



Miami-Dade Expressway Authority 2035 Long-Range Master Transportation Plan

December 2009

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Executive Summary

The Miami-Dade Expressway Authority (MDX) is a state-sanctioned, locally administered, public agency created in 1994 by the State of Florida and the Board of County Commissioners of Miami-Dade County. Effective December 10, 1996, MDX assumed responsibility of various non-interstate expressways operating in Miami-Dade County through a transfer agreement executed with the Florida Department of Transportation (FDOT). MDX is governed by its Board, comprised of 13 volunteer members appointed by the Board of County Commissioners and the Governor of the State of Florida.

In 1998, MDX adopted its first Long Range Master Transportation Plan (LRMTP) to address a portion of the transportation improvement needs of Miami-Dade County through the year 2020. The plan was then updated to the year 2025 in 2005 as a result of a series of Visioning Workshops held between July 2001 and December 2002. The workshops were structured to encourage creativity in the identification of projects, and to rank alternatives based on community needs. The 2025 plan identified the goals and objectives of MDX, provided documentation for additional improvement in and expansion of the system, and was used to support inclusion of various MDX projects in the Miami-Dade Metropolitan Planning Organization's (MPO) 2030 Long Range Transportation Plan (LRTP). Current MDX projects included in the MPO's 2030 plan are the SR 924 West Extension and the SR 874 Ramp Connector.

Consistent with the guideline established by the Board to update the plan regularly and, in order to provide input into the current MPO 2035 LRTP update study process, MDX embarked on a new planning and visioning process to update its plan to 2035. This document represents the results of the visioning process and provides the basis and guidance for future investment of money and other resources throughout the expressway system. The plan:

- Projects conditions and evaluates additional needs based on anticipated future growth and mobility needs over a 30-year timeframe to be compatible with other regional planning efforts and to provide a long-term perspective on expressway system needs.
- Identifies capital improvement project needs that include managed lanes, extensive expressway segment improvements, system expansion, and freeway interchange connections.
- Provides immediately useful information by including recommendations for improvements and addition of express toll lanes.
- Relates project benefits and potential for delivery to priorities expressed through a tier structure, with the highest priority roadway projects expected to be funded through existing revenue sources.
- Proposes a funding strategy to achieve MDX's 2035 LRMTTP vision.
- Considers other roadway improvement needs throughout Miami-Dade County.

MDX 2035 LRMTTP Study Process

A collaborative visioning and planning process was completed in early 2008 that included participation from key stakeholders, residents and elected officials to ensure broad support of MDX plans throughout Miami-Dade County. The foundation for the collaborative process was a solid technical analysis in which participants were provided with information such as traffic data, analysis of existing conditions, projected traffic conditions, and conceptual improvement strategies and designs. Study progress and direction was monitored and guided by MDX. A Blue Ribbon Panel, representing regional transportation stakeholders such as Miami-Dade Transit,



1 Introduction



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Presently, two major projects identified in the previous 2025 MDX LRMTP are included in the County MPO's LRTP for 2030:

- SR 924 (Gratigny Parkway) Extension West to the Homestead Extension Florida Turnpike (HEFT), and
- SR 874 (Don Shula) Ramp Connector to SW 136th Street

Although MDX plans for the SR 836 Southwest Extension was also included in the MDX 2025 LRMTP, it was only referenced in the County MPO plan since more analysis was recommended prior to inclusion. The current MDX 2035 LRMT update continues to include the SR 836 Southwest Extension project.

The MDX vision statement, directives and specific goals and objectives developed and included in the 2025 plan have been used in the development of the current MDX 2035 LRMT update. These statements and goals were incorporated into various evaluation criteria used for the selection and identification of future 2035 MDX system projects. This new 2035 Plan will guide future MDX project implementation throughout the County and provide the background necessary to include new MDX identified projects into the County MPO's 2035 LRTP, which was adopted in October 2009.

1.1 Mission and Vision Statements

The following mission and vision statements were developed for the 2025 LRMTP and remain pertinent to the 2035 update:

"It is the mission of the Miami-Dade Expressway Authority (MDX) to be an innovative transportation agency dedicated to the enhancement of mobility in Miami-Dade County."

"MDX's transportation system (System) will provide safe, affordable choices for the movement of people and goods in Miami-Dade County. The System will support and sustain economic opportunities in the South Florida region. It will be equitably tolled, well maintained, reliable, multi-modal and aesthetically pleasing while also being environmentally sensitive. This System will be planned, delivered and operated in cooperation with the MDX's partners in the public and private sectors."



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1.2 Miami-Dade Expressway Authority Goals and Objectives

The MDX Governing Board also established the following directives for the development of future plans and for the identification of projects:

- Use the full legislative authority of MDX to address transportation needs
- Consider building other transportation modes
- Consider "off-system" improvements
- Diversify revenue sources
- Give priority to current revenue-generating toll roads
- Give priority to electronic toll collection mechanisms and open road tolling strategies
- Explore relationships with other agencies
- Promote projects that do not need financial subsidies
- Create a recognizable brand name

The directives were expanded upon and translated into the following specific goals and objectives:

Goal 1: MDX will use its full legislative authority to improve mobility in Miami-Dade County

- Explore development of all modes of transportation
- Partner with other transportation agencies to implement alternative transportation projects
- Designate and reserve right-of-way in new project corridors for use by other transportation modes

- Develop Joint Project Agreements (JPA) to address funding shortfalls

Goal 2: Use MDX's innovative and expedited capacity to deliver projects in a timely and cost effective manner

- Expand the current MDX system and build new corridors
- Give priority to improving existing MDX system to better serve MDX's customers

Goal 3: Support projects that promote desirable urban patterns, economic development and improvement to target areas

- Give priority to implementing new expressway projects that support the economic viability of the existing MDX system
- Give priority to implementing new projects and other modes of transportation projects that:

Increase expressway capacity and regional mobility

Support existing urban development areas and patterns

Support local land use and environmental regulations

Promote regionalism

Provide for the future inclusion of other transportation modes in the design of roadways

Enhance economic vitality of specific areas in Miami-Dade County



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Goal 4: MDX will partner with other transportation agencies to improve regional mobility

- Select projects that interconnect the South Florida region
- Support the expansion of regional transportation modes

Goal 5: MDX will provide the financial capacity necessary to maintain a state-of-the-art expressway system and to implement planned improvements identified in the Master Plan

- Implement latest technologies in traffic management and electronic toll collection to optimize MDX system capacity
 - Intelligent Transportation System (ITS)
 - Electronic Toll Collection (ETC)
- Leverage all available financial resources to the maximum extent possible

This MDX 2035 LRMP update began in 2007. A series of visioning workshops, and elected official and key partner briefings were held throughout 2007 and 2008 in conjunction with extensive technical analysis, evaluation, and ranking of the projects.

It is anticipated that the component projects of the MDX LRMP will continue to be vetted through the public outreach process currently being undertaken by the MPO for the 2035 LRTP update. In addition, one-on-one meetings and briefings will continue with elected officials, constituent organizations, affected cities and agencies as part of the project development process and study efforts for each project selected for implementation.

1.3 Description of Existing MDX System

MDX was established to provide more local control over toll revenues along five major expressways in the County, and, as a result, greater influence in easing traffic congestion throughout the County. MDX was tasked with maintaining, operating and enhancing this expressway system with the funding generated from tolls collected. MDX does not receive revenues from gasoline or other taxes. In fact, more than 95% of its revenue comes from the tolls collected on four of the five expressways. Under the MDX charter, all tolls are to be fully dedicated to transportation enhancement projects in Miami-Dade County. The MDX system, encompassing more than 33.7 center-lane miles, consists of the following roadways:

SR 836, known as the Dolphin Expressway (or East-West Expressway) is the only full-length east-west expressway in Miami-Dade County. Its western terminus is at NW 137th Avenue and its eastern terminus is at Interstate 95 in downtown Miami. SR 836 is 14 miles long.

The Airport Expressway (SR 112) is a six- to eight-lane freeway from Miami International Airport (MIA) east to Interstate 95. The expressway parallels NW 36th Street - which runs to the south of the expressway for its entire length - and continues east of Interstate 95 as Interstate 195. SR 112 is 4.1 miles long.

SR 874, the Don Shula (South Dade) Expressway, is a diagonal route from the Homestead Extension of Florida's Turnpike (SR 821/HEFT) northeast to SR 826/Palmetto Expressway. It gives motorists a 7.2-mile long route from the HEFT, South Dade, and Homestead to the Palmetto Expressway. The entire freeway follows the South Florida Rail Corridor (SFRC).

SR 878 (Snapper Creek Expressway) is an east-west route that parallels Snapper Creek between SR 874 (Don Shula Expressway) and U.S. 1/SR 5 (Dixie Highway). The freeway generally traverses through Kendall. For its entire length of



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3.0 miles, the Snapper Creek Expressway is four lanes wide and has a narrow right-of-way. The median is a Jersey type barrier. SR 878 has interchanges with SW 72nd Avenue and SW 87th Avenue. It ends at an at-grade intersection at U.S. 1. There is no interchange with SR 826 (Palmetto Expressway).

SR 924 (Gratigny Parkway) is an east-west toll freeway that connects Interstate 75 and SR 826/Palmetto Expressway to NW 32nd Avenue. At this terminus, the parkway turns into Gratigny Drive/NW 119th Street which is a surface street. Although it is a "parkway," SR 924 meets the full freeway standards with six lanes for its entire length of 5.4 miles. Interchanges are located at SR 953, the LeJeune/Douglas Connector, and at West 4th Avenue/NW 57th Avenue.

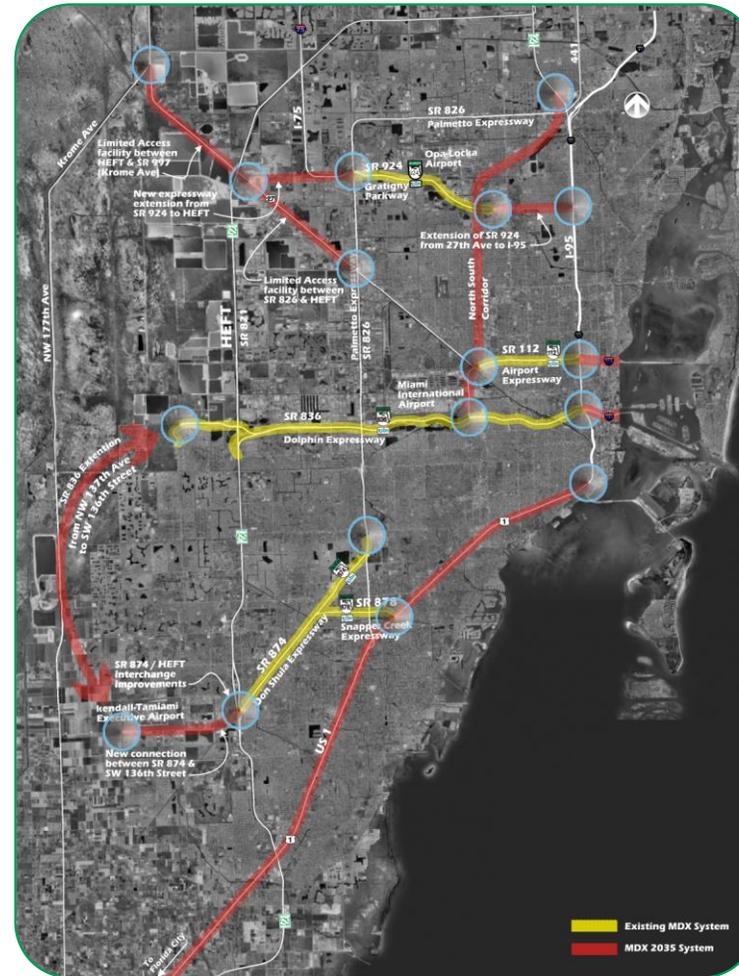
1.4 2035 LRMTTP Study Process

As previously mentioned, MDX began the 2035 update process in 2007. MDX held a workshop to provide a glimpse of how the Miami Dade County transportation infrastructure may look in the future. The MDX Future Projects Forum – Visioning / Financial Workshop was held on September 25, 2007. Results of the workshop and supporting technical information led to the identification of a new network of toll highways (see **Figure 1-1**).

MDX is presently conducting studies to determine the feasibility of these new projects, and to determine the impact of the projects on the regional and local transportation network. The goal is to find appropriate locations for new toll roads to provide needed transportation mobility to Miami-Dade County with minimal or no significant impacts to the human or natural environment.

The studies cover all aspects of planning, engineering and environmental assessments as well as financial assessments of the potential cost and revenue generating potential of the new toll network. The studies are separated into two phases.

Figure 1- 1: Network of Toll Highways



PHASE 1 – Engineering, Environmental Location and Traffic Analysis

The objectives of this phase are to determine feasible routes (alternatives) for new MDX roadway projects. This includes conceptual development of various engineering alignments for analysis. This phase also uses existing information from state and county agency sources to



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identify areas containing known fatal flaws such as major environmental locations and resources, schools, public parks, cultural resources, legally protected water bodies and land uses. Once identified, these areas are placed on an avoidance map to eliminate them from consideration. The remaining areas within the corridor are evaluated to determine the location of existing residential neighborhoods, existing commercial and industrial land-uses, and planned new developments in order to identify the best possible methods for avoidance of potential impacts to these existing and planned developments.

Once potential route locations are identified, the routes are evaluated for their transportation value. The objective of this part of the study is to determine the potential demand for a new roadway system – the volumes of daily traffic that would use the new expressways and how many trips would be diverted away from existing highways and roads, thus relieving traffic congestion along these facilities. While this effort does not involve a detailed traffic study, it is indicative of whether or not a new expressway is a good transportation project and therefore if further toll studies should be undertaken.

The traffic analysis process involves using the latest regional transportation computer simulation model to forecast future traffic volumes on the regional and local highway system with the proposed MDX projects. It is the intent of MDX to use the same model, to whatever extent feasible, that the Miami-Dade MPO is utilizing for its 2035 LRTP update. This model will produce a new set of 20-year traffic projections that simulate the future conditions with the new expressways in place.

PHASE 2 – Cost and Gross Toll Revenue

The objectives of this part of the study are to determine a range of costs for each new project and to develop projections of future toll revenues.

Cost is estimated for design, right-of-way acquisition and construction using formulas based on MDX unit prices and averages published by FDOT. Because these cost estimates are very general, a large contingency amount is added to the total, along with escalation factors for inflation and materials price increases to better approximate the future cost of the project. These cost estimates are refined over time as projects moves through the subsequent planning and design phases.

Gross toll revenue projections will be developed by applying a range of possible toll rates within the traffic demand model. Various assumptions are made for these projects, such as different tolling rate schemes, and toll collection means [e.g., open road tolling (ORT)]. Presently, MDX is planning to have all its roads under ORT by the end of 2012. The Florida Turnpike Enterprise is anticipating that many roads around the state will collect tolls through ORT by 2012 as well.

Toll traffic is estimated by first developing a reasonable range of toll rates for the time frame to be tested. Present toll rates in Florida are in the range of \$0.06 - \$0.18 per mile and planned toll rate changes will increase over the next twenty years to over \$0.20 per mile. MDX's traffic and revenue consultants have indicated that \$0.20 per mile would therefore be a reasonable rate to use for new expressway testing for 2035. The traffic demand for the new expressway projects are forecast with the use of a traffic demand model that takes into account the tolling means and toll cost rates.



2 MDX System Characteristics and Needs

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In order to determine potential improvements to the current system, it is necessary to document current conditions and future needs. These needs are based on land uses, mobility, key traffic generators, overall demand and network connectivity throughout the County. This chapter summarizes technical information related to traffic conditions and general operating characteristics of the existing MDX expressway system. Information from the public, local governments, stakeholders, and other agencies that work with MDX are also summarized. Future system needs are described based on traffic data, demographic information, public opinion surveys, and technical findings related to the potential expansion of the expressway system.

2.1 MDX Expressway System Characteristics

When MDX assumed the rights and the responsibilities for operating the County's expressway system, it obtained certain identifiable fixed assets (excluding the expressway system's infrastructure) and cash reserves from the FDOT. In exchange, MDX made a payment to the FDOT which was sufficient to satisfy certain bonded indebtedness of the State of Florida. This transaction was consummated through MDX's issuance of \$80,000,000 in an aggregate principal amount of its Toll System Revenue Bonds, Series 1996 (Taxable) (the Series 1996 Bonds). In addition, MDX assumed a liability from the State of Florida in the amount of \$11,843,000.

The Transfer Agreement gives MDX the right, in perpetuity, to the toll revenue generated by the expressway system and grants MDX the right to operate and maintain such expressway system.

In December 2002, MDX began transitioning the System's toll plazas to the new MDX Toll Management System. System-wide implementation was completed in the latter part of fiscal year 2003. As a result, transaction data is only

available as of fiscal year 2004. **Tables 2-1** through **2-3** show the toll transactions and average daily traffic by expressway for Fiscal Years 2004 through 2007:

Table 2- 1: Total Annual Traffic

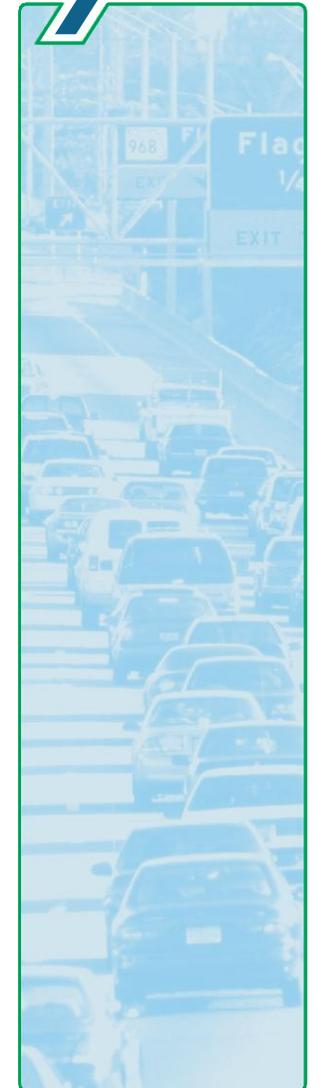
| Expressway | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|--------------------------|------------|------------|------------|------------|
| Gratigny (SR924) | 12,094,667 | 12,490,035 | 11,981,074 | 12,120,191 |
| Don Shula (SR 874) North | 12,857,861 | 12,862,007 | 13,002,486 | 13,874,197 |
| Don Shula (SR 874) South | 12,565,470 | 12,837,211 | 12,715,178 | 13,699,104 |
| Dolphin (SR836) | 17,845,382 | 18,637,782 | 18,022,153 | 19,197,337 |
| 17th Avenue | 2,692,684 | 2,411,316 | 2,528,500 | 2,723,125 |
| Airport (SR112) | 12,195,774 | 11,678,787 | 10,569,479 | 11,111,583 |
| MDX System | 70,251,838 | 70,917,138 | 68,818,870 | 72,725,537 |

Table 2- 2: Average Daily Traffic

| Expressway | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|--------------------------|---------|---------|---------|---------|
| Gratigny (SR924) | 33,058 | 34,851 | 33,637 | 33,224 |
| Don Shula (SR 874) North | 35,134 | 35,805 | 36,482 | 38,021 |
| Don Shula (SR 874) South | 34,339 | 35,753 | 35,686 | 37,547 |
| Dolphin (SR836) | 48,772 | 51,880 | 50,564 | 52,611 |
| 17th Avenue | 7,358 | 6,729 | 7,105 | 7,464 |
| Airport (SR112) | 33,320 | 32,500 | 29,655 | 30,474 |
| MDX System average | 191,981 | 197,518 | 193,129 | 199,341 |

Sources: MDX Finance Office - MDX Toll Operations

The tables indicate a general overall growth in traffic and transactions along the entire MDX system, with the Dolphin Expressway (SR 836) showing the greatest increase in its traffic count. Consistent with MDX goals, much of the traffic takes advantage of the electronic toll collection system.



2 MDX System Characteristics and Needs



Table 2- 3: Average Daily Traffic (Monday-Friday)

| Expressway | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|------------------------------|---------|---------|---------|---------|
| Gratigny (SR924) | 4,062 | 4,206 | 4,048 | 3,974 |
| Don Shula (SR 874) North | 3,272 | 3,309 | 3,718 | 3,807 |
| Don Shula (SR 874) South | 3,119 | 3,155 | 3,347 | 3,568 |
| Dolphin (SR836) | 3,758 | 4,083 | 3,994 | 4,112 |
| 17th Avenue | 745 | 729 | 744 | 803 |
| Airport (SR112) | 2,859 | 2,974 | 2,847 | 3,022 |
| MDX System Peak Hour Average | 17,815 | 18,456 | 18,698 | 19,286 |

Sources: MDX Finance Office - MDX Toll Operations

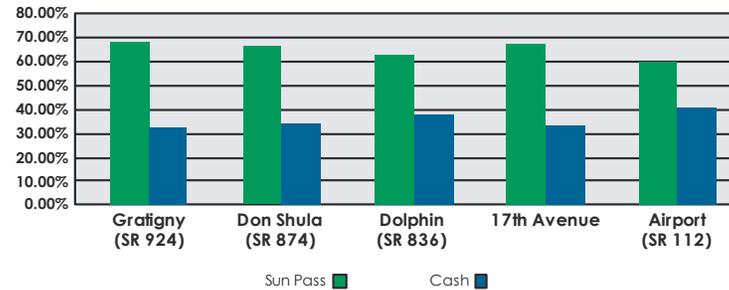
The amount of traffic that uses electronic toll collection can be analyzed based on the use of Sunpass. **Tables 2-4** and **Table 2-5** depict Sunpass penetration by expressway and by fiscal year. As evidenced by the information, all the expressways are achieving between 60% to 70% penetration, with SR 836 and SR 112 being the two lowest. However, the SR 836 numbers may not reflect the recent ORT improvement along SR 836 to SW 137th Avenue.

Table 2- 4: SunPass Penetration by Expressway by Fiscal Year

| Expressway | | FY 2004 | FY 2005 | FY 2006 | FY 2007 |
|--------------------|---------|---------|---------|---------|---------|
| Gratigny (SR924) | SunPass | 48% | 57% | 64% | 68% |
| | Cash | 52% | 43% | 36% | 32% |
| Don Shula (SR 874) | SunPass | 45% | 54% | 63% | 66% |
| | Cash | 55% | 46% | 37% | 34% |
| Dolphin (SR836) | SunPass | 44% | 51% | 57% | 62% |
| | Cash | 56% | 49% | 43% | 38% |
| 17th Avenue | SunPass | 42% | 53% | 61% | 67% |
| | Cash | 58% | 47% | 39% | 33% |
| Airport (SR112) | SunPass | 39% | 46% | 54% | 60% |
| | Cash | 61% | 54% | 46% | 40% |

Sources: MDX Finance Office - MDX Toll Operations

Table 2- 5: MDX SunPass Penetration by Expressway



Sources: MDX Finance Office - MDX Toll Operations

2.2 Urban Development Trends

Information regarding the high number of existing transactions and traffic along the MDX expressways supports the need for further expansion. However, additional data and information is necessary to analyze the best way to serve the future needs of the County. This data includes information regarding socio-economic conditions of the County as well as demographic and development patterns.

Miami-Dade County is a relatively young metropolis where sprawling urban development patterns have led to heavy reliance on single-occupancy vehicles. Most of the sprawl is located in the western areas of the County, whereas, on the east side it is more dense and compacted. Therefore, the future of the Miami-Dade community is inherently tied to finding new innovative solutions to enhance capacity while also incorporating alternate modes of transportation. The economic vitality, social structure and quality of life within Miami-Dade County depend on finding the right solutions. Understanding economic, land use and development trends of the past, as well as future projections, is a very important component to finding the right solutions for the community. This information is the foundation for all MDX master planning efforts.



