADA compliant, it may commission the removal of the stop at the transit operator's expense. Transit bus stop signs must be designed per the Manual on Uniform Traffic Control Devices (MUTCD) standards and must be attached to supports meeting the location, height, and lateral placement requirements established in the FDOT's Design Standards, Index Number 17302. Figure 24 provides examples of said placement, below.

Figure 24: Typical Sections for Placement of Single and Multi-Column Sign (sample)

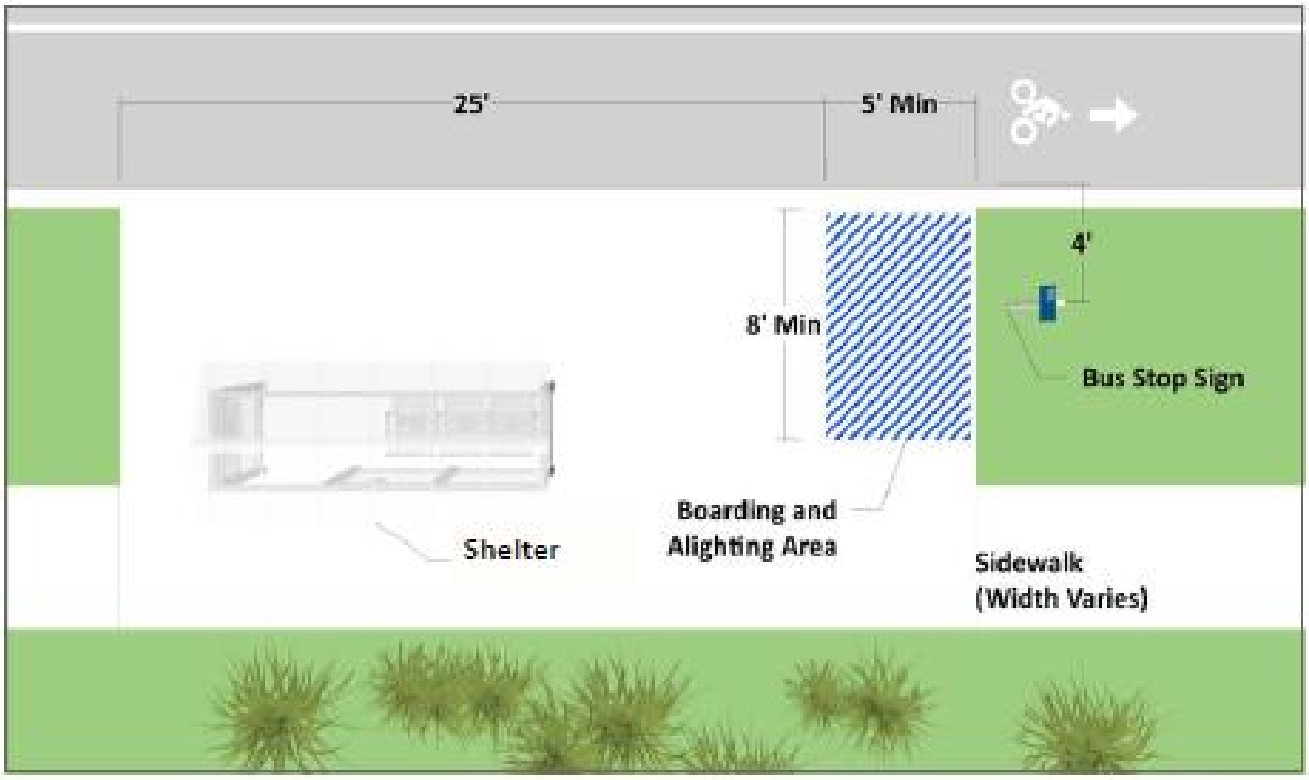


Source: FDOT Design Standards

Complete copies of Index Number 17302 are available at: www.dot.state.fl.us/rddesign/designstandards/standards.htm.

