**NEW ISSUE - BOOK-ENTRY ONLY** **RATINGS: See "RATINGS" herein**

*In the opinion of Squire Patton Boggs (US) LLP and D. Seaton and Associates, P.A., Co-Bond Counsel, under existing law (i) assuming continuing compliance with certain covenants and the accuracy of certain representations, interest on the Series 2016A Bonds is excluded from gross income for federal income tax purposes and is not an item of tax preference for purposes of the federal alternative minimum tax imposed on individuals and corporations, and (ii) the Series 2016A Bonds and the income thereon are exempt from taxation under the laws of the State of Florida, except estate taxes imposed by Chapter 198, Florida Statutes, as amended, and net income and franchise taxes imposed by Chapter 220, Florida Statutes, as amended. Interest on the Series 2016A Bonds may be subject to certain federal taxes imposed only on certain corporations, including the corporate alternative minimum tax on a portion of that interest. For a more complete discussion of the tax aspects, see "TAX MATTERS" herein.*

# $95,820,000
# MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY
## Toll System Refunding Revenue Bonds, Series 2016A

**Dated: Date of Delivery** **Due: July 1, as shown on the inside cover**

The Miami-Dade County Expressway Authority Toll System Refunding Revenue Bonds, Series 2016A (the "Series 2016A Bonds") will be issued by the Miami-Dade County Expressway Authority (the "Authority") in fully registered form under the book-entry system maintained by The Depository Trust Company ("DTC"), New York, New York. See "DESCRIPTION OF THE SERIES 2016A BONDS - Book-Entry Only System" herein.

The Series 2016A Bonds are issuable in denominations of $5,000 and integral multiples thereof. Interest on the Series 2016A Bonds will accrue from the date of delivery of the Series 2016A Bonds and will be payable each January 1 and July 1, commencing January 1, 2017.

The Series 2016A Bonds will be subject to redemption prior to maturity as described herein.

The Series 2016A Bonds are being issued by the Authority pursuant to the provisions of the Amended and Restated Trust Indenture dated as of June 15, 2002 from the Authority to The Bank of New York Mellon Trust Company, N.A., Jacksonville, Florida, as trustee (the "Trustee"), as previously supplemented and amended and as most recently supplemented by the Eleventh Supplemental Trust Indenture to Amended and Restated Trust Indenture dated as of September 1, 2016 from the Authority to the Trustee (collectively, the "Indenture"). The Series 2016A Bonds are being issued to provide funds sufficient, together with other available moneys, to (1) refund the outstanding portion of the Authority's Toll System Revenue Bonds, Series 2006, as further described herein, and (2) pay certain costs associated with the issuance of the Series 2016A Bonds.

The Series 2016A Bonds are payable from and secured solely by a pledge of and lien on the Revenues of the System and the moneys on deposit from time to time in certain of the Funds, Accounts and Subaccounts established under the Indenture on a parity with all other Bonds Outstanding from time to time, all as described herein.

**The principal of and interest on the Series 2016A Bonds are payable solely from the Revenues which are pledged to the payment thereof and the moneys on deposit from time to time in the Funds, Accounts and Subaccounts, in the manner and to the extent specified in the Indenture, and nothing in the Series 2016A Bonds or in the Indenture will be construed as obligating the Authority to pay the principal thereof or the interest thereon except from the Revenues and the moneys on deposit from time to time in said Funds, Accounts and Subaccounts. The Authority has no taxing power. The Series 2016A Bonds do not constitute an indebtedness of Miami-Dade County, Florida (the "County"), the State of Florida (the "State") or any other political subdivision or agency thereof within the meaning of any constitutional or statutory provision or limitation. No Owner of any of the Series 2016A Bonds will ever have the right to compel the exercise of the taxing power of the County or the State or any political subdivision or agency thereof, or the application of any funds other than funds pledged under the Indenture to the payment of the Series 2016A Bonds.**

Maturities, principal amounts, interest rates, yields, prices and initial CUSIP numbers for the Series 2016A Bonds are set forth on the inside cover page of this Official Statement.

THIS COVER PAGE CONTAINS CERTAIN INFORMATION FOR QUICK REFERENCE ONLY. IT IS NOT A SUMMARY OF THIS ISSUE. INVESTORS MUST READ THE ENTIRE OFFICIAL STATEMENT TO OBTAIN INFORMATION ESSENTIAL TO MAKING AN INFORMED INVESTMENT DECISION.

The Series 2016A Bonds are offered for delivery when, as and if issued and received by the Underwriters, subject to the opinions on certain legal matters relating to their issuance of Squire Patton Boggs (US) LLP, and D. Seaton and Associates, P.A., Co-Bond Counsel. Certain legal matters will be passed upon for the Authority by Carlos M. Zaldivar, General Counsel to the Authority, and by Squire Patton Boggs (US) LLP and D. Seaton and Associates, P.A., as Co-Disclosure Counsel. The Underwriters are represented by their co-counsel, Greenberg Traurig, P.A. and Llorente & Heckler, P.A. FirstSouthwest, a Division of Hilltop Securities Inc., Miami, Florida, is acting as Financial Advisor to the Authority. It is expected that the Series 2016A Bonds in definitive form will be available for delivery through the facilities of DTC in New York, New York on or about September 16, 2016.

**RBC CAPITAL MARKETS**

**CITIGROUP** **MORGAN STANLEY**

**RICE FINANCIAL PRODUCTS COMPANY**

Dated: August 30, 2016

**MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY**
**Toll System Refunding Revenue Bonds, Series 2016A**

| Maturity (July 1) | Principal Amount | Interest Rate | Yield[1] | Price[1] | Initial CUSIP No.[2] |
|---|---|---|---|---|---|
| 2028 | $11,595,000 | 5.000% | 2.020% | 126.351 | 593338AS5 |
| 2029 | 16,800,000 | 5.000% | 2.100% | 125.542 | 593338AT3 |
| 2030 | 10,590,000 | 5.000% | 2.160% | 124.940 | 593338AU0 |
| 2031 | 8,280,000 | 5.000% | 2.220% | 124.341 | 593338AV8 |
| 2032 | 23,580,000 | 5.000% | 2.270% | 123.844 | 593338AW6 |
| 2033 | 21,955,000 | 5.000% | 2.320% | 123.350 | 593338AX4 |
| 2034 | 3,020,000 | 5.000% | 2.390% | 122.662 | 593338AY2 |

[1] Yield and price calculated to the first optional call date of July 1, 2026.

[2] CUSIP® is a registered trademark of the American Bankers Association. CUSIP data herein are provided by CUSIP Global Service, managed on behalf of the American Bankers Association by S&P Global Marketing Intelligence. CUSIP numbers have been assigned by an independent company not affiliated with the Authority or the Underwriter and are included solely for the convenience of the holders of the Series 2016A Bonds. None of the Authority, the Underwriter or the Trustee is responsible for the selection or uses of the CUSIP numbers, and no representation is made as to their correctness on the Series 2016A Bonds or as indicated above. The CUSIP numbers are subject to being changed after execution and delivery of the Series 2016A Bonds as a result of various subsequent actions including, but not limited to, a refunding in whole or in part or as a result of the procurement of secondary market portfolio insurance or other similar enhancement by investors that is applicable to all or a portion of the Series 2016A Bonds.

**MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY**

Louis V. Martinez, Esq., Chair
Shelly Smith-Fano, Vice Chair
Rick J. Rodriguez Piña, Treasurer
Leonard Boord, Member
Vincent T. Brown, Esq., Member
Maurice A. Ferré, Member
Alfredo L. Gonzalez, Esq., Member
Maritza Gutiérrez, Member
Arthur J. Meyer, Member
Javier L. Vázquez, Esq., Member
Cliff B. Walters, Member
Luz Weinberg, Member
James A. Wolfe, P.E., Member

**EXECUTIVE DIRECTOR**

Javier Rodriguez, P.E.

**DEPUTY EXECUTIVE DIRECTOR/DIRECTOR OF TOLL OPERATIONS**

Stephan P. Andriuk

**DEPUTY EXECUTIVE DIRECTOR/CHIEF FINANCIAL OFFICER**

Marie T. Schafer, CPA

**DEPUTY EXECUTIVE DIRECTOR/DIRECTOR OF ENGINEERING**

Juan C. Toledo, P.E.

**GENERAL COUNSEL**

Carlos M. Zaldivar

**FINANCIAL ADVISOR**

FirstSouthwest, a Division of Hilltop Securities Inc.
Miami, Florida

**CO-BOND COUNSEL AND CO-DISCLOSURE COUNSEL**

Squire Patton Boggs (US) LLP

D. Seaton and Associates, P.A.

**GENERAL ENGINEERING CONSULTANTS**

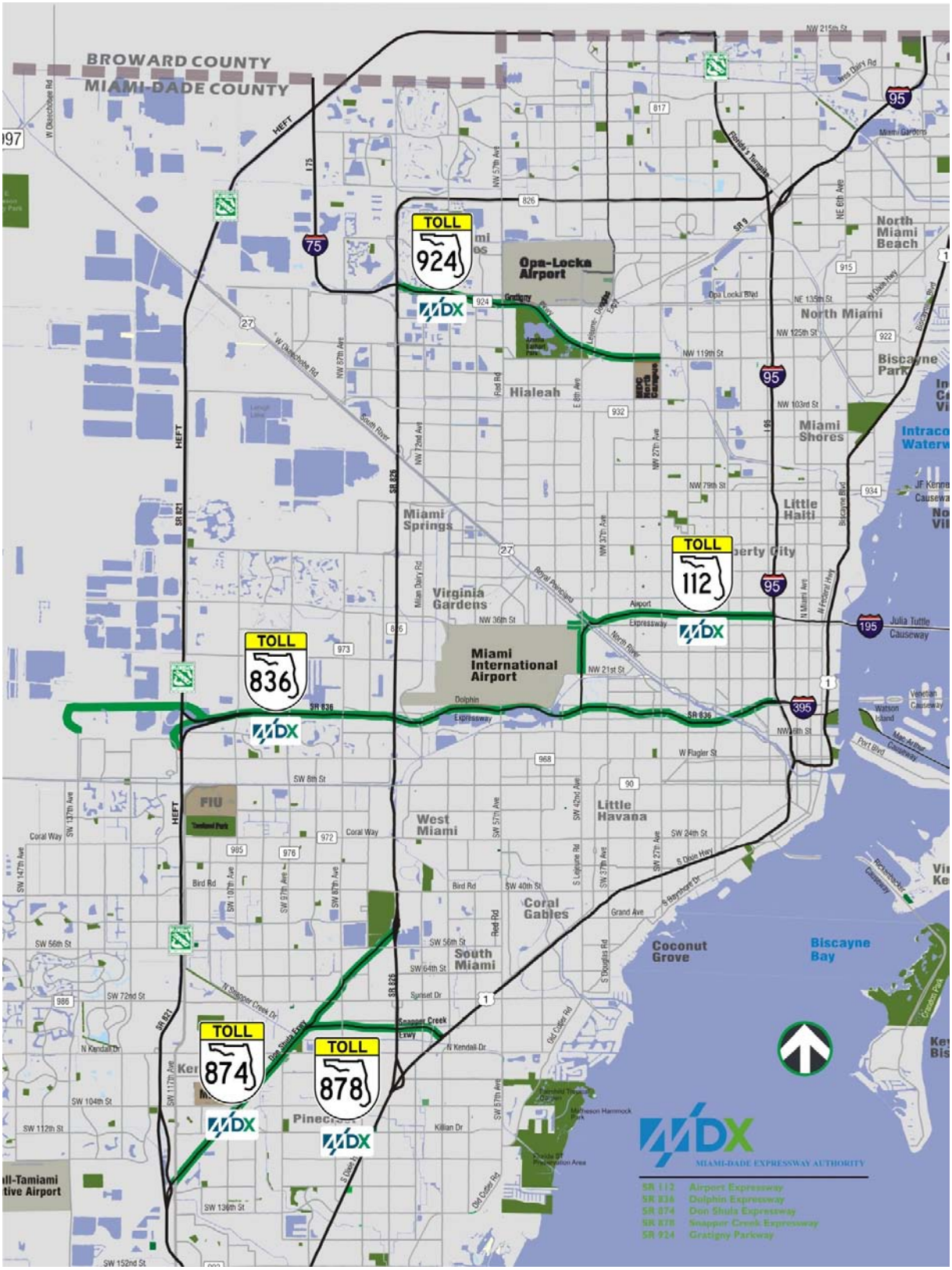
HNTB Corporation
Miami, Florida

EAC Consulting, Inc.
Miami, Florida

**TRAFFIC AND REVENUE CONSULTANT**

CDM Smith Inc.
New Haven, Connecticut

# SYSTEM MAP


BROWARD COUNTY
MIAMI-DADE COUNTY
TOLL 924
TOLL 112
TOLL 836
TOLL 874
TOLL 878
Opa-Locka Airport
Miami International Airport
Hialeah
Miami Springs
Virginia Gardens
West Miami
Little Havana
Coral Gables
South Miami
Coconut Grove
Biscayne Bay
North Miami Beach
North Miami
Biscayne Park
Miami Shores
Little Haiti
FIU
HEFT
SR 826
SR 836
Dolphin Expressway
Airport Expressway
Julia Tuttle Causeway
MIAMI-DADE EXPRESSWAY AUTHORITY
SR 112 Airport Expressway
SR 836 Dolphin Expressway
SR 874 Don Shula Expressway
SR 878 Snapper Creek Expressway
SR 924 Gratigny Parkway

No dealer, broker, salesman or other person has been authorized by the Authority or the Underwriters to give any information or to make any representations other than those contained in this Official Statement and, if given or made, such other information or representations must not be relied upon as having been authorized by any of the foregoing. This Official Statement does not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of the Series 2016A Bonds by any person in any state in which it is unlawful for such person to make such offer, solicitation or sale.

The information contained in this Official Statement has been obtained from the Authority, DTC and other sources which are believed to be reliable, but is not guaranteed as to accuracy or completeness and is not to be construed as a representation by the Underwriters. Any statements made in this Official Statement involving matters of opinion or of estimates, whether or not so expressly stated, are set forth as such and not as representations of fact, and no representation is made that any of the estimates will be realized. The information and expressions of opinion contained herein are subject to change without notice, and neither the delivery of this Official Statement nor any sale made hereunder, shall under any circumstances, create any implication that there has been no change in the affairs of the Authority since the date hereof. This Official Statement is submitted in connection with the sale of securities referred to herein, and may not be reproduced or used, in whole or in part, for any other purpose.

The Underwriters have provided the following sentence for inclusion in this Official Statement. The Underwriters have reviewed the information in this Official Statement in accordance with, and as part of, their respective responsibilities to investors under the federal securities laws as applied to the facts and circumstances of this transaction, but the Underwriters do not guarantee the accuracy or completeness of such information.

The Series 2016A Bonds have not been registered under the Securities Act of 1933 nor has the Indenture been qualified under the Trust Indenture Act of 1939, in reliance upon exemptions contained in such acts. The registration or qualification of the Series 2016A Bonds under the securities laws of the jurisdictions in which they have been registered or qualified, if any, shall not be regarded as a recommendation thereof. Neither these jurisdictions nor any of their agencies have passed upon the merits of the Series 2016A Bonds or the accuracy or completeness of this Official Statement.

**IN CONNECTION WITH THIS OFFERING, THE UNDERWRITERS MAY OVER-ALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE SERIES 2016A BONDS AT LEVELS ABOVE THAT WHICH MIGHT OTHERWISE PREVAIL IN THE OPEN MARKET. SUCH STABILIZING, IF COMMENCED, MAY BE DISCONTINUED AT ANY TIME.**

Certain statements included or incorporated by reference in this Official Statement constitute "forward-looking statements." Such statements generally are identifiable by the terminology used, such as "plan," "expect," "estimate," "budget" or other similar words. The achievement of certain results or other expectations contained in such forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause actual results, performance or achievements described to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Aside from its customary financial reporting activities, the Authority does not plan to issue any updates or revisions to those forward-looking statements if or when its expectations or events, conditions or circumstances on which such statements are based occur, subject to any contractual or legal responsibilities to the contrary.

References herein to laws, rules, regulations, resolutions, agreements, reports and other documents do not purport to be comprehensive or definitive. All references to such documents are qualified in their entirety by reference to the particular document, the full text of which may contain qualifications of and exceptions to statements made herein. Where full texts have not been included as appendices to this Official Statement they will be furnished on request.

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**OFFICIAL STATEMENT**
*relating to*

**$95,820,000**
**MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY**
**Toll System Refunding Revenue Bonds, Series 2016A**

# INTRODUCTION

## General

The purpose of this Official Statement, which includes the cover page and the Appendices hereto, is to furnish information in connection with the sale and issuance by the Miami-Dade County Expressway Authority (the "Authority") of $95,820,000 aggregate principal amount of its Miami-Dade County Expressway Authority Toll System Refunding Revenue Bonds, Series 2016A (the "Series 2016A Bonds"). The Series 2016A Bonds are being issued pursuant to Chapter 348, Part I, Florida Statutes, as amended (together with any successor provisions of law, the "Act"), a Resolution of the Authority adopted June 28, 2016 authorizing, among other things, the issuance of the Series 2016A Bonds, and under and pursuant to an Amended and Restated Trust Indenture dated as of June 15, 2002 (the "Amended and Restated Indenture"), from the Authority to The Bank of New York Mellon Trust Company, N.A. (f/k/a The Bank of New York Trust Company, N.A.), successor in trust to The Bank of New York, as trustee (the "Trustee"), as previously supplemented and amended (collectively, the "Original Indenture"), and as most recently supplemented by the Eleventh Supplemental Trust Indenture to Amended and Restated Trust Indenture dated as of September 1, 2016, from the Authority to the Trustee (the "Eleventh Supplemental Indenture" and, together with the Original Indenture, the "Indenture"). The Bank of New York Mellon Trust Company, N.A., Jacksonville, Florida, will also act as Bond Registrar and Paying Agent for the Series 2016A Bonds. Capitalized terms used but not defined herein have the same meaning as ascribed thereto in the Indenture unless the context would clearly otherwise indicate. See "APPENDIX E - The Amended and Restated Indenture and Form of Eleventh Supplemental Indenture" herein. As used in this Official Statement, the term "Fiscal Year" followed by a year designation shall mean the Fiscal Year commencing on July 1 of the previous year and ending on June 30 of such year.

The Authority has previously issued under the Original Indenture various Series of Bonds, $1,493,125,000 aggregate principal amount of which were Outstanding as of June 30, 2016. The Indenture permits the issuance of Additional Bonds, Completion Bonds and Refunding Bonds to be secured and payable on a parity with the Outstanding Bonds (together with the Series 2016A Bonds, the "Bonds") upon the satisfaction of certain conditions. The Series 2016A Bonds are being issued as Refunding Bonds under the Indenture. See "SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2016A BONDS" herein.

## Purpose of the Series 2016A Bonds

The Series 2016A Bonds are being issued to provide funds, together with other available moneys, to (1) refund the outstanding portion of the Authority's Toll System Revenue Bonds,

Series 2006, and (2) pay certain costs associated with the issuance of the Series 2016A Bonds. See "PLAN OF REFUNDING" herein.

**The Authority**

The Authority is a public instrumentality and agency of the State of Florida that was created in December 1994 by the Miami-Dade County Commission (the "Commission") to establish local control over toll revenues and to ease traffic congestion on five major expressways in Miami-Dade County, Florida (the "County"). It took complete financial and operational control of the expressways over from the Florida Department of Transportation (the "Department" or "FDOT") on December 10, 1996. The Authority's primary source of Revenues is Tolls.

The Act previously provided that, prior to July 1, 2016, the governing body of the authority was to consist of a maximum of thirteen appointed members. Seven members were appointed by the Commission and five were appointed by the Governor of the State of Florida. The District Secretary of District VI of the Department served as an ex-officio voting member of the Authority.

During the 2016 Florida legislative session, Section 348.0003, Florida Statutes, was amended to reduce the maximum number of board members permitted for certain expressway authorities in Florida, including the Authority. Under the amended statute, which became effective July 1, 2016, a county expressway authority board in Florida will be limited to a maximum of nine members, including the district secretary of the affected department district who will continue to serve as an ex-officio voting member. Except for holdover members of the Board as described below, as of July 1, 2016, the members of the Board will consist of three members appointed by the Governor and five members appointed by the Commission, as well as the District Secretary of District Six of the Department. A Board member serving on July 1, 2016 is permitted to serve out the remainder of his or her term but any reappointment or new appointment is subject to the amended statutory provisions. The Board compliment will be conformed to the new law through attrition. Additionally, the amendment places restrictions on the eligibility of any person to serve as a member based upon past or current representation of any client before the county expressway authority or representation of any client doing business with the Authority for a period of 4 years prior to appointment. See "THE AUTHORITY" herein.

**The System**

The Authority's expressway system presently consists of five major expressways known as the Airport Expressway (State Road 112), the Dolphin Expressway (State Road 836), the Don Shula Expressway (State Road 874), the Snapper Creek Expressway (State Road 878), the Gratigny Parkway (State Road 924), and has jurisdiction over NW 138th Street (collectively, the "System"), all of which are critical roadways in the County. Currently, each of the System's expressways is tolled using Open Road Tolling ("ORT") which has been implemented on a System-wide basis. ORT is essentially a toll system without toll booths, where traffic flows unimpeded at highway speeds. A map of the existing System appears near the front of this Official Statement. See "THE SYSTEM" and "APPENDIX B – Consulting Engineer's Report

Fiscal Year 2017-2021 Projects, Toll System Refunding Revenue Bonds, Series 2016A, HNTB Corporation" herein.

**Security for the Series 2016A Bonds**

The Series 2016A Bonds are payable from and secured solely by a pledge of and lien on the Revenues of the System and the moneys on deposit from time to time in certain of the Funds, Accounts and Subaccounts established under the Indenture on a parity with all other Bonds Outstanding from time to time under the Indenture. So long as no Event of Default has occurred and is continuing under the Indenture, Revenues are applied to the payment of Operation and Maintenance Expenses prior to their application to the payment of the Bonds. The term "Revenues" is defined in the Indenture as all Tolls, revenues, rates, fees, charges and rentals received by or accrued to the Authority in connection with or as a result of its ownership or operation of the System, including any Hedge Receipts, any revenues (including revenues that may be derived from taxes) pledged as part of the Trust Estate under the Indenture at any time after the date of the Indenture and any investment income derived from monies held on deposit in the Funds or Accounts (other than the Rebate Fund) created under the Indenture; and, except for the purpose of calculating Revenues in connection with certain certifications to be given with respect to the issuance of Additional Bonds under the Indenture, any amounts transferred or to be transferred from the Rate Stabilization Account to the Revenue Fund. See "SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2016A BONDS" herein.

The Authority also has authority to incur certain other obligations payable from Revenues, but presently has no long term indebtedness other than the Bonds. See "SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2016A BONDS – Other Indebtedness and – Interest Rate Swaps" and "THE SYSTEM" herein.

**Other Documents**

Complete descriptions of the terms and conditions of the Series 2016A Bonds are set forth in the Indenture. A copy of the Amended and Restated Indenture, together with the Form of the Eleventh Supplemental Indenture, is attached hereto as Appendix E. The descriptions of the Authority, the Series 2016A Bonds, the Indenture, and any other matters or documents contained herein are not comprehensive or definitive. All references herein to such documents and statements are qualified by the entire, actual content of such documents and statements. Copies of such documents and statements referred to herein that are not included in their entirety in this Official Statement may be obtained as described under "MISCELLANEOUS" herein.

## PLAN OF REFUNDING

The Series 2016A Bonds are being issued to provide funds, together with other available moneys, to (i) refund the outstanding portion of the Authority's Toll System Revenue Bonds, Series 2006 (the "Refunded Bonds"), and (ii) pay certain costs associated with the issuance of the Series 2016A Bonds. See "ESTIMATED SOURCES AND USES OF FUNDS."

A portion of the proceeds of the Series 2016A Bonds will be applied to refund the Refunded Bonds in order to achieve debt service savings for the Authority. The Authority will

deposit said proceeds with the Trustee in an amount sufficient, together with other available moneys, to pay all principal of and interest on the Refunded Bonds on their redemption date.

The Authority has provided notice of redemption for the Refunded Bonds, conditioned only upon the issuance of the Series 2016A Bonds. Under the terms of the notice, the Refunded Bonds will be redeemed on the date of delivery of the Series 2016A Bonds, at a redemption price of 100% of the principal amount thereof, plus accrued interest.

## DESCRIPTION OF THE SERIES 2016A BONDS

### General

Reference is made to the Series 2016A Bonds for the complete text thereof and to the Indenture, and the discussion herein is qualified by such references.

The Series 2016A Bonds will be dated their date of delivery, will be issued in registered form in denominations of $5,000 and integral multiples thereof under the book-entry only system described below and will bear interest at the rates and mature on the dates and in the principal amounts set forth on the inside cover page of this Official Statement. Interest on the Series 2016A Bonds, which will accrue on the basis of a 360-day year of twelve (12) 30-day months, will be payable each January 1 and July 1, commencing January 1, 2017.

### Book-Entry Only System

The Depository Trust Company, New York, New York ("DTC"), will act as securities depository for the Series 2016A Bonds. The Series 2016A Bonds will be issued as fully registered securities registered in the name of Cede & Co. (DTC's partnership nominee) or such other name as may be requested by an authorized representative of DTC. One fully registered security certificate will be issued for each maturity of the Series 2016A Bonds set forth in the inside cover page of this Official Statement, in the aggregate principal amount of such Series 2016A Bonds, and will be deposited with DTC.

DTC, the world's largest depository, is a limited purpose trust company organized under the New York Banking Law, a "banking organization" within the meaning of the New York Banking Law, a member of the Federal Reserve System, a "clearing corporation" within the meaning of the New York Uniform Commercial Code, and a "clearing agency" registered pursuant to the provisions of Section 17A of the Securities Exchange Act of 1934. DTC holds and provides asset servicing for over 3.5 million issues of U.S. and non-U.S. equity issues, corporate and municipal debt issues, and money market instruments (from over 100 countries) that its participants ("Direct Participants") deposit with DTC. DTC also facilitates the post-trade settlement among Direct Participants of sales and other securities transactions in deposited securities, through electronic computerized book-entry transfers and pledges between Direct Participants' accounts, thereby eliminating the need for physical movement of securities certificates. Direct Participants include both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, clearing corporations, and certain other organizations. DTC is a wholly-owned subsidiary of The Depository Trust & Clearing Corporation ("DTCC"). DTCC is the holding company for DTC, National Securities Clearing Corporation and Fixed Income Clearing Corporation all of which are registered clearing agencies. DTCC is owned by the users of its

regulated subsidiaries. Access to the DTC system is also available to others such as both U.S. and non-U.S. securities brokers and dealers, banks, trust companies, and clearing corporations that clear through or maintain a custodial relationship with a Direct Participant, either directly or indirectly ("Indirect Participants"). DTC has Standard & Poor's rating of: AA. The DTC Rules applicable to its Direct and Indirect Participants are on file with the Securities and Exchange Commission. More information about DTC can be found at www.dtcc.com.

Purchases of Series 2016A Bonds under the DTC system must be made by or through Direct Participants, which will receive a credit for the Series 2016A Bonds on DTC's records. The ownership interest of each actual purchaser of each Series 2016A Bond ("Beneficial Owner") is in turn to be recorded on the Direct and Indirect Participants' records. Beneficial Owners will not receive written confirmation from DTC of their purchase. Beneficial Owners are, however, expected to receive written confirmations providing details of the transaction, as well as periodic statements of their holdings, from the Direct or Indirect Participants through which the Beneficial Owner entered into the transaction. Transfers of ownership interests in the Series 2016A Bonds are to be accomplished by entries made on the books of Participants acting on behalf of Beneficial Owners. Beneficial Owners will not receive certificates representing their ownership interests in Series 2016A Bonds, except in the event that use of the book-entry system for the Series 2016A Bonds is discontinued.

To facilitate subsequent transfers, all Series 2016A Bonds deposited by Direct Participants with DTC are registered in the name of DTC's partnership nominee, Cede & Co. or such other name as may be requested by an authorized representative of DTC. The deposit of Series 2016A Bonds with DTC and their registration in the name of Cede & Co., or such other DTC nominee, effect no change in beneficial ownership. DTC has no knowledge of the actual Beneficial Owners of the Series 2016A Bonds; DTC's records reflect only the identity of the Direct Participants to whose accounts such Series 2016A Bonds are credited, which may or may not be the Beneficial Owners. The Direct and Indirect Participants will remain responsible for keeping account of their holdings on behalf of their customers.

Conveyance of notices and other communications by DTC to Direct Participants, by Direct Participants to Indirect Participants, and by Direct Participants and Indirect Participants to Beneficial Owners will be governed by arrangements among them, subject to any statutory or regulatory requirements as may be in effect from time to time. Beneficial Owners of the Series 2016A Bonds may wish to take certain steps to augment the transmission to them of notices of significant events with respect to the Series 2016A Bonds, such as redemptions, tenders, defaults and proposed amendments to the documents securing the Series 2016A Bonds. For example, Beneficial Owners of the Series 2016A Bonds may wish to ascertain that the nominee holding the Series 2016A Bonds for their benefit has agreed to obtain and transmit notices to Beneficial Owners. In the alternative, Beneficial Owners may wish to provide their names and addresses to the Bond Registrar and request that copies of notices are provided directly to them.

Redemption notices shall be sent to DTC. If less than all of a Series of Series 2016A Bonds are being redeemed, DTC's practice is to determine by lot the amount of the interest of each Direct Participant of such Series to be redeemed.

Neither DTC nor Cede & Co. (nor any other DTC nominee) will consent or vote with respect to the Series 2016A Bonds unless authorized by a Direct Participant in accordance with DTC's Procedures. Under its usual procedures, DTC mails an Omnibus Proxy to the Authority as soon as possible after the record date. The Omnibus Proxy assigns Cede & Co.'s consenting or voting rights to those Direct Participants to whose accounts the Series 2016A Bonds are credited on the record date (identified in a listing attached to the Omnibus Proxy).

Principal and interest payments on the Series 2016A Bonds will be made to Cede & Co., or to such other nominee as may be requested by an authorized representative of DTC. DTC's practice is to credit Direct Participants' accounts upon DTC's receipt of funds and corresponding detail information from the Authority or the Paying Agent on the payable date in accordance with their respective holdings shown on DTC's records. Payments by Participants to Beneficial Owners will be governed by standing instructions and customary practices, as is the case with securities held for the accounts of customers in bearer form or registered in "street name," and will be the responsibility of such Participant and not of DTC, the Authority, or the Paying Agent, subject to any statutory or regulatory requirements as may be in effect from time to time. Payment of the redemption price, principal and interest to DTC is the responsibility of the Authority or the Paying Agent, and disbursement of such payments to Direct Participants shall be the responsibility of DTC, and disbursement of such payments to the Beneficial Owners shall be the responsibility of Direct and Indirect Participants.

**NEITHER THE AUTHORITY NOR THE TRUSTEE WILL HAVE ANY RESPONSIBILITY OR OBLIGATION TO THE PARTICIPANTS OR THE BENEFICIAL OWNERS WITH RESPECT TO (1) THE ACCURACY OF ANY RECORDS MAINTAINED BY DTC OR ANY PARTICIPANT, (2) THE PAYMENT BY DTC OR ANY PARTICIPANT OF ANY AMOUNT DUE TO ANY BENEFICIAL OWNER IN RESPECT OF THE PRINCIPAL AMOUNT OF OR INTEREST ON THE SERIES 2016A BONDS, (3) THE DELIVERY BY DTC OR ANY PARTICIPANT OF ANY NOTICE TO ANY BENEFICIAL OWNER WHICH IS PERMITTED OR REQUIRED TO BE GIVEN TO BONDHOLDERS UNDER THE TERMS OF THE INDENTURE, OR (4) ANY CONSENT GIVEN OR OTHER ACTION TAKEN BY CEDE & CO., AS THE NOMINEE OF DTC, AS REGISTERED OWNER. SO LONG AS CEDE & CO. IS THE REGISTERED OWNER OF THE SERIES 2016A BONDS, AS NOMINEE OF DTC, REFERENCES IN THIS OFFICIAL STATEMENT TO THE BONDHOLDERS OR REGISTERED OWNERS OF THE SERIES 2016A BONDS SHALL MEAN CEDE & CO. AND SHALL NOT MEAN THE BENEFICIAL OWNERS OF THE SERIES 2016A BONDS.**

DTC may discontinue providing its services as securities depository with respect to the Series 2016A Bonds at any time by giving reasonable notice to the Authority or the Paying Agent. Under such circumstances, in the event that a successor securities depository is not obtained, Series 2016A Bond certificates are required to be printed and delivered. The Authority may decide to discontinue use of the system of book-entry transfers through DTC (or a successor securities depository). In that event, Series 2016A Bond certificates will be printed and delivered to DTC. Thereafter, Series 2016A Bond certificates may be transferred and exchanged as described in the Indenture.

The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that the Authority believes to be reliable, but the Authority takes no responsibility for the accuracy thereof.

**Redemption of Series 2016A Bonds**

Optional Redemption. The Series 2016A Bonds are subject to optional redemption prior to their stated maturity, at the option of the Authority, in whole or in part, and if in part, in any order of maturity selected by the Authority and by lot within a maturity, on any date on or after July 1, 2026, at a redemption price equal to 100% of the principal amount thereof plus accrued interest thereon to the redemption date, without premium.

Optional Redemption Procedures. Prior to notice being given to the Owners of the Series 2016A Bonds of any optional redemption of Series 2016A Bonds, either (A) there shall be deposited with the Trustee an amount sufficient to pay the principal amount of the Series 2016A Bonds subject to redemption, plus accrued interest to the redemption date, or (B) such notice shall state that the redemption is conditioned on the receipt of moneys for such redemption by the Trustee on or prior to the redemption date. In the event that a conditional notice of redemption is given and such moneys are not timely received, the redemption for which such notice was given will not be undertaken. Amounts deposited as described in clause (A) above will be kept by the Trustee in a separate account in the Sinking Fund (which the Trustee is authorized and directed to create under the Indenture) and segregated from all other moneys deposited under the Indenture and held uninvested unless invested at the direction of an Authorized Officer only in Government Obligations that mature on or before the redemption date.

Redemption upon the Occurrence of Certain Events. The Series 2016A Bonds may be redeemed in whole or in part in such amounts and of such maturities as the Authority directs at any time at a redemption price equal to 100% of the principal amount thereof plus accrued interest, if any, to the redemption date upon receipt by the Trustee of a written notice from the Authority stating that either of the following events has occurred: (1) all or substantially all of the System has been damaged or destroyed and the Authority determines that it is not practicable or desirable to rebuild, repair and restore the same; or (2) all or substantially all of the System has been condemned or such use or control thereof has been taken by eminent domain as to render the same unsatisfactory to the Authority for continued operation.

Notice of Redemption. At least thirty (30) days, but not more than forty-five (45) days, before a redemption date of any Series 2016A Bonds, the Trustee will cause a notice of such redemption to be: (a) filed with any Paying Agent; (b) sent by telefacsimile followed by first class mail to registered securities depositories and to national information services that disseminate redemption notices and (c) mailed, postage prepaid, to each Owner of the Series 2016A Bonds subject to such redemption at its address as it appears on the registration books kept by the Bond Registrar. Failure to file any such notice with any Paying Agent or to mail such notice to any Series 2016A Bondholder or to any securities depository or national information service or any defect therein will not affect the validity of the proceedings for redemption except to the extent that a Series 2016A Bondholder is prejudiced thereby, and then, only with respect to such Series 2016A Bondholder.

Each such notice will set forth: (a) the date fixed for redemption; (b) the redemption price to be paid; (c) the CUSIP numbers and the certificate numbers of the Series 2016A Bonds to be redeemed; (d) the name and address of the Paying Agent for the Series 2016A Bonds; (e) the dated date, interest rate and maturity date of the Series 2016A Bonds subject to redemption; (f) if less than all of the Series 2016A Bonds then Outstanding are called for redemption, the amounts of the Series 2016A Bonds to be redeemed; and (g) the name, address and telephone number of a contact for such redemption.

If a portion of an Outstanding Series 2016A Bond is selected for redemption, the Owner or his attorney or legal representative must present and surrender such Series 2016A Bond to the Bond Registrar for payment of the redemption price of the portion thereof called for redemption, and the Authority will execute and the Bond Registrar will authenticate and deliver to or upon the order of such Owner or his legal representative, without charge therefor, for the unredeemed portion of the principal amount of the Series 2016A Bond so surrendered, a Series 2016A Bond of the same stated maturity and bearing interest at the same rate.

WHILE THE SERIES 2016A BONDS ARE HELD UNDER THE BOOK-ENTRY ONLY SYSTEM DESCRIBED ABOVE, NOTICES OF REDEMPTION WILL BE MAILED SOLELY TO CEDE & CO., AS THE OWNER OF THE SERIES 2016A BONDS.

Effect of Calling for Redemption. If money or Escrow Securities, or a combination of both sufficient to pay the redemption price of the Series 2016A Bonds to be redeemed are held by the Trustee in trust for the Owners of Series 2016A Bonds to be redeemed on the date fixed for redemption, then interest on the Series 2016A Bonds called for redemption will cease to accrue; such Series 2016A Bonds will cease to be entitled to any benefits or security under the Indenture or to be deemed Outstanding, and the Owners of such Series 2016A Bonds will have no rights in respect thereof except to receive payment of the redemption price. Series 2016A Bonds and portions of Series 2016A Bonds for which irrevocable instructions to pay on one or more specified dates or to call for redemption at the redemption date have been given to the Trustee in form satisfactory to it will not thereafter be deemed to be Outstanding under the Indenture and will cease to be entitled to the security of or any rights under the Indenture, other than rights to receive payment of the redemption price thereof, to be given notice of redemption in the manner provided in the Indenture, and, to the extent provided in the Indenture, to receive Series 2016A Bonds for any unredeemed portions of Series 2016A Bonds, if money or Escrow Securities, or a combination of both, sufficient to pay the redemption price of such Series 2016A Bonds or portions thereof, are held in separate accounts by the Trustee in trust for the Owners of such Series 2016A Bonds.

## SECURITY AND SOURCES OF PAYMENT FOR THE SERIES 2016A BONDS

### Pledge of Revenues

In order to provide for the acquisition, construction, installation, equipping, operation and maintenance of the System and to secure the payment of the principal of, premium, if any, and interest on all Bonds issued under the Indenture, and to reimburse any Credit Provider, any Liquidity Provider and any Reserve Facility Provider for amounts owed them, but subject to the limitations of the Indenture, the Authority has assigned, pledged and granted pursuant to the

Indenture a lien upon and a security interest in all of its right, title and interest in the following described property, rights and interests (collectively, the "Trust Estate") to the Trustee:

(a) the Revenues;

(b) the Transfer Agreement; provided, that such assignment made shall not impair or diminish any obligation of the Authority under the provisions of the Transfer Agreement;

(c) all Funds, Accounts and Subaccounts established pursuant to the Indenture (other than the Rebate Fund) and all moneys and securities and earnings in such funds, accounts and subaccounts; and

(d) any and all other contracts, instruments, moneys, revenues or sources of revenues (including, without limitation, pledged tax receipts of any type and from any source), securities and property furnished from time to time to the Trustee by the Authority or on behalf of the Authority or by any other persons to be held by the Trustee as part of the Trust Estate under the terms of the Indenture, which may be pledged at the time of issuance of any Series of Bonds for the payment of all Bonds or specific Series of Bonds. No such other contracts, instruments, moneys, revenues or sources of revenues have been pledged prior to the issuance of the Series 2016A Bonds or are being pledged at the time of issuance of the Series 2016A Bonds.

**The principal of and interest on the Series 2016A Bonds are payable solely from the Revenues which are pledged to the payment thereof and the moneys on deposit from time to time in the Funds, Accounts and Subaccounts, in the manner and to the extent specified in the Indenture, and nothing in the Series 2016A Bonds or in the Indenture will be construed as obligating the Authority to pay the principal and the interest thereon except from the Revenues and the moneys on deposit from time to time in said Funds, Accounts and Subaccounts. The Authority has no taxing power. The Series 2016A Bonds do not constitute an indebtedness of the County, the State of Florida (the "State") or any other political subdivision or agency thereof within the meaning of any constitutional or statutory provision or limitation. No Owner of any of the Series 2016A Bonds will ever have the right to compel the exercise of the taxing power of the County or the State or any political subdivision or agency thereof, or the application of any funds other than the funds pledged under the Indenture to the payment of the Series 2016A Bonds.**

The Series 2016A Bonds are secured under the Indenture on a parity with all other Bonds Outstanding from time to time under the Indenture.

**Toll Covenant**

"Tolls" are defined as all tolls, fares, incomes, receipts, rents, franchises, charges and all returns or monies of an income nature derived by or for the benefit of the Authority from users of the System.

The Authority has covenanted in the Indenture:

(a) that it will continue in effect the present schedule of Tolls for traffic using the System until such schedule shall be increased, decreased, or otherwise changed, revised or reconfigured as provided in the Indenture,

(b) that it will maintain (x) any recurring revenue stream pledged pursuant to clause (d) of the Trust Estate (as described above) with respect to all Bonds or a particular Series of Bonds and (y) the Tolls for traffic using the System, in each case, at such lawful levels, as shall, in the opinion of the Consulting Engineer from time to time, result in producing Revenues sufficient in each Fiscal Year to provide an amount of Net Revenues in each Fiscal Year equal to not less than the greater of (i) one hundred twenty per centum (120%) of the Principal and Interest Requirements for such Fiscal Year on account of all Bonds then Outstanding and (ii) one hundred percent (100%) of the sum in such Fiscal Year of (A) any deficiency in the Debt Service Reserve Fund Requirement applicable to all Bonds then Outstanding and any amount scheduled to become due and payable to a Reserve Facility Provider in such Fiscal Year as a result of a draw or claim upon a Reserve Facility issued by such Reserve Facility Provider, (B) the Principal and Interest Requirements for such Fiscal Year on account of all Bonds Outstanding, and (C) the deposits to the Renewal and Replacement Fund for such Fiscal Year required by the provisions of the Indenture, and (D) the amount required to pay any current or past due Annual Repayment Requirements[1] due to the Department under the Indenture and the Transfer Agreement. Notwithstanding the foregoing, Net Revenues in each such Fiscal Year, without regard to any amounts transferred or to be transferred from the Rate Stabilization Account to the Revenue Fund, shall be equal to not less than one hundred per centum (100%) of the Principal and Interest Requirements for such Fiscal Year on account of all Bonds then Outstanding, and

(c) that on or before January 1 and July 1 of each Fiscal Year, it will review its financial condition and estimate and determine whether Net Revenues for such year are reasonably expected to be sufficient to enable the Authority to comply with clause (b) above and file with the Trustee a copy of its resolution making such determination ("Determination"). If the Determination evidences the Authority's determination that Net Revenues are or are anticipated to be inadequate to comply with clause (b) above, the Authority will forthwith request the Consulting Engineer to make its recommendations to the Authority, in writing, with a copy to the Trustee, as to a revision of the schedule of Tolls, rates, fees, rentals and other charges and any changes in methods of operation to provide sufficient Net Revenues to enable the Authority to comply with clause (b) above.

Anything in the Indenture to the contrary notwithstanding, if the Authority complies with all recommendations of the Consulting Engineer on or before the expiration of eight months from the date of filing the Determination with the Trustee, the failure to meet the requirements of said clause (b) in any Fiscal Year will not, in and of itself, constitute an Event of Default.

[1] There are currently no payments due the Department. For a description of the Annual Repayment Requirements that may be due the Department in the future under the Transfer Agreement, see "THE SYSTEM – Department Agreements" and "APPENDIX E – The Amended and Restated Indenture and Form of Eleventh Supplemental Indenture" herein.

Notwithstanding anything in the Indenture to the contrary, (i) the Authority may remove Tolls when necessary for public safety or otherwise in an emergency situation; and (ii) the Authority may relocate toll collection facilities and may replace two-way Tolls with one-way Tolls so long as it remains in compliance with the provisions of the Indenture, including the above covenants with respect to Tolls.

Notwithstanding any of the foregoing provisions, agreements and contracts for the operation and maintenance of the System in effect on the date of the Indenture shall not be subject to revisions except in accordance with their terms, and the Authority may enter into new agreements or contracts for the operation and maintenance of the System on such terms and for such periods of time as it shall determine to be proper.

"Net Revenues" are defined, for any period, as the amount of the excess of Revenues over the amounts paid from the Revenue Fund for Operation and Maintenance Expenses during such period.

"Operation and Maintenance Expenses" are defined as the reasonable and necessary Administrative Expenses (but only to the extent the same otherwise constitute Operation and Maintenance Expenses within the meaning of this definition), Department Operation and Maintenance Expenses (but only to the extent the same otherwise constitute Operation and Maintenance Expenses within the meaning of this definition) and the reasonable and necessary expenses of maintenance, repair and operation of the System and its toll facilities, including, without limitation, all ordinary and usual expenses of maintenance and repair, insurance premiums, engineering expenses, legal expenses, the costs of collecting and accounting for Tolls, employee bond premiums, payments in satisfaction of the obligations of the Authority with respect to rebate due the United States of America, amounts due in respect of fees and expenses under an agreement to be entered into with the Initial Liquidity Provider or any similar agreement with respect to a Credit or Liquidity Facility, and any other similar expenses required to be paid with respect to the System under the provisions of the Indenture or by law, as such expenses are determined to have been incurred in accordance with the method of accounting used in the annual financial statements of the Authority, including, to the extent so determined, expenses not annually recurring, but excluding: (i) any reserves for extraordinary maintenance or repair; (ii) any allowance for depreciation or amortization; and (iii) any deposits or transfers to the credit of the Funds and Accounts.

"Principal and Interest Requirements" are defined as the respective amounts which are required in each Fiscal Year to provide:

(a) for paying the interest on all Bonds then Outstanding which is payable on each Interest Payment Date in such Fiscal Year (the "Interest Requirement");

(b) for paying the principal of all Serial Bonds then Outstanding which is payable upon the maturity of Serial Bonds in such Fiscal Year (together with clause (c) immediately below, the "Principal Requirement"); and

(c) for paying the Amortization Requirements, if any, for all Term Bonds then Outstanding for such Fiscal Year (together with clause (b) immediately above, the "Principal Requirement").

For purpose of computing (a), (b) and (c) above, any principal, interest or Amortization Requirements due on the first day of a Fiscal Year shall be deemed due in the preceding Fiscal Year.

The Indenture contains certain conventions to be applied in determining the amount of Principal and Interest Requirements for any Fiscal Year. See the definition of "Principal and Interest Requirements" in Article I of the Indenture included herein as Appendix E.

See "HISTORICAL AND FORECASTED FINANCIAL INFORMATION – Toll Rates" herein for a description of the Authority's current toll rates and toll policy.

**Debt Service Reserve Fund**

As additional security for the Bonds, the Indenture establishes the "Miami-Dade County Expressway Authority Debt Service Reserve Fund" (the "Debt Service Reserve Fund"). The Indenture requires that there be on deposit in the Debt Service Reserve Fund an amount equal to the Debt Service Reserve Fund Requirement, which may be satisfied with cash and/or one or more Reserve Facilities as described in the Indenture. See "APPENDIX E - The Amended and Restated Indenture and Form of Eleventh Supplemental Indenture" herein for a description of the provisions which must be fulfilled in the use of a Reserve Facility.

The Authority had previously satisfied the Debt Service Reserve Fund Requirement through a combination of invested cash and Reserve Facilities. However, because the ratings of the Reserve Facility Providers fell below the minimum ratings required under the Indenture, cash was deposited to the credit of the Debt Service Reserve Fund. If the rating of any such Reserve Facility Providers increases to the required rating under the Indenture, the Authority may withdraw cash from the Debt Service Reserve Fund up to the amount available under the related Reserve Facility.

The "Debt Service Reserve Fund Requirement" means, as of any date of calculation, an amount equal to the least of (i) maximum Principal and Interest Requirements on the Bonds in the current or any future Fiscal Year for the Bonds; (ii) 125% of the Average Annual Debt Service Requirement for the Bonds or (iii) 10% of the proceeds of the Bonds. Upon issuance of the Series 2016A Bonds, the Debt Service Reserve Fund Requirement will be $113,785,053.96. The Debt Service Reserve Fund Requirement will be satisfied with invested funds currently on deposit in the Debt Service Reserve Fund and the excess resulting from the refunding of the Refunded Bonds will be applied to pay a portion of the redemption price of the Refunded Bonds.

Moneys held for the credit of the Debt Service Reserve Fund will be transferred to the credit of the Sinking Fund and used for the purpose of paying the principal and interest of all Bonds whenever and to the extent that the moneys held for the credit of the Sinking Fund and available moneys held for the credit of the General Fund and the Renewal and Replacement Fund is insufficient for such purpose. If the amount transferred from the Debt Service Reserve Fund to the Sinking Fund is less than the amount required to be transferred thereunder, any

amount thereafter deposited to the credit of the Debt Service Reserve Fund will be immediately transferred to the Sinking Fund as and to the extent required to make up such deficiency.

If on the Deposit Day immediately preceding each Interest Payment Date and/or principal payment date in each Fiscal Year the moneys held for the credit of the Debt Service Reserve Fund exceeds an amount equal to the Debt Service Reserve Fund Requirement, the Trustee will transfer such excess to the credit of the Sinking Fund.

Whenever the amount on deposit in the Debt Service Reserve Fund is less than the Debt Service Reserve Fund Requirement, the Trustee will notify the Authority of the amount of the deficiency. Upon such notification, the Trustee will transfer from moneys held to the credit of the Revenue Fund on the Deposit Day in each month thereafter, to the credit of the Debt Service Reserve Fund an amount not less than the Debt Service Reserve Fund Deposit Requirement until such deficiency is remedied.

"Debt Service Reserve Fund Deposit Requirement" is defined to mean an amount in each of the twelve successive months beginning with the month following any month in which any amount shall have been withdrawn from the Debt Service Reserve Fund (or drawn under a Reserve Facility) or a deficiency is determined to exist upon valuation of the Debt Service Reserve Fund pursuant to the Indenture, equal to one-twelfth of the deficiency created by such withdrawal (or draw under a Reserve Facility) or resulting from such valuation until such deficiency is made up. In the case of draws under the various Reserve Facilities, such deficiency will include repayment of draws, expenses and interest then due and owing under the provisions of the Reserve Facility Agreements.

**Additional Bonds**

Pursuant to the Indenture, Additional Bonds payable on a parity under the Indenture with any Bonds then Outstanding may be issued, from time to time, (i) for the purposes of paying all or a portion of the Costs of a Project, making deposits to the Funds and Accounts established under the Indenture and paying costs and expenses related thereto, or (ii) to finance Hedge Charges including, without limitation, termination payments related to Hedge Agreements.

Before any such Additional Bonds may be issued, certain items must be filed with the Trustee, including, but not limited to, the following:

(1) A copy of a certificate signed by an Authorized Officer of the Authority stating the amount of Test Period Revenues (as defined below) projected to be received by the Authority during the current Fiscal Year and each full Fiscal Year to and including the fifth full Fiscal Year following the projected date when the Project to be financed from the proceeds of such Additional Bonds will be placed in service (the "Test Period"). "Test Period Revenues" means the Net Revenues during the Test Period, as determined by the Authorized Officer, further adjusted by the Authorized Officer to reflect 100% of the additional Revenues which, in the opinion of the Consulting Engineer, would be received from increases in Tolls, rates, fees, rentals and other charges relating to the System scheduled to take effect during the Test Period (provided that such increases must be adopted as of the date the certification is made and such increases must be effective on, or scheduled to become effective no later than thirty-six months

from, the date on which such certificate is made and must remain in effect for the entirety of the Test Period);

(2) A written opinion of the Consulting Engineer stating that (A) the projections of Test Period Revenues set forth in the certificate of the Authorized Officer delivered pursuant to clause (l) above including, without limitation, that portion of Test Period Revenues anticipated by the Authorized Officer to be derived from increases in Tolls, rates, fees, rentals and other charges relating to the System scheduled to take effect during the Test Period, are reasonable, and (B) the Test Period Revenues are sufficient to enable the Authority to comply with all of the requirements of the covenant as to Tolls described under "Toll Covenant" above over the entirety of the Test Period, taking into account the additional Principal and Interest Requirements of the Additional Bonds proposed to be issued; and

(3) Either (A) a certificate of the Department stating that, at the time the Additional Bonds are to be issued, (1) the Authority is current in the payment to the Department of any unpaid Non-contingent Portion of Annual Repayment Requirements, (2) there is not any unpaid Contingent Portion of Annual Repayment Requirements, and (3) the Department acknowledges that Revenues, based on the opinion of the Consulting Engineer, are projected to be sufficient to pay when due the Annual Repayment Requirements after taking into account the debt service requirements of the Additional Bonds, or (B) if, at the time the Additional Bonds are to be issued (1) the Authority is not current in the payment to the Department of any unpaid Non-contingent Portion of Annual Repayment Requirements, (2) there shall be any unpaid Contingent Portion of Annual Repayment Requirements, or (3) Revenues, based on the opinion of the Consulting Engineer, are projected to be insufficient to pay when due the Annual Repayment Requirements after taking into account the debt service requirements of the Additional Bonds, a written consent from the Department to the issuance of such Bonds.

**Completion Bonds**

The Indenture provides for the issuance of Completion Bonds, from time to time, on a parity with any Bonds then Outstanding. Completion Bonds may be issued in an aggregate principal amount not to exceed 10% of the original estimated Cost of any Project financed from the proceeds of Bonds at the time of issuance of such Bonds. Completion Bonds may be issued for the purpose of providing funds to pay all or part of the Cost of completing the Project financed from the proceeds of such Bonds, to make deposits to the Funds and Accounts and pay other costs of issuance and expenses related thereto. Prior to the issuance of Completion Bonds, the Trustee must be provided with certain items, including a certificate from the Consulting Engineer stating that the original estimated cost of the Project to be completed at the time of issuance of the Bonds originally issued to finance such Project will be exceeded and that the proceeds of the proposed Completion Bonds, together with any other funds which are available or reasonably expected to become available, will be sufficient to pay the Cost of completing such Project.

**Refunding Bonds**

The Indenture allows for the issuance of Refunding Bonds, from time to time, on a parity with any Bonds then Outstanding for the purpose of refunding all or any portion of the Bonds

then Outstanding, making deposits to the Funds and Accounts and paying other costs of issuance and expenses related thereto.

Before any Refunding Bonds may be issued, certain items must be filed with the Trustee, including, but not limited to, either (A) a certificate signed by an Authorized Officer, confirming that the annual Principal and Interest Requirements for each Fiscal Year in which the Bonds to be refunded would be Outstanding but for such refunding for all Bonds Outstanding following issuance of the Refunding Bonds with respect to which the certificate is made (excluding any Bonds being defeased by proceeds of the Refunding Bonds) is not greater than the annual Principal and Interest Requirements for each Fiscal Year for all Bonds Outstanding prior to issuance of such Refunding Bonds, or (B) in lieu thereof, the certificate and opinion described above under "Additional Bonds," each prepared as though the Refunding Bonds constitute a Series of Additional Bonds and as though the Test Period shall commence on the date of issuance of such Refunding Bonds and, under the circumstances set forth above under "Additional Bonds," the written consent of the Department described therein.

The Series 2016A Bonds are being issued as Refunding Bonds under the Indenture.

**Other Indebtedness**

Nothing in the Indenture prohibits or limits the power of the Authority to enter into agreements, including interest rate swaps, incur obligations, undertake indebtedness or otherwise enter into any financing transactions to the extent such agreements, obligations, indebtedness or financing transactions do not impose any lien upon the Revenues and are payable from sources other than Revenues. The foregoing includes bond or revenue anticipation notes, including notes anticipated to be paid from proceeds of Bonds issued under the Indenture, and any other obligations of the Authority that are payable from funds other than Revenues.

During Fiscal Year 2016, the Authority paid all remaining obligations owed to the Department, with respect to amounts advanced from the Toll Facilities Revolving Trust Fund and the State Infrastructure Bank, with respect to two loans the Authority previously obtained from the State Infrastructure Bank. The Authority currently has no other outstanding long-term indebtedness other than Bonds issued under the Indenture.

**Interest Rate Swaps**

In 2004, in anticipation of the issuance of the Authority's Toll System Revenue Bonds Series 2005A through Series 2005E (the "Series 2005 Bonds"), the Authority entered into three separate forward-starting interest rate swap agreements, one of which, with J.P. Morgan Chase Bank, N.A. (the "Forward Swap" and the "Forward Swap Provider," respectively) remains in effect.

Pursuant to the Forward Swap, only the net amount due to either the Authority or the Forward Swap Provider is paid. The payments by the Authority under the Forward Swap (other than termination payments) constitute Hedge Obligations under the Indenture and are made from the Sinking Fund pursuant to the Indenture. Any payments to be made by the Authority, if any, in connection with the termination of the Forward Swap constitute Hedge Charges under the

Indenture and are to be made from the Authority Account, but can also be made from proceeds of Additional Bonds.

The Forward Swap is subject to early termination upon the occurrence of certain specified events, including, but not limited to the downgrade of the credit ratings of the Authority below certain levels, which could create an obligation of the Authority to pay significant Hedge Charges. The Forward Swap is subject to periodic "mark-to-market" valuations that may, upon the occurrence of certain events, require collateralization by the Authority by the delivery of cash or securities to the Forward Swap Provider on a custodial basis. Delivery of cash or securities to the Forward Swap Provider to collateralize the negative mark-to-market valuation of the Forward Swap could adversely affect the Authority's liquidity.

For more information on the Forward Swap, including the negative market value of the Forward Swap as of June 30, 2015, basis risks resulting from the different interest rate formulas upon which payments on the Forward Swap and the related bonds are computed, see "Interest Rate Swap Agreements" under Note 6 in "APPENDIX D – Excerpts of the Comprehensive Annual Financial Report of the Authority Fiscal Years Ended June 30, 2015 and 2014" hereto.

**Flow of Funds**

Establishment of Funds. Pursuant to the Indenture, the Authority has established the following Funds:

(1) The "Miami-Dade County Expressway Authority Construction Fund" (the "Construction Fund").

(2) The "Miami-Dade County Expressway Authority Revenue Fund" (the "Revenue Fund").

(3) The "Miami-Dade County Expressway Authority Sinking Fund" (the "Sinking Fund").

(4) The Debt Service Reserve Fund.

(5) The "Miami-Dade County Expressway Authority Renewal and Replacement Fund" (the "Renewal and Replacement Fund").

(6) The "Miami-Dade County Expressway Authority General Fund" (the "General Fund") and the "General Account," the "Rate Stabilization Account," and the "Authority Account" therein.

(7) The "Miami-Dade County Expressway Authority Rebate Fund" (the "Rebate Fund").

Deposit of Revenues. Pursuant to the Indenture, the Authority has covenanted that it will, to the extent practicable, deposit the portion of the Revenues comprised of cash toll receipts daily into one or more special trust funds designated the "Miami-Dade County Expressway System Toll Collection Account" (the "Collection Account"). The Collection Account is

established pursuant to a deposit trust agreement and maintained in one or more banks or trust companies designated by the Authority and eligible under the laws of the State to receive deposits of public funds. Expenses of administration incurred by the banks or trust companies maintaining the Collection Account are offset in part from time to time from investment earnings on amounts credited to the Collection Account. The Authority is required to transfer or cause to be transferred all amounts credited to the Collection Account weekly, to the extent practicable, but not less often than once every two weeks, to the Trustee for deposit to the credit of the Revenue Fund. The Authority has further covenanted that, except as provided in the Indenture with respect to investment earnings on the Sinking Fund and as otherwise provided in the Indenture, all Revenues collected by the Authority other than cash toll receipts will be deposited daily, to the extent practicable, but not less often than once every two weeks, with the Trustee for deposit to the credit of the Revenue Fund. The lien of the Indenture upon moneys and revenues that constitute part of the Trust Estate attaches as soon as such moneys and revenues are collected by or on behalf of the Authority.

On or before the 25th day of each month and/or on such other Deposit Day as may be required pursuant to a Supplemental Indenture, the Trustee is required to withdraw from the Revenue Fund and transfer an amount equal to the amount of all moneys held for the credit of the Revenue Fund on the last day of the preceding month less an amount (to be held as a reserve for Operation and Maintenance Expenses) not in excess of eight and thirty-three hundredths per centum (8.33%) of the amount shown by the Annual Budget to be necessary for Operation and Maintenance Expenses for the current Fiscal Year (or any percentage less than eight and thirty-three hundredths per centum (8.33%) as may be determined by the Authority by resolution from time to time filed with the Trustee) to the credit of the following Funds in the following order:

(a) first, deposit to the credit of the Sinking Fund, such amount thereof (or the entire sum so withdrawn if less than the required amount) equal the sum of

(i) an amount that, together with an equal amount assumed to be deposited on one Deposit Day of each succeeding calendar month prior to the next Interest Payment Date, equals the Interest Requirements of the Bonds payable on the next Interest Payment Date, and

(ii) an amount that, together with an equal amount assumed to be deposited on one Deposit Day of each succeeding calendar month prior to the next principal payment date (including any date established for the payment of Amortization Requirements) for the Bonds occurring within one year of the date of such deposit, equals the Principal Requirements of the Bonds payable on such next principal payment date (or date established for the payment of Amortization Requirements);

provided that in making such transfer, the Trustee will take into account any accrued interest deposited from the proceeds of a Series of Bonds and any amounts specified in a certificate of an Authorized Officer delivered to the Trustee prior to such Deposit Day as credited to the Sinking Fund or a special Account in the Construction Fund, dedicated to pay capitalized interest on Bonds and anticipated to be available to pay interest on Bonds on the next Interest Payment Date; provided further, that in making such transfer, the Trustee will take into account any investment income realized by the Authority from the investment of moneys to the credit of the

Sinking Fund and the Debt Service Reserve Fund (or any other excess in the Debt Service Reserve Fund transferred or then transferable to the Sinking Fund pursuant to the Indenture) since the Deposit Day next preceding the Interest Payment Date last occurring prior to such Deposit Day; and provided further that, in the event the Authority has entered into any Hedge Agreement pursuant to the provisions of the Indenture, amounts will be deposited in the Sinking Fund at such other times and/or in such other amounts or transferred to such other parties as necessary to pay the Hedge Obligations due under the Hedge Agreement on a parity with interest due on the Bonds, all in the manner described in the Supplemental Indenture authorizing the issuance of any Series of Bonds where Hedge Obligations may become payable under a Hedge Agreement. Notwithstanding the foregoing, the Authority will remain obligated to cure any deficiency in the amount so deposited for the payment of interest on Variable Rate Bonds on or prior to the applicable Interest Payment Date, and the Trustee will transfer from the Revenue Fund, to the extent that moneys are available therein, the amount necessary to cure any such deficiency on or prior to such Interest Payment Date.

(b) second, deposit to the credit of the Debt Service Reserve Fund, such amount, if any, remaining after the deposits under clause (a) above (or the entire balance if less than the required amount) as will equal the Debt Service Reserve Fund Deposit Requirement;

(c) third, deposit to the credit of the Renewal and Replacement Fund an amount equal to such amount, if any, as may be necessary to make the total amount to the credit of such Fund equal to the total amount budgeted for expenditure in the then current Fiscal Year by the Authority in its Annual Budget; and

(d) finally, deposit to the credit of the General Account within the General Fund, the balance, if any, remaining after making the deposits under clauses (a), (b) and (c) above.

For a further description of the deposits required to be made to the above Funds and Accounts and the application of the moneys deposited therein, including the application of moneys deposited to the General Account within the General Fund to the payment of the Annual Repayment Requirements due the Department, see "APPENDIX E - The Amended and Restated Indenture and Form of Eleventh Supplemental Indenture" herein.

**Investments**

Monies held for the credit of the Construction Fund, the Revenue Fund, the Sinking Fund, the Debt Service Reserve Fund, the Renewal and Replacement Fund, the General Fund and the Rebate Fund will, as nearly as may be practicable, be continuously invested and reinvested by the Trustee, only upon written direction or telephonic direction promptly followed by written direction of an Authorized Officer of the Authority to the Trustee, in Investment Securities which will mature, or which are subject to redemption by the holder thereof at the option of such holder, not later than the respective dates when monies held for the credit of said Funds will be estimated by an Authorized Officer to be required for the purposes intended (which Investment Securities, in the case of the Debt Service Reserve Fund, will not mature later than five years after the date of purchase). All such investments will be valued in accordance with the terms of the Indenture. See "APPENDIX E - The Amended and Restated Indenture and Form of Eleventh Supplemental Indenture" herein.

Any and all income received from the investment of monies in the Revenue Fund and the General Fund will be deposited upon receipt thereof in the Revenue Fund. Any and all income received from the investment of monies in the Accounts and Subaccounts in the Sinking Fund will be retained in the Accounts and Subaccounts in which they are earned. Any and all income earned on investments in the Debt Service Reserve Fund will be transferred to the Sinking Fund; provided, however, such income in the Debt Service Reserve Fund will be retained in the Debt Service Reserve Fund in the event that amounts on deposit therein are less than the Debt Service Reserve Fund Requirement.

Any income received from the investment of monies in the Construction Fund will remain therein until completion of the Project for which such monies were deposited in the Construction Fund and, to the extent any excess income remains at the end of the Project, the same will be applied in the manner set forth in the Indenture. See "APPENDIX E - The Amended and Restated Indenture and Form of Eleventh Supplemental Indenture."

Any income received from the investment of moneys in the Rebate Fund will remain therein.

**Other Covenants of the Authority**

The Authority has made several covenants in the Indenture including, but not limited to, covenants to establish and enforce reasonable rules with respect to the operation of the System, to retain a Consulting Engineer and Accountants as needed or required, to prepare an Annual Budget, to maintain or cause to be maintained various insurance with respect to the System, to keep adequate books and records, to diligently enforce the collection of Tolls, to prohibit the sale or disposal of any portion of the System except under certain circumstances and to inspect or cause the inspection of the System on a regular basis. See "APPENDIX E - The Amended and Restated Indenture and Form of Eleventh Supplemental Indenture" herein.

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## ESTIMATED SOURCES AND USES OF FUNDS

The following table presents the estimated sources and uses of funds in connection with the issuance of the Series 2016A Bonds:

| | |
|---|---|
| **SOURCES OF FUNDS** | |
| Principal Amount of Series 2016A Bonds | $ 95,820,000.00 |
| Original Issue Premium | 23,436,335.35 |
| Other Available Moneys [(1)] | 2,379.856.15 |
| **Total Sources of Funds** | $ 121,636,191.50 |
| **USES OF FUNDS** | |
| Redemption of the Refunded Bonds | $ 120,843,169.27 |
| Underwriters' Discount | 205,140.03 |
| Costs of Issuance[(2)] | 587,882.20 |
| **Total Uses of Funds** | $ 121,636,191.50 |

(1) Represents moneys in the Sinking Fund allocable to the Refunded Bonds and excess moneys in the Debt Service Reserve Fund as a result of the refunding.

(2) Includes financial advisory fees, legal fees, fees for traffic and engineering consultants, and other expenses incurred in the issuance of the Series 2016A Bonds.

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## ESTIMATED DEBT SERVICE SCHEDULE

The following table sets forth the estimated annual debt service schedule for the Series 2016A Bonds and other Outstanding Bonds and indicates the adjustment to annual debt service as a result of the refunding of the Refunded Bonds.

| | | LESS Refunded Bonds | | Series 2016A Bonds | | | |
|---|---|---|---|---|---|---|---|
| Fiscal Year | Total Debt Service Prior to Refunding[1] | Refunded Principal | Interest | Principal | Interest | Total | Total Debt Service[1][2] |
| 2017 | $ 96,678,719 | - | $ 5,679,213 | - | $ 3,792,875 | $ 3,792,875 | $ 94,792,382 |
| 2018 | 100,440,358 | - | 5,679,213 | - | 4,791,000 | 4,791,000 | 99,552,146 |
| 2019 | 102,363,745 | - | 5,679,213 | - | 4,791,000 | 4,791,000 | 101,475,532 |
| 2020 | 107,485,031 | - | 5,679,213 | - | 4,791,000 | 4,791,000 | 106,596,819 |
| 2021 | 110,549,658 | - | 5,679,213 | - | 4,791,000 | 4,791,000 | 109,661,445 |
| 2022 | 112,612,743 | - | 5,679,213 | - | 4,791,000 | 4,791,000 | 111,724,530 |
| 2023 | 115,224,279 | - | 5,679,213 | - | 4,791,000 | 4,791,000 | 114,336,066 |
| 2024 | 118,195,255 | - | 5,679,213 | - | 4,791,000 | 4,791,000 | 117,307,043 |
| 2025 | 120,280,032 | - | 5,679,213 | - | 4,791,000 | 4,791,000 | 119,391,819 |
| 2026 | 122,206,018 | - | 5,679,213 | - | 4,791,000 | 4,791,000 | 121,317,806 |
| 2027 | 120,453,330 | $ 5,650,000 | 5,679,213 | - | 4,791,000 | 4,791,000 | 113,915,118 |
| 2028 | 98,924,347 | 5,655,000 | 5,439,088 | $ 11,595,000 | 4,791,000 | 16,386,000 | 104,216,260 |
| 2029 | 91,020,732 | 5,495,000 | 5,191,681 | 16,800,000 | 4,211,250 | 21,011,250 | 101,345,300 |
| 2030 | 89,461,874 | - | 4,951,275 | 10,590,000 | 3,371,250 | 13,961,250 | 98,471,849 |
| 2031 | 89,425,325 | - | 4,951,275 | 8,280,000 | 2,841,750 | 11,121,750 | 95,595,800 |
| 2032 | 90,410,538 | 18,750,000 | 4,951,275 | 23,580,000 | 2,427,750 | 26,007,750 | 92,717,013 |
| 2033 | 90,372,538 | 19,595,000 | 4,107,525 | 21,955,000 | 1,248,750 | 23,203,750 | 89,873,763 |
| 2034 | 90,179,044 | 3,135,000 | 3,225,750 | 3,020,000 | 151,000 | 3,171,000 | 86,989,294 |
| 2035 | 109,576,315 | 3,290,000 | 3,069,000 | | | | 103,217,315 |
| 2036 | 109,572,445 | 3,455,000 | 2,904,500 | | | | 103,212,945 |
| 2037 | 109,572,680 | 3,620,000 | 2,731,750 | | | | 103,220,930 |
| 2038 | 109,576,375 | 24,885,000 | 2,550,750 | | | | 82,140,625 |
| 2039 | 109,578,065 | 26,130,000 | 1,306,500 | | | | 82,141,565 |
| 2040 | 109,577,000 | | | | | | 109,577,000 |
| 2041 | 22,231,750 | | | | | | 22,231,750 |
| 2042 | 22,232,250 | | | | | | 22,232,250 |
| 2043 | 22,232,000 | | | | | | 22,232,000 |
| 2044 | 22,233,750 | | | | | | 22,233,750 |
| | $ 2,612,666,195 | $119,660,000 | $107,851,706 | $95,820,000 | $70,745,625 | $166,565,625 | $2,551,720,114 |

(1) For Fiscal Years 2018 and beyond, debt service for the Series 2005 Bonds is calculated at a rate of 5.702%, which reflects the fixed payer swap rate plus 1.33% in order to account for the higher variable rate paid on the Series 2005 Bonds and the basis difference between the Series 2005 Bonds and the interest rate swap related to the Series 2005 Bonds. In Fiscal Year 2017, debt service for the Series 2005 Bonds is calculated at a rate of 5.8233% to account for higher anticipated basis spread in the short-term.

(2) Totals may not add due to rounding.

## THE AUTHORITY

The Authority was created as a public instrumentality and agency of the State pursuant to an Ordinance of the County enacted in 1994 to establish local control over toll revenues and to ease traffic congestion on five major expressways in the County. The Authority's purposes and powers include, among others, the power to (1) acquire, hold, construct, improve, maintain, operate, own and lease an expressway system; (2) fix, alter, charge, establish, and collect tolls, rates, fees, rentals, and other charges for the services and facilities of its expressway system; (3) utilize surplus revenues to finance or refinance the planning, design, acquisition, construction, maintenance or improvement of a public transportation facility or facilities located in Miami-Dade County or any programs or projects that will improve the levels of service on an expressway system; and (4) borrow money, make and issue negotiable notes, bonds, refunding bonds and other evidence of indebtedness to finance an expressway system. State legislation passed in 1996 enabled the Authority to take over complete operational and financial control in perpetuity from the Florida Department of Transportation of the five expressways that comprise the System. See "THE SYSTEM – Department Agreements," herein.

The Authority's Fiscal Year commences on July 1 and ends on June 30 of the following calendar year.

The Act previously provided that, prior to July 1, 2016, the governing body of the Authority was to consist of a maximum of thirteen appointed members. Seven members were appointed by the Commission and five were appointed by the Governor of the State of Florida. The District Secretary of District Six of the Department served as an ex-officio voting member of the Authority. Each member, except for the District Secretary of District Six of the Department, must at all times during his or her term of office be a resident of the County. Members serve without compensation. Any Member whose term expires serves until reappointed or until a new member is appointed.

During the 2016 Florida legislative session, Section 348.0003, Florida Statutes, was amended to reduce the maximum number of board members permitted for certain expressway authorities in Florida, including the Authority. Under the amended statute, which became effective July 1, 2016, the Board will be limited to a maximum of nine members, including the District Secretary of District Six of the Department who will continue to serve as an ex officio voting member. Except for holdover members of the Board as described below, as of July 1, 2016, the members of the Board will consist of three members appointed by the Governor and five members appointed by the Commission, as well as the District Secretary of District Six of the Department. A Board member serving on July 1, 2016 is permitted to serve out the remainder of his or her term but any reappointment or new appointment is subject to the amended statutory provisions. The Board compliment will be conformed to the new law through attrition. Additionally, the amendment places restrictions on the eligibility of any person to serve as a member based upon past or current representation of any client before the county expressway authority or representation of any client doing business with the Authority for a period of 4 years prior to appointment. See "THE AUTHORITY" herein.

**Authority Governing Board**

**Louis V. Martinez, Esq. (Chair).** Louis V. Martinez is "Of Counsel" at the law firm Diez Reus in Miami. Mr. Martinez formerly managed his own firm and served with the office of Florida's Attorney General as the Deputy Chief Assistant Attorney General. Mr. Martinez is a member of The Florida Bar, Cuban-American Bar Association, Illinois Bar and a member of the Miami Beach Chamber of Commerce. He earned his undergraduate degree from Loyola University and his Juris Doctor from DePaul University College of Law. He was appointed to the Authority by the Commission and his term expires on February 7, 2020.

**Shelly Smith-Fano (Vice Chair).** Ms. Smith-Fano is the Director of Miami Dade College, School of Business's Hospitality Management Program. She is active in local, state and federal civic organizations. She received an Associate in Arts degree from Miami Dade College, a Bachelor's degree in Modern Languages and a Master's Degree in Hospitality Management from Florida International University and is currently pursuing her Doctorate in Organizational Leadership from Northcentral University. She was appointed to the Authority by the Governor of Florida and her term expires on April 6, 2020.

**Rick J. Rodriguez Piña (Treasurer).** Rick J. Rodriguez Piña is the principal and founder of Rodriguez Piña & Associates, established in January of 1995. Mr. Rodriguez Piña formerly acted as Advisor to the Secretary of Commerce for the Florida Department of Commerce on special assignments and was the Manager for business retention for the Beacon Council. He has also previously served as a membership Director for the Hialeah-Miami Springs NW Dade Chamber of Commerce. He currently is the Chairman of the Latin American Business Association, serves as a member of the Florida International University President's Council Advisory Board, and was a member of the South Florida Regional Transportation Authority Citizens' Advisory Committee Board from 2004 through 2010. He earned an AA degree in international affairs from Miami-Dade College and a Bachelor of Arts degree in Political Science from Florida State University. He was appointed to the Authority by the Commission and his term expires on February 7, 2017.

**Leonard Boord.** Mr. Boord is the founder and Chief Executive Officer of Slon Capital, an investment firm in Miami. He is a 4-time chief executive officer focusing on the technology sector in Latin America. Two of the startups he helped develop were sold to Fortune 500 companies. He is a member of the National Association of Corporate Directors and currently serves on the boards of four companies involved in logistics, fourth party logistics, mobile payments, and airport concessions, as well as the Board of Trustees of Florida International University. He was appointed to the Authority by the Governor of Florida and his term expires on April 6, 2018.

**Vincent T. Brown, Esq**. Mr. Brown is currently the lead attorney at the Brown Law Group, LLC with over 20 years of experience in municipal government law. Previously, Mr. Brown was an Assistant County Attorney at Miami-Dade County. He is an active member of The Florida Bar and is admitted to the 11th Circuit Court of Appeals, and U.S. District Court Southern District of Florida. Mr. Brown received his Juris Doctor from St. Thomas University in 1992 and earned his Bachelor of Arts, with a concentration in criminal justice, from Clark-

Atlanta University in 1987. He was appointed to the Authority by the Commission and his term expires on February 7, 2017.

**Maurice A. Ferré.** Mr. Ferré is founder of the Office of Maurice Ferré, a business consulting firm established in 1985. He is a member of the Council on Foreign Relations and the Inter-American Dialogue. He previously served as Mayor of the City of Miami (1973 - 1985). He has also served in the Florida House of Representatives, as a City Commissioner of Miami and as Vice-Chairman of the Miami-Dade Board of County Commissioners (1994 - 1995) and is currently the Board member serving on the Metropolitan Planning Organization for the County. He is on the Board of ITS America and serves as a member of the Florida Transportation Commission. Mr. Ferré earned his bachelor's degree in architectural engineering and master of business administration at the University of Miami. He was appointed to the Authority by the Commission (and previously served as Chair) and his term expires on February 7, 2017.

**Alfredo L. Gonzalez, Esq.** Alfredo L. Gonzalez is a partner at the firm of Genovese Joblove & Battista, P.A. in Miami. Mr. Gonzalez was the Chief Executive Officer of Adorno & Yoss LLP and past head of the Real Estate and Governmental Practice Groups. He is an active member of the American Bar Association, The Florida Bar Association, the Dade County Bar Association, the Cuban American Bar Association and the University of Florida Hispanic Alumni Association. He is a past member of the board of directors of the Realtor Association of Miami Dade and the Beaches. Mr. Gonzalez is also a trustee of the Greater Miami Chamber of Commerce and has participated in a Blue Ribbon Committee which drafted recommendations for improvements to the City of Miami Building and Zoning Code. He received his Juris Doctor from the University of Florida Levin College of Law and earned his Bachelor of Arts degree in Accounting from the University of Miami. He was appointed to the Authority by the Commission and his term expires on February 7, 2017.

**Maritza Gutiérrez**. Ms. Gutiérrez founded Creative Ideas Advertising, Inc. in 1983. She serves as the President and Chief Executive Officer of the company. Ms. Gutiérrez's civic and community involvement includes serving as a member of the Destination Florida Commission, and she is an emeritus member of the Community Partnership for the Homeless Center. Ms. Gutiérrez has previously served as Chair of the Authority. She was appointed to the Authority by the Commission and her term expires February 7, 2017.

**Arthur J. Meyer.** Arthur J. Meyer joined ANF Group in July 2016, where he is responsible for strategy and growth initiatives in the South Florida Marketplace. Mr. Meyer brings more than eight years of developing, creating and supporting value driven construction solutions for clients resulting in over $750 million in project value that represents diverse market sectors (mixed-use, multi-family, hospitality, education, commercial and retail). He is an active, involved member of the South Florida community. In addition to serving as a board member on the on the Authority, he also serves on the boards of the President's Council of Florida International University, the Latin Builders Association, and the Greater Miami Chamber of Commerce. Additionally, he has served as a board member of the Florida International University Board of Trustees, the Florida Board of Governors and the Housing Finance Authority of Miami-Dade County. Mr. Meyer earned both his Masters of Science and Bachelor of Science in Construction Management from Florida International University. He was appointed to the Authority by the Commission and his term expires April 19, 2020.

**Javier L. Vázquez, Esq**. Javier Vazquez is a Partner at Berger Singerman LLP, with over 25 years of experience in real estate, zoning, land use, governmental regulation, and public hearing law. He is an active board member of the Children's Cancer Caring Center, is an associate member of the Urban Land Institute, Florida Bar Environmental and Land Use Law, Miami Lakes Bar Association, and the Greater Miami Chamber of Commerce Real Estate Committee. Mr. Vazquez received his Juris Doctor from the University of Miami, School of Law and earned his Bachelor of Science, from Florida International University. He was appointed to the Authority by the Governor of Florida and his term expires on April 6, 2017.

**Cliff B. Walters.** Cliff Walters is the President of Cliff Walters Consulting LLC. Mr. Walters previously served as a member of the Board of Pilot Commissioners. Mr. Walters received his Bachelor and Master degrees from the University of West Florida. Mr. Walters was appointed to the Authority by the Governor of Florida and his term expires on April 6, 2018.

**Luz Weinberg**. Former City of Aventura Commissioner Luz Weinberg was first elected to the Aventura City Commission in 2005, re-elected unopposed in 2010, and served through her November 2014 term-limits. Ms. Weinberg has also served from 2009 to 2015 on the Board and as Vice President of the National Association of Latino Elected and Appointed Officials (NALEO). She graduated from Miami Edison Senior High, Miami-Dade College and Florida International University where she earned a Magna Cum Laude Psychology degree, and began her career as case manager with renowned forensic psychologist, the late Dr. Leonard Haber. From 2010 to 2016, she was Director of Communications for global conglomerate Bouygues Construction's historic Port of Miami Tunnel Project and the iconic Brickell City Centre Project. Currently, she lends her twenty-five years of communications experience as a private consultant as Chief Executive Officer of GlobCOMMPro. She was appointed to the Authority by the Governor of Florida and her term expires April 6, 2017.

**James "Jim" A. Wolfe, P.E**. Mr. Wolfe was appointed District Six Secretary of the Florida Department of Transportation on May 23, 2016. He is responsible for the overall planning, design, construction, maintenance and operation of the State Highway System in Miami- Dade and Monroe Counties. He holds both undergraduate and graduate degrees in civil engineering from the University of Florida. Mr. Wolfe has been with the Florida Department of Transportation for 36 years, serving ultimately as the District 4 Secretary. He was previously both the Director of Operations and the Director of Development. While at District 4, Jim led the team that delivered the I-595 project, which was the first availability payment P3 highway project in the country. As District Secretary, Mr. Wolfe serves on the Department's Executive Leadership Team, Miami-Dade Expressway Authority Board of Directors, and Miami-Dade Metropolitan Planning Organization.

**Authority Management**

The Authority's management staff consists of an Executive Director, Deputy Executive Director/Director of Toll Operations, Deputy Executive Director/Chief Financial Officer, Deputy Executive Director/Director of Engineering and a General Counsel. The Authority operates under a management philosophy that provides for a qualified administrative staff of limited size and reliance upon contracted consultant assistance for specific tasks.

Executive Director. Javier Rodriguez, P.E., was selected by the Board to serve as the Executive Director of the Authority, commencing on March 2, 2007. Mr. Rodriguez holds a Bachelor of Science degree in Civil Engineering from Florida International University.

Prior to joining the Authority, Mr. Rodriguez worked with the FDOT, District Six for 16 years, including four years as Director of Transportation Development. During his tenure, Mr. Rodriguez supervised various projects to be implemented with future Public-Private Partnerships such as the Port of Miami Tunnel. He was responsible for the delivery of production and public transportation projects such as the interchanges on State Road 826, the Palmetto Expressway, Miami International Airport and the Miami Intermodal Center. For more than 10 years, Mr. Rodriguez has been an active member with the International Bridge, Tunnel and Turnpike Association ("IBTTA") volunteering in many capacities and serving on various committees. He joined the IBTTA Board of Directors in 2007 and served as the IBTTA's President in 2015. He is currently serving in the capacity of Immediate Past President. Additionally, Mr. Rodriguez has served or currently serves on the Advisory Board for the Miami-Dade Public Schools Academy of Engineering and the Salvation Army Advisory Board.

Mr. Rodriguez's responsibilities encompass the operation and maintenance of the existing toll road system, its expansion and financing. This includes long-range planning, design, right-of-way acquisition, construction, purchasing and contracting, and enhancing relations with its partners: the State of Florida, the Department of Transportation, Florida's Turnpike Enterprise, Miami-Dade County, Metropolitan Planning Organization, state and local agencies and municipalities.

Deputy Executive Director/Director of Toll Operations. Stephan P. Andriuk has served as Director of Toll Operations for the Authority since the creation of the position in March 2003. Mr. Andriuk is a graduate of George Mason University with a Bachelor of Science degree in Business Administration. His primary duties are to oversee all aspects of toll operations and provide liaison between the Toll Operations and the Authority staff on highway maintenance and operations, design and construction of toll gantry capital improvements, audit of toll revenue, and public communications. Previously, Mr. Andriuk was the Administrator of the Chesapeake Expressway in Chesapeake, Virginia. He has over 30 years of management experience, including over 27 years in toll operations. His tenure in Virginia included the procurement, installation, testing, integration and oversight of four different toll projects.

Deputy Executive Director/Chief Financial Officer. Marie T. Schafer, CPA. Ms. Schafer assumed the role of the Authority's Chief Financial Officer beginning January 2006 and reports directly to the Executive Director. Ms. Schafer is responsible for the Authority's overall financial related activities including financial reporting, budgeting, debt administration and cash management. In addition to financial related duties, the Chief Financial Officer is also responsible for managing the day to day operational functions and developing policies/procedures of the Authority as directed by the Executive Director. Ms. Schafer has over 25 years of experience in the accounting profession from the public and private sector. Ms. Schafer is a licensed CPA in the State of Florida and is a member of the Florida Institute of Certified Public Accountants and Government Finance Officers Association. Ms. Schafer holds a Bachelor degree in Accounting from Florida International University and a Master's Degree in Accounting from Saint Thomas Archdiocese University.

Deputy Executive Director/Director of Engineering. Juan C. Toledo, P.E. Mr. Toledo has over 20 years of experience in Construction and Design and currently oversees the implementation of MDX's Five-Year Work Program, currently estimated at over $630 million, which includes all planning, design, construction, operations and maintenance of the MDX highway system. Most recently, Mr. Toledo is spearheading the completion of the conversion to ORT on State Road 836 and State Road 112. Mr. Toledo holds a Bachelor of Science degree in Civil Engineering from Florida International University and is a registered professional engineer in the State of Florida.

General Counsel. Carlos M. Zaldivar, Esquire. Mr. Zaldivar joined the Authority in November 2014. Mr. Zaldivar has 20 twenty years of experience as a general counsel, trial lawyer and a former law enforcement professional. From 1992 – 2004, Mr. Zaldivar served as a Special Agent and a Supervisory Special Agent/General Counsel with the Federal Bureau of Investigation (FBI), where he conducted and supervised complex investigations into financial and money laundering schemes, narcotics distribution, extortion, kidnap and ransom and other criminal enterprises. As a FBI General Counsel, he directed legal operations for the FBI's Miami and San Juan divisions. He provided legal opinions to agents, supervisors and executive management and served as General Counsel for 10 Command Post operations. He received an FBI Director's Award for drafting three expedited wire intercept affidavits to support the successful recovery of a child who had been kidnapped. Following the FBI, Mr. Zaldivar entered private practice as a trial attorney and represented clients in both civil and criminal matters and has appeared in local, state and federal courts in numerous jurisdictions. Most recently, Mr. Zaldivar served as the General Counsel for an international manufacturing company that was based in Miami, Florida, and had operations in China, Central America and South America. Mr. Zaldivar holds a license to practice law in Florida, New Jersey and Pennsylvania (inactive). Mr. Zaldivar graduated with a Bachelor of Arts from Villanova University and earned his Juris Doctor Degree with a Tax Honor's Certificate from Rutgers University.

**Florida Transportation Commission Oversight**

The Authority is a public instrumentality of the State and, as such, is subject to certain oversight by the Florida Transportation Commission (the "FTC") which, prior to 2008, was charged with overseeing only the Department. Since 2008, the FTC is also charged with overseeing local transportation authorities, such as the Authority. Specifically, Section 20.23(2)(b)(8), Florida Statutes, authorizes and requires the FTC to monitor the efficiency, productivity, and management of the authorities created under Chapters 343 and 348, Florida Statutes. The FTC also conducts periodic reviews of each authority's operations and budget, acquisition of property, management of revenue and bond proceeds, and compliance with applicable laws and generally accepted accounting principles. The FTC publishes a report each year on its review of local authorities.

The FTC has no control over the revenue of the Authority, including, in particular, the Toll rates.

**Miami Intermodal Center**

On May 12, 2014, the Authority approved the form of an agreement with the Department that provides for the transfer to the Authority of fee simple ownership of a portion of what is known as the Miami Intermodal Center, or the "MIC." The MIC is a multi-modal transportation hub located adjacent to Miami International Airport. The facilities in the MIC transfer include a public transportation facility (the "Central Station") and associated joint development property (collectively, the "MIC Facilities"). The Central Station construction has been completed and the Department held a grand opening on April 9, 2015. The Central Station serves as a transportation gateway to the airport by integrating a variety of transportation modes, including the County buses, Tri-Rail, Amtrak, and MetroRail. The rental car facilities transferred in 2011 is not part of the conveyance of the MIC Facilities.

The proposed conveyance is contingent upon the County's approval pursuant to Section 348.0004(7), Florida Statutes. The Department and the Authority have presented this matter to the County and await the County's requisite approval. Once transferred, the MIC Facilities will be operated as a separate enterprise fund for accounting purposes and will not be part of the "System". Any revenues generated by the MIC Facilities will not be "Revenues" under the Indenture. Only Revenues on deposit in the Authority Account of the General Fund would be available to be used for the MIC Facilities at the Authority's discretion, including any interfund borrowings.

**Future Legislation**

As discussed earlier, legislation was recently passed by the Florida Legislature that modified the make-up of the Board. Other legislation has been introduced from time to time in the Florida Legislature that would have, if adopted, significantly affected the power to, among other things, issue additional bonds and autonomously authorize toll increases. Although such previous legislative proposals have not advanced beyond the committee level, it is possible that future legislation imposing similar or other restrictions may be introduced. The Authority cannot predict the effect on the Authority's operations of any future legislation.

## THE SYSTEM

The System is part of the National Highway System, Florida's State Highway System, and the Florida's Strategic Intermodal System, except that the Snapper Creek Expressway and the Dolphin Expressway extension (NW 137$^{th}$ Avenue to the HEFT) are not part of the Strategic Intermodal System. The System presently consists of five major expressways known as the Airport Expressway (State Road 112), the Dolphin Expressway (State Road 836), the Don Shula Expressway (State Road 874), the Snapper Creek Expressway (State Road 878), the Gratigny Parkway (State Road 924), and has jurisdiction over NW 138th Street, all of which are critical roadways in the County. Currently, each of the System's expressways is a toll facility. As further described below, the Authority implemented ORT on a System-wide basis. ORT is essentially a toll system without toll booths, where traffic flows unimpeded at highway speeds and tolls are collected electronically through transponders (SunPass®) or by video scanning of a license plate. SunPass® is an electronic toll account management system operated by Florida's Turnpike Enterprise with revenue subsequently transferred to the Authority. A map of the

existing System appears in the front of this Official Statement. For a more complete description of the System, see "APPENDIX B – Consulting Engineer's Report Fiscal Year 2017-2021 Projects, Toll System Refunding Revenue Bonds, Series 2016A, HNTB Corporation" herein.

**The Expressways**

Airport Expressway. The Airport Expressway originally opened in 1961 and extends for approximately 4.1 miles from Miami International Airport (the "Airport") on the west to Interstate 95 on the east and includes 26.2 lane miles. It provides access from the Airport to downtown Miami, the beaches as well as northern Miami-Dade County and Broward County. The Authority transitioned from conventional toll collection to ORT in November 2014. There are two separate ORT tolling points on this expressway collecting tolls from both eastbound and westbound traffic. For a description of the ORT gantry locations, see "APPENDIX B – Consulting Engineer's Report Fiscal Year 2017-2021 Projects, Toll System Refunding Revenue Bonds, Series 2016A, HNTB Corporation".

Dolphin Expressway. The Dolphin Expressway opened originally in 1965 and extends in a west to east orientation for approximately 14 miles providing access from the western suburban area of the County to the Airport, downtown Miami and the beaches and contains 98.3 lane miles. In 2007, the Authority completed an extension, which resulted in a new four lane, 2.2 mile extension westward to a new interchange at Northwest 137th Avenue. This extension is a SunPass® only facility which has six (6) lanes of high-speed electronic SunPass® toll collection equipment on a gantry just east of N.W. 137th Avenue. The removal of all conventional toll collection and conversion to ORT on the Dolphin commenced in November 2014, with the implementation of two new mainline ORT tolling gantries that collect tolls in both directions east of State Road 826; one located between 57th avenue and 72nd avenue, and the other between 17th avenue and 27th avenue. Multiple ramp gantry systems, closing the system allowing for no free movements were operational in the months that followed with the final two ramp gantries expected to be operational by July 2016. These locations are the west bound exit to 87th avenue and the southbound State Road 826 ramp to State Road 836 west. For a description of the ORT gantry locations, see "APPENDIX B – Consulting Engineer's Report Fiscal Year 2017-2021 Projects, Toll System Refunding Revenue Bonds, Series 2016A, HNTB Corporation".