2 MDX System Characteristics and Needs

2.2.1 Historical Background

Similar to many American cities, Miami-Dade County experienced a significant amount of growth in the early 1920's. Moreover, the mobility provided by the emergence of the automobile resulted in predominantly dispersed land use patterns throughout Miami-Dade County and created a city model with many centers. During the late 1950's and early 1960's, the first two major expressways constructed in Miami-Dade County were the Palmetto Expressway (SR826) and the Airport Expressway (SR 112) to Miami Beach; the latter one as a toll road. These increases in transportation capacity on the western fringes of the County induced further sprawling growth. In the 1960s, the development of the Town of Kendall created a major residential area in conjunction with the development of Dadeland Mall as its major commercial center.

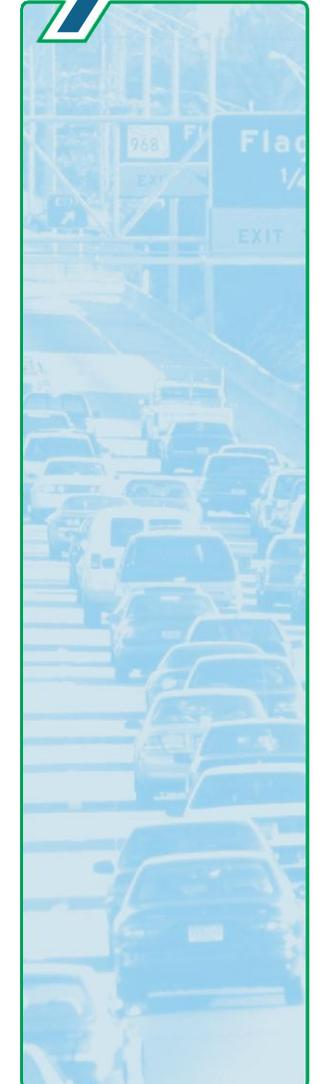
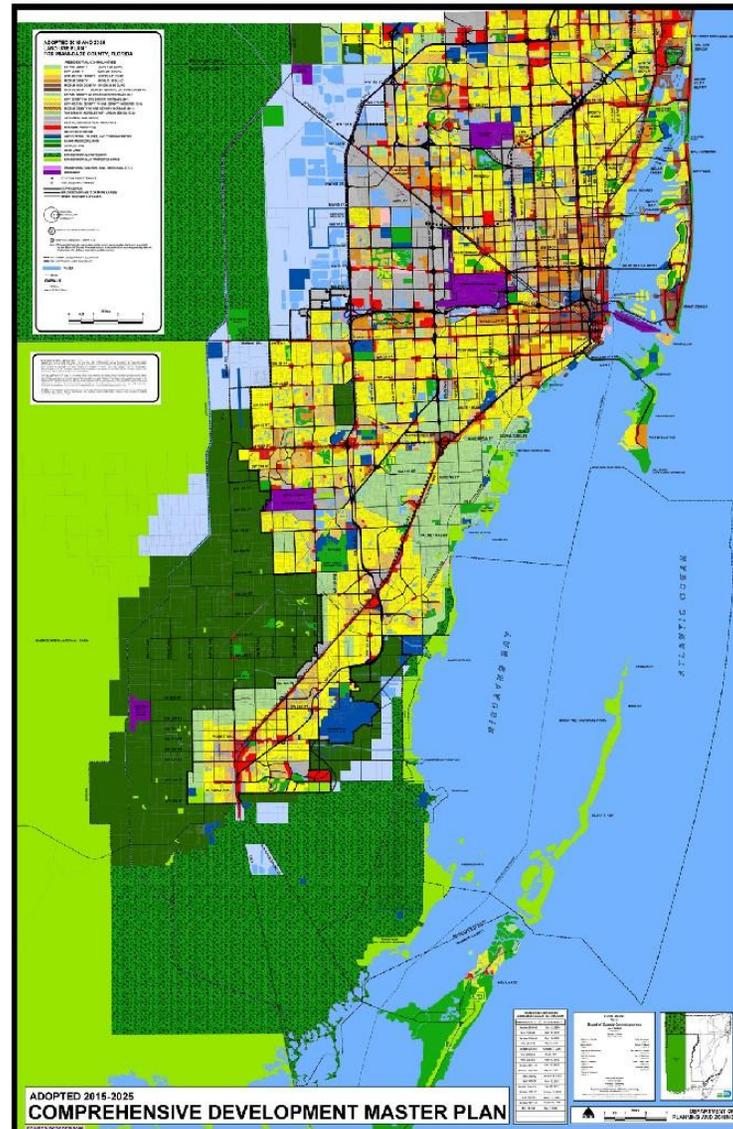
As air travel increased and air cargo grew, Miami International Airport (MIA) became an attraction for employment and the geographical distribution of jobs. Major industrial and distribution uses migrated from the area near the old Port of Miami, in what is now Park West, to the NW 37th Avenue corridor adjacent to the CSX rail line. Expressway access from SR 826 and SR 112 provided the opportunity to develop easily accessible vacant lands for industrial use in close proximity to the airport.

Sprawling westward growth to the airport and Kendall areas contributed to a process of decentralization of employment centers with increased spatial separation between residential areas and work places. These trends in growth patterns that started in the late 1950's and 1960's established the present land use pattern of Miami-Dade County and the multi-centers that shape its urban form today.

As evidenced by the County's Land Use plan (**Figure 2-1**), Miami-Dade County's urban development pattern is characterized by high-density (commercial and

residential) urban areas on the eastern edges along the bay, on nearby barrier islands, major commercial corridors, and employment centers, while lower density residential development exists to the west.

Figure 2- 1: Adopted 2015 and 2025 Land Use Plan



2 MDX System Characteristics and Needs

Following an MDX Board directive, master planning efforts are to make a conscious effort to identify projects that provide improved access to employment centers in Miami-Dade County and generate economic opportunities for disadvantage communities. Improved region-wide access could also provide the potential to attract investment and redevelopment opportunities to the County.

2.2.3 Growth and Development Forecasts

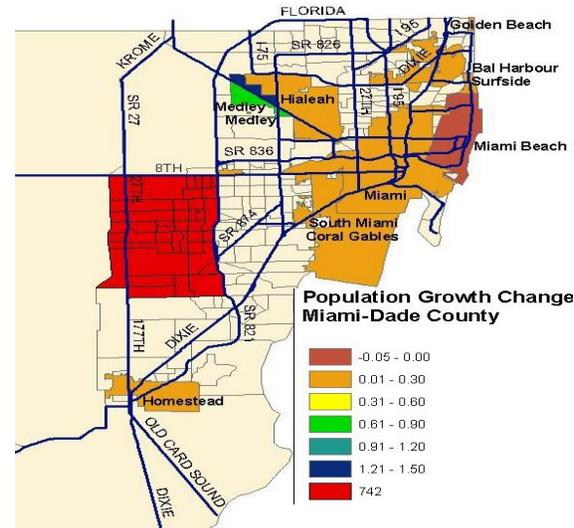
Recent local land use trends indicate continued, countywide urban densification as well as suburban development influenced by rapid population growth in the undeveloped southern and western sections of the County. Urban densification trends are supported by government initiatives such as "Eastward Ho!" which was developed by the Governor's Commission for a Sustainable South Florida to encourage urban in-fill redevelopment.

Information gathered from the 2000 U.S. Census indicates that, while there has been some growth in the eastern areas of the County, there is still strong demand for low-density development. The U.S. Census statistics show that from 1990 to 2000 population growth in Miami-Dade County occurred mostly in new development areas west of Florida's Turnpike, as illustrated in **Figure 2-3**.

According to the most recent 2030 Miami-Dade County L RTP estimates, the population of Miami-Dade County is expected to exceed three million, with a 43% growth from 2000 to 2030. Between 2000 and 2030, employment will increase by 34% to almost 1.6 million employees, households will increase by 40% to over one million, and auto ownership will increase 48% to over two million autos. Similarly, the people of Miami-Dade County will be making more than 11 million trips each day to work, school, and shopping, a 40% increase over the number of trips made in 2000 (**Figure 2-4**).

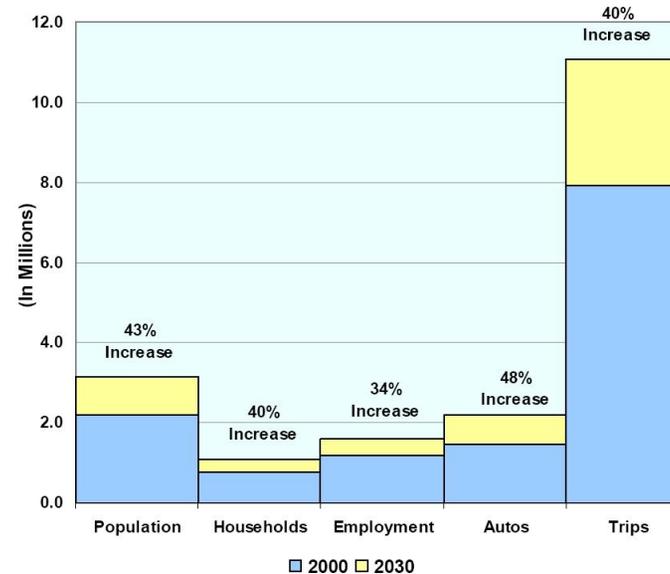


Figure 2- 3: Population Growth Change 1990-2000



Source: 1 U.S. Census Bureau Web Site.
2 IDEM

Figure 2- 4: Miami-Dade County Growth 200-2030



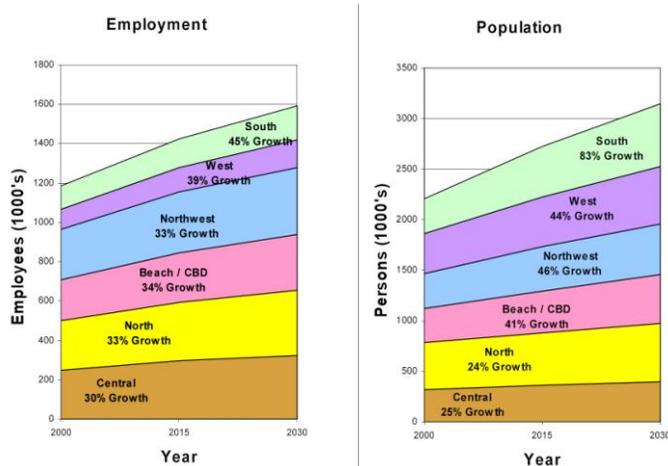
Source: Miami-Dade MPO Miami-Dade Transportation Plan 2030



2 MDX System Characteristics and Needs



Figure 2- 5: Miami-Dade County Projected Employment & Population Growth by Planning Area



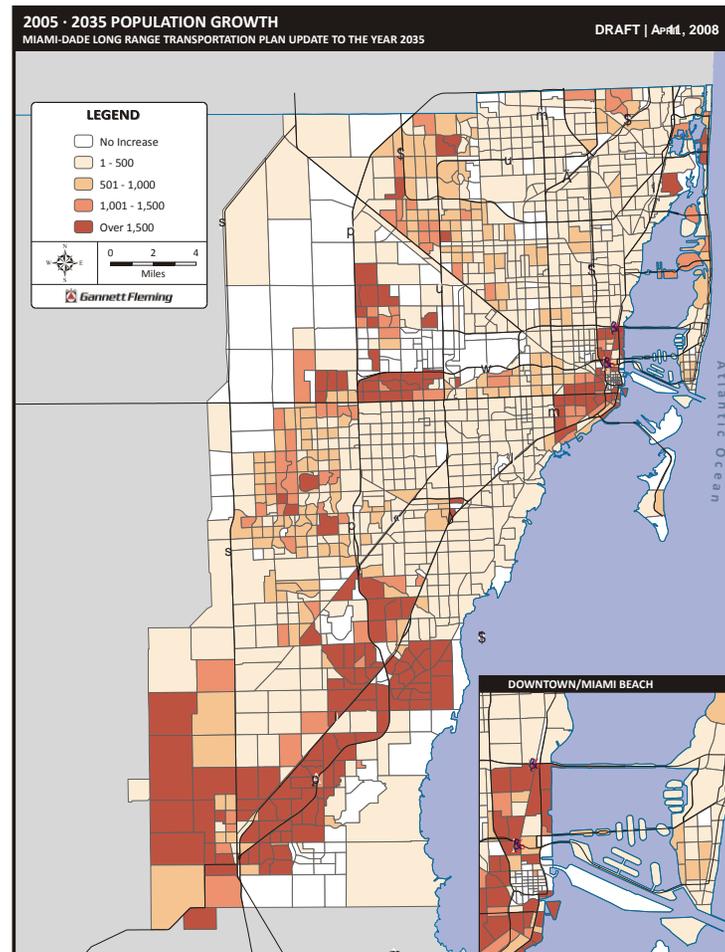
Source: Miami-Dade MPO Miami-Dade Transportation Plan 2030

As further indicated in **Figure 2-5**, this population and employment growth is concentrated in the South, West and Northwest Planning areas. However, all areas of the County are experiencing continued development and population growth, resulting in traffic volumes that are surpassing the expressway facilities capacity throughout Miami-Dade County. Due to the constraint on the expressway facilities, existing traffic demand along the roadway network is also exceeding capacity resulting in operational deficiencies along the major arterial corridors in the County.

Currently, the County MPO is developing the 2035 LRTP update. As a result of this effort, updated draft forecasts regarding employment and population growth have been developed. **Figures 2-6** and **2-7** show the total population and employment growth for the County between the years 2005 and 2035. This current information confirms that major residential growth will continue in the south and western areas of the County, while major employment growth will occur in northwestern Miami-Dade County. The growth in the number of vehicles in the

County, as shown in **Figure 2-8**, also indicates that the majority of travel for this new growth will continue to use the roadway and expressway network. Therefore, MDX's planning efforts are focused on serving the continued population and employment growth with new projects that can provide opportunities for system linkage to existing expressway and existing transit corridors, provide accessibility to the growing areas, and provide relief to the adjacent arterial roadway network which is constrained.

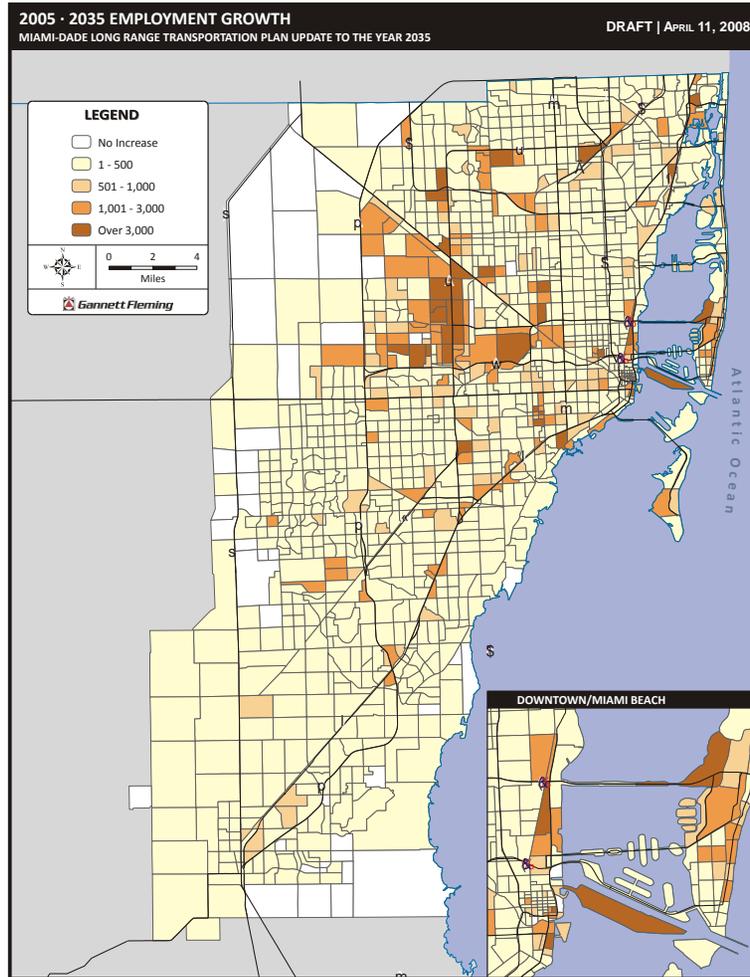
Figure 2- 6: Miami-Dade County Population Growth 2005-2035



Source: Miami-Dade County MPO

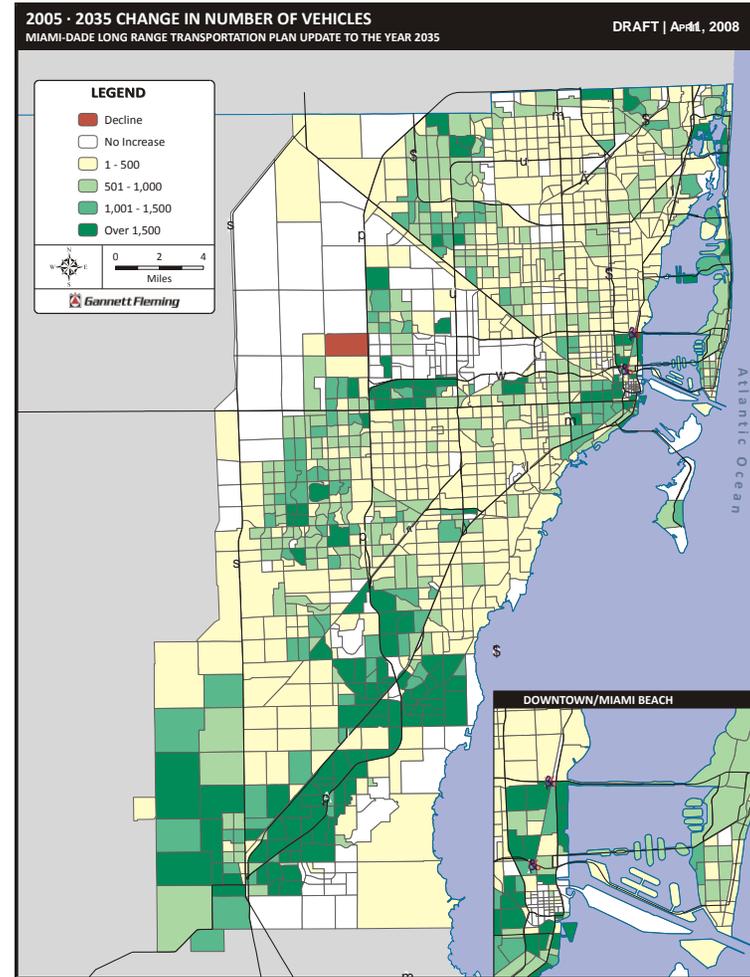


Figure 2- 7: Miami-Dade Employment Growth 2005-2035

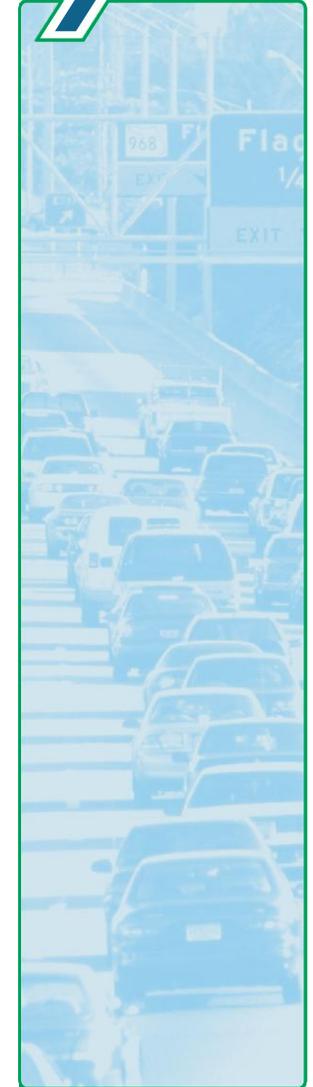


Source: Miami-Dade County MPO

Figure 2- 8: Miami-Dade County Number of Vehicles 2005-2035



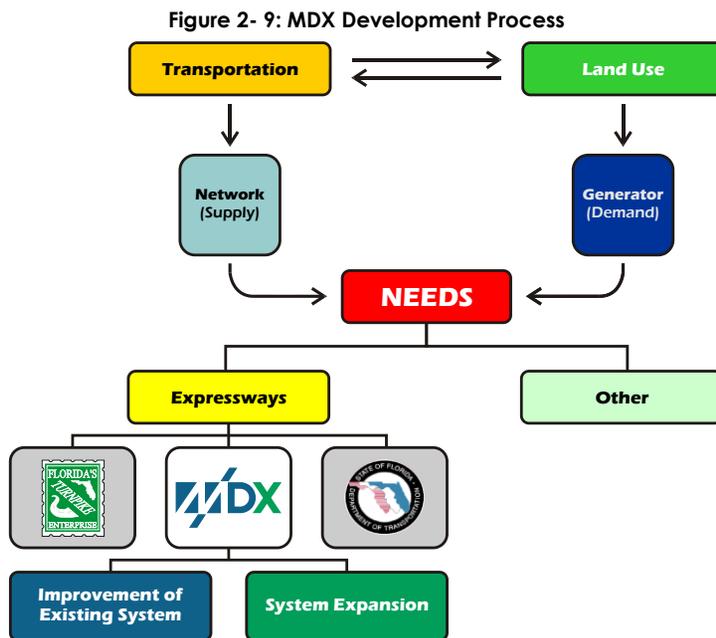
Source: Miami-Dade County MPO



2 MDX System Characteristics and Needs

2.3 Potential Expansion of the System Needs

Potential expansion of the system must be geared toward providing mobility, serving the needs of the community and addressing opportunities for connecting key destinations and traffic generators throughout the County. **Figure 2-9** illustrates the generic process that MDX follows in assessing the strategic importance of potential improvements, weighing their relative merits and deciding on how to plan and program expressway improvements on an ongoing basis.

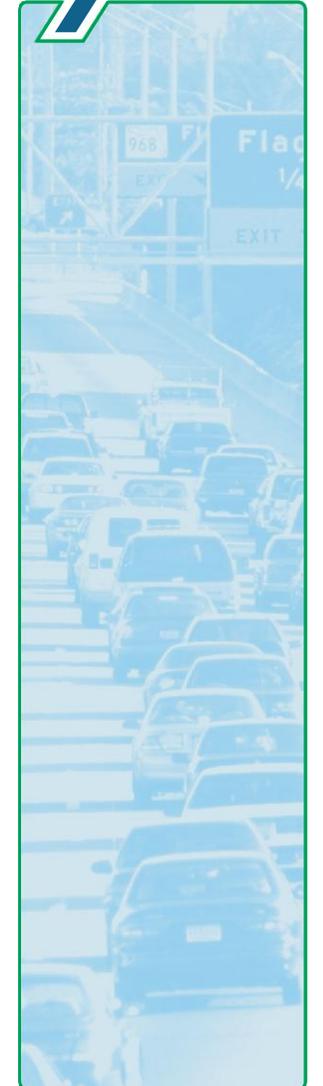


In addition to land use and development considerations, MDX also includes traffic and transportation information in their planning decisions for system expansion. One common transportation measure used is Level of Service (LOS). LOS for highways describes a quantitative stratification of the quality of service to a typical traveler on a facility into six letter grade levels with "A" describing the highest quality and "F" describing the lowest quality. LOS standards designate the lowest acceptable

operating conditions for the 100th highest volume hour of the year in the predominant traffic flow direction. The 100th highest volume hour represents the typical peak hour during the peak season. Definitions and measurement criteria used for minimum LOS standards are based on the Transportation Research Board Highway Capacity Manual 2000. **Table 2-6** presents the LOS criteria that can be used to identify critical needs and help prioritize projects.