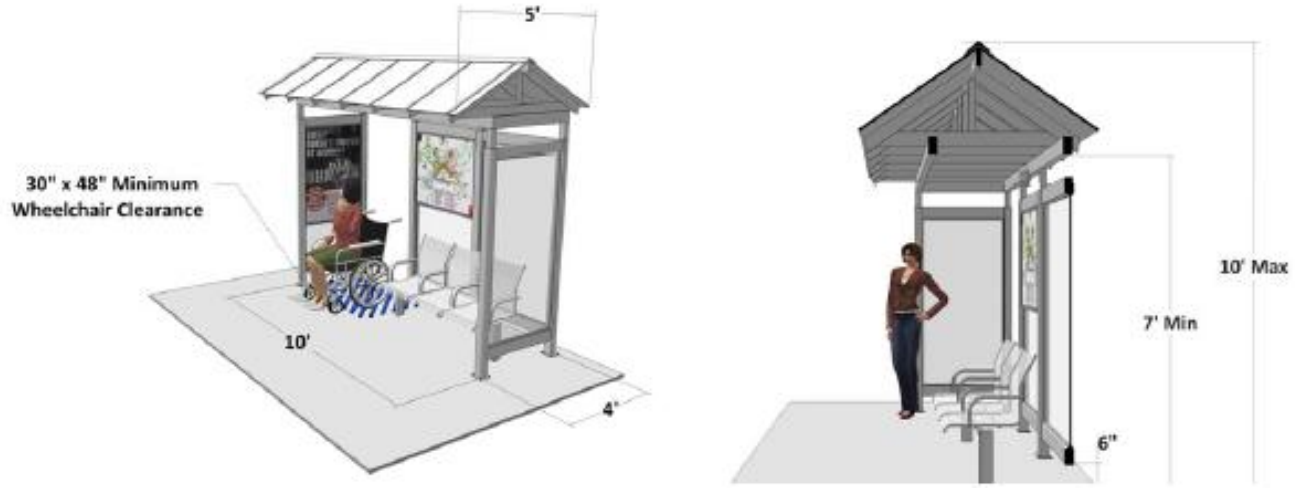
For placement of benches and shelters at designated bus stops, the entity wishing to place the shelters and/or benches must meet minimum FDOT transit design guidelines as well as local permitting requirements. For example, FDOT requirements relating to boarding and alighting (B&A) areas would read "A sidewalk and/or ramp provided with the B&A area shall be a minimum of 60 inches in width, and the ramp shall not exceed a slope of 1:12 (8.33%). A detectable warning surface is required where a sidewalk associated with a B&A area connects to the roadway at grade. Except for the area adjacent to the 6-inch curb, the areas surrounding the B&A area shall be flush with the adjacent shoulder and side slopes and designed to be traversable by errant vehicles." An example is provided in Figure 25, below.

Figure 25: Bus Stop Boarding and Alighting with Shelter



Source: 2013 Accessing Transit

Figure 26: Typical Bus Shelter Design



Source: 2013 Accessing Transit

Rule 14-20 F.A.C. allows the placement of bus shelters and benches that support designated transit stops if said placement is permitted by the municipality in which the amenity is to be placed, following the municipalities' respective permitting process, or Miami-Dade County's process in unincorporated Miami-Dade County. Miami-Dade County's permits are issued by DTPW and the process involves the following:

8.3.3.1.1 *Bus Benches Requirements (per County Ordinance)*

- Contracts for placement of bus passenger benches shall be awarded by territory based upon competitive bids or request for proposals;
- Permittee shall have the exclusive right to place bus passenger benches in the geographical territory specified in the contract;
- The permittee shall be responsible for compliance with applicable State and Federal regulations;
- Each bus passenger bench shall require an application, permit, and fee;
- DTPW shall have the right and duty to refuse approval of any location, or to require the removal of a bus bench from any location, when it appears that a traffic hazard may be created or that the public safety may be endangered, or when DTPW determines that the bus bench is improperly placed or is not compatible with the surrounding community;
- No bus passenger bench shall be placed or maintained within five feet of the outer edge of the pavement of any road, except at approved locations where sidewalks and curbs exist. Where no sidewalks and curbs exist, DTPW shall require bus benches to be located such distance in excess of five feet as may be deemed necessary or desirable for the public safety and welfare;
- Benches may be located at a bus stop where a bus passenger shelter has been installed, unless DTPW determines that the placement of said benches would interfere with the free flow of vehicular or pedestrian traffic or would impede handicapped persons;
- Each bench shall be placed with the advertising panel at an angle of no greater than twenty degrees to the adjacent roadway;
- Benches shall conform to the approved standards and specifications on file with the Product Control Branch of Miami-Dade County's Code Compliance Department;
- A permittee shall maintain each bus passenger bench in a good state of repair and appearance, and shall keep the area surrounding each bench free of debris, high grass, weeds, and other rubbish for a radius of seven feet from the center of the bench;
- Only one bench shall be permitted at each approved designated bus stop except as otherwise designated by DTPW;
- Each permittee shall agree to locate and maintain one bench containing no advertising for every ten approved benches that are placed that carry advertising. Such benches carrying no advertising shall be placed at locations designated by DTPW. No fee shall be charged for such benches, but permits will be required and an identification number shall be issued.

8.3.3.1.2 *Bus Shelter Requirements (per County Ordinance)*

Bus shelters shall be placed only at DTPW authorized bus stops. The shelter structure shall be permitted to extend onto private property, subject to private consent, provided all of the following prohibitions and requirements are met and only to the extent necessary to conform with setback requirements:

- Bus shelters shall be prohibited on private property in the RU-1, RU-2, EU-1, EU-1C, EU-2, EU-S, EU-M and AU zoning districts;
- Bus shelters shall not exceed 152 square feet in size;
- Bus shelters placed on Miami-Dade County or State of Florida maintained rights-of-way shall conform to Miami-Dade County Public Works Department's bus shelter setback requirements or State of Florida, Department of Transportation regulations, whichever is applicable.

8.3.3.1.3 *Bus Stop ADA Requirements*

Regardless of whether amenities such as bus shelters and benches are present, Federal, State and County regulation compliance require that the following meet ADA boarding and alighting minimum requirements:

- Firm, stable surface
- Minimum clear length of 96 inches
- Minimum clear width of 60 inches (measured parallel to the vehicle roadway)
- Connected to streets, sidewalks or pedestrian paths
- The slope of the pad parallel to the roadway be the same as the roadway
- Maximum slope: 2% perpendicular to the roadway

8.4 DESIGN CONSIDERATIONS AT RAIL STATIONS AND TRANSIT TERMINALS

The *Miami Dade Transit Service Standards* defines a transfer center as a fixed location where passengers interchange from one route or vehicle to another. Like a bus stop, a transit center will be more appealing to the traveling public if there are more amenities that support the comfort of the rider (see list of amenities in Section 8.3.2 Designing New Bus Stops). Since transit centers are designed primarily to facilitate bus transfers, by design, the traffic that a transfer center sees should be significantly more than a bus stop.

A major difference between a transit center and a bus stop is that whereas a bus stop will most likely be located curbside with boarding and alighting areas along the roadway, transit centers will usually have definitive ingress and egress points for bus access. Typically, transfer centers will feature the following:

- Adjacent Land Use Commercial or mixed-use zones in major retail activity center

• Site Plan	All vehicles and pedestrians must be able to enter, dwell, park, and exit with minimal potential conflict
• Street Characteristics	Intersection of major arterials, highway interchange
• Street-Side Elements	Off-line location with dedicated bus travel lanes and half-sawtooth bus bays
• Curb-Side Elements	Sheltered stop with benches and trash receptacles, and all other feasibly available amenities
• Bicycle/Pedestrian	Storage facilities and direct access to bike lanes and sidewalks
• Security	At a minimum, Crime Prevention Through Environmental Design (CPTED)

Figure 27: Example of Transfer Center

Source: 2013 Accessing Transit

Like bus stops, transfer centers and their components must meet ADA specifications. Similarly, the size of the transfer centers and the amount and type of amenities should be based on the projected or actual use. If the projected use warrants it, a proposed transfer center may feature restrooms, a security detail as well as manned ticket kiosks, news stand, or information centers.