Don Shula Expressway. The Don Shula Expressway opened in 1974. It extends in a southwest to northeast orientation for 7.2 miles connecting the southwest suburban area of the County from the Homestead Extension of Florida's Turnpike (the "HEFT") to the Palmetto Expressway and contains a total of 49.4 lane miles. ORT operations began on the Don Shula Expressway on July 17, 2010. The Don Shula Expressway has six lanes from the HEFT to the Snapper Creek Expressway, with additional auxiliary lanes between Killian Parkway and the Snapper Creek Expressway. From the Snapper Creek Expressway to the Palmetto Expressway (State Road 826), the Don Shula Expressway has recently been widened to a six-lane divided highway. There are three separate ORT tolling points on the Don Shula Expressway, all collecting tolls from both northbound and southbound traffic. For a description of the ORT gantry locations, see "APPENDIX B – Consulting Engineer's Report Fiscal Year 2017-2021 Projects, Toll System Refunding Revenue Bonds, Series 2016A, HNTB Corporation".

Snapper Creek Expressway. The Snapper Creek Expressway opened in 1974 and extends in a west to east orientation for 3 miles connecting the Don Shula Expressway and the southwest suburban area of the County to U.S. 1 and the southern terminus of Metrorail, the County's rapid rail system and contains 13.1 lane miles. ORT operations began on the Snapper Creek Expressway on July 17, 2010. Prior to the implementation of ORT, this expressway was not a toll road. There are two separate ORT tolling points on this expressway collecting tolls from both eastbound and westbound traffic. For a description of the ORT gantry locations, see "APPENDIX B – Consulting Engineer's Report Fiscal Year 2017-2021 Projects, Toll System Refunding Revenue Bonds, Series 2016A, HNTB Corporation".

Gratigny Parkway. The Gratigny Parkway opened in 1992 and extends in a west to east orientation for approximately 5.4 miles providing access from Broward County through I-75 and from the Palmetto Expressway in northwest Miami-Dade County to major arterials in northern Miami-Dade County which connect to I-95 and contains a total of 37.0 lane miles. ORT commenced operations on the Gratigny Parkway on June 7, 2010. There are two ORT tolling points on this expressway collecting tolls from both eastbound and westbound traffic. For a description of the ORT gantry locations, see "APPENDIX B – Consulting Engineer's Report Fiscal Year 2017-2021 Projects, Toll System Refunding Revenue Bonds, Series 2016A, HNTB Corporation".

**Toll Operations**

All of the System's expressways have been converted to ORT which is a set of integrated technologies that allows for the payment of tolls electronically using toll equipment that is located on overhead gantries and embedded in the roadway. ORT is essentially a toll system without tollbooths or cash payments, where traffic flows unimpeded at highway speeds. The toll lane equipment is connected to a toll zone host computer, which in turn communicates with the centralized computer system in a back office location where transactional data from lanes is processed and stored, and image review, reconciliation, reporting and invoicing take place. The in-lane equipment and software on State Road 874, State Road 878 and State Road 924 are being maintained by Electronic Transaction Consultants Corporation ("ETCC"). The ETCC maintenance contract expires on August 19, 2017. The in-lane equipment and software on State Road 112 and State Road 836 are being maintained by TransCore, LP ("TransCore"). The TransCore maintenance contract expires on April 30, 2022.

Toll collection with ORT is by either SunPass® or by Toll-by-Plate (also known as video tolling). The current breakdown of the transaction types (as of March 2016) is approximately 80% SunPass® and 20% Toll-by-Plate.

Under the SunPass® pre-paid electronic toll collection system, when a valid SunPass® account is identified by reading a transponder at a gantry or toll booth location, the transaction is linked to a customer's pre-paid account. The toll transactions are transmitted electronically to the Florida Turnpike Enterprise SunPass® service center, subsequent to which the funds are credited to the Authority.

Toll-by-Plate (also known as video tolling) is designed to work by automatically capturing an image of a vehicle's license plate as the vehicle passes under a toll gantry mounted

with cameras. Images for any vehicle that does not have a valid transponder read at the tolling point are saved and sent to the back office operation for image review. The Toll-by-Plate system uses either Optical Character Recognition ("OCR") to automatically recognize the license plate number, or a manual review process to match that license plate to the registered owner of the vehicle. If the registered owner of the vehicle has a SunPass® account, the transaction is assigned to his or her account as an "I-Toll", or if no account is found, an invoice is sent to the registered owner of the vehicle.

Currently, Toll-by-Plate transactions from each user without a transponder account, whose license plate has been read, are bundled into a single invoice and mailed to the address of the vehicle owner provided by the Department of Motor Vehicles. Invoices that are not paid result in a toll violation notice ("TVN") from the Authority and if it remains unpaid, are sent to a collection agency. Once an account is placed in collections, a vehicle registration stop is issued against the registered owner and a license plate or revalidation sticker may not be issued until that person's account is cleared. Throughout this process, any additional trips associated with the violating vehicle are accumulated into the bundle of transactions for which payment is owed to the Authority. Under Florida law, failure to pay tolls can be the basis for issuing a Uniform Traffic Citation (the "UTC"), which the Authority could issue for unpaid tolls returned from collections. UTC's are handled through the Miami-Dade County court system. Florida law provides that a failure to pay a UTC may result in the suspension of the vehicle owner's driver's license or inability to renew vehicle registration.

The Authority charges a toll rate differential for using the Toll-by-Plate option in comparison to SunPass® (Toll-by-Plate users currently pay twice the SunPass® rate). Other fees include late TVN fees, delinquent fees, collection fees, and Uniform Traffic Citation ("UTC") fees, applicable at various points along the non-payment escalation process.

Section 338.155, Florida Statutes, provides for certain toll exemptions, including law enforcement, fire rescue, and other government entities on official business, and certain handicapped persons (by state permit). Additionally, the Department may suspend toll collection during emergencies, such as weather-related evacuations.

Currently three vendors are engaged to handle Toll-by-Plate transactions. TransCore is responsible for the host operations and for interfacing with Q-Free America for image processing and with Credit Protection Association ("CPA") for billing and payment processing of the Toll-By-Plate transactions. This host interface also includes a direct connection to the Florida Turnpike Enterprise for payments on SunPass® transactions and for retrieving registered owner information for billing purposes.

Q-Free America, Inc. is responsible for the image review system.

CPA is responsible for the billing of non-SunPass® transactions via the Toll-by-Plate process. This process allows the Toll-By-Plate customer multiple methods of payment using the online web payment application, CPA's interactive voice response ("IVR") system, or to interact directly with an agent via telephone. The web application allows for viewing of all transactions and associated images online, as well as printing of account information such as invoices and images.

The Authority entered into a Memorandum of Understanding with Florida's Turnpike Enterprise ("FTE") and the Tampa-Hillsborough County Expressway Authority ("THEA") pursuant to which the parties will jointly implement a centralized customer service system ("CCSS") for statewide back office operation for administration of electronic toll collection. If and when the CCSS is fully developed and implemented the billing, customer service, processing and collection function will be transferred to the CCSS (and the CPA contract will be terminated). The targeted implementation date for CCSS is 2017. The CCSS Master Agreement was signed on March 2, 2016 by MDX. FTE, MDX and THEA staff members are now working with the Vendor to develop all facets of the back office operation.

The CCSS will provide the following services:

1. Processing and billing of transactions;
2. Identification of the registered owner of the vehicle;
3. Complete operational and financial reconciliation;
4. Comprehensive system reporting;
5. Customer account management;
6. Prepaid and post-paid accounts payment capability, lockbox and payment processing services;
7. Skip tracing and collection for delinquent or uncollectable accounts;
8. Transponder inventory management;
9. All inbound and outbound customer communication, and
10. Website, mobile website, mobile applications and interactive voice response ("IVR").

**Department Agreements**

Pursuant to the Transfer Agreement dated December 10, 1996 with the Department (the "Transfer Agreement"), the Department transferred full jurisdictional control over the operation, maintenance and finances of the System, in perpetuity, to the Authority, including all rights to regulate, establish, collect and receive Tolls thereon. In addition, the Department conveyed certain physical assets of the System (other than roadways) along with certain cash reserves. The Authority made a payment to the Department at the time of the transfer sufficient to defease certain outstanding bonds of the Department related to the transferred assets.

While the Transfer Agreement and the associated Toll Operations and Maintenance Agreement, Roadway Operations and Maintenance Agreement and SunPass® Agreement, each dated December 10, 1996, between the Department and the Authority (collectively with the Transfer Agreement, the "Department Agreements") contained a number of payment obligations from the Authority to the Department, virtually all of those payment obligations have been fulfilled or eliminated by the Authority. The only payment obligation remaining under the Department Agreements is a contingent obligation in connection with potential claims related to the presence of hazardous substances on the System. The Authority has agreed to reimburse the Department for liabilities resulting from such claims from Revenues deposited in the General Account within the General Fund under the Indenture on a basis subordinate to the payment of debt service on the Bonds, except that any environmental liabilities of $200,000 or less will be reimbursed by the Authority to the Department as part of Operations and Maintenance Expenses

from Revenues prior to the application of Revenues to the payment of debt service on the Bonds. In addition, the Authority is required to reimburse the Department for certain tort liabilities that are made, levied or assessed against the Department (that are not environmental liabilities) with respect to the System as part of Operations and Maintenance Expenses from Revenues prior to the application of Revenues to the payment of debt service on the Bonds. To date, there have been no claims relating to the System that could give rise to environmental or tort liabilities of the Department.

On February 26, 2013, the Authority and the Department entered into an interlocal agreement (the "Interlocal Agreement") to establish a new basis upon which the Authority will reimburse the Department for the processing of interoperable toll transactions associated with SunPass® accounts for Tolls incurred on the System and to reimburse the Department for insurance premiums related to the System and business interruption insurance for the collection of Tolls on the System. The new Interlocal Agreement expressly supersedes the Department Agreements to the extent of any conflict with the Interlocal Agreement.

As described above under "—Toll Operations," on March 2, 2016, the Authority, THEA and the Department entered into a Centralized Customer Services System Master Agreement to implement and operate a single CCSS for statewide administration of electric toll collection and prepaid single point contact for all toll agencies.

In August 2015, the Authority entered into a project specific agreement with the Department for the joint procurement of the design and construction of the improvements to the Dolphin Expressway (State Road 836) corridor, I-395, and the Midtown Interchange. As part of the agreement, the Department has taken the lead on procuring the project and administering the design-build contract. As part of the agreement, the Authority agreed to provide funding in the amount of $23.4 million to the Department to provide for the Authority's share of the project's construction, engineering and inspection and other costs that will be borne by the Department. The agreement further stipulates that the Department will construct a portion of the Authority's project No. 83611, including the connection from Southbound I-95 to Westbound Dolphin Expressway at a cost of $35 million. This project, including the Authority's anticipated construction cost, is included in the Authority's Five-Year Work Program, described below.

**Physical Condition of the System**

The Indenture requires that the Consulting Engineer perform an annual inspection of the System and issue an annual inspection report setting forth its findings and recommendations (the "Annual Inspection Report"). The most recent Annual Inspection Report was issued in December 2015 by EAC Consulting, Inc. ("EAC"), as Consulting Engineer. EAC determined that both the System's roadways and the toll facilities were generally in good condition. Any exceptions are isolated and have been made a part of the Five-Year Work Program (2017-2021). The one urgent recommendation noted regarding water intrusion at an administration building has already been addressed by the Authority. There were no critical recommendations noted.

Each bridge is inspected by certified bridge inspectors on a two year cycle from the date such bridge is originally placed in service. The Authority reported to the Florida Transportation Commission for Fiscal Year 2015 that 99% of its bridges were rated as good or better according

to the Department's Structural Conditional Appraisals rating criteria and no bridges have posted weight restrictions. A System-wide bridge rehabilitation/replacement planning study has been completed and required rehabilitation of assets has been included in the Authority's Five Year Work Program hereinafter discussed. See "Capital Improvement Program", below. See "APPENDIX B – Consulting Engineer's Report Fiscal Year 2017-2021 Projects, Toll System Refunding Revenue Bonds, Series 2016A, HNTB Corporation" herein for a detailed description of the most recent Annual Inspection Report.

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## Summary of Level of Service for the System

The following table summarizes the level of service at which the System operates. Estimated daily roadway capacity was derived from the Department's Quality/Level of Service Handbook.

### Existing System Level of Service (LOS) Summary

| Roadway[1] | Existing Conditions | | | Generalized Level of Service | |
|---|---|---|---|---|---|
| | No. of Lanes (mainline+aux.) | Maximum Daily Service Volume (veh/day) | AADT[2] 2014 | Volume to Capacity Ratio | LOS |
| **Dolphin Expressway / SR 836** | | | | | |
| Bet. NW 137 Avenue - HEFT | 4+0 | 84,600 | 23,000 | 0.27 | B |
| Bet. NW 107 Avenue - NW 87 Avenue | 8+0 | 176,600 | 128,672 | 0.73 | D |
| Bet. NW 72 Avenue - NW 57 Avenue | 8+0 | 158,940 [4] | 197,500 | 1.24 | F |
| Bet. NW 27 Avenue - NW 17 Avenue | 6+0 | 117,540 [4] | 145,500 | 1.24 | F |
| **Airport Expressway / SR 112** | | | | | |
| Bet. LeJeune Road - NW 27 Avenue | 6+0 | 130,600 | 105,000 | 0.80 | D |
| Bet. NW 17 Avenue - NW 12 Avenue | 9+0 | 199,650 | 115,000 | 0.58 | C |
| **Don Shula Expressway / SR 874** | | | | | |
| Bet. HEFT - Killian Parkway | 6+0 | 130,600 | 87,500 | 0.67 | C |
| Bet. Killian Parkway - Kendall Drive | 6+4 | 210,600 [3] | 107,500 | 0.51 | C |
| Bet. SR 878 - SR 826 | 6+0 | 130,600 | 81,000 | 0.62 | C |
| **Gratigny Parkway / SR 924** | | | | | |
| Bet. SR 826 - NW 57 Avenue | 6+0 | 130,600 | 60,000 | 0.46 | B |
| Bet. NW 57 Avenue - LeJeune Road | 6+0 | 130,600 | 47,500 | 0.36 | B |
| **Snapper Creek Expressway / SR 878** | | | | | |
| Bet. SR 874 - SW 87 Avenue | 4+0 | 84,600 | 40,500 | 0.48 | B |
| Bet. SW 87 Avenue - SW 72 Avenue | 4+0 | 84,600 | 40,000 | 0.47 | B |

Source: Consulting Engineer's Report Fiscal Year 2017-2021 Projects, Toll System Refunding Revenue Bonds, Series 2016A, HNTB Corporation and letter of HNTB Corporation dated August 1, 2016.

(1) All data presented in this table pertains to mainline sections of the designated roadways in the vicinity of each existing or proposed toll gantry/plaza.

(2) Annual average daily traffic volumes ("AADT") for calendar year 2014 obtained from the 2014 FDOT Traffic Information DVD.

(3) Based on the 2012 FDOT Generalized Level of Service table, Max. Daily Service Volume adjusted by (+20,000 veh/day) for auxiliary lane.

(4) Based on the 2012 FDOT Generalized Level of Service table, Max. Daily Service Volume adjusted by (-10%) for oversaturated conditions.

The concept of level of service ("LOS") uses qualitative measures that characterize operational conditions within a traffic stream and their perception by motorists and passengers. The descriptions of individual levels of service characterize these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions and comfort and convenience. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with LOS A representing the best operating conditions and LOS F the worst. Each level of service represents a range of operating conditions. The acceptable LOS threshold for the existing System is LOS E, which is in accordance with the Department's regulations regarding minimum level of service standards for expressways within an urban area of over 500,000 residents. The Authority currently has several projects under construction that will improve the LOS in those areas currently listed as LOS F in the Table above. See "APPENDIX B – Consulting Engineer's Report Fiscal Year 2017-2021 Projects, Toll System Refunding Revenue Bonds, Series 2016A, HNTB Corporation" herein for a more detailed description.

The most heavily traveled portion of the System is the eight-lane Dolphin Expressway from 72nd Avenue to 57th Avenue with an AADT for 2014 of 197,500 vehicles. This portion of the Dolphin Expressway exceeds acceptable capacity and, as previously mentioned, is being addressed by the various projects within the Five-Year Work Program described below under "Capital Improvement Program".

**Capital Improvement Program**

Long Range Plan. The Authority's Long Range Master Transportation Plan addresses a portion of the transportation improvement needs of the Miami-Dade County urban area through the Fiscal Year 2040 (the "2040 Master Transportation Plan"). The plan is updated every three to five years, most recently in March 2016. The 2040 Master Transportation Plan identified potential projects including improvements to the existing System, managed lanes and new expansion projects.

Five-Year Work Program. The basis for the Authority's five year work program is the 2040 Master Transportation Plan and identifies projects which the Authority anticipates funding over the next five years (the "Five-Year Work Program"). The Five-Year Work Program is changed annually as priorities are reevaluated, projects are completed, new projects are identified and the financial capabilities of the Authority evolve. The current Five-Year Work Program covers the five year period from Fiscal Year 2017 to Fiscal Year 2021 and includes thirty-five projects with a combined total estimated cost of approximately $634.0 million, including renewal and replacement projects as well as a contingency reserve. The projects contained in the Five-Year Work Program have been grouped into one of four categories, plus a contingency reserve, as shown in the following table. Renewal and Replacement projects are shown separately as they are funded from Renewal and Replacement Fund deposits, including funds currently on deposit and future deposits. Funding for the capital improvement projects will be primarily from proceeds of the Authority's Toll System Revenue Bonds, Series 2014A (the "Series 2014A Bonds") issued in June 2014 and existing resources including available and future toll revenues. No additional long-term debt is currently anticipated to fund the work program; however, as additional projects are added or are moved from the planning stage to construction, additional debt financing may be undertaken to pay for such projects.

## FY 2017-2021 Five-Year Work Program Category Breakdown by Fiscal Year

| Category | No. of Projects | Project Cost ($000s) | | | | | Total FY 17 through FY 21 |
|---|---|---|---|---|---|---|---|
| | | Fiscal Year | | | | | |
| | | 2017 | 2018 | 2019 | 2020 | 2021 | |
| **Transportation Improvement Program (TIP)** | | | | | | | |
| Existing System Improvements | 5 | $165,779 | $115,315 | $72,214 | $62,055 | $46,541 | **$461,903** |
| System Expansion | 3 | $37,901 | $23,978 | $11,921 | $8,593 | $3,321 | **$85,713** |
| Facilities Improvements | 3 | $5,776 | $1,095 | $0 | $0 | $0 | **$6,871** |
| New Expressways | 1 | $225 | $955 | $1,685 | $1,685 | $1,011 | **$5,559** |
| Other Projects | 1 | $7,000 | $3,000 | $0 | $0 | $0 | **$10,000** |
| Contingency Reserve | | $8,000 | $0 | $0 | $0 | $0 | **$8,000** |
| **Total TIP** | **13** | **$224,680** | **$144,343** | **$85,820** | **$72,332** | **$50,873** | **$578,047** |
| **Capital Improvement Program (CIP)** | | | | | | | |
| Facilities Improvements | 8 | $17,999 | $10,635 | $4,661 | $484 | $0 | **$33,778** |
| Contingency Reserve | | $250 | $0 | $0 | $0 | $0 | **$250** |
| **Total CIP** | **8** | **$18,249** | **$10,635** | **$4,661** | **$484** | **$0** | **$34,028** |
| **Renewal and Replacement Program (R&R)** | | | | | | | |
| Facilities Improvements | 14 | $4,672 | $8,536 | $3,212 | $2,908 | $2,095 | **$21,423** |
| Contingency Reserve | | $500 | $0 | $0 | $0 | $0 | **$500** |
| **Total R&R** | **14** | **$5,172** | **$8,536** | **$3,212** | **$2,908** | **$2,095** | **$21,923** |
| **Totals** | **35** | **$248,101** | **$163,513** | **$93,692** | **$75,724** | **$52,968** | **$633,999** |

(1) All Costs are Fiscal Year-of-expenditure costs and include only those costs to be expended within the Five-Year Work Program and not the total cost of the projects.

For a more detailed description of the Five-Year Work Program, including a description of major projects included in the Five-Year Work Program, see "APPENDIX B – Consulting Engineer's Report Fiscal Year 2017-2021 Projects, Toll System Refunding Revenue Bonds, Series 2016A, HNTB Corporation" herein.

## HISTORICAL AND FORECASTED FINANCIAL INFORMATION

### Toll Rates

Currently, the Authority has the exclusive right to determine, fix, impose and collect tolls for the use of the System. There is no other State of Florida executive, administrative or regulatory body with the authority to limit or restrict the System's rates and charges.

On March 19, 2013, the Authority Board approved a new toll policy that updates and replaces the prior toll policy adopted in 2008. The toll policy provides for an annual inflation adjustment to toll rates (which was provided for in the prior policy but never implemented), with the first such adjustment to be effective no earlier than July 1, 2019. Additionally, the toll policy provides for Toll-by-Plate rates to be twice the SunPass® toll rates, which adjustment took effect July 1, 2013. The toll policy also includes a Cash Back Toll Dividend Program which began in Fiscal Year 2016 and provides frequent users of the system "cash back" in any given year subject to MDX's fiscal operational performance and Board approval. On March 19, 2013, the Authority Board also approved ORT rates for the Dolphin and Airport Expressways. On December 9, 2014, the Board approved a multi-axle frequency discount program that will limit the tolls charged to a three-axle rate for multi-axle vehicles with valid SunPass® accounts. The forecasted toll information contained in Appendix C – MDX Investment Grade Traffic and Revenue Study (July 2016), CDM Smith Inc. supplementing the MDX Investment Grade Traffic and Revenue Study (April 2014) herein, provides alternative forecasts that take into account the inflation-based toll increases and the volume discount program. The Authority's toll policy and toll rates are subject to amendment and adjustment from time to time by the Authority. On March 24, 2015, the Board adopted Resolution No. 15-15 which declared the Board's intent to limit future toll increases to the following circumstances: (1) as required under the Indenture and for its internal Debt Management Policy Senior Coverage requirement (currently 1.50x); (2) system maintenance and safety projects; (3) Consumer Price Index adjustments (on or after July 1, 2019); and (4) to provide revenues to fund certain construction projects supported by the County or local municipality.

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The table below sets forth the historical Toll rates paid by various classes of motor vehicles since 1989:

**Historical Non-ORT Toll Rates by Vehicle Class**
**1989 to 2010**

| | 1989-1999[1] | 1999-2001[2] | 2001-2003[3] | 2003-2005[4] | 2005-June 2010[5][6] |
|---|---|---|---|---|---|
| Motor Vehicles with two axles | $ .25 | $ .50 | $ .75 | $ 1.00 | $ 1.25 |
| Motor Vehicles with three axles | .50 | .75 | 1.00 | 2.00 | 2.50 |
| Motor Vehicles with four axles | .75 | 1.00 | 1.25 | 3.00 | 3.75 |
| Motor Vehicles with five axles | 1.00 | 1.25 | 1.50 | 4.00 | 5.00 |
| Each additional axle | .25 | .25 | .25 | 1.00 | 1.25 |

Sources: State of Florida, Department of Transportation, Office of the Comptroller; Authority.

(1) Effective May 1, 1989 for the Airport Expressway; the Dolphin Expressway; the Don Shula Expressway; and January 6, 1992 for the Gratigny Parkway.

(2) Effective July 11, 1999 for the System; SunPass® users receive a 10% discount from the Toll rates provided.

(3) Effective July 1, 2001; not applicable to Airport Expressway; SunPass® users receive a 10% discount from the toll rates provided.

(4) Effective March 7, 2004 for the Dolphin Expressway, the Don Shula Expressway and the Gratigny Parkway. Airport Expressway increased $0.25 per motor vehicle axle.

(5) Effective July 3, 2005 toll adjustment equalized toll rates on all System expressways. SunPass® users are charged $0.25 less from the toll rates provided.

(6) Effective July 1, 2007, Dolphin Expressway (east and west) toll plaza began collection with toll rates of $0.75 SunPass® and $1.00 cash. Effective July 1, 2007, Dolphin Expressway 137th Extension (east and west) began collection with a toll rate of $0.25 SunPass® only. The toll rate is $0.25 SunPass®.

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The table below sets forth the toll plaza gantry locations and rates for all expressways. The Toll-by-Plate charge is equal to twice the SunPass® charge.

**Current ORT Tolling Locations and Rates**

| Expressway | Location | Type | Toll Direction | SunPass® Toll Rate[1] (2 axles)[2] |
|---|---|---|---|---|
| Gratigny (SR 924) | West of NW 42nd Avenue | Mainline | Both | $0.50 |
| | East of I-75/SR 826 | Mainline | Both | 0.50 |
| Airport (SR 112) | East of NW 42nd Avenue | Mainline | Both | $0.35 |
| | East of NW 17th Avenue | Mainline | Both | 0.35 |
| Dolphin (SR 836) | NW 12th Avenue | Ramp | To/From East only | $0.30 |
| | West of NW 17th Avenue | Mainline | Both | 0.70 |
| | NW 27th Avenue | Ramp | To/From West Only | 0.30 |
| | NW 57th Avenue | Ramp | To/From East Only | 0.30 |
| | West of NW 57th Avenue | Mainline | Both | 0.70 |
| | NW 87th Avenue | Ramp | To/From East Only | 0.30 |
| | CD Road West of SR 826 | CD Road | WB Only | 0.30 |
| | West of NW 97th Avenue | Mainline | Both | 0.70 |
| | NW 107th Avenue | Ramp | To/From West Only | 0.30 |
| | East of NW 137th Avenue | Mainline | Both | 0.30 |
| Don Shula (SR 874) | North of HEFT | Mainline | Both | $0.25 |
| | North of SW 104th Street | Mainline | Both | 0.25 |
| | South of SR 826 | Mainline | Both | 0.50 |
| Snapper Creek (SR 878) | East of SR 874 | Mainline | Both | $0.25 |
| | East of SW 87th Avenue | Mainline | Both | 0.25 |

T/F = to/from

(1) Rate shown is for cars with 2 axles. The rate also applies to each additional axle over two axles.
(2) In Fiscal Year 2015, the Authority approved Multiple Axle Vehicle Policy, capping rates to 3 axles for SunPass® customers only.

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The table below sets forth historical average daily toll transactions for each of the System's expressways:

## Historical Average Daily Toll Transactions

| Expressways | Average Daily Transactions | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Gratigny | | Airport | | Dolphin | | Don Shula | | Snapper Creek | | Total System | |
| Fiscal Year[1] | Total Average Daily Transactions | Percent Change | Total Average Daily Transactions | Percent Change | Total Average Daily Transactions | Percent Change | Total Average Daily Transactions | Percent Change | Total Average Daily Transactions | Percent Change | Total Average Daily Transactions | Percent Change |
| 2004[2] | 33,136 | 2.8 | 33,414 | 2.8 | 56,268 | 5.9 | 69,653 | 0.8 | - | - | 192,471 | 2.9 |
| 2005[2] | 34,781 | 5.0 | 32,531 | -2.6 | 58,633 | 4.2 | 71,586 | 2.8 | - | - | 197,531 | 2.6 |
| 2006[3][4] | 33,655 | -3.2 | 29,690 | -8.7 | 57,726 | -1.5 | 72,241 | 0.9 | - | - | 193,312 | -2.1 |
| 2007 | 33,206 | -1.3 | 30,443 | 2.5 | 60,056 | 4.0 | 75,543 | 4.6 | - | - | 199,248 | 3.1 |
| 2008[5] | 32,247 | -2.9 | 32,648 | 7.2 | 180,142 | 200.0 | 78,162 | 3.5 | - | - | 323,199 | 62.2 |
| 2009 | 29,969 | -7.1 | 34,036 | 4.3 | 176,643 | -1.9 | 77,491 | -0.9 | - | - | 318,139 | -1.6 |
| 2010 | 32,176 | 7.4 | 34,768 | 2.2 | 182,017 | 3.0 | 72,695 | -6.2 | - | - | 321,656 | 1.1 |
| 2011[6] | 72,818 | 126.3 | 36,240 | 4.2 | 189,141 | 3.9 | 237,405 | 226.6 | 70,536 | - | 606,140 | 88.4 |
| 2012 | 76,955 | 5.7 | 38,672 | 6.7 | 199,195 | 5.3 | 248,108 | 4.5 | 72,741 | 3.1 | 635,671 | 4.9 |
| 2013 | 79,216 | 2.9 | 40,060 | 3.6 | 202,032 | 1.4 | 255,830 | 3.1 | 73,673 | 1.3 | 650,811 | 2.4 |
| 2014[7] | 86,004 | 8.6 | 42,788 | 6.8 | 204,090 | 1.0 | 263,062 | 2.8 | 73,514 | -0.2 | 669,457 | 2.9 |
| 2015[8] | 94,648 | 10.1 | 137,076 | 220.4 | 411,714 | 101.7 | 285,435 | 8.5 | 76,135 | 3.6 | 1,005,008 | 50.1 |
| 2016[8] | 99,737 | 5.4 | 202,928 | 48.0 | 601,830 | 46.2 | 307,242 | 7.6 | 76,907 | 1.0 | 1,288,644 | 28.2 |

Source: Authority.

(1) Fiscal Year is 12 months from July 1 through June 30.

(2) Cash Tolls increased by $0.25 System-wide; SunPass® nominal rates unchanged.

(3) Tolls increased to $1.25 (cash) and $1.00 (SunPass®) at all plazas in July 2005 System-wide.

(4) Due to hurricane related Toll suspensions, average daily transactions in 2004/05 based on 359 days of operation, 2005/06 based on 356 days of operation.

(5) Tolling on new mainline toll plaza on Dolphin Expressway west of NW 97th Avenue and Extension to NW 137th Avenue began July 1, 2007.

(6) Tolling on Snapper Creek Expressway began July 17, 2010; average daily transactions in Fiscal Year 2011 based on 349 days of operation. Gratigny Parkway converted to ORT on June 7, 2010 and Don Shula Expressway converted to ORT on July 17, 2010.

(7) Toll-by-Plate Tolls increased to double SunPass® Rate and Cash Tolls removed on Dolphin Expressway at N.W. 17th Avenue in July 2013. Tolls at the Dolphin Expressway eastbound exit ramp to N.W. 17th Avenue suspended September 2013 due to ORT gantry construction activity.

(8) Increase resulting from implementation of ORT. Fiscal Year 2016 Figures are taken from Table 3 of the MDX Investment Grade Traffic and Revenue Study (July 2016), CDM Smith Inc. supplementing the MDX Investment Grade Traffic and Revenue Study (April 2014) (Appendix C herein), which are projected figures based upon March 2016 information. Actual Fiscal Year 2016 figures are slightly higher.

**Revenues, Expenses and Debt Service Coverage**

CDM Smith Inc. (the "Traffic Consultant") was retained by the Authority to develop traffic and revenue forecasts for the System to be used in connection with the issuance of the Series 2016A Bonds. Forecasts of traffic and Toll revenue for the System were prepared by the Traffic Consultant for Fiscal Years through 2030 and included in a report dated April 2014. The Traffic Consultant utilized a regional traffic demand model it developed based upon the Southeast Florida Regional Planning Model 6.5.3 as calibrated and refined by the Traffic Consultant. The report, including the Traffic Consultant's bring down letter dated July 2016, is included herein in "APPENDIX C – MDX Investment Grade Traffic and Revenue Study (July 2016), CDM Smith Inc. supplementing the MDX Investment Grade Traffic and Revenue Study (April 2014)" and should be read in its entirety.

Presented in the tables below are summaries of historical Revenues, Operation and Maintenance Expenses and Toll Covenant coverage ratios for Fiscal Years 2011 through 2015 and forecasted (operating summaries) Revenues, Operation and Maintenance Expenses and Toll Covenant coverage ratios for Fiscal Years 2016 through 2027. The forecast included in the table assumes no additional long-term debt throughout the forecast period after the issuance of the Series 2016A Bonds. Coverage is shown based upon forecasted revenues without the inflation-based toll increases. The forecasts represent estimates only and there can be no assurance that such estimates will be realized.

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## Historical Operating Summaries
## Fiscal Years Ended June 30, 2011 through 2015

| | 2015[1] | 2014[1] | 2013[1] | 2012[1] | 2011[1] |
|---|---|---|---|---|---|
| Revenues: | | | | | |
| Toll and fee revenues, net[2] | $182,824,359 | $129,216,643 | $134,412,451 | $122,510,799 | $121,863,351 |
| Investment income | 2,064,490 | 2,754,191 | 3,198,329 | 2,981,225 | 2,429,340 |
| Contributions for capital projects | 443,392 | 3,430,106 | 6,914,507 | 10,573,964 | 6,546,525 |
| Other revenues | 717,292 | 803,272 | 1,004,538 | 969,618 | 818,982 |
| Total Revenues | 186,049,533 | 136,204,212 | 145,529,825 | 137,035,606 | 131,658,198 |
| Operating expenses: | | | | | |
| Operations | 32,627,952 | 23,537,256 | 16,718,880 | 24,396,485 | 20,262,220 |
| Maintenance | 6,843,241 | 6,396,521 | 5,887,349 | 6,548,707 | 6,577,417 |
| Administration and Contracted Services | 5,985,483 | 6,741,800 | 5,141,684 | 5,023,958 | 5,590,122 |
| Total Operating Expenses | 45,456,676 | 36,675,577 | 27,747,913 | 35,969,150 | 32,429,759 |
| Net Revenues | $140,592,857 | $99,528,635 | $117,781,912 | $101,066,456 | $99,228,439 |
| Actual Debt Service for All Bonds Outstanding | $63,374,038 | $62,947,644 | $75,340,620 | $73,629,199 | $58,505,917 |
| Ratio of Net Revenues to Debt Service for All Bonds Outstanding [3] | 2.22 x | 1.58 x | 1.56 x | 1.37 x | 1.70 x |
| Actual Debt Service and All Fund Payments [4] | $68,729,146 | $70,283,123 | $84,370,900 | $87,469,524 | $79,608,152 |
| Ratio of Net Revenues to All Debt Service and All Fund Payments [5] | 2.05 x | 1.42 x | 1.40 x | 1.16 x | 1.25 x |

Source: Authority's audited financial statements.

(1) Amounts may have been changed from prior presentation to conform to current year's classifications. The reclassifications have no impact on previously reported net revenues.
(2) Includes revenues from toll violation enforcement.
(3) Requirement equals 1.20 times coverage per the Indenture.
(4) Includes State loan payments and deposits to the Renewal and Replacement Fund.
(5) Requirement equals 1.00 times coverage per the Indenture.

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**Forecasted Operating Summaries**
**Fiscal Years Ending June 30, 2016 through 2027**
(dollars in thousands)

| | FY 2016[10] | FY 2017 | FY 2018 | FY 2019 | FY 2020 | FY 2021 | FY 2022 | FY 2023 | FY 2024 | FY 2025 | FY 2026 | FY 2027 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Revenues | | | | | | | | | | | | |
| Net Toll Revenues [1] | $ 217,000 | $ 228,714 | $ 240,712 | $ 249,930 | $ 256,512 | $ 261,154 | $ 266,317 | $ 271,923 | $ 278,421 | $ 283,531 | $ 289,535 | $ 295,686 |
| Toll By Plate Fees[2] | 9,850 | 9,100 | 2,040 | 2,081 | 2,122 | 2,165 | 2,208 | 2,252 | 2,297 | 2,343 | 2,390 | 2,438 |
| Other Revenues [3] | 700 | 700 | 714 | 728 | 743 | 757 | 773 | 788 | 804 | 820 | 836 | 853 |
| Total Revenues | 227,550 | 238,514 | 243,466 | 252,739 | 259,377 | 264,076 | 269,298 | 274,963 | 281,522 | 286,694 | 292,761 | 298,977 |
| Interest Earnings | | | | | | | | | | | | |
| Total Interest Earnings | 2,008 | 1,976 | 2,155 | 2,727 | 4,008 | 5,026 | 5,908 | 8,140 | 11,145 | 11,774 | 12,611 | 13,908 |
| Total Gross Revenues | $ 229,558 | $ 240,490 | $ 245,621 | $ 255,466 | $ 263,385 | $ 269,102 | $ 275,206 | $ 283,103 | $ 292,667 | $ 298,468 | $ 305,372 | $ 312,885 |
| Operations, Maintenance and Administrative Expenses[4] | | | | | | | | | | | | |
| Operations | $ 38,365 | $ 39,219 | $ 41,324 | $ 42,564 | $ 43,841 | $ 45,156 | $ 46,511 | $ 47,906 | $ 49,343 | $ 50,824 | $ 52,348 | $ 53,919 |
| Maintenance | 7,301 | 7,352 | 7,876 | 8,151 | 8,437 | 8,732 | 9,037 | 9,354 | 9,681 | 10,020 | 10,371 | 10,734 |
| Administration & Contracted Services | 13,093 | 13,248 | 13,433 | 13,836 | 14,251 | 14,679 | 15,119 | 15,573 | 16,040 | 16,521 | 17,017 | 17,527 |
| Total Operations, Maintenance and Administration Expenses | 58,759 | 59,819 | 62,633 | 64,551 | 66,529 | 68,567 | 70,667 | 72,833 | 75,064 | 77,365 | 79,736 | 82,180 |
| Net Revenues | $ 170,799 | $ 180,671 | $ 182,988 | $ 190,915 | $ 196,856 | $ 200,535 | $ 204,539 | $ 210,270 | $ 217,603 | $ 221,103 | $ 225,636 | $ 230,705 |
| Total Senior Debt Service Requirement after Refunding[5] | $ 86,123 | $ 94,792 | $ 99,552 | $ 101,476 | $ 106,597 | $ 109,661 | $ 111,725 | $ 114,336 | $ 117,307 | $ 119,392 | $ 121,318 | $ 113,915 |
| Senior Debt Service Coverage [6] | 1.98 x | 1.91 x | 1.84 x | 1.88 x | 1.85 x | 1.83 x | 1.83 x | 1.84 x | 1.85 x | 1.85 x | 1.86 x | 2.03 x |
| Subordinated Debt Requirement[7] | $ 15,793 | - | - | - | - | - | - | - | - | - | - | - |
| Funding Requirements | | | | | | | | | | | | |
| Reserve and Replacement Fund Deposit for Pay As You Go and Maintenance[8] | 57,000 | 65,000 | 63,000 | 60,000 | 45,000 | 15,000 | 8,441 | 9,157 | 8,837 | 18,127 | 19,450 | 16,409 |
| Total Funding Requirements | 57,000 | 65,000 | 63,000 | 60,000 | 45,000 | 15,000 | 8,441 | 9,157 | 8,837 | 18,127 | 19,450 | 16,409 |
| Total Subordinate Debt Service and Funding Requirements | $ 72,793 | $ 65,000 | $ 63,000 | $ 60,000 | $ 45,000 | $ 15,000 | $ 8,441 | $ 9,157 | $ 8,837 | $ 18,127 | $ 19,450 | $ 16,409 |
| Coverage of Debt Service & Funding Requirements[9] | **1.07 x** | **1.13 x** | **1.13 x** | **1.18 x** | **1.30 x** | **1.61 x** | **1.70 x** | **1.70 x** | **1.73 x** | **1.61 x** | **1.60 x** | **1.77 x** |

Footnotes on following page.

Sources: Forecasted Toll Revenue from MDX Investment Grade Traffic and Revenue Study (July 2016), CDM Smith Inc. supplementing the MDX Investment Grade Traffic and Revenue Study (April 2014), Appendix C. Operations and Maintenance Expenses for Fiscal Year 2016 through Fiscal Year 2027 from Consulting Engineer's Report Fiscal Year 2017-2021 Projects, Toll System Refunding Revenue Bonds, Series 2016A, HNTB Corporation, Appendix B.

(1) See Table 21 of Traffic and Revenue Study (Appendix C), which provides forecasted Toll Revenue net of allowance for uncollectible Toll-by-Plate transactions. Fiscal Year 2017 based on approved budget.
(2) Includes late charges.
(3) Includes lease revenue, permit fees and miscellaneous revenue.
(4) Projections of Operations and Maintenance Expenses based on recommendations of Consulting Engineer which provide for new projects placed in service from work program. Administrative Expenses based on Authority's projection. Fiscal Year 2017 based on Board approved budget.
(5) "Total Senior Debt Service Requirement after Refunding" is estimated as shown under "Estimated Debt Service Schedule," herein.
(6) Requirement equals 1.20 times coverage per the Indenture. Coverage is shown based upon the forecast without inflation based toll increases (CPI).
(7) All subordinated Debt was paid off in Fiscal Year 2016.
(8) These disbursements reflect deposits into the Renewal and Replacement Fund, forecasted by HNTB and fund the Pay as You Go (cash) portion of the Work Program Projects.
(9) Requirement equals 1.00 times coverage per the Indenture. Coverage is shown based upon the forecast without CPI.
(10) Fiscal Year 2016 ended June 30, 2016, are unaudited and subject to year-end adjustments. The Authority has not yet closed the books for the Fiscal Year.

* Totals may not add due to rounding.

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## MANAGEMENT'S DISCUSSION AND ANALYSIS OF RESULTS OF OPERATIONS

### Fiscal Years 2015 and 2014

The following is an overview of the financial results of operations for Fiscal Years 2015 and 2014.

Operating Revenues

Total operating revenues were $183.5 million and $130.0 million for fiscal years 2015 and 2014, respectively. Total operating revenues for fiscal year 2015 increased $53.5 million or 41.2% over fiscal year 2014, compared to a decrease of $5.4 million or 4.0% over fiscal year 2013. Fiscal year 2015 and 2014 total operating revenues consisted of toll and fee revenues, net, of $182.8 million and $129.2 million, respectively, and other revenues of $717,000 and $803,000, respectively.

Cash collections at the State Road 836 97th Avenue and State Road 112 Mainline toll plazas ceased on November 14, 2014. Cash collections at the State Road 836 East Mainline and 17th Avenue toll plazas ceased on July 22, 2013. These cash collection locations were the final locations closed as part of the Authority's conversion to All Electronic Tolling ("AET") via ORT. All tolls on the System are now collected through electronic tolling.

Customers with an active SunPass® prepaid account maintain highway speeds while passing through tolling points and the toll amount is deducted from their account balance. Customers who do not have an active SunPass® prepaid account will receive a Toll-By-Plate ("TBP") invoice with an image of their license plate and a listing of all their toll transactions at the TBP rate.

Cash and SunPass® revenues are recognized at lane exit, TBP revenue is recognized when a customer is invoiced, and TBP revenues are offset by an allowance for doubtful accounts.

The Cash Back Toll Dividend ("CBTD") Program was implemented during fiscal year 2015 and is offered to SunPass® customers who register with the Authority in order to be eligible to receive a cash back payment. Cash back payment only occurs, subject to Board approval, if the Authority achieves all of its financial and operational performance measures for the fiscal year.

For fiscal year 2015, toll and fee revenues, net, were comprised of SunPass® of $148.0 million or 81.0%, cash collections of $1.8 million or 1.0%, TBP, net of $30.8 million or 16.8%, and recovery and fee revenues of $4.3 million or 2.4%, partially offset by Cash Back Toll Dividend payable of $2.2 million or -1.2%. During fiscal year 2015, 83,000 customers registered for the program while 37,000 qualified for cash back payment totaling $2.2 million. TBP gross revenue was $41.8 million, less an allowance for doubtful accounts of $11.0 million, which yielded net TBP revenue of $30.8 million. The total net toll and fee revenues increase of $53.6 million was primarily due to converting the last two expressways, Dolphin (State Road 836) and Airport (State Road 112), to ORT.

Other revenues were $717,000 and $803,000 for fiscal years 2015 and 2014, respectively. Other revenues consisted of leasing excess parcels, permits and other miscellaneous revenue.

Operating Expenses

Total operating expenses were $74.6 million and $66.1 million for fiscal years 2015 and 2014, respectively. Operating expenses increased $8.5 million or 12.9% over fiscal year 2014, compared to an increase of $9.7 million or 17.3% over fiscal year 2013. In fiscal year 2015 and 2014, operating expenses (excluding depreciation expenses) were $45.4 million and $36.7 million, an increase of $8.8 million or 23.9% over fiscal year 2014, compared to an increase of $8.9 million or 32.2% over fiscal year 2013.

Total operating expenses were comprised of operations of $32.6 million, maintenance of $6.8 million, administration and contracted services of $6.0 million and depreciation and maintenance of $29.2 million, totaling $74.6 million.

Operations

Operations expenses were $32.6 million and $23.5 million for fiscal years 2015 and 2014, respectively. In fiscal year 2015, operations increased $9.1 million or 38.6% primarily due to billing service provider expenses for a full year of operations and additional transactions related to the new tolling points of $3.0 million, FDOT pass-through charges for SunPass® processing cost of $3.5 million due to additional transactions related to new tolling gantries, ORT in-lane software/hardware maintenance of $2.1 million, full year of image review staffing expenses of $715,000, TBP related postage of $590,000, SunPass® transponder subsidy paid to FTE of $250,000, and service patrols expenses of $175,000; partially offset by a decrease in toll plaza collections staffing of $925,000, property insurance of $125,000 and bank fees of $125,000.

Operations expenses were $23.5 million and $16.7 million for fiscal years 2014 and 2013, respectively. In fiscal year 2014, operations increased $6.8 million or 40.8% primarily due to an increase in Account Management and Toll Enforcement Center ("AMTEC") back office services of $4.1 million for costs related to the prior toll operations vendor, new billing service provider expenses of $1.3 million, new image review staffing expenses of $1.3 million, SunPass® transponder subsidy paid to FTE of $725,000, staffing expenses at the customer service center of $445,000, toll transition expenses related to payments to our prior toll operations vendor for a revised software interface and severance payments to cash toll collectors of $225,000, service patrols expenses of $85,000, general engineering consultant support of $45,000 and operations related information technology expenses of $100,000; partially offset by a decrease in toll plaza collections staffing of $885,000, TBP related postage $250,000, bank fees of $200,000 and FDOT pass-through charges for SunPass® processing of $195,000

Maintenance

Maintenance expenses were $6.8 million and $6.4 million for fiscal years 2015 and 2014, respectively. In fiscal year 2015, maintenance costs increased $445,000 or 7.0% primarily due to an increase in Intelligent Transportation System ("ITS") maintenance expenses of $250,000 related to the completion of repairs, general engineering consultant maintenance support of

$125,000, periodic maintenance of $110,000, roadway and other maintenance services of $70,000; partially offset by a decrease in structural inspections of $110,000 based on variations in the bi-annual cycle of inspections.

In fiscal year 2014, maintenance costs increased $510,000 or 8.6% due to an increase in roadway, plaza and other maintenance services of $305,000 related to the additional expenses for the planned expansion of SR 924 along NW 138th Street, additional structural inspections of $190,000 based on variations in the bi-annual cycle of inspections, ITS maintenance expenses of $55,000 due to the completion of a backlog of repairs, and general engineering consultant maintenance support of $40,000; partially offset by a decrease in periodic maintenance expenses of $75,000.

Administration and Contracted Services

Administration and professional contracted services were $6.0 million and $6.8 million for fiscal years 2015 and 2014, respectively. In fiscal year 2015, expenses decreased $755,000 or 11.2% due to a decrease of $1.8 million in legal fees primarily related to an ongoing litigation, a decrease in general engineering consultant expenses of $250,000, and a decrease of $270,000 in expenses capitalized as part of the indirect cost allocation; partially offset by an increase in public communication expenses of $750,000, traffic and revenue consultant expenses of $80,000, and administration expenses of $40,000.

Depreciation and Amortization

Total depreciation and amortization were $29.2 million and $29.5 million for fiscal years 2015 and 2014, respectively. In fiscal year 2014, depreciation and amortization expense decreased $280,000 or 1.0% over fiscal year 2014, compared to an increase of $820,000 or 2.9% over fiscal year 2013. The decrease in fiscal year 2015 was due to the disposal of toll plaza related assets during the fiscal year. The increase in fiscal year 2014 was due to a full year's depreciation from assets placed in service during fiscal year 2013.

Non-Operating Revenue

Investment income was $2.1 million and $2.8 million for fiscal years 2015 and 2014, respectively. Investment income for fiscal year 2015 decreased $690,000 or 25.0% from fiscal year 2014, compared to a decrease of $445,000 or 13.9% from fiscal year 2013.

Miscellaneous income was $0 and $3.7 million for fiscal years 2015 and 2014, respectively. Miscellaneous income for fiscal year 2015 decreased to $0 from fiscal year 2014, compared to an increase of $3.1 million or 477.6% from fiscal year 2013.

Non-Operating Expenses

Interest expense was $56.1 million and $46.3 million for fiscal years 2015 and 2014, respectively. Interest expense for fiscal year 2015 increased $9.8 million or 21.1% over fiscal year 2014, compared to an increase of $5.6 million or 13.7% over fiscal year 2013. For fiscal year 2015, the increase was primarily due to an increase in senior bond interest of $12.5 million and a swap termination payment of $8.1 million, partially offset by capitalized interest impact of

$8.4 million and a decrease of amortization expense of $2.4 million and subordinate interest of $100,000.

Interest expense in fiscal years 2015 and 2014 was comprised of $72.9 million and $60.5 million in actual interest payments on debt, $(3.0 million) and $(615,000) million in amortization of bond issuance costs, less capitalized interest of $22.0 million and $13.6 million, respectively.

Bond issuance expenses were $1.4 million and $2.2 million for fiscal years 2015 and 2014, respectively. Issuance expense in fiscal year 2015 and 2014 are due to Series 2014B refunding and Series 2014A, respectfully. Bond issuance expense consists of underwriting fees and other professional services cost associated with the issuance of the Authority's revenue bonds.

Disposal of assets were $11.0 million and $7.7 million for fiscal years 2015 and 2014, respectively. In fiscal year 2015 the disposals were primarily due to the demolition of toll plazas and other roadway assets on SR 112 and SR 836 as part of the expressway's conversion to full ORT and a project in the planning phase.

Net Position

As of June 30, 2015 and 2014, the net position totaled $560.5 million and $508.1 million, respectively. Net position is comprised of net investment in capital assets of $211.9 million and $200.6 million, respectively; restricted of $167.4 million and $165.9 million, respectively; and unrestricted of $181.1 million and $141.5 million, respectively.

Change in net position was $54.9 million after a GASB 68 Implementation adjustment of negative $2.5 million, and $25.6 million for Fiscal Years 2015 and 2014, respectively.

Debt Service Requirement

In Fiscal Years 2015 and 2014, the debt service requirements (principal and interest) for all outstanding Bonds were approximately $63.4 million and $62.9 million, respectively. The Authority's senior debt service ratio for all Outstanding Bonds for Fiscal Years 2015 and 2014 was 2.22 and 1.58, respectively.

For more detailed information, see "APPENDIX D - Excerpts of the Comprehensive Annual Financial Report of the Authority Fiscal Years Ended June 30, 2015 and 2014".

**Fiscal Year 2016 Actual vs Budget Year to Date as of May 31, 2016**

Year to date as of May 31, 2016, total operating revenues were $215.6 million, a variance of $24.9 million or 13.1% above the budget forecast of $190.7 million. Operating revenues were comprised of toll and fee revenues of $212.3 million, investment income of $2.7 million, and other revenues of $685,000 for leased property and miscellaneous revenues.

Total operating expenses for the period were $52.1 million (excluding depreciation and amortization expenses), a variance of $2.4 million or 4.4% below the budget of $54.5 million. Operating expenses were 4.4% below budget due to timing of professional service tasks.

Total interest expense for the period was $68.0 million, a variance of $165,000 or less than 1% below the budget of $68.2 million.

Total operating income for the period was $95.5 million, a variance of $27.5 million or 40.5% above the forecast of $68.0 million.

**Fiscal Year 2017 Budget**

On May 31, 2016, the Board approved the Fiscal Year 2017 annual operating budget, which is approximately $158.1 million. The overall budget is comprised of an operating expense budget of approximately $59.8 million, interest expense budget of approximately $73.7 million, funding requirements of principal payments on debt of approximately $22.7 million, and capital (non-work program) budget of $1.9 million. The Board also approved $65.0 million to the Renewal and Replacement Fund for pay-as-go or cash portion funding of the work program.

Revenues for Fiscal Year 2017 are budgeted to be approximately $240.5 million, comprised of toll revenues of approximately $228.7 million (net of allowance for uncollectible video TBP customers), fee revenue of approximately $9.1 million, investment income of approximately $2.0 million, and lease revenues of approximately $700,000.

## CONTINUING DISCLOSURE

The Authority will agree in a Disclosure Dissemination Agent Agreement for the benefit of the Holders (as defined in such agreement) of the Series 2016A Bonds to provide certain financial information and operating data relating to it and the Series 2016A Bonds in each year (the "Annual Report"), and to provide notices of the occurrence of certain enumerated events. The agreement only applies so long as the Series 2016A Bonds remain Outstanding under the Indenture. The Annual Report will be provided by the Authority to Digital Assurance Certification, LLC ("DAC"), as its dissemination agent (the "Dissemination Agent"), which Dissemination Agent will provide the Annual Report to the centralized information repository developed and operated by the Municipal Securities Rulemaking Board through the Electronic Municipal Market Access System ("EMMA") described in the Form of the Continuing Disclosure Agreement attached as Appendix F hereto. The notices of events will be provided by the Dissemination Agent, upon the instructions of the Authority, to EMMA. The specific nature of the information to be contained in the Annual Report and the notices of material events are described in "APPENDIX F – Form of Disclosure Dissemination Agent Agreement," which shall be executed between the Authority and the Dissemination Agent at the time of issuance of the Series 2016A Bonds. With respect to the Series 2016A Bonds, no party other than the Authority is obligated to provide, nor is expected to provide, any continuing disclosure information.

During the last five years, the Authority has complied in all material respects with its prior continuing disclosure undertakings entered into pursuant to SEC Rule 15c2-12.

# LITIGATION

## General

There is no litigation pending or, to the knowledge of the Authority, threatened, seeking to restrain or enjoin the issuance or delivery of the Series 2016A Bonds or the operation and financial control of the System by the Authority or questioning or affecting the validity of the Series 2016A Bonds or the proceedings and authority under which the Series 2016A Bonds are to be issued. Neither the creation, organization or existence, nor the title of the present members of or other officers of the Authority to their respective offices is being contested. There is no litigation pending which in any manner questions the enforceability of the Act, the Indenture, the Department Agreements, the collection of the Tolls, the receipt of Revenues, or the pledge and use thereof for the payment of the principal of and interest on the Series 2016A Bonds.

## Open Road Tolling Litigation

The Open Road Tolling (ORT) project developed and installed by Electronic Transaction Consultants Company (ETCC) began processing live toll transactions on June 7, 2010. From the beginning, ETCC's ORT system experienced stability issues that required constant manual intervention and oversight with respect to both the collection of transaction information in the lanes ("ILORT") and the processing of those transactions using the Account Management and Toll Enforcement System ("AMTES"). ETCC was unable to provide the required level of automatic transaction processing and reporting required by the AMTES Contract. System functionality was implemented very slowly. Some aspects of AMTES were not fully functional and, in some areas, were never implemented at all.

The Authority placed ETCC on notice, in writing, of defaults related to both the AMTES and ILORT Contracts. The Authority has been engaged in litigation with ETCC since November 2012. As required by the AMTES and ILORT Contracts, ETCC and the Authority engaged in pre-suit mediation in late November 2012. No agreement was reached. However, the ILORT Contract dispute was mediated and resolved in July 2014. The Board approved the settlement on August 19, 2014, which became effective on the same date.

On April 13, 2011, the Authority gave written notice to ETCC to cure multiple defaults related to the AMTES Contract. On August 3, 2011, the Authority notified ETCC that it was assessing liquidated damages pursuant to the AMTES Contract at the rate of $2,500 per day, which had been accruing as of June 7, 2010. The Authority also made demands against ETCC's surety bonds in an effort to obtain ETCC's performance, which were declined.

ETCC sued the Authority on November 28, 2012 in the Eleventh Judicial Circuit Court, Miami, Florida. ETCC failed to cure its default with respect to the AMTES Contract and, pursuant to the contract, the Authority terminated the AMTES Contract on December 3, 2012. ETCC filed a five (5) count complaint alleging, among the allegations, breach of contract, bad faith and wrongful termination. The Authority answered the complaint and asserted counter-claims for breach of contract against ETCC.

On September 3, 2013, the Court entered a partial summary judgment against ETCC finding that ETCC did not reach "provisional acceptance" as required by the contract, and,

therefore, was not entitled to the operations and maintenance payments. On August 22, 2014, the Court denied ETCC's motion for reconsideration of the partial summary judgment.

Trial began on September 8, 2015 and was completed in December 2015. After completion of the trial in December, the judge ordered three additional mediations which were set for January, May and July 2016. The parties met but could not reach an agreement. On August 26, 2016, the judge ordered a fourth mediation which has been scheduled for September 19, 2016.

ETCC's claim for damages is $58,000,000. Outside counsel representing the Authority believes that ETCC's claims for damages are overstated and not supported by the terms of the AMTES Contract. The Authority believes that any damage award assessed against the Authority would not have an adverse effect on the security and sources of payment for the Series 2016A Bonds and Bonds Outstanding or result in a material change in ongoing operations.

## ENFORCEABILITY OF REMEDIES

The remedies available to the Trustee and owners of the Series 2016A Bonds upon an event of default under the Indenture are in many respects dependent upon judicial actions which are often subject to discretion and delay. Under existing constitutional and statutory law and judicial decisions, including specifically the federal bankruptcy code, the remedies specified by the Indenture and the Bonds may not be readily available or may be limited. The various legal opinions to be delivered concurrently with the delivery of the Bonds (including Bond Counsel's approving opinion) will be qualified, as to the enforceability of the remedies provided in the various legal instruments, by limitations imposed by general principles of equity, bankruptcy, reorganization, insolvency or other similar laws affecting the rights of creditors enacted before or after such delivery. See "APPENDIX E – THE AMENDED AND RESTATED INDENTURE AND FORM OF ELEVENTH SUPPLEMENTAL INDENTURE" attached hereto for a description of events of default and remedies.

## LEGALITY

Certain legal matters incident to the issuance of the Series 2016A Bonds and with respect to the tax-exempt status of the interest on the Series 2016A Bonds (see "TAX MATTERS" herein) are subject to the legal opinions of Squire Patton Boggs (US) LLP and D. Seaton and Associates, P.A., Co-Bond Counsel, whose opinions will be delivered at the time of issuance of the Series 2016A Bonds. Certain legal matters will be passed upon for the Authority by Carlos M. Zaldivar, General Counsel to the Authority, and by Squire Patton Boggs (US) LLP and D. Seaton and Associates, P.A., as Co-Disclosure Counsel. The Underwriters are represented by their co-counsel Greenberg Traurig, P.A. and Llorente & Heckler, P.A. Payment of fees for services rendered by Co-Bond Counsel, Co-Disclosure Counsel and counsel to the Underwriters relating to authorization, sale, execution and delivery of the Series 2016A Bonds is contingent on the issuance and delivery of the Series 2016A Bonds.

The proposed text of the legal opinions of Co-Bond Counsel is set forth as Appendix G to this Official Statement. The proposed text of the legal opinions to be delivered to the Authority by Co-Disclosure Counsel is set forth as Appendix H to this Official Statement. The actual legal

opinions to be delivered may vary from the text of Appendix G or Appendix H, as the case may be, if necessary, to reflect facts and law on the date of delivery of the Series 2016A Bonds.

While Squire Patton Boggs (US) LLP and D. Seaton and Associates, P.A., in their capacity as Co-Bond Counsel have participated in the preparation of certain portions of this Official Statement, Co-Bond Counsel has not been engaged by the Authority to confirm or verify, and except as may be set forth in the opinions of Co-Bond Counsel delivered to the Underwriters, expresses and will express no opinion as to the accuracy, completeness or fairness of any statements in this Official Statement, or in any other reports, financial information offering or disclosure documents or other information pertaining to the Authority or the Series 2016A Bonds that may be prepared or made available by the Authority, the Underwriters or others to the Owners of the Series 2016A Bonds or other parties.

The legal opinions of Co-Bond Counsel, Co-Disclosure Counsel and the Authority's General Counsel are based on existing law, which is subject to change. Such legal opinions are further based on factual representations made to Co-Bond Counsel, Co-Disclosure Counsel and the Authority's General Counsel as of the date thereof. Co-Bond Counsel, Co-Disclosure Counsel and the Authority's General Counsel assume no duty to update or supplement their respective opinions to reflect any facts or circumstances, including changes in law, that may thereafter occur or become effective.

The legal opinions to be delivered concurrently with the delivery of the Series 2016A Bonds express the professional judgment of the attorneys rendering the opinions regarding the legal issues expressly addressed therein. By rendering a legal opinion, the opinion giver does not become an insurer or guarantor of the result indicated by that expression of professional judgment, of the transaction on which the opinion is rendered, or of the future performance of parties to the transaction, nor does the rendering of an opinion guarantee the outcome of any legal dispute that may arise out of the transaction.

## TAX MATTERS

In the opinion of Squire Patton Boggs (US) LLP and D. Seaton and Associates, P.A., Co-Bond Counsel, under existing law: (i) interest on the Series 2016A Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, as amended (the "Code"), and is not an item of tax preference for purposes of the federal alternative minimum tax imposed on individuals and corporations; and (ii) the Series 2016A Bonds and the income thereon are exempt from taxation under the laws of the State of Florida, except estate taxes imposed by Chapter 198, Florida Statutes, as amended, and net income and franchise taxes imposed by Chapter 220, Florida Statutes, as amended. Co-Bond Counsel expresses no opinion as to any other tax consequences regarding the Series 2016A Bonds.

The opinion on tax matters will be based on and will assume the accuracy of certain representations and certifications, and continuing compliance with certain covenants, of the Authority contained in the transcript of proceedings and that are intended to evidence and assure the foregoing, including that the Series 2016A Bonds are and will remain obligations the interest on which is excluded from gross income for federal income tax purposes. Co-Bond Counsel will

not independently verify the accuracy of the Authority's certifications and representations or the continuing compliance with the Authority's covenants.

The opinion of Co-Bond Counsel is based on current legal authority and covers certain matters not directly addressed by such authority. It represents Co-Bond Counsel's legal judgment as to exclusion of interest on the Series 2016A Bonds from gross income for federal income tax purposes but is not a guaranty of that conclusion. The opinion is not binding on the Internal Revenue Service ("IRS") or any court. Co-Bond Counsel expresses no opinion about (i) the effect of future changes in the Code and the applicable regulations under the Code or (ii) the interpretation and the enforcement of the Code or those regulations by the IRS.

The Code prescribes a number of qualifications and conditions for the interest on state and local government obligations to be and to remain excluded from gross income for federal income tax purposes, some of which require future or continued compliance after issuance of the obligations. Noncompliance with these requirements by the Authority may cause loss of such status and result in the interest on the Series 2016A Bonds being included in gross income for federal income tax purposes retroactively to the date of issuance of the Series 2016A Bonds. The Authority has covenanted to take the actions required of it for the interest on the Series 2016A Bonds to be and to remain excluded from gross income for federal income tax purposes, and not to take any actions that would adversely affect that exclusion. After the date of issuance of the Series 2016A Bonds, Co-Bond Counsel will not undertake to determine (or to so inform any person) whether any actions taken or not taken, or any events occurring or not occurring, or any other matters coming to Co-Bond Counsel's attention, may adversely affect the exclusion from gross income for federal income tax purposes of interest on the Series 2016A Bonds or the market value of the Series 2016A Bonds.

A portion of the interest on the Series 2016A Bonds earned by certain corporations may be subject to a federal corporate alternative minimum tax. In addition, interest on the Series 2016A Bonds may be subject to a federal branch profits tax imposed on certain foreign corporations doing business in the United States and to a federal tax imposed on excess net passive income of certain S corporations. Under the Code, the exclusion of interest from gross income for federal income tax purposes may have certain adverse federal income tax consequences on items of income, deduction or credit for certain taxpayers, including financial institutions, certain insurance companies, recipients of Social Security and Railroad Retirement benefits, those that are deemed to incur or continue indebtedness to acquire or carry tax-exempt obligations, and individuals otherwise eligible for the earned income tax credit. The applicability and extent of these and other tax consequences will depend upon the particular tax status or other tax items of the owner of the Series 2016A Bonds. Co-Bond Counsel will express no opinion regarding those consequences.

Payments of interest on tax-exempt obligations, including the Series 2016A Bonds, are generally subject to IRS Form 1099-INT information reporting requirements. If a Series 2016A Bond owner is subject to backup withholding under those requirements, then payments of interest will also be subject to backup withholding. Those requirements do not affect the exclusion of such interest from gross income for federal income tax purposes.

Co-Bond Counsel's engagement with respect to the Series 2016A Bonds ends with the issuance of the Series 2016A Bonds, and, unless separately engaged, Co-Bond Counsel is not obligated to defend the Authority or the owners of the Series 2016A Bonds regarding the tax status of interest thereon in the event of an audit examination by the IRS. The IRS has a program to audit tax-exempt obligations to determine whether the interest thereon is includible in gross income for federal income tax purposes. If the IRS does audit the Series 2016A Bonds, under current IRS procedures, the IRS will treat the Authority as the taxpayer and the beneficial owners of the Series 2016A Bonds will have only limited rights, if any, to obtain and participate in judicial review of such audit. Any action of the IRS, including but not limited to selection of the Series 2016A Bonds for audit, or the course or result of such audit, or an audit of other obligations presenting similar tax issues, may affect the market value of the Series 2016A Bonds.

Prospective purchasers of the Series 2016A Bonds upon their original issuance at prices other than the respective prices indicated on the inside cover of this Official Statement, and prospective purchasers of the Series 2016A Bonds at other than their original issuance, should consult their own tax advisers regarding other tax considerations such as the consequences of market discount, as to all of which Co-Bond Counsel expresses no opinion.

**Risk of Future Legislative Changes and/or Court Decisions**

Legislation affecting tax-exempt obligations is regularly considered by the United States Congress and may also be considered by the State legislature. Court proceedings may also be filed, the outcome of which could modify the tax treatment of obligations such as the Series 2016A Bonds. There can be no assurance that legislation enacted or proposed, or actions by a court, after the date of issuance of the Series 2016A Bonds will not have an adverse effect on the tax status of interest on the Series 2016A Bonds or the market value or marketability of the Series 2016A Bonds. These adverse effects could result, for example, from changes to federal or state income tax rates, changes in the structure of federal or state income taxes (including replacement with another type of tax), or repeal (or reduction in the benefit) of the exclusion of interest on the Series 2016A Bonds from gross income for federal or state income tax purposes for all or certain taxpayers.

For example, recent presidential and legislative proposals would eliminate, reduce or otherwise alter the tax benefits currently provided to certain owners of state and local government bonds, including proposals that would result in additional federal income tax on taxpayers that own tax-exempt obligations if their incomes exceed certain thresholds. Investors in the Series 2016A Bonds should be aware that any such future legislative actions (including federal income tax reform) may retroactively change the treatment of all or a portion of the interest on the Series 2016A Bonds for federal income tax purposes for all or certain taxpayers. In such event, the market value of the Series 2016A Bonds may be adversely affected and the ability of holders to sell their Series 2016A Bonds in the secondary market may be reduced. The Series 2016A Bonds are not subject to special mandatory redemption, and the interest rates on the Series 2016A Bonds are not subject to adjustment in the event of any such change.

Investors should consult their own financial and tax advisers to analyze the importance of these risks.

**Original Issue Premium**

The Series 2016A Bonds (in this context, "Premium Bonds" or "Premium Bond") as indicated on the inside cover of this Official Statement were offered and sold to the public at a price in excess of their stated redemption price at maturity (the principal amount). That excess constitutes bond premium. For federal income tax purposes, bond premium is amortized over the period to maturity of a Premium Bond, based on the yield to maturity of that Premium Bond (or, in the case of a Premium Bond callable prior to its stated maturity, the amortization period and yield may be required to be determined on the basis of an earlier call date that results in the lowest yield on that Premium Bond), compounded semiannually. No portion of that bond premium is deductible by the owner of a Premium Bond. For purposes of determining the owner's gain or loss on the sale, redemption (including redemption at maturity) or other disposition of a Premium Bond, the owner's tax basis in the Premium Bond is reduced by the amount of bond premium that is amortized during the period of ownership. As a result, an owner may realize taxable gain for federal income tax purposes from the sale or other disposition of a Premium Bond for an amount equal to or less than the amount paid by the owner for that Premium Bond. A purchaser of a Premium Bond in the initial public offering at the price for that Premium Bond stated on the inside cover of this Official Statement who holds that Premium Bond to maturity (or, in the case of a callable Premium Bond, to its earlier call date that results in the lowest yield on that Premium Bond) will realize no gain or loss upon the retirement of that Premium Bond.

***OWNERS OF PREMIUM BONDS SHOULD CONSULT THEIR OWN TAX ADVISERS AS TO THE DETERMINATION FOR FEDERAL INCOME TAX PURPOSES OF THE AMOUNT OF BOND PREMIUM PROPERLY ACCRUABLE OR AMORTIZABLE IN ANY PERIOD WITH RESPECT TO THE PREMIUM BONDS AND AS TO OTHER FEDERAL TAX CONSEQUENCES AND THE TREATMENT OF BOND PREMIUM FOR PURPOSES OF STATE AND LOCAL TAXES ON, OR BASED ON, INCOME.***

## FINANCIAL STATEMENTS

Excerpts of the Comprehensive Annual Financial Report of the Authority as of and for the years ended June 30, 2015 and 2014, including the audited financial statements for such periods, are included in Appendix D as a public document and the consent of the auditor was not requested. The auditor has not been requested to perform, and has not performed, any service in connection with, and is therefore not associated with the offering of the Series 2016A Bonds.

## RATINGS

Fitch Ratings, Moody's Investor Services, Inc. and S&P Global Ratings, a division of S&P Global Inc. have assigned ratings of "A" (stable), "A2" (positive) and "A" (stable), respectively, to the Series 2016A Bonds. Such ratings reflect the views of such rating agencies and an explanation of the significance of such ratings may be obtained only from the rating agencies. There is no assurance that such ratings will be in effect for any given period of time or that they will not be revised downward or withdrawn entirely by the rating agencies, if, in the judgment of the rating agencies, circumstances so warrant. Any such downward revision or

withdrawal of such ratings may have an adverse effect upon the market price of the Series 2016A Bonds.

## DISCLOSURE PURSUANT TO SECTION 517.051, FLORIDA STATUTES

Pursuant to Section 517.051, Florida Statutes, no person may directly or indirectly offer or sell securities of the Authority except by an offering circular containing full and fair disclosure of all defaults as to principal or interest on its obligations since December 31, 1975, as provided by rule of the Florida Department of Financial Services (the "Financial Services Department"). Pursuant to Rule 69W-400.003, Florida Administrative Code, the Financial Services Department has required the disclosure of the amounts and types of defaults, any legal proceedings resulting from such defaults, whether a trustee or receiver has been appointed over the assets of the Authority, and certain additional information, unless the Authority believes in good faith that such information would not be considered material by a reasonable investor. The Authority has not defaulted as to principal of and interest on any of its obligations.

## UNDERWRITING

The Underwriters have agreed, subject to certain conditions, to purchase the Series 2016A Bonds from the Authority at an original aggregate purchase price of $119,051,195.32 (representing the original principal amount of $95,820,000.00 plus original issue premium of $23,436,335.35 and less Underwriters' discount of $205,140.03. The Underwriters' obligations are subject to certain conditions precedent, and they will be obligated to purchase all of the Series 2016A Bonds if any Series 2016A Bonds are purchased. The Series 2016A Bonds may be offered and sold to certain dealers (including dealers depositing such Series 2016A Bonds into investment trusts, including investment trusts managed by the Underwriters) at prices lower than the public offering prices, and such public offering prices may be changed from time to time by the Underwriters.

The Underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include securities trading, commercial and investment banking, financial advisory, investment management, principal investment, hedging, financing and brokerage services. Certain of the Underwriters and their respective affiliates have, from time to time, performed, and may in the future perform, various financial advisory and investment banking services for the Authority, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the Underwriters and their respective affiliates may make or hold a broad array of investments and actively trade debt and equity securities (or related derivative securities, which may include credit default swaps) and financial instruments (including bank loans) for their own account and for the accounts of their customers and may at any time hold long and short positions in such securities and instruments. Such investment and securities activities may involve securities and instruments of the Authority.

The Underwriters and their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express

independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments.

Citigroup Global Markets Inc., an underwriter of the Series 2016A Bonds, has entered into a retail distribution agreement with each of TMC Bonds L.L.C. ("TMC") and UBS Financial Services Inc. ("UBSFS"). Under these distribution agreements, Citigroup Global Markets Inc. may distribute municipal securities to retail investors through the financial advisor network of UBSFS and the electronic primary offering platform of TMC. As part of this arrangement, Citigroup Global Markets Inc. may compensate TMC (and TMC may compensate its electronic platform member firms) and UBSFS for their selling efforts with respect to the Series 2016A Bonds.

Morgan Stanley, parent company of Morgan Stanley & Co. LLC, an underwriter of the Series 2016A Bonds, has entered into a retail distribution arrangement with its affiliate Morgan Stanley Smith Barney LLC. As part of the distribution arrangement, Morgan Stanley & Co. LLC may distribute municipal securities to retail investors through the financial advisor network of Morgan Stanley Smith Barney LLC. As part of this arrangement, Morgan Stanley & Co. LLC may compensate Morgan Stanley Smith Barney LLC for its selling efforts with respect to the Series 2016A Bonds.

## PROFESSIONAL CONSULTANTS

### Financial Advisor

FirstSouthwest, a Division of Hilltop Securities Inc., Miami, Florida is serving as Financial Advisor to the Authority with respect to the sale of the Series 2016A Bonds. The Financial Advisor assisted in matters relating to the planning, structuring and issuance of the Series 2016A Bonds and provided other advice. The Financial Advisor will not engage in any underwriting activities with regard to the issuance and sale of the Series 2016A Bonds. The fee payable to the Financial Advisor is contingent upon the issuance and delivery of the Series 2016A Bonds.

### General Engineering Consultant; Traffic Consultant

The Authority has retained two firms to perform separate duties of the General Engineering Consultant under the Indenture. HNTB Corporation ("HNTB") serves as the General Engineering Consultant for Program Management/Production, while EAC Consulting, Inc. ("EAC") serves as the General Engineering Consultant for Construction Management. CDM Smith Inc. serves as the Authority's Traffic and Revenue Consultant. HNTB, EAC and CDM Smith Inc. are each a Consulting Engineer for purposes of the Indenture.

## FORWARD LOOKING STATEMENTS

Certain statements included or incorporated by reference in this Official Statement constitute "forward-looking statements." Such statements generally are identifiable by the terminology used, such as "plan," "expect," "estimate," "budget" or other similar words. The achievement of certain results or other expectations contained in such forward-looking

statements involve known and unknown risks, uncertainties and other factors that may cause actual results, performance or achievements described to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Aside from its customary financial reporting activities, the Authority does not plan to issue any updates or revisions to those forward-looking statements if or when its expectations or events, conditions or circumstances on which such statements are based occur, subject to any contractual or legal responsibilities to the contrary.

## MISCELLANEOUS

This Official Statement is not to be construed as a contract with the purchasers of the Series 2016A Bonds. The information and expressions of opinion in this Official Statement are subject to change without notice and neither the delivery of this Official Statement nor any sale made shall under any circumstances create any implication that there has been no change in the matters referred to in this Official Statement since its date. The references, excerpts and summaries of all documents referred to herein do not purport to be complete statements of the provisions of such documents, and reference is directed to all such documents for full and complete statements of all matters of fact relating to the Series 2016A Bonds, the security for and the source of repayment for the Series 2016A Bonds and the rights and obligations of the holders thereof. Copies of such documents may be obtained from the Authority by writing or calling the Miami-Dade County Expressway Authority, 3790 N.W. 21st Street, Miami, Florida 33142, Telephone No. (305) 637-3277.

So far as any statements made in this Official Statement involve matters of opinion or of estimates, whether or not expressly stated, they are set forth as such and not as representations of fact. No representation is made that any of the opinions or estimates will be realized.

## AUTHORIZATION OF OFFICIAL STATEMENT

The delivery of this Official Statement has been duly authorized by the governing body of the Authority. At the time of delivery of the Series 2016A Bonds, the Chair of the Authority will furnish a certificate to the effect that nothing has come to his attention which would lead him to believe that the Official Statement, as of its date and as of the date of delivery of the Series 2016A Bonds, contains an untrue statement of a material fact or omits to state a material fact which should be included therein for the purposes for which the Official Statement is intended to be used, or which is necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading.

**MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY**

By: */s/Louis V. Martinez*
Chair

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# APPENDIX A

# GENERAL INFORMATION RELATING TO MIAMI-DADE COUNTY, FLORIDA

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## APPENDIX A

## GENERAL INFORMATION RELATING TO MIAMI-DADE COUNTY, FLORIDA

Set forth below is certain general information concerning Miami-Dade County, Florida (the "County").

### History

The County is the largest county in the southeastern United States in terms of population. The County covers 2,209 square miles, located in the southeastern corner of the State of Florida (the "State"), and includes, among other municipalities, the cities of Miami, Miami Beach, Coral Gables and Hialeah. In 2015, the population of the County was estimated at 2,607,198.

The County was created on January 18, 1836 under the Territorial Act of the United States. It included the land area now forming Palm Beach and Broward Counties, together with the land area of the present County. In 1909, Palm Beach County was established from the northern portion of what was then Dade County. In 1915, Palm Beach County and the County contributed nearly equal portions of land to create what is now Broward County. There have been no significant boundary changes to the County since 1915.

### Economy

The County's economy has transitioned from mixed service and industrial in the 1970s to a knowledge-based economy. The shift to knowledge-based sectors, such as life sciences, aviation, financial services and IT/Telecom has diversified the local economy. Other important sectors include international trade, health services and the tourism industry, which remains one of the largest sectors in the local economy. Wholesale and retail trades are strong economic forces in the local economy as well and are projected to continue, which is reflective of the County's position as a wholesale center in Southeast Florida, serving a large international market. The diversification of the economy creates a more stable economic base.

In an effort to further strengthen and diversify the County's economic base, the County commissioned a private consulting firm in 1984 to identify goals and objectives for various public and private entities. The Beacon Council was established as a public private partnership to promote these goals and objectives.

### International Commerce

Approximately 1,200 multinational corporations are established in South Florida. Its proximity to the Caribbean, Mexico, Central and South America makes it a natural center for trade to and from North America. In addition, the international background of many of its residents is an important labor force characteristic for multinational companies that operate across language and cultural differences.

Trade with Latin America, Europe and Caribbean countries has generated substantial growth in the number of financial institutions conducting business in the County. The large Spanish-speaking labor force and the County's proximity to Latin America have also contributed to the growth of the banking industry in the County. According to the Federal Reserve Bank of Atlanta, as of September 30, 2015, there were 14 Edge Act Banks throughout the United States; four of those institutions were located in the County with over $10.7 billion on deposit. Edge Act Banks are federally chartered organizations offering a wide range of banking services, but limited to international transactions only. These banking institutions are: Banco Itau Europa International; Banco Santander International, HSBC Private Bank International and Standard Chartered Bank International.

### Corporate Expansion

The favorable geographic location of the County, a well-trained labor force and the favorable transportation infrastructure have allowed the economic base of the County to expand by attracting and retaining many national and international firms doing business with Latin America, the Caribbean, the United States and the rest of the world.

Among these corporations with world and/or national headquarters in the County are: Carnival Cruise Lines, Royal Caribbean Cruises, and Lennar. Those corporations with Latin American regional headquarters include: Exxon, AIG, Microsoft, Visa International and Wal-Mart.

**Industrial Development**

The role of the Miami-Dade County Industrial Development Authority (the "IDA") is the development and management of the tax-exempt industrial development revenue bond program which serves as a financial incentive to support private sector business and industry expansion and location. Programs developed are consistent with the IDA's legal status and compatible with the economic development goals established by the Board and other economic development organizations operating in the County. Between 1979 and the creation of the Beacon Council in 1986, the IDA provided expansion and location assistance to 195 private sector businesses, accounting for a capital investment of $695 million and the creation of over 11,286 new jobs.

The IDA's principal program, the Tax-Exempt Industrial Development Revenue Bond Program, has generated 461 applications through September 30, 2015. From 1986 to February 2015, bonds for 243 company projects have been issued in an aggregate principal amount in excess of $2.3 billion. Approximately 13,528 new jobs have been generated by these projects. The IDA continues to manage approximately 37 outstanding Industrial Development Revenue Bond Issues, approximating $902 million in capital investment.

**Other Developmental Activities**

In October 1979, the Miami-Dade County Health Facilities Authority (the "Health Authority") was formed to assist local not-for-profit health care corporations to acquire, construct, improve or refinance health care projects located in the County through the issuance of tax-exempt bonds or notes. As of September 2015, the total amount of revenue bonds issued by the Health Authority was over $2.1 billion.

In October 1969, the Board created the Miami-Dade County Educational Facilities Authority (the "EFA") to assist institutions of higher learning within the County to have an additional means to finance facilities and structures needed to maintain and expand learning opportunities and intellectual development. As of September 2015, the EFA had issued 53 series of bonds totaling over $1.8 billion.

In December 1978, the Housing Finance Authority of Miami-Dade County (Florida) (the "HFA") was formed to issue bonds to provide the HFA with moneys to purchase mortgage loans secured by mortgages on single family residential real property owned by low and moderate income persons residing in the County. Since its inception the HFA has generated $1.20 billion in mortgage funds through the issuance of revenue bonds under the Single Family Mortgage Revenue Bond Program. As of September 2015, under the HFA's Multi-Family Mortgage Revenue Bond Program, revenue bonds aggregating approximately $1.231 billion had been issued for new construction or rehabilitation of 20,434 units.

The bonds issued by the foregoing authorities and the IDA are not debts or obligations of the County or the State or any political subdivision thereof, but are payable solely from the revenues provided by the respective private activity borrower as security therefor.

**Film Industry**

The Film and Entertainment Industry is a very important industry economically to the County. The Greater Miami Convention and Visitors Bureau recognizes its importance in attracting visitors to the County by partnering with the County's Film and Entertainment Office to help market the County as a destination for entertainment production projects.

High impact television series have been the County's largest economic generator in the entertainment production sector. The County is the principal filming location for the high impact television series *Bloodline* (Netflix) and *Ballers* (HBO), which have spent approximately $150 million in the County over the past two years. Both *Bloodline* and *Ballers* have benefited from the State's production tax incentive program. Spanish language television,

in particular, Telenovelas, continues to film in the County. Notable recent Spanish language telenovelas include *Bajo el Mismo Cielo, Quien es Quien, Pasajeros* and *La Trailera*. Additionally, since Viacom International bases its operations now out of the new EUE/Screen Gems Studios in the City of Miami, Viacom is creating content in the County for its own networks like MTV, VH1 and Nickelodeon. This has brought shows like *Talia's Kitchen, Every Witch Way* and *W.I.T.s Academy* to the County. Additionally, the shows *Ridiculousness* and *I Am Frankie* are slated for production in the County in 2016.

Currently forecasted for early 2016 are pieces of larger feature films that are projected to shoot briefly in the County: *Baywatch, The Trap* and *Bad Boys 3*. The County also attracts reality television shows, including *House Hunters International, Real Housewives, Diners, Drive-ins and Dives, The Voice, So You Think You Can Dance, La Banda, Der Bachelor, Real Women of Telenovelas* and *Married at First Sight*. Television commercials and print advertising continue to shoot their projects in the County as well. The advertising sector generated approximately $20 million of direct spend into the local economy in calendar year 2015.

**Surface Transportation**

The County owns and operates through its Transit Department a unified multi-modal public transportation system. Operating in a fully integrated configuration, the County's Transit Department provides public transportation services through: (i) Metrorail - a 24.8-mile, 23-station elevated electric rail line connecting South Miami-Dade and the City of Hialeah with the Downtown and Civic Center areas as well as Miami International Airport providing 21.9 million passenger trips annually; (ii) Metromover - a fully automated, driverless, 4.4-mile elevated electric double-loop people-mover system interfaced with Metrorail and completing approximately 9.9 million passenger trips annually throughout 21 stations in the central business district and south to the Brickell international banking area and north to the Adrienne Arsht Center; and (iii) Metrobus, including both directly operated and contracted conventional urban bus service, operating approximately 29 million revenue miles per year, interconnecting with all Metrorail stations and key Metromover stations, and providing over 72.4 million passenger trips annually.

The County also provides Para-transit service to qualified elderly and handicapped riders through its Special Transportation Service, which supplies over 1.65 million passenger trips per year in a demand-response environment.

Additionally, the County's Transit Department is operating the Bus Rapid Transit (BRT) on the South Miami-Dade Busway, a dedicated-use BRT corridor that runs parallel to US1/South Dixie Highway. The South Miami-Dade Busway, which began operating in 1997 and was extended in December 2007, traverses over twenty miles, connecting Florida City (SW 344$^{th}$ Street) with the Metrorail system, with connection to downtown Miami.

**Airport**

The County owns and operates the Miami International Airport (the "Airport"), the principal commercial airport serving Southeast Florida. The Airport has also the second highest international passenger traffic in the U.S. During Fiscal Year 2015, the Airport handled 43,347,129 passengers and 2,206,306 tons of air freight. The Airport is classified by the Federal Aviation Administration as a large hub airport, the highest classification given by that organization. The Airport is also one of the principal maintenance and overhaul bases, as well as a principal training center, for the airline industry in the United States, Central and South America, and the Caribbean.

**Passengers and Cargo Handled by Airport**
**2011-2015**

| Fiscal Year | Passengers (in thousands) | Cargo Tonnage (in millions) | Total Landed Weight (million lbs.) |
|---|---|---|---|
| 2011 | 37,633 | 2.00 | 32,516 |
| 2012 | 39,564 | 2.10 | 33,548 |
| 2013 | 40,115 | 2.13 | 34,438 |
| 2014 | 40,845 | 2.18 | 35,298 |
| 2015 | 43,347 | 2.21 | 36,722 |

SOURCE: Miami-Dade County Aviation Department

**Seaport**

The Port is an island port, which covers 640 acres of land, operated by the Seaport Department. It is the world's largest multi-day cruise port. Embarkations and debarkations totaled over 4.9 million passengers for Fiscal Year 2015. With the increase in activity from the Far-East markets and South and Central America, containerized cargo movements at the Port amounted to approximately 1,007,800 TEUs (twenty-foot equivalent units) for Fiscal Year 2015.

The following table sets forth a five-year summary of both cruise passengers served and cargo handled:

**Passengers and Cargo Handled by Port**
**2011-2015**

| Fiscal Year | Cruise Passengers (Including Ferry Service) (in thousands) | Cargo TEUs (Twenty-Foot Equivalent Units) (in thousands) |
|---|---|---|
| 2011 | 4,018 | 907 |
| 2012 | 3,774 | 909 |
| 2013 | 4,079 | 901 |
| 2014 | 4,939 | 877 |
| 2015 | 4,916 | 1,008 |

SOURCE: Miami-Dade County Seaport Department

**Tourism**

The County is a leading center for tourism in the State of Florida and the State's principal port of entry for international air travelers. The Airport has the second highest international passenger traffic behind New York's John F. Kennedy International Airport.

A record estimated 15.5 million visitors spent at least one night in the County in 2015, a 6.4% increase over 2014, with Miami Beach remaining the most common area for visitor lodging. Domestic visitors accounted for 51.6% of all overnight visitors and international visitors made up 48.4% of all overnight visitors.

Latin America continued to be a leading source of international visitors to the County, accounting for over 5.0 million visitors in 2015. Visitors from Europe increased 5.9% in 2015 compared to 2014, accounting for over 1.5 million visitors. Canadian and other visitors increased in 2015 by 5.4%, accounting for roughly 837,000 visitors overall.

The following is a five-year schedule of domestic and international visitors, including a further breakdown of international visitors by region of origin, and the estimated economic impact produced by those visitors:

**Visitors and Their Estimated Economic Impact**
**2011-2015**

| | Visitors (in thousands) | | | Estimated Economic Impact (in millions) | | |
|---|---|---|---|---|---|---|
| | Domestic | Int'l | Total | Domestic | Int'l | Total |
| 2011 | 6,948 | 6,495 | 13,443 | 7,089 | 14,529 | 21,618 |
| 2012 | 7,075 | 6,834 | 13,909 | 7,482 | 15,183 | 22,665 |
| 2013 | 7,087 | 7,132 | 14,219 | 7,840 | 15,954 | 23,794 |
| 2014 | 7,303 | 7,260 | 14,563 | 7,885 | 15,966 | 23,851 |
| 2015 | 7,990 | 7,506 | 15,496 | 8,739 | 14,937 | 23,676 |

**International Visitors by Region**
**2011 – 2015**
**(in thousands)**

| Year | European | Caribbean | Latin America | Canada/Other | Total |
|---|---|---|---|---|---|
| 2011 | 1,325 | 703 | 3,720 | 748 | 6,496 |
| 2012 | 1,368 | 719 | 3,986 | 761 | 6,073 |
| 2013 | 1,332 | 719 | 4,300 | 781 | 7,132 |
| 2014 | 1,430 | 755 | 4,254 | 820 | 7,259 |
| 2015 | 1,515 | 799 | 5,154 | 836 | 8,304 |

SOURCE: Greater Miami Convention and Visitors Bureau

**Employment**

The following table illustrates the economic diversity of the County's employment base. No single industry dominates the County's employment market, and there have not been any significant decreases within the industry classifications displayed for the latest years for which information is available:

**Estimated Employment**
**in Non-Agricultural Establishments**
**2013-2015**

| | FY 2013 | | FY 2014 | | FY 2015 | |
|---|---|---|---|---|---|---|
| | Number of Jobs | Percent of Total | Number of Jobs | Percent of Total | Number of Jobs | Percent of Total |
| **Goods Producing Sector** | | | | | | |
| Construction | 30,100 | 2.9% | 39,200 | 3.6% | 36,700 | 3.3% |
| Manufacturing | 36,500 | 3.5 | 38,900 | 3.6 | 37,900 | 3.4 |
| Mining & Natural Resources | 400 | 0.0 | 400 | 0.0 | 400 | 0.0 |
| Total Goods-Producing Sector | 67,000 | 6.4 | 78,500 | 7.2 | 75,000 | 6.7 |
| **Service Providing Sector** | | | | | | |
| Transportation, Warehousing & Utilities | 61,700 | 6.0 | 66,300 | 6.0 | 67,200 | 6.1 |
| Wholesale Trade | 74,800 | 7.2 | 70,800 | 6.5 | 74,800 | 6.7 |
| Retail Trade | 137,400 | 13.3 | 146,700 | 13.4 | 144,400 | 13.0 |
| Information | 18,000 | 1.7 | 18,100 | 1.7 | 19,000 | 1.7 |
| Finance Activities | 73,000 | 7.0 | 75,400 | 6.9 | 78,600 | 7.1 |
| Professional and Business Services | 138,400 | 13.4 | 152,400 | 14.0 | 157,500 | 14.2 |
| Education and Health Services | 162,900 | 15.7 | 165,800 | 15.2 | 170,800 | 15.4 |
| Leisure and Hospitality | 122,900 | 11.9 | 127,700 | 11.7 | 135,400 | 12.2 |
| Other Services | 44,700 | 4.3 | 50,600 | 4.6 | 51,000 | 4.6 |
| Government | 134,700 | 13.0 | 139,400 | 12.8 | 137,000 | 12.3 |
| **Total Service Providing Sector** | 968,500 | 93.5 | 1,013,200 | 92.8 | 1,035,700 | 93.3 |
| **Total Non-Agricultural Employment** | 1,035,500 | 100 | 1,091,700 | 100 | 1,110,700 | 100 |

SOURCE: Miami-Dade County Department of Regulatory and Economic Resources, Planning Research and Economic Analysis Section, March 2016.

The following tables set forth the leading public and private County employers for 2015:

**Ten Largest Public Employers**

| Employer's Name | Number of Employees |
|---|---|
| Miami-Dade County Public Schools | 31,000 |
| Miami-Dade County | 24,692 |
| U.S. Federal Government | 19,300 |
| Florida State Government | 19,200 |
| Jackson Health System | 8,163 |
| Florida International University | 4,951 |
| City of Miami | 3,820 |
| Homestead AFB | 2,810 |
| Miami Dade College | 2,572 |
| City of Miami Beach | 1,795 |

**Ten Largest Private Employers**

| Employer's Name | Number of Employees |
|---|---|
| University of Miami | 13,864 |
| Baptist Health South Florida | 13,369 |
| American Airlines | 11,773 |
| Mount Sinai | 3,402 |
| Florida Power & Light Company | 3,011[(a)] |
| Miami Children's Hospital | 2,991 |
| Wells Fargo | 2,050[(a)] |
| Bank of America Merrill Lynch | 2,000[(a)] |
| Fontainebleau Miami Beach | 1,966 |
| Royal Caribbean International/Celebrity Cruises | 1,710 |

SOURCE: The Beacon Council/Miami-Dade County, Florida: *Business Profile & Location Guide 2016*
[(a)] 2014 Data

The following table sets forth the unemployment rates for the last five years and comparative rates for the United States, the State of Florida and the County:

**UNEMPLOYMENT RATES**
**2011- 2015**

| Area | 2011 | 2012 | 2013 | 2014 | 2015* |
|---|---|---|---|---|---|
| USA | 8.9% | 8.3% | 7.6% | 6.4% | 5.3% |
| Florida | 10.6 | 8.9 | 7.3 | 6.3 | 5.4 |
| Miami-Dade County | 12.0 | 9.6 | 8.9 | 7.1 | 6.1 |

Sources: Labor Market Statistics LAUS Program. Miami-Dade County, Regulatory and Environmental Resources Department, Planning Research Division, 2016.
Miami-Dade County Department of Regulatory and Economic Resources, Planning Research and Economic Analysis Section, March, 2016.
* Preliminary 12-month average through December 2015.