Table 2- 6: Level of Service Criteria

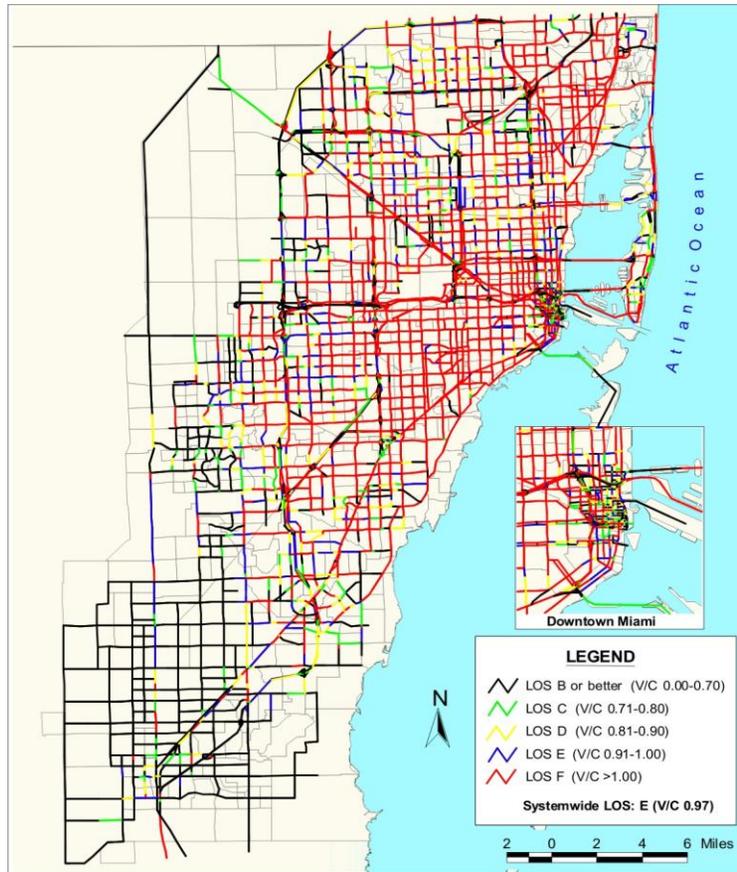
| STATEWIDE MINIMUM LEVEL OF SERVICE STANDARDS FOR THE STATE HIGHWAY SYSTEM, ROADWAYS ON THE STRATEGIC INTERMODAL SYSTEM (SIS), ROADWAYS ON THE FLORIDA INTRASTATE HIGHWAY SYSTEM (FIHS) AND ROADWAY FACILITIES FUNDED IN ACCORDANCE WITH SECTION 339.2819, FLORIDA STATUTES, THE TRANSPORTATION REGIONAL INCENTIVE PROGRAM (TRIP) | | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------|----------------------------------------|-----------------------------------------------------------|-----------------------|
| | SIS AND FIHS FACILITIES | | TRIP FUNDED FACILITIES AND OTHER STATE ROADS ³ | |
| | Limited Access Highway ⁴ (Freeway) | Controlled Access Highway ⁴ | Other Multilane ⁴ | Two-Lane ⁴ |
| Rural Areas | B | B ¹ | B | C |
| Transitioning Urbanized Areas, Urban Areas, or Communities | C | C | C | C |
| Urbanized Areas Under 500,000 | C(D) | C | D | D |
| Urbanized Areas Over 500,000 | D(E) | D | D | D |
| Roadways Parallel to Exclusive Transit Facilities | E | E | E | E |
| Inside TCMA ^s | D(E) ² | E ² | ... ² | ... ² |
| Inside TCEAs ² and MMTDs ² | ... ² | ... ² | ... ² | ... ² |



2 MDX System Characteristics and Needs

The Miami-Dade MPO uses LOS criteria as a performance measure to evaluate the impact of projects on the countywide roadways. In the last adopted LRTP, 2030, the MPO predicted heavy congestion throughout the County even after assuming a significant level of funding to complete numerous improvement projects (**Figure 2-10**). Moreover, the systemwide LOS standard deteriorated from LOS C in 2000 to LOS E in 2030. This documentation further supports the need to plan, fund and build new facilities that will improve overall mobility within the County.

Figure 2- 10: 2030 LOS MAP



Source: Miami-Dade

2.4 MDX System Needs Additional Supporting Information

2.4.1 Florida Department of Transportation Managed Lanes Study

In September 2008, the FDOT District 6 office released a report by Robert Poole entitled “A Managed Lanes Vision for South Florida”. The report provided a vision of a managed lanes network that included many of the MDX 2035 plan projects. The network consisted of an expressway network, an arterial managed lane network and a toll truckway system. Based on toll revenue projections in the report, the revenue stream anticipated would be capable of supporting the capital costs required for implementation. The report recommended the addition of several missing expressway links to fill in obvious travel gaps including the SR 924 East and West Extensions, the North-South Connector, and the SR 836 Southwest Extension. It also supported the conversion of the US-1 Busway into some form of managed lanes to Dadeland, and a reversible managed lane component along US-1 from Dadeland to I-95, in order to contribute towards the establishment of a managed lanes arterial network. The US-1 arterial improvement and the North-South Connector freeway improvement were highlighted as projects that would fulfill the need for north-south capacity in Miami-Dade County.

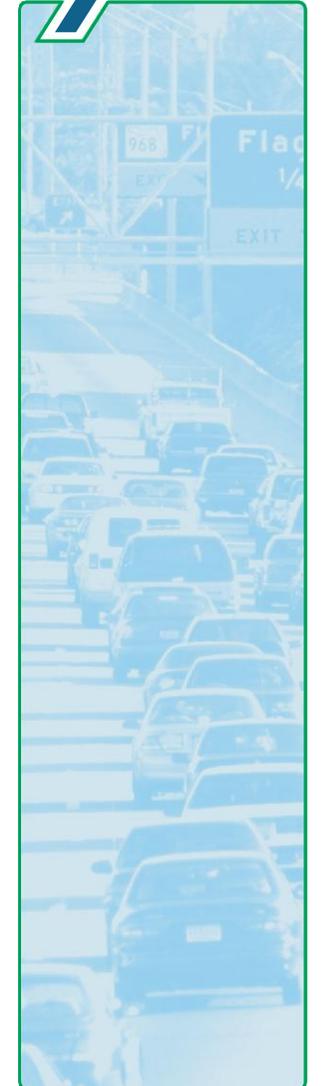
2.4.2 Miami-Dade Metropolitan Planning Organization Freight Plan

In October 2008, the MPO produced its first draft of the countywide Freight Plan. Several facts outlined in the plan support the need for various MDX 2035 plan projects. Major freight generators identified included the Medley area along US-27 and areas west of US-27 which encompass rock quarries. Origin and destination truck surveys conducted for the plan also indicated that the Opa-Locka Airport area was an emerging freight generator accessible to both the Port of Miami and Port



2 MDX System Characteristics and Needs

Everglades in Broward County. The plan indicated that incoming freight at Port Everglades is projected to reach numbers similar to the Port of Miami and that needed warehousing capacity was not available in Broward. Therefore, the Opa-Locka Airport area's development plan for more warehousing capacity, coupled with the easy access to Broward, is projected to contribute to the need for access and travel to this destination. As a result of the study process to date, the Freight Plan recommendations included extensions of SR 924 East and West for better access to the Medley area and the Opa-Locka Airport area. However, MDX 2035 vision projects to convert US-27 to a managed truckway and the establishment of a new North-South Connector from Miami International Airport to Opa-Locka Airport would also contribute to the improved mobility for freight in Miami-Dade County.



3 Capacity and Operational Improvement Element

3 Capacity Improvement Element

The Capacity Improvement Element focuses on MDX's identified capital improvements as a result of the 2035 Master Plan visioning process. As indicated previously, the visioning process was supported by MDX's agency goals, demographic, land use and technical transportation information presented in previous chapters. It includes projects that will increase roadway capacities, thereby maximizing opportunities for improved mobility, system linkage and reduced arterial roadway congestion.

The following projects were developed through a collaborative effort with MDX staff, Board members and strategic agencies. Presentations were made to the MDX Board, key MPO committees and the Blue Ribbon Panel during 2007 and 2008, culminating in the selection of these projects for further development. The evaluation and ranking for these projects is outlined further in Section 3.2

3.1 Recommended Improvements

3.1.1 SR 924 Extension to HEFT (West)

Description

The objective of this project (**Figure 3-1**) is to provide a connection between the HEFT, I-75, SR 924 (Gratigny Parkway) and SR 826 (Palmetto Expressway). The project would serve east-west mobility needs throughout the northern section of Miami-Dade County. A Concept Report was developed to conceptually illustrate, and provide preliminary analysis of different alternatives to accomplish this objective. Some of the alternatives being considered include:

Alternative 1 proposes to coordinate with the ongoing I-75 PD&E to use I-75 lanes from the intersection with NW 138th Street to SR 826 to accommodate the new SR 924 west extension. This alternative could potentially be constructed on the existing NW 138th Street and Graham Dairy Road right-of-way. Several options for this

alternative include fully elevated, partially elevated and/or interchange improvements only at Okeechobee Road and I-75. However, this alternative must be coordinated with current City of Hialeah plans to improve NW 138th Street to a six lane facility within their city's boundaries.

Alternative 2 proposes to coordinate with the ongoing I-75 PD&E to use the existing I-75 lanes from SR 826 (current end of SR 924) to the intersection of NW 170 St and I-75. This option could possibly be constructed in the unimproved NW 170 Street right-of-way. Additional right-of-way acquisition may be required to accommodate needed improvements. This option would also include modifications to the current I-75 and HEFT lanes to provide a connection to the proposed SR 924 Extension.

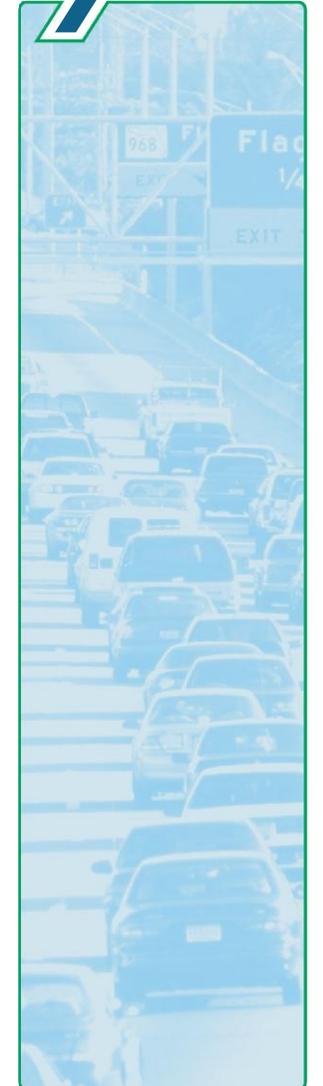
Alternative 3 proposes to connect SR 924 from SR 826 to the intersection of NW 170 St and I-75 with a separate facility on the west side of I-75. Right-of-way implications along NW 170 St for this alternative are similar to Alternative 2. However, additional right-of-way along the west side of I-75 may be required.

Location

The alternatives presented are possible improvements; however, there will likely be other options to consider during the planning process. The proposed extension is located within the area bounded by the HEFT on the west, Okeechobee Road on the South, NW 170 St on the North and I-75 on the east.

Purpose and Need

By providing an extension of SR 924 to the HEFT, mobility would be enhanced to all travelers in the northwest area of the County by interconnecting four major highways: HEFT, I-75, SR 826 and SR 924. This highway interconnection would reduce travel times and minimize delays by capturing through-traffic that is currently using local roads. The local roads in the area are currently operating at deficient levels of service and include Okeechobee Road



3 Capacity and Operational Improvement Element



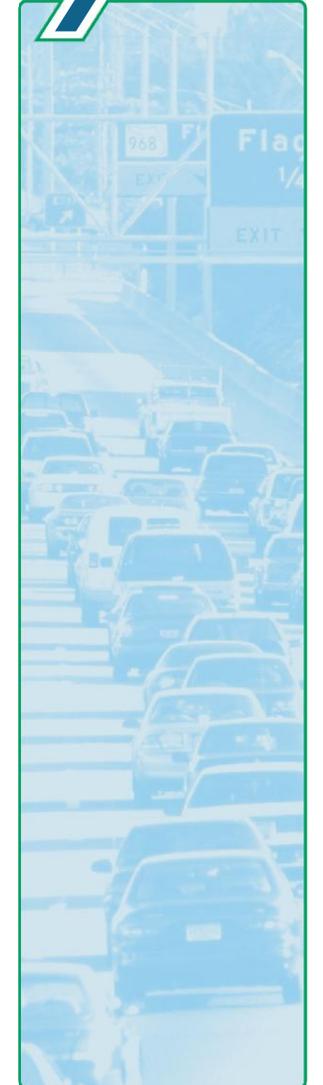
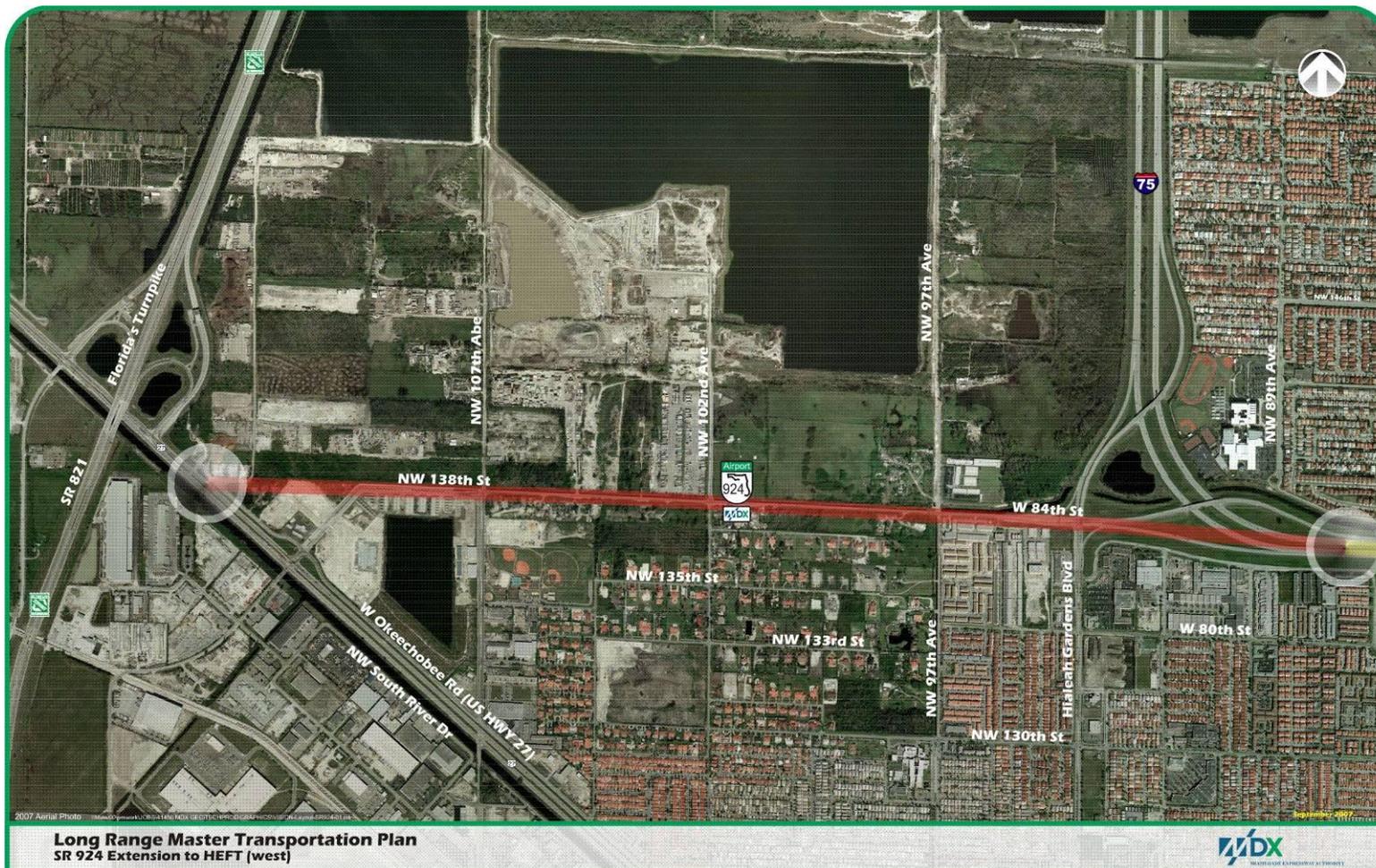
as well as local streets in the urban communities of Hialeah Gardens, Miami Lakes, and Hialeah.

MDX's proposed 2035 LRMP also includes an eastern extension of SR 924 from its current terminus at NW 32nd Avenue to I-95. Should both the western extension to the HEFT and the eastern extension to I-95 be implemented, a much needed east-west travel alternative to the already congested SR 836 would be created.

Project Status

This project was included in the MPO 2035 LRTP and is consistent with the County's Comprehensive Development Plan (CDMP) which calls for continued residential and commercial development westward to the HEFT. A Project Development and Environment study started in January 2010 with a 24 month schedule for completion.

Figure 3- 1: SR 924 Extension to HEFT (West)



3 Capacity and Operational Improvement Element



Area Characteristics

SR 924 ends at SR 826 with a connection to I-75. The proposed improvements to connect SR 924 with the HEFT may require a change in ownership of a section of I-75 from the FDOT to MDX.

Current land use in the study area is a mix of commercial, medium and low-density residential, industrial, and natural areas. East of the I-75 corridor, the land use is predominantly residential development. West of the I-75 corridor, the land use is currently undeveloped or used for quarry operations. The southern portion of the study area is commercial in the vicinity of I-75 and residential southwest of I-75. On the southwest side of US 27 (Okeechobee Road), the land use is mostly commercial.

The population of the area is predominantly Hispanic with an average age slightly under, and average income approximately equal to, the state and national averages.

Potential Issues

Community Issues

Commercial Impacts: Alternative 1 will require right-of-way acquisition on the adjacent properties along NW 138th Street, including some commercial developments. Alternatives 2 and 3 will require right-of-way acquisition on the undeveloped NW 154th Street and NW 170 Street right-of-way to have the minimum required typical section.

Residential Impacts: Alternative 1 is the only alternative that may impact some residences along NW 138th Street.

Natural Systems

The project lies within the East Turnpike Wetland Basin and areas characterized as forested wetlands exist within the study area. Most of the area west of the HEFT belongs to the South Florida Water Management District (SFWMD) and the state is also in the process of purchasing much of the land west of I-75 as part of the Comprehensive

Everglades Restoration Program (CERP) - North Lake Belt Storage Area.

Protected species may also be found in the study area, including wood storks, snail kites, indigo snakes and various wading birds.

Visual and Aesthetic

The alternatives to improve the NW 138th Street corridor could include elevated sections which would provide an opportunity to have landscape areas underneath the corridor. The elevated sections would mostly be adjacent to industrial and commercial uses. The development of connections at NW 154th Street (Alternative 2) and at NW 170th Street (Alternative 3) would also provide the opportunity to improve the aesthetics around these future interchanges.

Public Facilities

Community services are mainly confined to the south and east portions of the study area in the vicinity of the residential and commercial land uses. Several day care facilities, schools and places of worship are located within these areas.

Archeological and Historic Sites

The Graham Dairy House historic structure is located in the southwest segment of the study area.

Contamination

There are several types of contamination throughout the area, particularly within the industrial land uses. These include petroleum contamination facilities, petroleum tanks, solid waste and one toxic facility. The preferred alternative will seek to avoid or minimize the contamination impacts.



3 Capacity Improvement Element



Governmental Coordination

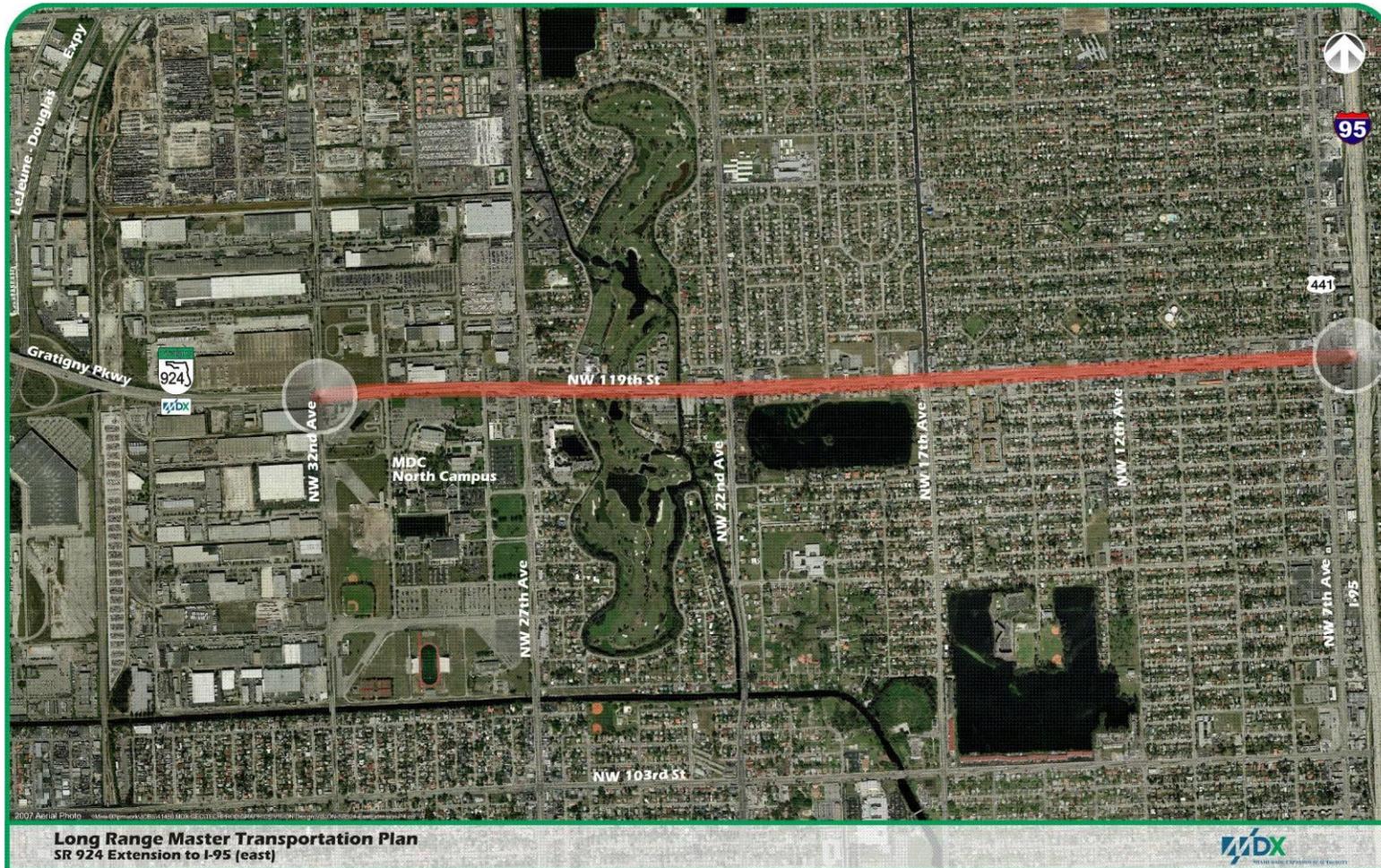
The project planning process will include coordination with all stakeholder agencies including Florida Turnpike Enterprise, Miami-Dade County, Florida Department of Transportation, City of Hialeah Gardens, City of Miami Gardens, and the City of Hialeah.