8.4.1 TRANSFER CENTERS AT TRI-RAIL STATIONS

Tri-Rail is a 72 mile long, regional (Miami-Dade, Broward and Palm Beach counties) commuter rail service operated by South Florida Regional Transportation Authority (SFRTA), which is funded by FTA, FDOT and the three counties in which it operates. Tri-Rail has direct connections with each county's major fixed-route transit service provider as well as numerous

shuttle, community circulators, trolleys and private sector bus service providers. There are 18 Tri-Rail stations, five of which are in Miami-Dade County. The Miami-Dade stations are:

- Golden Glades
- Opa-Locka
- Metrorail Transfer*
- Hialeah Market
- Miami Airport

*Metro-Rail and Tri-Rail stations adjacent to each other but designed to operate as one seamless transfer facility.

Similar to connecting with Metrorail and/or Metromover (directly or indirectly), municipal transit service routes that allow passengers to connect with Tri-Rail will increase the probability of the service being a success. Passengers will want to have as short a walk as possible to transfer to/from the municipal transit vehicle to/from the Tri-Rail platform. Coordination with Tri-Rail's Planning Department must be done to design the most efficient routes with minimal (or no) impact to existing train or other connecting bus transit services.

A municipality that is planning to introduce a transit service that will connect with Tri-Rail should initially contact Tri-Rail's Planning Department if the proposed transfer activity to/from the proposed municipal service to/from Tri-Rail requires any modification or addition to existing Tri-Rail facilities. SFRTA has detailed guidelines that should be followed for any proposed modification to existing or implementation of new Tri-Rail stations. *The SFRTA Station Design Guidelines* (8/17/12) is written for SFRTA staff and consultants to follow, but is a practical guide for any other entity wishing to request modifications to Tri-Rail stations. Once the SFRTA staff has agreed in concept to the proposed station modifications, the proposing municipality should prepare a scope or detailed description of what is being proposed. An example of the use of *The SFRTA Station Design Guidelines* as stated in the guidelines follows.

The Project Manager and Design Consultants shall determine whether:

- The scope is insufficient to bring the entire station into full compliance with these guidelines
- The scope contains work which conflicts with other work recommended by these guidelines
- The scope directly contradicts these guidelines

The guideline further describes methods to resolve discrepancies between the scope and the guidelines including evaluating the effectiveness of the guidelines themselves.

8.4.2 TRANSFER CENTERS AT METROMOVER AND METRORAIL STATIONS

The Metrorail system is a 25-mile dual track, elevated rapid transit system with 23 accessible Metrorail stations (approximately one mile apart) that provides service to Miami International Airport (MIA) and runs from Kendall through South Miami, Coral Gables, and downtown Miami; to the Civic Center/Jackson Memorial Hospital area; and to Brownsville, Liberty City, Hialeah, and Medley in northwest Miami-Dade. Metrorail provides access to Broward and Palm Beach counties via the Tri-Rail/Metrorail transfer station. The system currently uses 136 train cars. Surface and garage parking is available at 18 Metrorail stations.

The Metromover system is a 4.4-mile electrically-powered, fully automated people mover system connects with Metrorail at Government Center and Brickell stations and with Metrobus at various locations throughout downtown. Major destinations of the Metromover system include the American Airlines Arena, Bayside Market Place, Miami-Dade College and the Miami-Dade County School Board.