The following table sets forth the Per Capita Personal Income for the last five years for the United States, the Southeastern region, the State of Florida and the County.

**Per Capita Personal Income**
**2011 - 2015**

| Year | USA | Southeastern | Florida | Miami-Dade |
|---|---|---|---|---|
| 2011 | $41,560 | $37,473 | $39,636 | $37,834 |
| 2012 | 43,735 | 39,137 | 41,012 | 38,860 |
| 2013 | 44,765 | 39,760 | 41,497 | 39,880 |
| 2014 | 46,049 | 40,792 | 42,737 | 41,883 |
| 2015 | 47,669 | 42,252 | 44,101 | (*) |

Sources: U.S. Department of Commerce Economic and Statistic Administration Bureau of Economic Analysis/Regional Economic Information System.
*Note that this this table contains the most current information available as of the date of this Official Statement.

**County Demographics**

**Miami-Dade County**
**Estimates of Population by Age**
**2000-2030**

| Age Group | 2000 | 2010 | 2015 | 2020 | 2025 | 2030 |
|---|---|---|---|---|---|---|
| Under 16 | 495,375 | 479,211 | 497,975 | 535,382 | 573,080 | 615,553 |
| 16-64 | 1,457,435 | 1,659,816 | 1,741,608 | 1,804,055 | 1,851,342 | 1,902,394 |
| 65 & Over | 300,552 | 352,013 | 367,615 | 392,106 | 440,980 | 496,204 |
| Total | 2,253,362 | 2,491,040 | 2,607,198 | 2,731,543 | 2,865,402 | 3,014,151 |

SOURCE: U.S Census Bureau, Decennial Census Report for 2000 and 2010. Projections (2015-2030) provided by Miami-Dade County Department of Regulatory and Economic Resources, Planning Research and Economic Analysis Section, March 2016.

**Trend and Forecasts, Population in**
**Incorporated and Unincorporated Area**
**1960-2020**

| Year | Population in Incorporated Areas | Population in Unincorporated Areas | Total | Percentage Growth in Population |
|---|---|---|---|---|
| **Trends** | | | | |
| 1960 | 582,713 | 352,334 | 935,047 | N/A |
| 1970 | 730,425 | 537,367 | 1,267,792 | 35.6 |
| 1980 | 829,881 | 795,900 | 1,625,781 | 28.2 |
| 1990 | 909,371 | 1,027,723 | 1,937,094 | 19.1 |
| 1995 | 973,912 | 1,110,293 | 2,084,205 | 7.6 |
| 2000 | 1,049,074 | 1,204,288 | 2,253,362 | 8.1 |
| 2005 | 1,298,454 | 1,105,018 | 2,403,472 | 6.7 |
| 2010 | 1,386,864 | 1,109,571 | 2,491,040 | 3.6 |
| 2015 | 1,433,959 | 1,173,239 | 2,607,198 | 4.7 |
| **Forecasts** | | | | |
| 2020 | 1,502,349 | 1,229,194 | 2,731,543 | 4.8 |

SOURCE: U.S. Census Bureau, Decennial Census Reports for 1960-2010. Projections (2015 - 2020) provided by Miami-Dade County Department of Regulatory and Economic Resources, Planning Research and Economic Analysis Section, March, 2016.

**Population By Race and Ethnic Group[1]**
**1970 - 2010**
**(in thousands)**

| Year | Total[2] | Hispanic[1] | Black[1] | Non-Hispanic Whites and Others |
|---|---|---|---|---|
| 1970 | 1,268 | 299 | 190 | 782 |
| 1975 | 1,462 | 467 | 237 | 765 |
| 1980 | 1,626 | 581 | 284 | 773 |
| 1985 | 1,771 | 768 | 367 | 656 |
| 1990 | 1,967 | 968 | 409 | 618 |
| 1995 | 2,084 | 1,155 | 446 | 519 |
| 2000 | 2,253 | 1,292 | 457 | 534 |
| 2005 | 2,403 | 1,455 | 461 | 497 |
| 2010 | 2,496 | 1,624 | 496 | 449 |

**(In Percentages)**

| Year | Total[2] | Hispanic[1] | Black[1] | Non-Hispanic Whites and Others |
|---|---|---|---|---|
| 1970[2] | 100% | 24% | 15% | 62% |
| 1975[2] | 100 | 32 | 16 | 52 |
| 1980[2] | 100 | 36 | 17 | 48 |
| 1985[2] | 100 | 43 | 21 | 37 |
| 1990[2] | 100 | 49 | 21 | 31 |
| 1995[2] | 100 | 55 | 21 | 25 |
| 2000[2] | 100 | 57 | 20 | 24 |
| 2005[2] | 100 | 61 | 21 | 20 |
| 2010[2] | 100 | 65 | 20 | 18 |

SOURCE: U.S. Census Bureau, Census of Population Reports for 1970-2010. Projections provided by Miami-Dade County Department of Regulatory and Economic Resources, Planning Research and Economic Analysis Section, March, 2016.

Notes: [1] Persons of Hispanic origin may be of any race. Hispanic Blacks are counted as both Hispanic and Black. Other Non-Hispanics are grouped with Non-Hispanic White category. Sum of components exceeds total.

[2] Numbers may not add due to rounding

# APPENDIX B

# CONSULTING ENGINEER'S REPORT FISCAL YEAR 2017-2021 PROJECTS, TOLL SYSTEM REFUNDING REVENUE BONDS, SERIES 2016A

## HNTB CORPORATION

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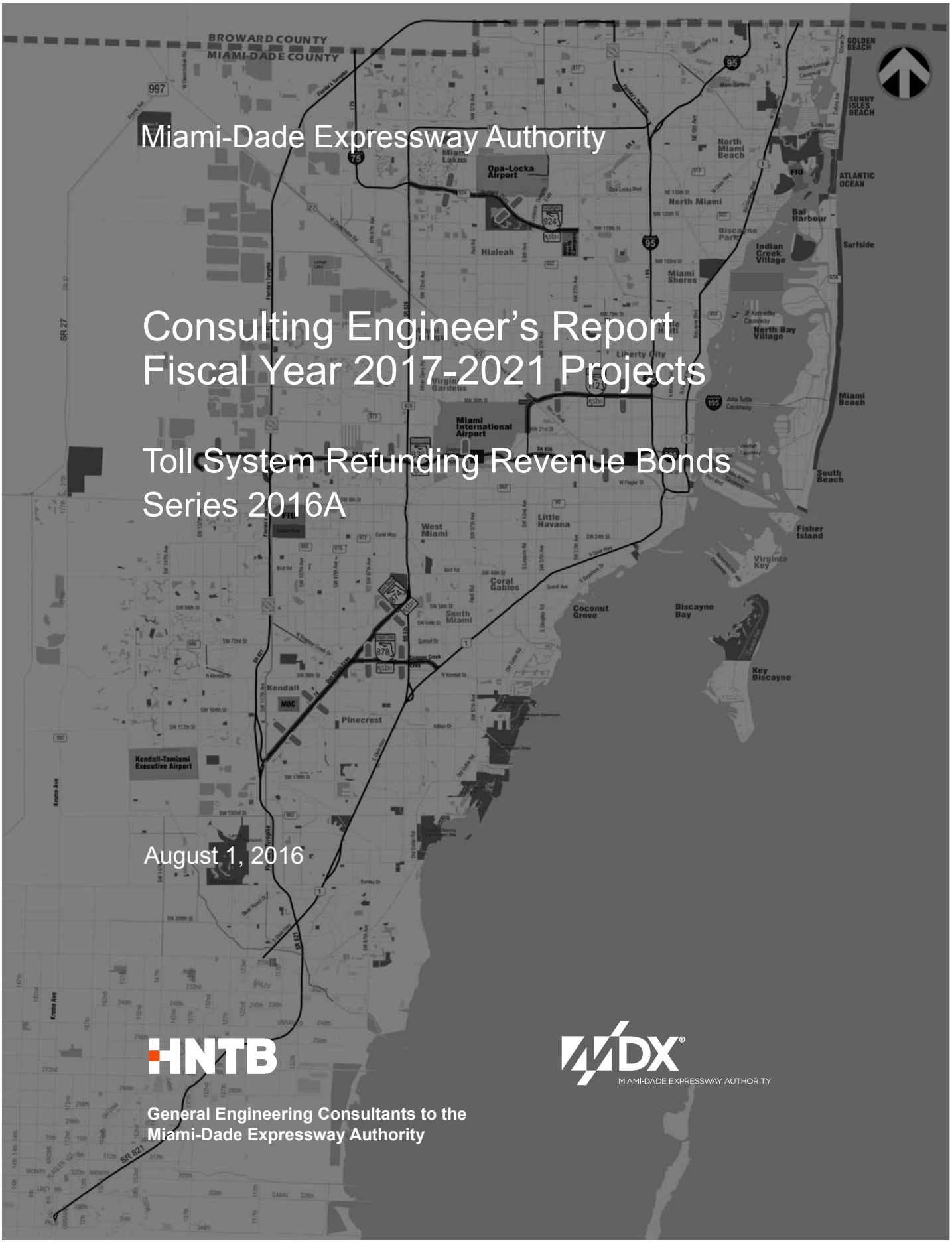
BROWARD COUNTY
MIAMI-DADE COUNTY
Miami-Dade Expressway Authority
Opa-Locka Airport
Hialeah
North Miami
North Miami Beach
Miami Lakes
Miami Shores
Bal Harbour
Surfside
Indian Creek Village
North Bay Village
Miami Beach
South Beach
Fisher Island
Virginia Key
Miami International Airport
Little Havana
West Miami
Coral Gables
South Miami
Coconut Grove
Biscayne Bay
Key Biscayne
Kendall
Pinecrest
Kendall-Tamiami Executive Airport
MDC
FIU
ATLANTIC OCEAN
GOLDEN BEACH
SUNNY ISLES BEACH
SR 27
SR 821
Krome Ave
Consulting Engineer's Report
Fiscal Year 2017-2021 Projects
Toll System Refunding Revenue Bonds
Series 2016A
August 1, 2016
HNTB
MDX
MIAMI-DADE EXPRESSWAY AUTHORITY
General Engineering Consultants to the
Miami-Dade Expressway Authority

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HNTB
General Consultants to the
*Miami-Dade Expressway Authority*

August 1, 2016

Ms. Marie Schafer
Deputy Executive Director/ CFO
Miami-Dade Expressway Authority
3790 NW 21st Street
Miami, Florida 33142

Re: Consulting Engineer's Report for the MDX Toll System Refunding Revenue Bonds, Series 2016A
MDX Contract No. RFQ-16-02 GEC A
HNTB Project No. 60770

Dear Ms. Schafer,

We are pleased to provide herewith our Consulting Engineer's Report for the MDX Toll System Refunding Revenue Bonds, Series 2016A. This report summarizes the physical condition of the existing System, and describes and reports on the status of MDX's Capital Improvement and Transportation Improvement Projects, specifically those projects contained in the current FY 2017-2021 Five-Year Work Program. This report also includes Operations and Maintenance Projections, as well as Renewal and Replacement Costs for the MDX System.

It has been a pleasure assisting you in the preparation of documentation for this financing.

Sincerely,

Gary W. Walsh, P.E.
GEC Deputy Program Director

Cc: Juan C. Toledo, P.E., MDX
Albert Sosa, P.E., HNTB
Sandra Herdocia, HNTB

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## PURPOSE

## PURPOSE OF THE REPORT

The purpose of this report is to provide engineering information pertinent to the condition of the MDX Expressway System located in Miami-Dade County (the "System") which will be used as part of the Series 2016A Official Statement. The report addresses the present physical condition of the System; describes the MDX FY 2017-2021 Five-Year Work Program (Work Program) and project costs; evaluates the Work Program proposed improvements and additions; management of the System; and provides a forecast for Operations, Maintenance and Administration expenses (O,M&A), as well as Renewal and Replacement Fund deposit requirements for the System.

Certain costs for this report were developed based on information contained in the MDX System-wide Traffic and Revenue Study dated April 25, 2014, as updated by the Miami-Dade Expressway (MDX) Toll System Refunding, 2016 Traffic and Toll Revenue Update Letter, dated July 26, 2016, both as prepared by CDM Smith Inc.

Based on our review of the 2015 Annual Inspection Report and our knowledge of MDX's expressways and facilities as General Engineering Consultants to the Authority, it is our opinion that the System has been maintained in good repair, working order and condition as outlined by Section 5.03 of the Authority's Amended and Restated Trust Indenture, dated as of June 15, 2002, as amended and supplemented, between MDX and The Bank of New York Mellon Trust Company, N.A. HNTB, as General Engineering Consultants to MDX, also provide additional opinions as required by the Trust Indenture and the offering documents.

The estimated cost to implement the MDX FY 2017-2021 Five-Year Work Program is $634.0 million and the Total Project Cost is $1,297 million which includes $1,259 million for the TIP and CIP projects and $38 million in R&R needs. Of the $1,297 million Total Project Cost, 70% has been completed or is under contract. There is also an additional unfunded R&R need of $143.7 million projected out from FY 2022 to FY 2030. This estimate includes funds required for project development, Project Development &

Engineering studies, final design, right-of-way acquisition, construction oversight, design/build and construction. HNTB, working together with MDX and EAC Consulting, Inc. the General Engineering Consultant B - Construction Management, has developed the Work Program projects and Work Program project costs. HNTB has developed the Renewal and Replacement Program cost forecast contained in this report. The Authority, in conjunction with HNTB, has developed the Operations, Maintenance & Administration (O,M&A) expense projections contained in this report. It is HNTB's opinion that the Work Program is sound, will add significant value to the System and improve mobility within Miami-Dade County, and the costs and schedules as presented herein are reasonable.

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## Section 1

# 1. MIAMI-DADE EXPRESSWAY AUTHORITY (MDX)

## 1.1 EXPRESSWAY AUTHORITY MISSION AND GOVERNANCE

In 1994, the Florida Legislature amended Florida Statutes, Chapter 348, Part 1, enabling the creation of the MDX. MDX was created on December 13, 1994, by ordinance of the Miami-Dade County Commission, pursuant to Chapter 348, Part I, Florida Statutes, for the purposes and having the powers to, among others, (1) acquire, hold, construct, improve, maintain, operate, own and lease the expressway system located in Miami-Dade County, Florida (the "County"); and (2) fix, alter, charge, establish and collect tolls, rates, fees, rentals, and other charges for the services and facilities of such system.

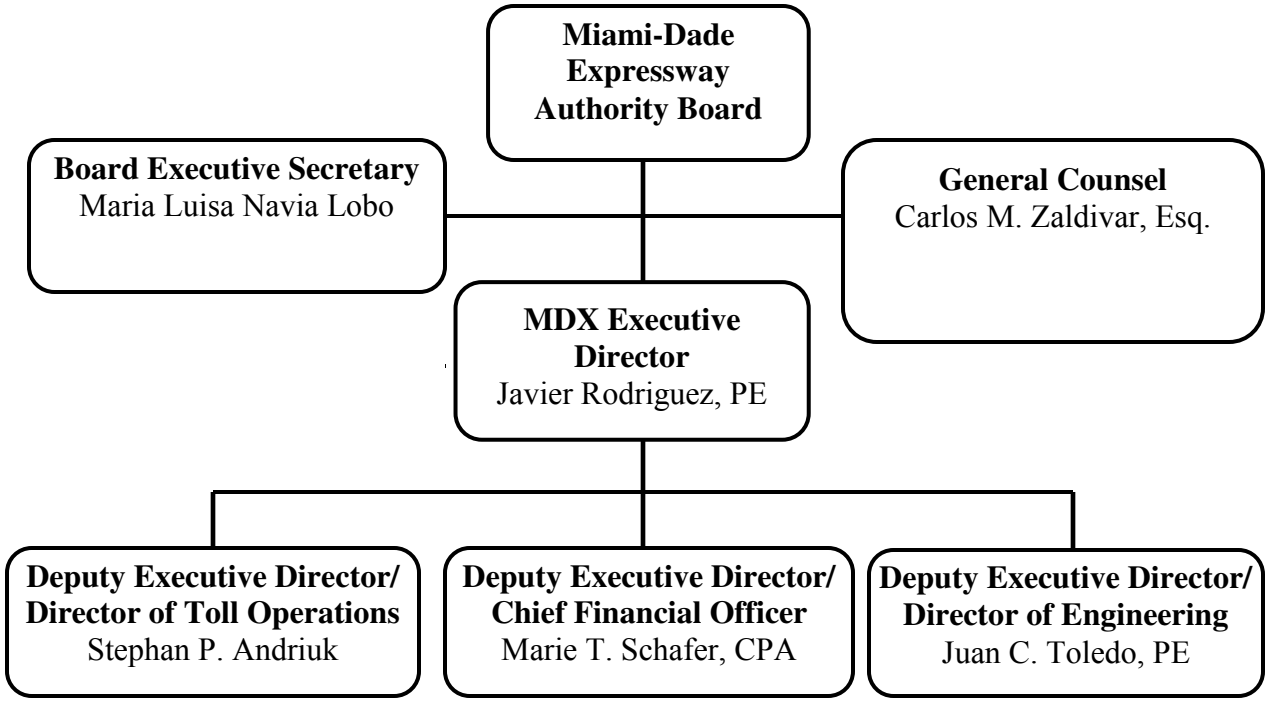
MDX is currently governed by a thirteen-member volunteer Board consisting of business and civic leaders. Florida's Governor appoints five members of the Board, while the Miami-Dade County Commission appoints seven. The thirteenth member, the Florida Department of Transportation District Six Secretary, serves as an ex-officio member. Board members serve four-year terms. The Board provides overall policy direction for MDX activities. Beginning July 1, 2016, the MDX Board will be reduced to a nine-member Board through attrition. The final makeup of the Board will be three members appointed by Florida's Governor, while the Miami-Dade County Commission will appoint five. The ninth member will be the Florida Department of Transportation District Six Secretary.

## 1.2 STAFFING

MDX operates under a management philosophy that provides for a qualified administrative staff of limited size, with reliance on contracted consultant assistance for specific tasks. Key management positions currently retained by MDX include the following: Executive Director, Board Executive Secretary, General Counsel, Deputy Executive Director/Chief Financial Officer, Deputy Executive Director/Director of Toll Operations, and Deputy Executive Director/Director of Engineering. The current staff organization is shown in Figure 1-1. MDX currently has a total staff of 45.

**Figure 1-1**

**MDX STAFF ORGANIZATION**




The Executive Director reports to the Board on expressway planning, engineering, construction, financing and operating activities. The Executive Director in turn, provides guidance and direction to MDX Deputy Executive Directors and managers. The Board provides overall policy direction to the Executive Director. Javier Rodriguez, P.E. has served as Executive Director of MDX since March 2007.

HNTB Corporation (HNTB) is currently the MDX General Engineering Consultant (GEC) A - Work Program/Production. EAC Consulting, Inc. (EAC) is currently the General Engineering Consultant B - Construction Management. GEC B prepared the MDX 2015 Annual Inspection and Report, which forms the basis for a portion of this report. MDX management staff is supported by multi-disciplined consulting firms, all of which have extensive experience in their respective fields.

Table 1-1 details the key supporting firms under contract to MDX.

**Table 1-1**

**MDX CONSULTANTS**

| Area of Expertise | Firm Type | Participants |
|---|---|---|
| Bond Counsel and Disclosure Counsel | Prime Consultant | Squire Patton Boggs (US) LLP |
| Bond Counsel and Disclosure Counsel | Prime Consultant | D. Seaton and Associates |
| General Engineering Consultant A – Work Program / Production | Prime Consultant | HNTB Corporation (HNTB) |
| General Engineering Consultant B – Construction Management | Prime Consultant | EAC Consulting, Inc. (EAC) |
| Financial Advisor | Prime Consultant | FirstSouthwest, a division of Hilltop Securities Inc. |
| External Independent Auditor | Prime Consultant | Moore Stephens Lovelace, P.A. |
| Traffic and Revenue Consulting Services | Prime Consultant | CDM Smith , Inc. |
| Roadway Maintenance | Prime Contractor | Florida Drawbridges, Inc. |
| ORT In-Lane Maintenance SR 874/SR878/SR924 | Prime Contractor | Electronic Transaction Consultants Corporation (ETCC) |
| ORT Host System and ORT In-Lane Maintenance on SR 112 and SR 836 | Prime Contractor | TransCore, L.P. |
| Image Review Services | Prime Contractor | Q-Free America, Inc. |
| Toll-By-Plate Billing & Payment Processing | Prime Contractor | Credit Protection Association |

In addition to the firms indicated in Table 1-1, MDX is supported by a number of additional firms in various areas such as design, construction engineering and inspection, materials testing, structures inspections, investment advisors, advertising, legislative advocacy and operations.

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## 1.3 RIGHT TO OPERATE - TRANSFER AGREEMENT

The five expressways that comprise the Authority's expressway system (State Roads 112, 836, 874, 878 and 924), located within the boundaries of the County (the "expressway system"), were operated by the State of Florida, Department of Transportation ("FDOT") through December 9, 1996. Effective December 10, 1996 and pursuant to a Transfer Agreement (the "Transfer Agreement") entered into between the Authority and the FDOT, the Authority assumed the rights and the responsibilities for operating the expressway system and obtained certain identifiable capital assets (excluding the expressway system's infrastructure) and cash reserves from the FDOT. In exchange, the Authority made a payment to the FDOT which was sufficient to defease certain bonded indebtedness of the State of Florida. This transaction was consummated through the Authority's issuance of $80,000,000 in aggregate principal amount of its Toll System Revenue Bonds, Series 1996 (Taxable) (the "Series 1996 Bonds"). In addition, the Authority assumed a liability from the State of Florida in the amount of $11,843,000 which has been paid in full. TheAuthority reflects in its financial statements a right to operate as an intangible asset an amount of $76,644,762.

The Transfer Agreement conveys to the Authority the right, in perpetuity, to the toll revenue generated by the expressway system and grants the Authority the right to operate and maintain such expressway system. Title to lands underlying the expressway system transferred to the Authority in the 1996 agreement remains with FDOT.

## 1.4 MDX LONG RANGE MASTER TRANSPORTATION PLAN

The current MDX Long Range Master Transportation Plan ("Master Transportation Plan"), covers transportation needs and includes projects through FY 2040. This Master Transportation Plan is updated every three to five years; the most recent update was completed in March of 2016. Seven major system expansion projects, three interchange improvement projects and two major managed lanes projects are included in the 2040 Long Range Master Transportation Plan. Only Projects listed below with Project numbers are currently included in the MDX Five-Year Work Program.

Major System Expansion Projects:

- SR 836/I-95 Interchange Improvements (Project 83611)
- SR 836 Operational, Capacity and Interchange Improvements (Project 83628)
- SR 836 Southwest Extension (Project 83618)
- SR 874 Ramp Connector to SW 128th Street (Project 87410)
- SR 924 Extension West to the Homestead Extension of Florida's Turnpike (HEFT) (Project 92404)
- SR 924 Extension East to I-95 (Project 92407)
- Connect 4 Express (Project 20001)

Major Interchange Improvement Projects:

- SR 836 Interchange Modifications at NW 87th Avenue (Project 83629)
- SR 874/SW 72nd Street Interchange (Project 87413)
- SR 836 HEFT Ramp Connections

Major Managed Lanes Projects:

- SR 836 managed lanes from west of NW 27th Avenue to Florida's Turnpike
- US 1 Express Lanes (Florida City to Dadeland South)

The MDX focus on projects to be implemented in the next several years that are part of the Master Transportation Plan is contained in the adopted Five-Year Work Program which sets forth the current status of all projects. The SR 836 Operational, Capacity and Interchange Improvements Project and the SR 836 Interchange Modifications at NW 87th Avenue Project are currently under construction. The SR 874 Ramp Connector Project is also currently under construction along with the central portion of the Project over the HEFT, which is under construction through an interagency agreement with Florida's Turnpike Enterprise. The SR 836/I-95 Interchange Reconstruction Project, which is currently in the procurement phase, will be constructed under an agreement with the Florida Department of Transportation. The SR 874/SW 72nd Street Interchange Project is currently funded through construction. The SR 924 Extension West to the HEFT is currently funded only for Project Development and Environment (PD&E), Right-of Way

and Final Design Services. Of the remaining Projects listed above, only the following are included in the MDX FY 2017–2021 Five-Year Work Program (The Five-Year Work Program):

- State Road (SR) 836 Southwest Extension (PD&E).
- SR 924 Extension East to I-95 (PD&E).
- Connect 4 Express (SR 836 to SR 924) (PD&E).

A more detailed discussion of these projects is included in Section 3.

## 1.5 THE FIVE-YEAR WORK PROGRAM

The Five-Year Work Program identifies and prioritizes the transportation needs of Miami-Dade County that MDX anticipates funding. As such, the Five-Year Work Program is re-confirmed and modified as required on an annual basis as priorities are re-evaluated, projects are completed, new projects are identified and the financial capabilities of MDX evolve. The MDX Board approves the Five Year Work Program including the total project cost for every project as well as the distribution by fiscal year and the Five Year Work Program is adopted, at which time the budget is available to staff for implementation of the Program.

The Five-Year Work Program, as developed by MDX in conjunction with both GEC's, is an important tool used by MDX to effectively manage its program of System expansions, improvements, renewals and replacements. The current Five-Year Work Program includes thirty-five (35) projects, including safety improvements, system preservation and mobility and capacity enhancement projects, with a combined total estimated cost for the five year period from Fiscal Year (FY) 2017 through FY 2021 of approximately $634.0 million.

The Five-Year Work Program consists of three aspects of infrastructure construction:

- Five-Year Transportation Improvement Program (TIP) – Improvements and expansions to the MDX highway system, including planning projects, new expressways and implementation of Intelligent Transportation Systems (ITS) and toll collection systems.

- Five-Year Capital Improvement Program (CIP) – Capital improvements to other MDX assets other than highway facilities and system-wide roadway improvement projects.
- Five-Year Renewal and Replacement (R&R) Program – Paying the cost of unusual or extraordinary maintenance or repairs, maintenance or repairs not recurring annually and renewals and replacements; repairs or replacements resulting from an emergency caused by some extraordinary occurrence; and all or any part of any System improvements.

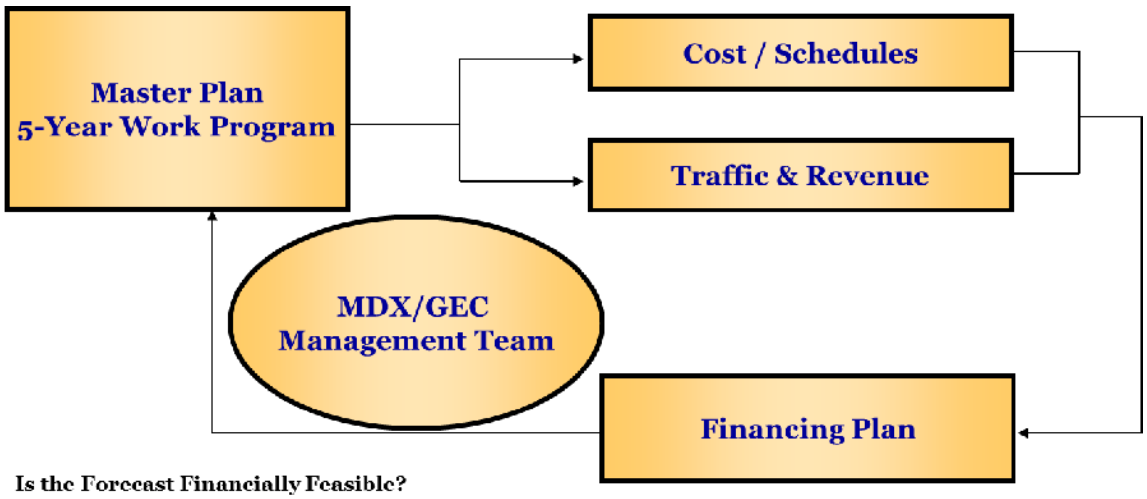
The Five-Year Work Program projects are identified and tracked through a control system to monitor funding levels, budgets, schedules, cash flows, and funding sources. Funding strategies are based on financial analyses performed during the Five-Year Work Program development process, which includes an annual analysis of availability of funds, monthly project schedules, projected cash draw down requirements updated quarterly, and ultimately, financial feasibility. Figure 1-2 illustrates the process used by MDX to update its Five-Year Work Program.

The Five-Year Work Program for FY 2017-2021 was approved and adopted by the MDX Board on March 29, 2016 and was then submitted to the Miami-Dade County Metropolitan Planning Organization (MPO).

It should be noted that only the Transportation Improvement Program and Capital Improvement Program projects contained in the Board approved MDX Five-Year Work Program are eligible for funding through bond proceeds. Projects contained in the Renewal and Replacement Program are funded out of General Fund reserves.

The Five-Year Work Program is described in greater detail in Section 3.

**Figure 1-2**
**FIVE-YEAR WORK PROGRAM PROCESS**




- **Is the Forecast Financially Feasible?**
- **If No – Revisit Work Program projects and/or evaluate alternative funding source(s)**
- **If Yes, Work Program is presented for approval**

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## Section 2

# 2. THE MDX SYSTEM

## 2.1 OVERVIEW OF THE MDX SYSTEM

The existing MDX System, shown in Figure 2-1, consists of the five primary expressways noted below. It contains 33.6 centerline miles of highway, 223.9 lane-miles, twenty seven electronic toll collection gantry sites (forty gantries total), an administrative headquarters facility, 116 bridges and various other structures along the following expressways (collectively the "System").

- Airport Expressway (SR 112) from LeJeune Road and NW 21st Street (Miami International Airport) to the I-95 / I-195 Interchange.
- Dolphin Expressway (SR 836) from NW 137th Avenue to the I-95 / I-395 Interchange.
- Don Shula Expressway (SR 874) from the Homestead Extension of Florida's Turnpike to the Palmetto Expressway (SR 826).
- Snapper Creek Expressway (SR 878) from the Don Shula Expressway (SR 874) to US 1.
- Gratigny Parkway (SR 924) from the Palmetto Expressway (SR 826) to NW 27th Avenue. MDX also acquired jurisdiction over a portion of NW 138th Street.

The existing System is discussed in more detail in the following sections that include:

- A description of the facilities;
- A description of the overall System's physical condition; and
- A summary of MDX's Operations and Maintenance requirements.

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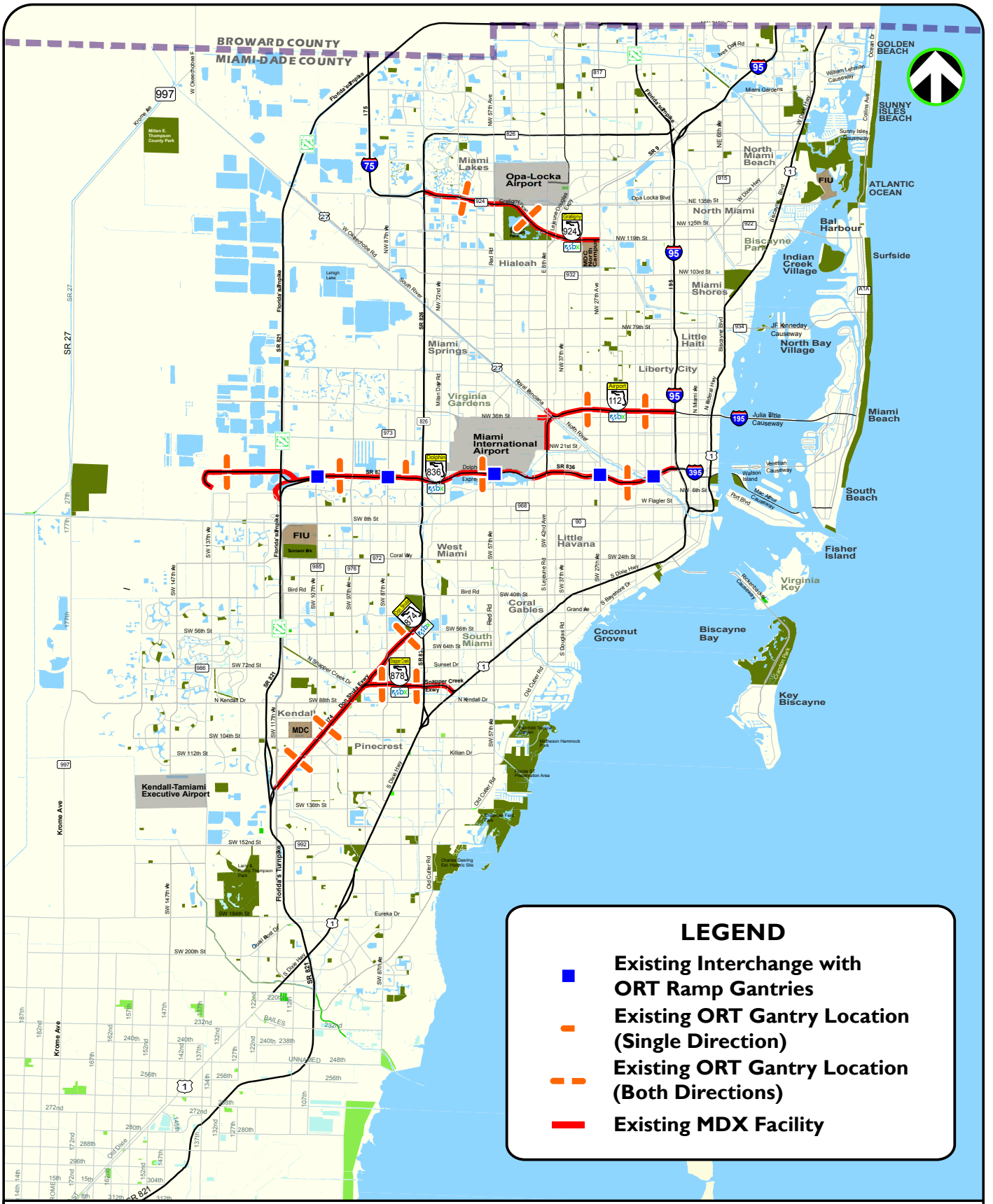


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**Figure 2-1: Existing System**

## 2.2 EXISTING SYSTEM

The following describes the existing five expressways.

**The Airport Expressway (SR 112)** is generally a six-lane toll road that serves east-west commuter traffic in the eastern portion of the County, providing access to and from Miami International Airport (MIA) on the west and to the I-95 and I-195 Interchange on the east (see Figure 2-2). The Airport Expressway is 4.1 miles in length, contains 26.2 lane miles, and extends from LeJeune Road and NW 21st Street (Miami International Airport) to an interchange with I-95. East of I-95, the Airport Expressway connects to I-195, which is another major access road to and from the city of Miami Beach. On November 15, 2014, SR 112 was converted to all electronic toll collection, referred to as Open Road Tolling. This conversion included the removal of the existing EB only toll plaza and all cash collection. There are two separate ORT tolling points on the Airport Expressway. Both locations collect tolls from both eastbound and westbound traffic. The first ORT tolling point is located between LeJeune Road and NW 27th Avenue. The second ORT tolling point is located between NW 17th Avenue and NW 12th Avenue.

**The Dolphin Expressway (SR 836)**, (see Figure 2-3and 2-4), is generally a six-lane toll road with the most heavily travelled sections upgraded to eight-lanes, with the Extension from NW 137th Avenue to Florida's Turnpike being only 4 lanes. SR 836 is oriented in an east-west direction serving as the main expressway link between downtown Miami, the central and western areas of the County and Miami International Airport (MIA). The Dolphin Expressway is 14.0 miles in length, contains a total of 98.3 lane miles, and extends from an interchange with NW 137th Avenue to an interchange with I-95 near downtown Miami. East of I-95, the Dolphin Expressway connects to I-395 and the MacArthur Causeway, which serves as one of the major access roads to and from the City of Miami Beach.

As of the date of this report, SR 836 has been converted to all electronic toll collection, referred to as Open Road Tolling. This conversion included the removal of the existing EB and WB toll plaza at NW 97th Avenue and the EB only toll plaza at NW 17th Avenue,

along with the elimination of all cash collection. SR 836 now has 4 mainline tolling points, each location collects tolls from both the eastbound and westbound roadways, 13 ramp tolling points and one additional tolling point on the westbound CD road between NW 87th Avenue and SR 826, see figures 2-3 and 2-4.

The four mainline tolling points are located as follows:

- Just east of NW 137th Avenue
- Just west of NW 97th Avenue
- Just west of NW 57th Avenue
- Just west of NW 17th Avenue

The thirteen ramp tolling points are located as follows:

- NW 107th Avenue eastbound off-ramp and westbound on-ramp (2)
- NW 87th Avenue eastbound on-ramp and westbound off-ramp from SR 826 (2)
- NW 57th Avenue eastbound on-ramp and westbound off-ramp (2)
- NW 27th Avenue eastbound off ramps and westbound on-ramps (4)
- NW 12th Avenue eastbound on-ramps and westbound off-ramp (3)

The single CD tolling point is located on the westbound CD road between NW 87th Avenue and SR 826

**The Don Shula Expressway (SR 874)**, (see Figure 2-5), serves commuter traffic traveling from the southwest area of the County. The Don Shula Expressway is 7.2 miles long, contains a total of 49.4 lane miles, and extends from an interchange with the HEFT to an interchange with the Palmetto Expressway (SR 826). This toll road has six lanes from the HEFT to the Snapper Creek Expressway (SR 878), with additional auxiliary lanes provided between Killian Parkway and the Snapper Creek Expressway. From the Snapper Creek Expressway to the Palmetto Expressway (SR 826) this toll road has recently been widened to a six-lane divided highway from a four lane divided highway. On July 17, 2010, SR 874 was converted to all electronic toll collection, referred to as Open Road Tolling. There are three separate ORT tolling points on the Don Shula

Expressway. All three locations collect tolls from both northbound and southbound traffic. The first ORT tolling point is located between the HEFT and Killian Parkway. The second ORT tolling point is located between Killian Parkway and the Snapper Creek Expressway (SR 878). The third tolling point is located between the Snapper Creek Expressway and the Palmetto Expressway (SR 826).

**The Snapper Creek Expressway (SR 878)** is located between the Don Shula Expressway (SR 874) and US 1 (see Figure 2-5). The Snapper Creek Expressway is a four-lane divided expressway with two lanes in each direction. The Snapper Creek Expressway is 3.0 miles in length, and contains a total of 13.1 lanes miles. On July 17, 2010, SR 878 was converted to ORT. There are two separate ORT tolling points on the Snapper Creek Expressway. Both locations collect tolls from both eastbound and westbound traffic. The first ORT tolling point is located between the Don Shula Expressway and SW 87th Avenue. The second ORT tolling point is located between SW 87th Avenue and US 1.

**The Gratigny Parkway (SR 924)** is a six-lane divided toll road located in the northern area of the County (see Figure 2-6). The Gratigny Parkway is 5.4 miles in length, contains a total of 37.0 lane miles, and extends from an interchange with I-75 and the Palmetto Expressway to approximately NW 27th Avenue, at which point it transitions into NW 119th Street. On June 7, 2010, SR 924 was converted to ORT. There are two separate ORT tolling points on the Gratigny Parkway. Both locations collect tolls from both eastbound and westbound traffic. The first ORT tolling point is located between I-75 and NW 57th Avenue. The second ORT tolling point is located between NW 57th Avenue and the NW 42nd Avenue /NW 37th Avenue connector. As part of MDX Work Program Project No. 92404, MDX reconstructed a 1.6 mile portion of NW 138th Street to a predominantly 6 lane section. This section of NW 138th Street will ultimately become part of the SR 924 Extension West to the HEFT and was transferred to MDX in February of 2012.

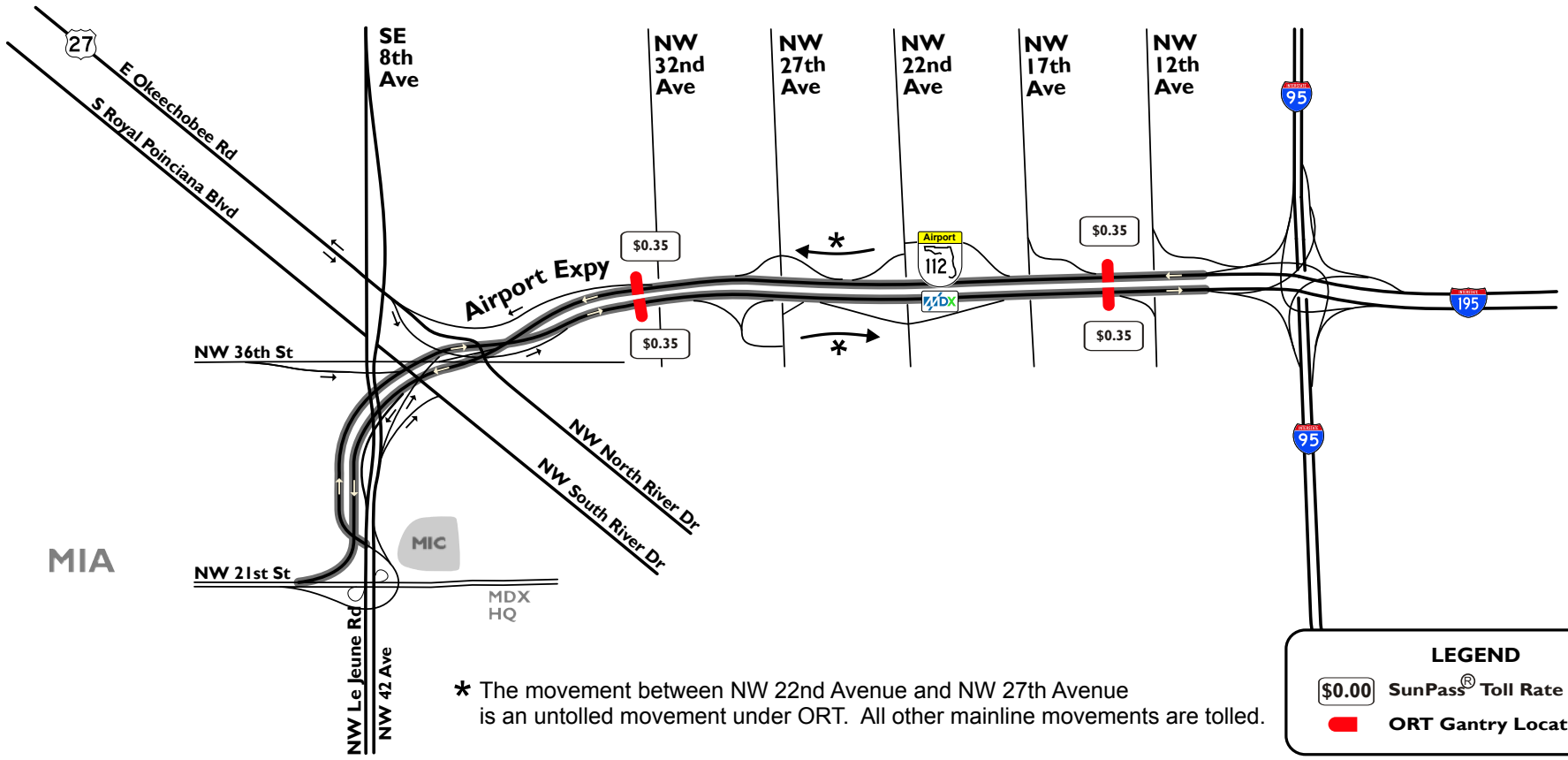
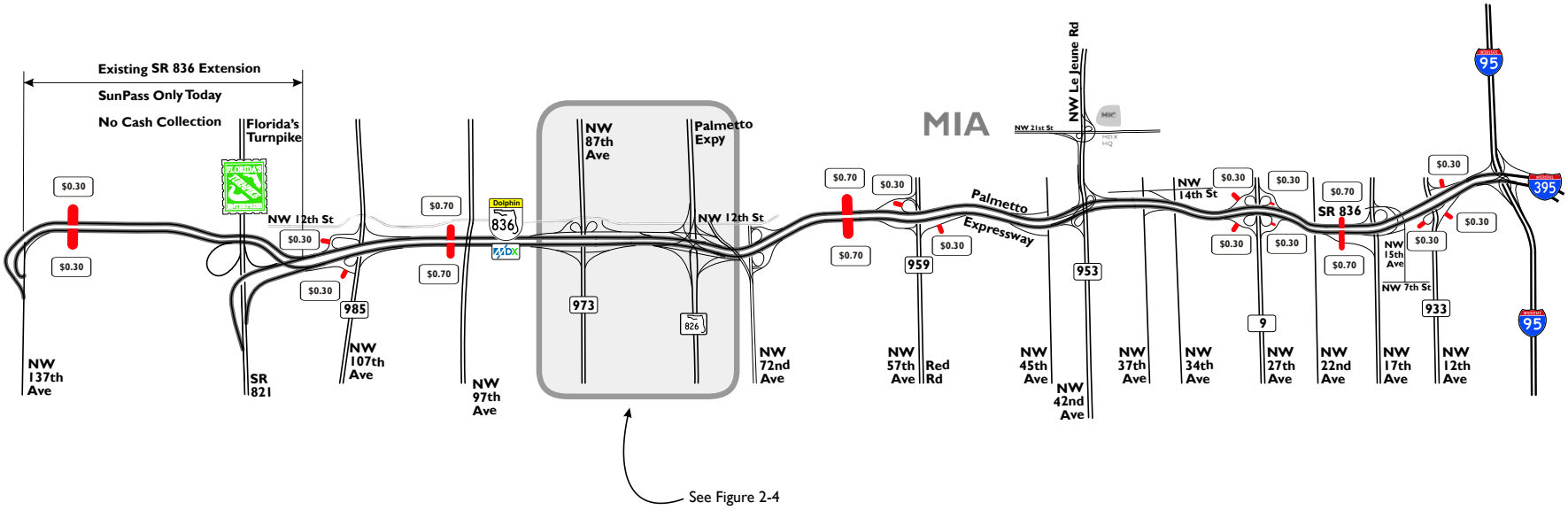



**Figure 2-2: Airport Expressway (SR 112)**




Note: Interchanges are shown with 2016 configuration

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**Figure 2-3: Dolphin Expressway (SR 836)**

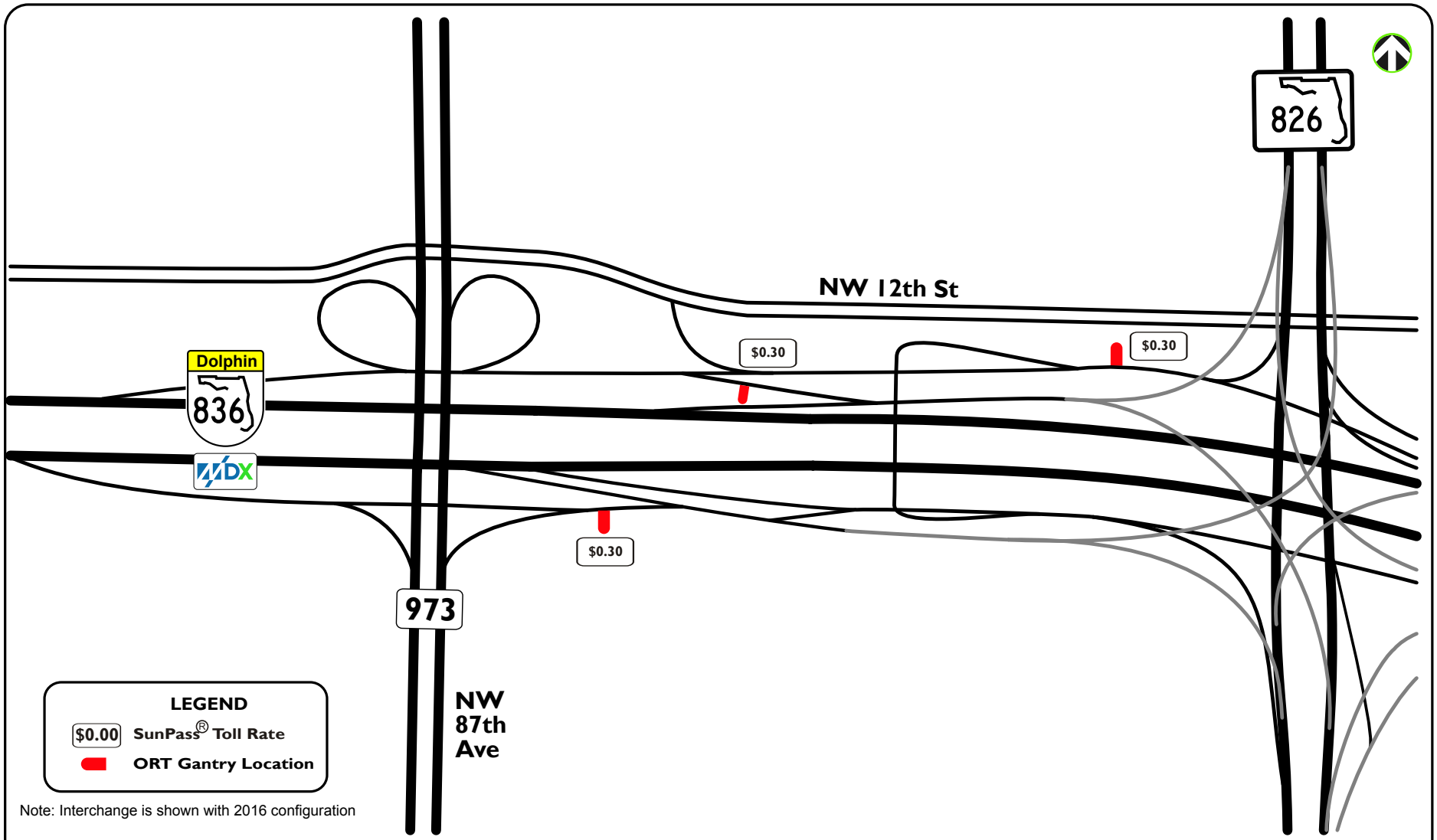


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**Figure 2-4: Dolphin/Palmetto Expressway Interchange**

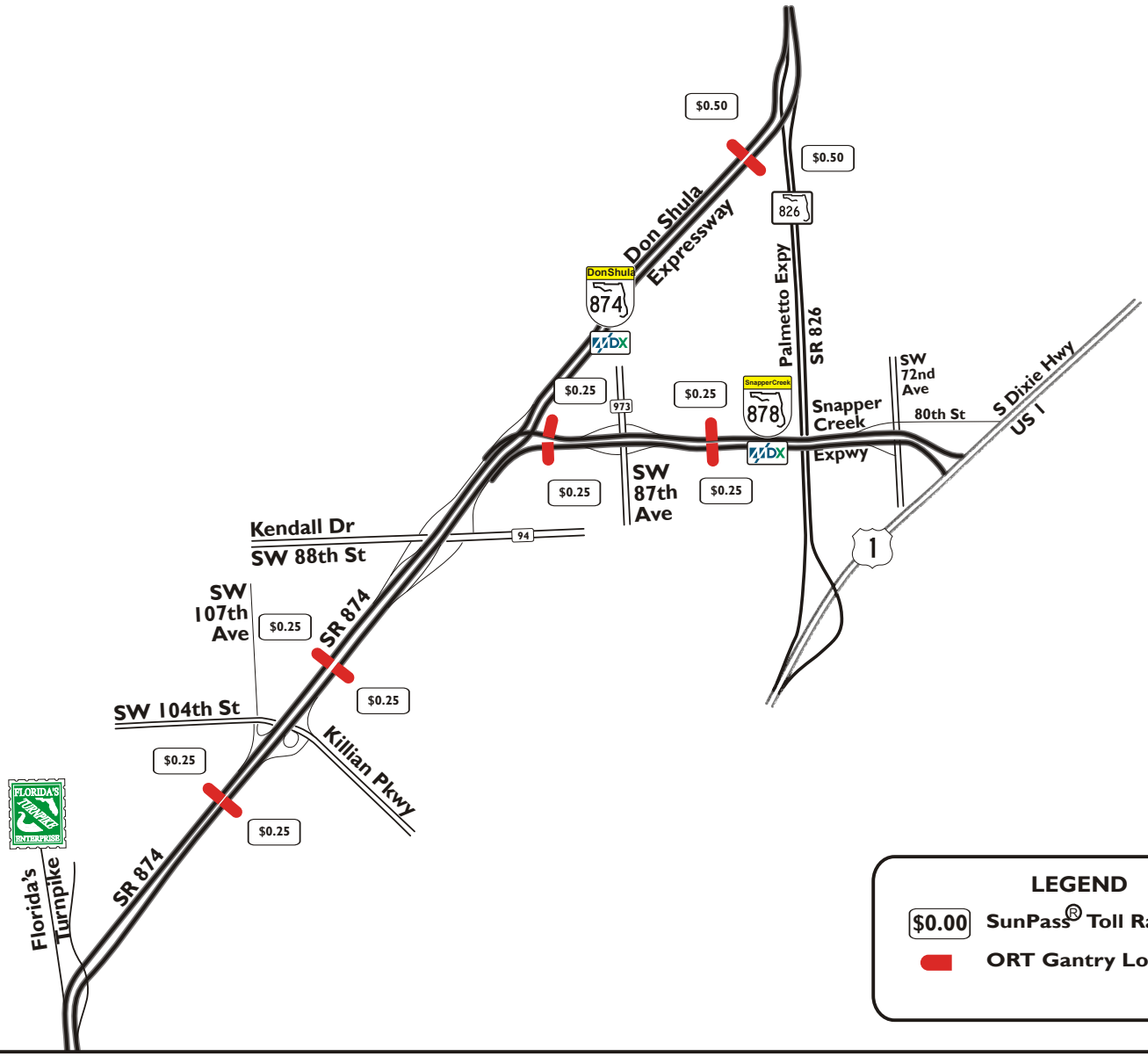


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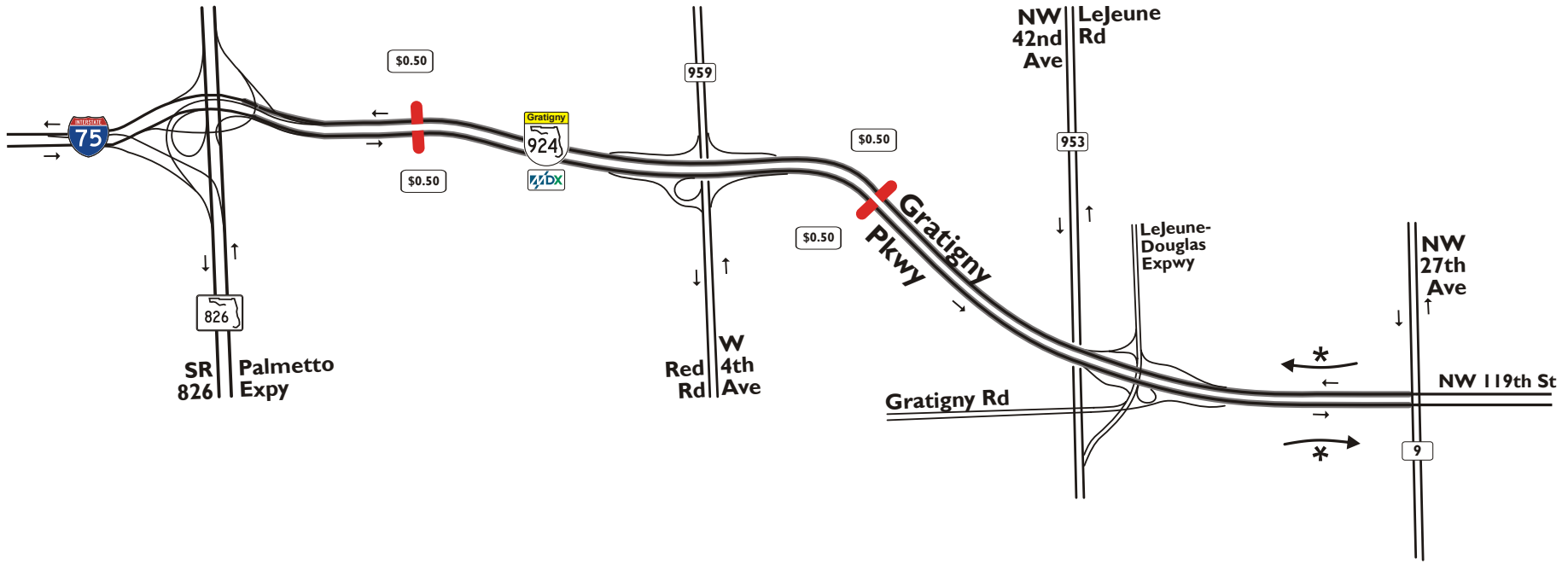
**Figure 2-5: Don Shula Expressway (SR 874) and Snapper Creek Expressway (SR 878)**




* The movement between NW 27th Avenue and LeJeune-Douglas Road is an untolled movement under ORT. All other mainline movements are tolled.

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**Figure 2-6: Gratigny Parkway (SR 924)**

## 2.3 SYSTEM CAPACITY

Table 2-1 provides a general summary of the level of service (LOS) at which the existing System is operating. Generalized levels of service and estimated daily roadway capacities were derived from the 2013 FDOT Quality/Level of Service Handbook.

The concept of LOS uses qualitative measures that characterize operational conditions within a traffic stream and their perception by motorists and passengers. The descriptions of individual levels of service characterize these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, and comfort and convenience. It is important to note that LOS is simply a qualitative breakdown from the roadway user's perspectives of transportation quality of service.

Based on the Highway Capacity Manual (HCM), the level of service grading criteria ranges from LOS A to LOS F, with LOS A representing a free-flow condition and LOS F representing failing conditions. The letter grades in between represent the various levels of congestion. LOS E is recognized as the minimum acceptable level of service for MDX expressways, as defined by Rule Chapter 14-94, Florida Administrative Code (F.A.C.) - Statewide Minimum Level of Service Standards for limited access roadways in urbanized areas with a population over 500,000 residents. It should be noted that there are two roadway segments identified as being at LOS F in Table 2.1. MDX currently has two projects under construction (MDX Projects 83608 and 83628) that will add capacity and improve the LOS and safety in these areas. Please see Section 3.1.1 of this report for additional information on these projects.

The following definitions reflect the general qualitative measure for each level of service.

- LOS A – Completely free flow conditions with operation of vehicles virtually unaffected by the presence of other vehicles.
- LOS B – Free flow, with presence of other vehicles becoming noticeable and average travel speeds slightly diminished from LOS A.
- LOS C – Influence of traffic density on operations is apparent, with ability to maneuver within the traffic stream clearly affected by the presence of other vehicles.

- LOS D – Bordering on unstable flow, with speeds and ability to maneuver severely restricted because of traffic congestion.
- LOS E – Operations at or near capacity, with unstable conditions.
- LOS F – Forced or breakdown flow, where vehicles traveling on the roadway arrive at a roadway segment at a rate greater than that at which they are discharged, forcing queues to form on the roadway. In this LOS, demand on the roadway exceeds the capacity.

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## Table 2-1

## Existing System Level of Service (LOS) Summary

| Roadway[1] | Existing Conditions | | | Generalized Level of Service | |
|---|---|---|---|---|---|
| | No. of Lanes (mainline+aux.) | Maximum Daily Service Volume (veh/day) | AADT[2] 2014 | Volume to Capacity Ratio | LOS |
| **Dolphin Expressway / SR 836** | | | | | |
| Bet. NW 137 Avenue - HEFT | 4+0 | 84,600 | 23,000 | 0.27 | B |
| Bet. NW 107 Avenue - NW 87 Avenue | 8+0 | 176,600 | 128,672 | 0.73 | D |
| Bet. NW 72 Avenue - NW 57 Avenue | 8+0 | 158,940 [4] | 197,500 | 1.24 | F |
| Bet. NW 27 Avenue - NW 17 Avenue | 6+0 | 117,540 [4] | 145,500 | 1.24 | F |
| **Airport Expressway / SR 112** | | | | | |
| Bet. LeJeune Road - NW 27 Avenue | 6+0 | 130,600 | 105,000 | 0.80 | D |
| Bet. NW 17 Avenue - NW 12 Avenue | 9+0 | 199,650 | 115,000 | 0.58 | C |
| **Don Shula Expressway / SR 874** | | | | | |
| Bet. HEFT - Killian Parkway | 6+0 | 130,600 | 87,500 | 0.67 | C |
| Bet. Killian Parkway - Kendall Drive | 6+4 | 210,600 [3] | 107,500 | 0.51 | C |
| Bet. SR 878 - SR 826 | 6+0 | 130,600 | 81,000 | 0.62 | C |
| **Gratigny Parkway / SR 924** | | | | | |
| Bet. SR 826 - NW 57 Avenue | 6+0 | 130,600 | 60,000 | 0.46 | B |
| Bet. NW 57 Avenue - LeJeune Road | 6+0 | 130,600 | 47,500 | 0.36 | B |
| **Snapper Creek Expressway / SR 878** | | | | | |
| Bet. SR 874 - SW 87 Avenue | 4+0 | 84,600 | 40,500 | 0.48 | B |
| Bet. SW 87 Avenue - SW 72 Avenue | 4+0 | 84,600 | 40,000 | 0.47 | B |

Notes:

1) All data presented in this table pertains to mainline sections of the designated roadways in the vicinity of each existing or proposed toll gantry/plaza.

2) Annual average daily traffic volumes ("AADT") for calendar year 2014 obtained from the 2014 FDOT Traffic Information DVD.

3) Based on the 2012 FDOT Generalized Level of Service table, Max. Daily Service Volume adjusted by (+20,000 veh/day) for auxiliary lane.

4) Based on the 2012 FDOT Generalized Level of Service table, Max. Daily Service Volume adjusted by (-10%) for oversaturated conditions.

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The most heavily traveled portion of the System is the Dolphin Expressway between NW 72nd Avenue and NW 57th Avenue. Demand exceeds capacity in various roadway segments along the Dolphin Expressway, mostly east of SR 826. MDX Projects 83608, 83628, 83629 and 83611 are, or soon will be, adding capacity to these sections of the Dolphin Expressway as part of the MDX 2017 – 2021 Five-Year Work Program. Please see Section 3.1.1 of this report for additional information on these projects.

## 2.4 EXPRESSWAY SYSTEM ANNUAL INSPECTION AND REPORT

### 2.4.1 Overview

In accordance with the requirements of MDX's Amended and Restated Trust Indenture dated as of June 15, 2002 (Trust Indenture), the Consulting Engineers for MDX are required to perform an annual inspection of the System and submit a report of the inspection and condition of the System. The Annual Inspection Report summarizes the findings of the inspection by category as follows:

- Roadway
- Bridges
- Intelligent Transportation Systems (ITS)
- Buildings
- Toll Gantries

The annual inspection of the System used for this report was performed by EAC serving as the MDX General Engineering Consultant, GEC B, and included a system-wide visual inspection of conditions throughout the System's roadways and at administration buildings and toll gantry facilities. The results of the inspection were documented in the Annual Inspection Report for FY 2015, dated December of 2015 and are summarized herein.

Each bridge structure is inspected by certified bridge inspectors on a two year cycle from the date such structure is originally placed in service. Inspections for the 116 bridges within the System are staggered within a two-year period. MDX's bridge structures are in good condition, with various minor repairs required.

### 2.4.2 Summary of Annual Inspection Report

This section contains a summary of the inspection assessment contained in the 2015 Annual Inspection Report prepared by EAC. MDX adopted the rating program procedures of FDOT and the condition of the System is evaluated by MDX under the FDOT Maintenance Rating Program (MRP) and by the Consulting Engineer during the annual inspection. The MRP is conducted three times a year at randomly selected locations to provide an in-depth quality assurance assessment of services provided by the asset maintenance contractor. Analysis of data assembled during the annual inspections assists in developing the Renewal and Replacement Program and the Capital Improvement Program components of the MDX Five-Year Work Program.

### 2.4.3 Annual Inspection Program Objective

This inspection program was conducted to meet the requirements set forth by the Trust Indenture. It provides MDX with an assessment of the overall condition of the System and identifies any specific work needs and deficiencies. The objective of the inspection program is to collect information and make observations in each of the areas outlined, analyze the data, determine whether or not System needs are adequately addressed in the current MDX maintenance program or Renewal & Replacement and Improvement projects and provide an overall assessment of the condition of the System.

The inspection program consists of a visual inspection of the infrastructure's condition throughout the MDX System of roadways and gantry facilities. The summary of the inspection report provides information on the operational and overall physical condition of each roadway facility.

### 2.4.4 Annual Inspection Program Scope

To accomplish the objective of this inspection program, the following format was followed to collect the data, assess conditions and provide information for inclusion in MDX's maintenance and Work Programs.

An inventory system was developed as part of the Annual Inspection process by GEC B, together with MDX, to collect data in order to record the conditions and assess the necessary repairs/maintenance of all facilities of the MDX System. A system-wide inspection was conducted to identify the condition of roadway components, such as pavement, drainage structures, barrier walls, noise walls, mechanically stabilized earth (MSE) walls, guardrail, lighting, signing, pavement striping and markings, retro reflective pavement markers, fencing and landscaping. The system-wide inspection also identified the condition of building facilities, which includes the roof, walls, lighting, HVAC, electrical systems, windows and doors. Also inspected was the condition of ITS components such as tolling equipment, pull boxes, fiber route markers, splice vaults, concrete aprons, loop detectors and all appurtenances. Monitoring of the tolling equipment itself is accomplished using the Maintenance Online Management System (MOMS), a software program which tracks and notifies MDX of any malfunctions with any components of the system. The inspections of bridges, ORT gantry structures, overhead sign structures and high mast light towers were conducted by independent structure inspection firms certified by the State of Florida. Data from these structure inspection reports were relied upon for this report as allowed by the Trust Indenture.

The work needs and repair items identified during the visual inspection were transferred to detailed data collection sheets and supplemented with photographs taken of typical conditions to visually record the observed conditions. Any condition adequately being addressed in the routine maintenance program or in ongoing MDX projects was then cross referenced to the appropriate MDX Project/Contract Number. A listing of needs not specifically addressed as part of routine maintenance or current MDX projects was then prepared. This listing is presented in the 'Recommendations' section of the report.

### 2.4.5 Performance Measures

MDX utilizes the FDOT Maintenance Rating Program (MRP) to assess the overall condition of its roadway system. The MRP provides a method of conducting a visual and mechanical evaluation of routine highway maintenance conditions. Inspection scores are

weighted in accordance with FDOT procedures based on Element Type and Facility Type (all MDX facilities are "Urban Limited Access").

The purpose of this evaluation is to provide information that can be used to schedule and prioritize routine maintenance activities and to provide uniform maintenance conditions that meet established objectives. Additionally the MRP provides a uniform means of comparing one roadway facility to another or of comparing prior inspections on the same facility. General program requirements are outlined in the Maintenance Rating Program Handbook published by the FDOT. MRP inspections are performed three (3) times during the fiscal year by an MDX independent MRP inspection firm. The MRP inspection firm is trained and certified by FDOT in MRP inspections.

The MDX Performance Criteria Goal is an overall FY average MRP score of 91 out of 100. The MDX Asset Maintenance Contract contains significant financial disincentives in case the Asset Maintenance Contractor does not maintain the MDX roadway system at or above this minimum rating level. The MDX Performance Criteria Goal exceeds the Florida Transportation Commission required MRP minimum for Toll Roads, which is an average MRP of 90, to help ensure compliance. Please see Section 2.5.3 for additional information on the implementation of the MDX MRP program.

FY 2015 MRP results are provided in Table 2-2 below.

**TABLE 2-2**

| Existing Expressway System MRP Condition Rating - FY 2015 | |
|---|---|
| Trimester No. | Results |
| 1 | 89.9 |
| 2 | 92.5 |
| 3 | 90.0 |
| FY 2015 Overall | 90.8 |

Source: MDX

The most recent year end MRP overall score of 90.8 meets the Performance Criteria Goal of 91, and indicates a satisfactory level of maintenance on the System for the safety of patrons.

### 2.4.6 Assessment of Expressways and Toll Facilities

The assessment of the expressways and toll facilities operations and conditions is based on the inspection, data collection and data characterization by corridor for roadway features, tolling facilities and administration buildings. An inspection of the entire length of each expressway in both travel directions, toll facilities, administration buildings and the MDX headquarters building was performed by EAC. Additionally, toll personnel, MDX maintenance personnel, MDX maintenance contractor personnel and GEC personnel involved in the Five-Year Work Program development were interviewed for clarification of the scope for all projects included.

The assessment classifies the inspection information and identifies work needs and necessary repairs. This process determines whether or not the needs are being addressed in current MDX projects and assists in developing an implementation program for those needs not already being addressed.

### 2.4.7 Inspection

The findings of the inspection for each expressway continue to show the level of maintenance meets the performance criteria goal of 91.

The overall analysis of the assets on a given expressway or of the MDX System as a whole is a subjective assessment based on the following:

- Consideration of the number of and type of needs identified in relation to the expressway length;
- Determination as to whether the work or repair needs are being adequately addressed under current MDX projects/contracts;
- Consideration of the expressway classification (all MDX expressways are classified as Urban Limited Access);
- Consideration of the Average Annual Daily Traffic (AADT);

- Acknowledgement that at any given point in time there will be a "normal" backlog of items resulting from vehicular impact damage awaiting repair; and
- Consideration of residual effect of any previous year's natural disasters. In this region hurricane damage is typically a factor to contend with during any given year.

#### 2.4.7.1 Roadway Assessment

##### 2.4.7.1.1 Roadway

The results of the inspections of the roadways within the MDX System indicate that most of the roadway pavement is new and in good condition with the exception of isolated areas along the west end of SR 924. MDX Work Program No. 30034 includes milling and resurfacing to address all noted deficiencies in this area. Construction is scheduled for 2016.

Concrete pavement areas on the east end of SR 836 are from original construction and are exhibiting cracking and repetitive repairs of potholes. Repair of this area has been included in MDX Project No. 83611.

##### 2.4.7.1.2 Drainage

The drainage system is in good condition system-wide, with the exception of the East end of SR 924, where excessive roadway flooding has been observed during extreme storm events. MDX Work Program Project No. 40044 will upgrade the drainage system in this area. Construction is scheduled to begin in 2016.

Most drainage structures and culverts show a normal degree of sedimentation, with no ponding or flooding observed.

##### 2.4.7.1.3 Structural

With regard to bridges, extensive and detailed inspections are performed on a bi-annual basis for MDX through the Inspections & Reporting Services for MDX Structures contract by TranSystems Corporation Consultants & Marlin Engineering, Inc. Inspections are required to be performed by Florida Certified Bridge Inspection/Engineering firms. MDX has chosen to group these inspections into two 2-year cycles for the purposes of tracking and programming. The Asset Management Contractor performs maintenance of

the MDX System including routine bridge repairs. MDX reported to the Florida Transportation Commission that 99% of its bridges were rated as good or better according to FDOT Structural Condition Appraisals rating criteria and no bridges have posted weight restrictions for FY 2015.

Toll Gantries structural components such as columns, mono-tube and flange connections are inspected by independent Consultants for MDX on a bi-annual basis.

Roadway structural components that include curbs, gutters and barrier walls are in good to excellent condition. Any vehicular impact damage is being addressed through routine Maintenance.

#### 2.4.7.1.4 Barriers and Fences

The Limited-Access fencing is generally in good condition system-wide. There are some access gates throughout the MDX system that require minor adjustments for smooth operation.

Attenuators are in excellent condition system-wide. Although guardrail is in good condition, there is a normal backlog of accident related locations where the guardrail is damaged.

#### 2.4.7.1.5 Pavement Markings and Signage

The majority of existing signs are in good to excellent condition. Reflective Pavement Markers (RPM's) are for the most part in good condition. On SR 112 the RPM's were replaced under MDX Work Program No. 30030 and 30031. In addition, old multi-post and overhead signs on SR 112 & SR 836 from NW 17th Avenue to NW 22nd Avenue were replaced and new signs were installed as part of the Open Road Tolling infrastructure improvement projects under MDX Work Program No.11209 & 83624. On SR 874 from Kendall Drive to SR 826 (Palmetto Expressway) the RPM's were replaced under MDX Work Program No. 87409.

#### 2.4.7.1.6 Electrical

The roadway lighting system is in good to excellent condition. Improvements were made on SR 112 and SR 836 as part of the MDX Work Program Project Nos. 11209, 30030, 30031 and 83624.

#### 2.4.7.1.7 Intelligent Transportation System (ITS)

Intelligent Transportation Systems (ITS) components, such as CCTV cameras, detectors, load centers, control cabinets, etc. are in good operational condition system-wide. The majority of the ITS route markers are in good condition system-wide, with some isolated areas in which the route markers have sustained damage and require replacement. The concrete apron for the ITS pull boxes are damaged or missing at various locations system-wide. The repair work will be performed under the ITS Maintenance Contracts.

#### 2.4.7.1.8 Vegetation/Aesthetics

Roadways are in good condition with regards to landscaping and aesthetics. Only a small isolated area of SR 878 remains with invasive and exotic vegetation, which will be removed by the asset maintenance contractor in 2016. The overall appearance of the System has continued to improve as a result of various landscaping projects completed to date.

### 2.4.7.2 Facility / Buildings Assessment

#### 2.4.7.2.1 Architectural / Structural

The administration buildings are generally in good condition. The demolition of the SR 112 Toll Plaza and Administration Building under MDX Work Program No. 11209 was completed in July 2015.

The exterior walls of the SR 836 / 17th Avenue Administration building were retrofitted with the fascia panels removed from the old toll plaza. The work was completed in July 2015 under MDX Work Program No. 83624. The terrazzo floor displays cracks and sporadic concrete patches but are well maintained. The roof is in good condition, with the exception of a few areas that have blistering on the cap membrane. There were no active leaks found.

The tunnel at the SR 836 / NW 17th Avenue main toll facility under the eastbound roadway was removed due to the new roadway configuration. The remaining portion is architecturally and structurally in good condition. The concrete walls and floor slab have minor cracks and there are isolated areas were evidence of minor water intrusion was detected. The repairs to seal the cracks were completed under the MDX Work

Program No. 83624.

The SR 874 Administration building exterior stucco walls, windows, doors and vinyl floor tiles are in good condition. The roof shows signs of aging, and there were several leaks detected along the west elevation interior wall. This deficiency must be further evaluated to determine if the water intrusion is coming from the roof, fascia panels or the windows.

The SR 924 Administration building exterior stucco walls, vinyl tile floors, acoustical ceiling tiles, and the doors, are all in good condition. The windows are in fair condition, and the roof shows signs of aging, but there were no active leaks found.

The MDX Headquarters exterior stucco walls, flooring, acoustical ceiling tiles, doors and windows are all in good condition. The parking area pavement shows signs of aging, but is in overall fair condition. The roof is in good condition, with the exception of a few areas that have blistering on the cap membrane. There were no active leaks found.

#### 2.4.7.2.2 Mechanical

The mechanical systems in the administration buildings system-wide are in good condition. The HVAC unit at MDX Headquarters Building No. 1 was replaced under MDX Work Program Project No. 30024. The HVAC equipment received cleaning and general routine maintenance. The Data Collection Shelters at the SR 836 NW 97th Avenue Toll Plaza and at NW 137th Avenue are equipped with HVAC back up units.

The SR 874 administration building emergency generator is in good condition. The generator muffler/exhaust system is insulated and shows minor signs of corrosion.

#### 2.4.7.2.3 Electrical

The electrical inspections of the administration buildings on SR 836, SR 874 and SR 924 reveal that the components are in good condition. The lightning protection system on the SR 924 Administration building is in need of repair.

### 2.4.7.3 Recommendations

The 2015 Annual Inspection Report prepared by EAC Consulting, Inc. has found the MDX System to be in good repair, working order and condition. Based on our review of this report, and our knowledge of the System, HNTB concurs with this determination.

Recommendations are offered for further improvements in the MDX Maintenance Program and Work Program. The recommended actions are outlined below and represent issues identified through the inspection process as well as those identified by MDX Maintenance and Operations personnel. Recommendations are categorized by discipline and degree of urgency. Some recommendations are more general in nature and are directed to the Maintenance and Improvement program as a whole.

Recommendations are made for only those items that may not be adequately addressed in the on-going maintenance program or improvement projects. The following categories are used to assess the level of urgency of work required.

General: recommendations should be considered for inclusion in the work effort at the earliest date that funding allows.

Urgent: recommendations should be addressed as soon as possible to avoid deterioration and additional long term expense.

Critical: recommendations should be addressed immediately to protect the safety of MDX patrons and the MDX System.

**General Recommendations**

Perform an evaluation of the ITS components system-wide to address damaged route markers, pull boxes and concrete aprons.

Perform an evaluation of the slopes on SR 874 mainline north and southbound bridges over the C-100 and C-100C canals and Snapper Creek canal C-2, to address erosion.

**Urgent Recommendations**

Perform an evaluation of the SR 874 Administration Building to determine the cause of the water intrusion along the west elevation interior wall. As of the date of this Consulting Engineer's Report, this item has already been addressed by MDX.

**Critical Recommendations**

There are no recommendations categorized as critical.

## 2.5 MDX OPERATIONS AND MAINTENANCE PROGRAM

### 2.5.1 Toll Operations

All of MDX's Roadways have been converted to Open Road Tolling (ORT) with tolls being collected either by Sunpass transponders or Pay-by-Plate image based post billing. The in-lane equipment and software on SR 874, SR 878 and SR 924 are being maintained by Electronic Transaction Consultants Corporation (ETCC). The ETCC maintenance Contract expires on August19, 2017. The in-lane equipment and software on SR 112 and SR 836 are being maintained by Transcore, LP (Transcore) The Transcore maintenance contract expires on April 30, 2022.

MDX processes its Sunpass transponder transactions thorough the Florida Turnpike Enterprise. Pay-by-Plate transaction images are reviewed and processed by Q-Free America, and then provided to Credit Protection Association for billing. Customer Service operations are also provided by Credit Protection Association. MDX entered into an agreement in Calendar Year 2015 with FTE to participate in the Statewide Centralized Customer Service System (CCSS). The CCSS will provide consolidated customer service and billing operations. Even after the CCSS becomes operational, MDX will continue to be responsible for in-lane hardware and software maintenance and image review operations.

The CCSS will service MDX and two other Florida agencies ("the Agencies"). These other Agencies are Florida's Turnpike Enterprise (FTE) and Tampa Hillsborough Expressway Authority (THEA). The contract is being managed by FTE. The CCSS will provide the following services to the Agencies:

1. Processing and billing of transactions;
2. Identification of the registered owner of the vehicle;
3. Complete operational and financial reconciliation;
4. Comprehensive system reporting;
5. Customer account management;
6. Prepaid and post-paid accounts payment capability, lockbox and payment processing services;
7. Skip tracing and collection for delinquent or uncollectable accounts;
8. Transponder inventory management;
9. All inbound and outbound customer communication, and
10. Website, mobile website, mobile applications and interactive voice response (IVR).

The CCSS is scheduled to be operational in mid to late 2017.

### 2.5.2 Roadway Operations

MDX is currently operating a Traffic Management Center (TMC) which provides oversight for all five System expressways. The TMC is staffed by Florida Drawbridges, Inc. (FDI) with the TMC manager provided by EAC, and provides for monitoring of the System and dispatch of emergency vehicles and Road Ranger services. The TMC is co-located within the FDOT District 6 TMC, which provides for certain efficiencies and proper coordination during events that affect multiple facilities. See Section 2.5.3 for more information on the FDI Contract.

MDX also has a contract with Ted & Stan's Towing Service, Inc. to provide Road Ranger service patrols. The services provided are free to MDX customers who are in

need of assistance on a System roadway. This service rapidly clears breakdowns from the System roadways, thereby improving the safety of the roadways. The current contract ends on June 30, 2017.

MDX currently obtains the insurance for their buildings, except for the MDX headquarters building, and structures as required by the Trust Indenture through FDOT on an annual basis. MDX's share of the insurance premiums is based on the Annual Facility and Bridge Assessment, Insurance Coverage Values, as prepared by HNTB. MDX insures their headquarters building under the Florida League of Cities policy.

Also funded out of roadway operations are MDX costs for electrical service for roadway lighting, ITS and communications systems; utility locate services; Rapid Incident Scene Clearance (RISC); and National Pollutant Discharge Elimination System (NPDES) permit compliance.

### 2.5.3 Roadway Maintenance

Facility and roadway asset maintenance on the System is provided under a Facility and Roadway Asset Maintenance Contract executed in March 2015 with Florida Drawbridges, Inc. (FDI) which has an initial term ending on June 30, 2020, and includes two 2-year renewal options. This is a performance based contract where the key responsibility of FDI is to ensure that all of the components of the System, including, but not limited to buildings, asphalt, turf, bridges, guardrail, attenuators, barrier and noise walls, signs, fence, landscaping, lighting and drainage structures are kept at or above certain performance levels set forth by MDX in the contract documents. The performance of FDI is based on the established MRP rating of 91 as the minimum acceptable rating. The rating of 91 exceeds the Florida Transportation Commission (FTC) required MRP rating for toll roads, which is an annual average MRP score of 90. It should be noted that the FTC required MRP rating for non-tolled limited access roads is 80, so toll roads have to meet a much higher standard. FDI is required to conduct ratings based on the MRP every four months, as prescribed in the latest FDOT MRP Handbook. The contract also

includes financial disincentives for not meeting (i) various contract requirements, (ii) required repair time frames and (iii) required MRP scores as well as false self-reporting. The last complete rating cycle that FDI conducted was for FY 2015. The rating resulted in an average score of 91, which meets the mandatory requirement of the contract.

In addition to the maintenance activities described above, the following activities are also accomplished under Roadway Maintenance:

- Non-routine guardrail/signing/lighting replacements
- ITS field repair services
- Structural inspections/emergency structure design
- Maintenance of the MIAMIS (MDX Inventory and Asset Management Information System) asset maintenance software
- Maintenance support services

### 2.5.4 Operations and Maintenance Projections

The following projections were developed through a collaborative effort among MDX staff and HNTB according to the following parameters:

- The approved MDX FY 2017 Operation and Maintenance budget was used as a baseline.
- MDX then compared the FY 2017 budget to the FY 2016 actual amounts and/or projected actual amounts to determine if there was any need to adjust costs for future projections.
- This information, together with any known proposed changes in Operation and Maintenance procedures, was then used to assist in developing the projections.
- MDX also reviewed existing contracts and used the amounts per these contracts for the projections. Projections beyond the term of the contracts assumed an inflation rate of 3% per year.
- HNTB provided any changes in Operation and Maintenance costs resulting from new MDX Five-Year Work Program projects that would be completed and put into operation during the projection period.
- MDX did not include any Operation and Maintenance costs for any projects currently in the planning or design phase, unless money for construction was also included in the MDX Five-Year Work Program. These Operation and Maintenance costs, as well as potential future

revenue, will be evaluated on a case-by-case basis prior to any of these projects being funded for construction in the MDX Five-Year Work Program.

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**Table 2-3**
**Summary of Forecasted Operations, Maintenance and Administrative (O, M & A) Expenses. Forecasts based on implementation of the Five-Year Work Program (in $000s)**

| FISCAL YEAR | OPERATIONS | MAINTENANCE | ADMINISTRATIVE | TOTAL |
|---|---|---|---|---|
| 2017 | $39,219 | $7,352 | $13,248 | $59,819 |
| 2018 | $41,324 | $7,876 | $13,433 | $62,633 |
| 2019 | $42,564 | $8,151 | $13,836 | $64,551 |
| 2020 | $43,841 | $8,437 | $14,251 | $66,529 |
| 2021 | $45,156 | $8,732 | $14,679 | $68,567 |
| 2022 | $46,511 | $9,038 | $15,119 | $70,667 |
| 2023 | $47,906 | $9,354 | $15,573 | $72,833 |
| 2024 | $49,343 | $9,681 | $16,040 | $75,064 |
| 2025 | $50,824 | $10,020 | $16,521 | $77,365 |
| 2026 | $52,348 | $10,371 | $17,017 | $79,736 |
| 2027 | $53,919 | $10,734 | $17,527 | $82,180 |
| 2028 | $55,536 | $11,109 | $18,053 | $84,699 |

Source: MDX, with O&M information on new Work Program projects provided by HNTB.

### 2.5.5 Renewal and Replacement Projections

The following Renewal and Replacement (R&R) Program was developed through a collaborative effort between MDX staff and HNTB according to the following parameters:

- The Renewal and Replacement Program is based on information obtained from the 2015 Annual Inspection Report, the System-wide Bridge Rehabilitation/Replacement Planning Study, HNTB's familiarity with the System and experience preparing similar programs for other toll agencies.
- It is intended to cover unusual or extraordinary maintenance or repairs, maintenance or repairs not recurring annually, and renewals and replacements on the System.
- It also anticipates Renewal and Replacement requirements for projects that are currently funded for construction in the FY 2017-2021 Five-Year Work Program.
- Costs used in the development of this program were derived from bids received on recent MDX Projects, together with FDOT local unit bid prices.
- This information was then discussed with MDX staff to assist in developing the projections.

**Table 2-4**

**Summary of Forecasted Renewal and Replacement Costs**

(in $000s)

| FISCAL YEAR | R&R COSTS |
|---|---|
| 2017 | $5,172 |
| 2018 | $8,536 |
| 2019 | $3,212 |
| 2020 | $2,908 |
| 2021 | $2,095 |
| 2022 | $17,092 |
| 2023 | $9,355 |
| 2024 | $9,102 |
| 2025 | $18,458 |
| 2026 | $19,780 |
| 2027 | $16,740 |
| 2028 | $21,923 |
| 2029 | $14,045 |
| 2030 | $17,224 |

In addition to the amounts shown above for the MDX R&R Program, MDX is also making additional deposits to the credit of the R&R Fund to fund a portion of the MDX Transportation Improvement Program. Section 5.09 of the Authority's Trust Indenture allows the use of R&R funds to pay for all or any part of the cost of any System Improvements.

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## Section 3

# 3. FISCAL YEAR 2017 - 2021 FIVE-YEAR WORK PROGRAM PROJECTS

## 3.1 INTRODUCTION

The following major changes, in addition to various smaller changes, have been made to the MDX Fiscal Year 2017-2021 Five-Year Work Program, as compared to the Fiscal Year 2015-2019 Five-Year Work Program, which was the basis of the previous Consulting Engineer's Report for the MDX Toll System Revenue and Refunding Revenue Bonds, Series 2014B.

- Project Number 83611, SR 836 / I-95 Interchange Improvement: the scope was revised to award the project together with FDOT's I-395 project and the funding agreement was negotiated for a decrease in MDX's total project cost from $304.5 million to $237.7 million which includes $35.0 million in funding from FDOT.
- Project Number 83628, SR 836 Operational, Capacity and Interchange Improvements: the design-build phase was awarded and the total estimated cost was reduced by $6.6 million.
- Project Number 87410, SR 874 Ramp Connector to SW 128th Street: the design-build phase was awarded for a total decrease of $17.0 million.
- Project Number 87413, SR 874 / SW 72$^{nd}$ Street Interchange: this project was added for a total increase of $10.3 million. The project includes a southbound exit ramp to SW 72nd Street and a northbound entrance ramp to SR 874.
- Project Number 50001, Dolphin Station Park & Ride: this project was added for a total increase of $10.0 million. FDOT together with Miami Dade Transit (MDT) are funding 100% of the project cost while MDX is fast-tracking the construction.
- Project Numbers 40045 and 40046, Wrong Way Safety Program and Systemwide Safety Improvements (Phase II): these projects were added to implement safety improvements resulting from the safety studies of high-crash locations for a total increase of $4.9 million.
- Project Numbers 30042 through 30049, System Preservation Projects: these projects were added for an increase of $8.5 million in order to maintain MDX's

System of roadways in good condition as programmed in the MDX Long-Range Renewal & Replacement Program.

Individual project descriptions, projected date of completion, estimated total costs of the TIP, CIP and R&R Projects within the five-year window from FY 2017-2021 and the Total Project Budget are summarized in Table 3-1 as well as other funding needs of the Authority. These figures are totaled by project phase.