3.1.2 SR 924 Extension to I-95 (East)

Description

The objective of this project (**Figure 3-2**) is to provide additional east-west mobility along a limited access facility from I-95 to SR 924 (Gratigny Parkway). This interconnection would provide another direct access from I-95 in the east to I-75 and the HEFT on the west. Such a connection would provide improved access and mobility

Figure 3- 2: SR 924 Extension to I-95 (East)



3 Capacity Improvement Element

to and from major origin and destinations in northern Miami-Dade County, including employment centers in the Cities of Hialeah, Opa-Locka and Miami Lakes, and Miami-Dade Community College along NW 119th Street. The proposed alternatives intended to accomplish this objective are as follows:

Alternative 1 proposes to construct additional limited-access lanes along NW 119th Street to separate through-traffic from local traffic, from the terminus of SR 924 at NW 32nd Avenue to I-95. A new interchange would be proposed at NW 119th Street to provide direct access to I-95 in the northbound and southbound direction. Major intersections, such as NW 27th Avenue, NW 22nd Avenue and NW 17th Avenue would be at grade separated between the local traffic and the limited-access SR 924.

Alternative 2 proposes to construct a four-lane elevated highway connecting I-95 with SR 924 west of NW 27th Avenue. The section of this elevated highway will include only one pier on the current SR 924 median. This option would include a Modified Single-Point Urban Interchange (SPUI) at NW 32nd Avenue. The current SR-924 lane configuration would remain as is, except that there would be a possibility of reducing the number of lanes along NW 119th Street to provide livability enhancement such as additional green space and wider sidewalks.

Location

SR 924 / NW 119th Street / Gratigny Parkway from NW 32nd Avenue to I-95.

Purpose and Need

The project connecting the current terminus of SR 924 to I-95 would enhance mobility to all travelers in the northern area of the County by providing interconnectivity between the County's major highways: SR 826, SR 924, I-75, HEFT and I-95. This highway interconnection will reduce travel times and minimize delays by separating through-traffic from local traffic in the area. Currently, it is estimated that NW 119th Street will operate at Level of

Service F in 2030. If the western extension of SR 924 is implemented, the two projects would essentially provide another, very much needed continuous east-west corridor in northern Miami-Dade County that could be an alternate to SR 836 and alleviate traffic along the local roadway network.

Project Status

The project was included in the Miami-Dade 2035 LRTP. A Project Development and Environment study is anticipated in 2010.

Area Characteristics

In this area, SR 924 (NW 119th Street) separates unincorporated Miami-Dade County to the south from the City of North Miami to the north. The corridor serves as the southern boundary for the City of North Miami from NW 17th Avenue to NW 3rd Avenue.

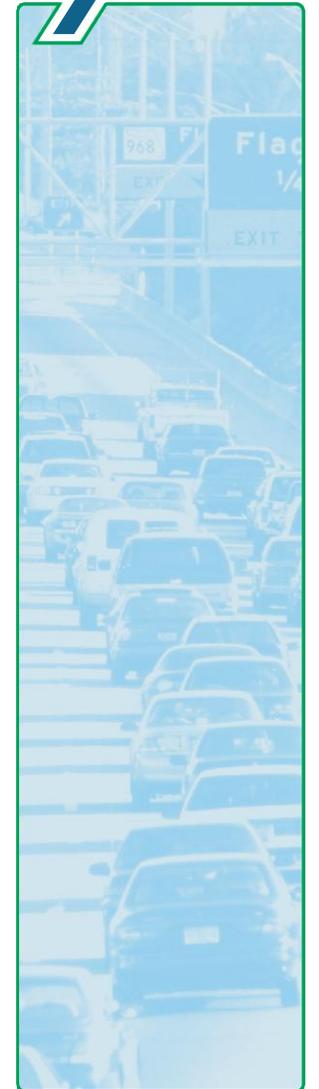
Land use in this study area is predominantly commercial and residential. The commercial corridor is found along the west side of I-95 and extends west along SR 924. Miami-Dade Community College and residential communities exist west of NW 22nd Avenue. Residential communities are also dominant east of I-95. The study area traverses the Westview Country Club, a private golf course, in the western portion of the study area.

The population of this area is predominantly African-American with an age and income levels below that of the state and national averages.

Potential Issues

Natural System

The study area is completely built-out with no natural systems remaining. Open spaces have been altered and are limited to maintained landscaped areas, such as golf courses, man-made lake shoreline, and sod fields. The majority of the study area lies outside of the 100-year floodplain.



3 Capacity Improvement Element

Community Issues

Commercial Impact: Alternative 1 will require right-of-way acquisition on the adjacent properties, including commercial developments at the major intersections. Alternative 2 will require right-of-way acquisition west of NW 32nd Avenue to connect with SR 924 and east of NW 17th Avenue to connect with I-95.

Residential Impact: Alternative 1 will also require the acquisition of residential properties, especially in the area around I-95 to allow for construction of the interchange access ramps. Alternative 2 will also impact the residences around I-95.

Visual and Aesthetics

Alternative 2 includes elevated sections and therefore would change the viewscape of the area. However, opportunities to provide more livable spaces under the elevated sections would be maximized with this alternative. The development of an interchange at I-95 will provide the opportunity to improve the aesthetics around the intersection of SR-924 and I-95. Proposed grade separations at major intersections in Alternative 1 would facilitate north-south movement for the adjacent residential neighborhoods and also provide an opportunity for landscaping at these intersections.

Governmental Coordination

The following entities will be contacted for coordination of improvements along this corridor, Miami-Dade County, Florida Department of Transportation, City of North Miami, Miami-Dade Community College, City of Opa-Locka, and the City of Hialeah.

Community Acceptance

There is an existing economic redevelopment plan for the City of North Miami that includes the NW 119th Street corridor. The plan recommends redevelopment of substandard land parcels along this section of SR-924 and said redevelopment could include improvement of the

existing right-of-way and development of a green way on the north side of NW 119th Street.

Public Facilities

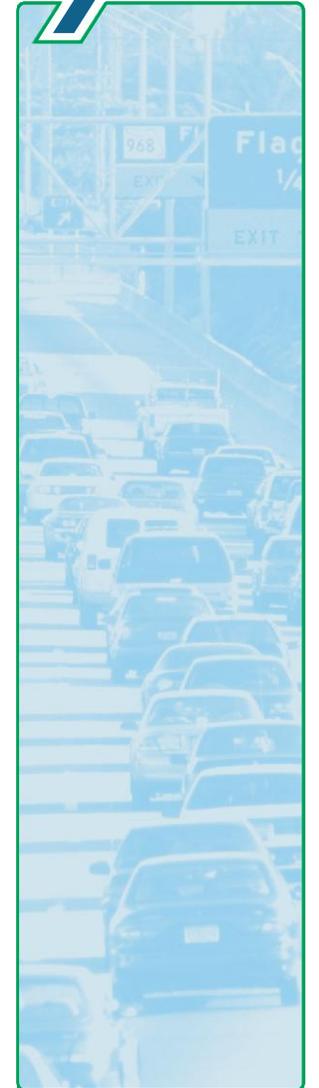
Community services within the study area include several places of worship, schools and day care facilities. The Miami-Dade College North Campus and Barry University are located on the western and eastern portions of the study corridor, respectively. There are two neighborhood parks, Kiwanis and Oleander, which lie within the study area.

Archeological and Historic Sites

There are various historic structures in the study area, most of which are private residences along NW 119th street, east of I-95. However, the majority are ineligible for inclusion in the local register to the National Register of Historic Places (NRHP). Therefore, they are not contributors to the Natural Resources District (NR District).

Contamination

Potential contamination sites include gasoline stations, hazardous waste sites, petroleum contaminant facilities and petroleum tanks. The preferred alternative will seek to avoid or minimize impacts to these sites.





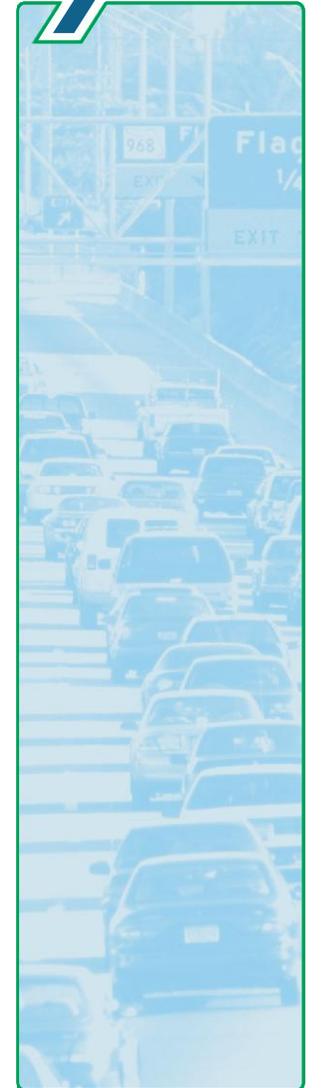
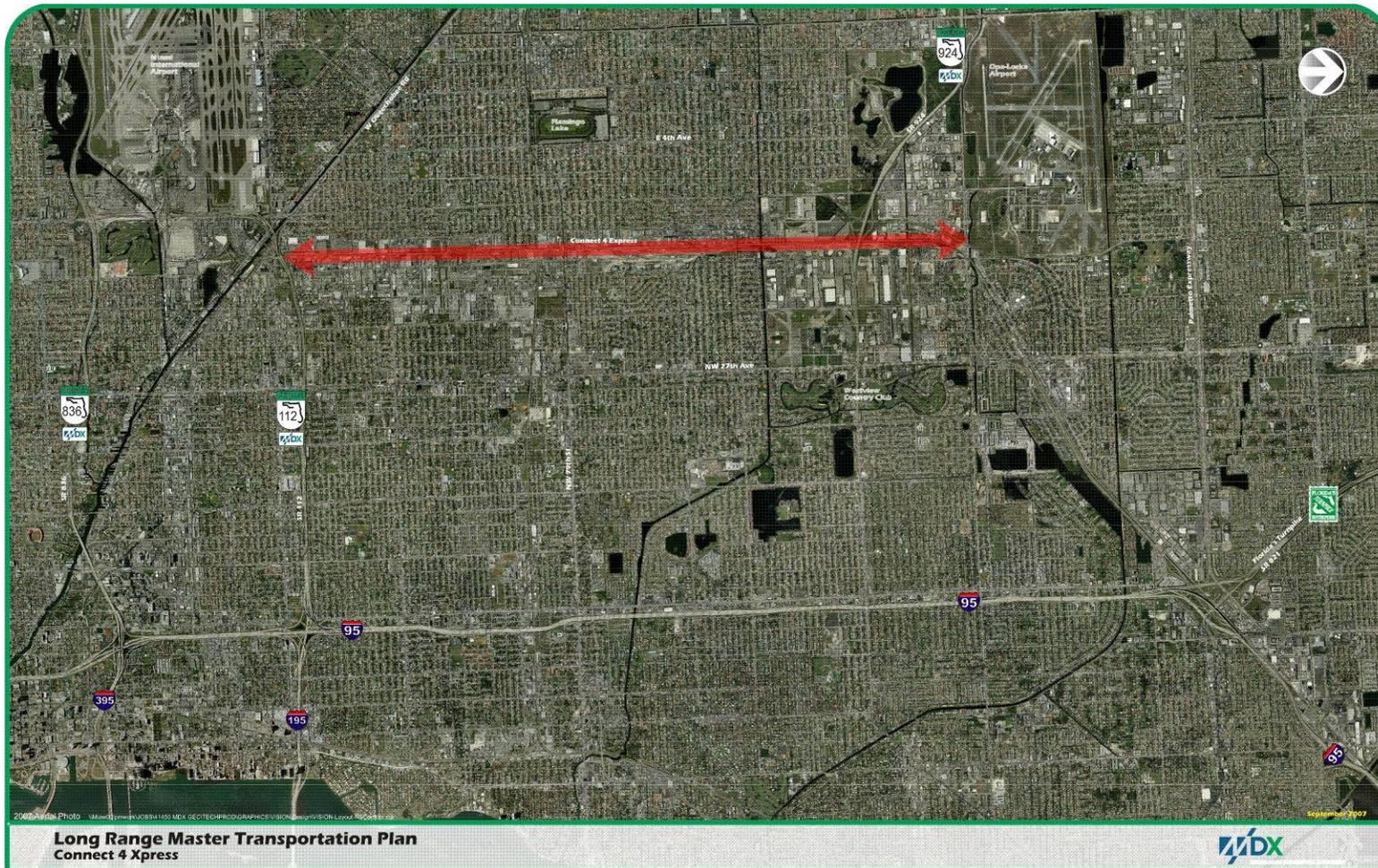
3.1.3 Connect 4 Xpress

Description

This project proposes a new, continuous, limited-access North/South Connector between Central Miami-Dade County/Miami International Airport and the northern part of the County (**Figure 3-3**). Currently there are only three corridors that serve this north-south function. They are I-95, the HEFT, and SR-826/Palmetto Expressway. The

conceptual project would construct a new North-South Connector from SR 836/SR-112/Airport Expressway to the HEFT with interchanges proposed at SR-826/Palmetto Expressway, and SR-9/Gratigny Pkwy. The planned multi-modal transportation corridor would include sufficient right-of-way to accommodate an extension of the regional transit system to the area.

Figure 3- 3: Connect 4 Xpress





Location

The study area of the North-South Connector is an irregularly-shaped section roughly bounded by NW 36th Street to the south, NW 199th Street to the north, NW 27th Avenue to the east, and NW 42nd Avenue to the west.

Purpose and Need

North Miami-Dade and South Broward County have experienced significant development and population growth, resulting in traffic volumes that are surpassing the existing expressway capacity. This results in congestion spilling onto the local arterial roadway network which is already over capacity.

The purpose of the project is to provide a new segment to a comprehensive regional expressway network that would connect residents in central and northern Miami-Dade County to major employment centers including Miami International Airport. This expressway would also relieve congestion on the arterial roads in the central suburbs of Miami-Dade County and would help reduce the congestion along I-95 and SR-826 (Palmetto Expressway).

Project Status

This project was included in the MPO's 2035 LRTP. A Project Development and Environment study is anticipated in 2010.

Area Characteristics

The study area is in a built-out urban environment. Land use in the study area is primarily high-density residential with intermixed commercial and industrial areas. Commercial/Industrial corridors are found along I-95 and NW 37th Avenue up to NW 135th Street, including a large commercial area southeast of Opa-Locka Airport. The Miami International Airport is in the southwest corner and the Opa-Locka Airport is in the center of the study area along the western perimeter. Recreational land uses are scattered throughout the study area including several local parks, golf courses and, in the north, Dolphin Stadium and Calder Race Course.

With the exception of the southwest portion of the study area, which is predominately Hispanic, the population of the study area is predominantly young and African-American with median incomes falling well below both the state and national averages.

Potential Issues

Natural Systems

The study area is completely built-out with few natural areas with the exception of some local parks and the banks of manmade canals and lakes. There are four major canals that traverse the study area: Miami Canal/C-6; Little River Canal/C-7; Biscayne Canal/C-8; and the Snake Creek Canal/C-9.

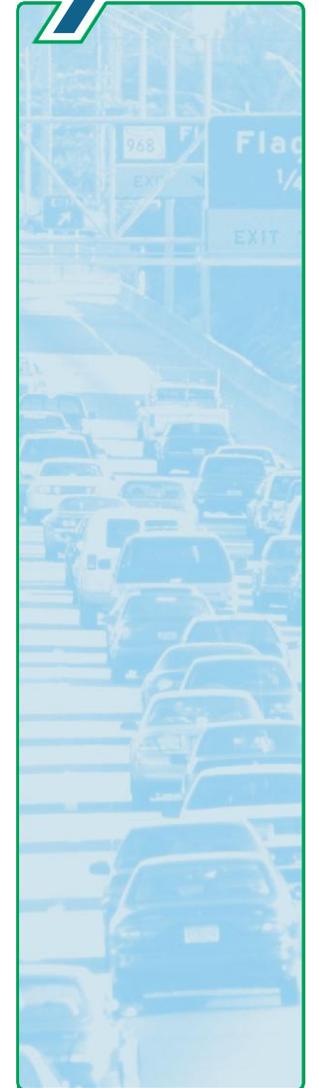
The endangered West Indian manatee (*Trichechus manatus latirostris*) may be found in the canals that traverse the study area. Special construction provisions would be required to minimize impacts to these animals during construction.

Floodplains

The majority of the study area lies outside of the 100-year floodplain; however, the exception is in the areas associated with the canal network in the study area, which generally lies within the 100-year flood plain (Zone AE).

Visual and Aesthetic

Dolphin Stadium is a significant visual feature in the northern portion of the study area. Designers will need to take into account the potential visual effects on the significant number of residential neighborhoods.



3 Capacity Improvement Element



Governmental Coordination

The study area includes the jurisdictions and services of several municipalities such as the Cities of Miami, Hialeah, Miami Shores, Miami Gardens, North Miami, North Miami Beach, Opa-Locka, Carol City, Biscayne Park and Miami-Dade County.

Public Facilities

The number of community services throughout the study area includes 685 places of worship; 171 government buildings; 192 daycare centers/facilities; 193 educational facilities; 8 civic centers; 16 police stations; and 6 hospitals. Dolphin Stadium, Florida Memorial College, Miami-Dade Community College, and St. Thomas University are some of the significant community features located within the study area.

Archaeological and Historic Sites

The study area includes 7 Historic Districts most of which are located in three areas: Opa-Locka, Miami Shores and the Miami area. There are 191 historic structures located within the study area that are eligible for the National Register of Historic Places (NRHP). These structures are located within the older sections of the County where the early inhabitants settled in Opa-Locka, Miami Shores, and Overtown. Of these, 24 have been listed on the NRHP, including the Hialeah Passenger Station, Miami Edison Senior High, and Opa-Locka Railroad Station. Approximately 25% of the identified sites are potential contributors to a Natural Resource (NR) District. There are two historic cemeteries in the study area: the Evergreen Cemetery located in the southern portion of the study area, and the Miramar Grave site located in the northern portion of the study area. Neither property has been evaluated by the State Historic Preservation Office.

Contamination

Within the project area there are many potential contamination sites. These include dry cleaners, gasoline stations, hazardous waste, petroleum contaminated facilities, and petroleum tanks sites. The preferred

alternative will seek to avoid or minimize the impacts on the contamination sites.

Community Acceptance

An extensive public outreach process would need to be undertaken as part of a new roadway alignment.

3.1.4 SR 874 Ramp Connector

Description

The SR 874 Ramp Connector proposes ramps between SW 136 Street and SR 874 with an extension to SW 127 Avenue (**Figure 3-4**). This extension could potentially connect to the proposed SR 836 West Kendall Extension, which is also part of MDX's LRMP.

Location

The extension encompasses an area of southwest Miami-Dade County bounded by the HEFT on the east and SW 127 Avenue on the west. The alignment is partially within the CSX Railroad and FPL corridors.

Purpose and Need

SR 874 (Don Shula Expressway) is one the primary highways connecting southwest Miami-Dade County to the rest of the County. Currently, there is no connection from SW 136 Street to SR 874 or to the HEFT. East-west alternatives along parallel facilities are operating above capacity during peak periods due to the rapid growth of residential, commercial, and industrial zones.

The proposed SR 874 Ramp Connector would provide an alternate east-west route within the study area, significantly reducing congestion on the HEFT at the SW 152 Street interchange, as well as improving connectivity to residents and operations throughout the entire study area.

Project Status

This project is included in the MPO's 2035 LRTP. A Project Development and Environment study started in January 2010 with an 18 month schedule for completion.



3 Capacity Improvement Element



Area Characteristics

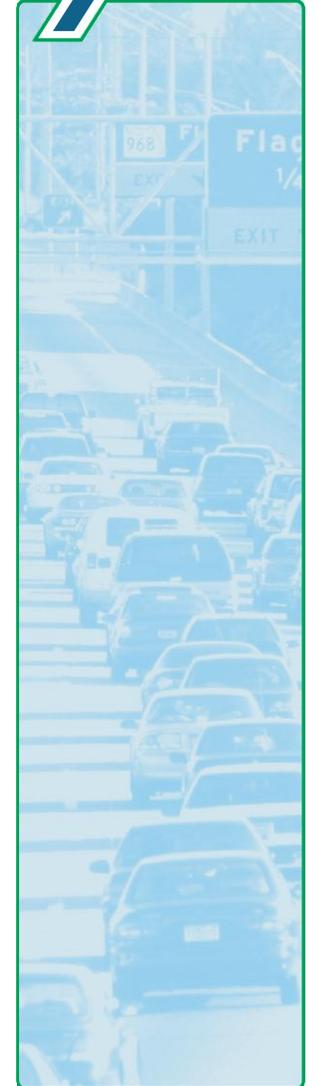
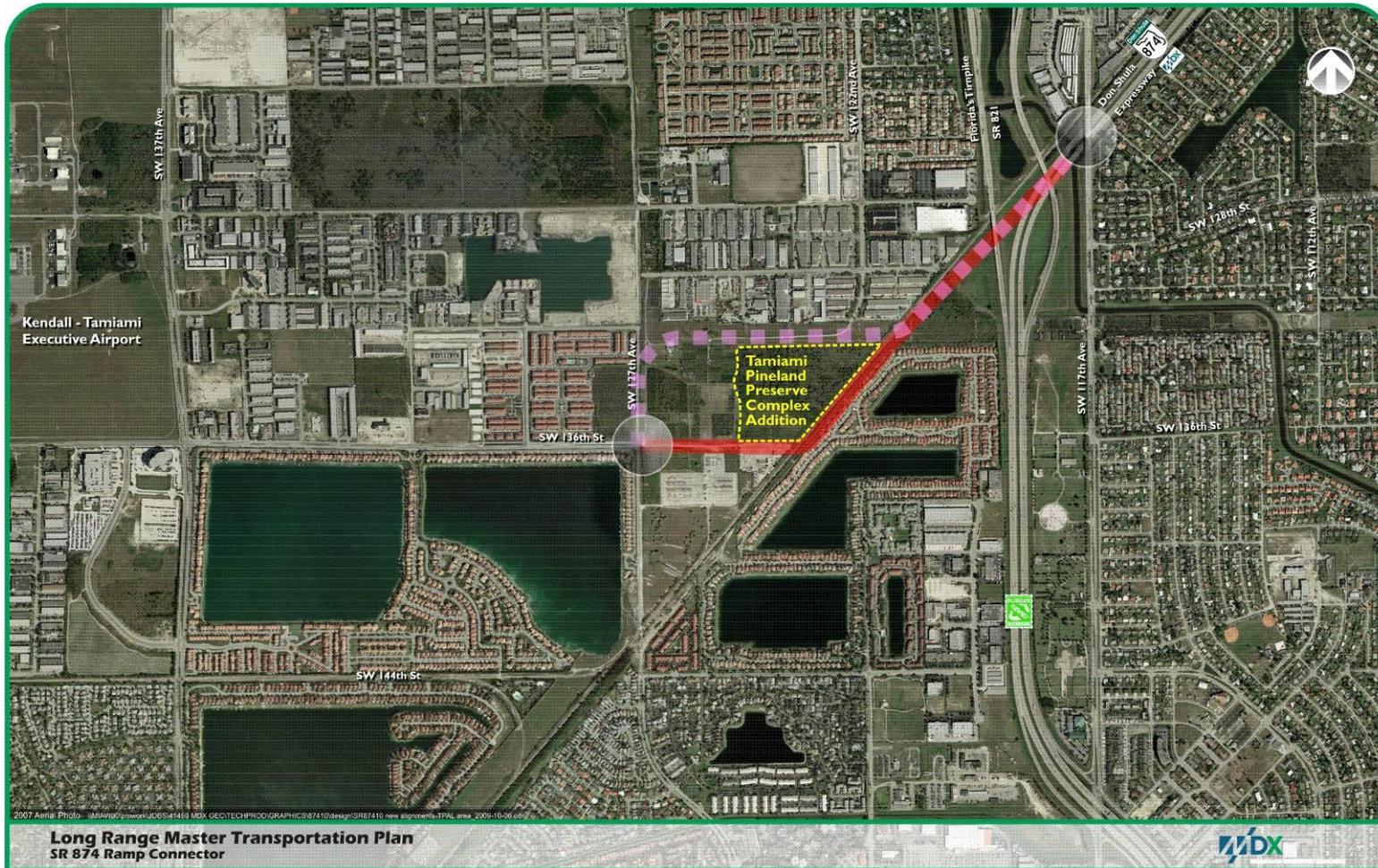
Land use in the study area is primarily undeveloped forested and agricultural areas. Residential areas are found in the south and east of the study area. The Kendall-Tamiami Executive Airport is located along SW 136 Street to the west of the study area as are various scattered religious centers.