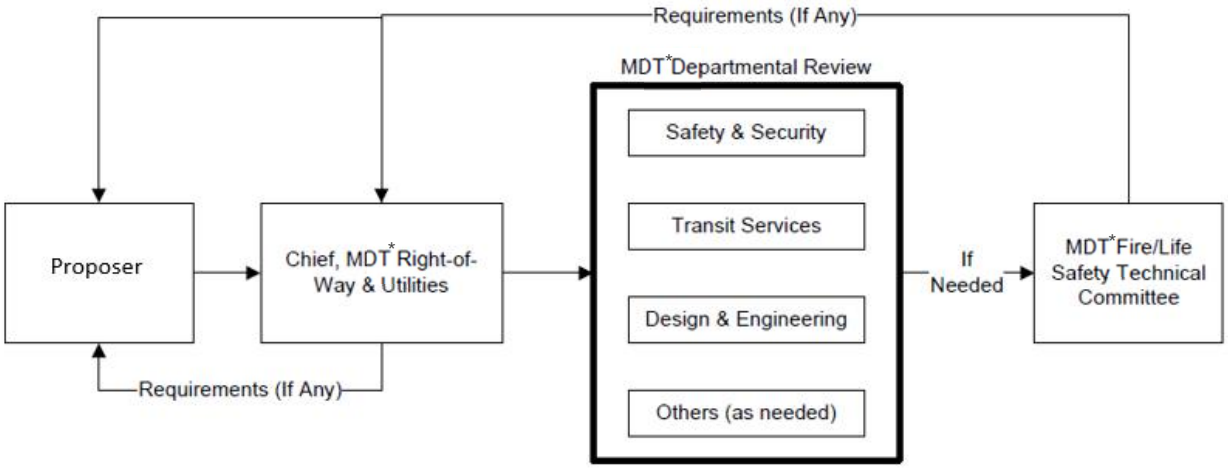
Municipal transit service routes that allow passenger to connect with Metrorail and Metromover will increase the probability of the service being a success. Passengers will want to have as short a walk as possible to transfer to/from the municipal transit vehicle to/from the Metrorail or Metromover station. Coordination with DTPW must be performed to design the most efficient routes with minimal (or no) impact to existing service.

If the proposed transfer activity to/from the proposed municipal service to Metrorail or Metromover requires any modification or addition to existing Metrorail or Metromover facilities, guidelines from the MDT Adjacent Construction Manual should be followed. First and foremost, early coordination with DTPW and any other potentially impacted entity should be done prior to taking any design or subsequent action. Then with DTPW's concurrence, sufficient drawings and details should be submitted to facilitate DTPW's review of the effects that the proposed project may or may not have on the DTPW facilities. An DTPW review requires internal circulation of the construction drawings to concerned departments. Drawings normally required for review are:

- Site Plan
- Drainage Area Maps and Drainage Calculations
- Architectural drawings (basement plans through top floor)
- Sections showing foundations and DTPW Structures
- Structural drawings (provide relative sections showing DTPW)
- Column load tables
- Pertinent drawings detailing an impact on DTPW facilities
- A copy of the geotechnical report

DTPW review will take a minimum of 15 days. No construction will be permitted without written permission from DTPW. DTPW's review process is provided in Figure 28, on the following page.

Figure 28: DTPW Review Process (modified)



** DTPW (formerly MDT)*
Source: MDT Adjacent Construction Manual (2015)

8.4.3 TRANSFER CENTERS AT EXISTING PARK-AND-RIDE LOTS

Park-and-Ride lots are areas where the traveling public can park their cars in order to utilize virtually any mode of transportation other than driving alone. Transportation planners consider park and ride lots a powerful tool to help encourage transit ridership and promote congestion relief. In describing park and ride lots, the *State of Florida State Park and Ride Guide* states "These facilities serve a broad range of use from being a small, simple place to park a few vehicles temporarily, to an upscale, grand multimodal hub. Park-and-Ride facilities are mainly utilized by commuters as a convenient means in the pursuit of ridesharing, carpooling, vanpooling, bus, or rail transit in order to reach their commute destination."

Unless its primary use is intended to encourage carpools and vanpools, park-and-ride lots are usually associated with a transfer center or at the start point of a long transit trip. The site selection for the park-and-ride lot will be a major factor in whether the site has strong utilization or not. Site selection should be done as a part of the transit route (and bus stops) planning process. Like a transfer center, the design of the park-and-ride lot must allow all vehicles and pedestrians to safely enter, dwell, park and exit with minimal potential conflict.