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# Table 3-1

# FY 2017-2021 Five-Year Work Program – Approved Budget

# Transportation Improvement Program

**FUNDED PROGRAM NEEDS**

| Proj. No. | Project Name / Description | Phase | Actuals Thru FY15 | Projected FY16 Budget | FY17 THRU FY21 ($000s) FY17 | FY18 | FY19 | FY20 | FY21 | 5-Year Total Budget | Total Project Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **11209** | **SR 112 Infrastructure Modifications for Open Road Tolling** | | | | | | | | | **$0** | **$15,675** |
| | Removal of existing toll plaza, installation of gantries, shelter and on & off system signage, and modification to the SR 112 roadway in the area of the gantries to accommodate highway-speed vehicle traffic for implementation of Open Road Tolling. | Proj. Development | $235 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $235 |
| | | Final Design | $2,165 | $2 | $0 | $0 | $0 | $0 | $0 | $0 | $2,167 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $11,502 | $1,771 | $0 | $0 | $0 | $0 | $0 | $0 | $13,273 |
| | | Design/Build | | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **11211** | **Central Boulevard Reconstruction** | | | | | | | | | **$0** | **$60,899** |
| | JPA with FDOT and Miami International Airport for partial funding and construction of Central Boulevard, the primary access roadway between MIA and SR 112 and SR 836. | Proj. Development | $663 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $663 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $57,185 | $3,051 | $0 | $0 | $0 | $0 | $0 | $0 | $60,236 |
| **83608** | **SR 826 / SR 836 Interchange Improvements** | | | | | | | | | **$46,500** | **$214,579** |
| | Design, Construction and Right-of-Way JPA w/ FDOT for partial funding of SR 826 / SR 836 interchange. Refer to FM # 249581. | Proj. Development | $1,655 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,655 |
| | | Final Design | $11,035 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $11,035 |
| | | Right-of-Way | $332 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $332 |
| | | Construction | $129,114 | $25,944 | $46,500 | $0 | $0 | $0 | $0 | $46,500 | $201,557 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **83611** | **SR 836 / I-95 Interchange Improvements** | | | | | | | | | **$210,337** | **$237,677** |
| | Improvements to SR 836 from NW 17 Ave. to I-95 including widening and operational improvements to SR 836 EB from NW 17 Ave. to I-95 Interchange, widening of the SR 836 bridges over the Miami River and improvements to the SR 836 WB mainline and new connector serving SR I-95 traffic | Proj. Development | $6,075 | $1,024 | $63 | $0 | $0 | $0 | $0 | $63 | $7,163 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $753 | $3,896 | $1,948 | $0 | $0 | $0 | $0 | $1,948 | $6,598 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $0 | $2,293 | $8,865 | $26,595 | $64,271 | $62,055 | $46,541 | $208,326 | $223,916 |
| **83618** | **SR 836 Southwest Extension** | | | | | | | | | **$6,282** | **$12,361** |
| | Preparation of concept report and PD&E Study for new expressway extension of SR 836 from NW 137 Ave. to the southwest Kendall area as part of the MDX Master Plan and the MPO Long Range Transportation Plan. | Proj. Development | $3,755 | $2,324 | $3,098 | $2,324 | $861 | $0 | $0 | $6,282 | $12,361 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **83624** | **SR 836 Infrastructure Modifications for Open Road Tolling (EAST SECTION)** | | | | | | | | | **$0** | **$29,126** |
| | Existing toll plaza modifications, installation of gantries, shelters and on & off system signage, and reconstruction of the SR 836 roadway to accommodate highway-speed vehicle traffic for implementation of Open Road Tolling. | Proj. Development | $1,317 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,317 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $531 | $62 | $0 | $0 | $0 | $0 | $0 | $0 | $593 |
| | | Design/Build | $25,553 | $1,664 | $0 | $0 | $0 | $0 | $0 | $0 | $27,216 |
| **83625** | **SR 836 Extension - Westbound Access Ramp** | | | | | | | | | **$0** | **$6,048** |
| | New public-use access ramp from west of NW 107th Avenue to SR 836 westbound extension. | Proj. Development | $84 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $84 |
| | | Final Design | $609 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $609 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $15 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $15 |
| | | Design/Build | $2,756 | $2,584 | $0 | $0 | $0 | $0 | $0 | $0 | $5,341 |
| **83628** | **SR 836 Operational, Capacity and Interchange Improvements** | | | | | | | | | **$114,736** | **$201,190** |
| | New SR 836 EB Auxiliary Lane from NW 57 Ave. to Le Jeune Road; SR 836 EB additional lane from Le Jeune Road to NW 27 Ave.; SR 836 WB additional lane from 17 Ave. to 57 Ave. and improvements to the interchanges at NW 57 Ave., Le Jeune Road, NW 27 Ave. and NW 17 Ave | Proj. Development | $6,227 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $6,227 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $582 | $10,492 | $3,497 | $0 | $0 | $0 | $0 | $3,497 | $14,572 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $11,848 | $57,305 | $57,305 | $53,934 | $0 | $0 | $0 | $111,239 | $180,391 |
| **83629** | **SR 836 Interchange Modifications at 87 Avenue** | | | | | | | | | **$80,066** | **$90,085** |
| | Reconstruction of the NW 87 Avenue Interchange and SR 836 Mainline to 500 feet west of NW 82 Avenue. | Proj. Development | $717 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $717 |
| | | Final Design | $7,473 | $167 | $0 | $0 | $0 | $0 | $0 | $0 | $7,640 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $28 | $1,634 | $46,569 | $29,412 | $4,085 | $0 | $0 | $80,066 | $81,728 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **83631** | **SR 836 Infrastructure Modifications for Open Road Tolling (WEST SECTION)** | | | | | | | | | **$0** | **$12,716** |
| | Modification of existing toll plaza and installation of gantries and on & off system signage, and modification to the SR 836 roadway and ramps in the area of the existing toll plaza. | Proj. Development | $1,279 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $1,280 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $7,380 | $4,057 | $0 | $0 | $0 | $0 | $0 | $0 | $11,437 |
| **87404** | **SR 874 / Killian Parkway Interchange** | | | | | | | | | **$0** | **$98,599** |
| | Modification of Killian Parkway Interchange and new NB and SB electronic toll collection gantries. Includes removal of existing toll plazas; roadway widening, sound barrier walls and extension of a lane on Killian Parkway from west of 107 Ave to Miami -Dade College entrance. | Proj. Development | $1,697 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $1,697 |
| | | Final Design | $9,732 | $26 | $0 | $0 | $0 | $0 | $0 | $0 | $9,758 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $85,769 | $1,376 | $0 | $0 | $0 | $0 | $0 | $0 | $87,144 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

# Table 3-1

# FY 2017-2021 Five-Year Work Program – Approved Budget

# Transportation Improvement Program

**FUNDED PROGRAM NEEDS**

| Proj. No. | Project Name / Description | Phase | Actuals Thru FY15 | Projected FY16 Budget | FY17 THRU FY21 ($000s) FY17 | FY18 | FY19 | FY20 | FY21 | 5-Year Total Budget | Total Project Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **87410** | **SR 874 Ramp Connector to SW 128 Street** | | | | | | | | | **$56,994** | **$97,274** |
| | New connection from SR 874 to SW 128 Street. | Proj. Development | $4,418 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $4,418 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $978 | $11,707 | $8,780 | $0 | $0 | $0 | $0 | $8,780 | $21,465 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $10,360 | $12,816 | $25,633 | $18,309 | $4,272 | $0 | $0 | $48,214 | $71,391 |
| **87413** | **SR 874 /SW 72 Street Interchange** | | | | | | | | | **$10,264** | **$10,321** |
| | New southbound exit ramp to SW 72 Street and new northbound entrance ramp to SR 874 from SW 72 Street. | Proj. Development | $0 | $10 | $845 | $0 | $0 | $0 | $0 | $845 | $855 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $47 | $187 | $47 | $0 | $0 | $0 | $233 | $280 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $0 | $0 | $0 | $5,328 | $3,858 | $0 | $0 | $9,186 | $9,186 |
| **92404** | **SR 924 Extension West to the Homestead Extension of the Florida Turnpike** | | | | | | | | | **$22,437** | **$39,142** |
| | PD&E Study, Final Design and acquisition of Right-Of-Way (Phase II) for new expressway extension from SR 924 west to the Homestead Extension of the Florida's Turnpike (HEFT). This project includes the Final Design for the improvements to 107 Ave. to be funded by M-D County. | Proj. Development | $4,662 | $188 | $86 | $0 | $0 | $0 | $0 | $86 | $4,936 |
| | | Final Design | $0 | $0 | $304 | $3,345 | $5,930 | $3,802 | $1,825 | $15,206 | $15,206 |
| | | Right-of-Way | $82 | $10 | $0 | $0 | $858 | $4,791 | $1,496 | $7,145 | $7,237 |
| | | Construction | $11,763 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $11,763 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **92407** | **SR 924 Extension East to I-95** | | | | | | | | | **$0** | **$4,088** |
| | PD&E Study for a new expressway extension from SR 924 at 32 Ave east to I-95 as part of the MDX Master Plan and the MPO Long Range Transportation Plan. | Proj. Development | $3,823 | $264 | $0 | $0 | $0 | $0 | $0 | $0 | $4,088 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **50001** | **Dolphin Station Park & Ride (MDT/FDOT Funded)** | | | | | | | | | **$10,000** | **$10,000** |
| | Fast track construction of a park and ride/terminal facility to support MDT's SR 836 Express Bus Service, provide a stop for several local bus routes, and serve a potential future east-west commuter rail service on the CSX line. Refer to FDOT FM#43714319401. | Proj. Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $0 | $0 | $7,000 | $3,000 | $0 | $0 | $0 | $10,000 | $10,000 |
| **20001** | **Connect 4 Express** | | | | | | | | | **$5,559** | **$6,950** |
| | Development for new expressway connecting SR 836, SR 112 and SR 924. Includes system interchanges with SR 112 and SR 924 and potential service interchanges with NW 54 Street, NW 79 Street and NW 103 Street with connectors to NW 37 Ave. | Proj. Development | $1,335 | $56 | $225 | $955 | $1,685 | $1,685 | $1,011 | $5,559 | $6,950 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **10016** | **SR 112 Toll System Conversion** | | | | | | | | | **$0** | **$5,182** |
| | SR 112 toll system conversion from the existing toll collection system to an Open Road Tolling (ORT) system. | Proj. Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $5,036 | $147 | $0 | $0 | $0 | $0 | $0 | $0 | $5,182 |
| **10017** | **SR 836 Toll System Conversion** | | | | | | | | | **$5,148** | **$25,054** |
| | SR 836 toll system conversion from the existing toll collection system to an Open Road Tolling (ORT) system. | Proj. Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $14,807 | $5,099 | $4,099 | $1,049 | $0 | $0 | $0 | $5,148 | $25,054 |
| **10018** | **Systemwide Open Road Tolling Hardware/Software Development** | | | | | | | | | **$1,188** | **$13,603** |
| | Development of systemwide hardware and software and enhancements to the account management toll enforcement system to accommodate requirements for Open Road Tolling. | Proj. Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $11,227 | $1,188 | $1,188 | $0 | $0 | $0 | $0 | $1,188 | $13,603 |
| **10019** | **Systemwide Implementation of Dynamic Message Signs (DMS)** | | | | | | | | | **$0** | **$12,482** |
| | Procurement and installation of dynamic message signs (DMS) at specific locations throughout the MDX System to provide travelers information on traffic conditions. | Proj. Development | $414 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $414 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $8,350 | $3,718 | $0 | $0 | $0 | $0 | $0 | $0 | $12,068 |
| **10021** | **Systemwide ITS Improvements** | | | | | | | | | **$535** | **$778** |
| | Implementation of systemwide ITS improvements resulting from ITS Master Plan recommendations. | Proj. Development | $90 | $10 | $0 | $0 | $0 | $0 | $0 | $0 | $99 |
| | | Final Design | $92 | $50 | $25 | $0 | $0 | $0 | $0 | $25 | $167 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $2 | $0 | $464 | $46 | $0 | $0 | $0 | $510 | $512 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | **Contingency Cost** | | **$5,253** | **$8,000** | | | | | **$8,000** | **$13,253** |
| | **TRANSPORTATION IMPROVEMENT PROGRAM TOTALS (FUNDED)** | | **$465,502** | **$160,234** | **$224,680** | **$144,343** | **$85,820** | **$72,332** | **$50,873** | **$578,047** | **$1,217,081** |

| | |
|---|---|
| **TOTAL FUNDED TIP FY 2017-2021** | **$578,047** |
| **TOTAL FUNDED TIP THROUGH FY 2040** | **$1,217,081** |

# Table 3-1

# FY 2017-2021 Five-Year Work Program – Approved Budget

# Capital Improvement Program

**FUNDED PROGRAM NEEDS**

| Proj. No. | Project Name / Description | Phase | Actuals Thru FY15 | Projected FY16 Budget | FY17 THRU FY21 ($000s) FY17 | FY18 | FY19 | FY20 | FY21 | 5-Year Total Budget | Total Project Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **40025** | **Integrated Financial Contract Management System** | | | | | | | | | **$120** | **$228** |
| | Procurement and implementation of an Integrated Financial Contract Management System. | Proj. Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $8 | $100 | $120 | $0 | $0 | $0 | $0 | $120 | $228 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **40027** | **Systemwide Safety Improvements** | | | | | | | | | **$0** | **$5,739** |
| | Safety improvements including those resulting from and recommended through the MDX systemwide safety studies. | Proj. Development | $174 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $174 |
| | | Final Design | $572 | $1 | $0 | $0 | $0 | $0 | $0 | $0 | $572 |
| | | Construction | $4,851 | $142 | $0 | $0 | $0 | $0 | $0 | $0 | $4,993 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **40041** | **SR 924 ORT System Replacement** | | | | | | | | | **$5,571** | **$5,596** |
| | SR 924 ORT System Replacement | Proj. Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $0 | $25 | $1,355 | $2,995 | $1,220 | $0 | $0 | $5,571 | $5,596 |
| **40042** | **SR 878 ORT System Replacement** | | | | | | | | | **$4,448** | **$4,473** |
| | SR 878 ORT System Replacement | Proj. Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $0 | $25 | $1,086 | $2,389 | $973 | $0 | $0 | $4,448 | $4,473 |
| **40043** | **SR 874 ORT System Replacement** | | | | | | | | | **$8,924** | **$8,949** |
| | SR 874 ORT System Replacement | Proj. Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $0 | $25 | $2,160 | $4,806 | $1,958 | $0 | $0 | $8,924 | $8,949 |
| **40044** | **SR 924 Drainage Improvements at NW 32 Ave** | | | | | | | | | **$1,946** | **$2,183** |
| | Upgrade the SR 924 drainage infrastructure at NW 32 Avenue. | Proj. Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Final Design | $205 | $29 | $7 | $0 | $0 | $0 | $0 | $7 | $241 |
| | | Construction | $3 | $0 | $1,570 | $368 | $0 | $0 | $0 | $1,939 | $1,942 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **40045** | **Wrong Way Safety Program** | | | | | | | | | **$3,531** | **$3,762** |
| | Installation "Wrong Way - Do Not Enter" and "One-Way" signs, pavement reconfiguration and radar/cameras for wrong way detection at 25 identified locations in the MDX System. | Proj. Development | $0 | $122 | $0 | $0 | $0 | $0 | $0 | $0 | $122 |
| | | Final Design | $0 | $109 | $163 | $0 | $0 | $0 | $0 | $163 | $272 |
| | | Construction | $0 | $0 | $3,368 | $0 | $0 | $0 | $0 | $3,368 | $3,368 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **40046** | **Systemwide Safety Improvements (Phase II)** | | | | | | | | | **$1,089** | **$1,089** |
| | Safety improvements including those resulting from and recommended through the MDX systemwide safety studies. | Proj. Development | $0 | $0 | $20 | $20 | $20 | $0 | $0 | $60 | $60 |
| | | Final Design | $0 | $0 | $0 | $45 | $20 | $25 | $0 | $90 | $90 |
| | | Construction | $0 | $0 | $0 | $11 | $469 | $459 | $0 | $939 | $939 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **40047** | **Statewide Centralized Customer Service System (CCSS)** | | | | | | | | | **$8,149** | **$9,587** |
| | Capital costs to establish a single centralized customer service system (CCSS) for statewide administration of electronic toll collection activities and a single point of contact for all the Toll Agencies' non-cash toll collection customers. | Proj. Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $1,438 | $8,149 | $0 | $0 | $0 | $0 | $8,149 | $9,587 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | **Contingency Cost** | | **$500** | **$250** | | | | | **$250** | **$750** |
| | **CAPITAL IMPROVEMENT PROGRAM TOTALS (FUNDED)** | | **$5,812** | **$2,515** | **$18,249** | **$10,635** | **$4,661** | **$484** | **$0** | **$34,028** | **$42,356** |

| | |
|---|---|
| **TOTAL FUNDED CIP FY 2017-2021** | **$ 34,028** |
| **TOTAL FUNDED CIP THROUGH FY 2040** | **$ 42,356** |

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# Table 3-1

# FY 2017-2021 Five-Year Work Program – Approved Budget

# Renewal and Replacement Program

**FUNDED PROGRAM NEEDS**

| Proj. No. | Project Name / Description | Phase | Actuals Thru FY15 | Projected FY16 Budget | FY17 THRU FY21 ($000s) FY17 | FY18 | FY19 | FY20 | FY21 | 5-Year Total Budget | Total Project Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **30029** | **Systemwide Bridge Rehabilitation and Joint Repairs** | | | | | | | | | **$1,702** | **$2,690** |
| | Perform bridge rehabilitation and joint repairs systemwide per the Long-Range R&R Program. | Proj. Development | $145 | $67 | $0 | $0 | $0 | $0 | $0 | $0 | $212 |
| | | Final Design | $305 | $0 | $206 | $0 | $0 | $0 | $0 | $206 | $511 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $472 | $0 | $598 | $897 | $0 | $0 | $0 | $1,496 | $1,967 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30030** | **SR 112 Mill, Resurface and Misc. Upgrades NW 21 St - NW 27 Ave** | | | | | | | | | **$0** | **$6,259** |
| | Perform milling and resurfacing along SR 112 mainline and ramps from NW 21 Street to NW 27 Avenue; provide pavement markings, perform sign inventory and upgrade to latest standards, upgrade lighting, perform minor drainage work and develop RRR Report. | Proj. Development | $113 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $113 |
| | | Final Design | $563 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $563 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $4,809 | $774 | $0 | $0 | $0 | $0 | $0 | $0 | $5,583 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30031** | **SR 112 Mill, Resurface and Misc. Upgrades from NW 27 Ave to 12 Ave** | | | | | | | | | **$0** | **$6,025** |
| | Perform milling and resurfacing along SR 112 mainline and ramps from NW 27 Avenue to 12 Avenue; provide pavement markings, perform sign inventory and upgrade to latest standards, upgrade lighting, perform minor drainage work and develop RRR Report. | Proj. Development | $101 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $101 |
| | | Final Design | $544 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $544 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $4,710 | $669 | $0 | $0 | $0 | $0 | $0 | $0 | $5,379 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30033** | **Systemwide Pavement Markings Rehabilitation (Phase II)** | | | | | | | | | **$798** | **$815** |
| | Systemwide improvements including installation and replacement of Raised Pavement Markers (RPM), thermoplastic pavement markings, audible and vibratory pavement markings, rumble strips and high performance tape. | Proj. Development | $0 | $17 | $17 | $0 | $0 | $0 | $0 | $17 | $34 |
| | | Final Design | $0 | $0 | $85 | $0 | $0 | $0 | $0 | $85 | $85 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $125 | $571 | $0 | $0 | $0 | $696 | $696 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30034** | **SR 924 Milling & Resurfacing from SR 826 to MM 1.2** | | | | | | | | | **$1,462** | **$1,617** |
| | Milling and Resurfacing of SR 924 from SR 826 to Mile Marker 1.2 per the Long-Range R&R Program. | Proj. Development | $79 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $79 |
| | | Final Design | $76 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $76 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $1,067 | $395 | $0 | $0 | $0 | $1,462 | $1,462 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30036** | **SR 836 Overhead Signature Gantries & Sign Structure Coating** | | | | | | | | | **$0** | **$1,557** |
| | Coating of overhead signature structures on SR 836 per the Long-Range R&R Program. | Proj. Development | $49 | $14 | $0 | $0 | $0 | $0 | $0 | $0 | $63 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $1,067 | $427 | $0 | $0 | $0 | $0 | $0 | $0 | $1,494 |
| **30037** | **Systemwide Class V Coating (Phase I)** | | | | | | | | | **$6,132** | **$6,132** |
| | Class V Coating of bridges, noise walls, and barrier walls system-wide per the Long-Range R&R Program. | Proj. Development | $0 | $0 | $105 | $0 | $0 | $0 | $0 | $105 | $105 |
| | | Final Design | $0 | $0 | $100 | $0 | $0 | $0 | $0 | $100 | $100 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $5,112 | $816 | $0 | $0 | $5,928 | $5,928 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30038** | **Systemwide Pavement Markings Rehabilitation (Phase III)** | | | | | | | | | **$1,167** | **$1,167** |
| | Installation and replacement of Raised Pavement Markers (RPM), thermoplastic pavement markings, contrast pavement markings, audible and vibratory pavement markings, rumble strips and high performance tape. | Proj. Development | $0 | $0 | $0 | $63 | $0 | $0 | $0 | $63 | $63 |
| | | Final Design | $0 | $0 | $0 | $86 | $0 | $0 | $0 | $86 | $86 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $1,019 | $0 | $0 | $1,019 | $1,019 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30040** | **HVAC Replacement at 97 Ave and 137 Ave Tolling Points** | | | | | | | | | **$221** | **$221** |
| | HVAC Replacement at 97 Ave and 137 Ave Tolling Points | Proj. Development | $0 | $0 | $13 | $0 | $0 | $0 | $0 | $13 | $13 |
| | | Final Design | $0 | $0 | $22 | $0 | $0 | $0 | $0 | $22 | $22 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $105 | $81 | $0 | $0 | $0 | $186 | $186 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30041** | **Systemwide Lighting Upgrades** | | | | | | | | | **$1,647** | **$1,673** |
| | Systemwide Lighting Upgrades per the Long-Range R&R Program. | Proj. Development | $0 | $26 | $26 | $0 | $0 | $0 | $0 | $26 | $52 |
| | | Final Design | $0 | $0 | $146 | $0 | $0 | $0 | $0 | $146 | $146 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $266 | $1,210 | $0 | $0 | $0 | $1,476 | $1,476 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30042** | **SR 836 Replacement of High-Mast Lights with LED** | | | | | | | | | **$0** | **$162** |
| | Replacement of High-Mast Lights with LED on SR 836 per the Long-Range R&R Program. | Proj. Development | $0 | $6 | $0 | $0 | $0 | $0 | $0 | $0 | $6 |
| | | Final Design | $0 | $14 | $0 | $0 | $0 | $0 | $0 | $0 | $14 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $142 | $0 | $0 | $0 | $0 | $0 | $0 | $142 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |

# Table 3-1

# FY 2017-2021 Five-Year Work Program – Approved Budget

# Renewal and Replacement Program

**FUNDED PROGRAM NEEDS**

| Proj. No. | Project Name / Description | Phase | Actuals Thru FY15 | Projected FY16 Budget | FY17 THRU FY21 ($000s) FY17 | FY18 | FY19 | FY20 | FY21 | 5-Year Total Budget | Total Project Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **30043** | **Systemwide ORT Gantries & Signature Structures Painting** | | | | | | | | | **$1,560** | **$1,560** |
| | Systemwide ORT Gantries & Signature Structures Painting per the Long-Range R&R Program. | Proj. Development | $0 | $0 | $59 | $0 | $0 | $0 | $0 | $59 | $59 |
| | | Final Design | $0 | $0 | $80 | $0 | $0 | $0 | $0 | $80 | $80 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $1,421 | $0 | $0 | $0 | $0 | $1,421 | $1,421 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30044** | **SR 878 Milling & Resurfacing from 87 Ave to U.S. 1** | | | | | | | | | **$2,752** | **$2,752** |
| | SR 878 Milling & Resurfacing from 87 Ave to U.S. 1 per the Long-Range R&R Program. | Proj. Development | $0 | $0 | $0 | $0 | $96 | $0 | $0 | $96 | $96 |
| | | Final Design | $0 | $0 | $0 | $0 | $203 | $12 | $0 | $215 | $215 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $2,441 | $0 | $2,441 | $2,441 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30045** | **HVAC Replacement at SR 874, SR 878 and SR 924 Tolling Points** | | | | | | | | | **$264** | **$264** |
| | HVAC Replacement at SR 874, SR 878 and SR 924 Tolling Points per the Long-Range R&R Program. | Proj. Development | $0 | $0 | $0 | $0 | $10 | $0 | $0 | $10 | $10 |
| | | Final Design | $0 | $0 | $0 | $0 | $22 | $0 | $0 | $22 | $22 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $232 | $0 | $232 | $232 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30046** | **Systemwide Replacement of Multi-Post & Overhead Signs** | | | | | | | | | **$496** | **$528** |
| | Systemwide Replacement of Multi-Post & Overhead Signs per the Long-Range R&R Program. | Proj. Development | $0 | $10 | $0 | $10 | $0 | $0 | $0 | $10 | $20 |
| | | Final Design | $0 | $22 | $0 | $22 | $0 | $0 | $0 | $22 | $45 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $232 | $0 | $232 | $0 | $0 | $463 | $463 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30047** | **Systemwide Structures Rehabilitation** | | | | | | | | | **$300** | **$300** |
| | Systemwide Rehabilitation of Structures per the Long-Range R&R Program. | Proj. Development | $0 | $0 | $0 | $0 | $0 | $50 | $50 | $100 | $100 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $100 | $100 | $200 | $200 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30048** | **Systemwide Pavement Markings Rehab. (Phase IV)** | | | | | | | | | **$2,019** | **$2,019** |
| | Systemwide rehabilitation of pavement markings, RPM and contrast, audible pavement markings and high-performance tape for all mainline and ramps as programmed in the Long-Range R&R program. | Proj. Development | $0 | $0 | $0 | $0 | $0 | $73 | $0 | $73 | $73 |
| | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $1,945 | $1,945 | $1,945 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **30049** | **Systemwide Lighting Upgrades (FY 2019)** | | | | | | | | | **$903** | **$903** |
| | Retrofit of existing systemwide lighting system to LED as programmed in the Long-Range R&R program | Proj. Development | $0 | $0 | $0 | $29 | $0 | $0 | $0 | $29 | $29 |
| | | Final Design | $0 | $0 | $0 | $61 | $20 | $0 | $0 | $81 | $81 |
| | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | Construction | $0 | $0 | $0 | $0 | $794 | $0 | $0 | $794 | $794 |
| | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | **Contingency Cost** | | | **$750** | **$500** | | | | | **$500** | **$1,250** |
| | **RENEWAL AND REPLACEMENT PROGRAM TOTALS (FUNDED)** | | **$13,034** | **$2,938** | **$5,172** | **$8,536** | **$3,212** | **$2,908** | **$2,095** | **$21,923** | **$37,895** |

| | |
|---|---|
| **TOTAL FUNDED R&R FY 2017-2021** | **$ 21,923** |
| **TOTAL FUNDED R&R THROUGH FY 2040** | **$ 37,895** |

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# Table 3-1

# FY 2017-2021 Five-Year Work Program – Approved Budget

# Other Funding Needs

**REQUIRED DEPOSITS INTO THE R&R ACCOUNT**

| Proj. No. | Project Name / Description | Project Limits | Phase | FY17 THRU FY21 ($000s) FY17 | FY18 | FY19 | FY20 | FY21 | 5-Year Total Budget | Total Project Cost |
|---|---|---|---|---|---|---|---|---|---|---|
| TBD | Renewal & Replacement Program (R&R) | Systemwide | All | **$0** | **$0** | **$0** | **$0** | **$0** | **$0** | **$292,345** |

| | |
|---|---|
| **TOTAL UNFUNDED R&R FY 2017-2021** | **$0** |
| **TOTAL UNFUNDED R&R THROUGH FY 2040** | **$292,345** |

**UNFUNDED PROGRAM NEEDS**

| Proj. No. | Project Name / Description | Project Limits | Phase | FY17 THRU FY21 ($000s) FY17 | FY18 | FY19 | FY20 | FY21 | 5-Year Total Budget | Total Project Cost |
|---|---|---|---|---|---|---|---|---|---|---|
| **83618** | **SR 836 Southwest Extension** | | | | | | | | **$451,478** | **$1,127,726** |
| | Acquisition of Right-Of-Way and Design-Build of new expressway extension of SR 836 from NW 137 Ave to the southwest Kendall area as part of the MDX Master Plan and the MPO Long Range Transportation Plan. | NW 137 Ave to SW Kendall Area | Proj. Development | $0 | $0 | $120 | $900 | $0 | $1,020 | $1,020 |
| | | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | | Right-of-Way | $0 | $0 | $0 | $23,250 | $23,250 | $46,500 | $93,000 |
| | | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | | Design/Build | $0 | $0 | $0 | $130,376 | $273,582 | $403,958 | $1,033,706 |
| **92404** | **SR 924 Extension West to the Homestead Extension of the Florida Turnpike (HEFT)** | | | | | | | | **$35,661** | **$223,748** |
| | Acquisition of Right-Of-Way (Phase II) and Construction of new expressway extension from SR 924 west to the HEFT as part of the MDX Master Plan and the MPO Long Range Transportation Plan. Including Construction of 107th Ave. to be funded by M-D County. | Existing SR 924 to HEFT | Proj. Development | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | | | Right-of-Way | $0 | $0 | $0 | $4,429 | $10,334 | $14,763 | $14,763 |
| | | | Construction | $0 | $0 | $0 | $0 | $20,899 | $20,899 | $208,986 |
| | | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **92407** | **SR 924 Extension East to I-95** | | | | | | | | **$57,764** | **$625,997** |
| | Acquisition of Right-Of-Way, Final Design and Construction of new expressway extension from SR 924 at 32 Ave east to I-95 as part of the MDX Master Plan and the MPO Long Range Transportation Plan. | Existing SR 924 at NW 32 Ave to I-95 | Proj. Development | $0 | $0 | $200 | $0 | $0 | $200 | $200 |
| | | | Final Design | $0 | $0 | $929 | $12,986 | $9,797 | $23,711 | $30,745 |
| | | | Right-of-Way | $0 | $0 | $0 | $754 | $33,099 | $33,853 | $52,785 |
| | | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $542,266 |
| | | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| **20001** | **Connect 4 Express** | | | | | | | | **$200** | **$1,446,944** |
| | Acquisition of Right-Of-Way, Final Design and Construction of new expressway connecting SR 836, SR 112 and SR 924. Includes system interchanges with SR 112 and SR 924 and potential service interchanges with NW 54 Street, NW 79 Street and NW 103 Street with connectors to NW 37 Ave | SR 836 to SR 924 | Proj. Development | $0 | $0 | $0 | $0 | $200 | $200 | $200 |
| | | | Final Design | $0 | $0 | $0 | $0 | $0 | $0 | $56,099 |
| | | | Right-of-Way | $0 | $0 | $0 | $0 | $0 | $0 | $90,000 |
| | | | Construction | $0 | $0 | $0 | $0 | $0 | $0 | $1,300,644 |
| | | | Design/Build | $0 | $0 | $0 | $0 | $0 | $0 | $0 |
| | **ANSPORTATION IMPROVEMENT PROGRAM TOTALS (UNFUNDED)** | | | **$0** | **$0** | **$1,249** | **$172,695** | **$371,160** | **$545,103** | **$3,424,415** |

| | |
|---|---|
| **TOTAL UNFUNDED TIP FY 2017-2021** | **$545,103** |
| **TOTAL UNFUNDED TIP THROUGH FY 2040** | **$3,424,415** |

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Table 3-2 below summarizes the FY 2017-2021 Work Program projected expenditures. Unlike Table 3-1 that shows amounts at the time the cost is incurred, Table 3-2 shows amounts at the projected time of payment which is on average 2 months in arrears of when the cost is incurred.

**Table 3-2**

**FY 2017-2021 Five-Year Work Program Projected Payout**

| Program | FY17 | FY18 | FY19 | FY20 | FY21 | FY22 |
|---|---|---|---|---|---|---|
| **TIP** | 239,487 | 166,103 | 110,412 | 84,862 | 55,223 | 24,491 |
| **CIP** | 12,600 | 14,459 | 6,539 | 351 | 153 | |
| **Contingency** | 4,125 | | | | | |
| **R&R** | 3,063 | 8,751 | 4,214 | 3,286 | 2,167 | 225 |
| **Contingency** | 250 | | | | | |
| | **$259,525** | **$189,313** | **$121,165** | **$88,499** | **$57,544** | **$24,716** |

Note: These amounts are the total budget needed to fund the projects in the FY 2017-2021 Five-Year Work Program. They do not take into account any reimbursements resulting from partnering agreements with other agencies that have been or may be negotiated by MDX. Anticipated reimbursements are included as part of the financing plan.

The projects in the current Work Program have been grouped into one of four categories. Existing System Improvement projects include any widening or reconstruction within an existing roadway segment. System Expansion projects include all construction of new roadway segments on new alignments adjacent to the existing System. Facility Improvement projects designate all non-routine maintenance and minor roadway and bridge improvements/enhancements and administrative building, toll gantry and ITS projects throughout the System. New Expressway projects include construction of new alignments and modifications/improvements of existing portions of roads acquired by MDX that will be added to the System.

### 3.1.1 Existing System Improvements

The following projects are categorized as Existing System Improvements in the current Five-Year Work Program. The total project budget includes all actual expenditures to date as well as all future budget allocated for the project in the MDX Financing Plan. All costs are shown in Thousands ($000's):

Project 83608 – SR 826 / SR 836 Interchange Improvements

(**Total Project Budget: $214,579**)

MDX has partnered with FDOT for the right-of-way acquisition, design and reconstruction of the SR 826 / SR 836 Interchange. FDOT contracted the construction of this project in FY 2010 and completion is expected in FY 2016. MDX has contributed $11.0 million towards the final design and is contributing an additional $196.5 million towards the construction with the last MDX payment scheduled in FY 2017. This project is of great significance as this interchange is the most congested in the County. This project is an example of MDX working together with its transportation partners in the delivery of significant improvements to mobility within the County.

Project 83611 – SR 836 / I-95 Interchange Improvements

(**Total Project Budget: $237,677**)

MDX partnered with FDOT by entering into a Joint Participation Agreement (JPA) for the development of an Environmental Assessment for the SR 836 project from NW 17$^{th}$ Avenue to I-95, in conjunction with the on-going FDOT I-395 Project Development and Environment ("PD&E") study which has been completed. MDX continues to partner with FDOT to advance the Right-Of-Way phase which has been started and the Design-Build phase which is anticipated to begin in the second half of FY 2017. The total project cost includes approximately $35 million towards improvements that mainly benefit FDOT users accessing the MDX facilities. Therefore, MDX requires the Department to fund this portion of the project. This project is of great significance as this interchange is one of the most congested in the County.

Project 83628 – SR 836 Operational, Capacity and Interchange Improvements

(**Total Project Budget: $201,190**)

An additional eastbound and westbound lane on SR 836 from west of NW 57th Avenue to NW 17th Avenue as well as improvements to the SR 836/ NW 57th Avenue Interchange, the SR 836 / LeJeune Interchange, the SR 836 / NW 27th Avenue Interchange and the SR 836/ NW 17th Avenue Interchange will provide additional capacity on the mainline and improve operations in and around the existing interchanges

resulting in an improved level of service and safety. The design-build phase for this project is ongoing and is scheduled to be completed at the end of FY 2018.

Project 83629 – SR 836 Interchange Modifications at 87th Avenue

(**Total Project Budget: $90,085**)

The current Five-Year Work Program provides funding for the reconstruction of the SR 836 Mainline and NW 87th Avenue interchange to enhance operations and improve safety on the SR 836 corridor. This project ties into MDX completed Project No. 83614 to the west and MDX Project No. 83608 completed on the east. The final design was completed and construction is scheduled to start at the end of FY 2016.

Project 87413 – SR 874/SW 72nd Street Interchange

(**Total Project Budget: $10,321**)

The project includes a southbound exit ramp to SW 72nd Street and a northbound entrance ramp to SR 874. As part of the project, sidewalks will be constructed in the southeast area of the interchange on SW 72nd Street. The new partial interchange at SR 874 and SW 72nd Street will provide connectivity to the expressway network while maintaining or improving traffic flow along SR 874 and the local roadway network. The ramps will provide access from SW 72nd Street to SR 874 northbound and from SR 874 southbound to SW 72nd Street. The project will result in easier access to SR 874 and the highway system connected to SR 874 as well as reduced congestion at key intersections along SW 72nd Street. The design-build phase will begin in FY 2017.

### 3.1.2 System Expansion

The following projects are categorized as System Expansions in the current Five-Year Work Program. Costs are shown in Thousands ($000's):

Project 83618 – SR 836 Southwest Extension

(**Total Project Budget: $12,361**)

MDX is evaluating the feasibility of a new 15 mile expressway extension of SR 836 from NW 137th Avenue to the southwest Kendall area. The extension of SR 836 is envisioned

as a multimodal facility, used also by express transit buses that would address the existing transportation needs of a vast community of thousands of existing residents living in the south western areas of Miami-Dade County west of the Turnpike. The Project Development & Environmental (PD&E) study is ongoing to determine feasibility and select a preferred alternative. Final design and construction for this project are not yet funded.

Project 87410 – SR 874 Ramp Connector to SW 128th Street

(**Total Project Budget: $97,274**)

The PD&E Study has been completed for a new 1.2 mile ramp connection from SR 874 to SW 128th Street. A portion of this project is currently being constructed by the Florida's Turnpike Enterprise under an interagency agreement with MDX as part of a larger project to widen the HEFT and reconstruct the HEFT/SR 874 Interchange. MDX has begun the design-build phase for the balance of the project which is scheduled for completion in FY 2019.

Project 92404 –SR 924 Extension West to the Homestead Extension of the Florida's Turnpike (HEFT)

(**Total Project Budget: $39,142**)

The PD&E Study is complete for a new 2.3 mile expressway extension of SR 924 to Florida's Turnpike in the vicinity of Okeechobee Road. The right-of-way activities are underway. The final design phase is scheduled to begin in FY 2017. Construction of this project is not yet funded, except for a 1.6 mile section of 138th Street, which has been reconstructed to a predominantly 6 lane section. This section of roadway was added as an MDX asset as part of the FY 2013 closeout.

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### 3.1.3 Facility Improvements

The following projects are categorized as Facility Improvements in the current Five-Year Work Program. Costs are shown in Thousands ($000's):

Projects 10017 and 10018 – SR 836 Hardware/Software Development and Installation for Full ORT Toll System Conversion

(**Total Project Budget: $38,657**)

As of early FY 2011, the SR 924, SR 874 and SR 878 corridors had been converted to ORT. SR 112 was converted to ORT in FY 2015. These projects provide for the conversion of SR 836 to complete the system-wide conversion to ORT. This work is scheduled to be completed by the end of FY 2016.

Project 10021 – System-wide ITS Improvements

(**Total Project Budget: $778**)

This project provides for the expansion of the system-wide MDX Incident Management CCTV Camera System and for the installation of Speed Feedback Signs on SR 924.

Project 40025– Integrated Financial Contract Management System

(**Total Project Budget: $228**)

Funding for the acquisition of a software application to complement the contracts management system.

Project 40041, 40042 & 40043 – SR 924, SR 878 & SR 874 ORT System Replacement

**(Total Project Budget: $19,018**)

These projects provide for the replacement of the existing ORT system at SR 924, SR 878 and SR 874 by FY 2017 to transition from the original system integrator to MDX's new system integrator. The project will also add equipment to capture vehicle front license plates, consistent with the system being installed on the Airport and Dolphin Expressways.

Project 40044 – SR 924 Drainage Improvements at NW 32nd Avenue

**(Total Project Budget: $2,183)**

The segment of SR 924 eastbound just west of NW 32nd Avenue has been subject to recurrent flooding. MDX has included in its Five-Year Work Program the improvements to the drainage system in order to fix the flooding affecting the MDX traffic in the area. The improvements will provide for an increase of the system runoff collection, intake and conveyance capacity by adding curb inlets, french drain and minor modifications to the remaining existing system. The project will be completed in FY 2018.

Project 40045– Wrong-Way Safety Program

**(Total Project Budget: $3,762)**

Installation of "Wrong-Way – Do Not Enter" and "One-Way" signs, pavement reconfiguration and radar/cameras for wrong way detection at 25 identified locations in the MDX System.

Project 40046– System-wide Safety Improvements (Phase II)

**(Total Project Budget: $1,088)**

In its commitment to safety, MDX added this project to provide for additional safety improvements identified through MDX's safety review program. All scope under this project is anticipated to be completed by FY 2020.

Project 40047– State-wide Centralized Customer Service System (CCSS)

**(Total Project Budget: $9,587)**

Capital costs for the establishment of a single Statewide Centralized Customer Service System (CCSS) for statewide administration of electronic toll collection activities and a single point of contact for all the Toll Agencies' non-cash toll collection customers to improve and simplify customer service while reducing overall agency costs. The CCSS is scheduled to begin operations in FY 2017.

Project 30029 – Systemwide Bridge Rehabilitation and Joint Repairs

(**Total Project Budget: $2,690**)

This project provides for the structural improvements and joint replacement at bridges system-wide to address needs resulting from the bridge assessment study. The estimated completion date for this project is in FY 2018.

Project 30033 – System-wide Pavement Markings Rehabilitation (Phase II)

(**Total Project Budget: $815**)

This project provides for system-wide improvements including installation and replacement of Roadway Pavement Markers (RPM), thermoplastic pavement markings, audible and vibratory pavement markings, rumble strips and high performance pavement marking tape to replace the existing assets that have reached the end of their useful life as of FY 2016.

Project 30034 – SR 924 Milling & Resurfacing

**(Total Project Budget: $1,617)**

As part of the Renewal & Replacement Program, MDX is resurfacing the segment of SR 924 from SR 826 to Mile Marker 1.2. This project is scheduled to be completed in FY 2018.

Projects 30037 – System-wide Class V Coating (Phase I)

**(Total Project Budget: $6,132)**

This system preservation project funds the Class V Coating for structures system-wide which will be done in one phase; former Project 30039 was combined with 30037 and will be completed by FY 2019.

Project 30038 – System-wide Pavement Markings Rehabilitation (Phase III)

**(Total Project Budget: $1,167)**

This system-wide project includes the installation and replacement of Roadway Pavement Markings (RPM), thermoplastic pavement markings, audible and vibratory pavement markings, rumble strips and high performance pavement marking tape to replace the existing assets that have reached the end of their useful life as of FY 2017.

Project 30040 – HVAC Replacement at 97th Avenue and 137th Avenue Tolling Points

**(Total Project Budget: $221)**

The HVAC units originally installed in FY 2010 will be reaching the end of their useful life and are scheduled for replacement under this project in FY 2017.

Project 30041 – System-wide Lighting Upgrades

**(Total Project Budget: $1,673)**

In FY 2017, MDX will begin implementing a program of lighting upgrades system-wide to bring those assets up to current standards using LED technology.

Project 30043 – System-wide ORT Gantries & Structures Painting

**(Total Project Budget: $1,560)**

The paint on the ORT gantries and signature structures will be reaching the end of its useful life and is scheduled for replacement under this project in FY 2017.

Project 30044 – SR 878 Milling & Resurfacing from 87th Avenue to U.S. 1

**(Total Project Budget: $2,752)**

The pavement on this segment of the SR 878 corridor will be reaching the end of its useful life and is scheduled for replacement under this project in FY 2020.

Project 30045 – HVAC Replacement at SR 874, SR 878 and SR 924 Tolling Points

**(Total Project Budget: $264)**

The HVAC units originally installed around FY 2013 will be reaching the end of their useful life and are scheduled for replacement under this project in FY 2020.

Project 30046 – System-wide Replacement of Multi-Post & Overhead Signs

**(Total Project Budget: $528)**

This project funds the replacement of multi-post and overhead signs system-wide which would have reached the end of their useful life in FY 2017 and in FY 2019.

Project 30047 – System-wide Structures Rehabilitation

**(Total Project Budget: $300)**

This project funds the planning and design of the rehabilitation of system-wide structures which would have reached the end of their useful life in FY 2020. Construction will be funded in upcoming work program updates.

Project 30048 – System-wide Pavement Markings Rehabilitation (Phase IV)

**(Total Project Budget: $2,019)**

This project funds the replacement of pavement markings system-wide which will reach the end of their useful life in FY 2021.

Project 30049 – System-wide Lighting Upgrades (FY 2019)

**(Total Project Budget: $903)**

In FY 2019, MDX will continue implementing a program of lighting upgrades system-wide to bring those assets up to current standards using LED technology.

### 3.1.4 New Expressways

The following projects are categorized as New Expressways in the current Five-Year Work Program. Costs are shown in Thousands ($000's):

Project 20001 – Connect 4 Express

(**Total Project Budget: $6,950**)

Project development study of a potential new expressway connecting SR 836, SR 112, SR 924 and SR 826. The PD&E Study will include evaluation of system interchanges with SR 112, SR 924 and SR 826 as well as potential service interchanges with NW 54$^{th}$ Street, NW 79$^{th}$ Street and NW 103$^{rd}$ Street with connectors to NW 37$^{th}$ Avenue. The PD&E Study is scheduled to begin in FY 2017 and is the only phase currently included in the Five-Year Work Program.

### 3.1.5 Other Projects

The following project is categorized as Other Projects in the current Five-Year Work Program. Costs are shown in Thousands ($000's):

Project 50001 – Dolphin Station Park & Ride

(**Total Project Budget: $10,000**)

MDX is fast-tracking the construction of the Dolphin Station Park & Ride. FDOT together with Miami Dade Transit (MDT) are funding 100% of the project cost. The facility will be operated and maintained by the Miami-Dade Department of Transportation and Public Works (DTPW). The Dolphin Station park and ride facility/terminal transit facility will support DTPW's SR 836/Dolphin Expressway Express Bus Service, provide a terminus or stop for several local bus routes serving the Dolphin Mall and the cities of Sweetwater and Doral, as well as serving a potential future east-west commuter rail service on the CSX line. The design-build phase is anticipated to begin in FY 2017.

The following projects will be completed in FY 2016 and therefore they have no budget projected in the FY 2017-2021 Five-Year Work Program:

- Project Number 11209, SR 112 Infrastructure Modifications for ORT;
- Project Number 11211, Central Boulevard Reconstruction;
- Project Numbers 83624 and 83631, SR 836 Infrastructure Modifications for ORT;
- Project Number 83625, SR 836 Extension – Westbound Access Ramp;
- Project Number 87404, SR 874/Killian Parkway Interchange;
- Project Number 92407, SR 924 Extension East to I-95 (PD&E only);
- Project Number 10016, SR 112 Toll System Conversion;
- Project Number 10019, System-wide Implementation of Dynamic Message Signs (DMS);

- Project Number 40027, System-wide Safety Improvements;
- Project Number 30030, SR 112 Milling, Resurfacing and Misc. Upgrades from NW 21st St to NW 27th Ave;
- Project Number 30031, SR 112 Milling, Resurfacing and Misc. Upgrades from NW 27th Ave to 12th Ave;
- Project Number 30036, SR 836 Overhead Signature Gantries & Sign Structure Coating; and
- Project Number 30042, SR 836 Replacement of High-Mast Lights with LED.

Table 3-3 contains a total of the projected cash expenditures, expressed in thousands, for each individual category for each of the Fiscal Years encompassed by the Five-Year Work Program. These figures are then totaled for each category and each Fiscal Year.

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**Table 3-3**

**FY 2017-2021 Five-Year Work Program Category Breakdown by Fiscal Year**

| Category | No. of Projects | Project Cost ($000s) | | | | | Total FY 17 through FY21 |
|---|---|---|---|---|---|---|---|
| | | Fiscal Year | | | | | |
| | | 2017 | 2018 | 2019 | 2020 | 2021 | |
| **Transportation Improvement Program (TIP)** | | | | | | | |
| Existing System Improvements | 5 | $165,779 | $115,315 | $72,214 | $62,055 | $46,541 | **$461,903** |
| System Expansion | 3 | $37,901 | $23,978 | $11,921 | $8,593 | $3,321 | **$85,713** |
| Facilities Improvements | 3 | $5,776 | $1,095 | $0 | $0 | $0 | **$6,871** |
| New Expressways | 1 | $225 | $955 | $1,685 | $1,685 | $1,011 | **$5,559** |
| Other Projects | 1 | $7,000 | $3,000 | $0 | $0 | $0 | **$10,000** |
| Contingency Reserve | | $8,000 | $0 | $0 | $0 | $0 | **$8,000** |
| **Total TIP** | **13** | **$224,680** | **$144,343** | **$85,820** | **$72,332** | **$50,873** | **$578,047** |
| **Capital Improvement Program (CIP)** | | | | | | | |
| Facilities Improvements | 8 | $17,999 | $10,635 | $4,661 | $484 | $0 | **$33,778** |
| Contingency Reserve | | $250 | $0 | $0 | $0 | $0 | **$250** |
| **Total CIP** | **8** | **$18,249** | **$10,635** | **$4,661** | **$484** | **$0** | **$34,028** |
| **Renewal and Replacement Program (R&R)** | | | | | | | |
| Facilities Improvements | 14 | $4,672 | $8,536 | $3,212 | $2,908 | $2,095 | **$21,423** |
| Contingency Reserve | | $500 | $0 | $0 | $0 | $0 | **$500** |
| **Total R&R** | **14** | **$5,172** | **$8,536** | **$3,212** | **$2,908** | **$2,095** | **$21,923** |
| **Totals** | **35** | **$248,101** | **$163,513** | **$93,692** | **$75,724** | **$52,968** | **$633,999** |

## 3.2 CAPITAL EXPENDITURES AND REQUIREMENTS

The estimated cost for the current Five-Year Work Program projects is $634.0 million. This estimate includes funds required for project development, PD&E, final design, right-of-way acquisition, design-build, construction and contingency. Capital and Renewal and Replacement requirements for the current Five-Year Work Program projects by category were summarized in Table 3-1. Assumptions inherent in the development of project cost estimates include:

1. Project development

    a. Includes costs for project definition at a level necessary to procure a final design consultant or design-build firm, depending on the procurement method utilized by MDX. This is estimated at approximately 1 to 5% of the estimated construction bid cost.

2. Final design

    a. Costs include project management costs of approximately 25 to 40% of Final Design Fee. This estimate is intended to provide for overall project management, interagency coordination, plans reviews and other administrative costs performed by MDX or their designated agent. Final design plans preparation is estimated at approximately 3 to 8% of the estimated construction bid cost for conventional and design-build projects.

3. Construction cost includes direct construction cost burdened with the following additional cost elements:

    a. Estimate Contingency – approximately percentage of Direct Construction Cost:

        - Initial Planning Stage – 26 to 30%
        - Detailed Planning Stage – 21 – 25%
        - 30% Plans – 16 to 20%

- 60% Plans – 10 to 15
- 90% Plans – 1 to 9%

b. Post-Design Services – approximately 8 to 15% of Final Design Fee

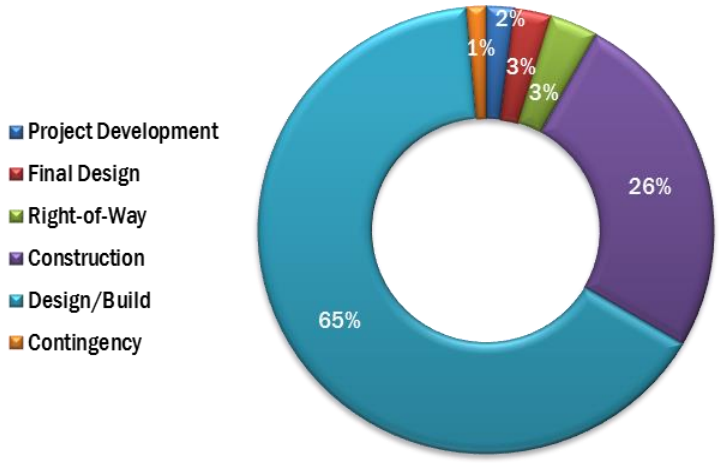
c. Construction Engineering and Inspection (CE&I) – approximately 6 to 12% of Direct Construction Cost. CE&I Management/Oversight – approximately 25 to 40% of CE&I fee.

4. Right-Of-Way – based on an estimate of the current market. The GEC right-of-way manager in coordination with appraisers put together an estimate of costs.

Other miscellaneous allowances (e.g. permitting, public information, testing, utility relocations, incentive bonuses, stipends, etc.) are estimated as applicable by phase of each project.

Figure 3-1 summarizes estimated costs by phase of all Capital and Renewal and Replacement projects included in the Five-Year Work Program for FY 2017-2021.

**Figure 3-1**
**FY 2017-2021 Five-Year Work Program – Phase Summary**



## 3.3 PROJECT SCHEDULES

Project schedules are based on historical time frames from previous projects and based on the General Engineering Consultant's knowledge of the implementation requirements at the time the Five-Year Work Program is developed. The schedules anticipate reasonable durations for completion of the work activities such as project development, final design, right-of-way acquisition, design/build and construction.

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# APPENDIX C

# MDX INVESTMENT GRADE TRAFFIC AND REVENUE STUDY (JULY 2016), CDM SMITH INC. SUPPLEMENTING THE MDX INVESTMENT GRADE TRAFFIC AND REVENUE STUDY (APRIL 2014)

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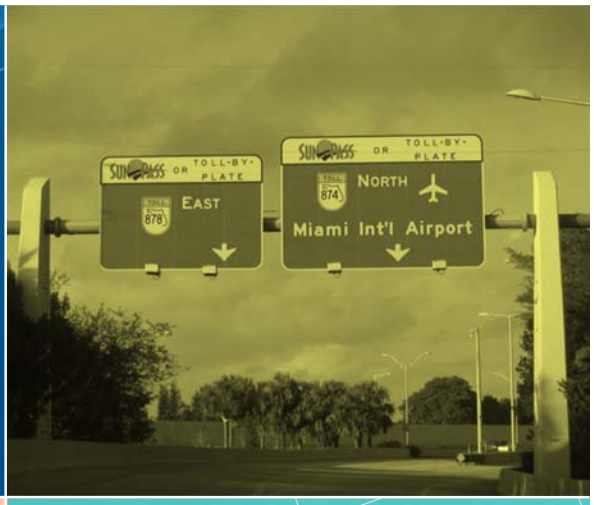
# MDX 2016
# Traffic and Revenue Forecast Update



July 2016

MDX
MIAMI-DADE EXPRESSWAY AUTHORITY

CDM Smith

CDM Smith
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New Haven, CT 06510
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July 26, 2016

Ms. Marie Schafer
Deputy Executive Director / CFO
Miami Dade Expressway Authority
3790 N.W. 21st Street
Miami, Florida 33142

**Re: Miami-Dade Expressway (MDX) Toll System Refunding, 2016 Traffic and Toll Revenue Update Letter**

Dear Ms. Schafer:

As part of the upcoming refunding, CDM Smith was requested by the Miami-Dade Expressway (MDX) Authority to perform a review of the traffic and toll revenue forecasts contained in our 2014 Investment Grade Traffic and Revenue Study (2014 IG Study) and to update the forecasts contained therein through FY 2033. To accomplish this, we reviewed the latest actual monthly transaction and revenue trend data by toll location through March 2016 and compared these against the aforementioned 2014 IG Study forecasts, reviewed the differences between the estimated and actual distributions of SunPass® and Toll-by-Plate (TBP) transactions, reviewed the status of projects in the latest highway improvement program versus what was contained in the 2014 IG Study, reviewed various socioeconomic data in light of trends forecasted in the 2014 IG Study, and reviewed other basic assumptions contained in the 2014 IG Study, such as toll rates and toll revenue leakage, in light of the actual experiences on the MDX System through March 2016.

This letter report summarizes the review process and details the specific updates to the 2014 IG Study traffic and revenue forecasts. The remainder of this report consists of five sections:

- **Description of the Existing MDX System** presents an overview of the existing MDX Expressways and the assumed roadway configurations underlying the traffic and revenue forecasts;
- **Prior Forecast Efforts** summarizes the major elements of the prior traffic and revenue studies used as the basis of the current traffic and revenue forecasts and provides a comparison of the previously forecasted impacts of ORT implementation against actual experience;
- **Traffic and Revenue Trends** describes the existing and historical traffic and operating conditions for the MDX System, including transactions and revenue, SunPass® market participation and vehicle class data;

- **Corridor Growth Overview** presents the results of an economic growth update conducted by an independent economist, Washington Economics Group (WEG), and the resulting adjustments applied to the estimated future year growth rates; and
- **Estimated Traffic and Revenue** summarizes the basic study assumptions and presents future year estimates of transactions and revenue for a Base Case under the current toll rates and for an Alternative Case assuming CPI-Based toll rates.

# Description of the Existing MDX System

Pursuant to Chapter 348, Part I, Florida Statutes, as amended, known as the Florida Expressway Authority Act, the Board of County Commissioners of Miami-Dade County created MDX on December 13, 1994. The intent behind the formation of MDX was to establish a responsive funding source to address transportation needs and to enhance mobility on Miami-Dade County's five expressways.

## MDX Expressways

In December 1996, MDX accepted operational and financial control of the following expressways from the Florida Department of Transportation (FDOT):

- Airport Expressway (SR 112) from the Miami International Airport (MIA) to I-95;
- Dolphin Expressway (SR 836) from NW 137th Avenue to I-95;
- Don Shula Expressway (SR 874) from the HEFT to Palmetto Expressway (SR 826);
- Snapper Creek Expressway (SR 878) from SR 874 to U.S. 1; and
- Gratigny Parkway (SR 924) from the SR 826 to NW 27th Avenue.

The location of the five existing MDX Expressways is shown in **Figure 1**. These expressways consist of approximately 33.6 centerline miles of expressways with 222.9 lane miles[1]. Revenue is currently collected from MDX customers at 13 mainline locations by a cashless, Open Road Tolling (ORT) system, through the use of SunPass® transponders or Toll-by-Plate (TBP) cameras mounted on overhead gantries. A brief description of each of the expressways is provided in **Table 1**. As part of the study effort, CDM Smith reviewed the current MDX Expressway mainline and ramp configuration and confirmed that it was consistent with the assumptions contained within the 2014 IG Study.

[1] Centerline miles, represent the total length of a given road from its starting point to its end point, while lane miles measure the total length and lane count of a given roadway. Lane miles are calculated by multiplying the centerline mileage of a road by the number of lanes it has.

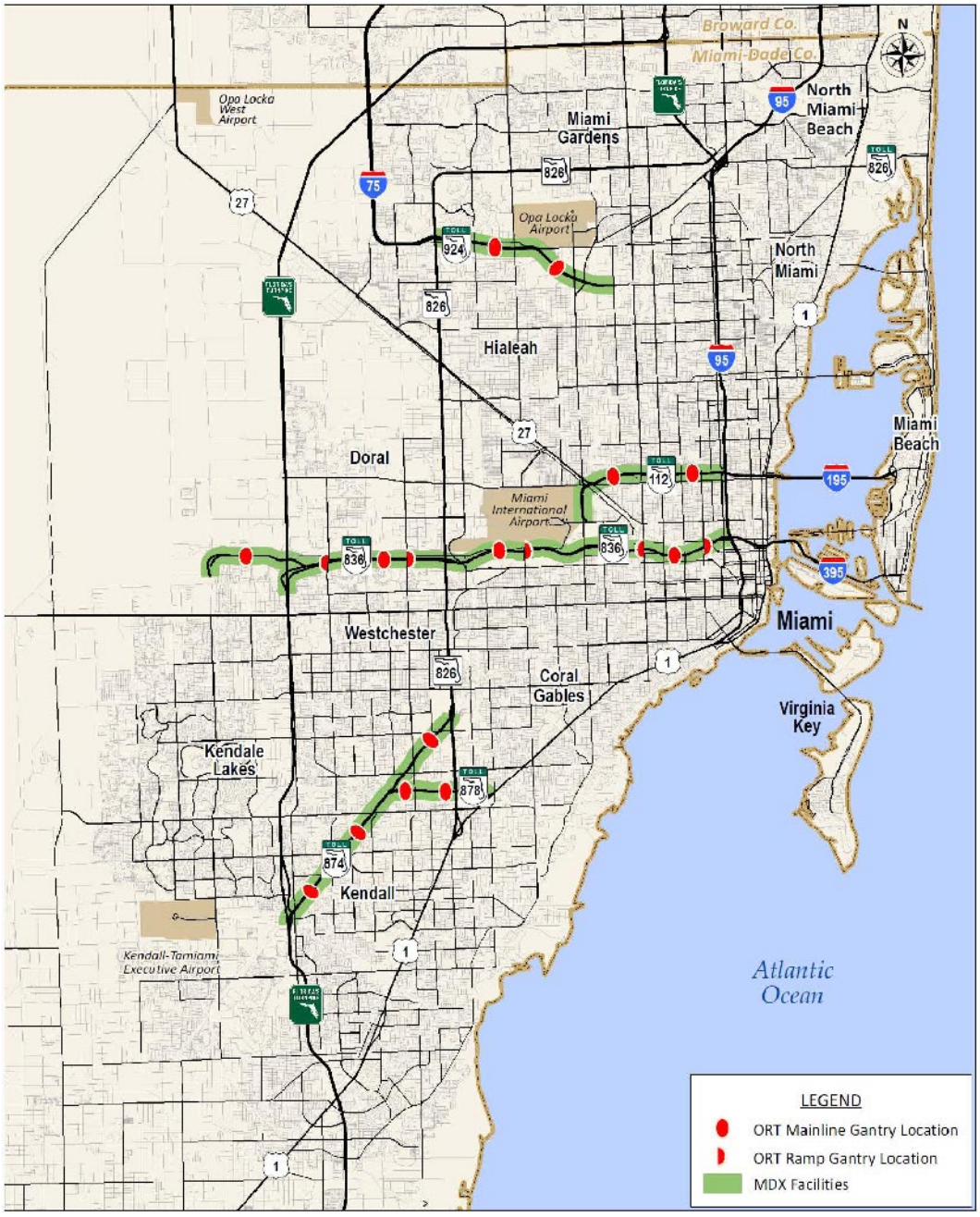



**Figure 1**
**Existing MDX System Location Map**

**Table 1**
**Summary of Existing MDX Expressways**

| MDX Expressway | Endpoints | Length (mi.) | Open-ing Year | ORT Conv. Year | Per-Mile SunPass® Toll Rate | Tolling Points | Passenger Car Toll Rates (SunPass®/TBP) |
|---|---|---|---|---|---|---|---|
| **SR 112** | MIA | 4.1 | 1961 | 2014 | $0.171 | E of NW 42nd Ave. | $0.35 / $0.70 |
| Airport Expy. | I-95 / I-195 | | | | | E of NW 17th Ave. | $0.35 / $0.70 |
| **SR 836** | NW 137th Ave. | 14.0 | 1965 | 2014 | $0.171 | E of NW 137th Ave. | $0.30 / $0.60 |
| Dolphin Expy. | I-95 / I-395 | | | | | NW 107th Ave. Ramps | $0.30 / $0.60 |
| | | | | | | W of NW 97th Ave. | $0.70 / $1.40 |
| | | | | | | NW 87th Ave. Ramps | $0.30 / $0.60 |
| | | | | | | W of NW 57th Ave. | $0.70 / $1.40 |
| | | | | | | NW 57th Ave. Ramps | $0.30 / $0.60 |
| | | | | | | NW 27th Ave. Ramps | $0.30 / $0.60 |
| | | | | | | W of NW 17th Ave. | $0.70 / $1.40 |
| | | | | | | NW 12th Ave. Ramps | $0.30 / $0.60 |
| **SR 874** | HEFT | 7.2 | 1974 | 2010 | $0.139 | N of HEFT | $0.25 / $0.50 |
| Don Shula Expy. | SR 826 | | | | | N of Killian Pkwy. | $0.25 / $0.50 |
| | | | | | | S of SR 826 | $0.50 / $1.00 |
| **SR 878** | SR 874 | 3.0 | 1974 | 2010 | $0.167 | W of SR 826 | $0.25 / $0.50 |
| Snapper Creek Expy. | US 1 | | | | | W of SW 87th Ave. | $0.25 / $0.50 |
| **SR 924** | I-75 / SR 826 | 5.4 | 1992 | 2010 | $0.185 | E of I-75 / SR 826 | $0.50 / $1.00 |
| Gratigny Pkwy. | NW 27th Ave. | | | | | W of NW 42nd Ave. | $0.50 / $1.00 |

SR 112 is a relatively short expressway facility which connects I-95 with Miami International Airport and several major arterial routes. Under the new ORT operation, tolls are collected at automated gantries at two locations, both serving each travel direction.

SR 836 is the most heavily utilized of the MDX facilities, and extends about 14 total miles from I-95 to 137th Avenue west of the Florida Turnpike. Much of this facility permitted toll-free travel in the past; it has now been fully converted to all electronic Open Road Tolling and toll-free movements are no longer permitted. The project serves as one of the only limited access east-west connections within Miami-Dade County. In addition to traffic along the immediate SR 836 corridor itself, it tends to draw traffic from southwestern portions of Miami Dade County due to the lack of limited access expressways along the U.S. Route 1 corridor, southwest of downtown Miami.

SR 874 and SR 878 generally serve as a connection between the Homestead Extension of Florida's Turnpike (HEFT) and the Palmetto Expressway, SR 826. This facility is being extended to the west to open up direct access to and from residential areas west of the HEFT. SR 878 also provides a direct connection to U.S. Route 1 in the Kendall/Coral Gables area.

Finally, SR 924 effectively operates as an extension of the southern end of I-75. It has a pair of two-directional tolling locations. Plans for possible extensions to both the west and east of SR 924 are under consideration, but are not assumed in this forecast.

# Prior Study Efforts

CDM Smith serves as Traffic and Revenue Consultant to the Authority and has previously provided estimates of future traffic and toll revenue for the MDX Expressways in support of toll revenue bonds. The current 2016 Traffic and Revenue Update study is based on the traffic data, modeling and forecast assumptions underlying the 2014 IG Study as well as the short-term forecasts included in the 2016 Short-Term Traffic and Revenue Forecast. Brief descriptions of the 2014 IG Study and the 2016 Short-Term Forecast are provided below. A summary of the estimated impacts of ORT included in the 2014 IG Study compared against the actual data is also provided for FY 2016, which was the first full year of systemwide ORT operation.

The review of the prior study efforts is organized into the following sections:

- 2014 Investment Grade Traffic and Revenue Study;
- Short-Term Traffic and Revenue Forecasts; and
- Impact of ORT Implementation – Forecast versus Actual.

## 2014 Investment Grade Traffic and Revenue Study

In 2014, CDM Smith performed a comprehensive Investment Grade study, culminating in the development of formalized updated long-term traffic and revenue forecasts for the MDX System through FY 2030. This study was conducted at a level of detail to meet the typical requirements of the financial community for major new bond issues. The study and the associated forecasts of transactions and revenue under Full ORT implementation included an independent review of the Region's underlying socioeconomic forecasts by WEG, a detailed traffic and revenue evaluation, and the collection of significant amounts of original traffic data. These data, which were incorporated into the Southeast Regional Planning Model (SERPM 6.5.3) used in the development of the forecasts, included Bluetooth Surveys of actual travel patterns on SR 836 and SR 112, system-wide traffic counts at each MDX expressway ramp and mainline plaza/gantry location, and INRIX speed data used to calculate travel times on the MDX expressways and select additional competing and feeder roadways in Miami-Dade and Broward Counties.

It is important to recognize that the 2014 IG Study was performed before the full implementation of ORT had been completed on SR 112 and SR 836, two of the most heavily used facilities in the MDX system. The forecast developed in the 2014 study assumed the conversion, but involved development of estimated traffic and revenue impacts associated with a number of new all-electronic tolling gantries. Prior to the final conversion, both of those facilities served an extensive amount of toll-free travel movements; so estimates of traffic diversions and other impacts associated with ORT were particularly important in development of the forecasts for the 2014 study. Since the actual conversion has now taken place, this report will subsequently provide a comparison of previous estimates of ORT conversion impacts with actual experience.

The forecasts of traffic and revenue contained in this update letter are predicated on the data collection and modeling efforts conducted as part of the 2014 IG Study. The forecast assumptions were reviewed and updated. Where necessary, high level adjustments were made to account for divergences between the prior forecast assumptions and the updated data trends and current forecast assumptions.

## Short-Term Traffic and Revenue Forecasts

As part of its routine annual traffic and revenue services for MDX, earlier this year CDM Smith developed updated monthly forecasts for a 36-month period encompassing Fiscal Years 2016,2017 and 2018. These used actual transaction and revenue data through December 2015. Also included in the short-term forecasts were the impacts of updated construction schedules and highway improvement plans based on discussions with MDX staff and their General Engineering Consultant (GEC), FDOT and Florida's Turnpike. The updated monthly forecasts were used as the baseline for the current 2016 Traffic and Revenue Update Study.

## Impact of ORT Implementation – Forecast versus Actual

Under the 2014 IG Study, it was assumed that all new mainline toll gantries on SR 112 and SR 836 would open on December 1, 2014 and that all ramp toll gantries on SR 836 would open on January 1, 2015. As of the date of the 2016 Short-Term Traffic and Revenue Forecasts, all ORT toll gantries were open, except for two ramp gantries near the NW 87th Avenue interchange on SR 836 expected to open in April 2016. In general, mainline toll gantries on SR 112 and SR 836 opened in November 2014, with the majority of the remaining toll gantries opening in January and February 2015.

As noted above, the 2014 IG Study relied upon the ORT impacts estimated using the travel demand model built upon the most recent transaction and socioeconomic data available, as well as assumptions regarding highway improvements, values of time, vehicle operating costs, and SunPass® participation rates. **Table 2** presents a comparison of previously estimated impacts associated with the ORT conversion on SR 112 and SR 836 with observed results following the actual implementation.

To enable the comparison to be made on a full fiscal year basis, the analysis compares previously estimated values for fiscal year 2016 (as developed in the 2014 study) with the most recent updated estimates for FY 2016. These updated estimates were developed within the last few months and the FY 2016 forecasts (which ends June 30 of this year) had the benefit of nine months of actual operating experience. While ORT had already been implemented on SR 874, SR 878, and SR 924, these are also included in the table because the implementation of ORT on SR 112 or SR 836 was anticipated to have minor impacts on some of these other facilities.

Overall, the conversion of the two major routes to ORT was expected to add 505,200 daily transactions to the system, largely due to the number of additional tolling points being implemented on SR 112 and SR 836. In practice, daily transactions increased by 541,400, about seven percent above the estimate which had been developed in the 2014 study. In terms of revenue impacts, the prior study anticipated an increase of $86.2 million in indicated annual revenue (not accounting for collection and other leakage issues). The actual additional revenue came in at $94.4 million, about 9.5 percent above estimate.

**Table 2**
**Comparison of Forecasted and Observed ORT Impacts, FY 2016**

| Toll Locations | 2014 IG Traffic and Revenue Study | | | | FY 2016 Observed[1] | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Forecast without Full ORT | Forecast with Full ORT | Est. ORT Impact | Pct. Impact | Estimate w/o Full ORT[2] | Actual with Full ORT | Est. ORT Impact | Pct. Impact | Pct. of Actual |
| **Annual Average Daily Transactions (000s)** | | | | | | | | | |
| **SR 112** | | | | | | | | | |
| Existing Toll Locations Prior to ORT | 44.1 | 51.6 | 7.5 | 17.0 | 45.5 | 52.5 | 7.0 | 15.4 | |
| Toll Locations New to ORT | | 144.5 | 144.5 | | | 149.4 | 149.4 | | |
| Total | 44.1 | 196.1 | 152.0 | 344.7 | 45.5 | 201.9 | 156.4 | 343.7 | 102.9 |
| **SR 836** | | | | | | | | | |
| Existing Toll Locations Prior to ORT | 230.1 | 213.4 | (16.7) | (7.3) | 224.5 | 235.7 | 11.2 | 5.0 | |
| Toll Locations New to ORT [3] | | 375.3 | 375.3 | | | 373.8 | 373.8 | | |
| Total | 230.1 | 588.7 | 358.6 | 155.8 | 224.5 | 609.5 | 385.0 | 171.5 | 107.4 |
| **SR 874 Total** | 300.4 | 294.3 | (6.1) | (2.0) | 301.9 | 301.9 | - | - | |
| **SR 878 Total** | 74.2 | 75.1 | 0.9 | 1.2 | 77.5 | 77.5 | - | - | |
| **SR 924 Total** | 86.3 | 86.1 | (0.2) | (0.2) | 99.1 | 99.1 | - | - | |
| **Systemwide** | | | | | | | | | |
| **Existing Toll Locations Prior to ORT** | **735.1** | **720.5** | **(14.6)** | **(2.0)** | **748.5** | **766.7** | **18.2** | **2.4** | |
| **Toll Locations New to ORT** | **-** | **519.8** | **519.8** | | **-** | **523.2** | **523.2** | | |
| **Total** | **735.1** | **1,240.3** | **505.2** | **68.7** | **748.5** | **1,289.9** | **541.4** | **72.3** | **107.2** |
| **Annual Revenue ($ Millions) [4]** | | | | | | | | | |
| **SR 112** | | | | | | | | | |
| Existing Toll Locations Prior to ORT | $ 17.9 | $ 8.5 | $ (9.4) | (52.7) | $ 21.7 | $ 8.5 | $ (13.2) | (60.8) | |
| Toll Locations New to ORT | | 23.7 | 23.7 | | | 23.9 | 23.9 | | |
| Total | 17.9 | 32.2 | 14.3 | 79.9 | 21.7 | 32.4 | 10.7 | 49.3 | 74.8 |
| **SR 836** | | | | | | | | | |
| Existing Toll Locations Prior to ORT | 73.9 | 59.4 | (14.5) | (19.6) | 78.8 | 66.7 | (12.1) | (15.5) | |
| Toll Locations New to ORT [3] | | 87.5 | 87.5 | | | 95.8 | 95.8 | | |
| Total | 73.9 | 146.9 | 73.0 | 98.7 | 78.8 | 162.5 | 83.7 | 106.2 | 114.7 |
| **SR 874 Total** | 41.3 | 40.2 | (1.2) | (2.8) | 43.5 | 43.5 | - | - | |
| **SR 878 Total** | 7.6 | 7.7 | 0.1 | 1.3 | 8.2 | 8.2 | - | | |
| **SR 924 Total** | 19.0 | 19.0 | 0.0 | (0.1) | 23.1 | 23.1 | - | - | |
| **Systemwide** | | | | | | | | | |
| **Existing Toll Locations Prior to ORT** | **$ 159.8** | **$ 134.7** | **$ (25.0)** | **(15.7)** | **$ 175.3** | **$ 150.0** | **$ (25.3)** | **(14.4)** | |
| **Toll Locations New to ORT** | **-** | **111.2** | **111.2** | | | **119.7** | **119.7** | | |
| **Total** | **159.8** | **245.9** | **86.2** | **53.9** | **175.3** | **269.7** | **94.4** | **53.9** | **109.5** |

(1) Based on Actual Data through March 2016.
(2) Based on Actual FY 2015 Data and the normal growth rates estimated in the 2014 IG Study.
(3) The SR 836 WB Slip Ramp and CD Road toll gantries near NW 87th Avenue are assumed to be open for all of FY 2016 under the 2014 IG Study, and are assumed to open April 2016 under the 2016 Annual Update.
(4) Does not include revenue adjustments to account for revenue leakage. Does not include fee revenue or revenue adjustments for MDX Discount programs.

In essence, the prior estimates proved to be slightly conservative and actual experience in both transactions and revenue exceeded the earlier forecasts. The actual experience is, of course, also used in the development of updated long-range traffic and revenue forecasts for the MDX system.

# Traffic and Revenue Trends

As part of the forecast update process, CDM Smith obtained and reviewed the latest transaction and revenue data from MDX. This was reviewed in comparison with estimates developed previously in the 2014 study, both in terms of normal growth rates as well as overall transaction and toll revenue trends. These data were also considered in the historical context of MDX transaction and revenue growth. The following section summarizes the annual and monthly transaction and revenue trends for each expressway and for the total MDX system.

## Annual System-wide Traffic and Revenue Trends

**Table 3** presents annual average daily transaction and revenue trends for FY 2005 through FY 2015 for each of the five MDX expressways. The MDX fiscal year runs from July 1 to June 30. Average daily transaction levels reflect only toll-paying transactions. It should be noted that in this letter report, the terms traffic and transactions are both used. However, traffic refers to the greater category of vehicular traffic on the MDX expressways, while transactions refer to traffic that has passed through a toll collection location.

Since FY 2005, systemwide transactions have increased more than fivefold. This is due to the addition of the SR 836 Extension, as well as the addition of new toll gantry locations as part of the implementation of system-wide ORT. Annual toll revenues have more than tripled since FY 2005 as a result of the SR 836 Extension and various toll increases. As part of the implementation of system-wide ORT, the MDX System was "closed", meaning that trips that were previously toll-free are now tolled. However, tolls at existing gantry locations were reduced so that the cost of a full length trip on any of the MDX expressways would cost roughly the same as it had prior to ORT implementation. This is the reason that toll revenues have not increased at the same rate as transactions since FY 2005. Excluding these years of significant changes in toll operations (FY 2006, FY 2008, FY 2011 and FY 2015), systemwide transactions have experienced annual increases averaging 2.2 percent, while systemwide toll revenues have experienced annual increases averaging 3.1 percent.

Between FY 2005 and FY 2010, the MDX system experienced a toll increase, a system expansion and the onset of the impacts of the Great Recession. As a result of the FY 2006 toll rate increase to $1.00 for SunPass® customers and $1.25 for cash customers, system-wide toll revenue increased by 34.2 percent, while average daily transactions decreased by 2.1 percent. Despite this, systemwide average daily transactions between FY 2005 and FY 2010 grew from 197,500 to 321,700. This increase of over 60 percent in 5 years was primarily the result of the opening of the new mainline toll plaza on SR 836 west of NW 97th Avenue and the SR 836 Extension between SW 137th Street and the HEFT in FY 2008. During FY 2008, transactions tripled on SR 836, increasing system-wide transactions by 62.2 percent and revenue by 39.8 percent. The impacts of the Great Recession, which had already begun to impact

**Table 3**

**Average Daily Transaction and Annual Toll Revenue Trends**

| Fiscal Year [1] | SR 112 Total | Percent Chng. [2] | SR 836 Total | Percent Chng. [2] | SR 874 Total | Percent Chng. [2] | SR 878 Total | Percent Chng. [2] | SR 924 Total | Percent Chng. [2] | Total System | Percent Chng. [2] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Average Daily Transactions** | | | | | | | | | | | | |
| 2005[3] | 32,531 | (2.6) | 58,633 | 4.2 | 71,586 | 2.8 | - | - | 34,781 | 5.0 | 197,531 | 2.6 |
| 2006[3][4] | 29,690 | (8.7) | 57,726 | (1.5) | 72,241 | 0.9 | - | - | 33,655 | (3.2) | 193,312 | (2.1) |
| 2007 | 30,443 | 2.5 | 60,056 | 4.0 | 75,543 | 4.6 | - | - | 33,206 | (1.3) | 199,248 | 3.1 |
| 2008[5] | 32,648 | 7.2 | 180,142 | 200.0 | 78,162 | 3.5 | - | - | 32,247 | (2.9) | 323,199 | 62.2 |
| 2009 | 34,036 | 4.3 | 176,643 | (1.9) | 77,491 | (0.9) | - | - | 29,969 | (7.1) | 318,139 | (1.6) |
| 2010 | 34,768 | 2.2 | 182,017 | 3.0 | 72,695 | (6.2) | - | - | 32,176 | 7.4 | 321,656 | 1.1 |
| 2011[6] | 36,240 | 4.2 | 189,141 | 3.9 | 237,405 | 226.6 | 70,536 | - | 72,818 | 126.3 | 606,140 | 88.4 |
| 2012 | 38,672 | 6.7 | 199,195 | 5.3 | 248,108 | 4.5 | 72,741 | 3.1 | 76,955 | 5.7 | 635,671 | 4.9 |
| 2013 | 40,060 | 3.6 | 202,032 | 1.4 | 255,830 | 3.1 | 73,673 | 1.3 | 79,216 | 2.9 | 650,811 | 2.4 |
| 2014[7] | 42,788 | 6.8 | 204,090 | 1.0 | 263,062 | 2.8 | 73,514 | (0.2) | 86,004 | 8.6 | 669,457 | 2.9 |
| 2015[8] | 137,076 | 220.4 | 411,714 | 101.7 | 285,435 | 8.5 | 76,135 | 3.6 | 94,648 | 10.1 | 1,005,008 | 50.1 |
| 2016[9] | 201,952 | 47.3 | 609,496 | 48.0 | 301,900 | 5.8 | 77,489 | 1.8 | 99,147 | 4.8 | 1,289,984 | 28.4 |
| **Average Annual Percent Change (AAPC)** | | | | | | | | | | | | |
| 2005-10 | | 1.3 | | 25.4 | | 0.3 | | N/A | | (1.5) | | 10.2 |
| 2010-15 | | 31.6 | | 17.7 | | 31.5 | | N/A | | 24.1 | | 25.6 |
| 2005-15 | | 15.5 | | 21.5 | | 14.8 | | N/A | | 10.5 | | 17.7 |
| **Annual Toll Revenue ($000s)** | | | | | | | | | | | | |
| 2005[3] | $7,157 | 13.9 | $17,359 | 16.1 | $20,857 | 13.1 | - | - | $10,932 | 20.8 | $56,305 | 15.5 |
| 2006[3][4] | 11,784 | 64.6 | 22,583 | 30.1 | 27,631 | 32.5 | - | - | 13,540 | 23.9 | 75,538 | 34.2 |
| 2007 | 12,305 | 4.4 | 23,901 | 5.8 | 29,833 | 8.0 | - | - | 13,716 | 1.3 | 79,755 | 5.6 |
| 2008[5] | 13,220 | 7.4 | 54,514 | 128.1 | 30,619 | 2.6 | - | - | 13,170 | (4.0) | 111,523 | 39.8 |
| 2009 | 13,587 | 2.8 | 53,499 | (1.9) | 30,004 | (2.0) | - | - | 12,065 | (8.4) | 109,155 | (2.1) |
| 2010 | 13,792 | 1.5 | 55,185 | 3.2 | 28,135 | (6.2) | - | - | 12,010 | (0.5) | 109,122 | (0.0) |
| 2011[6] | 14,480 | 5.0 | 56,824 | 3.0 | 30,226 | 7.4 | 6,683 | - | 14,470 | 20.5 | 122,683 | 12.4 |
| 2012 | 15,153 | 4.6 | 57,768 | 1.7 | 28,248 | (6.5) | 6,508 | (2.6) | 14,123 | (2.4) | 121,800 | (0.7) |
| 2013 | 15,940 | 5.2 | 60,053 | 4.0 | 31,751 | 12.4 | 7,043 | 8.2 | 15,805 | 11.9 | 130,592 | 7.2 |
| 2014[7] | 16,392 | 2.8 | 55,881 | (6.9) | 30,661 | (3.4) | 6,628 | (5.9) | 16,336 | 3.4 | 125,898 | (3.6) |
| 2015[8] | 21,472 | 31.0 | 97,689 | 74.8 | 35,300 | 15.1 | 7,225 | 9.0 | 18,997 | 16.3 | 180,682 | 43.5 |
| 2016[9] | 26,952 | 22.8 | 138,584 | 41.9 | 37,038 | 4.9 | 7,231 | 0.1 | 19,428 | 2.3 | 229,233 | 26.9 |
| **Average Annual Percent Change (AAPC)** | | | | | | | | | | | | |
| 2005-10 | | 14.0 | | 26.0 | | 6.2 | | N/A | | 1.9 | | 14.1 |
| 2010-15 | | 9.3 | | 12.1 | | 4.6 | | N/A | | 9.6 | | 10.6 |
| 2005-15 | | 11.6 | | 18.9 | | 5.4 | | N/A | | 5.7 | | 12.4 |

(1) Fiscal year is 12 months from July 1 through June 30.
(2) Percent change year-over-year.
(3) Due to hurricane related toll suspensions, average daily transactions in 2004/05 based on 359 days of operation; 2005/06 based on 356 days of operation.
(4) Tolls increased to $1.25 (cash) and $1.00 (SunPass) at all plazas in July 2005.
(5) Tolling on new mainline toll plaza on SR 836 west of NW 97th Avenue and Extension to NW 137th Avenue begins July 1, 2007.
(6) Tolling on SR 878 begins July 17, 2010; average daily transactions in FY 2011 based on 349 days of operation.
SR 924 converted to ORT facility on June 7, 2010. SR 874 converted to ORT facility on July 17, 2010.
(7) Toll-by-Plate Tolls Increased to double the SunPass® Rate and Cash Tolls Removed on SR 836 at NW 17th Ave. in July 2013.
Tolls at the SR 836 EB Exit Ramp to NW 17th Avenue suspended September 2013 due to ORT Gantry construction activity.
(8) SR 112 and SR 836 converted to ORT facilities November 2014.
(9) Projected based on actual data through March 2016.
Source: Miami-Dade Expressway Authority.

Broward County and SR 924 in FY 2008, were more fully realized in FY 2009. These included reductions in vehicle miles traveled, lower levels of employment and higher unemployment rates as compared to the prior year, and significantly fewer reported building permits for single family units. All this contributed to the 1.6 percent decrease in average daily transactions and the 2.1 percent decrease in revenue that occurred in FY 2009. Taking the year of toll increase and system expansion out of consideration, normal traffic growth between FY 2005 and FY 2010 averaged 1.3 percent, even with the impacts of the Great Recession. The expressway with the slowest normal growth during this period (Excluding FY 2006 and FY 2008) was SR 874 with an average annual traffic growth of about 0.1 percent, primarily as a result of the negative impacts of the recession in FY 2009 and FY 2010. The expressway with the highest normal growth during the same years was SR 836, with an average of 2.3 percent traffic growth per year.

At the end of FY 2010 and beginning of FY 2011, three of MDX's expressways were converted to ORT: SR 874, SR 878 and SR 924. During the first full year of operation in FY 2011, the removal of un-tolled movements on these three expressways created a significant 88.0 percent increase in toll transactions due to the addition of five new toll locations and the replacement of two toll plazas with toll gantries.

However, revenues increased at a lower rate of 12.4 percent due to the fact that the full-length trip costs on SR 874, SR 878 and SR 924, remained about the same. Hence, the number of toll points increased while the average toll per collection point decreased. The revenue increase was greater than the rate of normal growth due to the capturing of previously un-tolled movements on the three expressways. During the second year of ORT operation in FY 2012, transactions increased at a more normal growth rate of 4.9 percent, while revenue decreased slightly by 0.7 percent mainly due to conversions of customers from TBP to SunPass®, taking advantage of the lower toll rates, and billing processing issues associated with TBP.

In FY 2013, average daily transaction growth system-wide was 2.4 percent. Growth was impacted by construction taking place on the MDX system in FY 2013, including the SR 836/SR 826 interchange reconstruction project and the widening of the northern section of SR 874. Despite the slower transaction growth, revenues increased by 7.2 percent system-wide over FY 2012. This is a result of improved collections of TBP toll revenues, as is evidenced by the fact that SR 874, SR 878 and SR 924 (the first expressways to be converted to ORT) all experienced the greatest increases in revenue over the prior year.

Transactions and revenue impacts in FY 2014 derived primarily from the preparation for the shift to system-wide ORT. Total transactions grew by 2.9 percent over FY 2013, fueled by an increase in housing development in western Broward County, an increase in tourist traffic, reduced fuel prices and general economic recovery. Despite the growth in transactions, toll revenues decreased by 3.6 percent. This was due to two factors. First, at least $2.7 million in toll revenues was lost due to the suspension of toll collection on SR 836 at the EB exit ramp to NW 17th Avenue in September 2013 as a result of the construction of the new ORT toll gantry. Secondly, toll revenues were lost in FY 2014 due to additional leakage, related primarily to billing issues following the transition to a new toll collection vendor, beginning in October 2013. This process has now been improved.

Transaction and revenue impacts in FY 2015 both showed big increases over the prior year. The remaining two roadways without ORT, SR 112 and SR 836, were both converted to ORT in November 2014. Average daily transactions increased from 669,457 in FY 2014 to 1,005,008 in FY 2015, an increase of 50.1 percent. The largest portion of this increase came on SR 112, which went from one single-direction toll plaza to two bi-directional toll gantries. Average daily transactions on SR 112 increased from 42,788 in FY 2014 to 137,076 in FY 2015, a 220.4 percent increase, while annual toll revenue increased from $125.898 million in FY 2014 to $180.682 million in FY 2015, an increase of 43.5 percent. SR 836 also saw large increases in both transactions and revenue for FY 2015. Average daily transactions on SR 836 grew 101.7 percent to 411,714 while annual toll revenue grew 74.8 percent to $97.689 million. These large increases came from the addition of new toll gantries during the conversion to ORT.

Overall, daily transactions grew between FY 2005 and FY 2015 at an average of 17.7 percent per year system-wide, while revenue grew at an average annual rate of 12.4 percent. As discussed above, this was aided by a toll increase, system expansions and the conversion to ORT. Systemwide annual toll transaction and revenue trends for this period are presented graphically in **Figure 2**.

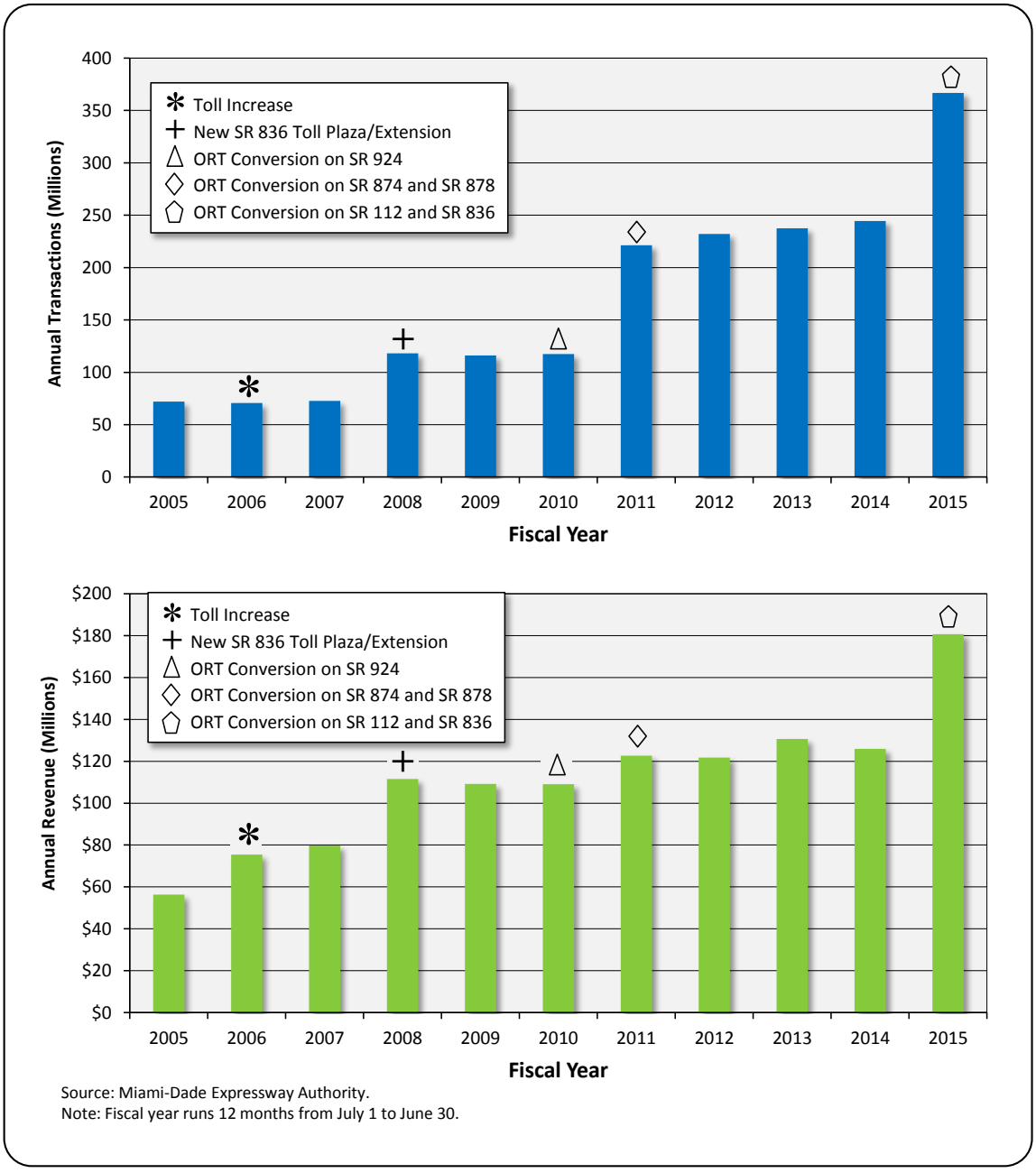
## Monthly Traffic and Revenue Trends by Expressway

Monthly transaction and collected toll revenue trends have been assembled for each of the five expressways for the last five fiscal years (FY 2011 through FY 2015). Audited transaction and collected toll revenue data, available for the first nine months of FY 2016 have also been included. Collected toll revenue represents actual revenues received for toll transactions by MDX (accounting for toll revenue leakage) and excludes fees.

### SR 112 – Airport Expressway

**Table 4** presents monthly transactions and gross toll revenue for SR 112 since FY 2011. Between FY 2011 and FY 2014, SR 112 transactions grew by an average of 6.0 percent per year, while revenue increased by 4.2 percent per year. Transactions increased in FY 2014 by 6.8 percent, due in part to a shift of traffic from SR 836 as a result of the removal of the old cash plaza on SR 836. Additionally, completion of the Central Boulevard reconstruction project and an increase in airport traffic coupled with improved economic conditions helped to boost SR 112 transactions. Despite the increases in transactions, toll revenues increased by 2.8 percent primarily as a result of additional leakage related to the billing issues following the transition to a new toll collection vendor, beginning in late October 2013.

With the conversion to system-wide ORT on November 15, 2014, transactions on SR 112 almost quadrupled with the addition of a new toll gantry west of NW 32nd Avenue and a new WB toll gantry east of NW 12th Avenue were added. SR 112 transactions increased by 220.4 percent from FY 2014 to FY 2015. SR 112 collected revenues continued to experience billing issues following the transition to a new toll collection vendor, but increased slightly in the last few months of the year as a result of the addition of the new toll gantries. Although transactions almost quadrupled since the ORT conversion,




Source: Miami-Dade Expressway Authority.
Note: Fiscal year runs 12 months from July 1 to June 30.

**Figure 2**
**Existing MDX System Location Map**

**Table 4**
**Monthly Transactions and Toll Revenue Trends, FY 2011 through FY 2016[1]**
**SR 112 – Airport Expressway**

| Month | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 | Percent Change | FY 2015 | Percent Change | FY 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Transactions (000s) | | | | | | | | | | |
| July | 1,038 | 9.9 | 1,140 | 4.1 | 1,187 | 6.0 | 1,258 | 3.7 | 1,305 | 362.1 | 6,028 |
| August | 1,040 | 11.6 | 1,161 | 2.6 | 1,191 | 11.0 | 1,322 | (2.0) | 1,296 | 353.5 | 5,875 |
| September | 1,010 | 9.8 | 1,109 | 0.0 | 1,109 | 8.6 | 1,204 | 4.1 | 1,253 | 352.6 | 5,672 |
| October | 1,084 | 5.0 | 1,138 | 7.0 | 1,218 | 9.9 | 1,339 | 2.3 | 1,369 | 347.2 | 6,124 |
| November | 1,066 | 8.9 | 1,161 | 2.0 | 1,184 | 7.6 | 1,273 | 163.6 | 3,357[2][3] | 77.5 | 5,957 |
| December | 1,078 | 8.0 | 1,165 | 3.4 | 1,204 | 9.5 | 1,318 | 339.8 | 5,797 | 8.6 | 6,297 |
| January | 1,098 | 8.5 | 1,191 | 4.6 | 1,246 | 7.3 | 1,337 | 344.4 | 5,944 | 5.8 | 6,290 |
| February | 1,067 | 9.7 | 1,171 | (0.3) | 1,168 | 7.7 | 1,257 | 341.3 | 5,547 | 11.1 | 6,166 |
| March | 1,260 | 2.9 | 1,297 | 1.8 | 1,321 | 5.4 | 1,391 | 355.2 | 6,332 | 7.1 | 6,781 |
| April | 1,180 | 2.6 | 1,211 | 6.2 | 1,287 | 3.7 | 1,334 | 353.2 | 6,047 | - | - |
| May | 1,179 | 4.6 | 1,233 | 5.0 | 1,295 | 2.9 | 1,333 | 350.2 | 6,000 | - | - |
| June | 1,127 | 4.5 | 1,178 | 3.0 | 1,213 | 3.1 | 1,251 | 362.5 | 5,786 | - | - |
| **Total** | **13,228** | **7.0** | **14,154** | **3.3** | **14,622** | **6.8** | **15,618** | **220.4** | **50,033** | **71.4[4]** | **55,190** |
| | Collectible Toll Revenue – Excluding Fee Revenue ($000s) | | | | | | | | | | |
| July | $ 1,158 | (0.3) | $ 1,155 | 9.5 | $ 1,265 | 12.0 | $ 1,416 | (5.4) | $ 1,340 | 31.1 | $ 1,757 |
| August | 1,157 | 7.6 | 1,245 | 5.1 | 1,308 | 12.3 | 1,468 | (12.3) | 1,287 | 60.8 | 2,069 |
| September | 1,119 | 8.8 | 1,217 | 1.8 | 1,239 | 6.6 | 1,320 | 0.7 | 1,329 | 56.1 | 2,074 |
| October | 1,202 | 0.5 | 1,208 | 10.1 | 1,330 | 5.8 | 1,407 | 16.1 | 1,634 | 33.7 | 2,185 |
| November | 1,177 | 5.4 | 1,241 | 2.5 | 1,272 | 3.4 | 1,314 | (1.0) | 1,301[2][3] | 57.3 | 2,047 |
| December | 1,132 | 9.2 | 1,236 | 8.8 | 1,344 | 1.1 | 1,359 | 7.7 | 1,464 | 42.2 | 2,083 |
| January | 1,213 | 4.1 | 1,263 | 5.7 | 1,336 | 5.3 | 1,407 | 20.0 | 1,689 | 22.6 | 2,070 |
| February | 1,168 | 7.3 | 1,254 | 1.8 | 1,277 | (0.1) | 1,276 | 36.1 | 1,737 | 28.1 | 2,225 |
| March | 1,370 | 2.6 | 1,406 | 1.3 | 1,424 | (0.2) | 1,421 | 72.0 | 2,444 | 7.9 | 2,638 |
| April | 1,291 | 2.1 | 1,318 | 3.6 | 1,365 | 1.3 | 1,382 | 40.0 | 1,935 | - | - |
| May | 1,254 | 6.1 | 1,330 | 3.8 | 1,380 | (5.4) | 1,306 | 98.0 | 2,586 | - | - |
| June | 1,240 | 3.2 | 1,281 | 9.5 | 1,402 | (6.2) | 1,315 | 107.3 | 2,726 | - | - |
| **Total** | **$14,481** | **4.6** | **$15,153** | **5.2** | **$15,940** | **2.8** | **$16,392** | **31.0** | **$21,472** | **34.6[4]** | **$19,148** |

Note: Annual revenue excludes revenue recovered through violation enforcement.
(1) Fiscal year represents 12 months beginning July 1 and ending June 30.
(2) All-electronic toll collection commenced on SR 112 with the ending of cash payment at the SR 112 EB Mainline Toll Plaza E of NW 12th Avenue on November 15, 2014.
(3) Two mainline ORT toll gantries opened on SR 112, one E of NW 12th Avenue and one E of NW 32nd Avenue.
(4) Represents the percent change in FY 2016 year-to-date versus same period in prior fiscal year.
Source: Miami-Dade Expressway Authority

each toll gantry carried a passenger car, SunPass® toll of $0.35, and as a result, the round-trip toll on SR 112 only increased from $1.00 to $1.40, resulting in collected revenues increasing 31.0 percent. The largest portion of this increase came from May and June, where both months almost doubled in collectable revenue from FY 2014 to FY 2015.