The population of the area is predominantly Hispanic with

an age and income level that generally reflects that of the state and national average.

The area surrounding the proposed corridor includes residential zones to the north and south. Industrial uses include the Tamiami Industrial Park and the Deerwood Industrial Park. There are also several commercial establishments to the north of the project along SW 136 Street approaching SW 127 Avenue.

Figure 3- 4: SR 874 Ramp Connector



3 Capacity Improvement Element

At present there is no connection between SW 136 Street and SR 874. Expressway access to this area is via the HEFT interchanges at SW 152 Street and SW 120 Street.

Potential Issues

Community Issues

Commercial: The extension would provide a much needed connection to the area and support further commercial development. Only issues with respect to access to the road from commercial uses could arise.

Residential: Issues may arise with the residential communities immediately adjacent to the proposed corridor; however, residential areas will benefit greatly from the new connections to the area's major highways.

Natural Systems

The study area includes a large tract of undeveloped forested land and crosses the SFWMD C-100 canal. This undeveloped land is classified as Environmentally Endangered Land (EEL) and protected and managed by the Miami-Dade County Department of Environmental Resources Management. During the screening of the project in Florida's Efficient Transportation Decision Making (ETDM) several agencies required that alternatives studied do not negatively impact said property.

The Nixon Smiley Pineland Preserve lies outside of the study area to the north. The study area is within the United States Fish and Wildlife Service (USFWS) consultation area for the endangered snail kite.

Public Facilities

Community services in the vicinity of the study area are predominantly places of worship and all lie outside the study area. The only community feature within the study area is the Kids Paradise Learning Center child care facility located at 13455 SW 136 Street.

Archeological and Historic Sites

There are no known archeological sites within the study area.

Contamination

Within the project area there are several petroleum fields, four hazardous waste sites and one toxic site. The preferred alternative will seek to avoid or minimize the impact on these contamination sites.

Visual and Aesthetics

Low potential exists for visual and aesthetic issues as the corridor runs through the expressway right-of-way and vacant lands. However, the viewscape may be affected by the proposed project for the residential areas in close proximity to the ramp extension on the south.

Governmental Coordination

Coordination with Miami-Dade County and Florida Turnpike will be required.

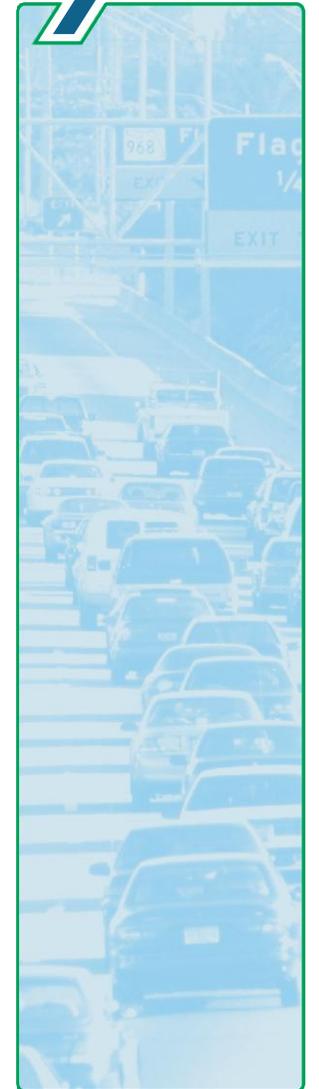
Community Acceptance

Potential for controversy does exist as the residential communities adjacent to the SW 136 Street may object to a new expressway access in close proximity.

3.1.5 SR 836 Southwest Extension

Description

The conceptual project would extend SR 836 from NW 137th Ave west and southwest to the vicinity east of Krome Avenue, then south through western Miami-Dade County, with interchanges proposed at SW 40th Street (Bird Road), SW 88th Street (Kendall Drive), SW 104th Street (Killian Parkway) and SW 136th Street (**Figure 3-5**). The planned multi-modal transportation corridor would include sufficient right-of-way to accommodate an extension of the regional transit system to the Kendall area. The SR 836 Kendall Extension may terminate at SW 136th Street to provide interconnectivity with the SR 874 Ramp Connector project, which is also part of MDX's LRMTTP Update. Two alternatives could be potentially considered:



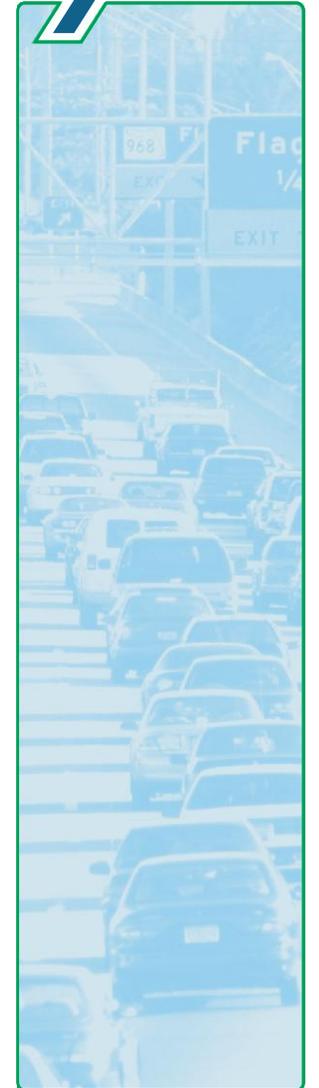
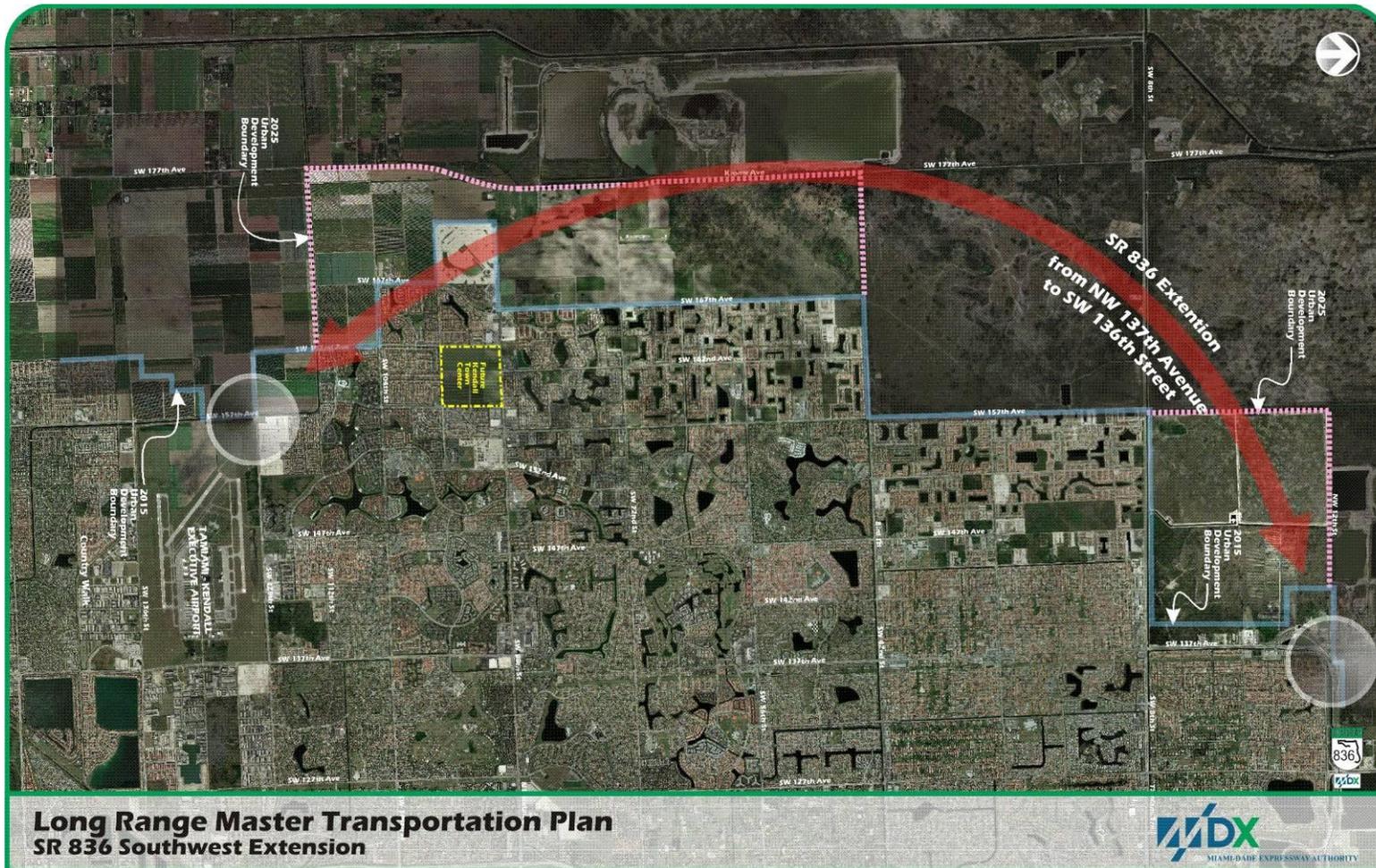
3 Capacity Improvement Element



Alternative 1 proposes to extend SR 836 from NW 137 Avenue, traversing southwest to SW 8 Street, then west to the vicinity of Krome Avenue (SW 177 Avenue). The extension would then continue south to SW 136 Street where it would turn west to SW 157 Avenue. This alternative could potentially serve as a barrier to urban sprawl west of Krome Avenue.

Alternative 2 proposes to extend SR 836 from NW 137 Avenue, traversing southwest to the SW 8 Street and SW 157 Avenue intersection. It would then proceed west along SW 157 Avenue until it reaches SW 136 Street. The area along SW 157 Avenue is predominantly residential.

Figure 3- 5: SR 836 Southwest Extension



3 Capacity Improvement Element

Both alternatives could, in the future, be connected at SW 157 Avenue to the proposed SR 874 Ramp Connector, which is also part of MDX's LRMTTP.

Location

The MDX SR 836 Extension study area is located in an unincorporated area of Miami-Dade County. The study area for the MDX SR-836 Extension Study area is an irregularly shaped section roughly bounded by NW 12th Street to the north, SW 136th Street to the south, SW 152nd Avenue to the east, and Krome Avenue to the west.

Purpose and Need

Traffic in Southwest Miami-Dade has grown significantly in recent years due to newly developed residential communities, commercial areas, and light industrial uses. Most of the area's projected growth includes low-to-medium density housing developments with supporting commercial uses such as neighborhood shopping centers, schools, and services. A new satellite facility to Baptist Hospital in the vicinity of Kendall Drive at SW 167 Avenue is currently being planned.

The east-west arterial roadways in Southwest Kendall are heavily congested because there are limited north-south options in the study area. Most of the north-south options are located to the east of the community. Therefore, all traffic exiting Kendall must travel east to access the area's major north-south facilities. The proposed extension would alleviate this congestion by providing much needed north-south capacity along the western area of the County, thus, connecting major commercial and industrial centers such as MIA, the future Miami Intermodal Center (MIC), the Port of Miami, Downtown Miami, and proposed industrial parks such as Beacon Trade Port. The extension would also provide a connection to other major destinations such as Florida International University, Dolphin Mall, and major employment areas such as the City of Doral.

Project Status

This project was included in the MPO's 2035 LRTP.

Area Characteristics

Land use designations for the study area are as follows: The north portion between NW 12th Street and SW 177th Avenue (Krome Avenue), north of SW 40th Street (Bird Road) is approximately 80% wetlands, 15% residential, 4% industrial, and 1% rangeland. The Miccosukee Casino is located in the northwest corner of SW 177th Avenue (Krome Avenue) and SW 8th Street (Tamiami Trail).

The south portion between SW 40th Street (Bird Road) and SW 136th Street is approximately 85% agriculture, 7% residential, 5% wetlands, 2.5% utilities, and 0.5% upland forests.

The County's current (2015) Urban Development Boundary (UDB) separates the residential developed lands of the east from the wetlands to the west and hugs Krome Avenue. In 2025 the UDB is proposed to extend west of Krome Avenue (SW 177th Avenue) between SW 42nd Street and SW 112th Street, increasing development pressures in the area.

Potential Issues

Community Issues

Commercial: No issues are foreseen. The extension would provide needed connection to the area's commercial development.

Residential: Issues may arise with the residential communities immediately adjacent to Alternative 2; however, residential areas will benefit greatly from the greater connectivity and access to the area's major highways.



3 Capacity Improvement Element



Natural Systems

The study area is within the Miami-Dade West Wellfields. The Bird Drive Recharge Basin, a component of the Comprehensive Everglades Restoration Plan (CERP), comprises 2,877 acres, and serves to recharge groundwater. An environmental mitigation plan may be required.

Public Facilities

Alternative 2 takes the corridor through the existing urban area; however, it would be constructed along a high population density corridor adjacent to several day care facilities, schools, health care centers, and religious facilities.

Archeological and Historic Sites

There are several historic burial and midden sites as well as prehistoric campsites located within the study area.

Visual and Aesthetic

Low potential exists for visual and aesthetic issues where the corridor runs through vacant lands. However, the SW 157 Avenue alternative would significantly impact the aesthetics of the area. The limited right-of-way would not allow for green space or landscaping throughout the corridor.

Governmental Coordination

Coordination with the following agencies will be required: Miami-Dade County, South Florida Water Management District, U.S. Army Corps of Engineers, South Florida Regional Planning Council and several others.

Community Acceptance

The potential for controversy exists due to the proximity of the Urban Development Boundary. An aggressive Public Involvement program will be required.

3.1.6 Airport/Seaport Managed Lanes

Description

The Airport-Seaport Managed Lanes (ASML) conceptual project would improve traffic conditions by implementing congestion pricing within non-physically separated managed lanes along SR 836, SR 112 and its connection through LeJeune Road/NW 42 Avenue. The proposed ASML would improve roadway traffic conditions and freight movement from the Seaport to the Airport and vice versa while also benefiting transit and passenger vehicles.

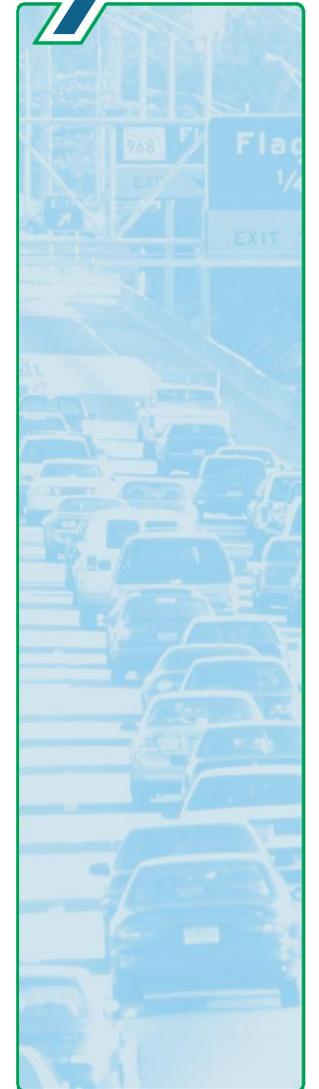
This conceptual project includes the identification of potential congestion mitigation improvements along SR 836, SR 112 and LeJeune Road / NW 42 Avenue (**Figure 3-6**). Viable improvement projects will be identified and tested along these corridors. The intent is to implement a project within the existing right-of-way with minimal reconstruction cost and effort. Project alternatives are scheduled to be developed in future studies. The project includes a managed lane concept for SR 836 between SW 137th Avenue and SR 826 and project improvements along SR 836 between SR 826 and SW 17th Avenue.

Location

The study area includes SR 836 from NW 137 Avenue to just west of I-95, SR 112 from I-95 to just west of LeJeune Road / NW 42 Avenue and LeJeune Road / NW 42 Avenue from just south of SR 836 to just north of SR 112.

Purpose and Need

The traffic demand for freight and passenger vehicles is anticipated to grow with the implementation of the new Port Tunnel at the Port of Miami. The proposed project will address this growth and attempt to provide alternatives to the intermixing of additional truck demand that will travel simultaneously with everyday traffic throughout these already congested corridors. By providing an alternative for truck travel between the Port of Miami and Miami International Airport (MIA), a quicker and safer commute for all vehicles within the study area can be accomplished.



3 Capacity Improvement Element

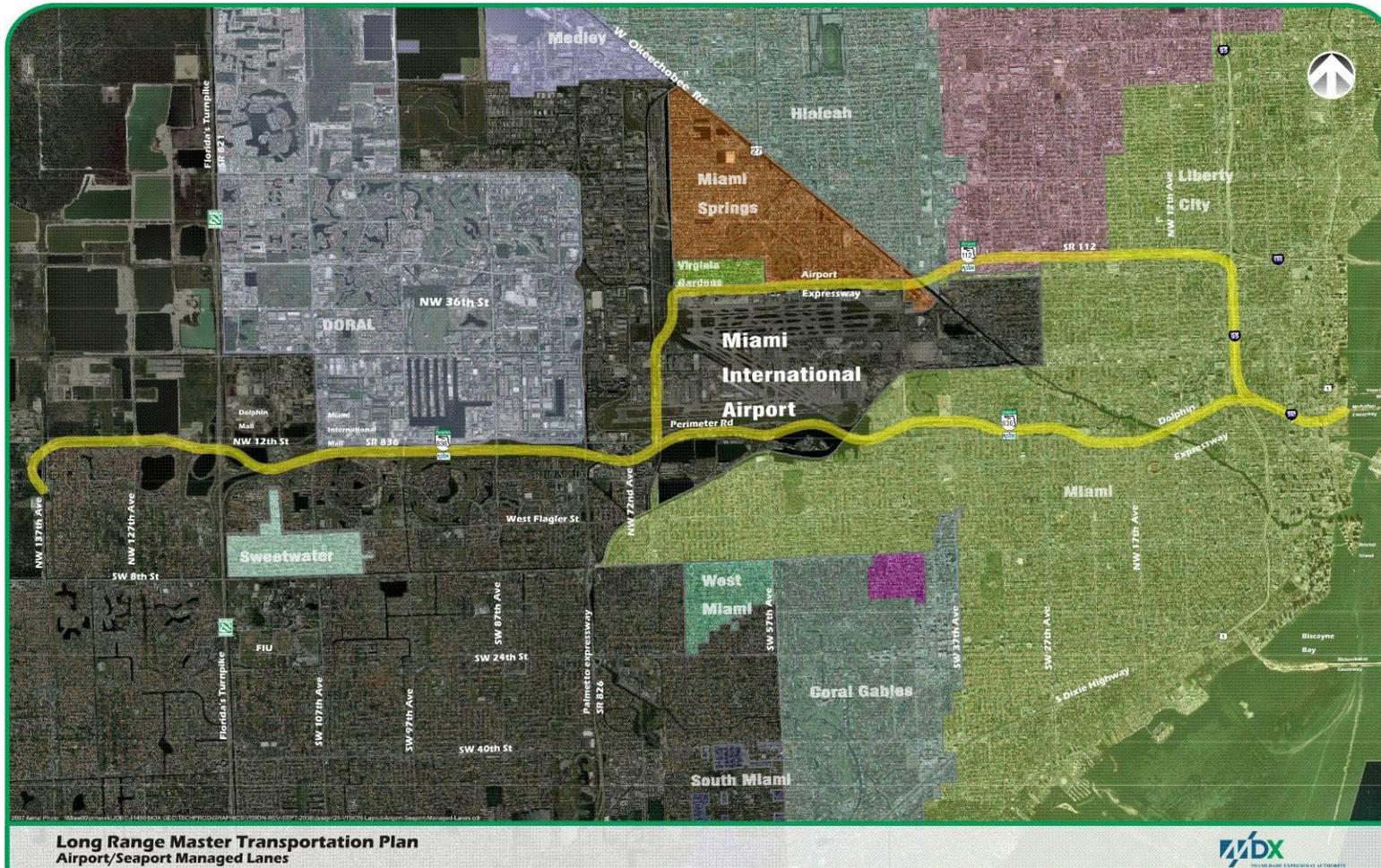
Project Status

This project was included in the MPO's 2035 L RTP as managed lanes between SW 137th Avenue and SR 826 along SR 836 and as intersection improvements between SR 826 and SW 17th Avenue. SR 112 improvements and further variable pricing analysis will be conducted at a future date.

Area Characteristics

The greater portion of this study involves existing limited-access facilities with a very limited right-of-way. Due to right-of-way constraints, an alternative that does not require major reconstruction is desired. The areas adjacent to the SR 112 corridor are predominantly residential, with sparsely integrated light commercial and industrial zones. The Metrorail runs parallel to SR 112 on the

Figure 3- 6: Airport/Seaport Managed Lanes



3 Capacity Improvement Element

north side of the highway from NW 12 Avenue to NW 27 Avenue. NW 36 Street is bordered by MIA to the south and by the primarily residential communities of Miami Springs and Virginia Gardens to the north. Immediately adjacent to NW 36 Street on the north side are numerous commercial businesses, including but not limited to, gas stations, motels, and restaurants. There are no current plans for using the SFRC corridor between I-95 and the MIC for rail transit.

SR 836 runs east-west providing access to major land uses such as MIA, Dolphin Stadium, Regional Hospitals, Florida International University (FIU), Dolphin Mall, International Mall, Downtown Miami and the Port of Miami, along with several residential and commercial land uses.

Since the alternatives for this project have yet to be developed, potential issues have not been identified.

3.1.7 US-1 Managed Lanes from Florida City to Dadeland South

Description

The US-1 Managed Lanes, Kendall Drive to Florida City project, proposes to use the existing busway from Florida City to the Dadeland South Metrorail Station to help mitigate the growing traffic demands along the US-1 corridor (**Figure 3-7**). The project, as proposed, would help fund future improvements to the rapid transit system in South Dade. The busway runs north-south, to the west of US-1 and upon completion, will run from SW 344 Street to the Dadeland South Metrorail station.