The amount of land needed for a park-and-ride lot will vary based on the projected demand. The *State of Florida State Park and Ride Guide* recommends the following steps to estimate the required lot size:

1. Compute the number of motorists that will use the facility*
2. Convert the number of motorists to the number of parked vehicles
3. Adjust the number of parked vehicles to account for fluctuations in demand created by seasonal factors

4. Compute the maximum accumulation of shared-ride vehicles
5. Compute the number of accessible spaces required
6. Convert the total estimated number of spaces to an area measure
7. Calculate additional space needs for bus facilities, turn radii, and other design criteria
8. Develop space allowances for landscaping, setbacks, drainage, and other design criteria

*Demand estimation methods available on the *State of Florida State Park and Ride Guide*

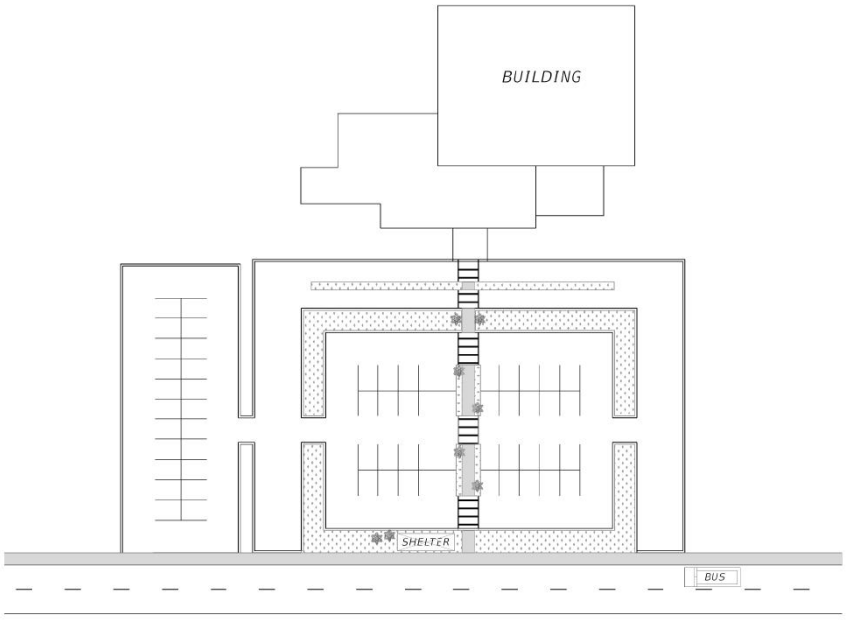
There should also be a designated kiss-and-ride area as well. That is an area within the park-and-ride lot where cars can access, stop briefly to drop-off or pick-up a transit passenger, then exit the facility.

8.4.4 TRANSFER CENTERS AT OTHER TRANSIT TERMINALS

8.4.4.1 Shared-use (Shopping Centers, Rec Centers, Etc.)

The most costly portion of implementing a transfer center and/or park and ride lot is usually associated with acquiring the necessary rights of way. Rights of way costs can be avoided through shared-use agreements with existing centers. Retail centers' patronage and typical commuting patterns have an inverse relationship, which makes parking spaces that are not in use throughout the day available for potential park-and-ride activity. Retail centers usually have a significant amount of unused parking spaces during the hours when park-and-riders' cars would be parked (weekdays, 5:30 A.M. to 6:30 P.M.). Figure 29 displays an example of how a bus may serve a shopping center without entering the parking lot. By keeping the vehicles on the curbside, excess parking spots at the shopping center may be used for park-and-ride purposes.

Figure 29: Bus Serving Shopping Center



Many retailers are willing to allow park and riders to park their cars in designated areas of their parking lots providing they have the capacity to do so and they are confident that the park-and-ride activities will not disrupt their normal business operations. Benefits to implementing a shared-use park and ride lot agreement include:

- It allows for testing the market without a large initial investment
- Marketing an existing location is easier than a new location
- Retailers may realize additional sales activity from park and riders
- Retailers might already be located along an existing transit route(s)

Any facility whose patrons use the facility at times that have an inverse relationship with typical commuting times are good candidates for shared-use park-and-ride lots. Houses of worship, public parks, and libraries also meet said criterion.