The first four months of FY 2016 show huge increases in transactions similar to the end of FY 2015 as a result of the conversion to ORT. Each of these months shows over 300 percent growth, with the largest increase in July at 362.1 percent. For the first nine months of FY 2016, transactions grew at an average of 71.4 percent compared to the same nine months of FY 2015. Collectable revenues for FY 2016 experienced growth as well, increasing by an average of 34.6 percent for the first nine months, with increases over FY 2014 in December through February making up for shortfalls during the prior year due to collection issues experienced during the first few months of ORT implementation. The highest increase came in August with a 60.8 percent increase compared to FY 2015. The latest month of available data, March 2016, may represent a return to normal growth trends, with a year-over-year increase of 7.1 percent in transactions and 7.9 percent in collected toll revenue.

## SR 836 – Dolphin Expressway

**Table 5** presents monthly transactions and gross toll revenue for SR 836 since FY 2011. Between FY 2011 and FY 2013, SR 836 transactions grew by an average of 2.6 percent per year, while revenue increased through FY 2013 before declining by 6.9 percent in FY 2014. This was despite major ongoing construction activity on SR 836 at the interchange with SR 826, involving nighttime lane and ramp closures, some full expressway closures and numerous traffic lane shifts to accommodate new roadway and overpass construction. Moreover, ORT gantry construction at the former NW 17th Avenue mainline plaza diverted some traffic to SR 112 as previously discussed.

Two factors served to depress transaction and revenue growth in FY 2014. First, some traffic from SR 836 shifted to SR 112 in order to avoid the construction work at the old SR 836 cash plaza. Furthermore, temporary suspension of toll collection at the EB exit ramp to NW 17th Avenue in mid-September 2013 resulted in the reduction of an estimated 275,000 transactions per month. Despite the modest increase in total annual transactions, toll revenues decreased by 6.9 percent, which differed from the year-over-year change in transactions due to the additional leakage related to billing issues following the transition to a new toll collection vendor, beginning in late October 2013.

Transaction and revenue growth in FY 2015 show the impacts of the traffic diversions resulting from the various SR 836 construction projects. Transactions during the first four months of FY 2015 grew by an average of 1.8 percent over FY 2014, roughly consistent with the prior year. With the conversion to system-wide ORT on November 15, 2015, transactions on SR 836 have more than doubled as new mainline and ramp toll gantries were added to the system. The most significant is the new mainline toll gantry at NW 57th Avenue, which has processed an average of 3.8 million additional transactions per month. The new westbound mainline toll gantry west of NW 17th Avenue is also a significant new source of toll transactions, processing roughly 1.8 million additional transactions per month. Overall, transactions and revenue have increased by 101.7 and 74.8 percent, respectively, FY 2014 to FY 2015.

**Table 5**
**Monthly Transactions and Toll Revenue Trends, FY 2011 through FY 2016[1]**
**SR 836 – Dolphin Expressway**

| Month | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 | Percent Change | FY 2015 | Percent Change | FY 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Transactions (000s) | | | | | | | | | | |
| July | 5,609 | 4.0 | 5,832 | 6.4 | 6,206 | (2.1) | 6,074[2] | 1.7 | 6,176 | 198.3 | 18,421 |
| August | 5,696 | 4.9 | 5,973 | 3.1 | 6,160 | 2.1 | 6,289 | 0.6 | 6,329 | 185.6 | 18,073 |
| September | 5,517 | 5.2 | 5,806 | 1.8 | 5,912 | 1.3 | 5,990[3] | 3.5 | 6,197 | 182.9 | 17,535 |
| October | 5,861 | 1.2 | 5,933 | 6.3 | 6,305 | 1.7 | 6,410 | 1.3 | 6,496 | 186.8 | 18,628 |
| November | 5,635 | 3.8 | 5,848 | 3.6 | 6,061 | 0.7 | 6,103 | 53.3 | 9,357[4][5] | 89.1 | 17,692 |
| December | 5,769 | 4.5 | 6,030 | (1.1) | 5,963 | 4.6 | 6,239 | 125.2 | 14,053 | 32.6 | 18,634 |
| January | 5,710 | 5.3 | 6,015 | 2.0 | 6,134 | 1.9 | 6,251 | 135.0 | 14,693[6] | 23.7 | 18,171 |
| February | 5,477 | 7.8 | 5,905 | (1.8) | 5,799 | 0.7 | 5,841 | 156.8 | 14,998 | 19.1 | 17,856 |
| March | 6,146 | 9.4 | 6,724 | (3.2) | 6,512 | (0.6) | 6,472 | 177.0 | 17,930 | 9.5 | 19,640 |
| April | 5,837 | 5.7 | 6,171 | 1.3 | 6,253 | 1.3 | 6,337 | 184.9 | 18,053 | - | - |
| May | 5,912 | 9.0 | 6,446 | (0.9) | 6,385 | 0.6 | 6,424 | 184.6 | 18,282 | - | - |
| June | 5,867 | 6.1 | 6,223 | (2.7) | 6,053 | 0.2 | 6,063 | 192.2 | 17,713 | - | - |
| **Total** | **69,036** | **5.6** | **72,905** | **1.1** | **73,742** | **1.0** | **74,493** | **101.7** | **150,276** | **71.1[7]** | **164,650** |
| | Collectible Toll Revenue – Excluding Fee Revenue ($000s) | | | | | | | | | | |
| July | $ 4,674 | (1.1) | $ 4,623 | 6.7 | $ 4,932 | 3.5 | $5,105[2] | (13.2) | $ 4,433 | 112.5 | $ 9,421 |
| August | 4,760 | (1.6) | 4,686 | 10.0 | 5,156 | 0.4 | 5,179 | (14.1) | 4,450 | 147.4 | 11,010 |
| September | 4,553 | 0.3 | 4,564 | 8.7 | 4,960 | (2.5) | 4,835[3] | (0.7) | 4,801 | 127.0 | 10,898 |
| October | 4,880 | (4.6) | 4,655 | 13.5 | 5,283 | (11.2) | 4,689 | 22.7 | 5,753 | 97.2 | 11,347 |
| November | 4,704 | (1.9) | 4,614 | 7.8 | 4,973 | (13.6) | 4,299 | 32.5 | 5,695[4][5] | 83.6 | 10,454 |
| December | 4,843 | (2.6) | 4,717 | 6.7 | 5,032 | (12.5) | 4,402 | 74.3 | 7,671 | 38.1 | 10,597 |
| January | 4,680 | 1.3 | 4,738 | 2.3 | 4,849 | (5.5) | 4,583 | 88.7 | 8,647[6] | 26.4 | 10,933 |
| February | 4,473 | 5.0 | 4,698 | (0.3) | 4,684 | (11.0) | 4,170 | 93.0 | 8,047 | 40.3 | 11,291 |
| March | 4,949 | 8.2 | 5,356 | (0.1) | 5,351 | (13.6) | 4,622 | 143.0 | 11,234 | 14.3 | 12,846 |
| April | 4,750 | 5.1 | 4,990 | (0.1) | 4,987 | (4.9) | 4,741 | 118.8 | 10,372 | - | - |
| May | 4,771 | 7.9 | 5,148 | (2.0) | 5,046 | (15.9) | 4,243 | 203.5 | 12,877 | - | - |
| June | 4,786 | 4.0 | 4,978 | (3.6) | 4,799 | 4.5 | 5,013 | 173.5 | 13,710 | - | - |
| **Total** | **$56,824** | **1.7** | **$57,768** | **4.0** | **$60,053** | **(6.9)** | **$55,881** | **74.8** | **$97,689** | **62.7[7]** | **$98,798** |

Note: Annual revenue excludes revenue recovered through violation enforcement.
(1) Fiscal year represents 12 months beginning July 1 and ending June 30.
(2) Cash toll collection at the SR 836 EB mainline toll plaza ended in July 2013.
(3) All toll collection at the SR 836 EB exit ramp to NW 17th Avenue suspended in September 2013 due to construction of the new ORT Toll Gantry.
(4) All-electronic toll collection commenced on SR 836 with the ending of cash payment at the SR 836 Mainline Toll Plaza W of NW 97th Avenue on November 15th, 2014.
(5) ORT toll gantries opened on the SR 836 WB Mainline W of NW 57th Avenue on November 15, 2014, the SR 836 EB Mainline W of NW 57th Avenue on November 17,2014, and the SR 836 WB Mainline W of NW 17th Avenue on No
(6) ORT toll gantries opened on the NW 57th Avenue EB On Ramp on January 1, 2015, the NW 87th Avenue EB On Ramp on January 17, 2015, the NW 17th Avenue EB Off Ramp on January 21, 2015, and the NW 27th Avenue WB On Ramp
(7) Represents the percent change in FY 2016 year-to-date versus same period in prior fiscal year.
Source: Miami-Dade Expressway Authority

The beginning of FY 2016 showed large growth, with the first four months almost tripling in transactions. For the first nine months, transactions have grown an average 71.1 percent compared to the same period from the prior year. Revenues have also increased compared to FY 2015, with the first three months more than doubling. These impacts can be attributed to the conversion from ORT as the same months in FY 2015 did not have the new gantries in place. Overall, the first nine months of FY 2016 revenue have increased by an average of 62.7 percent compared to the first nine months of FY 2015.

## SR 874 – Don Shula Expressway

Monthly transactions and gross toll revenue for SR 874 since FY 2011 are shown in **Table 6**. Between FY 2011 and FY 2015, SR 874 transactions and collected revenue increased by an average of 4.7 percent and 4.0 percent per year, respectively. This level of growth occurred despite two on-going construction projects. The first was the widening of SR 874 north of Kendall Drive and the second was the reconfiguration of the SR 874 interchange with the HEFT. The impacts of the construction activity are the most likely cause of the lower than average growth rate of 2.8 percent in FY 2013 and FY 2014 and the higher than average growth rate of 8.5 percent in FY 2015. This pattern would represent traffic diverting away from SR 874 during the construction activity and then returning upon completion.

Transactions and revenue both increased by 6.6 percent for the first nine months of FY 2016 compared to the same nine months in FY 2015. All nine months have shown positive growth in transactions, ranging from a 3.9 percent increase to a 12.1 percent increase. May and June showed the largest growth, increasing by 33.9 and 38.4 percent respectively compared to the same month in the prior year. This may represent traffic diverting from the HEFT as construction activity related to the widening project intensifies. FY 2016 collected revenues increased in six of the nine months, with a significant 25.6 percent year-over-year decrease in December 2015. These trends are most likely the result of normal FY 2016 toll revenues being compared against the backlog of TBP toll revenues that were collected in December and January of FY 2015. Traffic and revenue growth in February and March 2016 were strong, particularly due to the extra leap day in February.

## SR 878 – Snapper Creek Expressway

**Table 7** provides monthly transactions and gross toll revenue for SR 878. SR 878 was converted to ORT on July 17, 2010. Prior to the implementation of ORT, SR 878 was un-tolled. During FY 2011, the first year the expressway was tolled, transactions and revenue reached 24.6 million and $6.7 million respectively. Between FY 2011 and FY 2015, SR 874 transactions and collected revenue have generally followed similar trends to those of SR 878, increasing by an average of 3.1 percent and 2.0 percent per year, respectively. The difference in growth between transactions and collected revenue can be attributed to changes in SunPass® participation rates and delays in invoicing TBP customers.

FY 2015 transactions grew by 3.6 percent over FY 2014. Construction related impacts from SR 874 may have influenced FY 2015 transactions, specifically the completion of the SR 874 mainline construction projects, including the widening of SR 874 north of Kendall Drive. In total, collected revenues increased by 9.0 percent in FY 2015 as compared to the same period in FY 2014. FY 2016 transactions have increased in eight of the first nine months, with January being the lone exception. FY 2016 collected

**Table 6**
**Monthly Transactions and Toll Revenue Trends, FY 2011 through FY 2016[1]**
**SR 874 – Don Shula Expressway**

| Month | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 | Percent Change | FY 2015 | Percent Change | FY 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Transactions (000s) | | | | | | | | | | |
| July | 4,543[2] | 63.7 | 7,438 | 2.6 | 7,628 | 1.3 | 7,730 | 9.1 | 8,431 | 4.9 | 8,843 |
| August | 7,238 | 3.2 | 7,470 | 1.2 | 7,563 | 4.8 | 7,925 | 7.7 | 8,539 | 3.9 | 8,870 |
| September | 7,110 | 4.3 | 7,415 | 0.1 | 7,424 | 1.5 | 7,538 | 10.0 | 8,289 | 5.9 | 8,776 |
| October | 7,610 | (2.2) | 7,445 | 5.5 | 7,852 | 2.7 | 8,064 | 9.4 | 8,819 | 4.6 | 9,226 |
| November | 7,413 | 1.3 | 7,510 | 2.3 | 7,685 | (0.3) | 7,660 | 8.3 | 8,297 | 6.7 | 8,852 |
| December | 7,475 | 4.5 | 7,815 | 0.4 | 7,844 | 0.2 | 7,857 | 12.5 | 8,841 | 6.6 | 9,424 |
| January | 7,435 | 4.7 | 7,787 | 2.3 | 7,964 | (0.6) | 7,913 | 12.2 | 8,876 | 5.3 | 9,343 |
| February | 7,077 | 4.6 | 7,399 | 0.4 | 7,425 | 1.7 | 7,548 | 10.2 | 8,317 | 12.1 | 9,326 |
| March | 7,925 | (1.9) | 7,775 | 6.0 | 8,243 | 3.4 | 8,527 | 8.4 | 9,240 | 9.5 | 10,122 |
| April | 7,597 | (2.4) | 7,411 | 8.2 | 8,017 | 6.4 | 8,530 | 3.6 | 8,840 | - | - |
| May | 7,692 | 0.9 | 7,763 | 3.9 | 8,066 | 6.3 | 8,574 | 4.9 | 8,993 | - | - |
| June | 7,539 | 0.6 | 7,581 | 1.2 | 7,669 | 6.3 | 8,152 | 6.8 | 8,703 | - | - |
| **Total** | **86,653** | **4.8** | **90,807** | **2.8** | **93,378** | **2.8** | **96,018** | **8.5** | **104,184** | **6.6**[3] | **82,781** |
| | Collectible Toll Revenue – Excluding Fee Revenue ($000s) | | | | | | | | | | |
| July | $ 2,429[2] | (5.0) | $ 2,307 | 6.8 | $ 2,464 | 13.8 | $ 2,803 | (22.2) | $ 2,180 | (5.8) | $ 2,053 |
| August | 2,490 | (7.9) | 2,295 | 17.5 | 2,695 | 4.5 | 2,817 | (9.1) | 2,562 | 20.9 | 3,098 |
| September | 2,392 | (4.7) | 2,280 | 14.3 | 2,606 | (2.8) | 2,532 | 3.1 | 2,611 | 19.8 | 3,127 |
| October | 2,613 | (13.1) | 2,271 | 26.8 | 2,879 | (27.0) | 2,100 | 41.0 | 2,961 | 0.8 | 2,986 |
| November | 2,556 | (10.9) | 2,278 | 10.2 | 2,511 | 3.5 | 2,598 | 4.4 | 2,713 | 5.5 | 2,861 |
| December | 2,597 | (10.0) | 2,337 | 18.7 | 2,773 | (15.8) | 2,334 | 70.1 | 3,969 | (25.6) | 2,953 |
| January | 2,466 | (2.2) | 2,412 | 17.8 | 2,842 | (13.6) | 2,457 | 30.8 | 3,214 | (8.3) | 2,949 |
| February | 2,374 | (3.4) | 2,294 | 9.2 | 2,504 | (10.4) | 2,243 | 21.5 | 2,725 | 33.9 | 3,648 |
| March | 2,706 | (10.4) | 2,426 | 14.1 | 2,767 | (8.7) | 2,525 | (4.7) | 2,406 | 38.4 | 3,330 |
| April | 2,600 | (7.2) | 2,413 | 6.6 | 2,572 | 10.5 | 2,841 | (7.6) | 2,625 | - | - |
| May | 2,641 | (6.1) | 2,480 | 5.7 | 2,621 | (3.1) | 2,541 | 45.8 | 3,704 | - | - |
| June | 2,362 | 4.0 | 2,456 | 2.5 | 2,517 | 14.0 | 2,869 | 26.5 | 3,630 | - | - |
| **Total** | **$30,226** | **(6.5)** | **$28,248** | **12.4** | **$31,751** | **(3.4)** | **$30,661** | **15.1** | **$35,300** | **6.6**[3] | **$27,004** |

Note: Annual revenue excludes revenue recovered through violation enforcement.
(1) Fiscal year represents 12 months beginning July 1 and ending June 30.
(2) SR 874 converted to all-electronic toll collection on July 17, 2010.
(3) Represents the percent change in FY 2016 year-to-date versus same period in prior fiscal year.
Source: Miami-Dade Expressway Authority

**Table 7**
**Monthly Transactions and Toll Revenue Trends, FY 2011 through FY 2016[1]**
**SR 878 – Snapper Creek Expressway**

| Month | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 | Percent Change | FY 2015 | Percent Change | FY 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Transactions (000s) | | | | | | | | | | |
| July | 892[2] | 130.5 | 2,056 | 3.0 | 2,118 | 1.3 | 2,146 | 1.5 | 2,178 | 4.0 | 2,264 |
| August | 1,989 | 7.2 | 2,132 | 2.4 | 2,184 | 2.0 | 2,228 | 0.6 | 2,242 | 1.7 | 2,280 |
| September | 2,062 | 4.0 | 2,145 | 0.1 | 2,146 | (0.5) | 2,136 | 4.7 | 2,236 | 3.8 | 2,320 |
| October | 2,161 | 1.8 | 2,199 | 5.4 | 2,319 | 0.3 | 2,326 | 4.0 | 2,418 | 0.9 | 2,439 |
| November | 2,120 | 3.4 | 2,192 | 1.5 | 2,224 | (2.6) | 2,165 | 2.0 | 2,208 | 3.7 | 2,289 |
| December | 2,188 | 4.1 | 2,278 | (0.7) | 2,261 | (1.1) | 2,236 | 6.3 | 2,377 | 1.5 | 2,412 |
| January | 2,142 | 6.0 | 2,271 | 0.3 | 2,279 | (1.2) | 2,251 | 3.5 | 2,331 | (1.3) | 2,301 |
| February | 2,076 | 7.9 | 2,241 | (4.0) | 2,151 | (0.7) | 2,136 | 4.1 | 2,224 | 3.3 | 2,297 |
| March | 2,329 | 2.7 | 2,391 | (2.1) | 2,341 | (0.7) | 2,324 | 5.4 | 2,449 | 0.3 | 2,457 |
| April | 2,258 | (1.9) | 2,216 | 5.2 | 2,330 | 0.7 | 2,347 | 2.8 | 2,412 | - | - |
| May | 2,237 | 3.4 | 2,313 | 2.4 | 2,369 | 0.3 | 2,376 | 1.4 | 2,408 | - | - |
| June | 2,165 | 1.2 | 2,190 | (1.0) | 2,169 | (0.4) | 2,161 | 6.7 | 2,306 | - | - |
| **Total** | **24,617** | **8.1** | **26,623** | **1.0** | **26,891** | **(0.2)** | **26,832** | **3.6** | **27,789** | **1.9**[3] | **21,059** |
| | Collectible Toll Revenue – Excluding Fee Revenue ($000s) | | | | | | | | | | |
| July | $236[2] | 113.5 | $503 | 5.1 | $529 | 11.5 | $589 | (20.3) | $470 | (4.7) | $448 |
| August | 599 | (14.9) | 510 | 16.4 | 593 | 1.5 | 602 | (10.5) | 539 | 14.0 | 614 |
| September | 625 | (17.0) | 519 | 11.9 | 581 | (6.1) | 545 | 3.0 | 562 | 11.4 | 626 |
| October | 576 | (8.5) | 527 | 21.8 | 642 | (26.6) | 471 | 31.1 | 618 | 5.4 | 651 |
| November | 570 | (8.3) | 522 | 8.3 | 566 | 2.4 | 579 | (2.3) | 566 | 0.8 | 571 |
| December | 589 | (8.0) | 542 | 14.3 | 620 | (16.0) | 520 | 46.9 | 764 | (21.9) | 597 |
| January | 554 | (0.5) | 551 | 11.3 | 613 | (10.9) | 546 | 13.6 | 620 | (6.0) | 583 |
| February | 543 | 0.3 | 544 | 2.8 | 560 | (10.9) | 499 | 10.2 | 550 | 22.5 | 674 |
| March | 616 | (4.2) | 589 | 4.5 | 616 | (11.4) | 546 | (5.8) | 514 | 20.7 | 621 |
| April | 601 | (6.2) | 564 | 1.9 | 575 | 6.1 | 610 | (5.3) | 578 | - | - |
| May | 598 | (3.5) | 577 | 3.4 | 596 | (7.9) | 549 | 33.9 | 735 | - | - |
| June | 578 | (3.2) | 559 | (1.0) | 554 | 3.1 | 571 | 24.2 | 709 | - | - |
| **Total** | **$6,683** | **(2.6)** | **$6,508** | **8.2** | **$7,043** | **(5.9)** | **$6,628** | **9.0** | **$7,225** | **3.5**[3] | **$5,384** |

Note: Annual revenue excludes revenue recovered through violation enforcement.
(1) Fiscal year represents 12 months beginning July 1 and ending June 30.
(2) SR 878 converted to all-electronic toll collection on July 17, 2010.
(3) Represents the percent change in FY 2016 year-to-date versus same period in prior fiscal year.
Source: Miami-Dade Expressway Authority

December 2015. These trends are comparable to those experienced on SR 874 and are most likely the result of normal FY 2016 toll revenues being compared against the backlog of TBP toll revenues that were collected in December and January of FY 2015. Traffic and revenue growth in February and March 2016 were strong, particularly due to the extra leap day in February. The total transaction increase for the year to date is a modest 1.9 percent over FY 2015, while collectible revenue experienced a 3.5 percent increase over the same nine months in the prior year as well.

## SR 924 – Gratigny Parkway

Monthly transaction and gross toll revenue trends between FY 2011 and FY 2016 are shown for SR 924 in **Table 8**. Average transactions and collected revenue growth on SR 924 was 6.8 percent and 7.0 percent per year, respectively, between FY 2011 and FY 2015. Much of this growth can be attributed to double digit year-over-year increases experienced between February 2014 and March 2015. This growth is believed to come from accelerated growth in western Broward County via I-275.

For FY 2016 year-to-date, transactions increased by an average of 5.3 percent while revenue increased by an average of 1.7 percent. The decreases in revenue experienced in five months out of FY 2016, similar to the trends on SR 874 and SR 878, are most likely the result of normal FY 2016 toll revenues being compared against the backlog of TBP revenues collected in those months during the prior year.

## Monthly Traffic and Revenue Trends for the Total MDX System

**Table 9** provides monthly transactions and gross toll revenue for the MDX System. The combined impacts of the various individual expressways balance out such that average transactions and collected revenue growth between FY 2011 and FY 2014 was 3.5 percent and 0.9 percent per year, respectively. Again, the difference in growth between transactions and collected revenue can be attributed to the temporary suspension of toll collection at the EB exit ramp to NW 17th Avenue in mid-September 2013, changes in SunPass® participation rates and delays in invoicing TBP customers. Beginning in mid-November 2014, the systemwide impacts of ORT implementation can also be observed in the year-over-year differences in monthly transactions and collected revenues. FY 2016 year-to-date transactions are 93.6 percent higher than the same nine months in FY 2014 prior to full ORT implementation. Similarly, FY 2016 collected revenues are 75.3 percent higher than the same months in FY 2014. These increases are primarily due the addition of new mainline and ramp toll locations that serve to effectively "close" the MDX System and eliminate toll-free movements.

Monthly traffic and revenue trends for each expressway are shown in **Figure 3.** Transactions increased significantly on SR 112 and SR 836 in November 2014 with the addition of several new toll gantries under system-wide ORT implementation. Since March 2015, average monthly transactions have been relatively stable, at just below 40 million. Revenue has also increased following ORT implementation and addition of new toll locations that eliminated previously toll-free movements, from an average of $10.0 million per month to an average of $17.5 million. Considerable variations in monthly revenue occurred between May and July 2015 as MDX worked through the backlog of TBP transactions accumulated during the transition to a new TBP transaction processing vendor.

**Table 8**
**Monthly Transactions and Toll Revenue Trends, FY 2011 through FY 2016[1]**
**SR 924 – Gratigny Parkway**

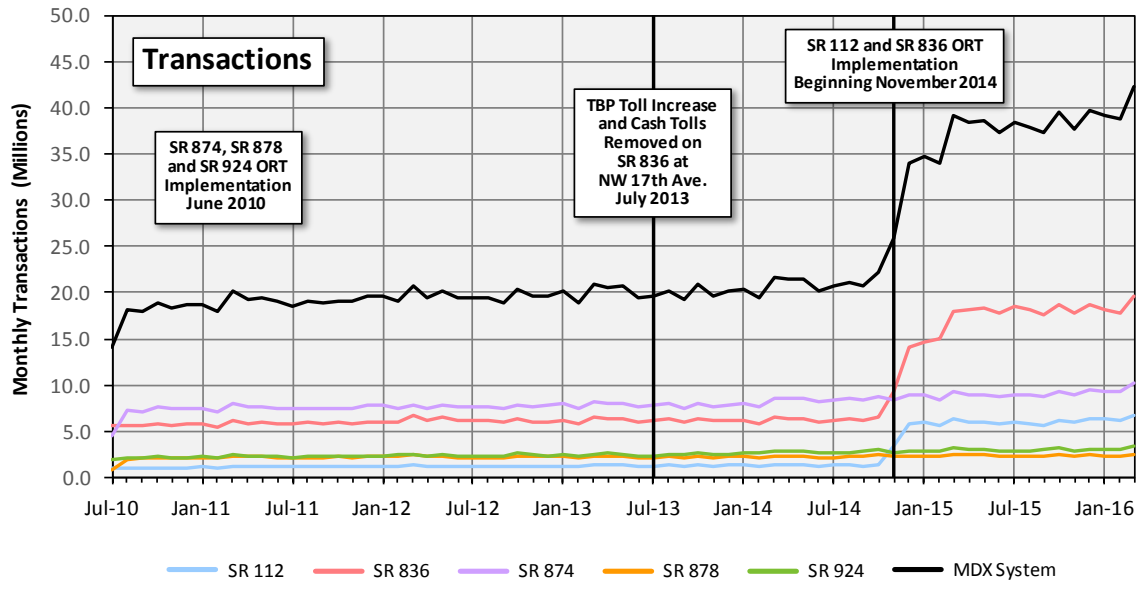
| Month | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 | Percent Change | FY 2015 | Percent Change | FY 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Transactions (000s) | | | | | | | | | | |
| July | 1,995 | 6.8 | 2,130 | 4.7 | 2,230 | 5.1 | 2,345 | 14.1 | 2,675 | 6.8 | 2,857 |
| August | 2,085 | 11.0 | 2,314 | 0.5 | 2,325 | 6.7 | 2,480 | 9.6 | 2,719 | 4.0 | 2,828 |
| September | 2,161 | 8.4 | 2,343 | (2.6) | 2,281 | 7.8 | 2,460 | 14.1 | 2,807 | 5.2 | 2,952 |
| October | 2,245 | 5.6 | 2,370 | 8.5 | 2,571 | 6.4 | 2,735 | 12.1 | 3,066 | 2.9 | 3,155 |
| November | 2,119 | 9.8 | 2,326 | 3.2 | 2,402 | 3.9 | 2,495 | 9.1 | 2,721 | 6.2 | 2,889 |
| December | 2,110 | 7.5 | 2,269 | 1.4 | 2,300 | 8.7 | 2,500 | 14.1 | 2,852 | 5.1 | 2,997 |
| January | 2,226 | 6.5 | 2,371 | 3.4 | 2,453 | 9.5 | 2,685 | 8.3 | 2,909 | 2.9 | 2,993 |
| February | 2,190 | 8.9 | 2,384 | (1.6) | 2,347 | 10.9 | 2,603 | 8.8 | 2,831 | 8.2 | 3,064 |
| March | 2,502 | 1.8 | 2,547 | 0.3 | 2,554 | 11.1 | 2,838 | 10.8 | 3,145 | 6.4 | 3,346 |
| April | 2,351 | 0.7 | 2,369 | 9.2 | 2,587 | 10.2 | 2,851 | 6.4 | 3,032 | - | - |
| May | 2,322 | 5.4 | 2,448 | 3.9 | 2,543 | 9.4 | 2,781 | 5.9 | 2,944 | - | - |
| June | 2,271 | 1.1 | 2,295 | 1.2 | 2,321 | 12.8 | 2,619 | 8.7 | 2,845 | - | - |
| **Total** | **26,579** | **6.0** | **28,166** | **2.7** | **28,914** | **8.6** | **31,392** | **10.1** | **34,547** | **5.3[2]** | **27,082** |
| | Collectible Toll Revenue – Excluding Fee Revenue ($000s) | | | | | | | | | | |
| July | $ 1,080 | (0.5) | $1,075 | 8.1 | $ 1,161 | 21.6 | $ 1,412 | (7.2) | $ 1,311 | (19.8) | $1,051 |
| August | 1,129 | 0.1 | 1,130 | 13.4 | 1,281 | 14.6 | 1,468 | (4.4) | 1,403 | 14.5 | 1,607 |
| September | 1,145 | 2.0 | 1,168 | 16.7 | 1,364 | (0.5) | 1,356 | 2.9 | 1,396 | 19.3 | 1,665 |
| October | 1,215 | (4.2) | 1,164 | 22.3 | 1,423 | (14.4) | 1,218 | 34.5 | 1,638 | (4.5) | 1,564 |
| November | 1,139 | (0.0) | 1,139 | 10.3 | 1,256 | 12.1 | 1,408 | 7.8 | 1,517 | (1.3) | 1,497 |
| December | 1,150 | (3.3) | 1,112 | 17.1 | 1,302 | (4.5) | 1,244 | 70.5 | 2,121 | (28.0) | 1,527 |
| January | 1,155 | 1.6 | 1,173 | 14.5 | 1,343 | 0.9 | 1,355 | 22.3 | 1,657 | (6.8) | 1,545 |
| February | 1,150 | 2.8 | 1,182 | 6.3 | 1,257 | 0.4 | 1,261 | 12.6 | 1,421 | 21.8 | 1,731 |
| March | 1,341 | (4.0) | 1,288 | 7.6 | 1,387 | (0.6) | 1,378 | (13.0) | 1,198 | 42.3 | 1,705 |
| April | 1,268 | (3.2) | 1,228 | 8.2 | 1,329 | 14.7 | 1,524 | (2.0) | 1,493 | - | - |
| May | 1,252 | 0.2 | 1,254 | 6.4 | 1,334 | (3.0) | 1,294 | 55.0 | 2,006 | - | - |
| June | 1,446 | (16.2) | 1,211 | 12.9 | 1,368 | 3.6 | 1,417 | 29.4 | 1,835 | - | - |
| **Total** | **$ 14,470** | **(2.4)** | **$14,123** | **11.9** | **$15,805** | **3.4** | **$16,336** | **16.3** | **$18,997** | **1.7[2]** | **$13,892** |

Note: Annual revenue excludes revenue recovered through violation enforcement.
(1) Fiscal year represents 12 months beginning July 1 and ending June 30.
(2) Represents the percent change in FY 2016 year-to-date versus same period in prior fiscal year.
Source: Miami-Dade Expressway Authority

**Table 9**
**Monthly Transactions and Toll Revenue Trends, FY 2011 through FY 2016[1]**
**Total MDX System**

| Month | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 | Percent Change | FY 2015 | Percent Change | FY 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Transactions (000s) | | | | | | | | | | |
| July | 14,077[3] | 32.1 | 18,596 | 4.2 | 19,369 | 0.9 | 19,552[4] | 6.2 | 20,765 | 85.0 | 38,414 |
| August | 18,049 | 5.5 | 19,049 | 2.0 | 19,422 | 4.2 | 20,243 | 4.4 | 21,124 | 79.5 | 37,926 |
| September | 17,860 | 5.4 | 18,817 | 0.3 | 18,872 | 2.4 | 19,328[5] | 7.5 | 20,782 | 79.3 | 37,255 |
| October | 18,960 | 0.7 | 19,084 | 6.2 | 20,264 | 3.0 | 20,874 | 6.2 | 22,168 | 78.5 | 39,572 |
| November | 18,354 | 3.7 | 19,037 | 2.7 | 19,556 | 0.7 | 19,696 | 31.7 | 25,941[6] | 45.3 | 37,679 |
| December | 18,621 | 5.0 | 19,556 | 0.1 | 19,571 | 3.0 | 20,150 | 68.3 | 33,921 | 17.2 | 39,764 |
| January | 18,610 | 5.5 | 19,635 | 2.2 | 20,076 | 1.8 | 20,438 | 70.0 | 34,752[7] | 12.5 | 39,098 |
| February | 17,887 | 6.8 | 19,099 | (1.1) | 18,889 | 2.6 | 19,385 | 75.0 | 33,917 | 14.1 | 38,709 |
| March | 20,162 | 2.8 | 20,733 | 1.1 | 20,970 | 2.8 | 21,553 | 81.4 | 39,095 | 8.3 | 42,345 |
| April | 19,223 | 0.8 | 19,378 | 5.7 | 20,474 | 4.5 | 21,399 | 79.4 | 38,384 | - | - |
| May | 19,342 | 4.4 | 20,203 | 2.2 | 20,657 | 4.0 | 21,488 | 79.8 | 38,627 | - | - |
| June | 18,968 | 2.6 | 19,467 | (0.2) | 19,426 | 4.2 | 20,246 | 84.5 | 37,354 | - | - |
| **Total** | **220,112** | **5.7** | **232,655** | **2.1** | **237,546** | **2.9** | **244,352** | **50.1** | **366,828** | **38.9[8]** | **350,762** |
| | Collectible Toll Revenue – Excluding Fee Revenue ($000s) | | | | | | | | | | |
| July | $ 9,576 | 0.9 | $ 9,662[3] | 7.1 | $ 10,351 | 9.4 | $ 11,326[4] | (14.1) | $ 9,733 | 51.3 | $14,730 |
| August | 10,135 | (2.7) | 9,865 | 11.9 | 11,034 | 4.5 | 11,535 | (11.2) | 10,241 | 79.7 | 18,398 |
| September | 9,834 | (0.9) | 9,748 | 10.3 | 10,749 | (1.5) | 10,590[5] | 1.0 | 10,699 | 71.9 | 18,390 |
| October | 10,486 | (6.3) | 9,825 | 17.6 | 11,556 | (14.5) | 9,884 | 27.5 | 12,603 | 48.6 | 18,733 |
| November | 10,146 | (3.5) | 9,794 | 8.0 | 10,577 | (3.6) | 10,199 | 15.6 | 11,793[6] | 47.8 | 17,431 |
| December | 10,311 | (3.6) | 9,944 | 11.3 | 11,071 | (10.9) | 9,859 | 62.2 | 15,990 | 11.0 | 17,756 |
| January | 10,068 | 0.7 | 10,138 | 8.3 | 10,982 | (5.8) | 10,347 | 53.0 | 15,828[7] | 14.2 | 18,080 |
| February | 9,709 | 2.7 | 9,972 | 3.1 | 10,282 | (8.1) | 9,449 | 53.2 | 14,479 | 35.1 | 19,568 |
| March | 10,983 | 0.8 | 11,066 | 4.3 | 11,545 | (9.1) | 10,492 | 69.6 | 17,796 | 18.8 | 21,140 |
| April | 10,510 | 0.0 | 10,513 | 3.0 | 10,827 | 2.5 | 11,098 | 53.2 | 17,003 | - | - |
| May | 10,515 | 2.6 | 10,788 | 1.8 | 10,978 | (9.5) | 9,932 | 120.6 | 21,908 | - | - |
| June | 10,411[2] | 0.7 | 10,485 | 1.5 | 10,640 | 5.1 | 11,186 | 102.1 | 22,610 | - | - |
| **Total** | **$122,683** | **(0.7)** | **$121,800** | **7.2** | **$130,592** | **(3.6)** | **$125,898** | **43.5** | **$180,682** | **37.8[8]** | **$164,226** |

Note: Annual revenue excludes revenue recovered through violation enforcement.
(1) Fiscal year represents 12 months beginning July 1 and ending June 30.
(2) SR 924 converted to all-electronic toll collection on June 7, 2010.
(3) SR 874 and SR 878 converted to all-electronic toll collection on July 17, 2010.
(4) Cash toll collection at the SR 836 EB mainline toll plaza ended in July 2013.
(5) All toll collection at the SR 836 EB exit ramp to NW 17th Avenue suspended in September 2013 due to construction of the new ORT Toll Gantry.
(6) All-electronic toll collection commenced on SR 112 with the ending of cash payment at the SR 112 EB Mainline Toll Plaza E of NW 12th Avenue on November 15th, 2014. Two mainline ORT toll gantries opened on SR 112, one E of NW 12th Avenue and one E of NW 32nd Avenue. All-electronic toll collection commenced on SR 836 with the ending of cash payment at the SR 836 Mainline Toll Plaza W of NW 97th Avenue on November 15th, 2014. ORT toll gantries opened on the SR 836 WB Mainline W of NW 57th Avenue on November 15, 2014, the SR 836 EB Mainline W of NW 57th Avenue on November 17,2014, and the SR 836 WB Mainline W of NW 17th Avenue on November 18th, 2014.
(7) ORT toll gantries opened on the NW 57th Avenue EB On Ramp on January 1, 2015, the NW 87th Avenue EB On Ramp on January 17, 2015, the NW 17th Avenue EB Off Ramp on January 21, 2015, and the NW 27th Avenue WB On Ramps on January 22, 2015.
(8) Represents the percent change in FY 2016 year-to-date versus same period in prior fiscal year.
Source: Miami-Dade Expressway Authority



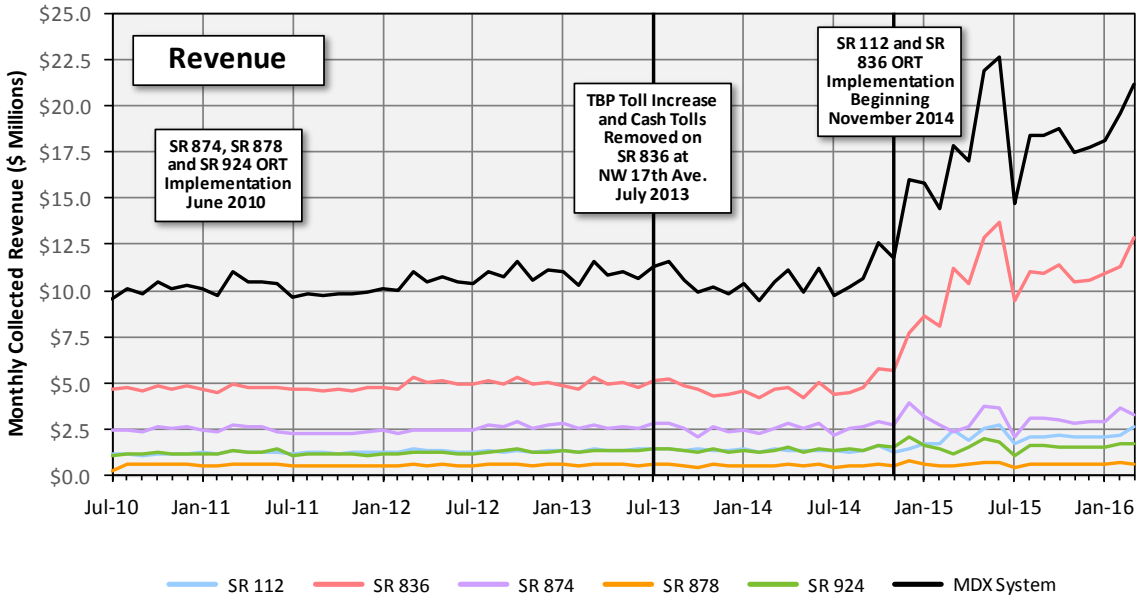




**Figure 3**
**Monthly Transactions and Toll Revenue Trends, FY 2011 through FY 2016**
**Total MDX System**

## SunPass® Participation Trends

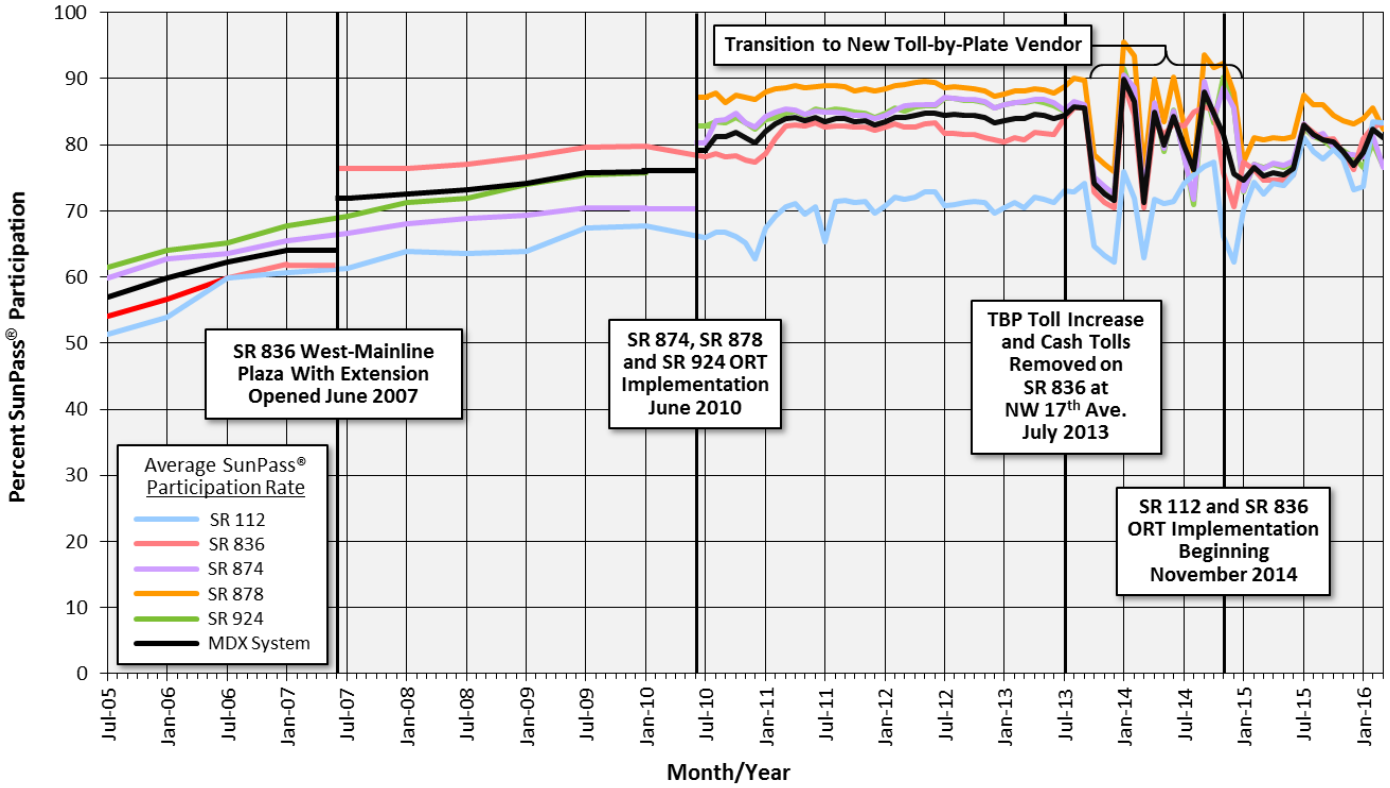
The SunPass® market shares are shown in **Figure 4** for each of the five expressways through March 2016, the latest month for which actual data was available. As illustrated in the figure, SunPass® use has increased steadily over the years. In July 2005, the SunPass® share ranged from about 51 to 61 percent, depending on expressway, with about half of customers still preferring to use cash. Steady growth in SunPass® market penetration can be observed from July 2005 through the beginning of 2013. In particular, SunPass® participation increased on SR 874, SR 878 and SR 924 as a result of the conversion to ORT in June and July 2010. By July 2013, average SunPass® participation rates were observed between 80 and 90 percent, with SR 112 experiencing roughly 70 percent participation as an outlier. This may be due to the greater number of rental cars, which tend to use TBP, and other occasional users on SR 112 due to its proximity to Miami International Airport.

Between October 2013 and January 2015, SunPass® participation rates fluctuated significantly as a result of MDX transitioning to a new TBP transaction processing vendor in mid-September 2013. During this transition period, MDX stopped sending TBP transaction data to its former vendor, resulting in a halt in the processing of I-Toll transactions, or SunPass® transactions initially classified as TBP transactions. As a result, the percent of transactions classified as SunPass® decreased as the unprocessed I-Toll transactions had not been included in the total. This temporary condition ended in January 2015 as the transition to a new billing provider was completed.

From January 2015 going forward, the SunPass® participation rate has been largely stable, though at rates lower than those observed in FY 2013. This is most likely the result of two factors. First, ORT implementation on SR 112 and SR 836 added new tolling locations and tolled previously untolled movements. Many of these locations have lower SunPass® participation rates than the existing toll locations, leading to a decrease in the average for these two expressways. Second, much of the new traffic to MDX has initially chosen to pay via TBP. This trend seems to be turning around as of FY 2016 as overall SunPass® participation rates are beginning to increase slightly, perhaps as TBP customers recognize the potential cost savings of switching to SunPass®. On a system-wide basis, average SunPass® participation is 80.7 for FY 2016 year-to-date.

## MDX Traffic Distribution by Vehicle Class

**Table 10** presents a comparison of the distribution of system-wide annual transactions by vehicle class and payment type for FY 2014 and FY 2016 year-to-date. As presented, two-axle vehicles, which include passenger cars, vans and SUVs, comprised 98.0 percent of total transactions in FY 2014, prior to system-wide ORT implementation and 97.9 percent of total transactions in FY 2016 following system-wide ORT implementation. Vehicles with three or more axles, which include trucks, buses and other commercial vehicles, comprised 2.0 percent and 2.1 percent of total transactions in FY 2014 and FY 2016, respectively. These numbers are consistent with the percentages observed in prior years and assumed in the 2014 IG Study. **Figure 5** illustrates the distribution of system-wide annual transactions by vehicle class and payment type for FY 2016 year-to-date.




Source: Miami-Dade Expressway Authority.

**Figure 4**

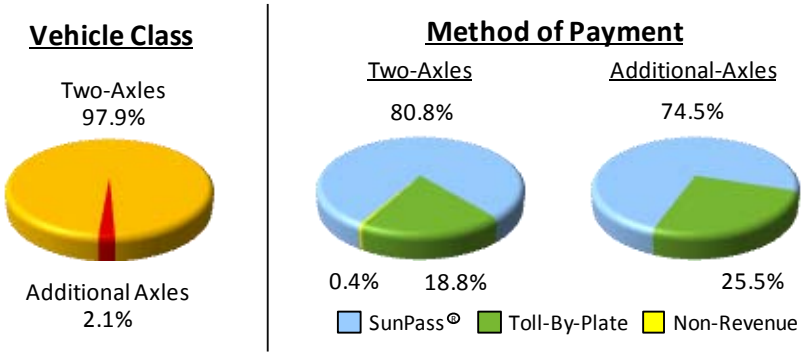
**Sunpass® Market Penetration Trends**

**Table 10**

**Transactions (Millions) by Vehicle Class and Payment Type, FY 2014 and FY 2016 [1]**

| Vehicle Class | | SunPass® | Toll-by-Plate [1] | Non-Revenue [2] | Total | Percent of Total |
|---|---|---|---|---|---|---|
| **FY 2014** | | | | | | |
| 2 Axles | Transactions | 191.6 | 46.3 | 1.4 | 239.3 | 98.0 |
| | Percent of Class | 80.0 | 19.3 | 0.6 | 100.0 | |
| 3 Axles | Transactions | 1.6 | 0.6 | --- | 2.2 | 0.9 |
| | Percent of Class | 72.2 | 27.8 | --- | 100.0 | |
| 4 Axles | Transactions | 0.9 | 0.3 | --- | 1.2 | 0.5 |
| | Percent of Class | 74.8 | 25.2 | --- | 100.0 | |
| 5 or More Axles | Transactions | 1.1 | 0.4 | --- | 1.5 | 0.6 |
| | Percent of Class | 68.9 | 31.1 | --- | 100.0 | |
| **Total** | Transactions | **195.1** | **47.7** | **1.4** | **244.2** | **100.0** |
| | **Percent of Class** | **79.9** | **19.5** | **0.6** | **100.0** | |
| **FY 2016 [3]** | | | | | | |
| 2 Axles | Transactions | 276.7 | 64.5 | 1.2 | 342.4 | 97.9 |
| | Percent of Class | 80.8 | 18.8 | 0.4 | 100.0 | |
| 3 Axles | Transactions | 2.5 | 0.9 | --- | 3.4 | 1.0 |
| | Percent of Class | 74.2 | 25.8 | --- | 100.0 | |
| 4 Axles | Transactions | 1.2 | 0.4 | --- | 1.6 | 0.5 |
| | Percent of Class | 73.0 | 27.0 | --- | 100.0 | |
| 5 or More Axles | Transactions | 1.8 | 0.6 | --- | 2.4 | 0.7 |
| | Percent of Class | 76.1 | 23.9 | --- | 100.0 | |
| **Total** | Transactions | **282.2** | **66.4** | **1.2** | **349.7** | **100.0** |
| | **Percent of Class** | **80.7** | **19.0** | **0.3** | **100.0** | |
| **Difference Between FY 2014 and FY 2016** | | | | | | |
| 2 Axles | Percent of Class | 0.8 | (0.5) | (0.2) | 0.0 | **(0.1)** |
| 3 Axles | Percent of Class | 2.0 | (2.0) | --- | 0.0 | 0.1 |
| 4 Axles | Percent of Class | 0.3 | 1.8 | --- | 0.0 | 0.0 |
| 5 or More Axles | Percent of Class | 7.2 | (6.2) | --- | 0.0 | 0.1 |
| **Total** | **Percent of Class** | **0.8** | **(0.5)** | **(0.2)** | **0.0** | **0.0** |

[1] Includes Cash and TBP transactions in FY 2014 and TBP transactions only in FY 2016.
[2] Vehicle class data for non-revenue vehicles not available.
[3] FY 2016 year-to-date, including data through March 2016.
Source: Miami-Dade Expressway Authority.




Source: Miami-Dade Expressway Authority

**FY 2016 TRANSACTIONS BY VEHICLE CLASS AND PAYMENT TYPE**

FIGURE 5

On an annual basis, 80.7 percent of all FY 2016 transactions were made using SunPass®. This represents a change of 0.7 percentage points over FY 2014, when SunPass® transactions represented 80.0 percent of total transactions. Looking at SunPass® market participation rates by vehicle type, a higher proportion of passenger vehicles used SunPass® in FY 2016 than commercial vehicles. Of the 7.3 million three-or-more-axle vehicle transactions, 74.5 percent were SunPass® compared to 80.8 percent for two-axle vehicles. These relationships are comparable to those observed in FY 2014.

Use of SunPass® also varied within the three-or-more-axle vehicle category. SunPass® use by five-or-more-axle vehicles, which are generally 18-wheel tractor trailer trucks and other heavy commercial vehicles, was 68.9 percent in FY 2014 and 76.1 percent in FY 2016. This was lower than the SunPass® market penetration among two-axle vehicles in both years. The lowest SunPass® market penetration rate within the commercial vehicle category was in the four-axle category, with 74.8 percent in FY 2014 and 73.0 percent in FY 2016. Three-axle vehicles, which includes delivery trucks, motor homes and other light commercial vehicles, had a SunPass® market penetration rate of 72.2 percent and 74.2 percent in FY 2014 and FY 2016, respectively.

## Corridor Growth Overview

This section presents the results of an updated independent socioeconomic review conducted by an independent economist, Washington Economics Group (WEG), and the resulting adjustments applied to the estimated future year growth-rates. The Update Report provided by WEG has been attached to this letter as **Appendix A**.

WEG was retained by CDM Smith to review the economic and demographic projections included in the 2014 IG Study and determine if significant changes have occurred in these variables. These forecasts were key inputs into traffic modeling in the prior study and other tasks that CDM Smith performed for the MDX.

WEG's review of these projections was based on a thorough study of the long-range forecast/ projections that were prepared by the Metropolitan Planning Organizations (MPOs) of Miami-Dade, Broward and Palm Beach Counties, Florida. In addition to detailed historical data on a number of key variables, each MPO released forecasts for many of these variables out to year 2035. WEG also reviewed and incorporated into its analysis data and forecasts released by the Federal government, the State of Florida, and multiple universities located throughout the State. Finally, WEG incorporated information obtained from constant interactions with private- and public-sector decision-makers throughout the State of Florida. Based on these inputs WEG prepared the forecast/projections that were provided to CDM Smith and ultimately used as input to the traffic model and the development of the 2014 IG Study traffic and revenue forecasts.

For the current 2016 traffic and revenue update, WEG reviewed the forecasts previously provided to CDM Smith. WEG contacted officials from Miami-Dade, Broward and Palm Beach Counties concerning updated MPO data to incorporate in the review. The newest projections from the Miami-Dade and Palm Beach Counties' MPOs were included, however, the newest Broward County MPO projection was not. After reviewing the Broward MPO's newest forecasts and comparing them with forecasts from other reliable sources, WEG has concluded that the newest data from the Broward County MPO underestimates population and employment growth. This was due to a recently implemented methodology change in the Broward MPO's population and employment forecasts. Thus, the original projections from the Broward MPO included in the October 2013 Forecast continue to best reflect current demographic estimates for the County.

## Population Forecast Trends

WEG obtained current population forecasts from multiple sources and compared them to the 2013 MPO projections. Comparisons of MPO population projections for key interim time periods show small decreases. **Table 11** summarizes the changes that have occurred in the MPO population forecasts between 2013 and now.

For Miami-Dade County in the year 2025, the latest projection decreased by a modest 2.3 percent, and for the year 2030, the decrease is also relatively small at 2.9 percent. Consistent with the long-term projection decrease, the interim year population forecast decreases for Palm Beach County were minimal: only 2.1 percent in 2025 and 2.7 percent in 2030. For the Miami-Dade, Broward and Palm Beach Counties region as a whole the decrease in population forecasts was consistent across the interim time periods with about 2 percent decrease.

**Table 11**

**Percentage Difference between 2013 and Current 2016 MPO Population Projections**

| Counties | 2025 | | | 2030 | | | 2035 | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2013 Proj. | 2016 Proj. | Pct. Change | 2013 Proj. | 2016 Proj. | Pct. Change | 2013 Proj. | 2016 Proj. | Pct. Change |
| Miami-Dade | 2,957 | 2,890 | -2.3 | 3,118 | 3,029 | -2.9 | 3,278 | 3,167 | -3.4 |
| Broward [1] | 2,043 | 2,043 | --- | 2,147 | 2,147 | --- | 2,251 | 2,251 | --- |
| Palm Beach | 1,530 | 1,498 | -2.1 | 1,606 | 1,562 | -2.7 | 1,683 | 1,628 | -3.2 |
| **Area Total** | **6,530** | **6,431** | **-1.5** | **6,871** | **6,738** | **-1.9** | **7,212** | **7,046** | **-2.3** |

[1] The newest MPO projections for Broward County were not used.
Sources: Miami-Dade, Broward and Palm Beach Metropolitan Planning Organizations (MPOs).

The analysis also indicated that the MPOs are projecting slightly lower populations in the year 2035 for Miami-Dade and Palm Beach Counties. The 2035 population projections for both Miami-Dade and Palm Beach Counties decreased by slightly over 3 percent. For the entire area total the 2035 projection decreased only 2.3 percent (or approximately 166,000 persons).

## Employment Forecast Trends

WEG also reviewed new employment forecasts provided by the MPOs for each of the three counties being studied. Similar to what was observed in the most recent population projections, the comparisons of MPO employment projections for key interim time periods show a gradual change. **Table 12** summarizes the differences between the prior 2013 MPO forecasts and the newly published MPO projections.

**Table 12**

**Percentage Difference between 2013 and Current 2016 MPO Employment Projections**

| Counties | 2025 | | | 2030 | | | 2035 | | |
|---|---|---|---|---|---|---|---|---|---|
| | 2013 Proj. | 2016 Proj. | Pct. Change | 2013 Proj. | 2016 Proj. | Pct. Change | 2013 Proj. | 2016 Proj. | Pct. Change |
| Miami-Dade | 1,696 | 1,652 | -2.6 | 1,845 | 1,786 | -3.2 | 1,994 | 1,920 | -3.7 |
| Broward [1] | 954 | 954 | --- | 983 | 983 | --- | 1,012 | 1,012 | --- |
| Palm Beach | 735 | 734 | -0.1 | 768 | 767 | -0.1 | 800 | 799 | -0.1 |
| **Area Total** | **3,385** | **3,340** | **-1.3** | **3,596** | **3,536** | **-1.7** | **3,806** | **3,731** | **-2.0** |

[1] The newest MPO projections for Broward County were not used.
Sources: Miami-Dade, Broward and Palm Beach Metropolitan Planning Organizations (MPOs).

The Miami-Dade County employment projection decreased by 2.6 percent for 2025, and by 3.2 percent for the 2030. However, all Palm Beach County projections remained practically unchanged: there was a 0.1 percent decrease in 2025 and in 2030. For the area as a whole there was a slight decrease in the projections for the interim years: a decrease of 1.3 percent in 2025 and 1.7 percent in 2030.

Similar to the population trends discussed earlier, the 2035 employment projection for Miami-Dade County has been revised downward slightly since 2013. The Miami-Dade employment projections were revised downward by 3.7 percent. Palm Beach County projections are relatively unchanged with a 0.1 percent increase, and the 2035 employment projection for the area as a whole decreased by 2 percent relative to the 2013 projection.

The small downward revisions in employment projections reflect current trends in economic activity in the Miami-Fort Lauderdale-Pompano Beach MSA (comprised of Miami-Dade, Broward and Palm Beach Counties). The MSA, especially, Miami-Dade and Broward Counties, is facing a slower global economic environment that is likely to last through 2017 due to expected slow growth of the global economy. WEG expects the MSA, especially Miami-Dade and Broward Counties, to return to trend growth following this slow-growth period.

## Visitor and Cargo Trends

Data on passengers at both Miami and Fort Lauderdale airports reflect strong increases. However, cargo data shows mixed results. Miami airport cargo and Port Everglades cargo increased between 2012 and 2015, which represents the most recent data. Fort Lauderdale Airport and PortMiami cargo decreased between 2012 and 2015, reflecting slower growth among South Florida's top international trade partners. WEG expects a resumption of positive growth after these key international trade partners recover in 2018 and beyond.

## Summary on Economic Update

After completing its review of recent economic conditions and updates in the intervening two years since their last detailed assessment, the WEG update report includes the following summary:

> *"Based on historical growth data and long-term trends, WEG has reviewed the long-term forecasts of socioeconomic variables for Miami-Dade, Broward and Palm Beach Counties. It is WEG's professional opinion that the estimates provided to MDX and CDM Smith in late 2013 are reasonable and continue to reflect the current projections of economic and social activity in the Region over the 2016-2035 time period."*

This was based on their review of the new MPO projections with other sources such as the University of Florida, Bureau of Economic and Business Research (BEBR), the University of Central Florida employment projections, and the U.S. Census Bureau. Moreover, WEG concluded that:

> "T*he regional economy, comprised of Miami-Dade, Broward, and Palm Beach Counties is expanding at a moderate pace. However, recessions in South Florida's top trade partners, especially Brazil and Argentina, have slowed modestly the expansion of economic activity. A resumption of stronger economic growth is expected once these trade partners recover in 2018 and beyond."*

The forecasts of socioeconomic variables provided to MDX and CDM Smith in late 2013 served as the foundation for the modeling effort used to develop the traffic and revenue forecasts contained in the

2014 IG Study. While WEG believes their prior estimates will ultimately be realized, their research indicated a 3.4 percent decrease in projected 2035 Miami-Dade County population. This reduces the average annual projected population growth between 2010 and 2035 from 1.14 percent per year to 0.99 percent, a decrease of roughly 12 percent. Similarly, the 2035 MPO projections of employment for Miami-Dade County employment were reduced by 3.7 percent. This reduces the average annual projected employment growth between 2010 and 2035 from 1.89 percent per year to 1.73 percent, a decrease of roughly 8 percent.

In light of this change, CDM Smith adjusted the estimated traffic growth rates from the 2014 IG study, which were based on the results of the model, at each toll location by 10 percent. For example, a toll location with a growth rate of 2.0 per year would be reduced to 1.8 percent. **Table 13** summarizes the adjustments made to estimated long-term "normal" growth rates between FY 2020 and FY 2030, compared against the 2014 IG Study. Normal growth represent traffic growth based on socioeconomic factors and exclude the impacts of construction activity, capacity improvements, toll rate changes or other non-economic factors. In general, estimated long-term growth rates ranged between 1.2 and 2.6 percent per year under the 2014 IG Study, with systemwide growth averaging 1.9 percent between FY 2020 and FY 2030. The adjusted growth rates for the 2016 study represent a reduction of roughly 10 percent, equating to an actual change of 0.1 to 0.2 percentage points.

**Table 13**
**Comparison of Long-Term Average Annual "Normal" Growth Rates (FY 2020 – FY 2030) by Expressway**
**2014 Investment Grade Study versus 2016 Update Study**

| MDX Expressway | 2014 IG Study | 2016 Update | Difference |
|---|---|---|---|
| **SR 112** | 1.2 | 1.1 | (0.1) |
| **SR 836** | 2.2 | 2.0 | (0.2) |
| **SR 874** | 1.5 | 1.4 | (0.1) |
| **SR 878** | 2.6 | 2.4 | (0.2) |
| **SR 924** | 2.1 | 1.9 | (0.2) |
| **Total MDX System** | **1.9** | **1.7** | **(0.2)** |

# Estimated Traffic and Revenue

A summary of estimated transaction and toll revenue forecasts from FY 2015 through FY 2030, including systemwide ORT implementation is presented in this section by expressway. The forecasts were developed based on the data review and forecast processes previously described. Two scenarios are provided: a Base Case that does not include CPI-Based toll rate increases and an Alternative forecast that includes CPI-Based Toll Rate Increases.

## Methodology and Forecast Development

CDM-Smith reviewed current MDX expressway transactions and revenue trends, historical and future estimated SunPass® participation rates, current and future relevant highway improvement project

construction and schedules, MDX toll rates and other data relevant to the MDX System. Based on this information, the 2014 IG Study forecasts provided to MDX in April 2014 were updated.

CDM Smith began with an updated baseline of traffic and revenue. This updated baseline relied upon both the latest data from MDX, previously described, and the research and analysis included in an updated short-term monthly forecast through FY 2018 conducted in February 2016. This analysis updated the estimated impacts of ORT implementation included in the 2014 IG Study based on the actual experience described previously in this report.

Forecasts of future traffic and revenue were developed by applying the adjusted long-term normal growth rates described previously to the updated baseline of traffic and revenue at the toll gantry level. Adjustments to forecasted normal growth rates were made at locations nearing capacity. In particular, the SR 836 mainline toll gantry at NW 57th Avenue is estimated to near capacity by FY 2021 based on normal growth rates. Additionally, the SR 836 mainline toll gantry at NW 97th Avenue is estimated to near capacity by FY 2031. In these years, assumed future growth rates were reduced in order to recognize the constraint that increased traffic congestion would place on traffic growth. Through the forecast period, actual capacity limits were not exceeded.

## Regional Highway Improvement Program

In addition to the updated baseline traffic and revenue estimates and forecasted growth rates, CDM Smith made adjustments to account for changes in the regional highway improvement program, estimated SunPass® participation rates, and estimated rates of revenue leakage since the 2014 IG Study. These adjustments are described in the following sections.

CDM Smith conducted a detailed review of the highway improvement assumptions included in the 2014 IG Study, which consisted of highway improvements based upon the MDX Five-Year Capital Improvement Program, the Miami-Dade MPO Regional Transportation Improvement Program (TIP), and the Miami-Dade MPO Long Range Transportation Plan (LRTP). The list of assumed projects, construction schedules and project configurations from the 2014 IG Study were reviewed and updated following meetings with MDX, FDOT, and Florida's Turnpike Enterprise. In addition, CDM Smith staff conducted route reconnaissance to review current construction activities. The differences between the prior IG 2014 Study assumptions and updated highway improvement construction schedules and opening dates are noted in this section and illustrated in **Figure 6**.

Impacts as a result of construction activity estimated in the 2014 IG Study were based on capacity restrictions incorporated into the travel demand model. Moreover, these impacts were assumed on an annual basis. Under the current 2016 Update forecasts, impacts due to construction were based on a detailed review of current construction projects and assumed schedules, estimated impacts based on the reduced capacity, and observed actual impacts through February 2015. The impacts were applied to the forecast on a monthly basis through FY 2018 and on an annual basis afterwards, allowing for more accurate application of impacts based on the project schedules. Due to the differences in the way the construction impacts were applied in the two sets of forecasts, the construction impact revisions would primarily impact the forecasts between FY 2015 and FY 2022.

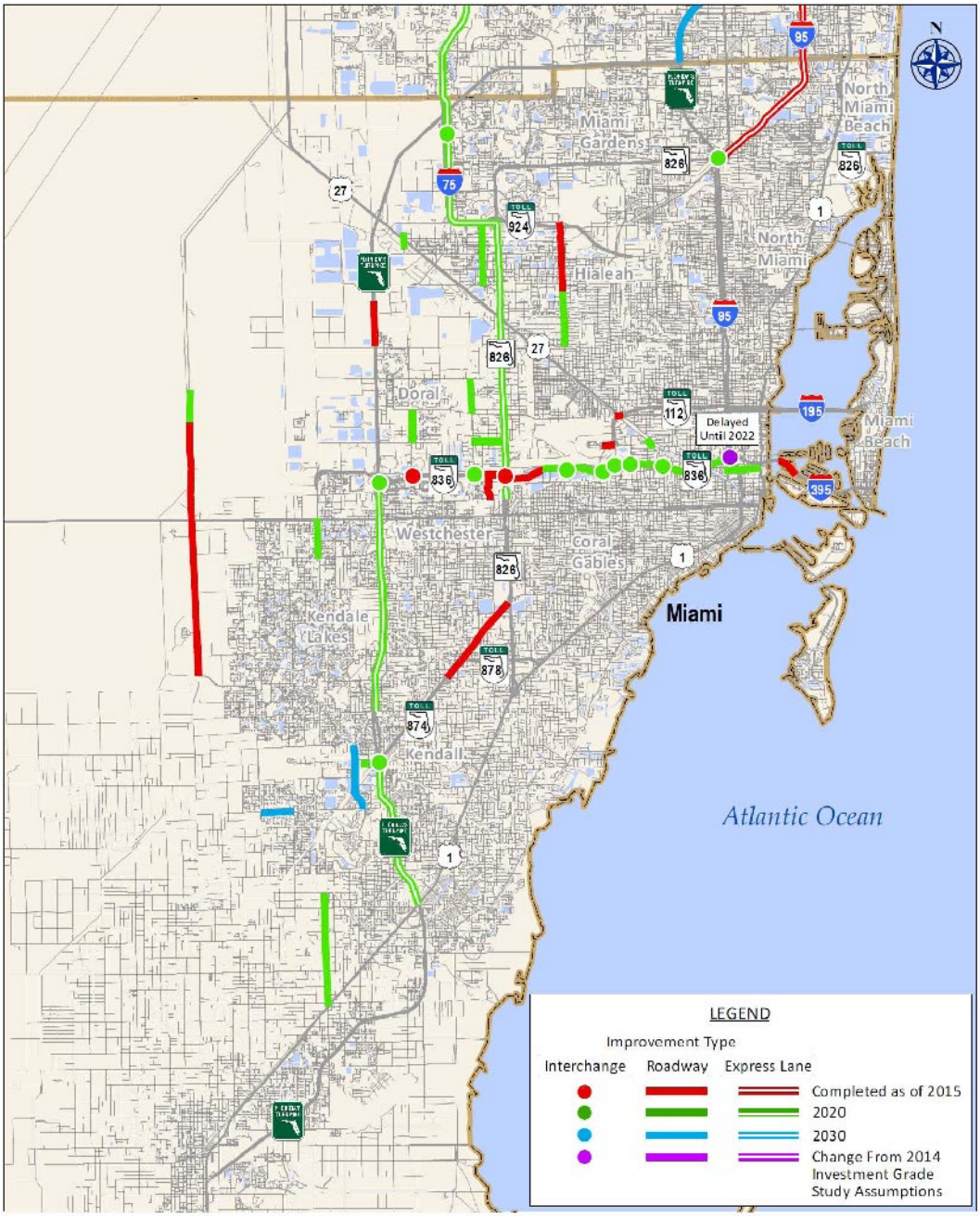



**Figure 6**
**Highway Improvements**

In the short-term, the primary change from the prior 2014 IG study forecast was the assumed completion of the SR 826 / SR 836 interchange project. Under the prior 2014 IG Study, the SR 826 / SR 836 interchange project was assumed to be complete by January 2015. Under the current 2016 Update forecasts, the actual project completion of April 2016 was incorporated. This means that construction activity is assumed to continue to negatively impact SR 836 transactions during the last half of FY 2015, while the benefits of the improvement will not be realized until mid-FY 2016.

In the longer term, there were differences in the assumed opening dates of various other significant highway improvement projects. Under the 2014 IG Study, the following major highway projects, included in the FY 2020 model network, were assumed to open by FY 2018:

- SR 874 Extension to SW 128th Street now by January 2019 (FY 2019);
- SR 836 capacity improvements between NW 57th Avenue and NW 17th Avenue now by October 2019 (FY 2020); and
- SR 836 / NW 87th Avenue interchange improvements now by September 2019 (FY 2020).
- SR 836 / I-95 interchange improvements now by the end of FY 2022;

Under the current 2016 Update study effort, the impacts for these projects have been incorporated into the indicated forecast years. Since each of these projects generally serves to increase MDX system transactions, particularly on SR 874 and SR 836, through capacity improvements and increased connectivity, the positive impacts of these projects have been adjusted to begin in the years indicated.

## SunPass® Participation Rates

Under the 2014 IG Study, an overall SunPass® participation rate of 85.5 percent was assumed for FY 2016. This assumption was based on an actual SunPass® participation rate of 84.2 percent in FY 2013 (prior to any billing issues related to the changes in Toll-by-Plate collection) and a slight increase that was assumed to occur as a result of the implementation of System-wide ORT. Based on the actual data through March 2016, the SunPass® participation rate was 80.3 percent in FY 2016. This is somewhat lower than assumed in the 2014 IG Study.

The latest data on SunPass® participation was used to adjust the assumed future year SunPass® participation rates. The differences between the previously assumed 2014 IG Study rates and the current 2016 Update Study are provided in **Table 14**. The change in SunPass® participation rates has two primary impacts. First, it increases indicated revenue estimates, as a higher percentage of customers will pay the higher Toll-by-Plate toll rates. Secondly, it increases the amount of revenue lost to leakage, as revenue reductions resulting from bad license plate images and unpaid transactions are based on Toll-by-Plate transactions.

**Table 14**
**Comparison of Estimated SunPass® Participation Rates by Expressway**
**2014 Investment Grade Study versus 2016 Update Study**

| MDX Expressway | FY 2016 | FY 2017 | FY 2018 | FY 2020 | FY 2030 | FY 2020 (CPI Tolls) | FY 2030 (CPI Tolls) |
|---|---|---|---|---|---|---|---|
| **Estimated SunPass® Participation under 2014 IG Study** | | | | | | | |
| **SR 112** | 76.3 | 76.6 | 76.9 | 77.4 | 77.4 | 77.8 | 78.2 |
| **SR 836** | 86.0 | 86.4 | 86.6 | 87.2 | 87.2 | 87.7 | 88.8 |
| **SR 874** | 88.7 | 89.0 | 89.3 | 89.8 | 89.6 | 90.3 | 90.4 |
| **SR 878** | 89.7 | 90.1 | 90.4 | 91.0 | 90.9 | 91.6 | 91.8 |
| **SR 924** | 88.5 | 88.8 | 89.2 | 89.8 | 89.9 | 90.1 | 90.7 |
| **Total MDX System** | **85.5** | **85.8** | **86.3** | **86.9** | **86.9** | **87.3** | **88.1** |
| **Estimated SunPass® Participation under 2016 Annual Update [1]** | | | | | | | |
| **SR 112** | 78.0 | 78.3 | 78.7 | 79.3 | 79.3 | 79.4 | 80.0 |
| **SR 836** | 80.3 | 80.6 | 81.0 | 81.6 | 81.8 | 81.7 | 83.1 |
| **SR 874** | 80.5 | 80.8 | 81.3 | 81.7 | 81.5 | 81.8 | 82.2 |
| **SR 878** | 85.1 | 85.4 | 85.9 | 86.4 | 86.4 | 86.5 | 87.2 |
| **SR 924** | 80.1 | 80.4 | 80.9 | 81.4 | 81.5 | 81.5 | 82.3 |
| **Total MDX System** | **80.3** | **80.5** | **81.0** | **81.6** | **81.6** | **81.7** | **82.6** |

[1] FY 2016 SunPass® participation rates are based on Actual Data through March 2016.

## Estimated Leakage Rates

Leakage rate assumptions were also updated in the current 2016 Update Study based on the most recent actual data and discussions with MDX Staff. The differences between the 2014 IG Study assumptions and those of the current 2016 Update Study are shown on a systemwide basis in **Table 15**.

Under the prior 2014 IG Study, total TBP revenue collected was estimated at 51.0 percent of indicated revenues in FY 2016 on an average systemwide basis, representing revenue leakage of 49.0 percent of TBP revenue or 12.2 percent of total system revenue. These estimates were based on FY 2013 data available prior to systemwide ORT implementation. Using actual revenue data following the implementation of systemwide ORT through March 2016, CDM Smith estimated roughly 54.4 percent of TBP indicated revenue would be collected while 45.6 percent of TBP revenue would be lost due to bad images, technological problems or unpaid transaction during FY 2016. This is 3.4 percentage points less than previously estimated. These changes are primarily due to improved collections, particularly as a result of MDX being granted the ability to place a hold on the vehicle registration of toll violators. On a total system-wide basis, the levels of revenue leakage would represent a loss of roughly 15.0 percent of total revenues, roughly 3 percentage points greater than estimated under the 2014 IG Study. The reason that leakage as a percent of TBP revenue decreases while leakage as a percent of total systemwide revenue increases is due to the decreases in SunPass® participation rates described earlier. These changes in revenue leakage were incorporated into the 2016 Update forecasts for FY 2016 at the expressway level, and were assumed to continue through the forecast period to FY 2030 and beyond.

**Table 15**
**Comparison of Estimated Leakage Rates by Type,**
**2014 Investment Grade Study versus 2016 Update Study**

| | 2014 IG Study [1] | | 2016 Update [2] | |
|---|---|---|---|---|
| | Percent of TBP Revenue | Percent of Total Revenue | Percent of TBP Revenue | Percent of Total Revenue |
| **FY 2016** | | | | |
| **Total Indicated** | **100.0** | **100.0** | **100.0** | **100.0** |
| Bad / Duplicate Images[3] | (14.9) | (3.7) | (21.6) | (7.2) |
| No Address / Non-Pursuable[3] | | | (6.3) | (2.0) |
| **Total Billable** | **85.1** | **96.3** | **72.1** | **90.8** |
| Unpaid | (34.1) | (8.5) | (17.7) | (5.8) |
| **Total Collected** | **51.0** | **87.8** | **54.4** | **85.0** |
| **FY 2030** | | | | |
| **Total Indicated** | **100.0** | **100.0** | **100.0** | **100.0** |
| Bad / Duplicate Images[3] | (10.0) | (2.3) | (15.0) | (4.6) |
| No Address / Non-Pursuable[3] | | | (4.4) | (1.4) |
| **Total Billable** | **90.0** | **97.7** | **80.6** | **94.0** |
| Unpaid | (16.9) | (3.8) | (14.5) | (4.5) |
| **Total Collected** | **73.1** | **93.9** | **66.1** | **89.5** |

[1] 2014 IG Study leakage rates were based on historical data available prior to systemwide ORT implementation.
[2] FY 2016 leakage rates are based on actual data through March 2016.
[3] Differentiation of revenue leakage between Bad / Duplicate Images and Non Address / Non-Pursuable not available under the 2014 IG Study.
Source: Miami Dade Expressway Authority

## Summary of Basic Assumptions

Traffic and toll revenue estimates for the MDX system are predicated upon the following basic assumptions, which are considered reasonable for purposes of our traffic and revenue forecast:

1. The current economic trends in the study area will continue, and will be generally as forecasted by the Miami-Dade, Broward and Palm Beach County Metropolitan Planning Organizations as reviewed and refined by the independent economist, as documented in this letter report;

2. No major recession, local or national, will occur which will significantly alter the pattern of growth in traffic and revenue;

3. Over the long term, motor fuel will remain in adequate supply, with no unexpected or substantial increases in fuel prices other than those due to seasonal or inflationary causes, throughout the forecast period;

4. Inflation will average 2.7 percent per year over the forecast period based on the CPI for the Miami, Fort Lauderdale, Pompano Beach Metropolitan Statistical Area as per CDM Smith's analysis of Moody's Analytics, CPI data (released April 2016);

5. Highway improvements to the MDX Expressways as described in the 2014 IG Study and updated in this report will be implemented as noted;

6. Other improvements to the present highway and local road system in the travel corridor will be limited to those described in the 2014 IG Study, with no other competing facilities, or capacity expansions other than those documented, occurring during the forecast period;

7. The percentage of SunPass® and TBP market shares in the MDX travel market will be estimated and presented in **Table 14** (shown previously);

8. Revenue leakage due to unreadable TBP images or unpaid TBP transactions will be as assumed and specified in this letter report;

9. The toll collection concepts and toll schedules shown in this report for both SunPass® and TBP Tolling options will be employed;

10. No toll changes other than those noted in this letter, such as CPI toll rate adjustments under the Alternative forecast, are assumed in the revenue forecasts included in this report;

11. Revenue forecasts are provided in current year dollars;

12. The MDX System will continue to be effectively maintained, efficiently operated, properly signed, and promoted to encourage maximum usage;

13. No natural disasters will occur that could significantly alter travel patterns in and through the area; and

14. No local, regional, or national emergency will arise that would abnormally restrict the use of motor vehicles.

Any significant departure from these basic assumptions could materially affect estimated traffic and toll revenue for the MDX System.

## Base Case Traffic and Revenue Forecasts – No CPI-Adjusted Toll Rate Increases

The Base Case traffic and revenue forecasts represent estimated transactions and toll revenue under the current systemwide ORT toll rates. The forecasts were developed as described previously through FY 2033. CPI-Based toll rate increases are not assumed. The toll rate assumptions and forecasts are provided in this section.

### Toll Rate Assumptions

Based on the current toll rates on the MDX Expressways and the toll policy adopted by the MDX Board of Directors, toll rate assumptions were developed for the current 2016 Update forecasts. Both the 2014 IG Study and the current 2016 Update study assume systemwide ORT implementation throughout the forecast period. **Table 16** provides the Base Case toll rate assumptions for SunPass® passenger cars.

**Table 16**
**Base Case Toll Rate Assumptions – No CPI-Adjusted Toll Rate Increases**
**Passenger Car SunPass® Rates**

| Expressway | Location | FY 2016 | FY 2020 | FY 2030 |
|---|---|---|---|---|
| **SR 112** | E of NW 42nd Avenue | $ 0.35 | $ 0.35 | $ 0.35 |
| | W of NW 17th Avenue | 0.35 | 0.35 | 0.35 |
| **SR 836** | E of NW 137th Avenue | $ 0.30 | $ 0.30 | $ 0.30 |
| | E of NW 97th Avenue | 0.70 | 0.70 | 0.70 |
| | W of NW 57th Avenue | 0.70 | 0.70 | 0.70 |
| | E of NW 17th Avenue | 0.70 | 0.70 | 0.70 |
| | Ramp Toll Gantries | 0.30 | 0.30 | 0.30 |
| **SR 874** | N of HEFT | $ 0.25 | $ 0.25 | $ 0.25 |
| | S of Killian Parkway | 0.25 | 0.25 | 0.25 |
| | S of SR 826 | 0.50 | 0.50 | 0.50 |
| **SR 878** | E of SR 874 | $ 0.25 | $ 0.25 | $ 0.25 |
| | W of SW 72nd Avenue | 0.25 | 0.25 | 0.25 |
| **SR 924** | E of SR 826 | $ 0.50 | $ 0.50 | $ 0.50 |
| | W of NW 42nd Avenue | 0.50 | 0.50 | 0.50 |

TBP toll rates are assumed to be twice the SunPass® rate. Vehicles with three or-more axles are charged twice the SunPass® passenger car rate if paying by SunPass®. Otherwise, three-or-more axle vehicles are charged proportionally higher rates based on the number of axles, as established by MDX policy as of December 10, 2014. It should be noted that this represents a change from the prior 2014 IG Study where toll rates for all three-or-more- axle vehicles were assumed to be based on an "n-1" system. This change has been incorporated into the current FY 2016 Update study and is estimated to have impacts of less than half a percent on total system-wide revenues.

It should be noted that the assumed values of time and vehicle operating costs underlying the original modeling effort included inflationary adjustments. Hence, the fixed toll rate scenario, without toll increases, actually reflects a decrease in "real" toll rates in real terms over the years. The result is that traffic growth rates under a fixed toll rate tend to be higher than those with inflationary adjustments.

## Estimated Short-Term Monthly Traffic and Revenue Estimates

CDM Smith developed an updated short-term monthly forecast through FY 2018 in order to forecast short-term traffic variations in a more detailed manner. The short-term monthly transactions and revenue forecasts are provided by expressway in **Tables 17 and 18**. FY 2016 transactions for all MDX expressways are estimated to increase to 472.1 million, based on actual data through March 2016, representing the first full year of system-wide ORT. Collected revenues are also estimated to increase to $229.2 million. Transactions are then estimated to continue increasing to 507.6 million in FY 2018. Collected revenues are estimated to be $240.7 million in FY 2018, an average increase of 2.5 percent per year over FY 2016.

**Table 17**
**Summary of Forecasted Monthly Transactions through FY 2018 (000s),**
**Base Case (No CPI-Adjusted Toll Increases)**

| Fiscal Year | Month | SR 112 | SR 836 | SR 874 | SR 878 | SR 924 | Total System |
|---|---|---|---|---|---|---|---|
| 2016 | July [1] | 6,028 | 18,421 | 8,843 | 2,264 | 2,857 | **38,414** |
| | August [1] | 5,875 | 18,073 | 8,870 | 2,280 | 2,828 | **37,926** |
| | September [1] | 5,672 | 17,535 | 8,776 | 2,320 | 2,952 | **37,255** |
| | October [1] | 6,124 | 18,628 | 9,226 | 2,439 | 3,155 | **39,572** |
| | November [1] | 5,957 | 17,692 | 8,852 | 2,289 | 2,889 | **37,679** |
| | December [1] | 6,297 | 18,634 | 9,424 | 2,412 | 2,997 | **39,764** |
| | January [1] | 6,290 | 18,171 | 9,343 | 2,301 | 2,993 | **39,098** |
| | February [1] | 6,166 | 17,856 | 9,326 | 2,297 | 3,064 | **38,709** |
| | March [1] | 6,781 | 19,640 | 10,122 | 2,457 | 3,346 | **42,345** |
| | April | 6,178 | 18,998 | 9,168 | 2,436 | 3,115 | **39,895** |
| | May | 6,409 | 20,038 | 9,378 | 2,482 | 3,120 | **41,427** |
| | June | 6,138 | 19,389 | 9,168 | 2,384 | 2,971 | **40,050** |
| | **Total** | **73,915** | **223,075** | **110,495** | **28,361** | **36,288** | **472,134** |
| 2017 | July | 6,162 | 19,789 | 9,044 | 2,223 | 2,718 | **39,936** |
| | August | 6,342 | 20,224 | 9,360 | 2,421 | 3,093 | **41,440** |
| | September | 5,840 | 19,231 | 9,080 | 2,369 | 2,988 | **39,508** |
| | October | 6,058 | 20,245 | 9,436 | 2,453 | 3,118 | **41,310** |
| | November | 6,019 | 19,638 | 9,360 | 2,409 | 3,045 | **40,471** |
| | December | 6,115 | 20,130 | 9,458 | 2,423 | 2,886 | **41,012** |
| | January | 6,416 | 20,034 | 9,514 | 2,412 | 3,029 | **41,405** |
| | February | 6,056 | 18,619 | 8,988 | 2,313 | 2,966 | **38,942** |
| | March | 6,801 | 20,885 | 10,063 | 2,592 | 3,369 | **43,710** |
| | April | 6,298 | 19,799 | 9,397 | 2,449 | 3,047 | **40,990** |
| | May | 6,667 | 20,648 | 9,778 | 2,574 | 3,195 | **42,862** |
| | June | 6,320 | 19,810 | 9,481 | 2,435 | 2,970 | **41,016** |
| | **Total** | **75,094** | **239,052** | **112,959** | **29,073** | **36,424** | **492,602** |
| 2018 | July | 6,393 | 20,192 | 9,393 | 2,272 | 2,771 | **41,021** |
| | August | 6,580 | 20,639 | 9,724 | 2,472 | 3,158 | **42,573** |
| | September | 6,015 | 19,557 | 9,402 | 2,397 | 3,003 | **40,374** |
| | October | 6,474 | 20,583 | 9,825 | 2,531 | 3,337 | **42,750** |
| | November | 6,380 | 19,899 | 9,716 | 2,459 | 3,209 | **41,663** |
| | December | 6,424 | 20,228 | 9,736 | 2,434 | 2,983 | **41,805** |
| | January | 6,869 | 20,507 | 10,002 | 2,504 | 3,263 | **43,145** |
| | February | 6,409 | 18,899 | 9,370 | 2,364 | 3,123 | **40,165** |
| | March | 7,144 | 21,160 | 10,463 | 2,622 | 3,492 | **44,881** |
| | April | 6,705 | 20,291 | 9,859 | 2,530 | 3,259 | **42,644** |
| | May | 7,039 | 21,086 | 10,229 | 2,633 | 3,361 | **44,348** |
| | June | 6,627 | 20,165 | 9,884 | 2,466 | 3,080 | **42,222** |
| | **Total** | **79,059** | **243,206** | **117,603** | **29,684** | **38,039** | **507,591** |

(1) Actual.

**Table 18**
**Summary of Forecasted Monthly Collected Toll Revenue through FY 2018 ($000s),**
**Base Case (No CPI-Adjusted Toll Increases)**

| Fiscal Year | Month | SR 112 | SR 836 | SR 874 | SR 878 | SR 924 | Total System |
|---|---|---|---|---|---|---|---|
| 2016 | July [1] | $ 1,757 | $ 9,421 | $ 2,053 | $ 448 | $ 1,051 | **$ 14,730** |
| | August [1] | 2,069 | 11,010 | 3,098 | 614 | 1,607 | **18,398** |
| | September [1] | 2,074 | 10,898 | 3,127 | 626 | 1,665 | **18,390** |
| | October [1] | 2,185 | 11,347 | 2,986 | 651 | 1,564 | **18,733** |
| | November [1] | 2,047 | 10,454 | 2,861 | 571 | 1,497 | **17,430** |
| | December [1] | 2,083 | 10,597 | 2,953 | 597 | 1,527 | **17,757** |
| | January [1] | 2,070 | 10,933 | 2,949 | 583 | 1,545 | **18,080** |
| | February [1] | 2,225 | 11,291 | 3,648 | 674 | 1,731 | **19,569** |
| | March [1] | 2,638 | 12,846 | 3,330 | 621 | 1,705 | **21,140** |
| | April | 2,600 | 13,174 | 3,345 | 617 | 1,885 | **21,621** |
| | May | 2,635 | 13,478 | 3,363 | 624 | 1,861 | **21,961** |
| | June | 2,570 | 13,135 | 3,325 | 605 | 1,789 | **21,424** |
| | **Total** | **$ 26,952** | **$ 138,584** | **$ 37,038** | **$ 7,231** | **$ 19,428** | **$ 229,233** |
| 2017 | July | 2,217 | 11,719 | 3,018 | 570 | 1,466 | **18,991** |
| | August | 2,268 | 11,999 | 3,089 | 606 | 1,593 | **19,554** |
| | September | 2,145 | 11,558 | 3,038 | 603 | 1,593 | **18,936** |
| | October | 2,163 | 11,964 | 3,110 | 618 | 1,634 | **19,488** |
| | November | 2,173 | 11,798 | 3,114 | 612 | 1,618 | **19,314** |
| | December | 2,194 | 11,958 | 3,136 | 611 | 1,542 | **19,441** |
| | January | 2,286 | 11,942 | 3,155 | 609 | 1,587 | **19,579** |
| | February | 2,211 | 11,246 | 3,020 | 590 | 1,574 | **18,641** |
| | March | 2,388 | 12,220 | 3,269 | 645 | 1,736 | **20,259** |
| | April | 2,308 | 11,992 | 3,162 | 626 | 1,646 | **19,733** |
| | May | 2,370 | 12,214 | 3,218 | 647 | 1,672 | **20,122** |
| | June | 2,302 | 11,875 | 3,169 | 623 | 1,595 | **19,563** |
| | **Total** | **$ 27,024** | **$ 142,485** | **$ 37,499** | **$ 7,358** | **$ 19,254** | **$ 233,621** |
| 2018 | July | 2,300 | 12,003 | 3,138 | 582 | 1,492 | **$19,516** |
| | August | 2,359 | 12,284 | 3,212 | 620 | 1,627 | **20,102** |
| | September | 2,218 | 11,810 | 3,156 | 610 | 1,610 | **19,404** |
| | October | 2,297 | 12,202 | 3,241 | 635 | 1,729 | **20,105** |
| | November | 2,311 | 12,016 | 3,240 | 624 | 1,716 | **19,908** |
| | December | 2,315 | 12,078 | 3,239 | 619 | 1,605 | **19,856** |
| | January | 2,441 | 12,221 | 3,304 | 632 | 1,696 | **20,295** |
| | February | 2,353 | 11,479 | 3,161 | 606 | 1,669 | **19,267** |
| | March | 2,517 | 12,413 | 3,398 | 655 | 1,807 | **20,790** |
| | April | 2,456 | 12,302 | 3,314 | 645 | 1,753 | **20,471** |
| | May | 2,511 | 12,519 | 3,369 | 663 | 1,767 | **20,829** |
| | June | 2,426 | 12,139 | 3,310 | 631 | 1,663 | **20,170** |
| | **Total** | **$ 28,504** | **$ 145,466** | **$ 39,085** | **$ 7,522** | **$ 20,134** | **$ 240,712** |

(1) Actual.