Location

The managed lanes will run along the busway from SW 344 Street in Florida City to the Dadeland South Metrorail Station.

Purpose and Need

This project proposes to use the existing and proposed busway as a managed lane facility, enabling regular

traffic to travel with the buses for the length of the corridor. Depending on the amount of congestion and the number of persons within each vehicle, a toll will be assessed for usage of the managed lane facility. The revenues generated from the toll would help fund future rapid transit improvements throughout the South Dade corridor. This project will also help mitigate the growing traffic demand in the region by providing an alternate route to commuters who regularly use US-1. Grade separated interchanges would be located at major intersections throughout the corridor.

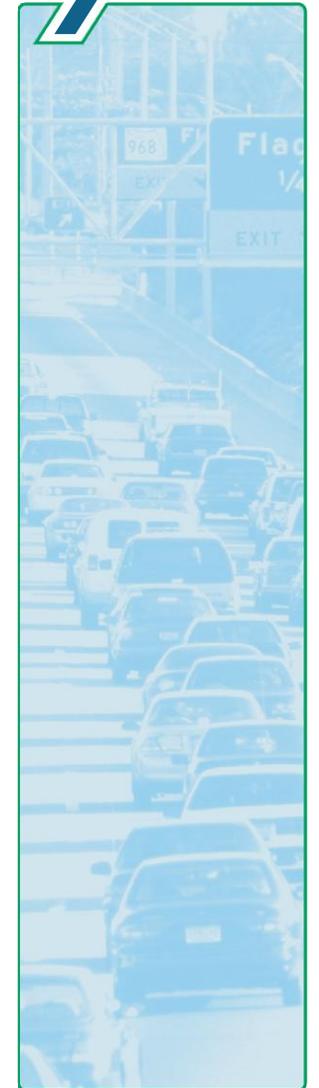
Project Status

This project was included in the MPO's 2035 LRTP. A Project Development and Environment study is anticipated in 2010.

Area Characteristics

The study area centers along US-1 from Kendall Drive to Florida City. This area is intermixed with medium to high density residential land uses in the northern portion and low to medium density residential land uses to the south. The corridor along South Dixie Highway (US-1) is a highly commercial one. Everglades National Park and Biscayne National Park are located south and east of the study area, respectively. Croplands and pasturelands surround the study area as well as various nurseries and tree crops. Recreational land uses are scattered throughout the study area and include various RV parks and campgrounds, golf courses, and local parks. Homestead Air Reserve Base is also located just east of the study area.

The population of the northern portion of the study area is predominantly white with an average income well above state and national averages. In the southern portion of the study area (south of SW 216th Street), the population is comprised mostly of Hispanic and African-American populations with incomes and ages below state and national averages.



3 Capacity Improvement Element

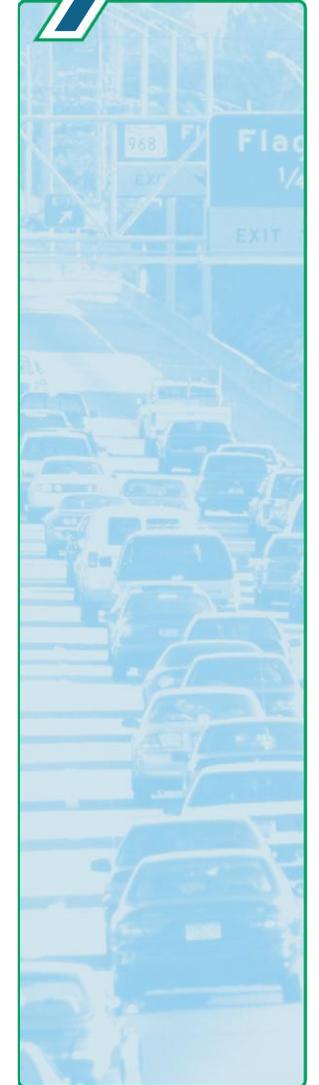
Potential Issues

Natural Systems

With the exception of some isolated pinelands, local parks, and banks of manmade canals, the study area is completely built-out with almost no natural areas remaining. There are several major canals that traverse the study area: Black Creek Canal/C-1; Bel-Aire Canal/C1-N; Snapper Creek Canal/C-2; Cutler Drain

Canal/C-100, C-100A, C100B, and C-100C; Princeton Canal/C-102; and Mowry Canal/C103. The endangered West Indian manatee (*Trichechus manatus latirostris*) may be found in the canals that traverse the study area. Special construction provisions would be required to minimize impacts to these animals during construction. The southern portion of the study corridor extends into the Wellfield Protection Area of 5 small wellfields: Harrison Park,

Figure 3- 7: US-1 Managed Lanes from Florida City to Dadeland South



3 Capacity Improvement Element

Newton, Leisure City, Naranja Park and Florida City. Everglades National Park and Biscayne National Park are located south and east of the study area, respectively. A variety of listed species and wading birds may be found traversing or foraging in the habitats within the study area.

Floodplains

The study area is intermixed with areas that lie within or outside of the 100-year flood plain. Areas east of US-1 and lands adjacent to the canal network are those that generally lie within the 100-year flood plain (Zones, A, AE and AH).

Community Issues

Commercial Impact: Express lanes would serve the commerce that exists throughout the corridor. Some traffic patterns may be modified by the closure of some roads that have direct access to US-1.

Residential Impact: No residential issues are foreseen.

Public Facilities

The study area includes the jurisdiction and services of several municipalities such as Homestead, Miami, Florida City, Goulds, Lakes by the Bay, Perrine, Pinecrest, Cutler Bay, Palmetto Bay, and South Miami. Community services are concentrated in the northern and southern portions of the study area and include 232 places of worship; 134 daycare facilities; 106 government buildings; 98 educational facilities; 16 cultural centers; 14 police facilities; and 3 hospitals. The South Dade Government Building, Palmetto Golf Course, and the Miami-Dade College South Campus are some of the significant community features located within the study area.

Archeological and Historic Sites

The study area includes 346 potentially historic structures most of which are found in the southern portion of the study area. Twenty of these potential structures have been determined to be eligible for the NRHP. Of these, 9

have been listed on the NRHP including the Florida Pioneer Museum, Homestead Chamber of Commerce, Neva King Cooper Elementary School, and portions of the Coral Castle. There are two historic cemeteries in the study area: the Silver Green Cemetery and Palms Memorial Park Cemetery which are both located in the southern portion. They are both primarily African American cemeteries and have not been evaluated by State Historic Preservation Office (SHPO).

Contamination

Since the proposed improvements are within the existing busway right-of-way, no impacts to contaminated sites near the corridor are anticipated.

Visual and Aesthetics

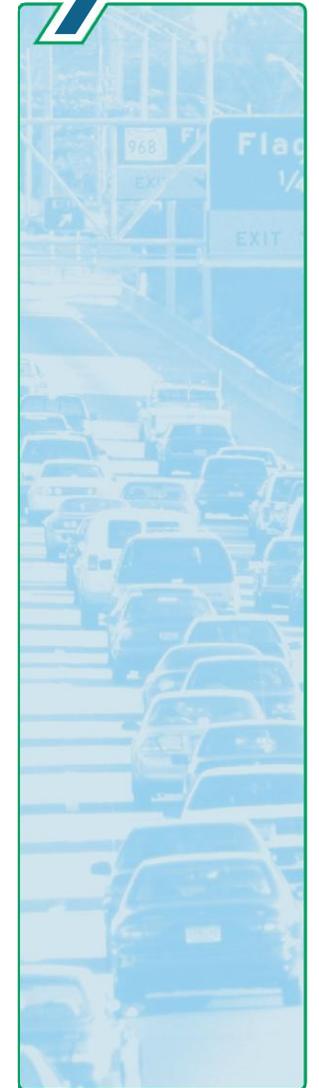
Project designers would need to take into account the potential visual effects on the significant numbers of residential neighborhoods and the themes of the various municipalities. The grade separated intersections may change the viewshed along US-1, which is mostly commercial.

Governmental Coordination

Coordination with the following agencies and municipalities will be required: Miami-Dade County, Miami-Dade Transit, FDOT, Florida City, City of Homestead, Village of Palmetto Bay, Town of Cutler Bay, and Village of Pinecrest.

Community Acceptance

There is a low potential for controversy since residential areas do not abut the project and all improvements are within the existing right-of-way.



3 Capacity Improvement Element

3.1.8 US-1 Managed Lanes from Dadeland South to I-95

Description

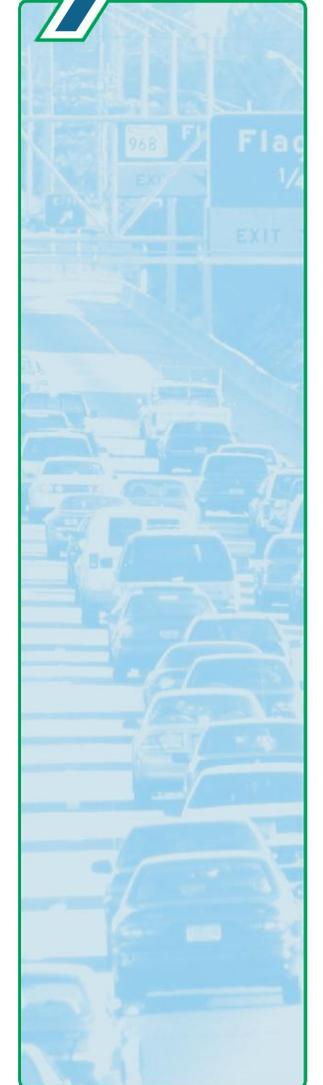
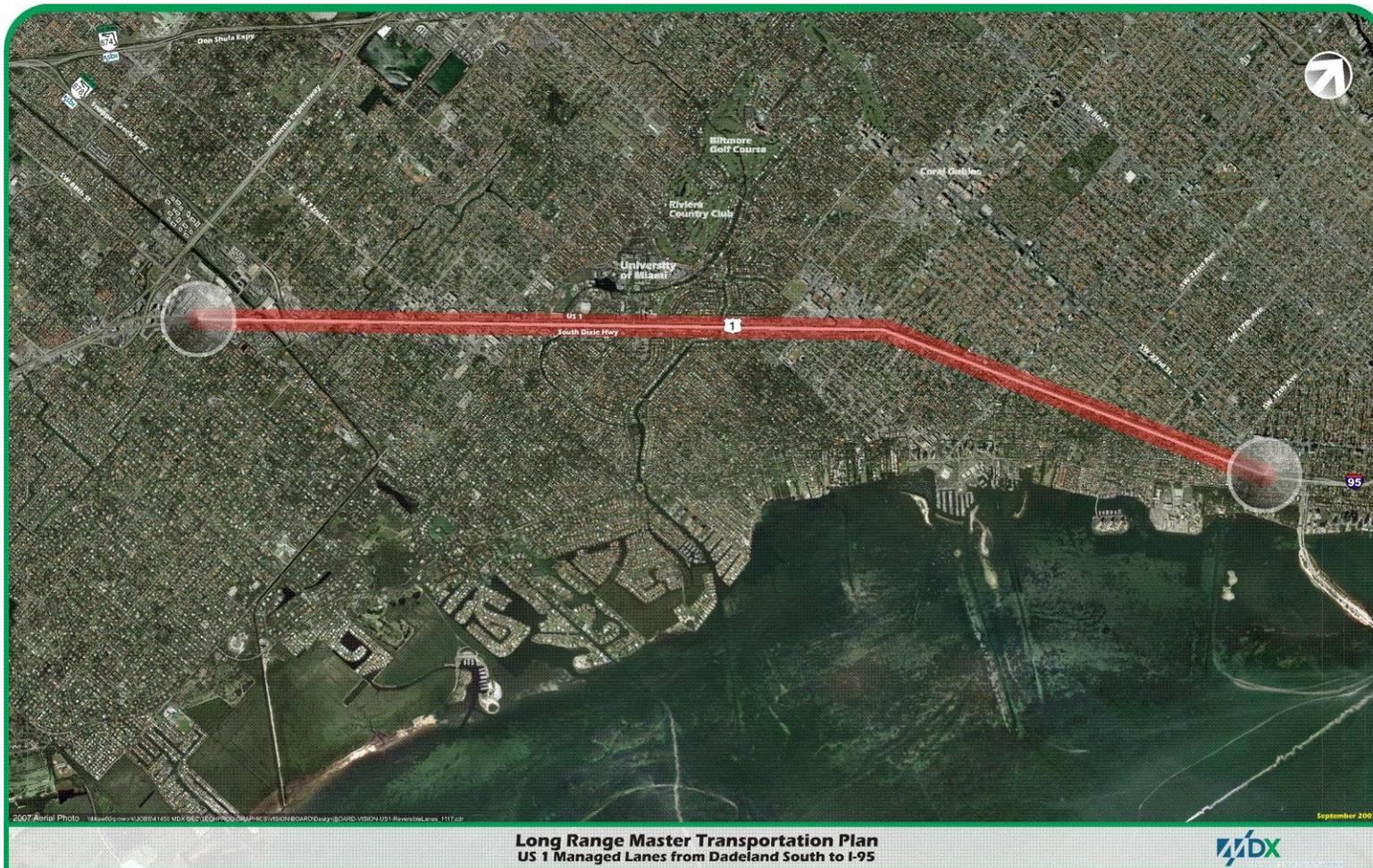
This project proposes an elevated corridor of managed lanes with variable toll pricing running from Dadeland South to I-95 Avenue along US-1 (Figure 3-8). This facility will improve accessibility to a Bus Rapid Transit System as well as local transit, enhancing mobility and reducing congestion along the US-1 corridor. Due to right-of-way

restrictions, the elevated roadway will be either in the median or immediately adjacent to the Metrorail line.

Location

The proposed improvement runs from Dadeland South to I-95 on US-1.

Figure 3- 8: US-1 Managed Lanes from Dadeland to I-95



3 Capacity Improvement Element



Purpose and Need

The US-1 corridor, in its central segment from Kendall Drive to downtown Miami, experiences congestion during the peak periods. The Metrorail system provides transportation services for commuters that can benefit from transit use. However, the demand for non-transit trips exceeds the capacity of the US-1 corridor. Some of these trips utilize SR 826 to SR 836 to reach downtown Miami destinations from the Dadeland area. An express lane system or a queue bypass lane system with variable toll pricing would enhance mobility along the corridor.

Project Status

This project was included in the MPO's 2035 LRTP.

Area Characteristics

The area from Dadeland South to I-95 is comprised mainly of light commercial and residential zones with some commercial and light industrial facilities between SW 42 Avenue and SW 37 Avenue. Residential uses are predominant in the area closest to downtown Miami. The Metrorail system services this area, with stations throughout the corridor, including stations at Dadeland Mall, South Miami Hospital, University of Miami and several others. The Metrorail is located on the west side of US-1 and runs elevated parallel to the corridor.

Potential Issues

Community Issues

Commercial Impact: Major impacts to commercial activity may occur during construction along this section of US-1.

Residential Impact: Residential issues may include noise impacts as well as opposition to another elevated structure within view of the residences.

Natural Systems

The study area is completely built-out with almost no natural areas besides a small patch of upland hardwood forest, two local parks, and the banks of manmade

canals. There are two major canals that traverse the study area: Snapper Creek Canal/C-2 and Coral Gables Canal/C-3. The northeast corner of the study area abuts with seagrass beds found in Biscayne Bay – part of the Biscayne Bay Aquatic Preserve and Outstanding Florida Waters. The endangered West Indian manatee (*Trichechus manatus latirostris*) is known to frequent the canals that traverse the study area. Special construction provisions would be required to minimize impacts to these animals during construction.

Floodplains

The study area mostly lies outside the 100-year flood plain. An exception is the area south of SW 57th Avenue on the east side of US-1 which lies primarily within the 100-year flood plain (Zone AE).

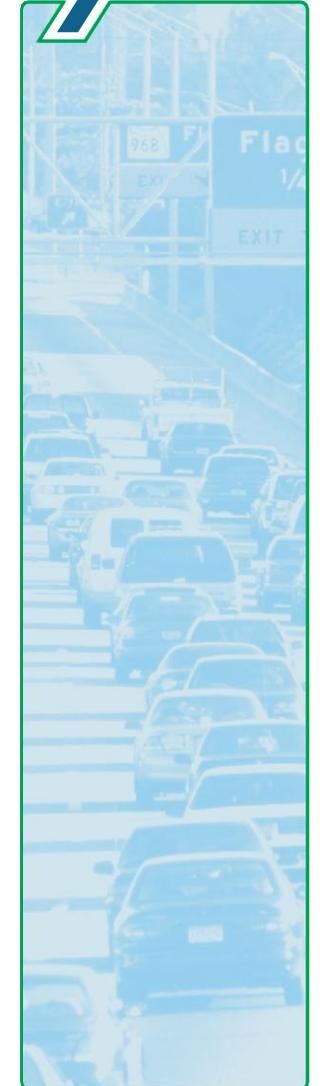
Visual and Aesthetics

The Metrorail system is located along the west side of US-1 and is the most significant visual feature within the study area. The construction of an elevated highway will have a significant visual impact on the aesthetics of the area. Because of the close proximity to the Metrorail and the limited right-of-way, there is little space for landscaping.

Apart from no landscaping possibilities, the existing green space beneath the Metrorail line might also be compromised due to the right-of-way restrictions.

Public Facilities

The study area includes the jurisdiction and services of multiple municipalities such as Miami, South Miami, and Coral Gables. Community services are scattered throughout the area and include 45 places of worship; 28 daycare facilities; 26 culture centers; 24 government buildings; 22 educational facilities; 4 hospitals; 2 police stations; and 1 fire station. In addition to the University of Miami, three of the 22 educational facilities have over 1,000 students. Three major hospitals are located within the study area: South Miami, Doctor's, and Mercy



3 Capacity Improvement Element

Hospitals. Additional significant community facilities within the study area include the Museum of Science and Planetarium, Vizcaya Museum and Gardens, and the Lowe Art Museum.

Archaeological and Historic Sites

The study area includes 297 potential historic structures located mainly in the northern portion on the east side of US-1. This area was a primary location for the early settlers of the City of Miami. Three of these historic structures, the Planetarium, Vizcaya, and the Cocoplum Women's Club, are registered on the NRHP. The majority of the other structures have not been evaluated. There is one potential historic cemetery in the study area: the Historic Coconut Grove Cemetery is mainly African-American and was established in 1906 but has not been evaluated. Three historic districts are located within the study area: Sunset Drive Historic District in the south; MacFarlane Homestead Historic District in the central section; and the Miami Roads Neighborhood in the north.

Governmental Coordination

Coordination with Miami Dade County and the cities of South Miami, Coral Gables, and Miami will be required.

Community Acceptance

There is a high potential for controversy and opposition due to the close proximity of residences to the corridor.

3.1.9 US 27 - New Limited Access Facility (SR 826 to HEFT to Krome Avenue)

Description

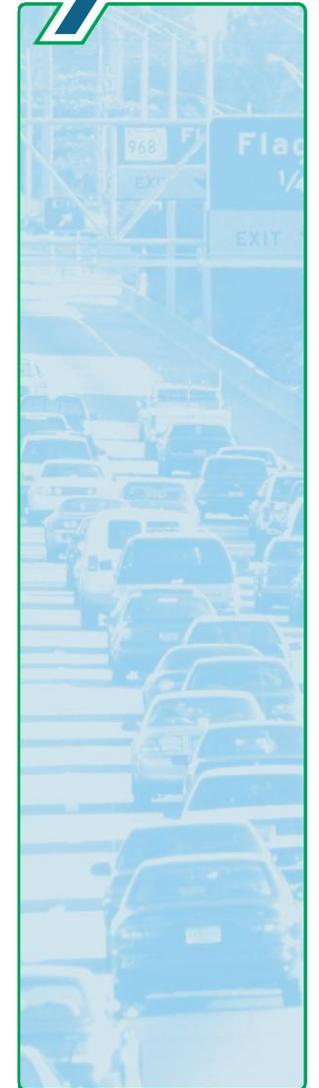
The objective of this project is to convert the current Okeechobee Road from a free access facility to a limited-access toll facility (**Figure 3-9**). Currently this road is a four-lane divided roadway from Krome Avenue to the HEFT and a six-lane divided roadway from the HEFT to the west side of the SR 826. The corridor includes several exclusive right and left-turn lanes at the majority of the intersections and median openings at these locations.

The following summarizes the improvements needed for this conversion:

The current perimeter road within the right-of-way limits needs to be separated by a fence. The exact location of the fence will depend on maintenance requirements for both roads. Considering that the land use around the corridor is not expected to have substantial changes, a potential alternative could be to maintain the current number of lanes in both directions and construct several Single-Point Urban Interchanges (SPUI). The SPUI will provide full access to the intersecting streets while maintaining the continuity along Okeechobee Road. The locations of the potential SPUI are listed below.

- At Krome Avenue
- At NW 186 Street
- Between SW 178th Street and NW 137th Avenue at NW 124th
- At NW 138th Street / Graham Dairy Road
- At NW 107th Avenue
- At NW 114th Street / Hialeah Gardens Boulevard
- At NW 105th Way

To eliminate the two signalized intersections at the HEFT interchange, the following improvements are recommended: 1) On the southwest corner of this interchange: a new single-lane ramp for the southbound HEFT entrance ramp and a single-lane ramp for the southbound HEFT traffic to eastbound US 27 traffic (both recommendations will require a bridge across existing canal) 2) On the southeast quadrant of this interchange: a new northbound HEFT exit ramp to US-27 eastbound and a new on-ramp from US-27 eastbound to HEFT northbound



3 Capacity Improvement Element

lanes (both options are single lanes and need a bridge to cross existing canal).