## Estimated Annual Transactions and Revenue

CDM Smith reviewed and updated the estimated transaction and revenue growth through FY 2020 based on the assumptions previously presented. For transaction growth between FY 2020 and FY 2030, CDM Smith assumed the adjusted long-term growth rates estimated in the FY 2014 IG Study previously discussed in this letter report. The impacts of a customer discount program have not been included in the annual transaction and revenue forecast, but are described further in the Official Statement.

**Table 19** presents the forecasts of annual transactions by expressway. **Table 20** presents the forecasts of annual indicated and collected revenue by expressway. Indicated revenue represents the total revenue that would be collected if the toll from all video transactions were collected. Collected revenue represents the portion of expected video revenue which can actually be invoiced to TBP customers and is assumed to be paid within a reasonable time frame, recognizing some portion of invoiced revenue may go uncollected. This category of toll revenue reflects the elimination of unreadable plates, mismatched DMV records or those with incorrect information on vehicle owner name and address; and recognizes that some portion of invoiced revenue may go uncollected.

**Table 19**

**Summary of Forecasted Transactions– Base Case (No CPI-Adjusted Toll Increases)**

| Fiscal Year | SR 112 | AAPC | SR 836 | AAPC | SR 874 | AAPC | SR 878 | AAPC | SR 924 | AAPC | Total System | AAPC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Annual Transactions (000s) | | | | | | | | | | | | |
| 2016[1][2] | 73,915 | --- | 223,075 | --- | 110,495 | --- | 28,361 | --- | 36,288 | --- | **472,134** | **---** |
| 2017 | 75,094 | 1.6 | 239,052 | 7.2 | 112,959 | 2.2 | 29,073 | 2.5 | 36,424 | 0.4 | **492,602** | **4.3** |
| 2018 | 79,059 | 5.3 | 243,206 | 1.7 | 117,603 | 4.1 | 29,684 | 2.1 | 38,039 | 4.4 | **507,591** | **3.0** |
| 2019 | 81,139 | 2.6 | 249,008 | 2.4 | 128,639 | 9.4 | 30,645 | 3.2 | 39,119 | 2.8 | **528,549** | **4.1** |
| 2020[2] | 82,594 | 1.8 | 255,641 | 2.7 | 129,463 | 0.6 | 31,452 | 2.6 | 40,114 | 2.5 | **539,263** | **2.0** |
| 2021 | 82,728 | 0.2 | 259,791 | 1.6 | 130,903 | 1.1 | 32,121 | 2.1 | 40,786 | 1.7 | **546,329** | **1.3** |
| 2022 | 81,266 | -1.8 | 263,942 | 1.6 | 132,722 | 1.4 | 32,894 | 2.4 | 41,584 | 2.0 | **552,408** | **1.1** |
| 2023 | 82,160 | 1.1 | 268,451 | 1.7 | 134,568 | 1.4 | 33,686 | 2.4 | 42,397 | 2.0 | **561,262** | **1.6** |
| 2024[2] | 83,292 | 1.4 | 273,811 | 2.0 | 136,813 | 1.7 | 34,592 | 2.7 | 43,345 | 2.2 | **571,853** | **1.9** |
| 2025 | 83,979 | 0.8 | 277,781 | 1.4 | 138,337 | 1.1 | 35,328 | 2.1 | 44,072 | 1.7 | **579,497** | **1.3** |
| 2026 | 84,903 | 1.1 | 282,607 | 1.7 | 140,263 | 1.4 | 36,178 | 2.4 | 44,934 | 2.0 | **588,885** | **1.6** |
| 2027 | 85,838 | 1.1 | 287,544 | 1.7 | 142,215 | 1.4 | 37,049 | 2.4 | 45,812 | 2.0 | **598,458** | **1.6** |
| 2028[2] | 87,020 | 1.4 | 293,395 | 2.0 | 144,590 | 1.7 | 38,045 | 2.7 | 46,836 | 2.2 | **609,888** | **1.9** |
| 2029 | 87,738 | 0.8 | 297,759 | 1.5 | 146,204 | 1.1 | 38,855 | 2.1 | 47,622 | 1.7 | **618,178** | **1.4** |
| 2030 | 88,704 | 1.1 | 303,044 | 1.8 | 148,241 | 1.4 | 39,791 | 2.4 | 48,553 | 2.0 | **628,332** | **1.6** |
| 2031 | 89,680 | 1.1 | 307,257 | 1.4 | 150,307 | 1.4 | 40,749 | 2.4 | 49,503 | 2.0 | **637,496** | **1.5** |
| 2032[2] | 90,916 | 1.4 | 312,397 | 1.7 | 152,820 | 1.7 | 41,845 | 2.7 | 50,609 | 2.2 | **648,586** | **1.7** |
| 2033 | 91,666 | 0.8 | 315,904 | 1.1 | 154,528 | 1.1 | 42,735 | 2.1 | 51,458 | 1.7 | **656,290** | **1.2** |

(1) Includes actual data through March 2016.
(2) Leap Year

**Table 20**

**Summary of Forecasted Indicated and Collected Toll Revenue – Base Case (No CPI-Adjusted Toll Increases)**

| Fiscal Year | SR 112 | AAPC | SR 836 | AAPC | SR 874 | AAPC | SR 878 | AAPC | SR 924 | AAPC | Total System | AAPC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Annual Indicated Toll Revenue ($000s) [1]** | | | | | | | | | | | | |
| 2016[2][3] | $ 32,353 | --- | $ 162,524 | --- | $ 43,482 | --- | $ 8,175 | --- | $ 23,120 | --- | **$269,654** | **---** |
| 2017 | 32,837 | 1.5 | 168,815 | 3.9 | 44,453 | 2.2 | 8,377 | 2.5 | 23,174 | 0.2 | **277,655** | **3.0** |
| 2018 | 34,425 | 4.8 | 171,317 | 1.5 | 46,063 | 3.6 | 8,517 | 1.7 | 24,083 | 3.9 | **284,406** | **2.4** |
| 2019 | 35,245 | 2.4 | 175,152 | 2.2 | 49,527 | 7.5 | 8,771 | 3.0 | 24,696 | 2.5 | **293,390** | **3.2** |
| 2020[3] | 35,789 | 1.5 | 179,588 | 2.5 | 49,676 | 0.3 | 8,979 | 2.4 | 25,252 | 2.3 | **299,284** | **2.0** |
| 2021 | 35,847 | 0.2 | 182,557 | 1.7 | 50,227 | 1.1 | 9,170 | 2.1 | 25,674 | 1.7 | **303,475** | **1.4** |
| 2022 | 35,213 | (1.8) | 186,416 | 2.1 | 50,924 | 1.4 | 9,391 | 2.4 | 26,174 | 1.9 | **308,118** | **1.5** |
| 2023 | 35,601 | 1.1 | 189,672 | 1.7 | 51,630 | 1.4 | 9,617 | 2.4 | 26,684 | 1.9 | **313,204** | **1.7** |
| 2024[3] | 36,091 | 1.4 | 193,529 | 2.0 | 52,490 | 1.7 | 9,876 | 2.7 | 27,279 | 2.2 | **319,264** | **1.9** |
| 2025 | 36,389 | 0.8 | 196,403 | 1.5 | 53,072 | 1.1 | 10,086 | 2.1 | 27,734 | 1.7 | **323,684** | **1.4** |
| 2026 | 36,789 | 1.1 | 199,881 | 1.8 | 53,809 | 1.4 | 10,329 | 2.4 | 28,275 | 1.9 | **329,083** | **1.7** |
| 2027 | 37,194 | 1.1 | 203,437 | 1.8 | 54,556 | 1.4 | 10,578 | 2.4 | 28,826 | 1.9 | **334,591** | **1.7** |
| 2028[3] | 37,707 | 1.4 | 207,640 | 2.1 | 55,465 | 1.7 | 10,863 | 2.7 | 29,468 | 2.2 | **341,143** | **2.0** |
| 2029 | 38,017 | 0.8 | 210,790 | 1.5 | 56,082 | 1.1 | 11,094 | 2.1 | 29,960 | 1.7 | **345,944** | **1.4** |
| 2030 | 38,436 | 1.1 | 214,590 | 1.8 | 56,861 | 1.4 | 11,362 | 2.4 | 30,544 | 1.9 | **351,793** | **1.7** |
| 2031 | 38,859 | 1.1 | 217,530 | 1.4 | 57,638 | 1.4 | 11,635 | 2.4 | 31,142 | 2.0 | **356,804** | **1.4** |
| 2032[3] | 39,394 | 1.4 | 221,121 | 1.7 | 58,586 | 1.6 | 11,948 | 2.7 | 31,838 | 2.2 | **362,887** | **1.7** |
| 2033 | 39,719 | 0.8 | 223,551 | 1.1 | 59,224 | 1.1 | 12,202 | 2.1 | 32,371 | 1.7 | **367,068** | **1.2** |
| **Annual Collected Toll Revenue ($000s) [4]** | | | | | | | | | | | | |
| 2016[2][3] | $ 26,952 | --- | $ 138,584 | --- | $ 37,038 | --- | $ 7,231 | --- | $ 19,428 | --- | **$ 229,233** | **---** |
| 2017 | 27,024 | 0.3 | 142,485 | 2.8 | 37,499 | 1.2 | 7,358 | 1.8 | 19,254 | -0.9 | **233,621** | **1.9** |
| 2018 | 28,504 | 5.5 | 145,467 | 2.1 | 39,085 | 4.2 | 7,522 | 3.4 | 20,134 | 4.6 | **240,712** | **3.0** |
| 2019 | 29,384 | 3.1 | 149,697 | 2.9 | 42,275 | 8.2 | 7,788 | 3.6 | 20,787 | 3.2 | **249,930** | **3.8** |
| 2020[3] | 30,029 | 2.2 | 154,432 | 3.2 | 42,649 | 0.9 | 8,013 | 2.9 | 21,389 | 2.9 | **256,512** | **2.6** |
| 2021 | 30,217 | 0.6 | 157,602 | 2.1 | 43,285 | 1.5 | 8,207 | 2.4 | 21,843 | 2.1 | **261,154** | **1.8** |
| 2022 | 29,827 | -1.3 | 161,627 | 2.6 | 44,061 | 1.8 | 8,430 | 2.7 | 22,372 | 2.4 | **266,317** | **2.0** |
| 2023 | 30,311 | 1.6 | 165,169 | 2.2 | 44,863 | 1.8 | 8,661 | 2.7 | 22,919 | 2.4 | **271,923** | **2.1** |
| 2024[3] | 30,886 | 1.9 | 169,263 | 2.5 | 45,804 | 2.1 | 8,923 | 3.0 | 23,544 | 2.7 | **278,421** | **2.4** |
| 2025 | 31,301 | 1.3 | 172,524 | 1.9 | 46,510 | 1.5 | 9,142 | 2.4 | 24,054 | 2.2 | **283,531** | **1.8** |
| 2026 | 31,806 | 1.6 | 176,339 | 2.2 | 47,356 | 1.8 | 9,393 | 2.7 | 24,641 | 2.4 | **289,535** | **2.1** |
| 2027 | 32,320 | 1.6 | 180,254 | 2.2 | 48,219 | 1.8 | 9,650 | 2.7 | 25,243 | 2.4 | **295,686** | **2.1** |
| 2028[3] | 32,931 | 1.9 | 184,773 | 2.5 | 49,231 | 2.1 | 9,942 | 3.0 | 25,929 | 2.7 | **302,806** | **2.4** |
| 2029 | 33,371 | 1.3 | 188,385 | 2.0 | 49,991 | 1.5 | 10,186 | 2.4 | 26,489 | 2.2 | **308,422** | **1.9** |
| 2030 | 33,908 | 1.6 | 192,604 | 2.2 | 51,902 | 1.8 | 10,465 | 2.7 | 27,134 | 2.4 | **315,012** | **2.1** |
| 2031 | 34,281 | 1.1 | 195,244 | 1.4 | 51,598 | 1.4 | 10,717 | 2.4 | 27,665 | 2.0 | **319,504** | **1.4** |
| 2032[3] | 34,753 | 1.4 | 198,468 | 1.7 | 52,446 | 1.6 | 11,005 | 2.7 | 28,283 | 2.2 | **324,956** | **1.7** |
| 2033 | 35,040 | 0.8 | 200,650 | 1.1 | 53,018 | 1.1 | 11,240 | 2.1 | 28,757 | 1.7 | **328,705** | **1.2** |

(1) Does not include adjustments for revenue leakage due to bad and duplicate images, non-pursuable or un-paid transactions.
(2) Includes actual data through March 2016.
(3) Leap Year
(4) Includes adjustments for revenue leakage due to bad and duplicate images, non-pursuable or un-paid transactions.

Annual transactions are forecasted to reach 539.2 million by FY 2020, with 628.3 million transactions estimated by FY 2030, a ten-year average growth rate of 1.5 percent. Through FY 2020, transaction growth is driven by average normal growth rates of 3.1 percent per year, as well as construction impacts and capacity improvements, such as the SR 874 Extension which has been estimated to increase SR 874 transactions by almost 7.9 million when completed in FY 2019. Between FY 2020 and FY 2030, normal growth rates are estimated to be 1.6 percent per year. It should be noted that these growth rates reflect the impacts of inflation, which would effectively lower the real toll rate on the MDX system. This would lead to slightly higher growth rates than under assumed annual CPI-based toll rate increases where the toll rates are kept constant in real terms.

Annual indicated revenues are expected to increase from $299.3 million in FY 2020 to nearly $351.8 million by FY 2030, a ten-year average growth rate of 1.6 percent. The minor differences in growth rates between transactions and indicated revenue are due to differential growth rates by expressway and toll gantry location and assumed changes in SunPass® participation rates. Annual collected revenues are expected to increase from $256.5 million in FY 2020 to $315.0 million by FY 2030, a ten-year average growth rate of 2.1 percent. The differences in growth between the forecasts of indicated and collected toll revenues are a result of assumed improvements in TBP revenue collection.

Estimated annual transactions and revenue by method of payment are provided in **Table 21**. Annual SunPass® transactions are estimated to reach 512.9 million or 81.6 percent of total transactions in FY 2030, while Toll-by-Plate transactions are estimated to reach 111.9 million by FY 2030. Revenues collected from SunPass® transactions are estimated to reach $243.3 million or 77.2 percent of total collected revenue by FY 2030. Collected toll revenues are estimated to be $71.7 million in FY 2030.

## Alternative Traffic and Revenue Forecasts – With CPI-Based Toll Rate Increases

The Alternative traffic and revenue forecasts represent estimated transactions and toll revenue under systemwide ORT toll rates that include annual CPI-based adjustments beginning in FY 2020. The forecasts were developed based on the impacts of CPI-based toll increases estimated under the 2014 IG Study. These impacts, which were adjusted based on the revised start date and CPI assumptions, were applied to the Base Case forecasts beginning in FY 2020. The toll rate assumptions and forecasts are provided in this section.

**Table 21**

**Forecasted Transactions and Revenue by Method of Payment– Base Case (No CPI-Adjusted Toll Increases)**

| Fiscal Year | SunPass® | Toll-by-Plate | Non-Revenue | | Total Transactions | Percent Change |
|---|---|---|---|---|---|---|
| **Annual Transactions (000s)** | | | | | | |
| 2016[1][2] | 378,896 | 90,562 | 2,677 | | **472,134** | --- |
| 2017 | 396,781 | 93,040 | 2,780 | | **492,602** | 4.3 |
| 2018 | 411,120 | 93,612 | 2,859 | | **507,591** | 3.0 |
| 2019 | 429,552 | 96,019 | 2,979 | | **528,549** | 4.1 |
| 2020[2] | 439,796 | 96,425 | 3,041 | | **539,263** | 2.0 |
| 2021 | 445,586 | 97,658 | 3,086 | | **546,329** | 1.3 |
| 2022 | 450,766 | 98,518 | 3,124 | | **552,408** | 1.1 |
| 2023 | 458,007 | 100,078 | 3,177 | | **561,262** | 1.6 |
| 2024[2] | 466,666 | 101,947 | 3,239 | | **571,853** | 1.9 |
| 2025 | 472,921 | 103,291 | 3,285 | | **579,497** | 1.3 |
| 2026 | 480,598 | 104,946 | 3,340 | | **588,885** | 1.6 |
| 2027 | 488,428 | 106,633 | 3,397 | | **598,458** | 1.6 |
| 2028[2] | 497,772 | 108,651 | 3,465 | | **609,888** | 1.9 |
| 2029 | 504,555 | 110,109 | 3,514 | | **618,178** | 1.4 |
| 2030 | 512,860 | 111,898 | 3,574 | | **628,332** | 1.6 |
| 2031 | 520,371 | 113,497 | 3,628 | | **637,496** | 1.5 |
| 2032[2] | 529,456 | 115,438 | 3,693 | | **648,586** | 1.7 |
| 2033 | 535,777 | 116,775 | 3,739 | | **656,290** | 1.2 |
| **Fiscal Year** | **SunPass®** | **Toll-by-Plate Indicated [3]** | **Toll-by-Plate Billable [4]** | **Toll-by-Plate Collectible [5]** | **Total Collectible [5] Revenue** | **Percent Change** |
| **Annual Toll Revenue ($000s)** | | | | | | |
| 2016[2][3] | $180,993 | $88,661 | $63,902 | $48,240 | **$229,233** | --- |
| 2017 | 187,652 | 90,003 | 64,870 | 45,969 | **233,621** | 1.9 |
| 2018 | 194,177 | 90,229 | 65,033 | 46,536 | **240,712** | 3.0 |
| 2019 | 201,567 | 91,822 | 66,728 | 48,363 | **249,930** | 3.8 |
| 2020[3] | 206,941 | 92,343 | 67,577 | 49,570 | **256,512** | 2.6 |
| 2021 | 209,840 | 93,635 | 69,104 | 51,314 | **261,154** | 1.8 |
| 2022 | 213,155 | 94,963 | 70,731 | 53,162 | **266,317** | 2.0 |
| 2023 | 216,668 | 96,536 | 72,632 | 55,256 | **271,923** | 2.1 |
| 2024[3] | 220,854 | 98,410 | 74,788 | 57,567 | **278,421** | 2.4 |
| 2025 | 223,906 | 99,778 | 76,587 | 59,625 | **283,531** | 1.8 |
| 2026 | 227,635 | 101,448 | 78,639 | 61,900 | **289,535** | 2.1 |
| 2027 | 231,440 | 103,152 | 80,750 | 64,246 | **295,686** | 2.1 |
| 2028[3] | 235,966 | 105,177 | 83,143 | 66,841 | **302,806** | 2.4 |
| 2029 | 239,281 | 106,662 | 85,140 | 69,140 | **308,422** | 1.9 |
| 2030 | 243,322 | 108,471 | 87,419 | 71,691 | **315,012** | 2.1 |
| 2031 | 246,801 | 110,003 | 88,653 | 72,703 | **319,504** | 1.4 |
| 2032[3] | 251,023 | 111,864 | 90,153 | 73,933 | **324,956** | 1.7 |
| 2033 | 253,929 | 113,139 | 91,181 | 74,776 | **328,705** | 1.2 |

(1) Includes actual data through March 2016.
(2) Leap Year
(3) Represents Indicated Lane Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
(4) Represents Billable Revenue, which includes Indicated Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
(5) Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.

## Toll Rate Assumptions

Using inflation rates based on the CPI for the Miami, Fort Lauderdale, and Pompano Beach Metropolitan Statistical Area prepared by Moody's Analytics, CDM Smith developed toll rates through FY 2033, assuming an average inflation rate of roughly 2.7 percent per year. These toll rates, which were rounded to the nearest penny, assumed that the first year of CPI increases would be FY 2020, with CPI adjustments pegged to FY 2019 levels. Based on the most recent MDX Board policy, CPI increases will begin no earlier than FY 2019.

As a result, CDM Smith adjusted the assumed toll rates for FY 2020 forward, as shown in **Table 22,** and adjusted the assumed impacts from prior IG 2014 Study so that toll increases would be assumed to begin in FY 2020, consistent with MDX Board policy and current inflation assumptions. As was stated previously, inflationary adjustments in tolls allow toll rates to keep pace with assumed increases in vehicle operating costs and values of time. As a result, the Alternative forecast toll rates represent a fixed-rate scenario in "real" terms, resulting in slightly lower normal traffic growth rates than under the Base Case scenario.

**Table 22**

**Alternative Toll Rate Assumptions – With CPI-Based Toll Rate Increases**

| Expressway | Location | FY 2016 | FY 2020 | FY 2030 |
|---|---|---|---|---|
| **SR 112** | E of NW 42nd Avenue | $ 0.35 | $ 0.36 | $ 0.47 |
| | W of NW 17th Avenue | 0.35 | 0.36 | 0.47 |
| **SR 836** | E of NW 137th Avenue | $ 0.30 | $ 0.31 | $ 0.40 |
| | E of NW 97th Avenue | 0.70 | 0.72 | 0.93 |
| | W of NW 57th Avenue | 0.70 | 0.72 | 0.93 |
| | E of NW 17th Avenue | 0.70 | 0.72 | 0.93 |
| | Ramp Toll Gantries | 0.30 | 0.31 | 0.40 |
| **SR 874** | N of HEFT | $ 0.25 | $ 0.26 | $ 0.33 |
| | S of Killian Parkway | 0.25 | 0.26 | 0.33 |
| | S of SR 826 | 0.50 | 0.51 | 0.67 |
| **SR 878** | E of SR 874 | $ 0.25 | $ 0.26 | $ 0.33 |
| | W of SW 72nd Avenue | 0.25 | 0.26 | 0.33 |
| **SR 924** | E of SR 826 | $ 0.50 | $ 0.51 | $ 0.67 |
| | W of NW 42nd Avenue | 0.50 | 0.51 | 0.67 |

Note: Assumes an average annual inflation rate of 2.7 percent based on March 2016 CPI data from Moodys
CPI-based toll rate increases are assumed to begin FY 2020.

## Estimated Annual Transactions and Revenue – With CPI Adjusted Rates After 2019

Given that CPI-Based toll increases are not assumed to begin until FY 2020, no changes were made to the traffic and revenue forecasts through FY 2019 under the Alternative forecast. Beginning in FY 2020, CDM Smith applied the adjusted impacts of the CPI-based toll increases by toll location on an annual basis. A systemwide transaction decrease of 0.4 percent is estimated in FY 2020, growing to a reduction of 3.9 percent by FY 2030 over the Base Case. Collected revenues are estimated to increase by 2.4 percent in FY 2020, compared to the Base Case. This impact increases 26.1 percent by FY 2030.

**Table 23** presents the forecasts of annual transactions by expressway for the Alternative forecasts with CPI-Based toll increases. **Table 24** presents the forecasts of annual indicated and collected revenue by expressway for the Alternative forecasts with CPI-Based toll increases. Indicated revenue represents the total revenue that would be collected if the toll from all video transactions were collected. Collected revenue represents the portion of expected video revenue which can actually be invoiced to TBP customers and is assumed to be paid within a reasonable time frame, recognizing some portion of invoiced revenue may go uncollected. This category of toll revenue reflects the elimination of unreadable plates, mismatched DMV records or those with incorrect information on vehicle owner name and address; and recognizes that some portion of invoiced revenue may go uncollected. The impacts of a customer discount program have not been included in the annual transaction and revenue forecast.

**Table 23**
**Summary of Forecasted Transactions – Alternative Case (With CPI-Based Toll Increases)**

| Fiscal Year | SR 112 | AAPC | SR 836 | AAPC | SR 874 | AAPC | SR 878 | AAPC | SR 924 | AAPC | Total System | AAPC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Annual Transactions (000s) | | | | | | |
| 2016[1][2] | 73,915 | --- | 223,075 | --- | 110,495 | --- | 28,361 | --- | 36,288 | --- | **472,134** | **---** |
| 2017 | 75,094 | 1.6 | 239,052 | 7.2 | 112,959 | 2.2 | 29,073 | 2.5 | 36,424 | 0.4 | **492,602** | **4.3** |
| 2018 | 79,059 | 5.3 | 243,206 | 1.7 | 117,603 | 4.1 | 29,684 | 2.1 | 38,039 | 4.4 | **507,591** | **3.0** |
| 2019 | 81,139 | 2.6 | 249,008 | 2.4 | 128,639 | 9.4 | 30,645 | 3.2 | 39,119 | 2.8 | **528,549** | **4.1** |
| 2020[2][3] | 82,210 | 1.3 | 254,591 | 2.2 | 129,266 | 0.5 | 31,397 | 2.5 | 39,866 | 1.9 | **537,332** | **1.7** |
| 2021 | 81,962 | -0.3 | 257,661 | 1.2 | 130,506 | 1.0 | 32,009 | 1.9 | 40,285 | 1.1 | **542,423** | **0.9** |
| 2022 | 80,138 | -2.2 | 260,672 | 1.2 | 132,119 | 1.2 | 32,723 | 2.2 | 40,820 | 1.3 | **546,472** | **0.7** |
| 2023 | 80,644 | 0.6 | 264,024 | 1.3 | 133,753 | 1.2 | 33,452 | 2.2 | 41,361 | 1.3 | **553,235** | **1.2** |
| 2024[2] | 81,376 | 0.9 | 268,176 | 1.6 | 135,778 | 1.5 | 34,292 | 2.5 | 42,025 | 1.6 | **561,647** | **1.5** |
| 2025 | 81,665 | 0.4 | 270,931 | 1.0 | 137,082 | 1.0 | 34,961 | 2.0 | 42,466 | 1.1 | **567,106** | **1.0** |
| 2026 | 82,181 | 0.6 | 274,489 | 1.3 | 138,778 | 1.2 | 35,740 | 2.2 | 43,030 | 1.3 | **574,219** | **1.3** |
| 2027 | 82,700 | 0.6 | 278,119 | 1.3 | 140,496 | 1.2 | 36,537 | 2.2 | 43,601 | 1.3 | **581,452** | **1.3** |
| 2028[2] | 83,450 | 0.9 | 282,592 | 1.6 | 142,625 | 1.5 | 37,454 | 2.5 | 44,300 | 1.6 | **590,422** | **1.5** |
| 2029 | 83,747 | 0.4 | 285,596 | 1.1 | 143,997 | 1.0 | 38,185 | 2.0 | 44,766 | 1.1 | **596,290** | **1.0** |
| 2030 | 84,276 | 0.6 | 289,446 | 1.3 | 145,781 | 1.2 | 39,036 | 2.2 | 45,360 | 1.3 | **603,899** | **1.3** |
| 2031 | 84,808 | 0.6 | 292,249 | 1.0 | 147,587 | 1.2 | 39,907 | 2.2 | 45,962 | 1.3 | **610,513** | **1.1** |
| 2032[2] | 85,578 | 0.9 | 295,901 | 1.2 | 149,825 | 1.5 | 40,908 | 2.5 | 46,699 | 1.6 | **618,912** | **1.4** |
| 2033 | 85,883 | 0.4 | 297,978 | 0.7 | 151,268 | 1.0 | 41,707 | 2.0 | 47,190 | 1.1 | **624,025** | **0.8** |

(1) Includes actual data through March 2016.
(2) Leap Year
(3) First year of CPI-Based toll rate increases, assuming an inflation rate of 2.7 percent per year.

**Table 24**

**Summary of Forecasted Indicated and Collected Toll Revenue – Alt. Case (With CPI-Based Toll Increases)**

| Fiscal Year | SR 112 | AAPC | SR 836 | AAPC | SR 874 | AAPC | SR 878 | AAPC | SR 924 | AAPC | Total System | AAPC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Annual Indicated Toll Revenue (000s) [1]** | | | | | | | | | | | | |
| 2016[2][3] | $32,353 | --- | $162,524 | --- | $43,482 | --- | $8,175 | --- | $23,120 | --- | **$269,654** | **---** |
| 2017 | 32,837 | 1.5 | 168,815 | 3.9 | 44,453 | 2.2 | 8,377 | 2.5 | 23,174 | 0.2 | **277,655** | **3.0** |
| 2018 | 34,425 | 4.8 | 171,317 | 1.5 | 46,063 | 3.6 | 8,517 | 1.7 | 24,083 | 3.9 | **284,406** | **2.4** |
| 2019 | 35,245 | 2.4 | 175,152 | 2.2 | 49,527 | 7.5 | 8,771 | 3.0 | 24,696 | 2.5 | **293,390** | **3.2** |
| 2020[3][4] | 36,619 | 3.9 | 183,838 | 5.0 | 50,986 | 2.9 | 9,214 | 5.1 | 25,794 | 4.4 | **306,450** | **4.5** |
| 2021 | 37,497 | 2.4 | 191,029 | 3.9 | 52,864 | 3.7 | 9,648 | 4.7 | 26,767 | 3.8 | **317,805** | **3.7** |
| 2022 | 37,659 | 0.4 | 199,402 | 4.4 | 54,967 | 4.0 | 10,130 | 5.0 | 27,854 | 4.1 | **330,011** | **3.8** |
| 2023 | 38,900 | 3.3 | 207,262 | 3.9 | 57,114 | 3.9 | 10,630 | 4.9 | 28,966 | 4.0 | **342,873** | **3.9** |
| 2024[3] | 40,267 | 3.5 | 215,901 | 4.2 | 59,471 | 4.1 | 11,178 | 5.2 | 30,185 | 4.2 | **357,003** | **4.1** |
| 2025 | 41,412 | 2.8 | 223,463 | 3.5 | 61,525 | 3.5 | 11,678 | 4.5 | 31,253 | 3.5 | **369,332** | **3.5** |
| 2026 | 42,688 | 3.1 | 231,839 | 3.7 | 63,797 | 3.7 | 12,229 | 4.7 | 32,433 | 3.8 | **382,987** | **3.7** |
| 2027 | 44,010 | 3.1 | 240,581 | 3.8 | 66,162 | 3.7 | 12,808 | 4.7 | 33,663 | 3.8 | **397,224** | **3.7** |
| 2028[3] | 45,507 | 3.4 | 250,411 | 4.1 | 68,819 | 4.0 | 13,454 | 5.0 | 35,042 | 4.1 | **413,234** | **4.0** |
| 2029 | 46,799 | 2.8 | 259,243 | 3.5 | 71,194 | 3.5 | 14,055 | 4.5 | 36,280 | 3.5 | **427,571** | **3.5** |
| 2030 | 48,262 | 3.1 | 269,150 | 3.8 | 73,855 | 3.7 | 14,724 | 4.8 | 37,666 | 3.8 | **443,657** | **3.8** |
| 2031 | 49,773 | 3.1 | 278,297 | 3.4 | 76,619 | 3.7 | 15,426 | 4.8 | 39,106 | 3.8 | **459,220** | **3.5** |
| 2032[3] | 51,500 | 3.5 | 288,845 | 3.8 | 79,730 | 4.1 | 16,215 | 5.1 | 40,743 | 4.2 | **477,033** | **3.9** |
| 2033 | 52,996 | 2.9 | 298,166 | 3.2 | 82,515 | 3.5 | 16,951 | 4.5 | 42,216 | 3.6 | **492,845** | **3.3** |
| **Annual Collected Toll Revenue ($000s) [5]** | | | | | | | | | | | | |
| 2016[2][3] | $26,952 | --- | $138,584 | --- | $37,038 | --- | $7,231 | --- | $19,428 | --- | **$229,233** | **---** |
| 2017 | 27,024 | 0.3 | 142,485 | 2.8 | 37,499 | 1.2 | 7,358 | 1.8 | 19,254 | -0.9 | **233,621** | **1.9** |
| 2018 | 28,504 | 5.5 | 145,467 | 2.1 | 39,085 | 4.2 | 7,522 | 2.2 | 20,134 | 4.6 | **240,712** | **3.0** |
| 2019 | 29,384 | 3.1 | 149,697 | 2.9 | 42,275 | 8.2 | 7,788 | 3.5 | 20,787 | 3.2 | **249.930** | **3.8** |
| 2020[3][4] | 30,749 | 4.6 | 158,210 | 5.7 | 43,807 | 3.6 | 8,229 | 5.7 | 21,867 | 5.2 | **262,862** | **5.2** |
| 2021 | 31,647 | 2.9 | 165,197 | 4.4 | 45,614 | 4.1 | 8,646 | 5.1 | 22,803 | 4.3 | **273,906** | **4.2** |
| 2022 | 31,951 | 1.0 | 173,333 | 4.9 | 47,638 | 4.4 | 9,111 | 5.4 | 23,850 | 4.6 | **285,883** | **4.4** |
| 2023 | 33,187 | 3.9 | 181,101 | 4.5 | 49,730 | 4.4 | 9,595 | 5.3 | 24,934 | 4.5 | **298,547** | **4.4** |
| 2024[3] | 34,542 | 4.1 | 189,615 | 4.7 | 52,022 | 4.6 | 10,127 | 5.5 | 26,121 | 4.8 | **312,427** | **4.6** |
| 2025 | 35,718 | 3.4 | 197,248 | 4.0 | 54,067 | 3.9 | 10,618 | 4.9 | 27,186 | 4.1 | **324,837** | **4.0** |
| 2026 | 37,017 | 3.6 | 205,659 | 4.3 | 56,319 | 4.2 | 11,158 | 5.1 | 28,358 | 4.3 | **338,510** | **4.2** |
| 2027 | 38,368 | 3.6 | 214,464 | 4.3 | 58,673 | 4.2 | 11,728 | 5.1 | 29,584 | 4.3 | **352,816** | **4.2** |
| 2028[3] | 39,884 | 4.0 | 224,310 | 4.6 | 61,304 | 4.5 | 12,362 | 5.4 | 30,953 | 4.6 | **368,813** | **4.5** |
| 2029 | 41,232 | 3.4 | 233,333 | 4.0 | 63,704 | 3.9 | 12,960 | 4.8 | 32,208 | 4.1 | **383,437** | **4.0** |
| 2030 | 42,743 | 3.7 | 243,392 | 4.3 | 66,380 | 4.2 | 13,623 | 5.1 | 33,605 | 4.3 | **399,742** | **4.3** |
| 2031 | 44,096 | 3.2 | 251,826 | 3.5 | 68,879 | 3.8 | 14,278 | 4.8 | 34,904 | 3.9 | **413,982** | **3.6** |
| 2032[3] | 45,626 | 3.5 | 261,371 | 3.8 | 71,676 | 4.1 | 15,008 | 5.1 | 36,365 | 4.2 | **430,045** | **3.9** |
| 2033 | 46,951 | 2.9 | 269,805 | 3.2 | 74,180 | 3.5 | 15,690 | 4.5 | 37,680 | 3.6 | **444,306** | **3.3** |

(1) Does not include adjustments for revenue leakage due to bad and duplicate images, non-pursuable or un-paid transactions.
(2) Includes actual data through March 2016.
(3) Leap Year
(4) First year of CPI-Based toll rate increases, assuming an inflation rate of 2.7 percent per year.
(5) Includes adjustments for revenue leakage due to bad and duplicate images, non-pursuable or un-paid transactions.

Annual transactions are forecasted to reach 537.3 million by FY 2020, with 603.9 million transactions estimated by FY 2030, a ten-year average growth rate of 1.2 percent. Through FY 2020, transaction growth is driven by average normal growth rates of 3.1 percent per year, as well as construction impacts and capacity improvements, such as the SR 874 Extension which has been estimated to increase SR 874 transactions by almost 7.9 million transactions when completed in FY 2019. Between FY 2020 and FY 2030, normal growth rates are estimated to be 1.2 percent per year. Given the assumed CPI-based toll rate increases beginning in FY 2020, toll rates will remain relatively constant in real terms. Under the Base Case, the impacts of inflation would effectively lower the real toll rate on the MDX system, leading to slightly higher growth rates. As a result, the Alternative Case forecast estimates slightly lower normal growth rates following the implementation of assumed annual CPI-based toll rate increases.

Annual indicated revenues are expected to increase from $306.5 million in FY 2020 to nearly $443.7 million by FY 2030, a ten-year average growth rate of 3.8 percent. The difference in growth rates between transactions and revenue is due primarily to the assumed annual CPI-based toll rate increases. Annual collected revenues are expected to increase from $262.9 million in FY 2020 to over $399.7 million by FY 2030, a ten-year average growth rate of 4.3 percent. The differences in growth between the forecasts of indicated and collected toll revenues are the result of assumed improvements in TBP revenue collection.

Estimated annual transactions and revenue by method of payment are provided in **Table 25**. Annual SunPass® transactions are estimated to reach 499.1 million or 82.6 percent of total transactions in FY 2030, while Toll-by-Plate transactions are estimated to reach 101.4 million by FY 2030. Revenues collected from SunPass® transactions are estimated to reach $314.1 million or 78.6 percent of total collected revenue by FY 2030. Collected toll revenues are estimated to be $85.6 million in FY 2030.

## Disclaimer

CDM Smith used currently-accepted professional practices and procedures in the development of the traffic and revenue estimates in this report. However, as with any forecast, it should be understood that differences between forecasted and actual results may occur, as caused by events and circumstances beyond the control of the forecasters. In formulating the estimates, CDM Smith reasonably relied upon the accuracy and completeness of information provided (both written and oral) by MDX. CDM Smith also relied upon the reasonable assurances of independent parties and is not aware of any material facts that would make such information misleading.

CDM Smith made qualitative judgments related to several key variables in the development and analysis of the traffic and revenue estimates that must be considered as a whole; therefore, selecting portions of any individual result without consideration of the intent of the whole may create a misleading or incomplete view of the results and the underlying methodologies used to obtain the results. CDM Smith gives no opinion as to the value or merit of partial information extracted from this report.

## Table 25

## Forecasted Transactions and Revenue by Method of Payment– Alternate Case (CPI-Adjusted Toll Increases)

| Fiscal Year | SunPass® | Toll-by-Plate | Non-Revenue | Total Transactions | Percent Change |
|---|---|---|---|---|---|
| **Annual Transactions (000s)** | | | | | |
| 2016[1][2] | 378,896 | 90,562 | 2,677 | **472,134** | --- |
| 2017 | 396,781 | 93,040 | 2,780 | **492,602** | 4.3 |
| 2018 | 411,120 | 93,612 | 2,859 | **507,591** | 3.0 |
| 2019 | 429,552 | 96,019 | 2,979 | **528,549** | 4.1 |
| 2020[2][3] | 438,760 | 95,541 | 3,030 | **537,332** | 1.7 |
| 2021 | 443,438 | 95,922 | 3,063 | **542,423** | 0.9 |
| 2022 | 447,471 | 95,910 | 3,091 | **546,472** | 0.7 |
| 2023 | 453,532 | 96,571 | 3,131 | **553,235** | 1.2 |
| 2024[2] | 460,960 | 97,505 | 3,181 | **561,647** | 1.5 |
| 2025 | 465,979 | 97,913 | 3,214 | **567,106** | 1.0 |
| 2026 | 472,368 | 98,594 | 3,257 | **574,219** | 1.3 |
| 2027 | 478,871 | 99,281 | 3,300 | **581,452** | 1.3 |
| 2028[2] | 486,820 | 100,249 | 3,353 | **590,422** | 1.5 |
| 2029 | 492,227 | 100,675 | 3,389 | **596,290** | 1.0 |
| 2030 | 499,084 | 101,381 | 3,434 | **603,899** | 1.3 |
| 2031 | 505,100 | 101,940 | 3,473 | **610,513** | 1.1 |
| 2032[2] | 512,079 | 103,311 | 3,522 | **618,912** | 1.4 |
| 2033 | 516,340 | 104,132 | 3,553 | **624,025** | 0.8 |

| Fiscal Year | SunPass® | Toll-by-Plate Indicated [4] | Toll-by-Plate Billable [5] | Toll-by-Plate Collectible [6] | Total Collectible [6] Revenue | Percent Change |
|---|---|---|---|---|---|---|
| **Annual Toll Revenue ($000s)** | | | | | | |
| 2016[2][3] | $ 180,993 | $ 88,661 | $ 63,902 | $ 48,240 | **$ 229,233** | - |
| 2017 | 187,652 | 90,003 | 64,870 | 45,969 | **233,621** | 1.9 |
| 2018 | 194,177 | 90,229 | 65,033 | 46,536 | **240,712** | 3.0 |
| 2019 | 201,567 | 91,822 | 66,728 | 48,363 | **249,930** | 3.8 |
| 2020[3] | 212,345 | 94,105 | 68,867 | 50,516 | **262,862** | 5.2 |
| 2021 | 220,681 | 97,124 | 71,679 | 53,226 | **273,906** | 4.2 |
| 2022 | 229,759 | 100,252 | 74,670 | 56,124 | **285,883** | 4.4 |
| 2023 | 239,216 | 103,657 | 77,990 | 59,332 | **298,547** | 4.4 |
| 2024[3] | 249,599 | 107,404 | 81,624 | 62,828 | **312,427** | 4.6 |
| 2025 | 258,763 | 110,569 | 84,870 | 66,073 | **324,837** | 4.0 |
| 2026 | 268,897 | 114,090 | 88,438 | 69,613 | **338,510** | 4.2 |
| 2027 | 279,484 | 117,741 | 92,171 | 73,332 | **352,816** | 4.2 |
| 2028[3] | 291,364 | 121,870 | 96,339 | 77,449 | **368,813** | 4.5 |
| 2029 | 302,113 | 125,458 | 100,142 | 81,324 | **383,437** | 4.0 |
| 2030 | 314,146 | 129,511 | 104,375 | 85,596 | **399,742** | 4.3 |
| 2031 | 325,806 | 133,414 | 107,521 | 88,176 | **413,982** | 3.6 |
| 2032[3] | 338,460 | 138,572 | 111,678 | 91,585 | **430,045** | 3.9 |
| 2033 | 349,697 | 143,148 | 115,366 | 94,609 | **444,306** | 3.3 |

(1) Includes actual data through March 2016.
(2) Leap Year
(3) First year of CPI-Based toll rate increases, assuming an inflation rate of 2.7 percent per year.
(4) Represents Indicated Lane Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
(5) Represents Billable Revenue, which includes Indicated Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
(6) Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.

All estimates and projections reported herein are based on CDM Smith's experience and judgment and on a review of information obtained from multiple agencies, including MDX. These estimates and projections may not be indicative of actual or future values, and are therefore subject to substantial uncertainty. Future developments, economic conditions cannot be predicted with certainty, and may affect the estimates or projections expressed in this report, such that CDM Smith does not specifically guarantee or warrant any estimate or projection contained within this report.

While CDM Smith believes that the projections and other forward-looking statements contained within the report are based on reasonable assumptions as of the date of the report, such forward-looking statements involve risks and uncertainties that may cause actual results to differ materially from the results predicted. Therefore, following the date of this report, CDM Smith will take no responsibility or assume any obligation to advise of changes that may affect its assumptions contained within the report, as they pertain to socioeconomic and demographic forecasts, proposed residential or commercial land use development projects and/or potential improvements to the regional transportation network.

The purpose of this updated report is to be part of the Series 2016A official statement and to forecast revenue to be included in MDX forecast financial plan. All other use of this report and its contents are intended solely for use by MDX and designated parties approved by MDX and CDM Smith. Any use by third-parties, other than as noted above, is expressly prohibited. In addition, any publication of the report without the express written consent of CDM Smith is prohibited.

CDM Smith is not, and has not been, a municipal advisor as defined in Federal law (the Dodd Frank Bill) to MDX and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to MDX with respect to the information and material contained in this report. CDM Smith is not recommending and has not recommended any action to MDX. MDX should discuss the information and material contained in this report with any and all internal and external advisors that it deems appropriate before acting on this information.

* * *

We appreciate the important nature of this assignment and the opportunity to work with the Authority. Please do not hesitate to call if you have any comments and/or questions.

Very truly yours,

Paul M. Marcella
Associate/Project Manager
CDM Smith Inc.

Appendix A

# An Update of 2013 Forecast Review

## The Washington Economics Group, Inc.

The Washington Economics Group, Inc.®

**Brief**

# An Update of 2013 Forecast Review for Miami-Dade, Broward, and Palm Beach Counties

Prepared for:

CDM Smith

June 3, 2016

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**Professional Opinion of The Washington Economics Group, Inc. (WEG)**

Based on historical growth data and long-term trends, WEG has reviewed the long-term forecasts of socioeconomic variables for Miami-Dade, Broward, and Palm Beach Counties. It is WEG's professional opinion that the estimates provided to MDX and CDM Smith in late 2013 are reasonable and continue to reflect the current projections of economic and social activity in the Region over the 2016-2035 time period.

## INTRODUCTION

The Washington Economics Group, Inc. (WEG) has been retained by CDM Smith to review the projections of economic and demographic variables included in the October 2013 Forecast prepared for CDM Smith and to determine **if significant** changes have occurred in these variables. These forecasts provide key inputs into traffic modeling and other tasks that CDM Smith performs for the Miami-Dade Expressway Authority (MDX).

WEG's review of these projections is based on a thorough study of the long-range forecast/ projections that are prepared by the Metropolitan Planning Organizations (MPOs) of Miami-Dade, Broward, and Palm Beach Counties, Florida. In addition to detailed data on a number of key variables, each MPO has released forecasts for many of these variables out to year 2035 and beyond. WEG also reviews and incorporates into its analysis data and forecasts released by the Federal government, the State of Florida, and multiple universities located throughout the State. These sources include the University of Florida's Bureau of Economic and Business Research (BEBR), The University of Central Florida's (UCF) Institute for Economic Competitiveness, the Florida Department of Economic Opportunity (DEO), the Florida Office of Economic and Demographic Research (EDR), and the U.S. Census Bureau. Finally, WEG incorporates information obtained from constant interactions with private and public-sector decision makers throughout the State of Florida. Based on these inputs WEG prepares the forecast/projections that are provided to CDM Smith.

To begin the update, WEG contacted officials from Miami-Dade, Broward, and Palm Beach Counties concerning updated MPO data to incorporate in the review. The newest projections from the Miami-Dade and Palm Beach Counties' MPOs were included, however, the newest Broward County MPO projection was not. This was due to a recently implemented methodology change in the Broward MPO's population and employment forecasts.

After reviewing the Broward MPO's newest forecasts and comparing them with forecasts from other reliable sources, **WEG has concluded that the newest data from the Broward County MPO underestimates population and employment growth**. Thus, the original projections from the Broward MPO included in the October 2013 Forecast continue to **best reflect** current economic and demographic estimates and projections for the County.

## POPULATION FORECAST TRENDS

WEG reviewed a number of independent population forecasts for this assignment. WEG has and continues to utilize these forecasts as an input into its review of the MPO data and in the formation of our forecasts. For this assignment WEG obtained current population forecasts from multiple sources and compared them to the 2013 MPO projections.

Comparisons of MPO population projections for the key interim time periods of 2025 and 2030 show small decreases. Table 1 below summarizes the changes that have occurred in the MPO population forecasts between 2013 and now. For Miami-Dade County in the year 2025 the projection decreased by a modest 2.3 percent, and for the year 2030, the decrease is also relatively small at 2.9 percent. Consistent with the long-term projection decrease, the interim year population forecast decreases for Palm Beach County were minimal: only 2.1 percent in 2025 and 2.7 percent in 2030.

For the Miami-Dade, Broward, and Palm Beach Counties region as a whole the decrease in population forecasts was consistent across the interim time periods hovering at about 2 percent.

**Table 1.**
**Percentage Change of New vs. Old Population Projections**

| Counties | 2025 | 2030 | 2035 |
|---|---|---|---|
| Miami-Dade | **-2.3%** | **-2.9%** | **-3.4%** |
| Broward* | **---** | **---** | **---** |
| Palm Beach | **-2.1%** | **-2.7%** | **-3.2%** |
| Area Total | **-1.5%** | **-1.9%** | **-2.3%** |

*The newest MPO projections for Broward County were not used.
*Sources: Miami-Dade, Broward, and Palm Beach Metropolitan Planning Organizations (MPOs).*

The analysis also indicated that the MPOs are projecting slightly lower populations in the year 2035 for Miami-Dade and Palm Beach Counties[2]. The 2035 population projections for both Miami-Dade and Palm Beach Counties decreased by slightly over 3 percent. For the entire area total the 2035 projection decreased only 2.3 percent (or approximately 166,000 persons). Table 2 on the next page summarizes the changes in MPO population projections for 2035.

.

**Table 2.**

[2]The newest MPO employment and population projections are through 2040. Therefore, these data were interpolated for the year 2035 as well as for the interim years.

| Comparison of New Population Projections – 2035 | | | |
|---|---|---|---|
| **Counties** | **2013 Projections** | **Current/2016 Projections** | **Percent Difference** |
| Miami-Dade | 3,278,155 | 3,167,023 | **-3.4%** |
| Broward* | 2,250,830 | 2,250,830 | **---** |
| Palm Beach | 1,682,599 | 1,628,047 | **-3.2%** |
| Area Total | 7,211,584 | 7,045,900 | **-2.3%** |

*The newest MPO projections for Broward County were not used.
*Sources: Miami-Dade, Broward, and Palm Beach Metropolitan Planning Organizations (MPOs).*

Figure 1 below compares the 2013 MPO population projections for the Miami-Dade, Broward, and Palm Beach Counties area totals with the current MPO projections for the area.

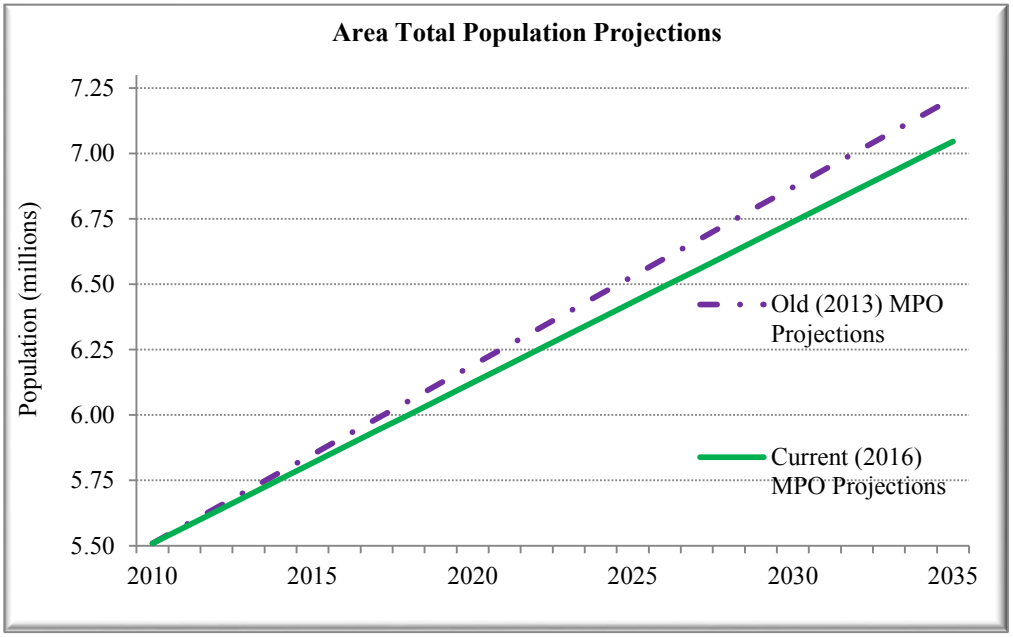


**Figure 1.**
*Sources: Miami-Dade, Broward, and Palm Beach Metropolitan Planning Organizations (MPOs).*

As stated in the introduction, WEG has concluded that the new demographic projections from the Broward MPO do not reflect current economic and demographic trends due to a recently implemented change in methodology. In fact, according to the new Broward MPO data sets, the County's projected population in 2020 is lower than the *current* U.S. Census-provided County population as of 2015 (1.82 million and 1.90 million respectively).

To add additional support to this decision, Table 3 below below compares the newest available Broward population projections for 2035 from the University of Florida Bureau

of Economic and Business Research (BEBR) with the newest MPO-provided projections. BEBR provides updated population projections for each county in the State on an annual basis. The BEBR projections are 9.4 percent higher than the MPO projections made under the new methodology, which is a large difference and contributed to WEG's decision to use the prior MPO data for Broward.

**Table 3.**
**Comparison of Broward Population Projections for 2035 – New MPO vs. New BEBR**

| County | Newest MPO Projection | 2016 BEBR Projection | Percent Difference |
|---|---|---|---|
| Broward | 1,930,064 | 2,111,652 | **9.4%** |

*Sources: Broward Metropolitan Planning Organization (MPO); University of Florida Bureau of Economic and Business Research (BEBR).*

## EMPLOYMENT FORECAST TRENDS

WEG also reviewed new employment forecasts provided by the MPOs for each of the three Counties being studied. Similar to what was observed in the most recent population projections, the comparisons of MPO employment projections for key interim time periods show a gradual change. Table 4 below summarizes these changes due to the newly published MPO data. For Miami-Dade County in the year 2025 the projection decreased by 2.6 percent, and for the year 2030 the decrease is 3.2 percent. However, all Palm Beach County projections remained practically unchanged: there was a 0.1 percent decrease in 2025 and in 2030.

For the area as a whole there was a slight decrease in the projections for the interim years: 1.3 percent in 2025, and 1.7 percent in 2030.

**Table 4.**
**Percentage Change of New vs. Old Employment Projections**

| Counties | 2025 | 2030 | 2035 |
|---|---|---|---|
| Miami-Dade | **-2.6%** | **-3.2%** | **-3.7%** |
| Broward* | **---** | **---** | **---** |
| Palm Beach | **-0.1%** | **-0.1%** | **-0.1%** |
| Area Total | **-1.3%** | **-1.7%** | **-2.0%** |

*The newest MPO projections for Broward County were not used.
*Sources: Miami-Dade, Broward, and Palm Beach Metropolitan Planning Organizations (MPOs).*

Similar to the population trends discussed earlier, the 2035 employment projection for Miami-Dade County has been revised downward slightly since 2013. The Miami-Dade employment projections were revised downward by 3.7 percent. Palm Beach County

projections are relatively unchanged with a 0.1 percent decrease, and the 2035 employment projection for the area as a whole was decreased by 2 percent relative to the 2013 projection. Table 5 below summarizes the changes in MPO employment projections for 2035.

**Table 5.**
**Comparison of New Employment Projections – 2035**

| Counties | 2013 Projections | Current Projections | Percent Difference |
|---|---|---|---|
| Miami-Dade | 1,994,215 | 1,920,309 | **-3.7%** |
| Broward* | 1,011,286 | 1,011,286 | **---** |
| Palm Beach | 800,045 | 799,282 | **-0.1%** |
| Area Total | 3,805,546 | 3,730,877 | **-2.0%** |

*The newest MPO projections for Broward County were not used.
*Sources: Miami-Dade, Broward, and Palm Beach Metropolitan Planning Organizations (MPOs).*

Figure 2 below compares the 2013 MPO employment projections for the Miami-Dade, Broward, and Palm Beach Counties area totals with the current MPO projections for the area.

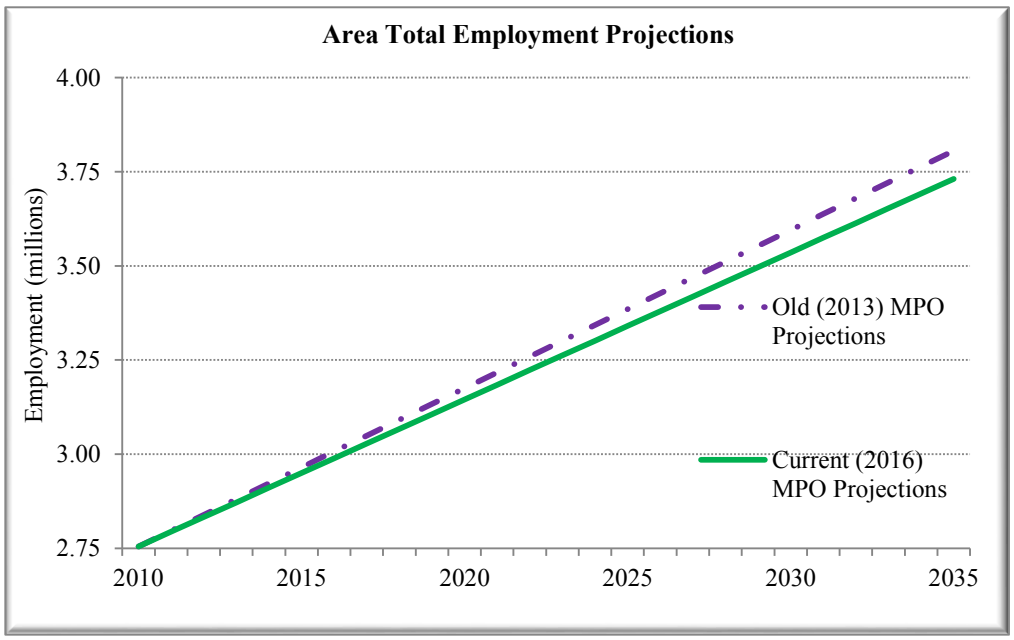


**Figure 2.**
*Sources: Miami-Dade, Broward, and Palm Beach Metropolitan Planning Organizations (MPOs).*

Similar to what was displayed in Table 3, Table 6 below compares the newest available Broward employment projections for 2035 from the University of Central Florida (UCF) Institute for Economic Competitiveness with the newest MPO-provided projections. UCF

provides updated employment estimates and projections for the South Florida MSA on an annual basis. To calculate the projected Broward employment figures for 2035, UCF's estimated employment growth rates through 2035 were applied to the base Broward County employment estimate for 2015 provided by the Florida Department of Economic Opportunity (DEO). This is a valid methodology as UCF and the DEO use very similar definititions for employment and thus employment growth. The total employment figures for the South Florida MSA as of 2015 from UCF and the DEO differ by less than 1 percent (2.50 million and 2.51 million respectively).

The UCF projections are 14.9 percent higher than the MPO projections made under the new methodology. Again, this is a large difference, and it contributed to WEG's decision to use the prior MPO data for Broward.

**Table 6.**
**Comparison of Broward Employment Projections for 2035 – New MPO vs. New UCF**

| County | Newest MPO Projection | 2016 UCF Projection | Percent Difference |
|---|---|---|---|
| Broward | 908,946 | 1,044,304 | **14.9%** |

*Sources: University of Central Florida Institute for Economic Competitiveness; Florida Department of Economic Opportunity (DEO).*

The small downward revisions in employment projections from the Miami-Dade and Palm Beach MPOs reflect current trends in economic activity in the Miami-Fort Lauderdale-Pompano Beach Metropolitan Statistical Area (comprised of Miami-Dade, Broward and Palm Beach Counties; see Table 4). The MSA, especially Miami-Dade and Broward Counties, is facing slower economic growth that is likely to last through 2017 due to expected slow growth of the global economy along with recessions in major trade partners of South Florida, such as Brazil and Argentina. WEG expects the MSA, especially Miami-Dade and Broward Counties, to return to trend growth following this slow-growth period.

Table 7 on the next page presents recent trends in key South Florida economic indicators. The moderate contraction in international trade this year is likely to modestly impact cargo flow through the MDX 836 corridor. International trade growth is expected to resume positive growth after 2017.

**Table 7.**
**South Florida MSA* Recent Economic Indicators**

| Indicators | 2014 | 2015 | 2016[E] |
|---|---|---|---|

| | | | |
|---|---|---|---|
| Total Population | 5,929,819 | 6,012,331 | 6,085,569 |
| Total Employment | 2,428,000 | 2,506,600 | 2,566,760 |
| Real Personal Income Growth | **3.6%** | **4.5%** | **3.2%** |
| Payroll Employment Growth | **3.4%** | **3.2%** | **2.4%** |
| International Trade Growth | **-3.8%** | **-7.8%** | **-8.7%** |
| Taxable Sales Growth | | | |
| Miami-Dade County | **6.2%** | **9.1%** | **3.1%** |
| Broward County | **7.1%** | **8.5%** | **3.3%** |
| Palm Beach County | **9.5%** | **6.7%** | **5.0%** |

* Comprised of Miami-Dade, Broward, and Palm Beach Counties.
E Indicates an estimate
*Sources: Florida Department of Economic Opportunity (DEO), UCF Institute for Economic Competitiveness; Florida Office of Economic and Demographic Research (EDR), U.S. Census International Trade Division (Customs District 52), U.S. Census American Community Survey (ACS).*

## VISITOR AND CARGO TRENDS

The passenger-related data at both Miami and Fort Lauderdale airports reflect strong increases, as shown in Table 8. However, cargo data show mixed results. Miami airport cargo and Port Everglades cargo increased between 2012 to the most recent data. However, as indicated in Table 9, Fort Lauderdale Airport (FLL) and PortMiami cargo decreased between 2012 and present, reflecting slower growth among South Florida's top international trade partners. WEG expects a resumption of positive growth after these key international trade partners recover in 2018 and beyond.

In addition, the newest projections of Miami International Airport (MIA) and FLL airport enplanements were revised slightly since the October 2013 WEG Forecast: a 3.2 percent decrease in MIA enplanements in 2035 along with a 0.9 percent increase in FLL enplanements. Forecasted growth for PortMiami remains unchanged since the October 2013 Forecast. See Tables 8 through 10 on the next page for a summary of this data.

**Table 8.**
**Comparison of Passenger and Visitor Data in the Region - 2012 and 2015** (Thousands)

| Area | 2012 Data | 2015 Data | Avg Annual % Change |
|---|---|---|---|
| Miami-Dade Overnight Visitors | 13,909 | 15,496 | **3.8%** |
| Broward Overnight Visitors | 12,040 | 15,397 | **9.3%** |
| MIA Airport Passengers | 39,467 | 44,350 | **4.1%** |
| FLL Airport Passengers | 23,569 | 26,942 | **4.8%** |
| PortMiami Passengers* | 3,782 | 4,939 | **10.2%** |
| Port Everglades (FLL) Passengers | 3,757 | 3,773 | **0.1%** |

*Newest available data for PortMiami is through 2014.
*Sources: Greater Miami Convention & Visitors Bureau, Greater Ft. Lauderdale Convention & Visitors Bureau, FLL and MIA Airport Statistics, PortMiami Annual Financial Report, Port Everglades Waterborne Commerce Chart.*

**Table 9.**
**Comparison of Cargo Data in the Region 2012 and 2015** (Thousands)

| Area | 2012 Data | 2015 Data | Avg Annual % Change |
|---|---|---|---|
| MIA Airport Cargo Tons | 2,128 | 2,211 | **1.3%** |
| FLL Airport Cargo Tons | 97 | 83 | **-5.0%** |
| PortMiami Cargo Tons* | 8,108 | 7,700 | **-1.7%** |
| Port Everglades (FTL) Cargo Tons | 7,039 | 8,258 | **5.8%** |

*Newest available data for PortMiami is through 2014.
*Sources: FLL and MIA Airport Statistics, PortMiami Annual Financial Report, Port Everglades Waterborne Commerce Chart.*

**Table 10.**
**Comparison of New Forecasted Enplanements for MIA & FLL Airports – 2035** (Thousands)

| Area | 2013 Data | 2016 Data | Percent Difference |
|---|---|---|---|
| MIA Enplanements | 31,847 | 30,841 | **-3.2%** |
| FLL Enplanements | 20,626 | 20,816 | **0.9%** |

*Sources: U.S. DOT FAA TAF data.*

## HOUSEHOLD AND PERSONAL INCOME FORECAST TRENDS

Projections for the number of households and personal income present a positive picture. Long-term forecasts for these variables occur over a shorter time horizon, with the end-point in the year 2023. Personal income forecasts are available for the Miami-Ft. Lauderdale-Pompano Beach MSA as well as for the State of Florida, however, forecasts of total households are available only for the State as a whole. Between 2013 and 2023 the projection for statewide household formation has only increased by 0.4 percent, somewhat

less than the increases observed for both population and employment projections over the same time period. (See Table 11 below.)

Over the past few years, projections for the personal income of MSA residents in the year 2023 have increased by 9.9 percent, while projections for the personal income of all Floridians have increased by 10.4 percent.

**Table 11.**
**Comparison of New Household and Personal Income Projections - 2023**

| Indicators | 2013 Projections | Current Projections | Percent Change |
|---|---|---|---|
| Households (Florida) | 8,734,000 | 8,768,000 | **0.4%** |
| Real Personal Income (MSA)* | $307,600 | $338,200 | **9.9%** |
| Real Personal Income (Florida)* | $963,100 | $1,063,700 | **10.4%** |

* Personal income is measured in real terms (2005 dollars).
*Sources: Florida Office of Economic and Demographic Research (EDR), UCF Institute for Economic Competitiveness.*

## CONCLUSION

The newest demographic projections provided by the Miami-Dade and Palm Beach Counties MPOs do not differ significantly from the MPO projections provided in WEG's 2013 Forecast report. The newest demographic projections provided by the Broward MPO did differ significantly from the prior MPO projections. However, after reviewing and comparing the new MPO projections with other sources such as the University of Florida, Bureau of Economic and Business Research (BEBR), the University of Central Florida employment projections, and the U.S. Census Bureau, WEG concluded that the **prior** MPO projections for Broward County, contained in the 2013 Report, best reflect current demographic and economic trends.

The regional economy, comprised of Miami-Dade, Broward, and Palm Beach Counties is expanding at a moderate pace. However, recessions in South Florida's top trade partners, especially Brazil and Argentina, have slowed modestly the expansion of economic activity. A resumption of stronger economic growth is expected once these trade partners recover in 2018 and beyond.

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September 17, 2014

Miami-Dade County Expressway Authority
Miami, Florida

Squire Patton Boggs (US) LLP
Miami, Florida

Citigroup Global Markets Inc.,
As Representative of the Underwriters
Orlando, Florida

D. Seaton and Associates
Miami, Florida

RE: **Investment Grade Traffic and Revenue Study, Dated April 25, 2014 (the "Report")**

Ladies and Gentlemen:

CDM Smith, Inc. (the "Traffic and Revenue Consultant") has reviewed the Report prepared by the Traffic and Revenue Consultant in connection with the issuance by the Miami-Dade County Expressway Authority (the "Authority") of its Toll System Revenue Bonds, Series 2014A and hereby certifies as follows in connection with the issuance by the Authority of its Toll System Revenue and Refunding Revenue Bonds, Series 2014B (the "Series 2014B Bonds"):

1. As of the date hereof, there has not been any change, or any development involving a prospective change, subsequent to the date of the Report which would materially adversely affect the findings in the Report. You may rely on the Report as if it were dated as of the date hereof.

2. As of the date hereof, the Traffic and Revenue Consultant knows of no material change in matters described in the Report or in the information and data contained in the Official Statement with respect to the Series 2014B Bonds which are attributed to the Traffic and Revenue Consultant.

3. As of the date hereof, the assumptions used in compiling the Report and arriving at the conclusions stated therein are reasonable and such conclusions remain accurate.

Very truly yours,

Edward J. Regan, III
Senior Vice President
CDM Smith



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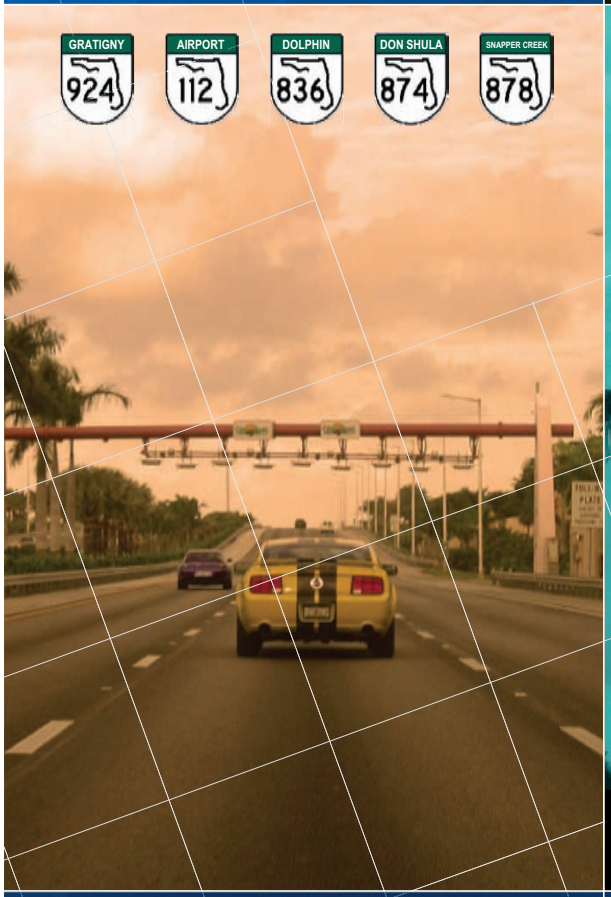
# MDX Investment-Grade Traffic and Revenue Study




Final

April 2014

MDX
MIAMI-DADE EXPRESSWAY AUTHORITY

CDM Smith

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# Chapter 1
# Introduction

Pursuant to Chapter 348, Part I, Florida Statutes, as amended, known as the Florida Expressway Authority Act, the Board of County Commissioners of Miami-Dade County created the Miami-Dade County Expressway Authority (MDX) on December 13, 1994. The intent behind the formation of MDX was to establish a responsive funding source to address transportation needs and to enhance mobility on Miami-Dade County's five expressways.

In December 1996, MDX accepted operational and financial control of the following expressways from the Florida Department of Transportation (FDOT):

- **Gratigny Parkway** (SR 924) from the Palmetto Expressway (SR 826) to NW 27th Avenue;
- **Airport Expressway** (SR 112) from the Miami International Airport (MIA) to I-95;
- **Dolphin Expressway** (SR 836) from NW 137th Avenue to I-95;
- **Don Shula Expressway** (SR 874) from the HEFT to SR 826; and
- **Snapper Creek Expressway** (SR 878) from SR 874 to U.S. 1.

## Purpose of Study

CDM Smith serves as Traffic and Revenue Consultant for MDX. The latest investment-grade traffic and revenue studies were completed in July 2010 and March 2013, and provided transaction and toll revenue estimates by fiscal year (July 1 – June 30). The later study was performed as an update to the 2010 study, with the purpose of providing short-term forecasts of traffic and revenue through fiscal year (FY) 2022, and was used in support of MDX Toll System Refunding Bonds, Series 2013A. All standard due-diligence data review and analyses for this update were performed as noted below. The last long-term, investment-grade traffic and revenue study with forecasts through FY 2035 was performed by CDM Smith for MDX in July 2010. That forecast was based on a comprehensive traffic and revenue study, which included an independent review of underlying socioeconomic forecasts by the Washington Economics Group (WEG), a detailed traffic and revenue evaluation of several planned MDX System improvements, including the conversion of SR 924, SR 874 and SR 878 to Open Road Tolling (ORT), and sensitivity tests.

As noted above, in the intervening three years, the long-term forecast provided in the 2010 study was updated in the March 2013 study to reflect actual traffic and revenue trends, assumed transaction and revenue growth forecasts resulting from the national and local recession, and changes in certain assumptions regarding future MDX improvements. However, no new long-term traffic and revenue forecast was developed during this period.

CDM Smith has been requested to perform a comprehensive study, culminating in the development of formalized updated long-term traffic and revenue forecasts for the MDX System through FY 2030. This study is intended to be used in support of additional bond financing by MDX. The revenue forecasts included in this report consist of revenue to be generated from various elements of the





improvement program, most notably the conversion of the remaining two expressways, SR 112 and SR 836, to ORT by FY 2015. While there will be some expected "phasing in" of ORT toll gantries at several interchange ramp locations along SR 836, the mainline toll gantries on both SR 112 and SR 836 will be operational no later than December 1, 2014. ORT at the SR 836 ramp toll gantry locations will begin no later than January 1, 2015.

The study was conducted at a level of detail to meet the typical requirements of the financial community for major new bond issues. The MDX system has a long record of success and has enjoyed considerable traffic and revenue growth in the past, aided by a series of toll increases, a new toll plaza, a roadway extension on SR 836, and conversion of SR 874, SR 878 and SR 924 to ORT. The implementation of ORT on SR 112 and SR 836 represents a significant change for the MDX system, which includes the elimination of almost all remaining toll-free movements on the MDX system and several new toll collection locations (mainline and ramp toll gantries). This study and the associated forecasts of transactions and revenue under Full ORT implementation included an independent review of the Region's underlying socioeconomic forecasts by the Washington Economics Group, a detailed traffic and revenue evaluation, and the collection of significant amounts of original traffic data. This data included Bluetooth Surveys on SR 836 and SR 112, system-wide traffic counts at each MDX expressway ramp and mainline plaza/gantry location, and INRIX speed data used to calculate travel times on the MDX expressways and select additional competing and feeder roadways in Miami-Dade and Broward Counties. The data collected is discussed and summarized and presented in Chapter 3, Traffic Data Collection, while more detailed summaries of each are provided in Appendix A.

## Description of Existing MDX System

The existing MDX Expressway System is shown in Figure 1-1. It consists of approximately 33.6 miles of expressways with 222.3 lane miles. Miles, or centerline miles, represent the total length of a given road from its starting point to its end point, while lane miles measure the total length and lane count of a given roadway. Lane miles are calculated by multiplying the centerline mileage of a road by the number of lanes it has. Revenue is currently collected at eleven mainline locations. A brief description of each of the expressways is provided below.

### SR 924 - Gratigny Parkway

SR 924 opened to traffic on January 6, 1992 and serves commuter and commercial traffic from northwest to north-central Miami-Dade County. SR 924 is approximately 5.4 miles in length, contains a total of 37.0 lane miles, and extends from an interchange with I-75 and SR 826 to NW 27th Avenue. SR 924 transitions from a limited access expressway to an arterial roadway (NW 119th Street) at approximately NW 32nd Avenue.

SR 924 was the first expressway on the MDX System to be converted to ORT, which was implemented on June 7, 2010. Cash is no longer accepted as a payment option on this expressway. Tolls are collected in both directions at two mainline toll gantries where the SunPass® and Toll-by-Plate passenger car toll at each of the gantries is $0.50 and $1.00, respectively. The first gantry is located west of NW 42nd Avenue (LeJeune Road) and the second gantry is west of NW 57th Avenue. Passenger car customers without SunPass® pay via Toll-by-Plate, which is currently $2.00, or double the SunPass® toll, for a full-length trip in one direction or $0.370 per-mile. The same one-way, full-length trip for SunPass® customers is $1.00 or $0.185 per-mile. While tolls for Toll-by-Plate customers are double those of SunPass® customers, as of July 1, 2013, invoices sent to Toll-by-Plate

**EXISTING MDX SYSTEM LOCATION MAP**

FIGURE 1-1





customers no longer include a $3.00 administration fee. This change in billing policy applies to transactions made on all MDX expressways.

## SR 112 - Airport Expressway

SR 112 opened to traffic on December 22, 1961 and runs from Miami International Airport (MIA) to I-95. The expressway serves short, east-west commuter trips in eastern Miami-Dade County, providing access to MIA on the west and I-95 to the east, north of downtown Miami. The expressway is 4.1 miles in length and contains 26.4 lane-miles. SR 112 also connects directly to I-195, a non-MDX expressway that provides access to Miami Beach and a direct connection to 95 Express.

Tolls are currently collected in the eastbound direction only at a single mainline toll plaza located west of NW 12th Avenue (SR 933). Eastbound passenger car cash and Toll-by-Plate customers pay $1.25 and $2.00, respectively, for a full-length, eastbound trip, while westbound customers make the reverse trip un-tolled. Therefore, an eastbound trip equates to per-mile rates of approximately $0.305 for cash and $0.488 for Toll-by-Plate customers. SunPass® customers pay $1.00 for the full-length, eastbound trip or approximately $0.244 per-mile.

When ORT is implemented on January 1, 2015, tolls will be collected in both directions at two mainline toll gantries. The first gantry will be located west of NW 12th Avenue and the second gantry will be located west of NW 32nd Avenue. Passenger car customers without SunPass® will pay via Toll-by-Plate, which will be $1.40 for a full-length trip in one direction or $0.342 per-mile. The same one-way, full-length trip for SunPass® customers will be $0.70 or $0.171 per-mile.

## SR 836 - Dolphin Expressway

SR 836 extends from NW 137th Avenue to I-95. The expressway serves east-west commuters and commercial traffic across central Miami-Dade County, providing access to west Miami-Dade County, MIA, and the Central Business District. SR 836 is approximately 14.0 miles in length, with a total of 100.5 lane-miles, and extends from an interchange with NW 137th Avenue to an interchange with I-95 near downtown Miami. The expressway opened in three stages. The segment from SR 826 to I-95 opened to traffic on September 16, 1965. The segment from the HEFT to SR 826 opened in 1972. The final segment from NW 137th Avenue to the HEFT opened in July 2007.

Tolls are currently collected in the eastbound direction only at a mainline toll plaza located just west of NW 17th Avenue, and as of July 21, 2013 only SunPass® and Toll-by-Plate methods of toll payment are available. Passenger car SunPass® and Toll-by-Plate customers at this location pay $1.00 and $2.00, respectively. Tolls are collected in both directions at the NW 97th Avenue toll plaza where the cash method of toll payment is still accepted. Passenger car cash customers pay $1.00, Toll-by-Plate, $1.50, and SunPass®, $0.75. Tolls are also collected between the HEFT and the western terminus at NW 137th Avenue. Tolls on this segment are collected electronically via SunPass® or Toll-by-Plate. The passenger car tolls for this segment are $0.25 for SunPass® and $0.50 for Toll-by-Plate.

The toll for a one-way, full-length eastbound trip for SunPass® customers traveling on SR 836 from NW 137th Avenue to I-95 is $2.00 or approximately $0.143 per-mile for the 14.0 mile trip. The toll for a similar full-length trip in the westbound direction is $1.00 or approximately $0.071 per-mile. The same full-length trips for Toll-by-Plate customers are $4.00 or $0.286 per-mile eastbound and $2.00 or $0.143 per-mile westbound. The major un-tolled movements on SR 836 include traffic in both directions between 87th Avenue and NW 27th Avenue and westbound from I-95 to NW 87th Avenue. These will be eliminated with the implementation of full, system-wide ORT.

### SR 874 - Don Shula Expressway

SR 874 extends from the HEFT to SR 826 and opened to traffic on July 8, 1974. This expressway serves commuter traffic from southwest to central Miami-Dade County. SR 874 is 7.2 miles in length, contains a total of 45.4 lane-miles, and extends from an interchange with the HEFT to an interchange with SR 826, 3.7 miles south of SR 836.

SR 874 was converted to ORT on July 17, 2010. Cash is no longer accepted as a payment option and there are no un-tolled movements. Tolls are collected in both directions at three mainline toll gantries. The first toll gantry is located immediately north of the HEFT where passenger car SunPass® and Toll-by-Plate customers pay $0.25 and $0.50, respectively. The second is north of the Killian Parkway interchange where passenger car SunPass® and Toll-by-Plate customers also pay $0.25 and $0.50, respectively. The third is located at the northern end of the expressway south of its interchange with SR 826. At this toll location, the toll for passenger car SunPass® and Toll-by-Plate customers is $0.50 and $1.00, respectively. Passenger car customers without SunPass® making a full-length, one-way trip pay their toll via Toll-by-Plate, which is $2.00 or $0.278 per-mile. SunPass® customers pay $1.00 or $0.139 per-mile.

### SR 878 - Snapper Creek Expressway

SR 878, which extends from SR 874 to U.S. 1, is a short, 3.0 mile, east-west expressway that begins at SR 874 north of Kendall Drive (SW 88th Street). The expressway has a total of 13.1 lane-miles and provides direct access to U.S. 1 and a Metrorail parking garage on the east. The expressway opened in 1974 at the same time as SR 874.

SR 878 was converted to ORT on July 17, 2010. This expressway did not have any tolling locations prior to the implementation of ORT and now has no un-tolled movements. Tolls are collected in both directions at two mainline toll gantries located west of SW 87th Avenue and west of SR 826. The SunPass® and Toll-by-Plate passenger car toll at each of the toll gantries is $0.25 and $0.50, respectively. Passenger car customers without SunPass® can pay the toll via Toll-by-Plate, which is $1.00 for a full-length, one-way trip or $0.333 per-mile. For the same trip, SunPass® customers pay $0.50 or $0.167 per-mile.

## Other Principal Highways in Miami-Dade County

In addition to the MDX expressways, a number of other expressways and local arterials provide a full array of surface transportation alternatives in Miami of varying speed, access, and mobility.

- **Florida's Turnpike** offers high-speed, limited-access mobility to Miami-Dade County from points north, terminating at the interchange of I-95 and SR 826.
- The **Homestead Extension of Florida's Turnpike (HEFT)** is a circumferential route around the north and west fringes of the Miami area. SR 836 and SR 874 have direct access to the HEFT.
- From the north, **I-75** intersects with the HEFT and adjoins SR 924 and SR 826.
- **I-95** parallels Florida's Turnpike and terminates just south of the City of Miami Downtown area at U.S. 1. It intersects with SR 112 and SR 836.
- **95 Express,** running down the middle of I-95 between Florida's Turnpike and I-195, is a 4-lane tolled Express roadway that provides service toll-free for registered high-occupancy vehicles





(HOV-3+), buses and hybrid vehicles. Non-registered vehicles can opt into the express lanes by paying a variable toll utilizing SunPass®. 95 Express has a direct connection to SR 112 on the southern end of the project.

- **I-195** provides direct access from I-95 to Miami Beach and connects directly into SR 112 at its eastern terminus.
- **I-395** provides direct access from I-95, SR 836 and downtown Miami to Miami Beach.
- The **Palmetto Expressway (SR 826)** is a circumferential route around the northern and western portions of Miami-Dade County. It intersects with SR 924, I-75, SR 836 west of MIA, and SR 874 and terminates in the south at U.S. 1.
- **U.S. 1** is a major arterial surface street running northeast-southwest parallel to sections of SR 874. It connects Key West, Homestead, and downtown Miami. It feeds directly into the southern end of I-95, and continues parallel to that route to points north.

## Overview of Study Approach

This comprehensive study builds upon data and knowledge assembled from prior traffic and revenue studies of the MDX System performed by CDM Smith who has served as the MDX traffic and revenue consultant since 1998. The following is a summary of the work scope and methods used in this study.

### MDX Historical Trend Analysis

CDM Smith routinely monitors annual and monthly traffic and revenue trends by expressway and toll location for the MDX system. This includes a review of short-term economic conditions, patterns of use of electronic toll collection, and the impact of on-going construction activity on the system. MDX system operating characteristics, such as traffic volumes, method of payment and vehicle class information, are also used both as travel demand model inputs as well as for model calibration purposes. A summary of the analysis of historical operating trends and characteristics on the MDX system is provided in Chapter 2.

### Traffic Data Collection

As part of this task, three key pieces of traffic data to be used in the travel demand model calibration and traffic and revenue forecasting elements of the study were collected. These included Bluetooth Surveys on SR 836 and SR 112, the purpose of which was to conduct an assessment of interchange-to-interchange movements on the toll-free segments of SR 836 and SR 112; system-wide traffic counts at each MDX expressway ramp and mainline plaza/gantry location for use in developing 2013 average daily traffic profiles for each of the MDX expressways; and INRIX speed data used to collect travel time data for the MDX expressways and select additional competing and feeder roadways in Miami-Dade and Broward counties. This information, which includes travel time and average speeds by time period, will also be used in the travel demand model calibration process.

### Travel Pattern and Trip Characteristics Survey

The principal element of this task is the conduct of a travel pattern and trip characteristics survey of MDX customers. This survey collected "real world" information from MDX customers about actual trip patterns (trip origins and destinations) and trip characteristics such as trip purpose, trip frequency and vehicle occupancy. This information was used to aid in calibration of the travel demand model.

The data, such as trip frequency, was also used to aid in developing the traffic and revenue impacts associated with alternative toll pricing programs such as volume or frequent user discounts.

### Economic Growth Analysis

A critical element of any traffic and revenue forecast is future socioeconomic projections for the market areas of each expressway and the region as a whole. CDM Smith obtained the latest official forecasts produced by each of the Miami-Dade, Broward and Palm Beach County Metropolitan Planning Organizations (MPOs). An independent economics subconsultant, Washington Economics Group (WEG), was also retained to provide an independent review of the reasonableness of the socioeconomic forecasts.

### Travel Demand Model Update

For use in the analysis, CDM Smith obtained the Southeast Florida Regional Planning Model (SERPM), version 6.5, developed by the District 4 and District 6 offices of the Florida Department of Transportation (FDOT) in coordination with and officially adopted by the local MPOs. In consultation with the Florida Department of Transportation, the Miami-Dade MPO, Florida's Turnpike Enterprise, MDX, and other relevant agencies, the model roadway network was updated to reflect the latest cost-feasible highway improvement program assumptions, including the MDX committed improvement program. Updated trip tables were developed based on the refined socioeconomic forecasts provided by WEG. The model was "recalibrated" to reflect FY 2013 observed traffic counts collected on the MDX system and alternative routes, to the extent possible. Alternative future year trip tables were also developed based on the updated socioeconomic forecasts provided by WEG.

### Traffic and Revenue Forecasts

Using the updated traffic models, CDM Smith performed traffic assignments at multiple analysis years including FY 2013, FY 2015, FY 2020 and FY 2030. These assignments assumed that ORT on the Airport Expressway and Dolphin Expressway mainlines would begin no later than December 1, 2014 and at the Dolphin Expressway ramps no later than January 1, 2015. Estimates of traffic and revenue were initially made assuming system-wide implementation of ORT at toll rates excluding CPI adjustments. By excluding toll rate adjustments, it was easier to isolate the estimated impacts associated with system-wide ORT implementation.

Also included as part of the traffic and revenue forecasts is an analysis of the traffic and revenue impacts associated with alternative pricing strategies. Based on this analysis, the MDX Board approved a Customer Rewards/Volume Frequency Program on February 25, 2014 that provides a 10 percent discount to qualifying SunPass® passenger car customers with a discount cap of $30 per quarter. An estimate of the impact of this program has been included in the traffic and revenue forecasts.

A traffic and revenue forecast referred to as the Base Case, is also provided. This forecast includes assumed CPI-based adjustments to toll rates at each of the ORT toll gantries, along with the revenue impact of the MDX Board-approved Customer Rewards/Volume Frequency Program.

Annual traffic and revenue forecasts for the Base Case toll rate scenario through FY 2030 are included, as well as annual traffic and revenue forecasts through FY 2030 assuming no CPI-based toll adjustments. These were checked for reasonableness, in comparison to historical long-term traffic growth rates as well as capacity constraints on each of the expressways.





## Order of Presentation

The remainder of this report consists of five chapters.

- Chapter 2 presents a summary of historical and current traffic and revenue trends and conditions on the MDX System;
- Chapter 3 presents a summary of the traffic data collected, excluding the travel pattern and trip characteristics surveys. Detailed summaries of the data are provided in Appendix A to this report;
- Chapter 4 presents a summary of the travel pattern and trip characteristics surveys distributed to MDX SunPass® customers. A copy of the technical details of the survey, along with survey tabulations are included in Appendix B to this report;
- Chapter 5 presents a summary of the independent economist's review of the reasonableness of the socioeconomic and demographic forecasts used in the study. It is noted that the full report of the independent economic consultant is included in Appendix C to this report; and
- Chapter 6 first describes the development of the traffic forecast model, assumed roadway improvements, and ORT tolling configuration and toll rates, with additional modeling information being presented in Appendix D. Also presented are forecasts of traffic and toll revenue under both a Fixed Toll Rate scenario, meaning tolls are fixed at FY 2015 levels over the FY 2015 to FY 2030 forecast period, and the Base Case scenario, which assumes annual CPI-adjusted toll rate increases, including the estimated revenue impact of various alternative pricing strategies for a volume discount program and the estimated revenue impact of the Customer Rewards/Volume Frequency Program approved by the MDX Board on February 25, 2014.

# Chapter 2

# MDX Historical Operating Trends and Characteristics

Chapter 2 provides a detailed analysis of historical operating trends on the existing MDX expressways. This includes annual and monthly transaction and revenue patterns, changes in the market share between cash and SunPass® customers, and an evaluation of transaction distribution by vehicle class and method of payment.

## Annual Transaction and Revenue Trends

Figure 2-1 presents system-wide annual toll transaction and revenue trends for FY 2003 through FY 2013 for the total MDX System. During this ten-year period, overall daily transactions grew at an average of 13.3 percent per fiscal year system-wide, while revenue grew at an average annual rate of 11.4 percent. This growth in transactions and revenue was heavily influenced by system expansions such as the new NW 97th Avenue mainline plaza and the mainline Extension to SW 137th Avenue on SR 836 in FY 2008, two toll rate increases over the ten year period, the opening of two new toll gantries on SR 878 in FY 2011 and the conversion to ORT of SR 924 in FY 2010 and SR 874 to ORT in FY 2011.

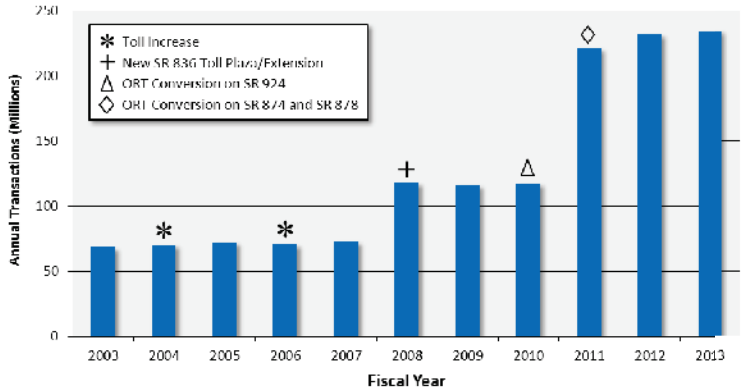
## Annual Average Daily Transaction and Collectible Revenue Trends

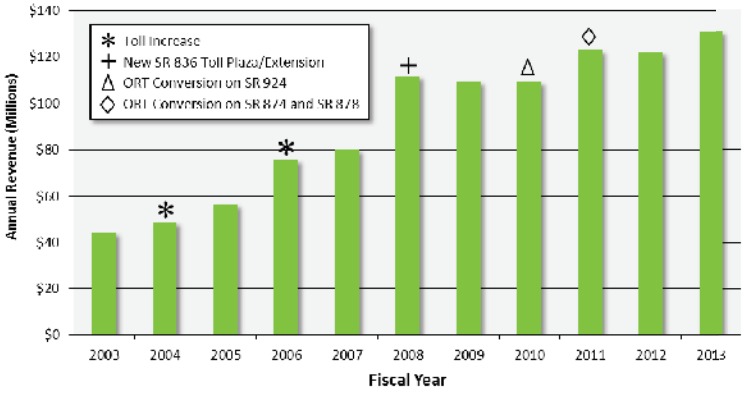
Table 2-1 presents annual average daily transaction and revenue trends for FY 2003 through FY 2013 for each of the five MDX expressways. MDX fiscal year runs from July 1st to June 30th. Average daily transaction levels reflect only toll-paying transactions. It should be noted that in this report, the terms traffic and transactions are both used. However, traffic refers to the greater category of vehicular traffic on the MDX expressways, while transactions refer to traffic that has passed through a toll collection location.

The MDX system experienced impacts in FY 2003 associated with major reconstruction activity at the toll plazas on SR 836 and SR 112. These had a significant negative impact on traffic and revenue growth by temporarily reducing traffic on both SR 836 and SR 112. Additional negative impacts resulted from a complete replacement of plaza toll technology systems and the deployment of dedicated and express SunPass® lanes. This change had the effect of lowering average toll rates by increasing SunPass® market penetration. Overall, in FY 2003, systemwide average daily transactions increased by a modest 0.2 percent, while revenue decreased by 3.2 percent.








Source: Miami-Dade Expressway Authority.
Note: Fiscal year runs 12 months from July 1 to June 30.