Location

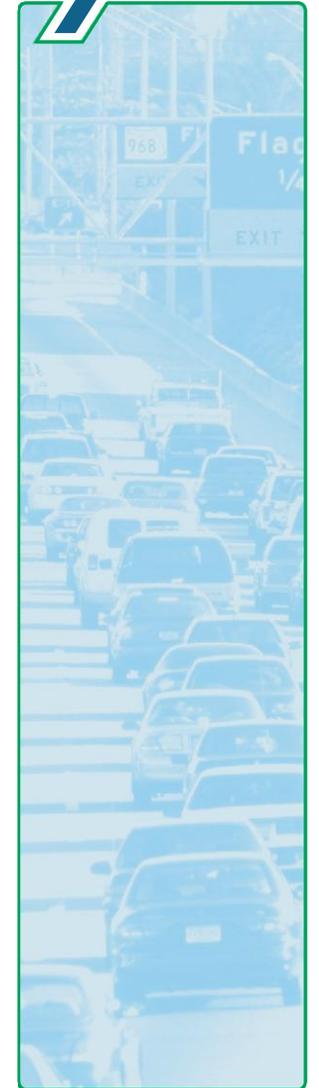
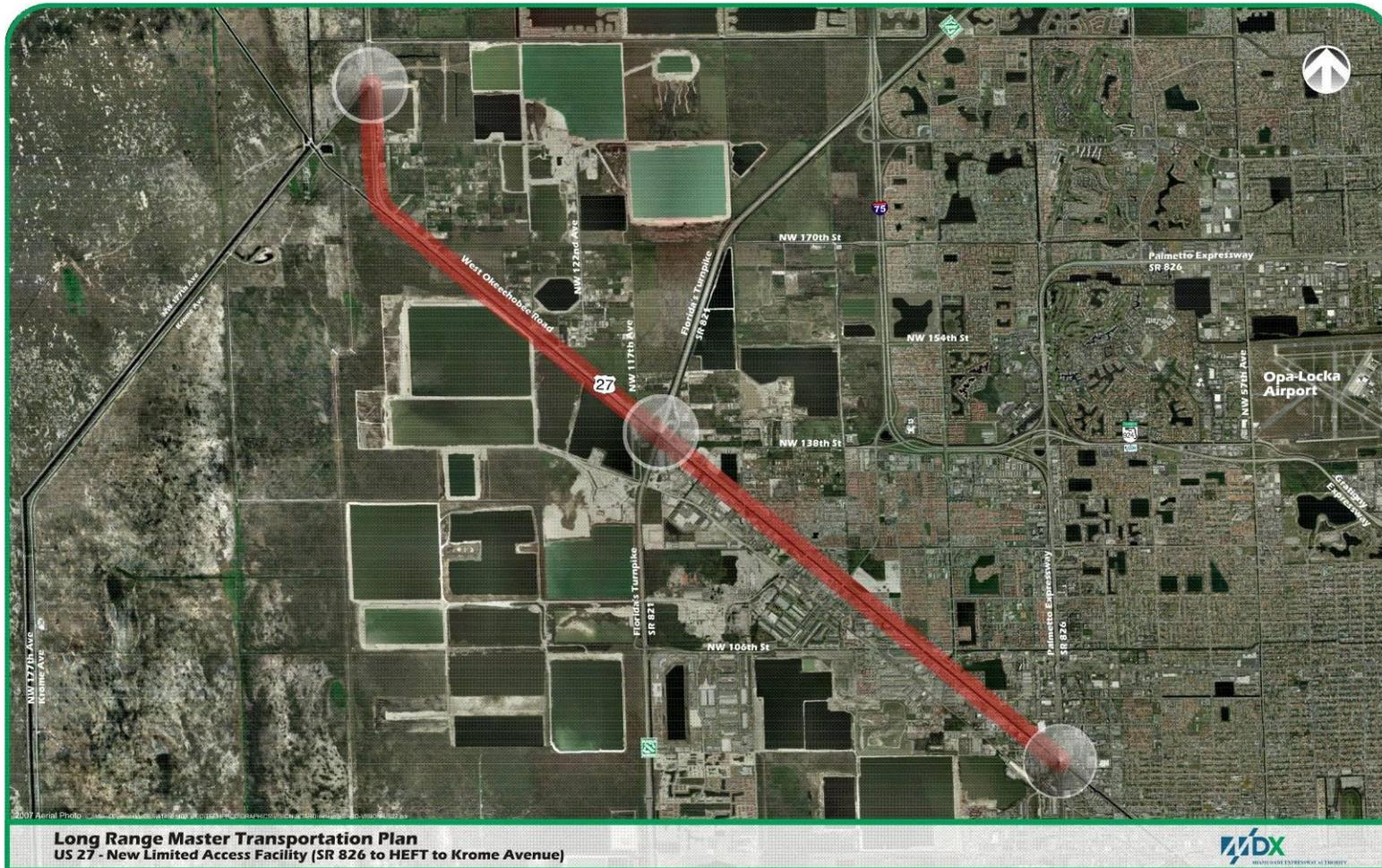
US-27 / Okeechobee Road from Krome Avenue to SR 826 (Palmetto Expressway), in central Miami-Dade County.

Purpose and Need

Okeechobee Road is an important facility within Miami-Dade County that provides a vital link in the network by

connecting three counties on the western limits. This corridor also serves as an important truck route for transshipments from the Port of Miami to the Medley warehouse areas, and as a link between SR 112 (the Airport Expressway), SR 826 (the Palmetto Expressway), and the HEFT. By making this facility a limited access facility, mobility and capacity along this corridor will improve significantly.

Figure 3- 9: US 27 - New Limited Access Facility



3 Capacity Improvement Element

Project Status

The proposed concept was included in the MPO's 2035 L RTP.

Area Characteristics

Land use in the study area is primarily high density residential east of the HEFT and wetlands to the west. Rock quarries and their excavated lakes are found throughout the central portion of the study area west of the HEFT, which is also known as the Lake Belt area. South of US 27 and east of the HEFT, land use is primarily commercial / industrial. The Snake Creek Canal (C-9) separates Miami-Dade County from Broward County in the northern limits of the study area. Additionally, the Opa-Locka West airfield is located east of the Krome Avenue/US 27 interchange.

Based on the latest Miami-Dade County Land Use Plan, significant changes in land use are not expected within the next ten years. Major changes will occur when the Army Corps of Engineers and South Florida Water Management District incorporate some private lands into the Comprehensive Everglades Restoration Plan. These areas are located west of the HEFT.

The population of the area is dominated by Hispanics with most of the study area's median age and income being comparable to the state and national levels.

Potential Issues

Natural Systems

The study area west of the HEFT is within the Northwest Wellfield Protection Area. This area is also within both the North and Central Lake Belt Storage Areas on land mostly owned by South Florida Water Management District (SFWMD). These storage areas are designed as in-ground reservoirs. The Miami Canal (C-6), Snake Creek Canal (C-9) and Biscayne Canal (C-8) extend through the area.

There are upland hardwood forests, upland shrubs, and freshwater marshes north of the HEFT and Okeechobee

Road and wetland hardwood forests south of the HEFT and Okeechobee Road. The Pennsuco Wetlands and WCA 3B abut the project area to the west. Everglades National Park (ENP) is southwest of the study area. A variety of listed species and wading birds may be found in the habitats within the study area.

Floodplains

Except for relatively small areas east of SR 826, the study area is within the 100-year flood plain (Zones A, AE and AH).

Commercial Impact

Some traffic patterns may be modified by closing roads that have a direct access to US-27. However, the parallel frontage roads could be improved to mitigate these traffic changes.

Public Facilities

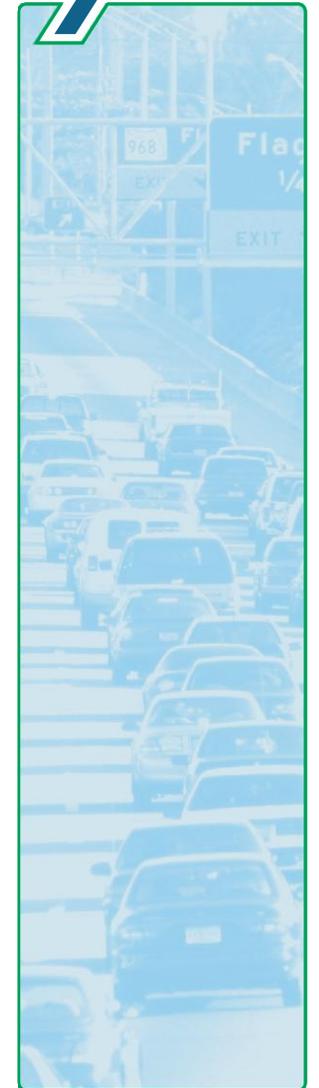
Community services are concentrated east of I-75 in the developed areas surrounding SR 826. Palmetto General Hospital is the only hospital located within the study area. There are 64 places of worship, 55 schools, 60 daycares, and a variety of social services offered within the study area. There are also three golf courses, three police stations and the Opa-Locka West Airport which is in the northwest corner of the study area.

Archaeological and Historic Sites

Sixteen structures have been identified on Honey Hill Road in the northeast corner of the study area; however, they have all been determined to be ineligible for the NRHP. The Graham Dairy House located on Route 27 is potentially eligible but has not yet been evaluated by the SHPO.

Contamination

Potential contamination sites include gasoline stations, hazardous waste, petroleum contaminant facility, petroleum tanks and toxic release sites. The preferred alternative will avoid or minimize impacts to these sites.



3 Capacity Improvement Element

Visual and Aesthetics

The conversion of Okeechobee Road to a limited-access facility will provide the opportunity to improve the aesthetics around the entire corridor, particularly around all the proposed interchanges.

Governmental Coordination

The following entities will need to be contacted for coordinating improvements in this corridor: Miami-Dade County, Florida Department of Transportation, Town of Medley, SFWMD, Florida Turnpike Enterprise, City of Hialeah, and City of Hialeah Gardens.

Community Acceptance

Community controversy is expected to be minimum or moderate.

3.2 System-wide Prioritization

The MDX LRMTTP development and update process is an ongoing effort that started with the agency's founding and will continue into the future.

Building on the master planning efforts completed in 2005, a new series of planning workshops, visioning exercises, and technical evaluations were completed in 2007 and 2008 that culminated in the projects being included in this 2035 MDX LRMTTP.

The projects described in detail in this section were ranked and prioritized by staff and the MDX Board. Briefings and presentations were also made to elected officials, the Citizens Transportation Advisory Committee (CTAC) of the MPO Board and the specially convened Blue Ribbon Panel to garner their input and opinions as to the viability and importance of each of the proposed projects. As mentioned previously, the Blue Ribbon Panel consisted of representatives of other regional transportation agency representatives such as FDOT and Miami-Dade Public Works.

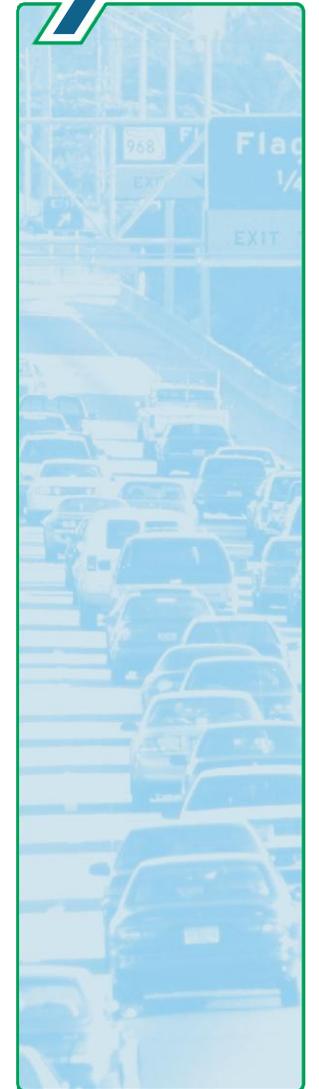
3.2.1 Criteria Definition and Weights

In order to provide an objective evaluation, a numerically-based evaluation analysis was performed by the MDX staff and Board using available data. This analysis involved the generation of a weighting scheme for each of the evaluation criteria and a ranking of the projects based on the criteria.

The evaluation parameters were developed with a multidisciplinary group that included transportation engineers, planners, environmental scientists and public involvement staff. The goals developed in the 2025 MDX LRMTTP were the basis for criteria development and included:

- MDX Strategic Fit
- Environmental Impacts
- Natural
- Physical
- Social
- Project Schedule
- Public Acceptance
- Financial factors
- Included in the MPO LRTP
- Mobility
- Economic Development

The criteria selected allowed for a comprehensive and systematic evaluation of each proposed project. Each MDX Board or staff participant was requested to assign values, 0 to 10 (with 10 being the highest score), to each of these parameters according to their preferences and



3 Capacity Improvement Element



experience. **Table 3-1** depicts the cumulative results of the relative weight of each of the factors assigned by the participants. The responses of the group were summarized and entered into a matrix.

It should be noted that "Mobility" was the most important criterion to the team followed by "MDX Strategic Fit" and "Financial Factors". Four of the criteria scored around 6, and the criterion "Included in the MPO LRTP" was the lowest by a significant amount.

Table 3- 1: Criteria Weights

| | |
|--------------------------|-----|
| MDX Strategic Fit | 8.8 |
| Environmental Impacts | 6.7 |
| Project Schedule | 6.3 |
| Public Acceptance | 6.9 |
| Financial factors | 7.8 |
| Included in the MPO LRTP | 3.9 |
| Mobility | 9.4 |
| Economic Development | 6.3 |

3.2.2 Project Evaluation and Ranking

The technical group of MDX staff and Board members was reconvened to evaluate proposed projects using the weighted criteria. A numerical value 1 to 3 was assigned to each project based on the pros and cons associated with each project. The value definitions were:

1-VERY HIGH (Value = 3). This value is associated with an overwhelming positive effect from the project and had a numerical value of three.

2-MEDIUM (Value = 2). This value is associated with slight positive or negative effects, resulting in conditions maintaining the status quo (no significant impacts either way). It had a numerical value of two.

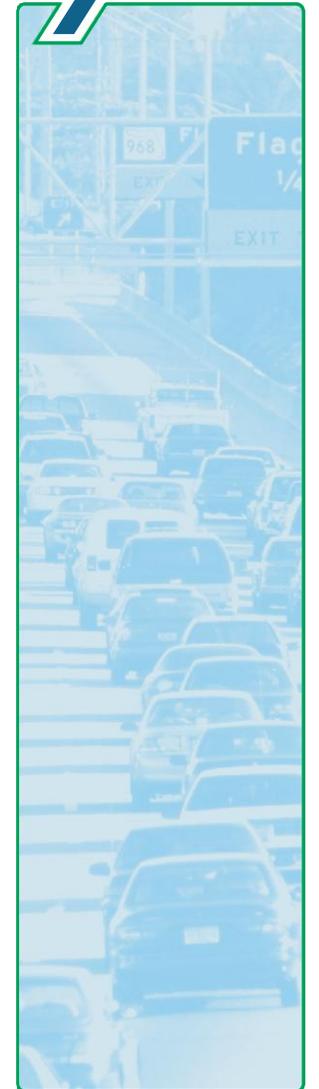
3-LOW (Value = 1). This value is associated with generally detrimental effects, e.g., strong public opposition. It was assigned a value of one.

Each project value was multiplied by the weighted criteria and the cumulative results from the technical group evaluation were summarized and are shown in **Table 3-2**. Both the SR 874 Ramp Connector project and the SR 924 West Extension project were ranked high and they are already included in the MDX 2025 LRMTTP and the County MPO 2030 LRTP. MDX staff and Board subsequently provided this information to the Blue Ribbon Panel for their recommendations regarding which new projects to include in the MDX 2035 LRMTTP.

Table 3- 2: Ranking and Weighted Average

| Ranking | Projects | Weighted Average |
|---------|----------------------------------------|------------------|
| 1 | US 1 Managed Lanes (FC to S. Miami) | 148.1 |
| 2 | SR 924 West- Extension to the Turnpike | 147.4 |
| 3 | SR 924 East-Extension to I-95 | 138.0 |
| 4 | SR 874 Ramp Connector | 135.5 |
| 5 | North – South Corridor | 128.7 |
| 6 | US 1 Managed Lanes | 127.8 |
| 7 | US 27 – Okeechobee Road | 122.9 |
| 8 | SR 836 Southwest Extension | 116.3 |
| 9 | Airport/Seaport Managed Lanes | 95.3 |

The final recommendation of the Blue Ribbon Panel was to prioritize the projects into two Tiers with Tier 1 being priority projects. The Tier 1 projects included two projects that were ranked high by the technical evaluation (SR 924 East Extension and US-1 Managed Lanes), and two projects that were ranked lower (SR 836 SW Extension and



3 Capacity Improvement Element

Airport/Seaport Managed Lanes). The remaining new projects were considered Tier 2 projects and given a lower priority. Nevertheless, feasibility studies and other work will continue with Tier 2 projects as well. The MDX Operations Committee, after reviewing the ranking efforts and input from the Blue Ribbon Panel, adopted the Blue Ribbon Panel recommendations. Below are the final recommendations for projects to include in the 2035 MDX Long Range Master Transportation Plan. All the projects were included in the MPO 2035 LRTP.

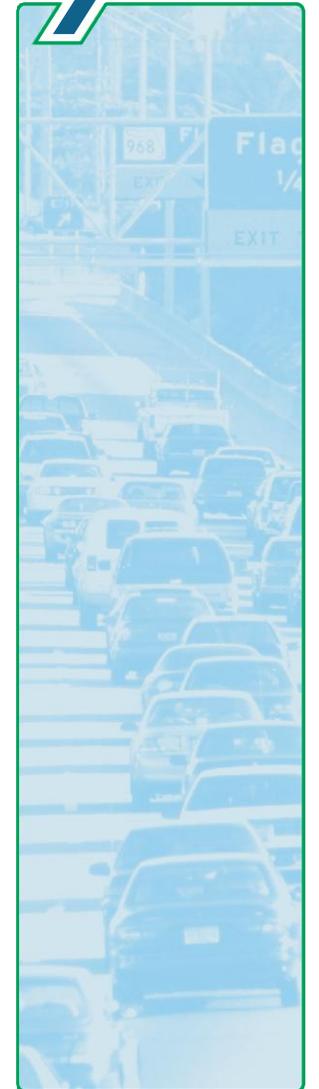
Tier 1 includes:

- SR 836 Southwest Extension
- US-1 Managed Lanes (Florida City to Dadeland)
- Airport/Seaport Managed Lanes
- SR 924 East Extension to I-95

Tier 2 includes:

- North-South Corridor
- US 1 Managed Lanes (Dadeland to I-95)
- US 27 Okeechobee Road

These projects would be progressed through the MPO planning process in addition to the two projects already included in the LRTP: the 924 West Extension to Florida's Turnpike and the SR 874 Ramp Connector project.



4 Funding Strategy

From the public side, contributions often involve providing roadway right-of-way along with the construction of transportation improvements to local roads that would connect to the new expressways.

For transportation projects of significant size, the private sector generally provides the majority of funding for construction in exchange for either a guaranteed financial return (for example, the payment of principal and interest on revenue bonds), or for the ability to operate the facility and collect the toll revenue under a long-term lease agreement, often referred to as a concession contract.

In either case, the public benefits by having a major transportation project constructed much earlier than would have been affordable through traditional means. The public also benefits because very little tax funds, if any, are used to build the project thus allowing public resources to be used for other needed projects. A valuable public project can often be advanced by 20-30 years through the use of P3 financing. Because of severe limitations on tax funds, some projects can only be built using this approach.

As part of the visioning process, MDX completed an initial evaluation of the revenue generating potential for six of the proposed projects:

- the SR 874 Ramp Connector
- the SR 924 East Extension
- the US 1 Managed Lanes
- the SR 836 Southwest Extension
- the Connect 4 Xpress, and

- the SR 924 West Extension

Updated traffic modeling was prepared for four of the projects, and extrapolations of previous study results were prepared for the remaining two projects.

The preliminary revenue projections are presented on **Figures 4-2** through **4-7**. More detailed analysis will be developed before project implementation.

Estimated traffic and revenue data was prepared for each project on the basis of 20 year forecasts and they include revenue from proposed facilities and revenue impacts on existing MDX expressways. All projects are assumed to use Open Road Tolling since they are all likely to be implemented after ORT is operational in 2012.

The cumulative potential annual revenue from these six projects, once all are implemented, could range from \$160 to \$258 million.