**ANNUAL SYSTEM-WIDE TRANSACTION AND REVENUE TRENDS**
FIGURE 2-1

**Table 2-1**
**Average Daily Transaction and Annual Revenue Trends**

**Average Daily Transactions**

| Fiscal Year [1] | SR 924 Total Daily Transactions | SR 924 Percent Change | SR 112 Total Daily Transactions | SR 112 Percent Change | SR 836 Total Daily Transactions | SR 836 Percent Change | SR 874 Total Daily Transactions | SR 874 Percent Change | SR 878 Total Daily Transactions | SR 878 Percent Change | MDX System Total Daily Transactions | MDX System Percent Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 | 32,221 | 2.9 | 32,499 | (3.8) | 53,144 | (2.6) | 69,098 | 3.3 | - | - | 186,962 | 0.2 |
| 2004 [2] | 33,136 | 2.8 | 33,414 | 2.8 | 56,268 | 5.9 | 69,653 | 0.8 | - | - | 192,471 | 2.9 |
| 2005 [4] | 34,781 | 5.0 | 32,531 | (2.6) | 58,633 | 4.2 | 71,586 | 2.8 | - | - | 197,531 | 2.6 |
| 2006 [3] [4] | 33,655 | (3.2) | 29,690 | (8.7) | 57,726 | (1.5) | 72,241 | 0.9 | - | - | 193,312 | (2.1) |
| 2007 | 33,206 | (1.3) | 30,443 | 2.5 | 60,056 | 4.0 | 75,543 | 4.6 | - | - | 199,248 | 3.1 |
| 2008 [5] | 32,247 | (2.9) | 32,648 | 7.2 | 180,142 | 200.0 | 78,162 | 3.5 | - | - | 323,199 | 62.2 |
| 2009 | 29,969 | (7.1) | 34,036 | 4.3 | 176,643 | (1.9) | 77,491 | (0.9) | - | - | 318,139 | (1.6) |
| 2010 | 32,176 | 7.4 | 34,768 | 2.2 | 182,017 | 3.0 | 72,695 | (6.2) | - | - | 321,656 | 1.1 |
| 2011 [6] | 72,818 | 126.3 | 36,240 | 4.2 | 189,141 | 3.9 | 237,405 | 226.6 | 70,536 | - | 606,140 | 88.4 |
| 2012 | 76,955 | 5.7 | 38,672 | 6.7 | 199,195 | 5.3 | 248,108 | 4.5 | 72,741 | 3.1 | 635,671 | 4.9 |
| 2013 | 79,216 | 2.9 | 40,060 | 3.6 | 202,032 | 1.4 | 255,830 | 3.1 | 73,673 | 1.3 | 650,811 | 2.4 |
| **Average Annual Percent Change (AAPC)** | | | | | | | | | | | | |
| 2003-2008 | | 0.0 | | 0.1 | | 27.7 | | 2.5 | | N/A | | 11.6 |
| 2008-2013 | | 19.7 | | 4.2 | | 2.3 | | 26.8 | | N/A | | 15.0 |
| 2003-2013 | | 9.4 | | 2.1 | | 14.3 | | 14.0 | | N/A | | 13.3 |

**Annual Revenues (in thousands)**

| Fiscal Year [1] | SR 924 Total Revenue | SR 924 Percent Change | SR 112 Total Revenue | SR 112 Percent Change | SR 836 Total Revenue | SR 836 Percent Change | SR 874 Total Revenue | SR 874 Percent Change | SR 878 Total Revenue | SR 878 Percent Change | MDX System Total Revenue | MDX System Percent Change |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2003 | 8,177 | 0.7 | 5,854 | (1.5) | 13,480 | (7.5) | 16,726 | (2.0) | - | - | 44,237 | (3.2) |
| 2004 [2] | 9,050 | 10.7 | 6,285 | 7.4 | 14,951 | 10.9 | 18,445 | 10.3 | - | - | 48,731 | 10.2 |
| 2005 [4] | 10,932 | 20.8 | 7,157 | 13.9 | 17,359 | 16.1 | 20,857 | 13.1 | - | - | 56,305 | 15.5 |
| 2006 [3] [4] | 13,540 | 23.9 | 11,784 | 64.6 | 22,583 | 30.1 | 27,631 | 32.5 | - | - | 75,538 | 34.2 |
| 2007 | 13,716 | 1.3 | 12,305 | 4.4 | 23,901 | 5.8 | 29,833 | 8.0 | - | - | 79,755 | 5.6 |
| 2008 [5] | 13,170 | (4.0) | 13,220 | 7.4 | 54,514 | 128.1 | 30,619 | 2.6 | - | - | 111,523 | 39.8 |
| 2009 | 12,065 | (8.4) | 13,587 | 2.8 | 53,499 | (1.9) | 30,004 | (2.0) | - | - | 109,155 | (2.1) |
| 2010 | 12,010 | (0.5) | 13,792 | 1.5 | 55,185 | 3.2 | 28,135 | (6.2) | - | - | 109,122 | (0.0) |
| 2011 [6] | 14,470 | 20.5 | 14,480 | 5.0 | 56,824 | 3.0 | 30,226 | 7.4 | 6,683 | - | 122,683 | 12.4 |
| 2012 | 14,123 | (2.4) | 15,153 | 4.6 | 57,768 | 1.7 | 28,248 | (6.5) | 6,508 | (2.6) | 121,800 | (0.7) |
| 2013 | 15,805 | 11.9 | 15,940 | 5.2 | 60,053 | 4.0 | 31,751 | 12.4 | 7,043 | 8.2 | 130,592 | 7.2 |
| **Average Annual Percent Change (AAPC)** | | | | | | | | | | | | |
| 2003-2008 | | 10.0 | | 17.7 | | 32.2 | | 12.9 | | N/A | | 20.3 |
| 2008-2013 | | 3.7 | | 3.8 | | 2.0 | | 0.7 | | N/A | | 3.2 |
| 2003-2013 | | 6.8 | | 10.5 | | 16.1 | | 6.6 | | N/A | | 11.4 |

[1] Fiscal year is 12 months from July 1 through June 30.
[2] Cash tolls increased by $0.25 systemwide; SunPass nominal rates unchanged.
[3] Tolls increased to $1.25 (cash) and $1.00 (SunPass) at all plazas in July 2005.
[4] Due to hurricane related toll suspensions, average daily transactions in 2004/05 based on 359 days of operation; 2005/06 based on 356 days of operation.
[5] Tolling on new mainline toll plaza on SR 836 west of NW 97th Avenue and Extension to NW 137th Avenue begins July 1, 2007.
[6] Tolling on SR 878 begins July 17, 2010; average daily transactions in FY 2011 based on 349 days of operation.
SR 924 converted to ORT facility on June 7, 2010. SR 874 converted to ORT facility on July 17, 2010.

Source: Miami-Dade Expressway Authority





Modest gains in system-wide transactions were seen in FY 2004 and FY 2005, with average daily toll transactions growing by 2.9 and 2.6 percent respectively. System-wide revenue in FY 2004 increased by 10.2 percent as a result of a system-wide cash toll rate increase to $1.00 and FY 2005 revenue increased by 15.5 percent. While these growth rates are reflective of a strong regional economy, growth in FY 2005 was lower than anticipated due to rapid increases in motor fuel prices, which may have suppressed traffic growth by 1 to 2 percent.

As a result of the FY 2006 toll rate increase to $1.00 for SunPass® customers and $1.25 for cash customers, system-wide revenue significantly increased by 34.2 percent, while average daily transactions decreased by 2.1 percent compared to FY 2005 levels. On SR 112, tolls were increased from $0.50 to $1.00 for SunPass® customers and $0.75 to $1.25 for cash customers, resulting in an increase in average toll rate of over 80 percent. The average toll rate increased an average of about 30 percent on each of the other three expressways. This is reflected in the change in average daily transactions on SR 112, which decreased by 8.7 percent. Decreases of 1.5 and 3.2 percent also occurred on SR 836 and SR 924, respectively. Part of this decrease was also due to a significant negative traffic and revenue impact resulting from the suspension of tolls in late September and October 2005 due to hurricanes. Annual transactions on SR 874 increased slightly, due in part to motorists using SR 874 and SR 826 to avoid construction activity on SR 836 west of SR 826.

In FY 2007, average daily transactions and revenue increased by 3.1 and 5.6 percent respectively. Daily transactions on SR 874 and SR 836 led the increases at 4.6 percent and 4.0 percent. Only SR 924 experienced a transaction decline over the prior year of 1.3 percent. This may have been due to the start of the housing market crash in 2007 and its effects on Broward County. Residents of Broward County have historically been a major source of traffic demand on SR 924. However, revenue on SR 924 increased by 1.3 percent in FY 2007 due to a slight increase in the average toll rate.

With the opening of the new mainline toll plaza on SR 836 west of NW 97th Avenue and the SR 836 Extension between SW 137th Street and the HEFT in FY 2008, transactions tripled on SR 836, increasing system-wide transactions by 62.2 percent and revenue by 39.8 percent. Average daily transactions on SR 836 increased by 200.0 percent from 60,056 in FY 2007 to 180,142 in FY 2008. Additionally, the effects of the housing market decline continued to impact Broward County and SR 924. Transactions and revenue on SR 924 declined in FY 2008 by 2.9 and 4.0 percent respectively.

The impacts of the "great recession" of 2008-09 were felt in FY 2009. These included reductions in vehicle miles traveled, lower levels of employment and higher unemployment rates as compared to the prior year, and significantly fewer reported building permits for single family units. All this contributed to the 1.6 percent decrease in average daily transactions and the 2.1 percent decrease in revenue that occurred in FY 2009. Except for transactions on SR 112, which were maintained by continued tourist traffic from the airport, all MDX expressways experienced transaction declines, led by SR 924 with a 7.1 percent loss in transactions.

In FY 2010, system-wide average daily transactions reflected modest growth of only 1.1 percent, while revenue remained the same as levels seen in FY 2009. Traffic growth in FY 2010 was influenced by the continued effects of the economic recession, construction impacts related to the ORT conversion, and the first month of ORT on SR 924 in June 2010. On SR 874, average daily transactions decreased by 6.2 percent from 77,491 to 72,695 in FY 2010. Both SR 924 and SR 874 experienced a revenue decline in FY 2010 of 0.5 percent and 6.2 percent respectively.

At the end of FY 2010 and beginning of FY 2011, three of MDX's expressways, SR 874, SR 878 and SR 924 were converted to ORT. Under ORT, cash toll collection was eliminated as a payment option and toll gantries were located so as to preclude un-tolled trips, thus making it a "closed" system of toll collection. With ORT there are two methods of payment: SunPass® or Toll-by-Plate. Under this toll collection system, SunPass® users pay the same for a full-length trip across multiple gantries as they did at the single toll plaza under the cash toll collection system. During the first full year of operation in FY 2011, the removal of un-tolled movements on these three expressways created a significant 88.0 percent increase in toll transactions due to the addition of five new toll locations and the replacement of two toll plazas with toll gantries. However, revenues increased at a lower rate of 12.4 percent due to the fact that the full-length trip costs on SR 874, SR 878 and SR 924, remained the same. The revenue increase was greater than the rate of normal growth due to the capturing of previously un-tolled movements on the three expressways. During the second year of operation in FY 2012, transactions increased at a more normal growth rate of 4.9 percent, while revenue decreased slightly by 0.7 percent mainly due to conversions of customers from Toll-by-Plate to SunPass®, taking advantage of the lower toll rates, and billing processing issues associated with Toll-by-Plate .

In FY 2013, average daily transaction growth system-wide was 2.4 percent, down from 4.9 percent during FY 2012. Growth was impacted by construction taking place on the MDX system in FY 2013, including the SR 836/SR 826 interchange reconstruction project and the widening of the northern section of SR 874. Economic uncertainty within the region and nationwide may also have played a role in the slower traffic growth rate. Despite the slower transaction growth, revenues increased by 7.2 percent system-wide over FY 2012. This is a result of improved collections of Toll-by-Plate toll revenues, as is evidenced by the fact that SR 874, SR 878 and SR 924 all experienced the greatest increases in revenue over the prior year.

Average daily toll transactions grew by an average of 13.3 percent per fiscal year system-wide between FY 2003 and FY 2013, while revenue grew by an average annual rate of 11.4 percent. This growth in transactions and revenue was primarily the result of system expansion, such as the new NW 97th Avenue mainline plaza and the mainline Extension to SW 137 Avenue on SR 836, two toll rate increases over the 10 year period, the opening of two new toll gantries on SR 878, and the conversion of SR 924 and SR 874 to ORT expressways.

## Monthly Transaction and Toll Revenue Trends

Monthly transaction and collectible toll revenue trends have been assembled for each of the five expressways for the last eight fiscal years plus the first four months of the current fiscal year 2014. Collectible toll revenue represents actual revenues received for toll transactions by the Authority and excludes fees. As previously mentioned, SR 878 did not become a tolled expressway until July 17, 2010. Data is reported for this expressway beginning in FY 2011. These statistics are useful in identifying the impacts of rate increases, construction, economic climate, non-recurring incidents such as extreme weather, and other special events.

### SR 924 – Gratigny Parkway

Monthly transaction and gross toll revenue trends between FY 2006 and FY 2014 are shown for SR 924 in Table 2-2. After a decline in transactions in FY 2006 due to the July 2005 toll rate increase and hurricane-related toll suspensions in September 2005 and October 2005, transactions in FY 2007 increased by 1.2 percent while revenues increased by 1.3 percent.



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**Table 2-2**
**Monthly Transactions and Toll Revenue Trends**
**SR 924 - Gratigny Parkway**
**FY 2006 Through FY 2014 [1]**

**Transactions**

| Month | FY 2006 [2] | Percent Change | FY 2007 | Percent Change | FY 2008 | Percent Change | FY 2009 | Percent Change | FY 2010 | Percent Change | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| July | 942,852 | (0.4) | 939,479 | 0.4 | 943,222 | (5.2) | 894,462 | (1.1) | 884,921 | 125.4 | 1,994,776 | 6.8 | 2,130,107 | 4.7 | 2,230,479 | 5.1 | 2,344,760 |
| August | 1,000,299 | (0.6) | 994,625 | 1.9 | 1,013,579 | (16.9) | 842,513 | 3.1 | 869,052 | 139.9 | 2,084,802 | 11.0 | 2,313,933 | 0.5 | 2,324,717 | 6.7 | 2,479,914 |
| September | 957,034 | 6.9 | 1,022,807 | (6.5) | 955,991 | (3.4) | 923,519 | (1.5) | 909,728 | 137.6 | 2,161,494 | 8.4 | 2,343,317 | (2.6) | 2,281,246 | 7.9 | 2,461,215 |
| October | 732,044 | 46.6 | 1,073,077 | (1.2) | 1,059,716 | (8.4) | 970,400 | (1.7) | 953,663 | 135.4 | 2,244,957 | 5.6 | 2,369,694 | 8.5 | 2,570,961 | 6.4 | 2,735,348 |
| November | 1,010,204 | (0.5) | 1,005,081 | (1.6) | 988,619 | (12.9) | 860,621 | 0.2 | 862,254 | 145.8 | 2,119,244 | 9.8 | 2,326,455 | 3.2 | 2,401,981 | - | - |
| December | 1,017,182 | (5.5) | 960,916 | (3.0) | 932,298 | (2.8) | 905,946 | (3.5) | 874,648 | 141.3 | 2,110,496 | 7.5 | 2,268,766 | 1.4 | 2,299,769 | - | - |
| January | 1,058,297 | (2.2) | 1,035,019 | (3.4) | 999,971 | (8.2) | 918,079 | (3.8) | 883,635 | 151.9 | 2,226,131 | 6.5 | 2,371,391 | 3.4 | 2,452,790 | - | - |
| February | 1,010,726 | (1.6) | 994,936 | 0.4 | 998,655 | (10.2) | 896,566 | (3.8) | 862,422 | 153.9 | 2,189,850 | 8.9 | 2,384,038 | (1.6) | 2,346,700 | - | - |
| March | 1,162,009 | (4.9) | 1,104,948 | (7.2) | 1,025,515 | (3.0) | 994,828 | (3.7) | 957,680 | 161.3 | 2,502,462 | 1.8 | 2,546,561 | 0.3 | 2,553,993 | - | - |
| April | 1,020,853 | (1.9) | 1,000,951 | 0.8 | 1,008,899 | (6.4) | 944,519 | (1.7) | 928,092 | 153.4 | 2,351,416 | 0.7 | 2,368,748 | 9.2 | 2,587,220 | - | - |
| May | 1,066,057 | (2.6) | 1,038,258 | (6.0) | 976,318 | (7.9) | 899,046 | 0.2 | 901,068 | 157.7 | 2,322,353 | 5.4 | 2,447,718 | 3.9 | 2,542,773 | - | - |
| June | 1,003,517 | (5.3) | 950,094 | (5.3) | 899,507 | (1.3) | 888,182 | 109.1 | 1,857,094 [3] | 22.3 | 2,270,687 | 1.1 | 2,294,815 | 1.2 | 2,321,252 | - | - |
| Total | 11,981,074 | 1.2 | 12,120,191 | (2.6) | 11,802,290 | (7.3) | 10,938,681 | 7.4 | 11,744,257 | 126.3 | 26,578,668 | 6.0 | 28,165,543 | 2.7 | 28,913,881 | 6.5 [4] | 10,021,237 |

**Collectible Toll Revenue - Excluding Fee Revenue**

| Month | FY 2006 [2] | Percent Change | FY 2007 | Percent Change | FY 2008 | Percent Change | FY 2009 | Percent | FY 2010 | Percent Change | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| July | $ 1,047,848 | 2.1 | $ 1,069,442 | (1.4) | $ 1,054,774 | (5.4) | $ 998,109 | (2.0) | $ 977,810 | 10.4 | $ 1,079,550 | (0.5) | $1,074,612 | 8.1 | $ 1,161,172 | 21.6 | $ 1,412,175 |
| August | 1,145,940 | (1.8) | 1,125,194 | 1.2 | 1,138,203 | (17.8) | 935,235 | 2.1 | 955,285 | 18.2 | 1,128,892 | 0.1 | 1,129,536 | 13.4 | 1,281,252 | 14.6 | 1,467,860 |
| September | 1,065,162 | 10.2 | 1,173,886 | (9.0) | 1,067,673 | (4.3) | 1,021,773 | (1.8) | 1,003,116 | 14.2 | 1,145,338 | 2.0 | 1,168,067 | 16.7 | 1,363,503 | (0.5) | 1,356,303 |
| October | 821,128 | 44.7 | 1,188,374 | (0.7) | 1,179,847 | (9.6) | 1,066,390 | (1.9) | 1,046,206 | 16.2 | 1,215,177 | (4.2) | 1,163,700 | 22.3 | 1,423,318 | (29.8) | 999,233 |
| November | 1,133,606 | 0.1 | 1,134,357 | (2.6) | 1,104,783 | (14.0) | 950,071 | (0.7) | 943,229 | 20.8 | 1,139,124 | (0.0) | 1,138,863 | 10.3 | 1,256,205 | - | - |
| December | 1,140,123 | (3.7) | 1,097,602 | (5.0) | 1,042,602 | (3.5) | 1,006,065 | (3.8) | 967,885 | 18.8 | 1,150,143 | (3.3) | 1,112,430 | 17.1 | 1,302,493 | - | - |
| January | 1,181,187 | (1.2) | 1,166,460 | (4.0) | 1,119,651 | (10.1) | 1,006,054 | (3.8) | 967,581 | 19.4 | 1,154,875 | 1.6 | 1,173,088 | 14.5 | 1,342,767 | - | - |
| February | 1,146,116 | (2.5) | 1,117,741 | (0.4) | 1,113,308 | (11.3) | 987,366 | (4.1) | 947,052 | 21.5 | 1,150,222 | 2.8 | 1,182,078 | 6.3 | 1,256,715 | - | - |
| March | 1,313,295 | (5.2) | 1,245,403 | (8.5) | 1,139,803 | (4.1) | 1,092,668 | (3.5) | 1,054,607 | 27.2 | 1,341,323 | (4.0) | 1,288,302 | 7.6 | 1,386,743 | - | - |
| April | 1,152,916 | (1.5) | 1,135,364 | (0.3) | 1,132,311 | (8.3) | 1,037,790 | (1.8) | 1,019,601 | 24.3 | 1,267,810 | (3.2) | 1,227,527 | 8.2 | 1,328,697 | - | - |
| May | 1,211,399 | (2.6) | 1,180,483 | (8.6) | 1,079,492 | (9.2) | 980,284 | 0.5 | 985,064 | 27.1 | 1,251,551 | 0.2 | 1,253,801 | 6.4 | 1,334,461 | - | - |
| June | 1,181,051 | (8.4) | 1,081,829 | (7.8) | 997,398 | (1.4) | 983,032 | 16.2 | 1,142,581 [3] | 26.5 | 1,445,685 | (16.2) | 1,211,345 | 12.9 | 1,368,055 | - | - |
| Total | $ 13,539,773 | 1.3 | $ 13,716,134 | (4.0) | $ 13,169,846 | (8.4) | $ 12,064,836 | (0.5) | $ 12,010,016 | 20.5 | $ 14,469,691 | (2.4) | $ 14,123,349 | 11.9 | $ 15,805,381 | 0.1 [4] | $ 5,235,571 |

[1] Fiscal year represents 12 months beginning July 1 and ending June 30.
[2] Tolls increased to $1.25 (cash) and $1.00 (SunPass) at all plazas in July 2005.
[3] Gratigny Parkway converted to all-electronic toll collection on June 7, 2010.
[4] Represents the percent change in fiscal year 2014 year-to-date versus same period in prior fiscal year.
Annual revenue excludes revenue recovered through violation enforcement.
Source: Miami-Dade Expressway Authority





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During FY 2008 and FY 2009, transactions declined by 2.6 percent and 7.3 percent respectively, while revenues were down by 4.0 percent and 8.4 percent. The decreases were due in part to the reduced use of SR 924 by commuters from Broward County, which experienced decreases in total population and employment levels during the 2008-09 recession.

In FY 2010, transactions increased by 7.4 percent and revenue decreased by 0.5 percent over FY 2009 levels. Both transactions and revenue were affected by repaving and other construction projects that began in December 2010 to prepare for the implementation of ORT on SR 924. Construction related to the ORT conversion was completed in May 2010. In June 2010, transactions significantly increased over the same month in the prior year due to the ORT conversion. An additional tolling point was added as a part of the conversion to prevent un-tolled movements. SunPass® customers traveling on SR 924 continued paying the same amount of tolls for the full-length trip; however, the total toll amount was split between two gantries. As a result, the total number of transactions on the expressway more than doubled, beginning in June 2010, while revenues increased primarily due to the capture of previously un-tolled movements. FY 2011 transactions and revenue increased by 126.3 percent and 20.5 percent respectively, as a result of the first full year of ORT on the expressway.

Compared to FY 2011, FY 2012 transactions increased by 6.0 percent while revenues decreased by 2.4 percent. This slight decrease in revenues can largely be attributed to the timing of toll collection, as the collection process associated with Toll-by-Plate billing is longer than SunPass® or the prior cash system. Another factor for the revenue decline is the increase in SunPass® market penetration from 84.0 percent in FY 2011 to 85.2 percent in FY 2012. SunPass® customers pay less than the previous cash toll rate on the expressway, which results in less revenue being collected.

During FY 2013, transactions and revenue increased by 2.7 and 11.9 percent, respectively, compared with FY 2012. The higher revenue growth trend continues to reflect improvements in toll collection since the implementation of ORT. It should also be noted that if the additional day of transactions due to a leap year in FY 2012 were eliminated, transaction growth would have been 0.3 percent higher at 3.0 percent.

Year-to-date transactions for FY 2014 are 6.5 percent greater than the same time period in FY 2013, while collectible toll revenue is 0.1 percent greater. Most notable is October 2013 collectible revenue which is almost 30.0 percent lower than October 2012. This is the result of the Authority transitioning to a new Toll-by-Plate transaction processing vendor in mid-September 2013. During this transition period, MDX has stopped sending Toll-by-Plate transaction data to its former vendor, resulting in a decrease of invoices mailed to customers and a halt in the processing of I-Toll transactions, or SunPass® transactions initially classified as Toll-by-Plate transactions. This condition is temporary as the transaction data is transitioned to a new billing provider. This transition has delayed billing of Toll-by-Plate customers, resulting in collectible revenue that was slightly lower in September 2013 and significantly lower in October 2013 versus the prior year. These decreases are most notable on MDX's ORT expressways since the percent of transactions that are Toll-by-Plate is considerably higher. These year-over-year decreases are expected to be temporary, with Toll-by-Plate billing and I-Toll transaction processing resuming in 2014. Moreover, it is anticipated that the backlog of unbilled Toll-by-Plate transactions and unprocessed I-Toll transactions will produce greater collectible revenues in second half of FY 2014 when compared to the same months in FY 2013.





## SR 112 – Airport Expressway

Table 2-3 presents monthly transactions and gross toll revenue for SR 112. In FY 2007, transactions increased by 5.1 percent while revenue increased by 4.4 percent. This was the first year of transaction growth after several years that had been affected by toll rate increases, hurricane-related toll suspensions and construction impacts. Specifically, July 2005 and August 2005 transactions and revenue declined due to plaza reconstruction and October 2005 levels declined due to hurricane-related toll suspensions.

In spite of the economic recession which severely affected south Florida and the rest of the nation, and included large increases in fuel prices from $2.00 to $4.00 a gallon, transactions on SR 112 increased by 7.5 percent in FY 2008. Transaction and revenue growth on SR 112 is primarily driven by strong growth at the Miami International Airport and Port of Miami. As a result, transactions on SR 112 remained mostly stable through the 2008-09 recession due to the continued use of the expressway by tourist and commercial traffic from the Miami International Airport and the Port of Miami. Due to the growth in transactions, revenue also increased by a comparable 7.4 percent, which was significantly influenced by the first three months of FY 2008.

FY 2009 transactions increased by an additional 4.0 percent, topping the 12.0 million mark for the first time since FY 2004. Revenue also increased in FY 2009 by 2.8 percent. Between FY 2010 and FY 2012, transactions and revenues continued to increase. In FY 2012, transactions and revenue reached 14.1 and $15.1 million respectively.

During FY 2013, transactions and revenue increased by 3.3 and 5.2 percent, respectively, compared with FY 2012. Some slight increases in the rate of transaction and revenue growth occurred in the latter months of FY 2013 most likely attributable to traffic shifts from SR 836 to avoid the ORT gantry construction at the former NW 17th Avenue mainline plaza.

Year-to-date transactions and revenue growth in FY 2014 continue to show the effects of the traffic diversions resulting from the SR 836 construction. Transactions during the first four months of FY 2014 are 8.9 percent greater than the same time period in the prior fiscal year. Revenue growth during the first four months of FY 2014 is 6.2 percent greater; although October collectible revenue was 5.5 percent lower than October 2012, evidencing the effect of the temporary halt in the issuance of Toll-by-Plate invoices and the temporary suspension of the I-Tolling process.

## SR 836 – Dolphin Expressway

Table 2-4 presents monthly transactions and gross toll revenue for SR 836. In FY 2006, transactions and revenue in October 2005 were affected by hurricane-related toll suspensions, which resulted in significant increases in both transactions and revenue in October 2006. Transactions increased by 6.7 percent in FY 2007 aided by a drop in motor fuel prices from September 2006 through March 2007. Revenues increased by 5.8 percent in FY 2007.

Transaction and revenue trends increased significantly beginning in July 2007 because of the newly constructed NW 97th Avenue mainline toll plaza and the new electronic toll collection (ETC) gantry on the SR 836 Extension to SW 137th Avenue. Transactions increased from 21.9 million in FY 2007 to 65.9 million in FY 2008, or just over 200 percent, due almost exclusively to these two additional toll locations, which accounted for 37.6 million and 6.2 million transactions respectively. Revenues increased in FY 2008 by 128.1 percent from $23.9 million to $54.5 million.

**Table 2-3**
**Monthly Transactions and Toll Revenue Trends**
**SR 112 - Airport Expressway**
**FY 2006 Through FY 2014 [1]**

**Transactions**

| Month | FY 2006 [2] | Percent Change | FY 2007 | Percent Change | FY 2008 | Percent Change | FY 2009 | Percent Change | FY 2010 | Percent Change | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| July | 925,907 | (17.6) | 762,766 | 29.9 | 990,750 | 2.9 | 1,019,321 | 7.8 | 1,098,955 | (5.6) | 1,037,656 | 9.9 | 1,140,485 | 4.1 | 1,186,954 | 6.0 | 1,257,666 |
| August | 886,084 | (17.1) | 734,480 | 38.6 | 1,017,913 | (3.9) | 978,200 | 4.2 | 1,019,697 | 2.0 | 1,040,450 | 11.6 | 1,160,721 | 2.6 | 1,190,731 | 11.0 | 1,322,031 |
| September | 815,653 | (1.6) | 802,631 | 10.6 | 887,807 | 9.0 | 967,370 | 1.9 | 985,431 | 2.5 | 1,009,648 | 9.8 | 1,108,612 | 0.0 | 1,109,011 | 8.6 | 1,204,329 |
| October | 641,041 | 47.5 | 945,653 | (0.2) | 943,445 | 10.8 | 1,045,553 | 1.4 | 1,060,529 | 2.2 | 1,083,874 | 5.0 | 1,137,939 | 7.0 | 1,217,861 | 9.9 | 1,338,622 |
| November | 867,402 | 6.3 | 921,973 | 5.8 | 975,429 | (0.2) | 973,859 | 2.6 | 998,845 | 6.7 | 1,066,009 | 8.9 | 1,160,531 | 2.0 | 1,183,943 | - | - |
| December | 921,412 | 3.1 | 949,835 | 3.9 | 986,703 | 6.1 | 1,047,106 | 1.5 | 1,063,232 | 1.4 | 1,078,113 | 8.0 | 1,164,702 | 3.4 | 1,203,979 | - | - |
| January | 916,105 | 9.0 | 998,551 | 2.1 | 1,019,316 | 3.4 | 1,053,651 | 3.1 | 1,086,648 | 1.0 | 1,097,605 | 8.5 | 1,190,745 | 4.6 | 1,246,096 | - | - |
| February | 869,009 | 9.4 | 950,472 | 4.0 | 988,107 | 1.5 | 1,003,360 | 2.2 | 1,025,267 | 4.1 | 1,067,270 | 9.7 | 1,170,713 | (0.3) | 1,167,689 | - | - |
| March | 1,019,943 | 6.1 | 1,082,141 | (0.8) | 1,073,545 | 6.0 | 1,138,258 | 2.0 | 1,160,689 | 8.6 | 1,260,124 | 2.9 | 1,296,877 | 1.8 | 1,320,534 | - | - |
| April | 917,938 | 8.2 | 993,158 | 4.4 | 1,037,048 | 6.1 | 1,100,271 | (1.2) | 1,087,232 | 8.6 | 1,180,478 | 2.6 | 1,211,172 | 6.2 | 1,286,658 | - | - |
| May | 939,299 | 6.7 | 1,002,485 | 4.4 | 1,047,092 | 1.4 | 1,062,244 | 1.6 | 1,079,194 | 9.3 | 1,179,209 | 4.6 | 1,233,409 | 5.0 | 1,294,895 | - | - |
| June | 849,686 | 13.9 | 967,438 | 1.5 | 981,914 | 5.3 | 1,034,070 | (0.9) | 1,024,460 | 10.0 | 1,127,220 | 4.5 | 1,178,107 | 3.0 | 1,213,483 | - | - |
| Total | 10,569,479 | 5.1 | 11,111,583 | 7.5 | 11,949,069 | 4.0 | 12,423,263 | 2.1 | 12,690,179 | 4.2 | 13,227,656 | 7.0 | 14,154,013 | 3.3 | 14,621,834 | 8.9 [3] | 5,122,648 |

**Collectible Toll Revenue - Excluding Fee Revenue**

| Month | FY 2006 [2] | Percent Change | FY 2007 | Percent Change | FY 2008 | Percent Change | FY 2009 | Percent Change | FY 2010 | Percent Change | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| July | $ 1,050,638 | (19.8) | $ 842,518 | 29.5 | $ 1,091,299 | 2.9 | $ 1,122,645 | 6.2 | $ 1,191,835 | (2.9) | $ 1,157,842 | (0.3) | $1,154,728 | 9.5 | $ 1,264,882 | 12.0 | $ 1,416,142 |
| August | 1,025,468 | (21.2) | 808,340 | 39.5 | 1,127,771 | (5.2) | 1,069,259 | 3.4 | 1,105,113 | 4.7 | 1,156,799 | 7.6 | 1,244,815 | 5.1 | 1,307,729 | 12.3 | 1,468,039 |
| September | 900,786 | (1.2) | 890,085 | 10.8 | 985,929 | 7.9 | 1,064,153 | 1.6 | 1,081,133 | 3.5 | 1,118,545 | 8.8 | 1,216,589 | 1.8 | 1,238,850 | 6.6 | 1,320,401 |
| October | 696,473 | 48.8 | 1,036,314 | 1.1 | 1,047,362 | 9.0 | 1,141,684 | 0.9 | 1,152,205 | 4.3 | 1,201,906 | 0.5 | 1,208,070 | 10.1 | 1,329,611 | (5.5) | 1,255,832 |
| November | 959,348 | 5.9 | 1,015,766 | 6.4 | 1,080,587 | (0.9) | 1,070,959 | 0.9 | 1,080,834 | 8.9 | 1,177,070 | 5.4 | 1,241,057 | 2.5 | 1,271,587 | - | - |
| December | 1,001,687 | 8.2 | 1,083,712 | 0.6 | 1,089,980 | 6.5 | 1,160,873 | (0.2) | 1,158,364 | (2.3) | 1,131,591 | 9.2 | 1,235,857 | 8.8 | 1,344,129 | - | - |
| January | 1,004,343 | 9.4 | 1,099,201 | 2.9 | 1,130,908 | 1.8 | 1,151,423 | 1.6 | 1,169,516 | 3.7 | 1,213,305 | 4.1 | 1,263,077 | 5.7 | 1,335,532 | - | - |
| February | 969,575 | 7.7 | 1,044,062 | 4.8 | 1,094,512 | 0.1 | 1,095,213 | 1.4 | 1,110,439 | 5.2 | 1,168,325 | 7.3 | 1,253,811 | 1.8 | 1,276,791 | - | - |
| March | 1,127,016 | 4.9 | 1,182,105 | (0.0) | 1,181,546 | 5.2 | 1,242,720 | 1.5 | 1,261,223 | 8.7 | 1,370,329 | 2.6 | 1,406,374 | 1.3 | 1,424,167 | - | - |
| April | 1,017,382 | 8.9 | 1,107,811 | 4.1 | 1,153,638 | 3.5 | 1,194,160 | (1.4) | 1,177,387 | 9.7 | 1,291,142 | 2.1 | 1,317,687 | 3.6 | 1,364,780 | - | - |
| May | 1,041,144 | 7.3 | 1,116,796 | 3.5 | 1,156,047 | (1.2) | 1,142,226 | 2.3 | 1,168,531 | 7.3 | 1,253,825 | 6.1 | 1,330,057 | 3.8 | 1,380,114 | - | - |
| June | 990,102 | 8.9 | 1,078,227 | 0.2 | 1,080,346 | 4.7 | 1,131,513 | 0.3 | 1,134,980 | 9.3 | 1,240,287 | 3.2 | 1,280,544 | 9.5 | 1,401,649 | - | - |
| Total | $ 11,783,963 | 4.4 | $ 12,304,937 | 7.4 | $ 13,219,925 | 2.8 | $ 13,586,828 | 1.5 | $ 13,791,561 | 5.0 | $ 14,480,964 | 4.6 | $ 15,152,665 | 5.2 | $ 15,939,821 | 6.2 [3] | $ 5,460,413 |

[1] Fiscal year represents 12 months beginning July 1 and ending June 30.
[2] Tolls increased to $1.25 (cash) and $1.00 (SunPass) at all plazas in July 2005.
[3] Represents the percent change in fiscal year 2014 year-to-date versus same period in prior fiscal year.
Annual revenue excludes revenue recovered through violation enforcement.
Source: Miami-Dade Expressway Authority







**Table 2-4**
**Monthly Transactions and Toll Revenue Trends**
**SR 836 - Dolphin Expressway**
**FY 2006 Through FY 2014 [1]**

**Transactions**

| Month | FY 2006 [2] | Percent Change | FY 2007 | Percent Change | FY 2008 [3] | Percent Change | FY 2009 | Percent Change | FY 2010 | Percent Change | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| July | 1,745,348 | 1.5 | 1,771,676 | 220.5 | 5,678,582 | (6.1) | 5,332,810 | 3.1 | 5,497,979 | 2.0 | 5,609,035 | 4.0 | 5,832,105 | 6.4 | 6,206,060 | (2.1) | 6,073,538 |
| August | 1,693,964 | 2.5 | 1,735,698 | 226.1 | 5,660,961 | (9.7) | 5,112,534 | 6.5 | 5,444,916 | 4.6 | 5,696,427 | 4.9 | 5,972,878 | 3.1 | 6,159,836 | 2.1 | 6,288,493 |
| September | 1,626,746 | 7.1 | 1,742,234 | 189.7 | 5,047,482 | 3.3 | 5,212,195 | 1.1 | 5,271,084 | 4.7 | 5,517,448 | 5.2 | 5,805,749 | 1.8 | 5,911,877 | 1.3 | 5,988,621 |
| October | 1,238,770 | 50.0 | 1,858,590 | 199.2 | 5,560,874 | (1.4) | 5,484,637 | 3.9 | 5,696,088 | 2.9 | 5,860,766 | 1.2 | 5,932,586 | 6.3 | 6,304,832 | 1.7 | 6,410,390 |
| November | 1,714,557 | 3.8 | 1,779,376 | 202.9 | 5,390,448 | (3.2) | 5,219,178 | 2.8 | 5,367,427 | 5.0 | 5,635,375 | 3.8 | 5,847,770 | 3.6 | 6,061,126 | - | - |
| December | 1,768,319 | 2.9 | 1,820,461 | 202.9 | 5,514,142 | (0.1) | 5,508,977 | 1.4 | 5,585,466 | 3.3 | 5,769,229 | 4.5 | 6,030,499 | (1.1) | 5,962,807 | - | - |
| January | 1,789,399 | 4.7 | 1,872,866 | 193.4 | 5,494,298 | (1.7) | 5,400,158 | 0.7 | 5,435,587 | 5.0 | 5,709,683 | 5.3 | 6,014,984 | 2.0 | 6,134,460 | - | - |
| February | 1,690,642 | 3.6 | 1,751,964 | 208.0 | 5,396,017 | (5.3) | 5,107,869 | 2.0 | 5,207,913 | 5.2 | 5,476,749 | 7.8 | 5,904,666 | (1.8) | 5,798,809 | - | - |
| March | 1,939,309 | 3.7 | 2,010,203 | 185.7 | 5,743,858 | (0.1) | 5,739,836 | 3.3 | 5,930,934 | 3.6 | 6,146,310 | 9.4 | 6,724,024 | (3.2) | 6,511,837 | - | - |
| April | 1,798,058 | 4.1 | 1,870,917 | 200.1 | 5,614,062 | (1.2) | 5,545,337 | 2.6 | 5,689,941 | 2.6 | 5,836,525 | 5.7 | 6,171,474 | 1.3 | 6,252,602 | - | - |
| May | 1,811,659 | 5.7 | 1,914,178 | 194.0 | 5,628,492 | (2.4) | 5,494,260 | 4.4 | 5,735,988 | 3.1 | 5,912,139 | 9.0 | 6,445,837 | (0.9) | 6,384,741 | - | - |
| June | 1,733,882 | 3.4 | 1,792,299 | 190.3 | 5,202,675 | 2.2 | 5,316,855 | 4.8 | 5,572,797 | 5.3 | 5,866,634 | 6.1 | 6,222,742 | (2.7) | 6,052,797 | - | - |
| Total | 20,550,653 | 6.7 | 21,920,462 | 200.8 | 65,931,891 | (2.2) | 64,474,646 | 3.0 | 66,436,120 | 3.9 | 69,036,320 | 5.6 | 72,905,314 | 1.1 | 73,741,784 | 0.7 [4] | 24,761,042 |

**Collectible Toll Revenue - Excluding Fee Revenue**

| Month | FY 2006 [2] | Percent Change | FY 2007 | Percent Change | FY 2008 [3] | Percent Change | FY 2009 | Percent Change | FY 2010 | Percent Change | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| July | $ 1,879,201 | 3.6 | $ 1,946,577 | 131.7 | $ 4,509,262 | (1.3) | $ 4,449,204 | 2.8 | $ 4,574,780 | 2.2 | $ 4,674,024 | (1.1) | $4,623,160 | 6.7 | $ 4,932,039 | 3.5 | $ 5,104,920 |
| August | 1,891,468 | 0.6 | 1,902,837 | 144.7 | 4,656,296 | (9.4) | 4,219,100 | 7.0 | 4,516,540 | 5.4 | 4,760,067 | (1.6) | 4,685,867 | 10.0 | 5,156,344 | 0.4 | 5,179,284 |
| September | 1,768,621 | 8.0 | 1,909,322 | 121.8 | 4,235,708 | 2.1 | 4,325,687 | 2.5 | 4,432,751 | 2.7 | 4,552,506 | 0.3 | 4,564,300 | 8.7 | 4,959,514 | (2.5) | 4,835,278 |
| October | 1,377,953 | 46.9 | 2,023,565 | 127.7 | 4,606,733 | (2.0) | 4,516,386 | 5.1 | 4,747,862 | 2.8 | 4,880,481 | (4.6) | 4,655,186 | 13.5 | 5,282,766 | (23.6) | 4,034,554 |
| November | 1,871,864 | 3.5 | 1,938,049 | 129.8 | 4,454,371 | (2.9) | 4,326,617 | 2.2 | 4,420,467 | 6.4 | 4,704,376 | (1.9) | 4,613,676 | 7.8 | 4,972,760 | - | - |
| December | 1,933,354 | 3.6 | 2,003,341 | 126.9 | 4,545,845 | 1.4 | 4,609,124 | 0.8 | 4,646,486 | 4.2 | 4,843,236 | (2.6) | 4,717,036 | 6.7 | 5,031,777 | - | - |
| January | 1,950,343 | 4.9 | 2,045,015 | 122.7 | 4,554,774 | (2.3) | 4,448,225 | 1.1 | 4,497,888 | 4.0 | 4,679,558 | 1.3 | 4,738,499 | 2.3 | 4,849,472 | - | - |
| February | 1,866,665 | 2.3 | 1,909,727 | 135.1 | 4,489,089 | (5.4) | 4,247,743 | 1.8 | 4,322,996 | 3.5 | 4,473,413 | 5.0 | 4,698,044 | (0.3) | 4,684,420 | - | - |
| March | 2,119,726 | 1.8 | 2,157,700 | 120.3 | 4,754,103 | 0.5 | 4,776,813 | 3.4 | 4,939,101 | 0.2 | 4,949,196 | 8.2 | 5,356,416 | (0.1) | 5,351,393 | - | - |
| April | 1,967,811 | 3.6 | 2,038,734 | 131.2 | 4,714,193 | (2.5) | 4,594,516 | 2.9 | 4,729,241 | 0.4 | 4,750,352 | 5.1 | 4,990,412 | (0.1) | 4,986,829 | - | - |
| May | 1,979,128 | 5.2 | 2,081,845 | 124.9 | 4,682,382 | (3.7) | 4,510,318 | 4.9 | 4,730,748 | 0.9 | 4,771,412 | 7.9 | 5,147,576 | (2.0) | 5,046,111 | - | - |
| June | 1,976,454 | (1.6) | 1,944,393 | 121.7 | 4,311,071 | 3.8 | 4,475,743 | 3.4 | 4,626,059 | 3.4 | 4,785,586 | 4.0 | 4,977,925 | (3.6) | 4,799,378 | - | - |
| Total | $ 22,582,588 | 5.8 | $ 23,901,105 | 128.1 | $ 54,513,828 | (1.9) | $ 53,499,476 | 3.2 | $ 55,184,920 | 3.0 | $ 56,824,205 | 1.7 | $ 57,768,097 | 4.0 | $ 60,052,803 | (5.8) [4] | $ 19,154,036 |

[1] Fiscal year represents 12 months beginning July 1 and ending June 30.
[2] Tolls increased to $1.25 (cash) and $1.00 (SunPass) at all plazas in July 2005.
[3] Tolling on new mainline toll plaza on SR 836 west of NW 97th Avenue and Extension to NW 137th Avenue begins July 1, 2007.
[4] Represents the percent change in fiscal year 2014 year-to-date versus same period in prior fiscal year.
Annual revenue excludes revenue recovered through violation enforcement.
Source: Miami-Dade Expressway Authority

Excluding transactions from the new NW 97th Avenue mainline plaza and the ETC toll gantry on the SR 836 Extension from the SR 836 totals, it is estimated that transactions during FY 2008 would have risen by a modest 1.0 percent. This estimated growth reflects the national economic trends and economic conditions specific to south Florida. These trends include the large increases in gasoline prices from $2.00 to $4.00 a gallon and the rise in unemployment. South Florida also faced the challenges of net negative changes in the populations of Miami-Dade and Broward Counties. While the decreases are modest, they stand in sharp contrast with earlier periods of robust growth reflected in the traffic growth experienced on transportation roadways such as MDX.

During FY 2009 the national and regional conditions described above contributed to the 2.2 percent and 1.9 percent decline in SR 836 transactions and revenue. In addition to the negative impacts associated with the economic recession, completion of roadway widening on SR 826 south of SR 836 may have shifted some previously diverted traffic back to SR 826. Between FY 2010 and FY 2012, transactions and revenue continued to increase. In FY 2012, transactions and revenue reached 72.9 and $57.8 million, respectively.

During the first five months of FY 2013, transactions increased by 4.3 percent compared to the same period in FY 2012 in spite of major ongoing construction activity on SR 836 at the interchange with SR 826. However, construction began to negatively impact transactions during the second half of FY 2013, most likely due to the start of major construction activity on the actual eastbound mainline of SR 836. The SR 836 / SR 826 interchange reconstruction project entered Phase 3 during the last quarter of FY 2013, involving nighttime lane and ramp closures, some full expressway closures and numerous traffic lane shifts to accommodate new roadway and overpass construction. Moreover, ORT gantry construction at the former NW 17th Avenue mainline plaza diverted some traffic to SR 112 as previously discussed. Overall transaction and revenue growth in FY 2013 were 1.1 percent and 4.0 percent, respectively.

Year-to-date FY 2014 transactions and revenue growth continue to show the effects of the traffic diversions resulting from the SR 836 construction. FY 2014 transactions and revenues on SR 836 may have also been impacted by the removal of cash payment from the mainline and ramp toll locations at NW 17th Avenue on July 21, 2013. Transaction growth during the first four months of FY 2014 were a very modest 0.7 percent greater than the same time period in FY 2013. Collectible revenue during the first four months of FY 2014 was 5.8 percent lower than the same period in FY 2013, due to decreases of 2.5 percent in September and 23.6 percent in October, respectively. These decreases are most likely related to both construction impacts and the temporary halt in the issuance of Toll-by-Plate invoices and the I-Tolling process...

## SR 874 – Don Shula Expressway

Table 2-5 provides monthly transactions and gross toll revenue for SR 874. In FY 2006, transactions and revenue in October 2005 declined significantly as a result of hurricane-related toll suspensions on the expressway. Transactions and revenue on SR 874 increased in both FY 2007 and FY 2008. However, transactions and revenue decreased in 2009 by 1.1 percent and 2.0 percent respectively, primarily due to economic conditions.

Construction-related impacts associated with the SR 874 / Killian Parkway interchange project, which began in October 2009, and the SR 874/SR 826 interchange reconfiguration project continued through FY 2010 and reduced both transactions and revenue by 6.2 percent, compared to FY 2009.



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**Table 2-5**
**Monthly Transactions and Toll Revenue Trends**
**SR 874 - Don Shula Expressway**
**FY 2006 Through FY 2014 [1]**

**Transactions**

| Month | FY 2006 [2] | Percent Change | FY 2007 | Percent Change | FY 2008 | Percent Change | FY 2009 | Percent Change | FY 2010 | Percent Change | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| July | 2,164,158 | 2.5 | 2,218,803 | 6.1 | 2,353,817 | (0.3) | 2,346,183 | 1.6 | 2,384,699 | 90.5 | 4,543,398 [3] | 63.7 | 7,437,547 | 2.6 | 7,627,770 | 1.3 | 7,729,741 |
| August | 2,116,313 | 3.8 | 2,197,519 | 10.8 | 2,435,749 | (8.3) | 2,234,577 | 6.0 | 2,368,487 | 205.6 | 7,238,343 | 3.2 | 7,469,655 | 1.2 | 7,562,971 | 4.8 | 7,924,804 |
| September | 2,044,015 | 8.3 | 2,213,230 | 3.0 | 2,278,541 | (0.6) | 2,263,969 | (0.1) | 2,262,492 | 214.3 | 7,109,974 | 4.3 | 7,414,834 | 0.1 | 7,423,649 | 1.6 | 7,540,324 |
| October | 1,558,988 | 49.8 | 2,335,291 | 2.0 | 2,382,164 | (0.5) | 2,370,800 | (4.3) | 2,269,380 | 235.3 | 7,609,793 | (2.2) | 7,444,715 | 5.5 | 7,851,660 | 2.7 | 8,064,474 |
| November | 2,115,745 | 6.9 | 2,261,211 | 3.2 | 2,332,459 | (1.6) | 2,295,517 | (7.3) | 2,128,120 | 248.3 | 7,413,074 | 1.3 | 7,510,351 | 2.3 | 7,685,170 | - | - |
| December | 2,240,207 | 3.2 | 2,312,910 | 3.9 | 2,403,571 | 0.4 | 2,413,939 | (6.5) | 2,257,452 | 231.1 | 7,475,135 | 4.5 | 7,814,702 | 0.4 | 7,843,547 | - | - |
| January | 2,218,843 | 6.9 | 2,371,883 | 1.1 | 2,397,559 | (0.1) | 2,394,563 | (10.0) | 2,155,007 | 245.0 | 7,434,535 | 4.7 | 7,786,927 | 2.3 | 7,963,687 | - | - |
| February | 2,084,259 | 5.9 | 2,206,896 | 6.2 | 2,344,477 | (3.8) | 2,256,254 | (7.0) | 2,099,068 | 237.1 | 7,076,536 | 4.6 | 7,398,598 | 0.4 | 7,424,846 | - | - |
| March | 2,390,502 | 3.5 | 2,472,985 | 1.1 | 2,500,869 | 0.6 | 2,516,364 | (7.6) | 2,325,835 | 240.7 | 7,924,617 | (1.9) | 7,775,304 | 6.0 | 8,242,738 | - | - |
| April | 2,246,834 | 3.1 | 2,317,050 | 4.7 | 2,426,842 | 0.4 | 2,436,059 | (15.3) | 2,064,467 | 268.0 | 7,596,595 | (2.4) | 7,410,704 | 8.2 | 8,016,734 | - | - |
| May | 2,309,382 | 4.4 | 2,410,791 | 2.0 | 2,458,755 | (0.9) | 2,437,039 | (12.3) | 2,136,309 | 260.1 | 7,692,169 | 0.9 | 7,763,415 | 3.9 | 8,065,949 | - | - |
| June | 2,228,418 | 1.2 | 2,254,732 | 1.7 | 2,292,597 | 1.2 | 2,319,009 | (10.2) | 2,082,343 | 262.0 | 7,538,550 | 0.6 | 7,580,619 | 1.2 | 7,669,207 | - | - |
| Total | 25,717,664 | 7.2 | 27,573,301 | 3.8 | 28,607,400 | (1.1) | 28,284,273 | (6.2) | 26,533,659 | 226.6 | 86,652,719 | 4.8 | 90,807,371 | 2.8 | 93,377,928 | 2.6 [4] | 31,259,343 |

**Collectible Toll Revenue - Excluding Fee Revenue**

| Month | FY 2006 [2] | Percent Change | FY 2007 | Percent Change | FY 2008 | Percent Change | FY 2009 | Percent Change | FY 2010 | Percent Change | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| July | $ 2,274,090 | 6.0 | $ 2,410,877 | 4.4 | $ 2,518,033 | (0.8) | $ 2,496,782 | 1.2 | $ 2,526,113 | (3.9) | $ 2,428,785 [3] | (5.0) | $2,306,621 | 6.8 | $ 2,464,242 | 13.8 | $ 2,803,213 |
| August | 2,333,574 | 2.1 | 2,382,884 | 9.8 | 2,616,807 | (9.8) | 2,360,155 | 6.1 | 2,503,733 | (0.5) | 2,490,297 | (7.9) | 2,294,623 | 17.5 | 2,695,269 | 4.5 | 2,817,429 |
| September | 2,158,675 | 10.9 | 2,393,153 | 2.3 | 2,447,110 | (2.0) | 2,398,642 | 1.0 | 2,422,341 | (1.2) | 2,392,323 | (4.7) | 2,279,984 | 14.3 | 2,606,181 | (2.8) | 2,532,391 |
| October | 1,667,715 | 50.3 | 2,506,836 | 1.6 | 2,547,608 | (1.9) | 2,497,931 | (3.4) | 2,413,326 | 8.3 | 2,612,963 | (13.1) | 2,270,973 | 26.8 | 2,878,849 | (40.6) | 1,711,369 |
| November | 2,051,996 | 18.4 | 2,429,994 | 2.7 | 2,496,710 | (2.6) | 2,432,826 | (7.8) | 2,243,727 | 13.9 | 2,556,164 | (10.9) | 2,277,804 | 10.2 | 2,510,843 | - | - |
| December | 2,413,708 | 4.3 | 2,517,891 | 1.8 | 2,564,146 | 0.5 | 2,576,423 | (7.0) | 2,394,912 | 8.4 | 2,596,614 | (10.0) | 2,336,683 | 18.7 | 2,772,584 | - | - |
| January | 2,387,196 | 7.6 | 2,567,480 | (0.1) | 2,565,698 | (1.4) | 2,529,707 | (10.2) | 2,270,859 | 8.6 | 2,466,367 | (2.2) | 2,412,406 | 17.8 | 2,841,592 | - | - |
| February | 2,273,916 | 5.0 | 2,388,046 | 5.2 | 2,511,588 | (4.3) | 2,403,083 | (7.5) | 2,223,934 | 6.7 | 2,374,010 | (3.4) | 2,293,699 | 9.2 | 2,504,221 | - | - |
| March | 2,602,111 | 2.6 | 2,669,864 | (0.0) | 2,669,653 | 0.4 | 2,680,606 | (7.8) | 2,470,257 | 9.5 | 2,706,087 | (10.4) | 2,425,751 | 14.1 | 2,766,737 | - | - |
| April | 2,432,797 | 3.3 | 2,513,815 | 3.8 | 2,609,811 | (0.9) | 2,587,309 | (15.1) | 2,195,503 | 18.4 | 2,599,781 | (7.2) | 2,413,274 | 6.6 | 2,572,334 | - | - |
| May | 2,511,595 | 4.1 | 2,615,135 | 0.4 | 2,626,679 | (2.3) | 2,565,998 | (12.5) | 2,244,044 | 17.7 | 2,640,519 | (6.1) | 2,480,191 | 5.7 | 2,621,489 | - | - |
| June | 2,523,175 | (3.4) | 2,436,764 | 0.4 | 2,445,417 | 1.2 | 2,474,784 | (10.1) | 2,225,841 | 6.1 | 2,361,980 | 4.0 | 2,456,089 | 2.5 | 2,516,749 | - | - |
| Total | $ 27,630,548 | 8.0 | $ 29,832,740 | 2.6 | $ 30,619,261 | (2.0) | $ 30,004,245 | (6.2) | $ 28,134,589 | 7.4 | $ 30,225,889 | (6.5) | $ 28,248,099 | 12.4 | $ 31,751,090 | (7.3) [4] | $ 9,864,402 |

[1] Fiscal year represents 12 months beginning July 1 and ending June 30.
[2] Tolls increased to $1.25 (cash) and $1.00 (SunPass) at all plazas in July 2005.
[3] Don Shula Parkway converted to all-electronic toll collection on July 17, 2010.
[4] Represents the percent change in fiscal year 2014 year-to-date versus same period in prior fiscal year.
Annual revenue excludes revenue recovered through violation enforcement.
Source: Miami-Dade Expressway Authority





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Concurrent to the SR 874 / Killian Parkway interchange project, construction of the SR 874 ORT infrastructure was completed. ORT was implemented on SR 874 and SR 878 on July 17, 2010.

FY 2011 transactions and revenue increased by 226.6 percent and 7.4 percent respectively, as a result of the first full year of ORT on the expressway. Beginning on July 17, 2010, two additional tolling points were added as a part of the conversion in order to eliminate un-tolled movements on the expressway. SunPass® customers traveling on SR 874 continued paying the same amount of tolls for the full length trip; however the total toll amount was split between three gantries. As a result, the total number of transactions on the expressway more than tripled beginning in August 2010 while the revenues increased by 7.4 percent due to the capturing of previously un-tolled movements.

Compared to FY 2011, FY 2012 transactions increased by 4.8 percent while revenue decreased by 6.5 percent. This decrease in revenue can largely be attributed to the timing of toll collection. As previously mentioned, there is a longer collection process involved with Toll-by-Plate billing. Another factor for the revenue decline is the increase in SunPass® market penetration from 84.2 percent in FY 2011 to 85.1 percent in FY 2012. SunPass® customers pay less than the previous cash toll rate on the expressway, which results in a slight decrease in revenues collected.

On SR 874, transaction grew by 2.8 percent in FY 2013 despite two ongoing construction projects. The first was the widening of SR 874 north of Kendall Drive and the second was the reconfiguration of the SR 874 interchange with the HEFT. The significant revenue increase over FY 2012 of 12.4 percent is primarily due to improved collection of Toll-by-Plate toll revenue.

During the first four months of FY 2014, transactions increased by 2.6 percent while revenue decreased by 7.3 percent. This is the result of the Authority transitioning to a new Toll-by-Plate transaction processing vendor in mid-September 2013. During this transition period, MDX has stopped sending Toll-by-Plate transaction data to its former vendor, resulting in a decrease of invoices mailed to customers and a halt in the processing of I-Toll transactions, or SunPass® transactions initially classified as Toll-by-Plate transactions. This condition is temporary as the transaction data is transitioned to a new billing provider. This transition has delayed billing of Toll-by-Plate customers, resulting in collectible revenue that was slightly lower in September 2013 and significantly lower in October 2013 versus the prior year. These decreases are most notable on MDX's existing ORT expressways since the percent of transactions that are Toll-by-Plate is considerably higher. These year-over-year decreases are expected to be temporary, with Toll-by-Plate billing and I-Toll transaction processing resuming in 2014. Moreover, it is anticipated that the backlog of unbilled Toll-by-Plate transactions and unprocessed I-Toll transactions will produce greater collectible revenues in second half of FY 2014 when compared to the same months in FY 2013.

## SR 878 – Snapper Creek Expressway

Table 2-6 provides monthly transactions and gross toll revenue for SR 878. SR 878 was converted to ORT on July 17, 2010. Prior to the implementation of ORT, SR 878 was un-tolled. During FY 2011, the first year the expressway was tolled, transactions and revenue reached 24.6 million and $6.7 million respectively. In FY 2012, transactions increased by 8.1 percent while revenue decreased by 2.6 percent. This revenue decline can be attributed to customers switching to the SunPass® method of payment to take advantage of lower toll rates and the delay in invoicing Toll-by-Plate customers, which was previously discussed. SunPass® market penetration increased from 84.1 percent in FY 2011 to 88.9 percent in FY 2012.





**Table 2-6**
**Monthly Transactions and Toll Revenue Trends**
**SR 874 - Snapper Creek Expressway**
**FY 2006 Through FY 2014 [1]**

**Transactions**

| Month | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 |
|---|---|---|---|---|---|---|---|
| July | 891,967 | 130.5 [2] | 2,056,072 | 3.0 | 2,118,077 | 1.3 | 2,145,891 |
| August | 1,988,840 | 7.2 | 2,132,239 | 2.4 | 2,183,830 | 2.0 | 2,227,833 |
| September | 2,061,553 | 4.0 | 2,144,901 | 0.1 | 2,146,330 | (0.4) | 2,136,884 |
| October | 2,160,835 | 1.8 | 2,199,430 | 5.4 | 2,318,808 | 0.3 | 2,325,518 |
| November | 2,119,798 | 3.4 | 2,191,630 | 1.5 | 2,223,946 | - | - |
| December | 2,187,933 | 4.1 | 2,277,701 | (0.7) | 2,260,842 | - | - |
| January | 2,142,003 | 6.0 | 2,271,298 | 0.3 | 2,278,631 | - | - |
| February | 2,076,385 | 7.9 | 2,240,787 | (4.0) | 2,151,033 | - | - |
| March | 2,328,545 | 2.7 | 2,390,505 | (2.1) | 2,340,693 | - | - |
| April | 2,257,767 | (1.9) | 2,215,505 | 5.2 | 2,330,403 | - | - |
| May | 2,236,567 | 3.4 | 2,312,565 | 2.4 | 2,368,710 | - | - |
| June | 2,164,723 | 1.2 | 2,190,483 | (1.0) | 2,169,416 | - | - |
| Total | 24,616,916 | 8.1 | 26,623,116 | 1.0 | 26,890,719 | 0.8 [3] | 8,836,126 |

**Collectible Toll Revenue - Excluding Fee Revenue**

| Month | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 |
|---|---|---|---|---|---|---|---|
| July | $ 235,568 | 113.5 [2] | $502,889 | 5.1 | $ 528,699 | 11.5 | $ 589,444 |
| August | 598,742 | (14.9) | 509,702 | 16.4 | 593,257 | 1.5 | 602,051 |
| September | 624,796 | (17.0) | 518,659 | 11.9 | 580,530 | (6.1) | 545,370 |
| October | 575,644 | (8.5) | 526,937 | 21.8 | 641,795 | (39.2) | 390,478 |
| November | 569,564 | (8.3) | 522,311 | 8.3 | 565,640 | - | - |
| December | 589,468 | (8.0) | 542,298 | 14.3 | 619,740 | - | - |
| January | 553,672 | (0.5) | 550,762 | 11.3 | 612,791 | - | - |
| February | 542,898 | 0.3 | 544,497 | 2.8 | 559,901 | - | - |
| March | 615,628 | (4.2) | 589,497 | 4.5 | 615,870 | - | - |
| April | 601,322 | (6.2) | 563,847 | 1.9 | 574,705 | - | - |
| May | 597,656 | (3.5) | 576,853 | 3.4 | 596,245 | - | - |
| June | 577,755 | (3.2) | 559,334 | (1.0) | 553,730 | - | - |
| Total | $ 6,682,712 | (2.6) | $ 6,507,585 | 8.2 | $ 7,042,903 | (9.3) [3] | $ 2,127,343 |

[1] Fiscal year represents 12 months beginning July 1 and ending June 30.
[2] Snapper Creek Parkway converted to all-electronic toll collection on July 17, 2010.
[3] Represents the percent change in fiscal year 2014 year-to-date versus same period in prior fiscal year.
Annual revenue excludes revenue recovered through violation enforcement.
Source: Miami-Dade Expressway Authority

During FY 2013, transactions may have been negatively affected by the SR 874 widening project, as construction was beginning in the area of the Kendall Drive Interchange on SR 874. Overall transaction growth in FY 2013 was 1.0 percent. The significant revenue increase over FY 2012 of 8.2 percent was primarily due to improved collection of Toll-by-Plate toll revenues.

During the first four months of FY 2014, transactions increased by a modest 0.8, while revenue decreased by 9.3 percent, compared with FY 2013. Again, this is the result of the Authority transitioning to a new Toll-by-Plate transaction processing vendor in mid-September 2013. During this transition period, MDX has stopped sending Toll-by-Plate transaction data to its former vendor, resulting in a decrease of invoices mailed to customers. The transaction data will be transitioned to a new billing provider, which has delayed billing of Toll-by-Plate customers. This temporary condition has resulted in reductions in collectible revenue in September and October compared with September and October of FY 2012.

## Total MDX System

Table 2-7 provides monthly transactions and gross toll revenue for the MDX System, with all toll plazas combined. As previously mentioned, FY 2006 transactions and revenue in October 2005 were affected by hurricane-related toll suspensions. The entire system enjoyed positive growth in transactions and revenues during FY 2007 and FY 2008; however FY 2009 was affected by the economic recession, which resulted in fewer trips on the MDX System during the year.

During FY 2010, system-wide transactions increased by 1.1 percent while revenue remained relatively flat compared to FY 2009. This slow growth can be attributed to the continued economic recession and construction activity during the year in preparation for the ORT conversion on several expressways. SR 924 converted to ORT in June 2010, which resulted in a significant increase in transactions for that month.

In FY 2011, transactions and revenue increased by 87.5 percent and 12.4 percent, respectively, due to the first full year of ORT on SR 924 and SR 874 and the tolling of SR 878. Transactions increased by 5.7 percent in FY 2012 while revenue declined by 0.7 percent. As previously mentioned, this revenue decline can be attributed to the timing of toll revenue collection as a result of ORT implementation, as well as the effects of customers taking advantage of lower toll rates by switching to the SunPass® method of payment.

During FY 2013, transactions and revenue have increased by 2.1 percent and 7.2 percent, respectively, compared to FY 2012. The significant increase in revenue is again attributed to the increase in transactions and improvements in toll collection in FY 2013.

Systemwide transactions during the first four months of FY 2014 increased by 2.7 percent, while collectible revenue is 4.2 percent lower, compared with FY 2013. This is despite a systemwide increase in Toll-by-Plate tolls from a $0.15 surcharge over the SunPass® toll rate to double the SunPass® toll rate. Again, this is the result of the Authority transitioning to a new Toll-by-Plate transaction processing vendor in mid-September 2013. During this transition period, MDX has stopped sending Toll-by-Plate transaction data to its former vendor, resulting in a decrease of invoices mailed to customers. The transaction data will be transitioned to a new billing provider, which has delayed billing of Toll-by-Plate customers. This temporary condition has resulted in reductions in collectible revenue in September and October compared with September and October of FY 2012.



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**Table 2-7**
**Monthly Transactions and Toll Revenue Trends**
**Total MDX System**
**FY 2006 Through FY 2014 [1]**

**Transactions**

| Month | FY 2006 [1] | Percent Change | FY 2007 | Percent Change | FY 2008 [3] | Percent Change | FY 2009 | Percent Change | FY 2010 | Percent Change | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| July | 5,778,265 | (1.5) | 5,692,724 | 75.1 | 9,966,371 | (3.7) | 9,592,776 | 2.9 | 9,866,554 | 42.7 | 14,076,832 [5] | 32.1 | 18,596,316 | 4.2 | 19,369,340 | 0.9 | 19,551,596 |
| August | 5,696,660 | (0.6) | 5,662,322 | 78.9 | 10,128,202 | (9.5) | 9,167,824 | 5.8 | 9,702,152 | 86.0 | 18,048,862 | 5.5 | 19,049,426 | 2.0 | 19,422,085 | 4.2 | 20,243,075 |
| September | 5,443,448 | 6.2 | 5,780,902 | 58.6 | 9,169,821 | 2.2 | 9,367,053 | 0.7 | 9,428,735 | 89.4 | 17,860,117 | 5.4 | 18,817,413 | 0.3 | 18,872,113 | 2.4 | 19,331,373 |
| October | 4,170,843 | 49.0 | 6,212,611 | 60.1 | 9,946,199 | (0.8) | 9,871,390 | 1.1 | 9,979,660 | 90.0 | 18,960,225 | 0.7 | 19,084,364 | 6.2 | 20,264,122 | 3.0 | 20,874,352 |
| November | 5,707,908 | 4.6 | 5,967,641 | 62.3 | 9,686,955 | (3.5) | 9,349,175 | 0.1 | 9,356,646 | 96.2 | 18,353,500 | 3.7 | 19,036,737 | 2.7 | 19,556,166 | - | - |
| December | 5,947,120 | 1.6 | 6,044,122 | 62.7 | 9,836,714 | 0.4 | 9,875,968 | (1.0) | 9,780,798 | 90.4 | 18,620,906 | 5.0 | 19,556,370 | 0.1 | 19,570,944 | - | - |
| January | 5,982,644 | 4.9 | 6,278,319 | 57.9 | 9,911,144 | (1.5) | 9,766,451 | (2.1) | 9,560,877 | 94.6 | 18,609,957 | 5.5 | 19,635,345 | 2.2 | 20,075,664 | - | - |
| February | 5,654,636 | 4.4 | 5,904,268 | 64.7 | 9,727,256 | (4.8) | 9,264,049 | (0.7) | 9,194,670 | 94.5 | 17,886,790 | 6.8 | 19,098,802 | (1.1) | 18,889,077 | - | - |
| March | 6,511,763 | 2.4 | 6,670,277 | 55.1 | 10,343,787 | 0.4 | 10,389,286 | (0.1) | 10,375,138 | 94.3 | 20,162,058 | 2.8 | 20,733,271 | 1.1 | 20,969,795 | - | - |
| April | 5,983,683 | 3.3 | 6,182,076 | 63.2 | 10,086,851 | (0.6) | 10,026,186 | (2.6) | 9,769,732 | 96.8 | 19,222,781 | 0.8 | 19,377,603 | 5.7 | 20,473,617 | - | - |
| May | 6,126,397 | 3.9 | 6,365,712 | 58.8 | 10,110,657 | (2.2) | 9,892,589 | (0.4) | 9,852,559 | 96.3 | 19,342,437 | 4.4 | 20,202,944 | 2.2 | 20,657,068 | - | - |
| June | 5,815,503 | 2.6 | 5,964,563 | 57.2 | 9,376,693 | 1.9 | 9,558,116 | 10.2 | 10,536,694 [4] | 80.0 | 18,967,814 | 2.6 | 19,466,766 | (0.2) | 19,426,155 | - | - |
| Total | 68,818,870 | 5.7 | 72,725,537 | 62.7 | 118,290,650 | (1.8) | 116,120,863 | 1.1 | 117,404,215 | 87.5 | 220,112,279 | 5.7 | 232,655,357 | 2.1 | 237,546,146 | 2.7 [6] | 80,000,396 |
| YTD Total | 21,089,216 | 10.7 | 23,348,559 | 67.9 | 39,210,593 | (3.1) | 37,999,043 | 2.6 | 38,977,101 | 76.9 | 68,946,036 | 9.6 | 75,547,519 | 3.2 | 77,927,660 | 2.7 | 80,000,396 |

**Collectible Toll Revenue - Excluding Fee Revenue**

| Month | FY 2006 [2] | Percent Change | FY 2007 | Percent Change | FY 2008 [3] | Percent Change | FY 2009 | Percent Change | FY 2010 | Percent Change | FY 2011 | Percent Change | FY 2012 | Percent Change | FY 2013 | Percent Change | FY 2014 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| July | $ 6,251,778 | 0.3 | $ 6,269,413 | 46.3 | $ 9,173,367 | (1.2) | $ 9,066,741 | 2.2 | $ 9,270,539 | 3.3 | $ 9,575,768 [5] | 0.9 | $ 9,662,010 | 7.1 | $ 10,351,034 | 9.4 | $ 11,325,895 |
| August | 6,396,450 | (2.8) | 6,219,254 | 53.4 | 9,539,077 | (10.0) | 8,583,749 | 5.8 | 9,080,671 | 11.6 | 10,134,797 | (2.7) | 9,864,543 | 11.9 | 11,033,851 | 4.5 | 11,534,662 |
| September | 5,893,244 | 8.0 | 6,366,447 | 37.2 | 8,736,420 | 0.8 | 8,810,254 | 1.5 | 8,939,342 | 10.0 | 9,833,508 | (0.9) | 9,747,598 | 10.3 | 10,748,578 | (1.5) | 10,589,744 |
| October | 4,563,270 | 48.0 | 6,755,090 | 38.9 | 9,381,550 | (1.7) | 9,222,389 | 1.5 | 9,359,599 | 12.0 | 10,486,171 | (6.3) | 9,824,866 | 17.6 | 11,556,339 | (27.4) | 8,391,465 |
| November | 6,016,814 | 8.3 | 6,518,166 | 40.2 | 9,136,452 | (3.9) | 8,780,474 | (1.1) | 8,688,257 | 16.8 | 10,146,297 | (3.5) | 9,793,712 | 8.0 | 10,577,035 | - | - |
| December | 6,488,873 | 3.3 | 6,702,545 | 37.9 | 9,242,574 | 1.2 | 9,352,485 | (2.0) | 9,167,647 | 12.5 | 10,311,052 | (3.6) | 9,944,304 | 11.3 | 11,070,723 | - | - |
| January | 6,523,068 | 5.4 | 6,878,156 | 36.2 | 9,371,032 | (2.5) | 9,135,409 | (2.5) | 8,905,844 | 13.0 | 10,067,776 | 0.7 | 10,137,833 | 8.3 | 10,982,154 | - | - |
| February | 6,256,272 | 3.2 | 6,459,576 | 42.6 | 9,208,497 | (5.2) | 8,733,405 | (1.5) | 8,604,421 | 12.8 | 9,708,868 | 2.7 | 9,972,128 | 3.1 | 10,282,048 | - | - |
| March | 7,162,149 | 1.3 | 7,255,073 | 34.3 | 9,745,106 | 0.5 | 9,792,806 | (0.7) | 9,725,189 | 12.9 | 10,982,563 | 0.8 | 11,066,339 | 4.3 | 11,544,910 | - | - |
| April | 6,570,906 | 3.4 | 6,795,725 | 41.4 | 9,609,953 | (2.0) | 9,413,775 | (3.1) | 9,121,731 | 15.2 | 10,510,406 | 0.0 | 10,512,747 | 3.0 | 10,827,345 | - | - |
| May | 6,743,267 | 3.7 | 6,994,259 | 36.5 | 9,544,600 | (3.6) | 9,198,826 | (0.8) | 9,128,386 | 15.2 | 10,514,963 | 2.6 | 10,788,477 | 1.8 | 10,978,420 | - | - |
| June | 6,670,782 | (1.9) | 6,541,213 | 35.1 | 8,834,232 | 2.6 | 9,065,072 | 0.7 | 9,129,461 [4] | 14.0 | 10,411,293 | 0.7 | 10,485,236 | 1.5 | 10,639,561 | - | - |
| Total | $ 75,536,872 | 5.6 | $ 79,754,916 | 39.8 | $ 111,522,859 | (2.1) | $ 109,155,385 | (0.0) | $ 109,121,086 | 12.4 | $ 122,683,461 | (0.7) | $ 121,799,795 | 7.2 | $ 130,591,998 | (4.2) [6] | $ 41,841,766 |
| YTD Total | 23,104,742 | 10.8 | 25,610,204 | 43.8 | 36,830,415 | (3.1) | 35,683,134 | 2.7 | 36,650,150 | 9.2 | 40,030,243 | (2.3) | 39,099,017 | 11.7 | 43,689,802 | (4.2) | 41,841,766 |

[1] Fiscal year represents 12 months beginning July 1 and ending June 30.
[2] Cash tolls increased by $0.25 systemwide; SunPass nominal rates unchanged.
[3] Tolling on new mainline toll plaza on SR 836 west of NW 97th Avenue and Extension to NW 137th Avenue begins July 1, 2007.
[4] Gratigny Parkway converted to all-electronic toll collection on June 7, 2010.
[5] Don Shula Parkway and Snapper Creek Parkway converted to all-electronic toll collection on July 17, 2010.
[6] Represents the percent change in fiscal year 2014 year-to-date versus same period in prior fiscal year. Annual revenue excludes revenue recovered through violation enforcement.

Source: Miami-Dade Expressway Authority



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## SunPass® Market Penetration Trends

Electronic toll collection was implemented on the MDX System in 1999. Referred to as SunPass®, the electronic toll account management system is operated by Florida's Turnpike Enterprise.

As shown in Figure 2-2, SunPass® market penetration has steadily increased since 2005. The SunPass® market shares are shown for each of the five expressways, on a monthly basis between July 2005 and October 2013, the latest month for which actual data was available. SunPass® use has increased steadily over the years. In July 2005, the SunPass® share ranged from about 51 to 61 percent, depending on expressway, with about half of customers still preferring to use cash.

The SunPass® market share increased in 2005, particularly around the time of the July 2005 toll increase. While both cash and SunPass® rates were increased, many motorists not yet in the SunPass® program were able to avoid the increase altogether by simply shifting from cash to SunPass®.

On a system-wide basis, SunPass® market penetration continued to gradually increase, reaching almost 66 percent by June 2007. In the same month, SunPass® market penetration on SR 836 was 64 percent. With the opening of the SunPass®-only SR 836 Extension and the 97th Avenue mainline toll plaza on SR 836 in late June 2007, SunPass® market penetration on SR 836 increased to almost 77 percent. System-wide market penetration rose to more than 72 percent.

Between January and July of 2010, SunPass® market penetration rates on SR 874 significantly increased from 70 to 75 percent and on SR 924 from 80 to 84 percent due to deliberate marketing of SunPass® by MDX in preparation of the ORT conversion.

By June 2012, SunPass® market penetration system-wide increased to 84 percent. SunPass® market penetration continued to increase as customers choose to take advantage of the lower SunPass® toll rates instead of the Toll-by-Plate payment method. In FY 2012, the highest SunPass® market penetration was on SR 878, while the lowest continued to be on SR 112. SR 112 is the lowest possibly due to the presence of a significant number of less frequent users, generally associated with travel to and from Miami International Airport.

In FY 2013, the SunPass® market penetration system-wide increased slightly from 84.0 percent in FY 2012 to 84.2 percent. Cash transactions decreased by 0.3 percent from 4.7 percent in FY 2012 to 4.4 percent, while Toll-by-Plate transactions increased by a slight 0.1 percent to 11.4 percent. The highest SunPass® market penetration was on SR 878, while the lowest continued to be on SR 112. SR 112 is the lowest possibly due to the presence of a significant number of less frequent users, generally associated with travel to and from MIA.

The trends observed in FY 2013 have generally continued in FY 2014. However, SunPass® market penetration rates decreased most significantly in October 2013, due to the Authority transitioning to a new Toll-by-Plate transaction processing vendor in mid-September 2013. During this transition period, MDX has stopped sending Toll-by-Plate transaction data to its former vendor, resulting in a halt in the processing of I-Toll transactions, or SunPass® transactions initially classified as Toll-by-Plate transactions. As a result in the percent of transactions classified as SunPass® has decreased as the unprocessed I-Toll transactions have not been included in the total. This condition is temporary as the transaction data is transitioned to a new billing provider. These SunPass® participation rate decreases are expected to be temporary, with I-Toll transaction processing resuming in 2014.



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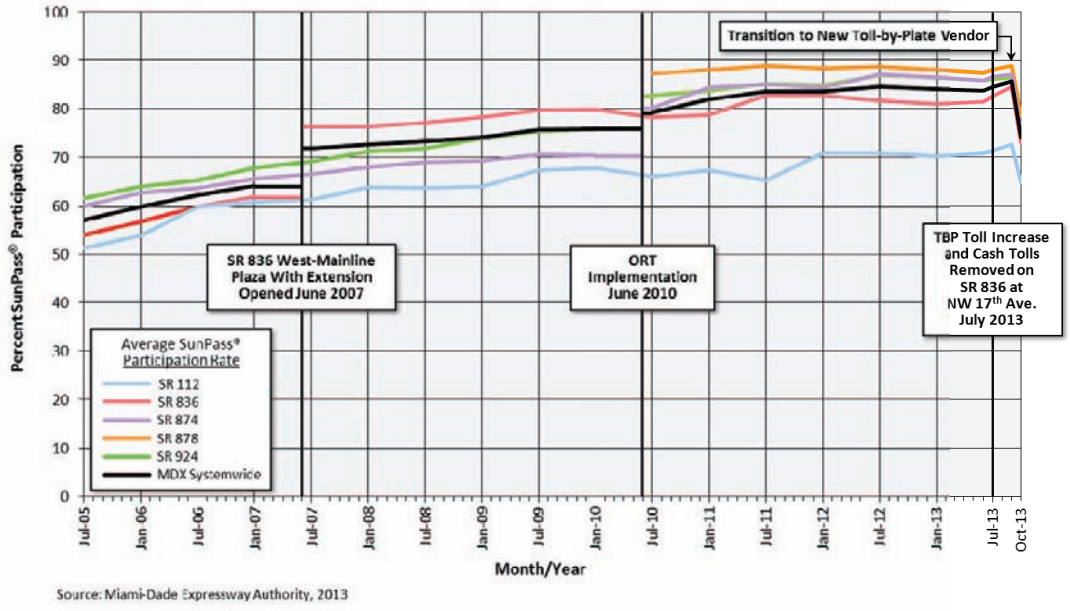


Source: Miami-Dade Expressway Authority, 2013

**SUNPASS® MARKET PENETRATION TRENDS**

FIGURE 2-2





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## MDX System Transactions by Vehicle Class and Payment Type

Figure 2-3 and Table 2-8 present a summary of the distribution of system-wide annual transactions by vehicle class and payment type for FY 2013. As presented, two-axle vehicles, which include passenger cars, vans and SUVs, comprised 98.1 percent of total transactions. Vehicles with three or more axles, which include trucks, buses and other commercial vehicles, comprised 1.9 percent of total transactions. These numbers are consistent with percentages observed in prior years.

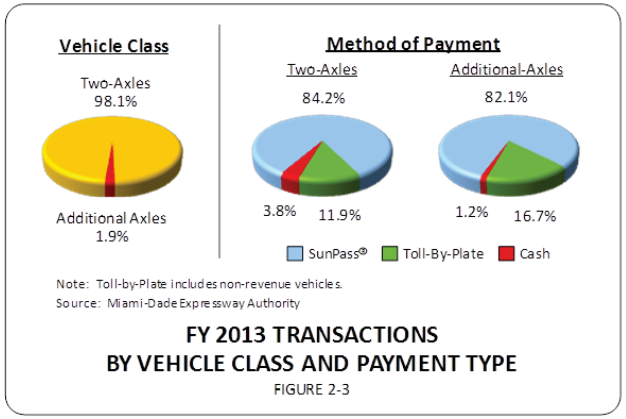


FIGURE 2-3

On an annual basis, 84.2 percent of all transactions were made using SunPass®, 3.8 percent were made using cash and 11.4 percent were Toll-by-Plate. Looking at SunPass® market penetration rates by vehicle type, a higher proportion of passenger vehicles used SunPass® in FY 2013 than commercial vehicles. Of the 4.5 million three-or-more-axle vehicle transactions, 82.1 percent were SunPass®, 1.2 percent were Cash and 16.7 percent were Toll-by-Plate. Approximately 84.2 percent of transactions by two-axle vehicles were SunPass®, 3.8 percent were Cash and 11.3 percent were Toll-by-Plate.

Use of SunPass® also varied within the three-or-more-axle vehicle category. SunPass® use by five-or-more-axle vehicles, which are generally 18-wheel tractor trailer trucks and other heavy commercial vehicles, was 79.9 percent in FY 2013. This was lower than the SunPass® market penetration among two-axle vehicles by almost 5 percent. SunPass® market penetration among three-axle vehicles, which includes delivery trucks, motor homes and other light commercial vehicles, was 82.6 percent. The highest SunPass® market penetration rate within the commercial vehicle category was in the four-axle category with 83.8 percent.





**Table 2-8**
**Transactions by Vehicle Class and Payment Type**
**FY 2013**

| Vehicle Class | | Transactions | | | | | Percent of Total |
|---|---|---|---|---|---|---|---|
| | | SunPass | Cash | Toll-by-Plate | Non-Revenue | Total | |
| 2 Axles | Number | 196,195,182 | 8,932,665 | 26,392,521 | 1,509,684 | 233,030,052 | **98.1%** |
| | % of Class | 84.2% | 3.8% | 11.3% | 0.6% | 100.0% | |
| 3 Axles | Number | 1,669,456 | 17,625 | 333,264 | 0 | 2,020,345 | **0.9%** |
| | % of Class | 82.6% | 0.9% | 16.5% | 0.0% | 100.0% | |
| 4 Axles | Number | 923,943 | 7,420 | 171,304 | 0 | 1,102,666 | **0.5%** |
| | % of Class | 83.8% | 0.7% | 15.5% | 0.0% | 100.0% | |
| 5 or More Axles | Number | 1,112,395 | 30,128 | 250,557 | 0 | 1,393,080 | **0.6%** |
| | % of Class | 79.9% | 2.2% | 18.0% | 0.0% | 100.0% | |
| **Total** | **Number** | **199,900,975** | **8,987,838** | **27,147,646** | **1,509,684** | **237,546,143** | **100.0%** |
| | **% of Class** | **84.2%** | **3.8%** | **11.4%** | **0.6%** | **100.0%** | |

Source: Miami-Dade Expressway Authority

# Chapter 3
# Traffic Data Collection

Since the last investment grade study was conducted in 2010, a number of significant changes have occurred on the Miami-Dade Expressway Authority (MDX) system. These include the conversion of the Don Shula Expressway (SR 874), the Snapper Creek Expressway (SR 878), and the Gratigny Parkway (SR 924) to Open Road Tolling (ORT). Several expressways have also been widened or have had interchange reconfigurations. In addition, traffic volumes and potentially traffic patterns have continued to fluctuate with changes in the state and national economy. Due to these changes, updated traffic data were needed to inform the travel demand modeling effort and provide a context for developing the traffic and revenue forecasts.

To support the technical analysis for this investment-grade traffic and revenue study, CDM Smith constructed a data collection plan, including:

- Traffic counts at mainline and ramp locations along each of the MDX expressways;
- Interchange-to-interchange movements on SR 836 and SR 112 observed using Bluetooth technology; and
- Roadway travel time and speed data collected from travel time runs performed by CDM Smith personnel on the MDX Expressway System and INRIX data for all of 2011 for the MDX System and major competing and complimentary roadways.

This chapter discusses the data collection efforts and provides summaries of the more relevant traffic data findings.

## Overview of Traffic Data Collection Program

Three primary forms of traffic data were collected as part of this study effort. These data were traffic counts, interchange-to-interchange movements and roadway travel time and speed data. Each of these data elements were necessary for developing the travel demand model and the traffic and revenue forecasts.

Toll transaction and revenue data supplied by MDX at toll plaza/gantry locations were supplemented by 2012 traffic count data from Florida Department of Transportation (FDOT) and new traffic counts conducted in August and September 2013 on the MDX Expressways and at other key locations. The traffic count data collected were used to develop a balanced Fiscal Year (FY) 2013 traffic profile for each MDX Expressway, providing traffic volumes for every mainline segment and ramp. These FY 2013 traffic profiles were compared against FY 2013 traffic assignments during the model calibration task of the study.

In order to ensure that the traffic demand model properly reflected not only FY 2013 volumes, but also major expressway movements for SR 112 and SR 836, a matrix of interchange-to-interchange movements was required for each expressway. CDM Smith collected interchange-to-interchange movement data using BluFAX Bluetooth readers. The BluFAX technology used wireless Bluetooth technology to detect devices with Bluetooth capabilities inside of a traveling vehicle. The BluFAX





Bluetooth readers were mounted on streetlights or signposts at strategic locations in order to observe trips on SR 836 and SR 112. The trip pattern of each vehicle was then determined based on the specific BluFAX Bluetooth readers at which it was detected. Using this information, interchange-to-interchange movement matrices were developed for SR 836 and SR 112. These matrices would be used to develop the balanced traffic profile in areas where traffic counts were unavailable, to adjust specific movements within the travel demand model trip tables and to analyze the movements that might be impacted by the conversion to Full ORT.

Lastly, CDM Smith collected speed data from three sources: the 2011 INRIX speed database provided by FDOT, travel time runs conducted by CDM Smith in August 2013 and TTI data on I-95, I-195 and SR 826 available from FDOT. The speed data collected covered the major expressways and arterials in Miami-Dade County as well as the major competing arterials for SR 836 and SR 112. Given that slower speeds increase travel times and influence the choice of route, the collection of travel time and speed data was essential to the calibration of the updated model. Free-flow speed data collected from these sources served as an input into the travel demand model while the traffic assignment results were compared against actual congested speed data.

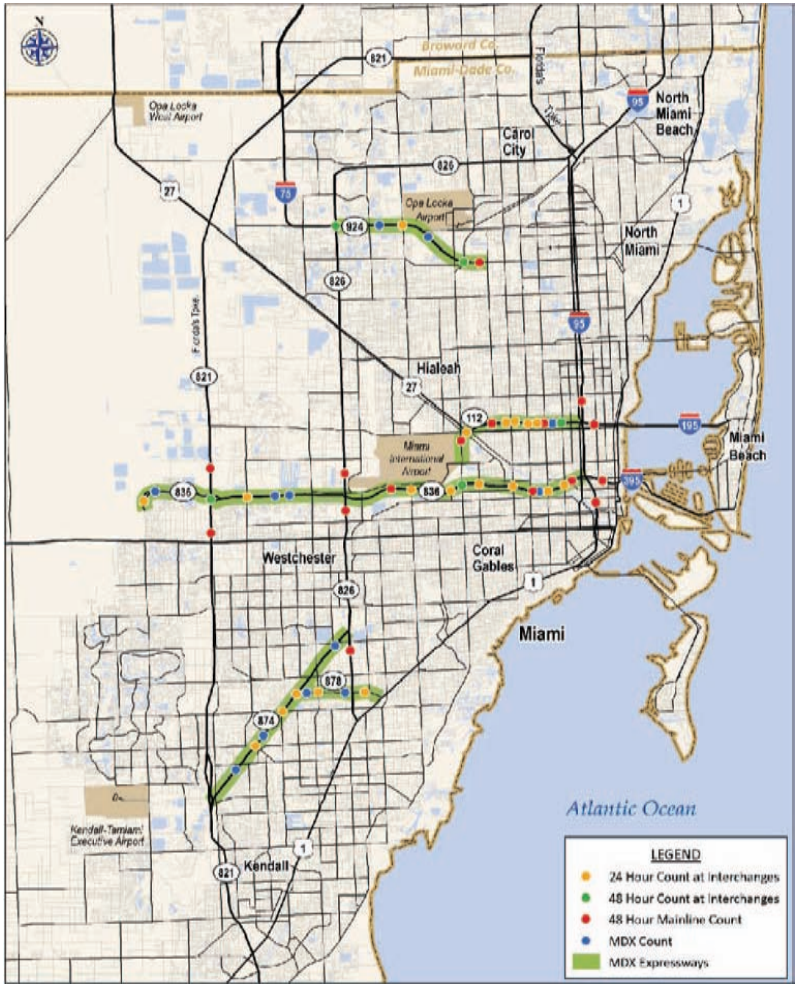
## Traffic Count Program

The traffic assignment output from the SERPM 6.5.3 model used in the traffic and revenue forecasting process is annual average daily traffic (AADT) volumes. As part of the model calibration process, developing a balanced traffic profile of FY 2013 AADT volumes for each MDX Expressway ramp and mainline section was considered an important study element in order to compare the model's traffic assignment output with actual traffic volumes. In addition, developing annual average weekday traffic (AAWT) volumes were also important in order to prepare estimates of the traffic and revenue impacts associated with alternative pricing strategies.

In order to develop these profiles, new traffic counts were conducted by Florida Transportation Engineering (FTE) during August and September 2013 on MDX Expressway mainlines and ramps and at other key locations, as shown in Figure 3-1. Mainline traffic volume and classification counts were conducted for 48-hours, both on internal weekdays (Tuesday through Thursday) and on weekends. Traffic volume counts were also conducted on all MDX Expressway ramps on internal weekdays for 24-hours or 48-hours, depending on location. Due to construction activity, no counts were collected on SR 836 between the NW 87th Avenue mainline plaza and NW 57th Avenue or on the SR 874 southbound exit ramp to Kendall Drive. Detailed count location descriptions, count dates and the traffic volumes resulting from this data collection effort are summarized in Table 3-1.

Using the data collected, CDM Smith estimated both FY 2013 AWDT volumes and AADT volumes, which are shown in Table 3-1. Since the traffic counts performed were collected on weekdays, they were first adjusted to AWDT volumes and then to AADT volumes for model calibration.

In order to obtain AWDT volumes, the raw weekday traffic volumes collected at each location were multiplied by seasonal adjustment factors to bring them to annual levels. These seasonal adjustment factors were developed based on FY 2013 monthly transaction data at the MDX mainline toll locations and 2012 monthly variations observed at FDOT permanent count stations. The resulting AWDT volumes were then balanced as part of the development of the balanced traffic profiles. The balanced traffic profiles also provided CDM Smith with the average hourly distribution of traffic on each mainline and ramp. This information was also used later in the study for developing estimated traffic and revenue impacts associated with the various alternative pricing strategies considered.