Figure 4- 2: Proposed SR 924 West Extension

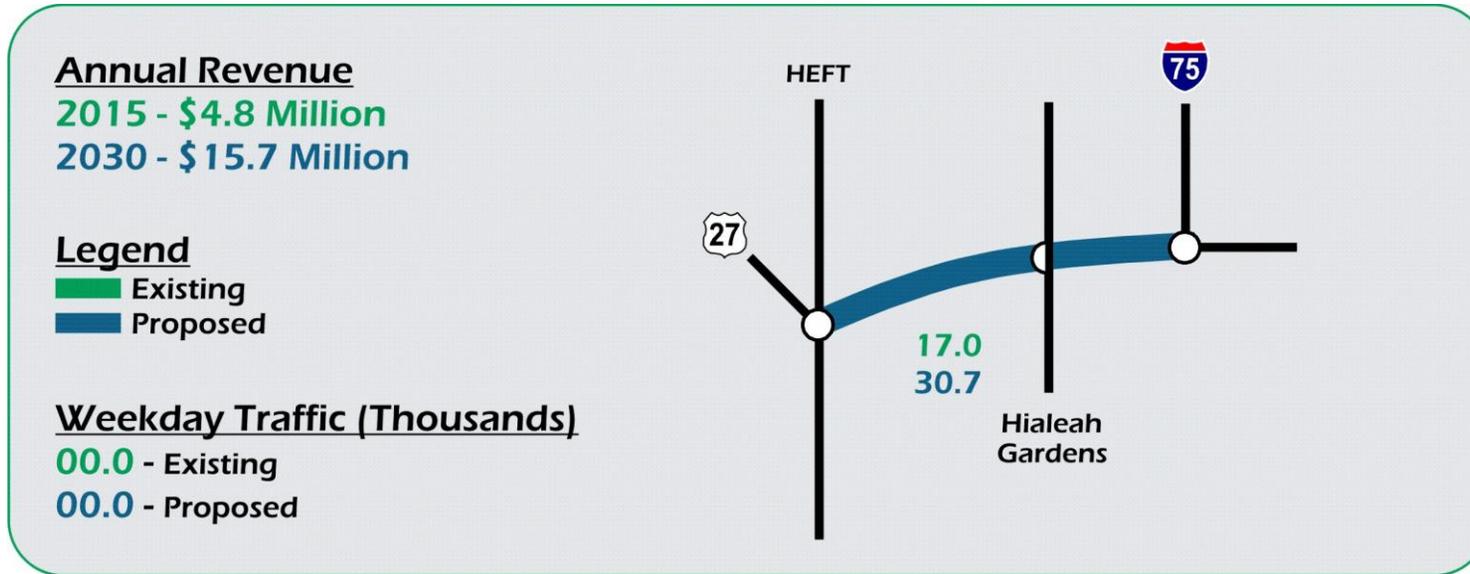


Figure 4- 3: Proposed SR 924 East Extension

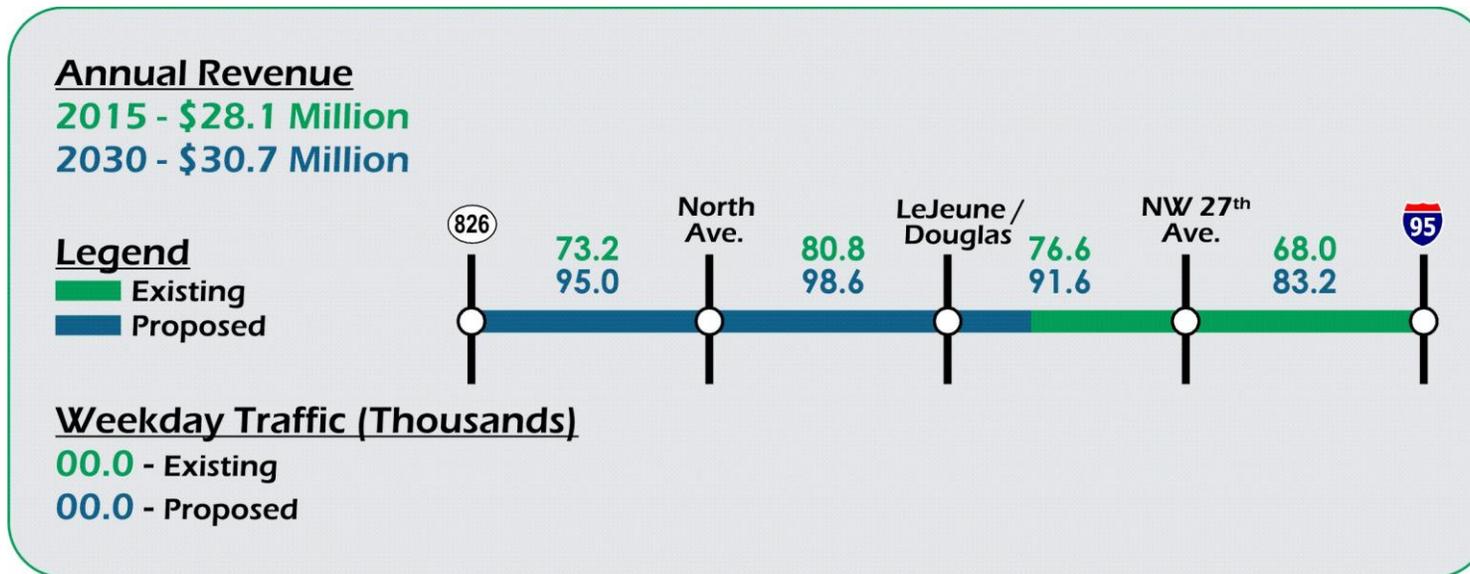


Figure 4- 4: Proposed SR 874 Ramp Connector

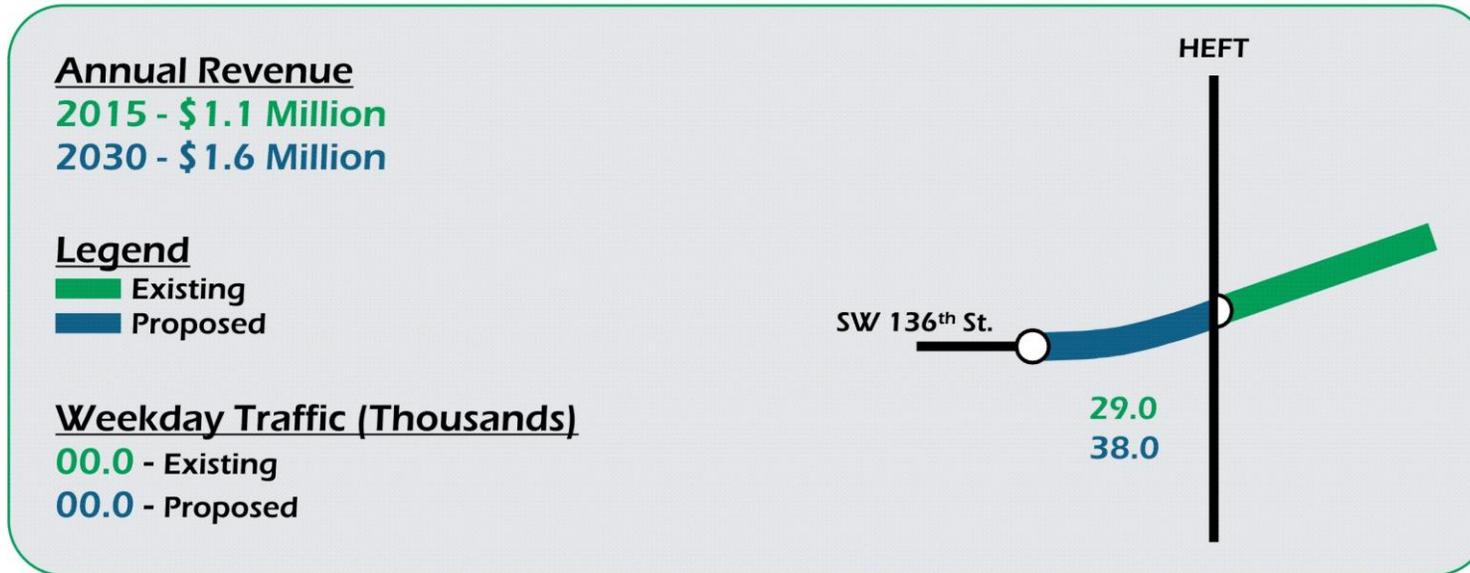


Figure 4- 5: Proposed U.S. 1 Managed Lanes

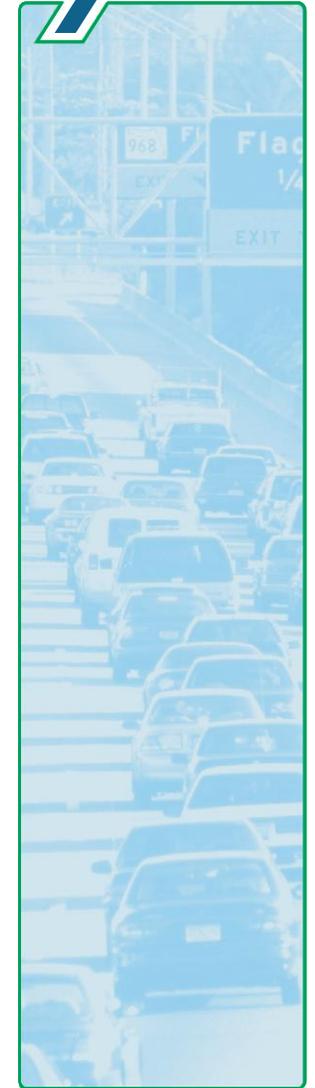
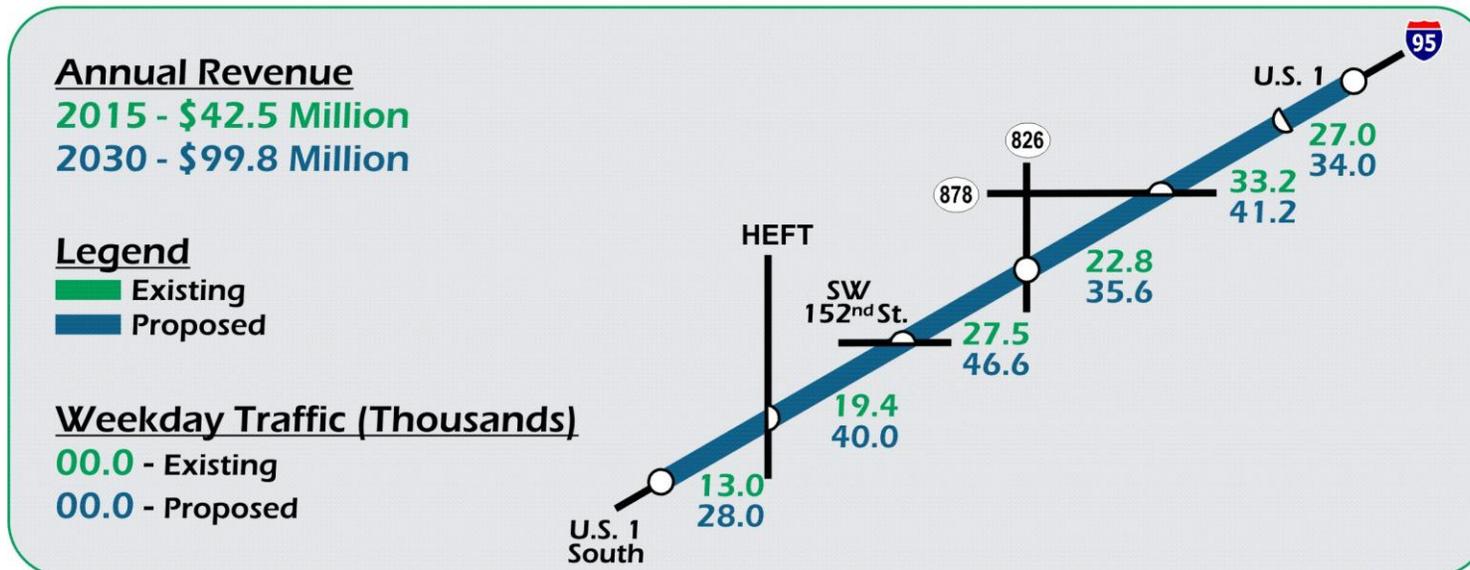
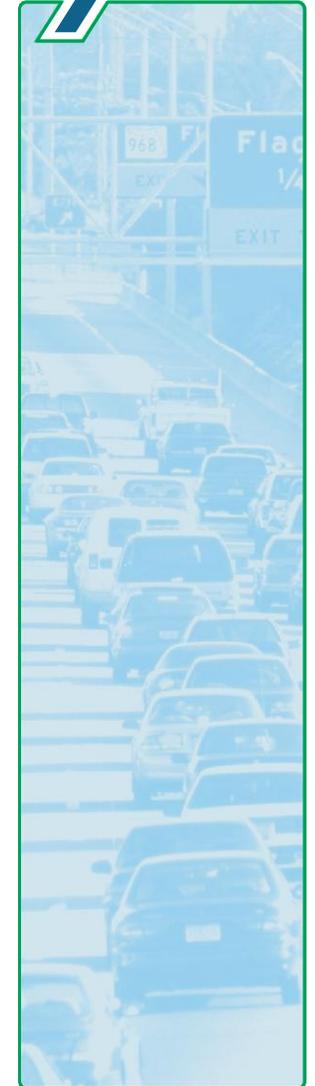
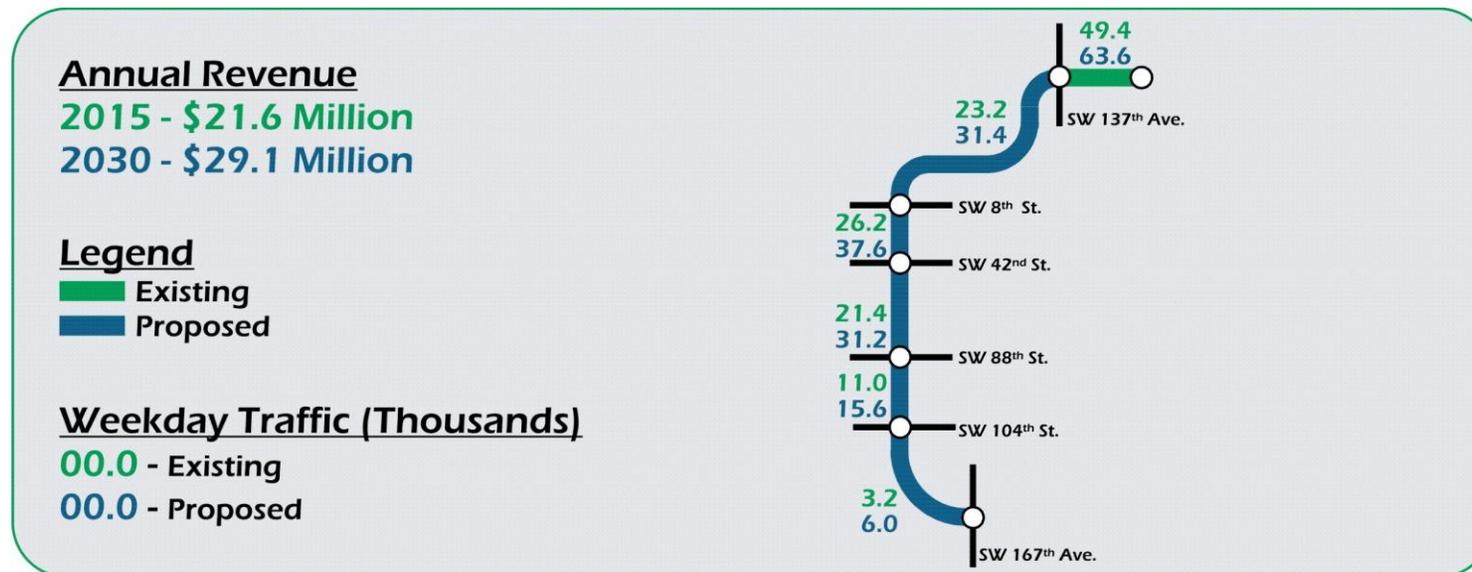


Figure 4- 6: Proposed Connect 4 Xpress



Figure 4- 7: Proposed SR 836 Southwest Extension



4 Funding Strategy

4.3 Summary

As indicated, all projects would have a positive impact on MDX revenue. The total annual revenue for all projects combined could be:

- 2015 - \$160 million
- 2030 - \$258 million

Table 4-1 presents the initial results of toll traffic estimates for the MDX system. The Annual Transactions shown represent a forecast of the number of drivers who would be willing to pay \$.20 per mile to use a limited-access system to avoid traffic congestion on local roads. While this is a preliminary forecast of toll traffic, these results are indicative of a system of connecting toll expressways that are serving a significant demand, thus suggesting there is value in moving forward with the study of new potential toll projects.

These projects would create significant regional mobility improvements. Over one million annual hours of travel could be saved if all projects are implemented by the year 2015.

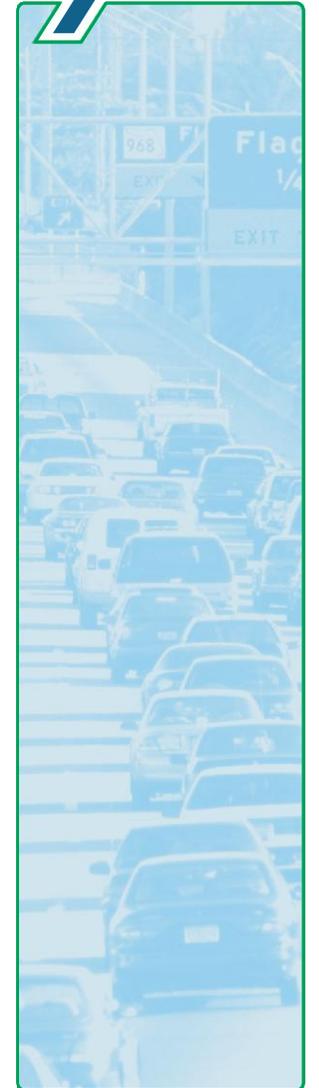
A recent Texas Transportation Institute study ranks Miami-Dade County as the 11th most congested area in the United States. The average driver loses 50 hours a year to congestion in this region so any efforts to reduce this would have a beneficial impact in many areas such as:

- the cost of doing business
- reduced commute times
- energy and fuel savings
- safer operations with fewer road mishaps due to congestion

Table 4- 1: Combined Traffic and Revenue Including Impacts to MDX System

| Year | SR 874 Extension | | SR 924 East | | US 1 Reversible Lanes Combined Sections | | SR 836 Extension | | North South Corridor (Central Parkway) | | SR 924 Extension W Extension Revenue | |
|------|---------------------|----------------|---------------------|----------------|-----------------------------------------|----------------|---------------------|----------------|----------------------------------------|----------------|--------------------------------------|----------------|
| | Annual Transactions | Annual Revenue | Annual Transactions | Annual Revenue | Annual Transactions | Annual Revenue | Annual Transactions | Annual Revenue | Annual Transactions | Annual Revenue | Annual Transactions | Annual Revenue |
| 2015 | 10000 | \$1,084,600 | 28455000 | \$21,639,000 | 18210000 | \$51,530,000 | 27466000 | \$19,866,000 | 36041000 | 57,515,000 | | \$2,960,000 |
| 2016 | 10200 | \$1,116,500 | 28816000 | \$21,870,000 | 18630000 | \$53,700,000 | 28108000 | \$20,254,000 | 36509000 | 58,225,000 | | \$3,200,000 |
| 2017 | 10400 | \$1,148,400 | 29183000 | \$22,104,000 | 19080000 | \$55,800,000 | 28766000 | \$20,649,000 | 36984000 | 58,945,000 | | \$3,460,000 |
| 2018 | 10600 | \$1,148,400 | 29553000 | \$22,340,000 | 19560000 | \$58,000,000 | 29439000 | \$21,052,000 | 37467000 | 59,676,000 | | \$3,740,000 |
| 2019 | 10800 | \$1,180,300 | 29929000 | \$22,579,000 | 20040000 | \$60,300,000 | 30128000 | \$21,463,000 | 37956000 | 60,417,000 | | \$4,050,000 |
| 2020 | 11000 | \$1,212,200 | 30309000 | \$22,820,000 | 20490000 | \$62,400,000 | 30832000 | \$21,882,000 | 38453000 | 61,169,000 | | \$4,390,000 |
| 2021 | 11300 | \$1,244,100 | 30694000 | \$23,064,000 | 20970000 | \$66,500,000 | 31554000 | \$22,309,000 | 38957000 | 61,932,000 | | \$4,750,000 |
| 2022 | 11600 | \$1,276,000 | 31084000 | \$23,310,000 | 21450000 | \$71,500,000 | 32292000 | \$22,744,000 | 39469000 | 62,707,000 | | \$5,140,000 |
| 2023 | 11900 | \$1,307,900 | 31479000 | \$23,559,000 | 21960000 | \$76,600,000 | 33047000 | \$23,188,000 | 39989000 | 63,493,000 | | \$5,570,000 |
| 2024 | 12200 | \$1,339,800 | 31879000 | \$23,811,000 | 22470000 | \$84,300,000 | 33821000 | \$23,640,000 | 40517000 | 64,290,000 | | \$6,030,000 |
| 2025 | 12500 | \$1,371,700 | 32284000 | \$24,065,000 | 22980000 | \$94,400,000 | 34612000 | \$24,101,000 | 41052000 | 65,099,000 | 25000 | \$6,530,000 |
| 2026 | 12800 | \$1,403,600 | 32695000 | \$24,322,000 | 23220000 | \$99,700,000 | 35421000 | \$24,572,000 | 41596000 | 65,920,000 | 26300 | \$6,862,000 |
| 2027 | 13100 | \$1,435,500 | 33110000 | \$24,582,000 | 23460000 | \$105,200,000 | 36250000 | \$25,051,000 | 42148000 | 66,753,000 | 27600 | \$7,190,000 |
| 2028 | 13400 | \$1,467,400 | 33531000 | \$24,845,000 | 23700000 | \$111,100,000 | 37098000 | \$25,540,000 | 42708000 | 67,598,000 | 28900 | \$7,519,000 |
| 2029 | 13700 | \$1,499,300 | 33957000 | \$25,110,000 | 23940000 | \$117,300,000 | 37966000 | \$26,038,000 | 43276000 | 68,456,000 | 30400 | \$7,592,000 |
| 2030 | 14000 | \$1,531,200 | 34388000 | \$25,378,000 | 24180000 | \$123,800,000 | 38854000 | \$26,547,000 | 46656000 | 74,171,000 | 30700 | \$7,994,000 |
| 2031 | 14100 | \$1,531,200 | 34732000 | \$25,632,000 | 24420000 | \$130,600,000 | 39243000 | \$26,812,000 | 47122000 | 74,912,000 | 31100 | \$8,103,000 |
| 2032 | 14200 | \$1,563,100 | 35079000 | \$25,888,000 | 24660000 | \$137,900,000 | 39635000 | \$27,080,000 | 47593000 | 75,661,000 | 31500 | \$8,213,000 |
| 2033 | 14300 | \$1,563,100 | 35430000 | \$26,147,000 | 24900000 | \$145,500,000 | 40032000 | \$27,351,000 | 48069000 | 76,418,000 | 31900 | \$8,322,000 |
| 2034 | 14400 | \$1,563,100 | 35784000 | \$26,409,000 | 25140000 | \$153,500,000 | 40432000 | \$27,624,000 | 48550000 | 77,182,000 | 32300 | \$8,432,000 |
| 2035 | 14500 | \$1,595,000 | 36142000 | \$26,673,000 | 25380000 | \$161,900,000 | 40836000 | \$27,901,000 | 49036000 | 77,954,000 | 32700 | \$8,505,000 |

Source: MDX Finance Office-MDX Toll Operations



4 Funding Strategy



- productivity and efficiency gains
- overall improvement in the quality of life
- enhanced public image for the region as a whole.

4.4 Implementation Plan Funding Strategy

There are still many goals to accomplish before any of the 2035 Master Plan projects become reality. Feasibility studies need to be completed, public workshops and outreach needs to be conducted and the MPO process negotiated.

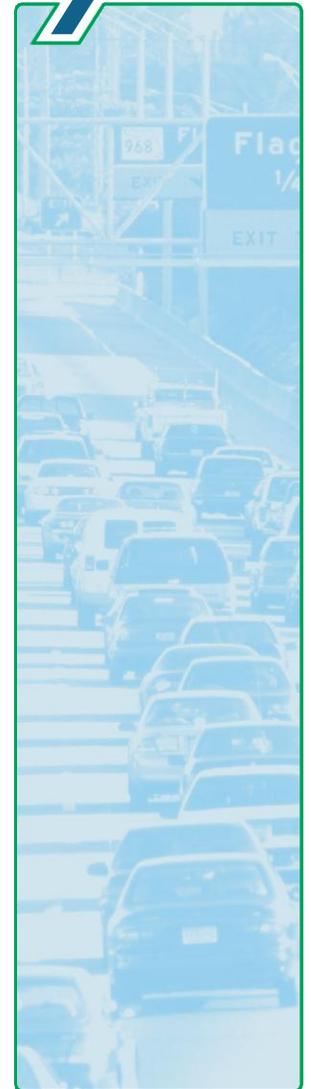
More detailed concept reports and studies are being completed as part of project planning and refinement.

Prior to actual project financing, there needs to be a more detailed assessment of the risks associated with each of the projects proposed as part of the master planning effort.

Future studies will include:

- Extensive market research to determine the viability of each project and the likelihood that the revenue projections can be achieved and the facility utilized efficiently by the public.
- Detailed economic analysis to determine toll rates, actual rates-of-return on the investments and financial capacity calculations.
- Environmental studies to determine the impacts to the natural and social environments and to develop appropriate mitigation strategies for each project.

- More detailed traffic modeling, in particular, utilizing the latest regional transportation model being jointly developed by Miami-Dade, Broward and Palm Beach counties that should be made available in late 2009.
- Toll rate optimization analysis to help determine the best rates to implement, whether variable time-of-day tolling makes sense in certain situations and how to balance increased toll rates and future traffic projections.
- Updated financial feasibility assessments relative to the status of MDX financial capacity at various points in time.



5 Implementation Plan Next Steps and Updates

5 Implementation Plan Next Steps and Updates

5.1 Next Steps

MDX has the legal ability to build, own and operate toll highways in Miami-Dade County. Even so, the process to implement major infrastructure improvements in Miami-Dade County must formally include the MPO, FDOT and other key transportation providers to partner with MDX in the planning of new expressways and major improvements within the County limits.

MDX must complete the following activities in order to implement any of the recommended projects included in this 2035 LRMTTP update:

Complete Feasibility Studies

MDX must complete a feasibility study for each project in concert with any key participants such as the City of Miami and FDOT to help determine the need, financial opportunities, and viable locations for expressway projects.

MPO/LRTP Process

MDX was successful in including all these new expressway projects in the 2035 LRTP of the County Metropolitan Planning Organization (MPO) which was adopted in October 2009.

Project Agreements

If a new expressway concept is found to be acceptable, MDX would then develop formal agreements related to the roles and responsibilities of the participating jurisdictions, where applicable.

PD&E and IJR/IMR Studies

Once agreements are in place, MDX can begin the required Project Development & Environment (PD&E) studies and applicable Interchange Justification Reports (IJR) or Interchange Modification Reports (IMR) in cooperation with FDOT and the Federal Highway

Administration (FHWA). During PD&E studies, specific alternative locations and designs are analyzed and associated environmental impacts are presented for public review. The PD&E study will lead to a final recommended location and design concept for the project that would be presented to the key stakeholders and for MDX acceptance.

IJR or IMRs are required by FDOT and FHWA to identify design concepts and traffic impacts related to new interchanges or modifications to existing interchanges on the Interstate highway system. No new interchanges or modifications to existing interchanges can occur on the Interstate highway system without federal approval.

Communication/Coordination with Potential Finance Partners

While these activities are underway, MDX would continue to communicate with the various financial organizations that could become potential partners on the project. These would include the Florida Turnpike Enterprise, bond underwriters and rating agencies, and other private toll organizations that specialize in funding and operating toll roads as a business.

5.2 Interim and 5-Year Plan Update

Consistent with its current policy, MDX is scheduled to update the Master Transportation Plan regularly. The next anticipated update is in 2014 with a planning horizon of 2040 consistent with County MPO update schedules. However, as a result of MDX project implementation, or when it is warranted due to changing circumstances or priorities, a Master Plan update can be prepared in order to document any revisions, and provide a basis for continued dialogue with key stakeholders, the MPO and the public.