**TRAFFIC COUNT LOCATIONS**

FIGURE 3-1

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**Table 3-1**
**Traffic Count Locations**

| Location Number | Roadway | Dir. | Ramp or Mainline | Location | Source | Count Dates | Raw Weekday Volumes [1] | AWDT [2] | Balanced AWDT | AWDT to AADT Factor | Balanced AADT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 21 | SR 112 | EB | Mainline | West of NW 42nd Ave | FTE | 8/13-8/14/2013 | 11,146 | 11,477 | 10,550 | 0.928 | 9,790 |
| 22 | SR 112 | WB | Mainline | West of NW 42nd Ave | FTE | 8/13-8/14/2013 | 11,587 | 11,932 | 10,970 | 0.923 | 10,130 |
| 23 | SR 112 | WB | Exit | Le Jeune Road / NW 42nd Avenue SB | FTE | 8/7/2013 | 18,701 | 19,257 | 16,420 | 0.920 | 15,100 |
| 24 | SR 112 | EB | Entrance | Le Jeune Road / NW 42nd Avenue NB | FTE | 8/6/2013 | 12,720 | 13,098 | 10,920 | 0.919 | 10,040 |
| 25 | SR 112 | EB | Entrance | NW 36th Street EB | FTE | 8/6/2013 | 15,110 | 15,560 | 12,900 | 0.914 | 11,790 |
| 26 | SR 112 | WB | Exit | NW 36th Street WB | FTE | 8/7/2013 | 13,746 | 14,155 | 12,070 | 0.916 | 11,060 |
| 27 | SR 112 | EB | Entrance | US 27 / S Okeechobee Road SB | FTE | 8/7/2013 | 15,485 | 15,946 | 13,340 | 0.911 | 12,150 |
| 28 | SR 112 | WB | Exit | US 27 / S Okeechobee Road NB | FTE | 8/7/2013 | 14,968 | 15,413 | 13,150 | 0.924 | 12,150 |
| 29 | SR 112 | EB | Mainline | Between NW 42nd Avenue and NW 27th Avenue | FTE | 8/7-8/8/2013 | 51,280 | 52,806 | 47,710 | 0.918 | 43,780 |
| 30 | SR 112 | WB | Mainline | Between NW 27th Avenue and NW 42nd Avenue | FTE | 8/13-8/14/2013 | 52,599 | 54,163 | 52,610 | 0.921 | 48,450 |
| 31 | SR 112 | EB | Exit | NW 27th Avenue | FTE | 8/6/2013 | 5,171 | 5,325 | 5,460 | 0.919 | 5,020 |
| 32 | SR 112 | EB | Entrance | NW 27th Avenue SB | FTE | 8/6/2013 | 1,113 | 1,146 | 910 | 0.912 | 830 |
| 33 | SR 112 | WB | Exit | NW 27th Avenue | FTE | 8/7/2013 | 8,569 | 8,824 | 8,650 | 0.925 | 8,000 |
| 34 | SR 112 | WB | Entrance | NW 27th Avenue | FTE | 8/7/2013 | 5,321 | 5,479 | 4,450 | 0.921 | 4,100 |
| 35 | SR 112 | EB | Entrance | NW 27th Avenue | FTE | 8/6/2013 | 5,051 | 5,201 | 4,250 | 0.911 | 3,870 |
| 39 | SR 112 | EB | Exit | NW 22nd Avenue | FTE | 8/7/2013 | 9,801 | 10,093 | 6,390 | 0.925 | 5,910 |
| 37 | SR 112 | EB | Entrance | NW 22nd Avenue | FTE | 8/7/2013 | 3,274 | 3,371 | 2,720 | 0.912 | 2,480 |
| 38 | SR 112 | WB | Exit | NW 22nd Avenue | FTE | 8/7/2013 | 5,251 | 5,407 | 5,210 | 0.925 | 4,820 |
| 36 | SR 112 | WB | Entrance | NW 22nd Avenue | FTE | 8/7/2013 | 5,851 | 6,025 | 8,300 | 0.919 | 7,630 |
| 40 | SR 112 | WB | Mainline | Between NW 17th Avenue and NW 22nd Avenue | FTE | 8/13-8/14/2013 | 56,729 | 58,417 | 53,720 | 0.922 | 49,530 |
| 41 | SR 112 | EB | Mainline | Between NW 17th Avenue and NW 12th Avenue - Toll Plaza | MDX | FY 2013 | 43,627 | 43,740 | 43,740 | 0.915 | 40,030 |
| 42 | SR 112 | WB | Exit | NW 17th Avenue via NW 40th Street | FTE | 8/7-8/8/2013 | 6,216 | 6,401 | 5,890 | 0.927 | 5,460 |
| 43 | SR 112 | EB | Exit | NW 12th Ave via NW 39th Street | FTE | 8/7-8/8/2013 | 1,263 | 1,301 | 1,200 | 0.908 | 1,090 |
| 48 | SR 836 | EB | Mainline | Between NW 137th Avenue and HEFT - Toll Gantry | MDX | FY 2013 | 11,083 | 10,932 | 10,930 | 0.909 | 9,930 |
| 49 | SR 836 | WB | Mainline | Between HEFT and NW 137th Avenue - Toll Gantry | MDX | FY 2013 | 12,594 | 12,341 | 12,340 | 0.952 | 11,750 |
| 50 | SR 836 | EB | Entrance | HEFT SB | FTE | 8/13-8/14/2013 | 8,070 | 7,976 | 8,410 | 0.933 | 7,850 |
| 51 | SR 836 | EB | Entrance | HEFT NB | FTE | 8/13-8/14/2013 | 29,584 | 29,239 | 30,780 | 0.923 | 28,420 |
| 52 | SR 836 | WB | Exit | HEFT NB | FTE | 8/13-8/14/2013 | 10,722 | 10,567 | 10,630 | 0.943 | 10,020 |
| 53 | SR 836 | WB | Exit | HEFT SB | FTE | 8/13-8/14/2013 | 36,454 | 35,926 | 37,770 | 0.953 | 36,010 |
| 54 | SR 836 | EB | Exit | NW 107th Avenue via Ramp to HEFT NB Exit Ramp | FTE | 8/13/2013 | 6,127 | 6,056 | 5,280 | 0.907 | 4,790 |
| 55 | SR 836 | EB | Entrance | NW 107th Avenue SB | FTE | 8/13/2013 | 8,563 | 8,463 | 8,860 | 0.959 | 8,500 |
| 56 | SR 836 | WB | Exit | HEFT / NW 107th Avenue SB | FTE | 8/13/2013 | 39,069 | 38,503 | 39,020 | 0.952 | 37,160 |
| 57 | SR 836 | WB | Exit | NW 107th Avenue SB via HEFT / NW 107th Avenue SB Ramp | FTE | 8/13/2013 | 4,929 | 4,858 | 5,080 | 0.955 | 4,850 |
| 58 | SR 836 | WB | Entrance | NW 107th Avenue via HEFT / NW 107th Avenue SB Ramp | FTE | 8/13/2013 | 10,813 | 10,656 | 10,720 | 0.945 | 10,130 |
| 63 | SR 836 | EB | Entrance | NW 107th Avenue NB | FTE | 8/13/2013 | 5,354 | 5,292 | 5,570 | 0.934 | 5,200 |
| 64 | SR 836 | EB | Ramp | Connect Ramp from Mainline to NW 107th Avenue NB Entry Ramp | FTE | 8/13/2013 | 2,881 | 2,847 | 2,750 | 0.938 | 2,580 |
| 65X | SR 836 | EB | Mainline | West of NW 97th Avenue - Toll Plaza | MDX | FY 2013 | 59,499 | 59,264 | 59,260 | 0.930 | 55,110 |
| 66X | SR 836 | WB | Mainline | West of NW 97th Avenue - Toll Plaza | MDX | FY 2013 | 65,198 | 62,071 | 62,070 | 0.953 | 59,170 |
| 90 | SR 836 | EB | Mainline | Between NW 72nd Avenue and NW 57th Avenue | FTE | 8/21-8/22/2013 | 95,296 | 93,557 | 95,250 | 0.940 | 89,540 |
| 91 | SR 836 | WB | Mainline | Between NW 57th Avenue and NW 72nd Avenue | FTE | 8/20-8/21/2013 | 99,890 | 97,927 | 103,890 | 0.952 | 98,880 |
| 92 | SR 836 | EB | Exit | NW 57th Avenue / Red Road | FTE | 8/14/2013 | 9,868 | 9,672 | 12,130 | 0.937 | 11,370 |
| 93 | SR 836 | EB | Entrance | NW 57th Avenue / Red Road | FTE | 8/14/2013 | 11,427 | 11,200 | 13,030 | 0.938 | 12,220 |
| 94 | SR 836 | WB | Exit | NW 57th Avenue / Red Road SB | FTE | 8/14/2013 | 11,158 | 10,924 | 12,110 | 0.943 | 11,420 |
| 95 | SR 836 | WB | Entrance | NW 57th Avenue / Red Road | FTE | 8/14/2013 | 12,714 | 12,448 | 11,630 | 0.945 | 10,990 |
| 96 | SR 836 | EB | Exit | NW 45th Avenue | FTE | 8/14/2013 | 5,045 | 4,936 | 4,490 | 0.949 | 4,260 |
| 97 | SR 836 | WB | Entrance | NW 45th Avenue | FTE | 8/14/2013 | 28,828 | 28,187 | 27,510 | 0.953 | 26,220 |
| 98 | SR 836 | EB | Exit | Le Jeune Road / NW 42nd Avenue SB | FTE | 8/14-8/15/2013 | 9,736 | 9,526 | 8,210 | 0.946 | 7,770 |
| 99 | SR 836 | EB | Exit | Le Jeune Road / NW 42nd Avenue NB | FTE | 8/14-8/15/2013 | 21,750 | 21,282 | 19,700 | 0.943 | 18,580 |

(1) For data provided by MDX, volumes represent actual average weekday volumes from October 2012.
(2) For data provied by MDX, AWDT volumes are actual FY 2013







**Table 3-1 (cont'd)**
**Traffic Count Locations**

| Location Number | Roadway | Dir. | Ramp or Mainline | Location | Source | Count Dates | Raw Weekday Volumes [1] | AWDT [2] | Balanced AWDT | AWDT to AADT Factor | Balanced AADT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | SR 836 | EB | Entrance | Le Jeune Road / NW 42nd Avenue SB | FTE | 8/14-8/15/2013 | 4,397 | 4,302 | 4,980 | 0.946 | 4,710 |
| 101 | SR 836 | EB | Entrance | Le Jeune Road / NW 42nd Avenue NB | FTE | 8/14-8/15/2013 | 6,107 | 5,976 | 7,020 | 0.934 | 6,560 |
| 102 | SR 836 | WB | Exit | Le Jeune Road / NW 42nd Avenue NB | FTE | 8/14-8/15/2013 | 5,921 | 5,789 | 6,930 | 0.957 | 6,630 |
| 103 | SR 836 | WB | Exit | Le Jeune Road / NW 42nd Avenue SB | FTE | 8/14-8/15/2013 | 6,696 | 6,547 | 7,590 | 0.955 | 7,250 |
| 88 | SR 836 | WB | Entrance | Le Jeune Road / NW 42nd Avenue SB | FTE | 8/14-8/15/2013 | 16,431 | 16,066 | 9,600 | 0.947 | 9,090 |
| 89 | SR 836 | WB | Ramp | Connect Ramp from MIA to NW 45th Avenue | FTE | 8/14/2013 | 27,218 | 26,613 | 26,610 | 0.952 | 25,320 |
| 104 | SR 836 | EB | Entrance | NW 37th Ave / Douglas Road | FTE | 8/14/2013 | 6,433 | 6,295 | 7,800 | 0.945 | 7,370 |
| 105 | SR 836 | WB | Exit | NW 37th Ave / Douglas Road | FTE | 8/14/2013 | 12,499 | 12,221 | 8,090 | 0.952 | 7,700 |
| 106 | SR 836 | EB | Ramp | NW 27th Avenue SB | FTE | 8/14/2013 | 14,685 | 14,345 | 11,360 | 0.946 | 10,750 |
| 107 | SR 836 | EB | Entrance | NW 27th Avenue SB | FTE | 8/14/2013 | 1,674 | 1,635 | 4,270 | 0.920 | 3,930 |
| 108 | SR 836 | EB | Exit | NW 27th Avenue NB | FTE | 8/14/2013 | 9,889 | 9,660 | 9,070 | 0.943 | 8,550 |
| 109 | SR 836 | EB | Entrance | NW 27th Avenue NB | FTE | 8/14/2013 | 2,720 | 2,657 | 3,160 | 0.937 | 2,960 |
| 110 | SR 836 | WB | Exit | NW 27th Avenue NB | FTE | 8/14/2013 | 3,821 | 3,731 | 4,090 | 0.954 | 3,900 |
| 111 | SR 836 | WB | Entrance | NW 27th Avenue NB | FTE | 8/14/2013 | 10,109 | 9,871 | 9,970 | 0.950 | 9,470 |
| 112 | SR 836 | WB | Exit | NW 27th Avenue SB | FTE | 8/14/2013 | 4,414 | 4,310 | 5,070 | 0.955 | 4,840 |
| 113 | SR 836 | WB | Entrance | NW 27th Avenue SB | FTE | 8/14/2013 | 9,422 | 9,200 | 8,960 | 0.951 | 8,520 |
| 114 | SR 836 | EB | Mainline | Between NW 17th Avenue and NW 12th Avenue - Toll Gantry | MDX | FY 2013 | 58,790 | 57,265 | 57,270 | 0.938 | 53,700 |
| 115 | SR 836 | WB | Mainline | Between NW 17th Avenue and NW 27th Avenue | FTE | 9/9-9/10/2013 | 61,066 | 59,550 | 80,110 | 0.953 | 76,340 |
| 116 | SR 836 | EB | Exit | NW 17th Avenue - Toll Gantry | MDX | FY 2013 | 10,815 | 13,224 | 13,220 | 0.930 | 12,300 |
| 117 | SR 836 | EB | Exit | NW 17th Avenue SB via NW 17th Avenue Exit Ramp | FTE | 8/15/2013 | 4,242 | 4,137 | 4,530 | 0.945 | 4,280 |
| 118 | SR 836 | WB | Entrance | NW 17th Avenue NB | FTE | 8/15/2013 | 6,351 | 6,193 | 8,320 | 0.952 | 7,920 |
| 119 | SR 836 | WB | Entrance | NW 17th Avenue SB | FTE | 8/15/2013 | 10,938 | 10,667 | 14,940 | 0.955 | 14,270 |
| 120 | SR 836 | EB | Entrance | NW 17th Avenue SB | FTE | 8/15/2013 | 9,814 | 9,570 | 5,250 | 0.947 | 4,970 |
| 121 | SR 836 | EB | Entrance | NW 12th Avenue NB | FTE | 8/15/2013 | 13,735 | 13,394 | 6,850 | 0.937 | 6,420 |
| 122 | SR 836 | WB | Exit | NW 12th Avenue | FTE | 8/15/2013 | 17,647 | 17,209 | 12,730 | 0.935 | 11,900 |
| 123 | SR 836 | EB | Mainline | Between NW 12th Avenue and I-95 | FTE | 9/9-9/10/2013 | 87,235 | 85,070 | 69,370 | 0.938 | 65,080 |
| 124 | SR 836 | WB | Mainline | Between I-95 and NW 12th Avenue | FTE | 8/19-8/20/2013 | 75,576 | 73,700 | 69,580 | 0.949 | 66,060 |
| 125 | SR 874 | NB | Mainline | North of HEFT - Toll Gantry | MDX | FY 2013 | 42,494 | 42,369 | 42,370 | 0.940 | 39,840 |
| 126 | SR 874 | SB | Mainline | North of HEFT - Toll Gantry | MDX | FY 2013 | 40,753 | 40,784 | 40,780 | 0.918 | 37,450 |
| 127 | SR 874 | NB | Exit | Killian Drive / SW 104th Street | FTE | 8/6/2013 | 2,825 | 2,874 | 2,700 | 0.933 | 2,520 |
| 128 | SR 874 | NB | Entrance | Killian Drive / SW 104th Street EB | FTE | 8/6/2013 | 13,197 | 13,425 | 13,880 | 0.934 | 12,960 |
| 129 | SR 874 | NB | Entrance | Killian Drive / SW 104th Street EB | FTE | 8/6/2013 | 2,773 | 2,821 | 2,920 | 0.932 | 2,720 |
| 130 | SR 874 | SB | Exit | SW 107th Avenue NB | FTE | 8/6/2013 | 12,780 | 13,017 | 13,100 | 0.914 | 11,970 |
| 131 | SR 874 | SB | Exit | Killian Drive / SW 104th Street | FTE | 8/6/2013 | 2,214 | 2,255 | 2,260 | 0.916 | 2,070 |
| 132 | SR 874 | SB | Entrance | Killian Drive / SW 104th Street / SW 107th Avenue | FTE | 8/6/2013 | 3,363 | 3,425 | 3,260 | 0.917 | 2,990 |
| 133 | SR 874 | NB | Mainline | South of Kendall Drive / SW 88th Street - Toll Gantry | MDX | FY 2013 | 56,859 | 56,460 | 56,460 | 0.939 | 52,990 |
| 134 | SR 874 | SB | Mainline | South of Kendall Drive / SW 88th Street - Toll Gantry | MDX | FY 2013 | 52,613 | 52,876 | 52,880 | 0.917 | 48,500 |
| 135 | SR 874 | NB | Exit | Kendall Drive / SW 88th Street | FTE | 8/6/2013 | 4,335 | 4,403 | 4,110 | 0.937 | 3,850 |
| 137 | SR 874 | SB | Entrance | Kendall Drive / SW 88th Street | FTE | 8/6/2013 | 3,536 | 3,605 | 3,510 | 0.917 | 3,220 |
| 138 | SR 874 | NB | Exit | SR 878 EB | FTE | 8/6/2013 | 15,332 | 15,702 | 15,040 | 0.920 | 13,830 |
| 139 | SR 874 | NB | Entrance | Kendall Drive / SW 88th Street | FTE | 8/6/2013 | 5,738 | 5,813 | 5,400 | 0.937 | 5,060 |
| 140 | SR 874 | WB | Exit | Kendall Drive / SW 88th Street | FTE | 8/6/2013 | 6,327 | 6,440 | 6,390 | 0.919 | 5,870 |
| 142 | SR 874 | NB | Mainline | South of SR 826 - Toll Gantry | MDX | FY 2013 | 41,278 | 41,218 | 41,220 | 0.946 | 38,980 |
| 143 | SR 874 | SB | Mainline | South of SR 826 - Toll Gantry | MDX | FY 2013 | 37,226 | 37,918 | 37,920 | 0.919 | 34,830 |
| 141 | SR 878 | NB | Entrance | Kendall Drive / SW 88th Street | FTE | 8/6/2013 | 3,585 | 3,672 | 3,910 | 0.939 | 3,670 |
| 146 | SR 878 | EB | Mainline | East of SR 874 - Toll Gantry | MDX | FY 2013 | 20,674 | 20,441 | 20,440 | 0.924 | 18,880 |
| 147 | SR 878 | WB | Mainline | East of SR 874 - Toll Gantry | MDX | FY 2013 | 22,714 | 22,328 | 22,330 | 0.914 | 20,420 |

(1) For data provided by MDX, volumes represent actual average weekday volumes from October 2012.
(2) For data provied by MDX, AWDT volumes are actual FY 2013

**Table 3-1 (cont'd)**
**Traffic Count Locations**

| Location Number | Roadway | Dir. | Ramp or Mainline | Location | Source | Count Dates | Raw Weekday Volumes [1] | AWDT [2] | Balanced AWDT | AWDT to AADT Factor | Balanced AADT |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 148 | SR 878 | EB | Exit | SW 87th Avenue | FTE | 8/6/2013 | 3,003 | 3,070 | 2,970 | 0.936 | 2,780 |
| 149 | SR 878 | EB | Entrance | SW 87th Avenue | FTE | 8/6/2013 | 2,076 | 2,123 | 2,170 | 0.954 | 2,070 |
| 150 | SR 878 | WB | Exit | SW 87th Avenue | FTE | 8/6/2013 | 2,228 | 2,289 | 2,260 | 0.920 | 2,080 |
| 151 | SR 878 | WB | Entrance | SW 87th Avenue | FTE | 8/6/2013 | 3,875 | 3,981 | 3,900 | 0.915 | 3,570 |
| 152 | SR 878 | EB | Mainline | East of SW 87th Avenue - Toll Gantry | MDX | FY 2013 | 19,869 | 19,646 | 19,650 | 0.925 | 18,170 |
| 153 | SR 878 | WB | Mainline | East of SW 87th Avenue - Toll Gantry | MDX | FY 2013 | 20,931 | 20,688 | 20,690 | 0.914 | 18,920 |
| 154 | SR 878 | EB | Exit | SW 72nd Avenue | FTE | 8/6/2013 | 7,268 | 7,419 | 7,530 | 0.895 | 6,740 |
| 155 | SR 878 | WB | Entrance | SW 72nd Avenue | FTE | 8/6/2013 | 5,920 | 6,071 | 6,030 | 0.909 | 5,480 |
| 1 | SR 924 | EB | Entrance | SR 826 NB | FTE | 8/6-8/7/2013 | 8,280 | 8,595 | 8,590 | 0.846 | 7,270 |
| 2 | SR 924 | EB | Exit | SR 826 SB | FTE | 8/6-8/7/2013 | 1,526 | 1,584 | 1,580 | 0.848 | 1,340 |
| 3 | SR 924 | WB | Exit | SR 826 NB | FTE | 8/6-8/7/2013 | 2,350 | 2,465 | 2,470 | 0.830 | 2,050 |
| 4 | SR 924 | WB | Entrance | SR 826 SB | FTE | 8/6-8/7/2013 | 9,872 | 10,356 | 10,360 | 0.827 | 8,570 |
| 5 | SR 924 | EB | Mainline | Between SR 826 and NW 57th Avenue - Toll Gantry | MDX | FY 2013 | 27,536 | 26,482 | 26,480 | 0.835 | 22,110 |
| 6 | SR 924 | WB | Mainline | Between NW 57th Avenue and SR 826 - Toll Gantry | MDX | FY 2013 | 28,009 | 27,127 | 27,130 | 0.827 | 22,440 |
| 7 | SR 924 | EB | Exit | SW 57th Avenue / W 4th Avenue / Red Road | FTE | 8/6/2013 | 7,672 | 8,092 | 7,560 | 0.841 | 6,360 |
| 8 | SR 924 | EB | Entrance | SW 57th Avenue / W 4th Avenue / Red Road SB | FTE | 8/6/2013 | 1,767 | 1,864 | 1,820 | 0.835 | 1,520 |
| 9 | SR 924 | EB | Entrance | SW 57th Avenue / W 4th Avenue / Red Road NB | FTE | 8/6/2013 | 671 | 708 | 690 | 0.841 | 580 |
| 10 | SR 924 | WB | Exit | SW 57th Avenue / W 4th Avenue / Red Road | FTE | 8/6/2013 | 2,699 | 2,865 | 2,710 | 0.830 | 2,250 |
| 11 | SR 924 | WB | Entrance | SW 57th Avenue / W 4th Avenue / Red Road SB | FTE | 8/6/2013 | 9,362 | 9,938 | 9,290 | 0.826 | 7,670 |
| 12 | SR 924 | EB | Mainline | West of Le Jeune Douglas Expressway - Toll Gantry | MDX | FY 2013 | 22,403 | 21,437 | 21,440 | 0.833 | 17,860 |
| 13 | SR 924 | WB | Mainline | West of Le Jeune Douglas Expressway - Toll Gantry | MDX | FY 2013 | 21,329 | 20,545 | 20,550 | 0.828 | 17,010 |
| 14 | SR 924 | EB | Exit | Le Jeune Road / Douglas Expressway SB | FTE | 8/6-8/7/2013 | 2,750 | 2,946 | 2,760 | 0.837 | 2,310 |
| 15 | SR 924 | EB | Exit | Le Jeune Road / Douglas Expressway NB | FTE | 8/6-8/7/2013 | 1,278 | 1,369 | 1,280 | 0.844 | 1,080 |
| 16 | SR 924 | EB | Entrance | Le Jeune Road / Douglas Expressway | FTE | 8/6-8/7/2013 | 8,660 | 9,278 | 8,680 | 0.850 | 7,380 |
| 17 | SR 924 | WB | Exit | Le Jeune Road / Douglas Expressway | FTE | 8/6-8/7/2013 | 7,719 | 8,289 | 7,660 | 0.829 | 6,350 |
| 18 | SR 924 | WB | Entrance | Le Jeune Road / Douglas Expressway | FTE | 8/6-8/7/2013 | 4,196 | 4,506 | 4,160 | 0.829 | 3,450 |
| 19 | SR 924 | EB | Mainline | West of Le Jeune Road / Douglas Expressway Entry Ramp | FTE | 8/7-8/8/2013 | 16,308 | 17,473 | 17,400 | 0.832 | 14,470 |
| 20 | SR 924 | WB | Mainline | West of Le Jeune Road / Douglas Expressway Exit Ramp | FTE | 8/7-8/8/2013 | 14,143 | 15,188 | 16,380 | 0.828 | 13,560 |
| 156 | I-95 | Both | Mainline | North of SR 112 | FTE | 8/12-8/13/2013 | 198,991 | 195,568 | 195,570 | 0.959 | 187,640 |
| 157N | I-95 | NB | Mainline | South of SR 836 | FTE | 8/13-8/14/2013 | 69,315 | 71,736 | 71,740 | 0.959 | 68,830 |
| 157S | I-95 | SB | Mainline | South of SR 836 | FTE | 8/13-8/14/2013 | 80,301 | 74,734 | 74,730 | 0.959 | 71,700 |
| 158E | I-195 | EB | Mainline | East of I-95 | FTE | 9/9-9/10/2013 | 68,362 | 71,915 | 71,910 | 0.947 | 68,120 |
| 158W | I-195 | WB | Mainline | East of I-95 | FTE | 9/9-9/10/2013 | 55,780 | 59,792 | 59,790 | 0.947 | 56,630 |
| 159E | I-395 | EB | Mainline | East of I-95 | FTE | 8/13-8/14/2013 | 34,273 | 35,052 | 35,050 | 0.991 | 34,720 |
| 159W | I-395 | WB | Mainline | East of I-95 | FTE | 8/13-8/14/2013 | 37,029 | 37,870 | 37,870 | 1.003 | 37,990 |
| 160N | SR 826 | NB | Mainline | North of SR 836 | FTE | 8/26-8/27/2013 | 121,835 | 123,728 | 123,730 | 0.922 | 114,110 |
| 160S | SR 826 | SB | Mainline | North of SR 836 | FTE | 8/26-8/27/2013 | 119,199 | 121,051 | 121,050 | 0.922 | 111,640 |
| 161 | SR 826 | Both | Mainline | South of SR 836 | FTE | 8/12-8/13/2013 | 180,439 | 183,243 | 183,240 | 0.922 | 169,000 |
| 144 | SR 826 | NB | Mainline | South of SR 874 | FTE | 9/9-9/10/2013 | 55,693 | 56,558 | 56,560 | 0.922 | 52,160 |
| 145 | SR 826 | SB | Mainline | South of SR 874 | FTE | 8/12-8/13/2013 | 44,710 | 45,405 | 45,400 | 0.922 | 41,870 |
| 162N | HEFT | NB | Mainline | North of SR 836 | FTE | 9/9-9/10/2013 | 54,070 | 54,478 | 54,480 | 0.907 | 49,400 |
| 162S | HEFT | SB | Mainline | North of SR 836 | FTE | 9/9-9/10/2013 | 67,432 | 66,830 | 66,830 | 0.901 | 60,200 |
| 163 | HEFT | Both | Mainline | South of SR 836 | FTE | 8/12-8/13/2013 | 127,472 | 127,385 | 127,380 | 0.904 | 115,130 |

(1) For data provided by MDX, volumes represent actual average weekday volumes from October 2012.
(2) For data provied by MDX, AWDT volumes are actual FY 2013





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The balanced AWDT volumes were converted to AADT volumes by time period based on adjustment factors also developed from actual FY 2013 daily variation data at the MDX Expressway mainline tolling locations and daily variation data observed at FDOT permanent count stations. The final balanced AADT volume profiles were also developed for the peak periods. The profiles were also used in the traffic model calibration process.

## Daily Variations

The traffic counts performed on select MDX expressway mainline segments were collected on both internal weekdays and on weekends, allowing for the estimation of daily traffic variations. Figures 3-2 and 3-3 present the daily traffic variations for FY 2013 at MDX mainline locations for both ORT and non-ORT expressways. For each graph, AADT at each location is represented by an index of 1.0. The graphs show how each location's traffic volume varies for an average weekday, Saturday and Sunday, compared to the average day (1.0).

As shown in Figure 3-2, the ORT MDX expressways are generally commuter-oriented, with average weekday traffic significantly greater than weekend traffic. SR 924 has more traffic during the average weekday compared to Saturday and Sunday, with the average weekday volumes greater than the average day by 17 to 20 percent. Similarly, SR 878 has average weekday volumes 12 percent greater than the average day. Likewise, Saturday traffic volumes on SR 924 and SR 878 are roughly 82 percent and 65 percent of the average day, respectively, while Sunday volumes for both expressways are even lower. SR 874 shows slightly less of a commuter-oriented travel pattern, with average weekday volumes 5 to 8 percent greater than the average day and Saturday volumes more than 90 percent of the average day. This is most likely due to the use of SR 874 as a major connector between Homestead and points south to downtown Miami, Miami Beach and the Miami International Airport.

Daily traffic variations for the Non-ORT MDX expressways are shown in Figure 3-3. SR 112 and SR 836 have a smaller differential between weekday and weekend traffic volume, primarily due to their use as major east-west roadways. On SR 836, average weekday traffic is greater than the average day by between 2 and 9 percent. The difference between the average weekday and the average day is greater on the west end of SR 836, due in part to a greater number of commuters using those sections of SR 836. At NW 17th Avenue, Saturday traffic volumes are actually 6 percent greater than the average day. This is the only location on the MDX system where weekend traffic was observed to be greater than weekday traffic. This may be due in part to the proximity of the interchange to Marlins Park, which may have influenced the traffic count.

Average weekday traffic volumes were generally 7 to 9 percent greater than the average day on SR 112, and 85 percent and 75 percent of the average day on Saturdays and Sunday, respectively. However, east of NW 42nd Avenue weekdays, Saturdays and Sundays are all roughly similar to the average day. This is most likely due to the greater percent of traffic to and from the Miami International Airport at that location than other locations on SR 112.

Average daily variations for the Non-MDX Expressways are provided in Figure 3-4. Each of the roadways has a higher traffic volume for an average weekday and drop slightly on Saturday and Sunday. Of the roadways where counts were conducted, I-195, SR 826, and HEFT have the highest average weekday traffic volumes. Saturday and Sunday traffic volumes were greatest on I-95, I-395, and SR 826.



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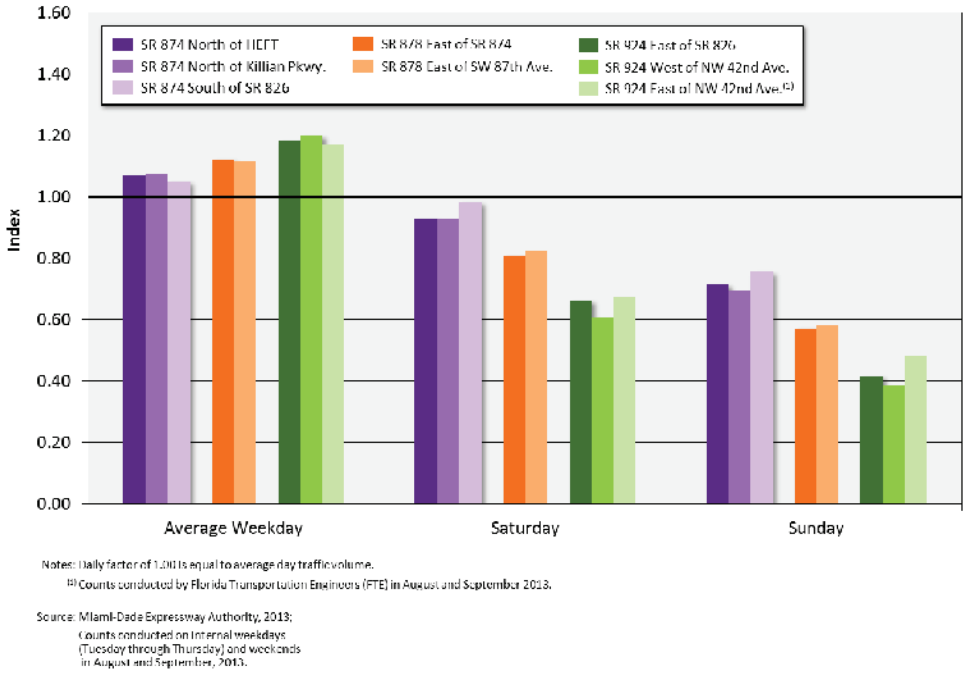



Notes: Daily factor of 1.00 is equal to average day traffic volume.
(1) Counts conducted by Florida Transportation Engineers (FTE) in August and September 2013.

Source: Miami-Dade Expressway Authority, 2013;
Counts conducted on internal weekdays
(Tuesday through Thursday) and weekends
in August and September, 2013.

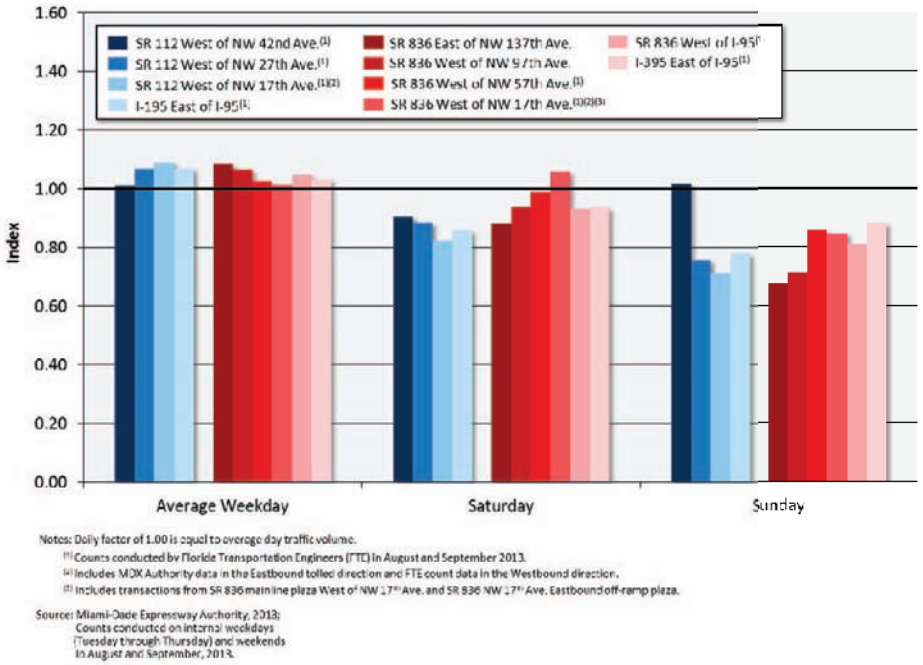
**AVERAGE FY 2013 DAILY TRAFFIC VARIATIONS BY LOCATION ON MDX ORT EXPRESSWAYS**

FIGURE 3-2







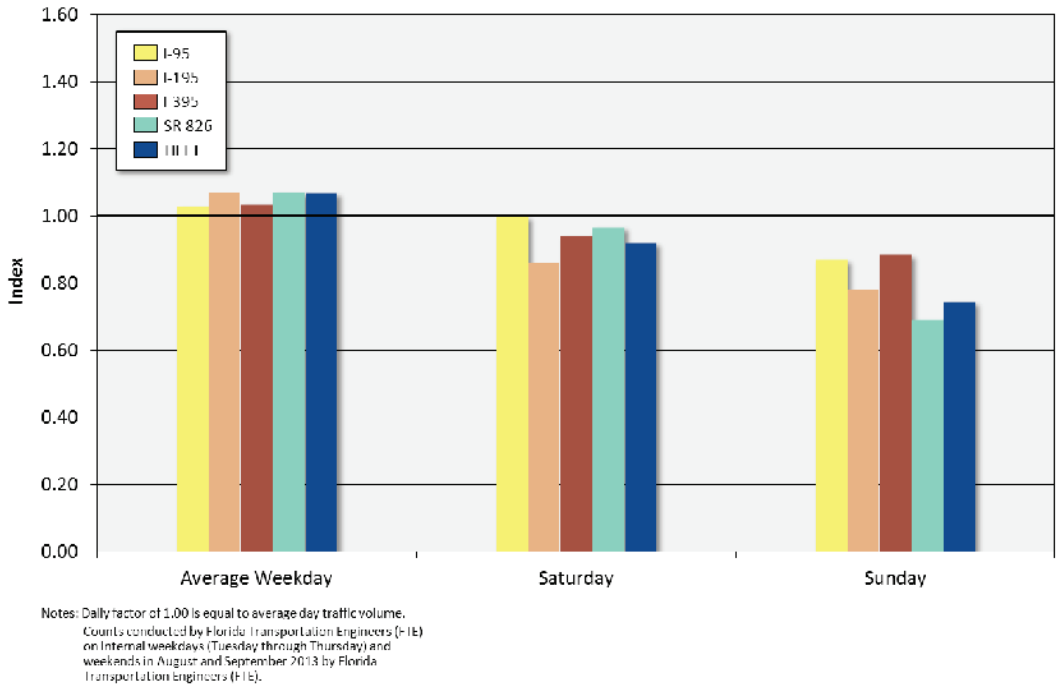



Notes: Daily factor of 1.00 is equal to average day traffic volume.
(1) Counts conducted by Florida Transportation Engineers (FTE) in August and September 2013.
(2) Includes MDX Authority data in the Eastbound tolled direction and FTE count data in the Westbound direction.
(3) Includes transactions from SR 836 mainline plaza West of NW 17th Ave. and SR 836 NW 17th Ave. Eastbound off-ramp plaza.

Source: Miami-Dade Expressway Authority, 2013;
Counts conducted on internal weekdays
(Tuesday through Thursday) and weekends
in August and September, 2013.

**AVERAGE FY 2013 DAILY TRAFFIC VARIATIONS BY LOCATION ON MDX NON-ORT EXPRESSWAYS**

FIGURE 3-3




Notes: Daily factor of 1.00 is equal to average day traffic volume.
Counts conducted by Florida Transportation Engineers (FTE) on internal weekdays (Tuesday through Thursday) and weekends in August and September 2013 by Florida Transportation Engineers (FTE).

**AVERAGE DAILY TRAFFIC VARIATIONS**
**AT NON-MDX EXPRESSWAY MAINLINE LOCATIONS**
FIGURE 3-4





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## Hourly Variations

Data at the mainline locations were also collected by hour. Figures 3-5 and 3-6 provide the percent of daily traffic by hour for each of the individual expressways. This includes data provided both by MDX and the traffic count program.

The average hourly traffic variations for the MDX ORT Expressways are shown in Figure 3-5. Each of the ORT expressways shows a clear peaking pattern in that AM Peak Period (6:30-9:30 AM) and PM Peak Period (3:30-6:30 PM) volumes are significantly greater than other hours, and "peak" during these commuting hours. For SR 874, each of the locations follow the same general trend and only vary slightly in the percent of daily traffic. This indicates that traffic is consistent throughout the roadway and may include a significant percentage of full-length through trips. In general, SR 874 AM Peak Hour traffic is 6 to 7 percent of the average daily volume and PM Peak Hour traffic is 8 to 9 percent of the average daily volume. The same trends are apparent for SR 924 and SR 878, however there is a larger variance in the percent of daily traffic for the two locations on SR 878. AM Peak Hour traffic volumes on SR 878 and SR 924 reach 8 to 10 percent and 9 to 11 percent of the average daily volume, respectively. PM Peak Hour traffic volumes on SR 878 and SR 924 reach 10 to 12 percent and 9 to 11 percent of the average daily volume, respectively. In addition, SR 874 and SR 878 have higher peaks during the PM Peak Period (3:30 – 6:30 PM), while the AM and PM Peaks on SR 924 are relatively similar. This may indicate that SR 874 and SR 878 are used for after work travel, such as dining and recreation, to a greater degree than SR 924.

The average hourly traffic variations for the MDX non-ORT Expressways are shown in Figure 3-6. The SR 836 western segment shows a clear peak in the AM Peak Period (6:30 – 9:30 AM) and PM Peak Period (3:30 – 6:30 PM) at the location East of NW 137th Avenue. This peaking pattern fades as traffic moves further east along the roadway. For both SR 112 and SR 836 east of 57th Avenue, a clear peaking pattern is not available. This may be due to the use of both roadways throughout the day as major east-west connections between SR 826 and downtown Miami, Miami Beach and the Miami International Airport.

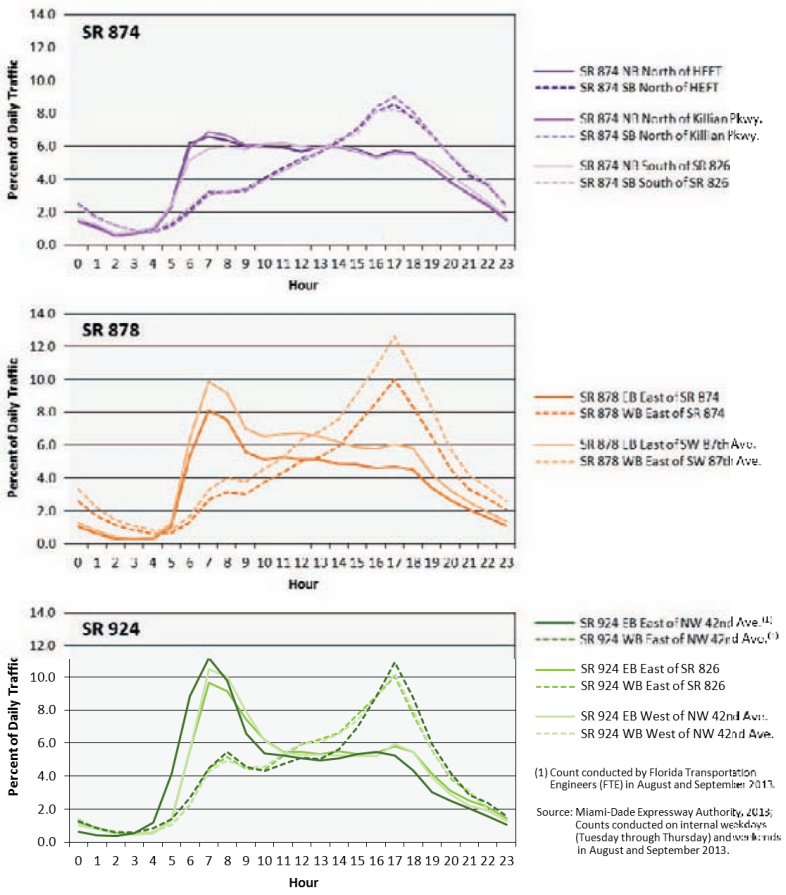
## Interchange-to-Interchange Movement Survey

In order to study the conversion of SR 836 and SR 112 to ORT, updated interchange-to-interchange matrices of travel demand were required. These matrices would show the estimated level of current demand for each movement from interchange to interchange on SR 836 and SR 112. The matrices would be used to develop the balanced traffic profile in areas where traffic counts were unavailable, to calibrate the travel demand model and to analyze which movements might be impacted by the proposed tolling changes.

CDM Smith used BluFAX Bluetooth reader technology provided by Traffax in order to conduct the survey of interchange-to-interchange movements. The BluFAX technology uses wireless Bluetooth technology to detect devices with Bluetooth capabilities inside of a traveling vehicle. The devices detected include most modern smart phones, consumer electronics such as headsets or computer peripherals, GPS systems, or in-car communications systems. By mounting the BluFAX Bluetooth readers on streetlights or signposts at strategic locations, individual trips on SR 836 and SR 112 could be tracked based on the unique identification signals of Bluetooth-enabled electronic devices. The trip pattern of each vehicle was then determined based on the specific BluFAX Bluetooth readers at which it was detected.

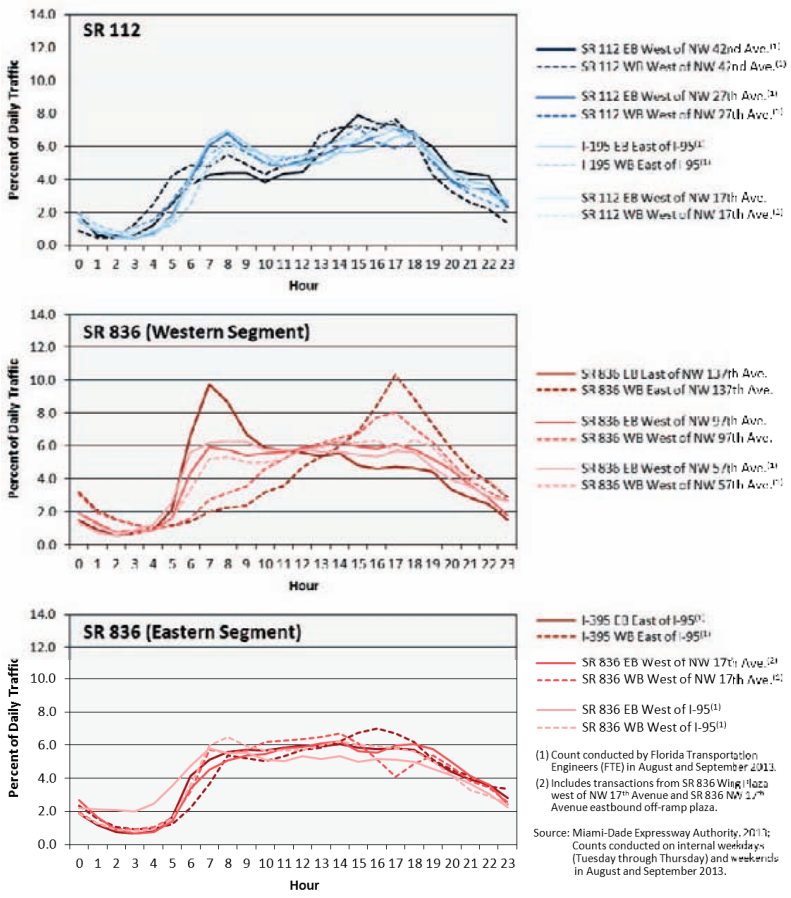







**AVERAGE FY 2013 HOURLY TRAFFIC VARIATIONS BY LOCATION ON MDX ORT EXPRESSWAYS**

FIGURE 3-5




**AVERAGE FY 2013 HOURLY TRAFFIC VARIATIONS BY LOCATION ON MDX NON-ORT EXPRESSWAYS**

FIGURE 3-6





Figure 3-7 shows the distribution of BluFAX Bluetooth readers along the SR 836 and SR 112 corridor, covering every movement on and off of the expressways. The plan called for 35 BluFAX Bluetooth readers deployed at specific locations along the SR 836 and SR 112 corridor, where the readers would run 24 hours per day. Additional readers were placed at the entrance to the Miami International Airport and on HEFT south of SR 874 in order to obtain additional trip origin and destination information. A detailed list of the BluFAX Bluetooth reader locations is provided in Table 3-2.

Three full days of data were collected during internal weekdays in August 2013. Additional weekday data were also collected. A matrix of interchange-to-interchange movements was then compiled based on the particular BluFAX Bluetooth readers at which each unique Bluetooth device was detected. It should be noted that the movements recorded in this manner are slightly biased towards shorter distance trips. This is because longer trips would have to pass by more BluFAX Bluetooth readers, providing more of an opportunity for an error in detection.

The interchange-to-interchange movements observed during the survey are SR 112 and SR 836 are summarized in Tables 3-3 and 3-4, respectively. Each table provides the observed interchange-to-interchange movements by direction. The entering interchanges are located along the left side of the table while the existing interchanges are located across the top. The total number of vehicles observed entering at each interchange is provided at the right of the table and the total number of vehicles exiting at each interchange is provided along the bottom of the table. Each box within the matrix provides the number of observed vehicles traveling from the entering interchange to the exiting interchange, as well as what that volume represents as a percentage of either the total entering or exiting volumes. The row percentages represent the entering volumes, while the column percentages represent the exiting volumes. It is important to note that the data in Tables 3-3 and 3-4 provide only the vehicles observed during the survey. Additional vehicles without Bluetooth devices would also have traveled on the MDX Expressways during the survey period and would not be included. Therefore, some movement to and/or from low volume ramps on SR 836 and SR 112 may show no observed vehicles even though there are vehicles that may make those movements. The observed interchange-to-interchange movement data provided here should therefore be reviewed in combination with the corresponding traffic counts. A summary of the more significant interchange-to-interchange movements follows.

## Observed Travel Patterns - SR 836 and SR 112

Table 3-5 provides the top ten overall observed movements, as well as the top ten movements for SR 836 and SR 112 individually. Due to the smaller length of SR 112, shorter trips show a greater frequency within the Bluetooth reader zone. This short trip phenomenon is the reason why eight of the ten major movements observed occur on SR 112, with the highest being 2015 vehicles (3.1 percent) traveling between NW 42nd Avenue and I-95 to/from the North. As for SR 112 individually, the data shows that most of the top movements include travel to and from I-95 or I-195. Major roadways that appear in the top ten movements on SR 836 include I-95, HEFT, SR 826 and NW 42nd Avenue. It should be noted that seven of the top ten movements on SR 836, including the top three movements, are currently toll free.

Interchange-to-interchange movements through proposed ORT mainline toll locations on SR 836 are shown in Figure 3-8. For each schematic, the total traffic at each mainline toll location is represented as 100 percent. The percent of traffic traveling to or from the mainline toll location to each interchange is shown by direction. Higher percentages are indicated by darker colors, while lower percentages are indicated by lighter colors.

**BluFAX BLUETOOTH READER LOCATIONS**

FIGURE 3-7

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**Table 3-2**
**BluFAX Bluetooth Reader Locations**

| Reader Number | Roadway | Road Segment | Specific Location | |
|---|---|---|---|---|
| 1 | HEFT | N of SR 836 | SB Signpost for Exit 25A-27 (Median Post) | Between NW 25th St. and Exit 25A-27 Off Ramp |
| 2 | HEFT | S of SR 836 | NB Signpost for Exit 26 (Median Post) | Between SW 8th St. and Flagler St. |
| 3 | HEFT | S of SR 874 | NB Signpost for Exit 17 (Median Post) | Between Exit 16 and SR 874 Ramps |
| 4 | SR 836 | E of NW 137th Ave. | Electronic Toll Gantry (Median Post) | East of NW 137th Ave. Ramps |
| 5 | SR 836 | E of NW 97th Ave. | Center Lightpost in "Welcome Miami-Dade" Bush Garden | Between Toll Gantry and NW 87th Ave Ramps |
| 6 | NW 87th Ave. | S of SR 836 | Traffic Lightpost on SW Corner of Intersection with NW 800 BLK (Sandalwood Rentals) | Between SR 836 and NW 8th St. |
| 7 | NW 13th Terrace | W of NW 87th Ave. | Lighpost W of Entrance to Porcelanosa (Prior to NW 87th Ave. Turning Lanes) | |
| 8 | NW 12th St. | E of NW 89th Ct. | Traffic Lightpost on NE Corner of Intersection | |
| 9 | SR 826 | N of SR 836 | NB Signpost for NW 25th St Exit (Median Post) | South of NW 25th St. |
| 10 | SR 826 | S of SR 836 | NB Signpost for SR 836 Exit (Median Post) | Just North of Flagler Street On-Ramp |
| 11 | Perimeter Rd. | E of NW 72nd Ave. | Lighpost W of Entrance to AP Atlantic Entrance | |
| 12 | NW 72nd Ave. | S of NW 7th St. | Traffic Lightpost on SW Corner of Intersection (in Front of MedPlan) | |
| 13 | SR 836 | E of 57th Ave. | EB Signpost for NW 57th Ave. Exit W of 57th Ave. Ramps (Median Post) | Between NW 72nd Ave. and NW 57th Ave. |
| 14 | NW 57th Ave | S of SR 836 | SB Lightpost S of Canal Bridge | |
| 15 | SR 836 | W of 57th Ave. | EB Signpost for LeJeune and NW 45th St. W of Lake Bridge (Median Post) | Between NW 57th Ave. and NW 45th Ave. |
| 16 | NW 42nd Ave. | N of NW 27th St. | Cell Phone Lot Sign in Median (Across from NW 27th St.) | |
| 17 | NW 11th St. | W of NW 42nd Ave. | Lightpost W of Catch of the Day (Near Fire Hydrant) | |
| 18 | NW 21st St | E of MIA | 1/2/3/4/5 Signpost W of 5 Ramp (Median Post) | |
| 19 | SR 836 | E of NW 42nd Ave. | WB Signpost for NW 42nd Ave. Exit west of NW 37th Ave. (Median Post) | Between NW 42nd Ave. and NW 37th Ave. |
| 20 | SR 836 | W of NW 27th Ave. | EB Signpost for NW 27th Ave. Exit (on South Side) | Between NW 37th Ave. and NW 27th Ave. |
| 21 | NW 14th St. | E of NW 27th Ave. | Lightpost on SE of Intersection in front of El Morro Supermarket | |
| 22 | NW 9th St. | W of NW 27th Ave. | Lightpost W of Intersection in front of Botanica Nena | |
| 23 | SR 836 | E of NW 27th Ave. | EB Signpost with Toll Schedule W of NW 17th Ave Toll Plaza / Gantry | Between NW 27th Ave. and NW 17th Ave. |
| 24 | NW 7th Ave. | W of NW 17th Ave. | Electric Pole on corner of NW 17th Ct. behind Bowl Bar | |
| 25 | SR 112 | E of NW 42nd Ave. | WB Signpost for NW 42nd Ave. Exit west of Elevated Transit Line (Median Post) | |
| 26 | SR 836 | W of I-95 | EB Signpost for I-95 North / I-395 / I-95 South Exit (Median Post) | Just West of I-95 Ramps |
| 27 | I-95 | S of SR 836 | NB Signpost for I-95 Express Lanes 2 Miles (Median Post) | |
| 28 | I-395 | E of I-95 | Signpost between I-95 and NE 1st Ave. | Between I-95 and NE 1st Ave. |
| 29 | SR 112 | N of 21st St | NB Railroad Crossing Signpost (Medan Post) | |
| 30 | NW 38th Ave. | E of NW 27th Ave. | Electric Pole with 20 MPH Curve Sign | Between NW 29th Ave. and NW 27th Ave. |
| 31 | NW 27th Ave. | N of SR 112 | NB Lightpost across from NW 45th St. in front of MTS Power Product | |
| 32 | SR 112 | W of NW 27th Ave. | Palm Tree in Median across from NW 22nd Ave Metro Rail Sign | Between NW 27th Ave. and NW 22nd Ave. |
| 33 | SR 112 | E of NW 17th Ave. | WB Signpost for NW 22nd Ave. MetroRail Sign (Median Post) W of NW 17th Ave. Toll Plaza | Between NW 17th Ave. and NW 12th Ave. |
| 34 | I-95 | N of SR 112 | SB Signpost for Variable Message Sign S of NW 62nd Ave. On Ramps | Between NW 62nd Ave. and SR 836 / I-395 |
| 35 | I-195 | E of I-95 | Median Signpost for SR 112 West Keep Left | Between I-95 and N Miami Ave. |





CDM Smith
FINAL April 25, 2014

**Table 3-3**
**Observed SR 836 Eastbound Movements**
Eastbound Movements Based on Bluetooth Survey Conducted August 2013

| | | | Exit | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | NW 107th Avenue | NW 87th Avenue | SR 826 | NW 72nd Avenue | NW 57th Avenue | NW 45th Avenue | NW 42nd Avenue | NW 27th Avenue | NW 17th Avenue | I-95 / I-395 | Total |
| Entrance | HEFT | Observed | 1 | 1535 | 1111 | 167 | 249 | 251 | 572 | 233 | 268 | 889 | 5276 |
| | | % of Entrance | 0.0% | 29.1% | 21.1% | 3.2% | 4.7% | 4.8% | 10.8% | 4.4% | 5.1% | 16.8% | |
| | | % of Exit | 100.0% | 77.7% | 35.0% | 15.4% | 15.1% | 13.1% | 14.9% | 9.2% | 12.5% | 10.9% | |
| | NW 137th Avenue | Observed | | 441 | 357 | 38 | 93 | 55 | 168 | 69 | 78 | 196 | 1495 |
| | | % of Entrance | | 29.5% | 23.9% | 2.5% | 6.2% | 3.7% | 11.2% | 4.6% | 5.2% | 13.1% | |
| | | % of Exit | | 22.3% | 11.2% | 3.5% | 5.7% | 2.9% | 4.4% | 2.7% | 3.6% | 2.4% | |
| | NW 107th Avenue | Observed | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | % of Entrance | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| | | % of Exit | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| | NW 87th Avenue | Observed | | | 1709 | 343 | 468 | 346 | 730 | 373 | 230 | 1215 | 5414 |
| | | % of Entrance | | | 31.6% | 6.3% | 8.6% | 6.4% | 13.5% | 6.9% | 4.2% | 22.4% | |
| | | % of Exit | | | 53.8% | 31.7% | 28.4% | 18.0% | 19.0% | 14.8% | 10.7% | 14.9% | |
| | SR 826 | Observed | | | | 534 | 690 | 553 | 1220 | 704 | 481 | 1455 | 5637 |
| | | % of Entrance | | | | 9.5% | 12.2% | 9.8% | 21.6% | 12.5% | 8.5% | 25.8% | |
| | | % of Exit | | | | 49.4% | 41.9% | 28.8% | 31.7% | 27.9% | 22.4% | 17.8% | |
| | NW 72nd Avenue | Observed | | | | | 145 | 75 | 187 | 131 | 99 | 341 | 978 |
| | | % of Entrance | | | | | 14.8% | 7.7% | 19.1% | 13.4% | 10.1% | 34.9% | |
| | | % of Exit | | | | | 8.8% | 3.9% | 4.9% | 5.2% | 4.6% | 4.2% | |
| | NW 57th Avenue | Observed | | | | | | 639 | 971 | 577 | 417 | 1122 | 3726 |
| | | % of Entrance | | | | | | 17.1% | 26.1% | 15.5% | 11.2% | 30.1% | |
| | | % of Exit | | | | | | 33.3% | 25.2% | 22.9% | 19.4% | 13.7% | |
| | NW 42nd Avenue | Observed | | | | | | | | 80 | 109 | 565 | 754 |
| | | % of Entrance | | | | | | | | 10.6% | 14.5% | 74.9% | |
| | | % of Exit | | | | | | | | 3.2% | 5.1% | 6.9% | |
| | NW 37th Avenue | Observed | | | | | | | | 354 | 422 | 1318 | 2094 |
| | | % of Entrance | | | | | | | | 16.9% | 20.2% | 62.9% | |
| | | % of Exit | | | | | | | | 14.0% | 19.6% | 16.1% | |
| | NW 27th Avenue | Observed | | | | | | | | | 45 | 158 | 203 |
| | | % of Entrance | | | | | | | | | 22.2% | 77.8% | |
| | | % of Exit | | | | | | | | | 2.1% | 1.9% | |
| | NW 12th Avenue | Observed | | | | | | | | | | 917 | 917 |
| | | % of Entrance | | | | | | | | | | 100.0% | |
| | | % of Exit | | | | | | | | | | 11.2% | |
| | Total | Observed | 1 | 1976 | 3177 | 1082 | 1645 | 1919 | 3848 | 2521 | 2149 | 8176 | 26494 |



Chapter 3 • Traffic Data Collection

**Table 3-3 (Cont'd)**
**Observed SR 836 Movements**
Westbound Movements Based on Bluetooth Survey Conducted August 2013

| | | | Exit | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | NW 12th Avenue | NW 27th Avenue | NW 37th Avenue | NW 42nd Avenue | NW 57th Avenue | NW 72nd Avenue | SR 826 | NW 87th Avenue | NW 107th Avenue | NW 137th Avenue | HEFT | Total |
| Entrance | I-95 / I-395 | Observed | 2360 | 222 | 527 | 1027 | 379 | 104 | 685 | 1022 | 0 | 418 | 323 | 7067 |
| | | % of Entrance | 33.4% | 3.1% | 7.5% | 14.5% | 5.4% | 1.5% | 9.7% | 14.5% | 0.0% | 5.9% | 4.6% | |
| | | % of Exit | 100.0% | 72.3% | 53.0% | 62.9% | 23.2% | 26.5% | 17.5% | 20.8% | 0.0% | 25.2% | 19.5% | |
| | NW 17th Avenue | Observed | | 85 | 231 | 391 | 167 | 52 | 319 | 432 | 0 | 55 | 66 | 1798 |
| | | % of Entrance | | 4.7% | 12.8% | 21.7% | 9.3% | 2.9% | 17.7% | 24.0% | 0.0% | 3.1% | 3.7% | |
| | | % of Exit | | 27.7% | 23.2% | 24.0% | 10.2% | 13.2% | 8.1% | 8.8% | 0.0% | 3.3% | 4.0% | |
| | NW 27th Avenue | Observed | | | 236 | 214 | 144 | 32 | 324 | 316 | 0 | 100 | 90 | 1456 |
| | | % of Entrance | | | 16.2% | 14.7% | 9.9% | 2.2% | 22.3% | 21.7% | 0.0% | 6.9% | 6.2% | |
| | | % of Exit | | | 23.7% | 13.1% | 8.8% | 8.1% | 8.3% | 6.4% | 0.0% | 6.0% | 5.4% | |
| | NW 42nd Avenue | Observed | | | | | 675 | 90 | 662 | 914 | 0 | 277 | 258 | 2876 |
| | | % of Entrance | | | | | 23.5% | 3.1% | 23.0% | 31.8% | 0.0% | 9.6% | 9.0% | |
| | | % of Exit | | | | | 41.4% | 22.9% | 16.9% | 18.6% | 0.0% | 16.7% | 15.6% | |
| | NW 45th Avenue | Observed | | | | | 266 | 18 | 282 | 242 | 0 | 37 | 29 | 874 |
| | | % of Entrance | | | | | 30.4% | 2.1% | 32.3% | 27.7% | 0.0% | 4.2% | 3.3% | |
| | | % of Exit | | | | | 16.3% | 4.6% | 7.2% | 4.9% | 0.0% | 2.2% | 1.7% | |
| | NW 57th Avenue | Observed | | | | | | 97 | 871 | 1344 | 0 | 168 | 145 | 2625 |
| | | % of Entrance | | | | | | 3.7% | 33.2% | 51.2% | 0.0% | 6.4% | 5.5% | |
| | | % of Exit | | | | | | 24.7% | 22.2% | 27.3% | 0.0% | 10.1% | 8.7% | |
| | NW 72nd Avenue | Observed | | | | | | | 773 | 364 | 0 | 108 | 92 | 1337 |
| | | % of Entrance | | | | | | | 57.8% | 27.2% | 0.0% | 8.1% | 6.9% | |
| | | % of Exit | | | | | | | 19.7% | 7.4% | 0.0% | 6.5% | 5.5% | |
| | SR 826 | Observed | | | | | | | | 284 | 0 | 263 | 267 | 814 |
| | | % of Entrance | | | | | | | | 34.9% | 0.0% | 32.3% | 32.8% | |
| | | % of Exit | | | | | | | | 5.8% | 0.0% | 15.8% | 16.1% | |
| | NW 87th Avenue | Observed | | | | | | | | | 0 | 236 | 241 | 477 |
| | | % of Entrance | | | | | | | | | 0.0% | 49.5% | 50.5% | |
| | | % of Exit | | | | | | | | | 0.0% | 14.2% | 14.5% | |
| | NW 107th Avenue | Observed | | | | | | | | | | | 147 | 147 |
| | | % of Entrance | | | | | | | | | | | 100.0% | |
| | | % of Exit | | | | | | | | | | | 8.9% | |
| | Total | Observed | 2360 | 307 | 994 | 1632 | 1631 | 393 | 3916 | 4918 | 0 | 1662 | 1658 | 19471 |





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**Table 3-4**
**Observed SR 112 Eastbound Movements**
Movements Based on Bluetooth Survey Conducted August 2013

**EASTBOUND**

| | | | Exit | | | | |
|---|---|---|---|---|---|---|---|
| | | | NW 27th Ave. | NW 22nd Ave. | NW 12th Ave. via NW 39th St. | I-95 / I-95 Express / I-195 | Total |
| Entrance | W of NW Le Jeune / MIA | Observed | 0 | 0 | 0 | 0 | 0 |
| | | % of Entrance | 0.0% | 0.0% | 0.0% | 0.0% | |
| | | % of Exit | 0.0% | 0.0% | 0.0% | 0.0% | |
| | Le Jeune Rd NB / NW 36th St. / US 27 | Observed | 1,474 | 0 | 441 | 3,026 | 4,941 |
| | | % of Entrance | 29.8% | 0.0% | 8.9% | 61.2% | |
| | | % of Exit | 100.0% | 0.0% | 24.3% | 42.4% | |
| | NW 27th Ave. | Observed | | 0 | 0 | 0 | 0 |
| | | % of Entrance | | 0.0% | 0.0% | 0.0% | |
| | | % of Exit | | 0.0% | 0.0% | 0.0% | |
| | NW 22nd Ave. | Observed | | | 1,372 | 4,105 | 5,477 |
| | | % of Entrance | | | 25.1% | 74.9% | |
| | | % of Exit | | | 75.7% | 57.6% | |
| Total | | Observed | 1,474 | 0 | 1,813 | 7,131 | 10,418 |

**WESTBOUND**

| | | | Exit | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | NW 17th Ave. via NW 40th St. | NW 22nd Ave. | NW 27th Ave. | Le Jeune Rd NB / NW 36th St. / US 27 | W of NW Le Jeune / MIA | Total |
| Entrance | I-95 / I-95 Express / I-195 | Observed | 117 | 3,264 | 0 | 4,686 | 0 | 8,067 |
| | | % of Entrance | 1.5% | 40.5% | 0.0% | 58.1% | 0.0% | |
| | | % of Exit | 100.0% | 100.0% | 0.0% | 74.6% | 0.0% | |
| | NW 22nd Ave. | Observed | | | 0 | 0 | 0 | 0 |
| | | % of Entrance | | | 0.0% | 0.0% | 0.0% | |
| | | % of Exit | | | 0.0% | 0.0% | 0.0% | |
| | NW 27th Ave. | Observed | | | | 1,597 | 0 | 1,597 |
| | | % of Entrance | | | | 100.0% | 0.0% | |
| | | % of Exit | | | | 25.4% | 0.0% | |
| Total | | Observed | 117 | 3,264 | 0 | 6,283 | 0 | 9,664 |





**Table 3-5**
**Top Ten Interchange to Interchange Movements by Expressway**

**Top Ten Overall Observed Movements**

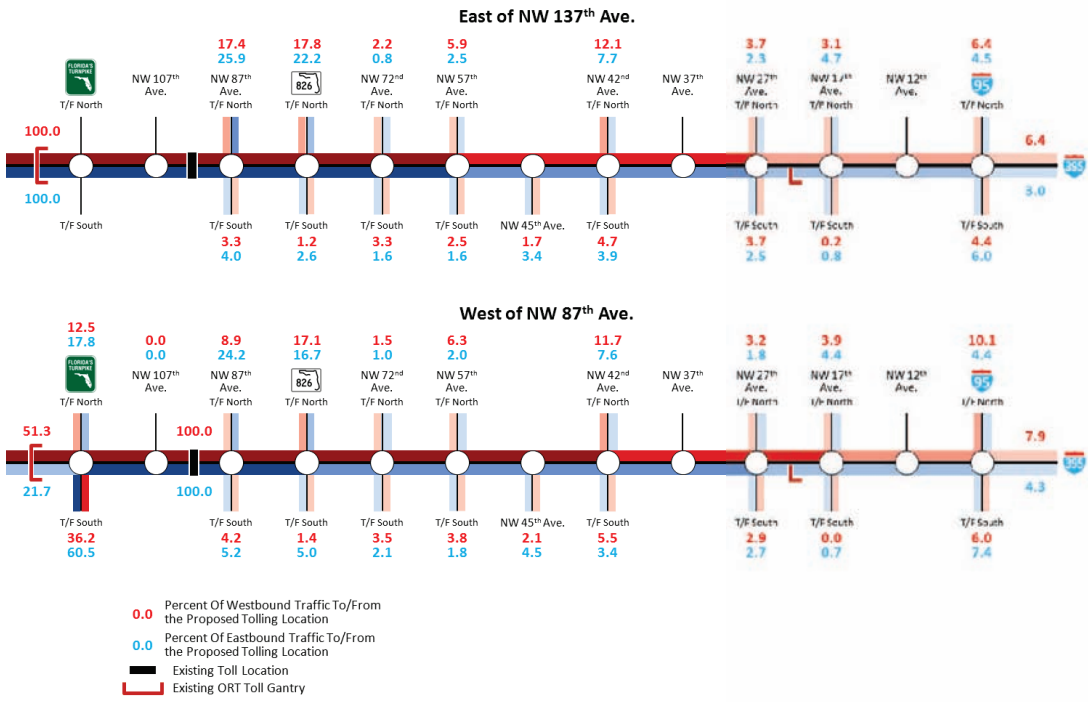
| Expressway | Travel Path: Western End | Travel Path: Eastern End | Number of Observed Vehicles | Percent of Total Vehicles Observed |
|---|---|---|---|---|
| SR 112 | NW 42nd Ave. | I-95 T/F North | 2015 | 3.1 |
| SR 112 | NW 22nd Ave. | I-95 T/F North | 1958 | 3.0 |
| SR 112 | I-95 T/F North | NW 42nd Ave. | 1677 | 2.6 |
| SR 112 | NW 42nd Ave. | I-195 | 1617 | 2.5 |
| SR 112 | I-195 | NW 22nd Ave. | 1403 | 2.2 |
| SR 112 | NW 12th Ave. | NW 22nd Ave. | 1365 | 2.1 |
| SR 112 | I-95 T/F North | NW 22nd Ave. | 1253 | 1.9 |
| SR 836 | NW 87th Ave. T/F North | NW 57th Ave. T/F North | 1253 | 1.9 |
| SR 836 | NW 12th Ave. | I-95 T/F South | 1182 | 1.8 |
| SR 112 | NW 42nd Ave. | NW 27th Ave. T/F South | 1172 | 1.8 |

**Top Ten Overall Observed Movements on SR 112**

| Expressway | Travel Path: Western End | Travel Path: Eastern End | Number of Observed Vehicles | Percent of Total Vehicles Observed |
|---|---|---|---|---|
| SR 112 | NW 42nd Ave. | I-95 T/F North | 2015 | 3.1 |
| SR 112 | NW 22nd Ave. | I-95 T/F North | 1958 | 3.0 |
| SR 112 | I-95 T/F North | NW 42nd Ave. | 1677 | 2.6 |
| SR 112 | NW 42nd Ave. | I-195 | 1617 | 2.5 |
| SR 112 | I-195 | NW 22nd Ave. | 1403 | 2.2 |
| SR 112 | NW 12th Ave. | NW 22nd Ave. | 1365 | 2.1 |
| SR 112 | I-95 T/F North | NW 22nd Ave. | 1253 | 1.9 |
| SR 112 | NW 42nd Ave. | NW 27th Ave. T/F South | 1172 | 1.8 |
| SR 112 | NW 22nd Ave. | I-195 | 1133 | 1.7 |
| SR 112 | I-195 | NW 42nd Ave. | 1006 | 1.5 |

**Top Ten Overall Observed Movements on SR 836**

| Expressway | Travel Path: Western End | Travel Path: Eastern End | Number of Observed Vehicles | Percent of Total Vehicles Observed |
|---|---|---|---|---|
| SR 836 | NW 87th Ave. T/F North | NW 57th Ave. T/F North | 1253 | 1.9 |
| SR 836 | NW 12th Ave. | I-95 T/F South | 1182 | 1.8 |
| SR 836 | NW 12th Ave. | I-95 T/F North | 1157 | 1.8 |
| SR 836 | HEFT T/F South | NW 87th Ave. T/F North | 1061 | 1.6 |
| SR 836 | HEFT T/F South | SR 826 T/F North | 1058 | 1.6 |
| SR 836 | NW 87th Ave. T/F North | NW 42nd Ave. T/F North | 925 | 1.4 |
| SR 836 | SR 826 T/F South | NW 42nd Ave. T/F North | 910 | 1.4 |
| SR 836 | NW 57th Ave. T/F North | NW 42nd Ave. T/F North | 847 | 1.3 |
| SR 836 | NW 87th Ave. T/F North | I-95 T/F South | 826 | 1.3 |
| SR 836 | NW 37th Ave. | I-95 T/F South | 815 | 1.3 |



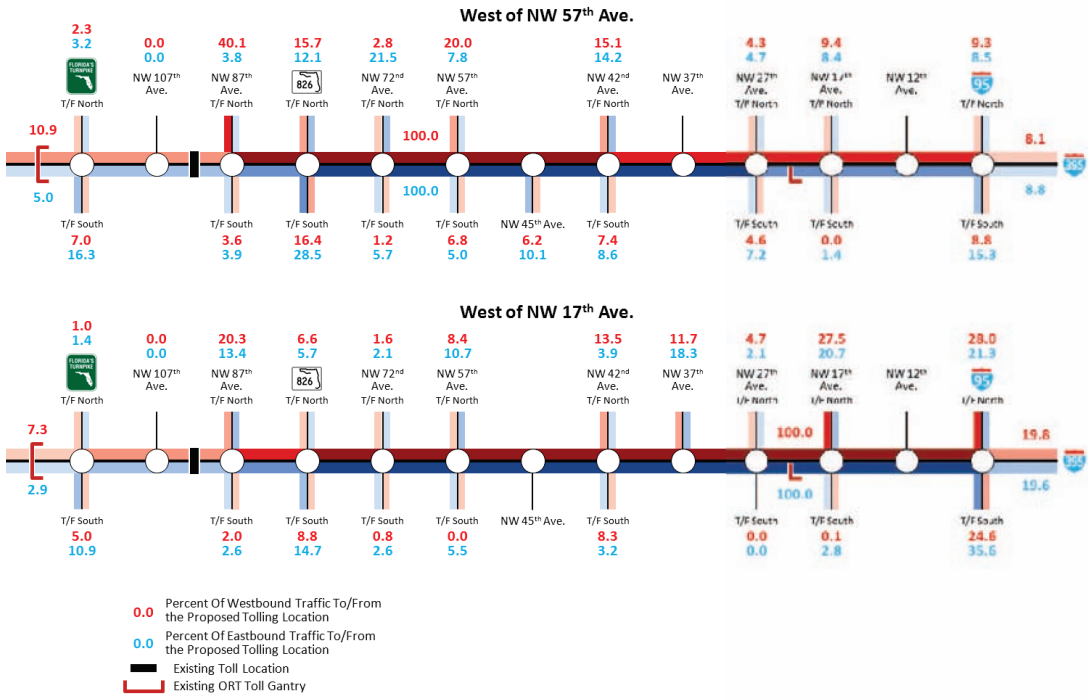

**INTERCHANGE TO INTERCHAGE MOVEMENTS THROUGH PROPOSED ORT MAINLINE LOCATIONS**

FIGURE 3-8










**INTERCHANGE TO INTERCHAGE MOVEMENTS THROUGH PROPOSED ORT MAINLINE LOCATIONS**

FIGURE 3-8 (cont'd.)

From the toll location east of NW 137th Avenue, which is the SR 836 Extension, 54.7 percent of eastbound traffic and 39.7 percent of westbound traffic were observed exiting at NW 87th Avenue and SR 826. This indicates that a significant amount of traffic on the SR 836 Extension is short distance. NW 42nd Avenue, I-95, and I-395 also represent major destinations for traffic from the SR 836 Extension.

At the existing mainline toll location west of NW 87th Avenue, traffic primarily travels to and from HEFT and the SR 836 Extension. From the NW 87th Avenue toll location, major interchange origins and destinations include SR 826, I-95 and NW 42nd Avenue to/from the North. Additionally, 24.2 percent of eastbound traffic passing through the toll location enters and exits at NW 87th Avenue. Significant interchange origins and destinations at the other existing tolling location west of NW 17th Avenue include NW 87th Avenue, NW 42nd Avenue, NW 17th Avenue, I-95 and I-395.

Under full ORT, a toll gantry would be located on SR 836 between NW 72nd Avenue and NW 57th Avenue. This section of SR 836 represents the only major east-west expressway connection between SR 826 and NW 42nd Avenue south of SR 924. At this location, significant interchange origins and destinations include NW 87th Avenue, SR 826, NW 42nd Avenue, I-95 and I-395. NW 72nd Avenue and 57th Avenue also represent major interchange origins and destinations, due to their proximity to this segment of SR 836 and the current toll-free movements available.

The distributions of traffic both entering and exiting the MDX expressways by interchange are provided in Tables 3-6 and 3-7. The distribution of entering and exiting traffic on SR 112 is provided in Table 3-6. Movements entering and exiting from I-95 and NW 42nd Avenue, at either end of the expressway, represent significant movements. In addition, 27.3 percent of all movements entering SR 112, enter from NW 22nd Avenue. Since this interchange serves the local residential community as well as the Earlington Heights Metromover station, the entering movements from this interchange may be the result of various commuter-oriented travel patterns.

**Table 3-6**
**Access and Egress Ramps: SR 112 – Airport Expressway**
**Percent of Total Movements**

| Interchange | Access Ramp | Egress Ramp |
|---|---|---|
| NW 42nd Avenue / S LeJeune Road and Points West | 24.6 | 31.3 |
| NW 27th Avenue | 8.0 | 7.3 |
| NW 22nd Avenue | 27.3 | 16.3 |
| I-95 / I-95 Express Lanes | 25.6 | 22.9 |
| I-195 | 14.6 | 12.6 |
| NW 17th Avenue (via NW 40th Street) | -- | 0.6 |
| NW 12th Avenue (via NW 39th Street) | -- | 9.0 |
| **Total** | **100.0** | **100.0** |

The distribution of entering and exiting traffic on SR 836 is provided in Table 3-7. Major entering and exiting movements include HEFT, SR 826, NW 42nd Avenue, I-95 and I-395. Additionally, about 15 percent of traffic enters and exits SR 836 at NW 87th Avenue. This may be due to motorists attempting to avoid the mainline toll plaza located west of NW 87th Avenue. Another significant interchange is NW 57th Avenue, with 13.8 percent of traffic entering SR 836 at this interchange, possibly due to trips





originating from and headed to the Metropolitan Hospital, business parks and residences located in this area.

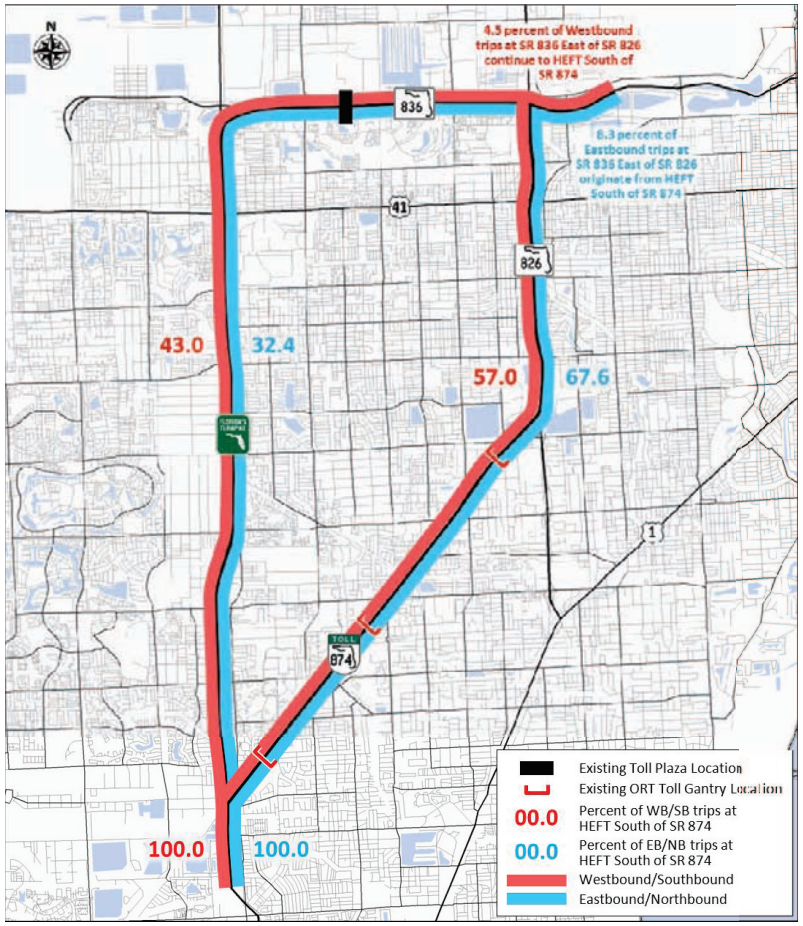
**Table 3-7**
**Access and Egress Ramps: SR 836 – Dolphin Expressway**
**Percent of Total Movements**

| Interchange | Access Ramp | Egress Ramp |
|---|---|---|
| NW 137th Avenue | 3.2 | 3.6 |
| SR 821 / Florida's Turnpike | 11.5 | 3.6 |
| NW 107th Avenue | 0.3 | 0.0 |
| NW 87th Avenue | 13.0 | 15.0 |
| SR 826 / Palmetto Expressway | 14.3 | 15.4 |
| NW 72nd Avenue / Milam Dairy Road | 4.7 | 3.2 |
| NW 57th Avenue / N Red Road | 13.8 | 7.1 |
| NW 45th Avenue | 1.9 | 4.2 |
| NW 42nd Avenue / S LeJeune Road | 7.9 | 11.9 |
| NW 37th Avenue | 4.6 | 2.2 |
| NW 27th Avenue | 3.6 | 6.1 |
| NW 17th Avenue | 3.9 | 4.8 |
| NW 12th Avenue | 2.0 | 5.1 |
| I-95 | 11.8 | 13.4 |
| I-395 | 3.5 | 4.4 |
| **Total** | **100.0** | **100.0** |

## Observed Travel Patterns on SR 874 and HEFT

Based on the BluFAX Bluetooth reader placed on HEFT south of SR 874, CDM Smith analyzed observed travel patterns from HEFT south of SR 874 to SR 836 east of SR 826. The analysis revealed that 8.3 percent of observed Eastbound trips and 4.5 percent of observed Westbound trips on SR 836 east of SR 826 originate from or continue to HEFT south of SR 874. Trips traveling between these two points have two primary travel options. The first option is to use SR 874 and SR 826, a trip of 11 miles and $1.00 under current SunPass® passenger car toll rates. The second option is to use HEFT and the western section of SR 836, a trip of 13.5 miles and $1.77 under current SunPass® passenger car toll rates.

CDM Smith analyzed the percent of traffic using each travel option based on the observed results of the interchange-to-interchange movement survey. The results of this analysis are shown in Figure 3-9. Of the total observed trips traveling to and from HEFT south of SR 874, 67.6 percent of Northbound traffic and 57.0 percent of Southbound traffic chose to use SR 874. This may be due to the slightly shorter distance and lower toll using the SR 874 route. However, despite needing to pay an additional $0.77 in tolls, 32.4 percent of observed Northbound traffic and 43.0 percent of observed Southbound traffic still chose to use HEFT and the western end of SR 836. This may be due to travelers who had previously switched to HEFT to avoid construction on SR 874 and have not yet returned despite the current reduction in construction activity. The percentages of travelers using either travel option will most likely continue to change based on toll rate changes on both the HEFT and on the MDX Expressways and based on construction activity on HEFT and SR 874.




**DISTRIBUTION OF SR 836 TRIPS TO AND FROM HEFT, SOUTH OF SR 874**

FIGURE 3-9





## Balanced Traffic Profiles

Based on the FY 2013 AWDT volumes and AADT volumes, CDM Smith developed balanced profiles for each of the MDX Expressways. The balanced profiles provide balanced, FY 2013 traffic volumes for each mainline and ramp segment.

Due to current construction activities, traffic counts could not be performed in the area of the SR 836 / SR 826 interchange. In lieu of traffic count data, CDM Smith relied upon an assessment of interchange-to-interchange movements obtained from Bluetooth reader technology to estimate traffic volumes on SR 836 between NW 87th Avenue and NW 72nd Avenue as well as available 2012 traffic count data from FDOT. First, the distribution of traffic traveling from both ends of the construction zone to the intermediate interchanges and through the construction zone was estimated based on the interchange-to-interchange movements observed by the BluFAX Bluetooth readers. The distribution of traffic to and from each interchange within the construction zone was also estimated. These distributions were then applied to the mainline counts performed on either end of the construction zone. The traffic volume estimates resulting from this process were checked for reasonableness against 2012 mainline traffic counts from FDOT, as well as the balanced profile created for the 2010 Investment Grade Traffic and Revenue Study.

The profiles were developed on an hourly basis for the average weekday based on the AWDT volumes and by time period for the average day based on the AADT volumes. The total daily traffic volumes for the average weekday and average day can be found in Figures 3-10 through 3-14.

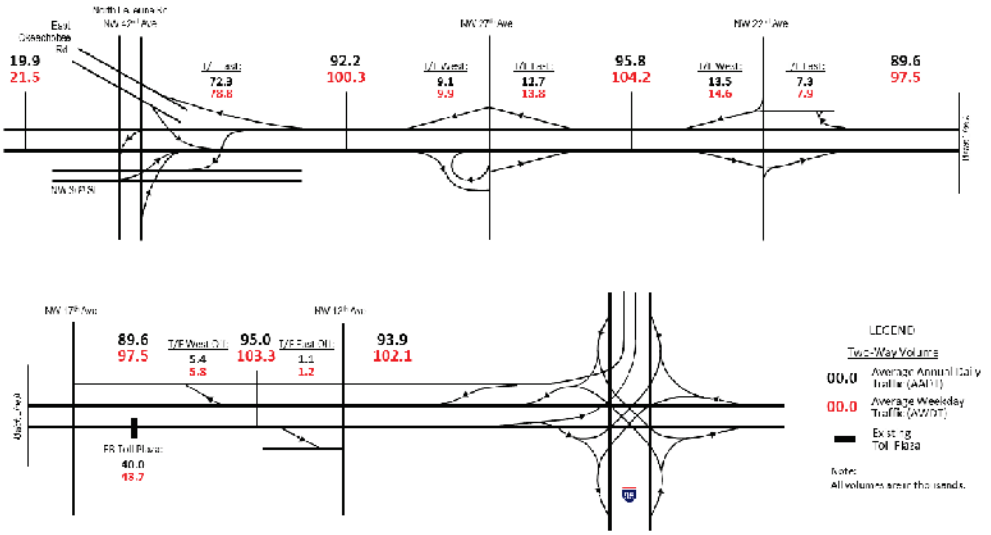
### SR 112 - Airport Expressway

Estimated two-way AADT and AWDT volumes for SR 112, the Airport Expressway, are shown in Figure 3-10. At the existing eastbound mainline toll plaza location between NW 17th Avenue and NW12th Avenue, eastbound AADT and AWDT were 34,000 and 40,200 in FY 2013, respectively. Along the other segments of SR 112, two-way AADT volumes ranged between 89,600 and 95,800 vehicles in FY 2013. The segment with highest FY 2013 two-way AADT volume was between NW 27th Avenue and NW 22nd Avenue at 95,800. The segment with the lowest two-way AADT volume was between NW 22nd Avenue and NW 17th Avenue at the location of the toll plaza, with an AADT volume of 89,600, as some SR 112 patrons exit at NW 22nd Avenue and use local arterials in order to avoid the toll. Lastly, an average of 19,900 vehicles per day, and 21,500 per weekday, travels to and from the Miami International Airport, representing 21.5 percent of traffic west of NW 27th Avenue.

### SR 836 – Dolphin Expressway

Estimated two-way AADT and AWDT volumes for SR 836, the Dolphin Expressway, are shown in Figures 3-11 and 3-12. Due to the construction efforts on SR 836, CDM Smith had to use the configuration of the SR 836 mainline and ramps at the time the traffic counts were conducted as the basis for the balanced traffic profiles.

In FY 2013, traffic volumes on the SR 386 Extension between NW 137th Avenue and the HEFT were 21,700 vehicles on the average day and 23,200 vehicles on the average weekday. At the SR 836 western mainline plaza located near NW 97th Avenue, two-way AADT and AWDT volumes were 114,300 and 121,300 vehicles in FY 2013, respectively. The SR 836 eastern mainline and ramp toll locations west of NW 17th Avenue, which toll eastbound motorists only, had combined FY 2013 eastbound AADT and AWDT volumes of 69,600 and 70,500 vehicles, respectively.

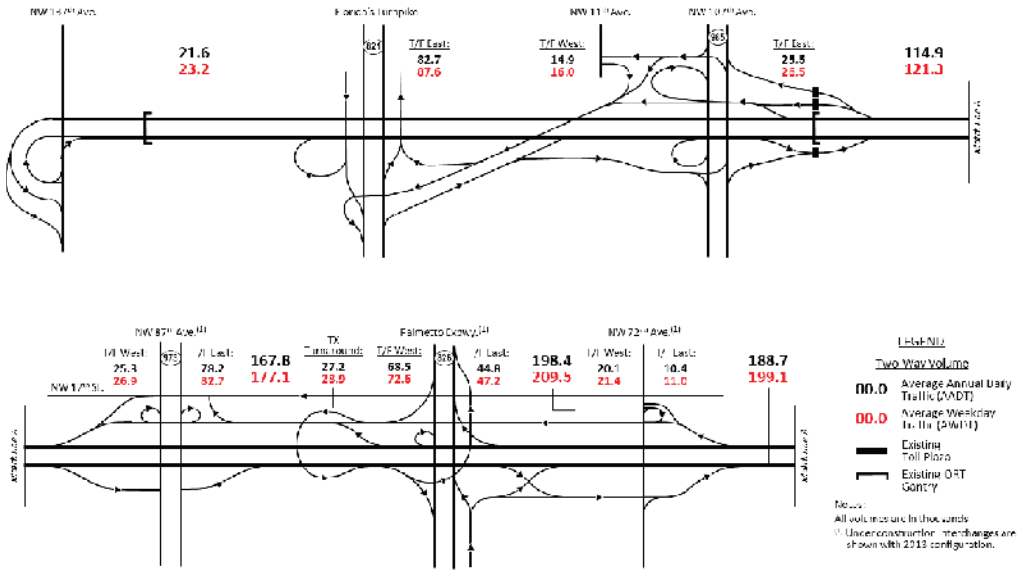



**ESTIMATED FY 2013 AVERAGE DAILY TRAFFIC VOLUMES**
**SR 112 - AIRPORT EXPRESSWAY**
FIGURE 3-10

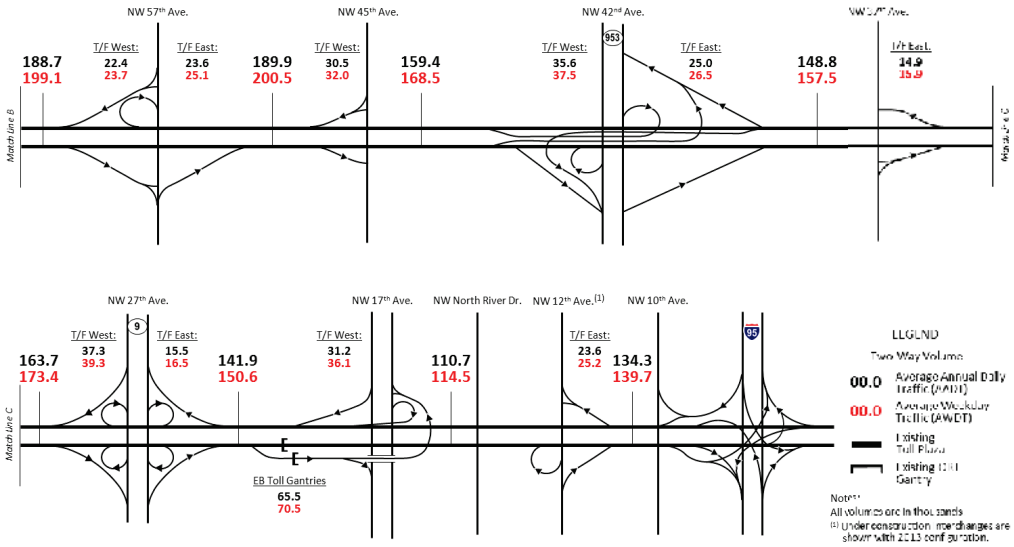









**ESTIMATED FY 2013 AVERAGE DAILY TRAFFIC VOLUMES**
**SR 836 - DOLPHIN EXPRESSWAY**
FIGURE 3-11




**ESTIMATED FY 2013 AVERAGE DAILY TRAFFIC VOLUMES**
**SR 836 - DOLPHIN EXPRESSWAY**
FIGURE 3-12





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The section of SR 836 carrying the greatest traffic volumes is located between SR 826 and NW 45th Avenue. This section is a major east-west connection, specifically from the HEFT and SR 826 to Miami International Airport and downtown Miami. In FY 2013, two-way AADT volumes between SR 826 and NW 45th Avenue ranged between 188,400 and 198,100 vehicles. Two-way AWDT volumes between SR 826 and NW 45th Avenue ranged between 199,100 and 209,500 vehicles.

### SR 874 – Don Shula Expressway and SR 878 – Snapper Creek Expressway

Estimated two-way AADT and AWDT volumes for SR 874 and SR 878, the Don Shula and Snapper Creek Expressways, are shown in Figure 3-13. At the former mainline toll plaza location between the HEFT and SW 104th Street / Killian Parkway, two-way AADT and AWDT volumes were 77,300 and 83,200 vehicles in FY 2013, respectively. The segment of SR 874 with the greatest traffic volumes in FY 2013 was located between SW 104th Street / Killian Parkway and SW 88th Street / Kendall Drive. In FY 2013, this segment had a two-way AADT volume of 101,500 vehicles and a two-way AWDT volume of 109,300 vehicles. The northern segment, between SR 878 and SR 826, had an AADT volume of 73,800 vehicles and an AWDT volume of 79,100 vehicles. Volumes along SR 878, the Snapper Creek Expressway, ranged between 24,900 and 39,300 vehicles on the average day and between 26,800 and 42,800 vehicles on the average weekday.

### SR 924 – Gratigny Parkway

Estimated two-way AADT and AWDT volumes for SR 924, the Gratigny Parkway, are shown in Figure 3-14. The recession severely impacted the Miami region in general, including Broward County commuters, who are significant users of SR 924. Since 2009, traffic volumes on SR 924 have begun to recover back to pre-recession levels. At the former mainline toll plaza between NW 57th Avenue and LeJeune-Douglas Expressway, the FY 2013 two-way AADT volume was 34,900 vehicles and the two-way AWDT volume was 42,000 vehicles. The greatest traffic volumes for the expressway are located between SR 826, Palmetto Expressway, and NW 57th Avenue. In FY 2013, the two-way traffic volumes were 44,600 vehicles on the average day and 53,600 vehicles on the average weekday.

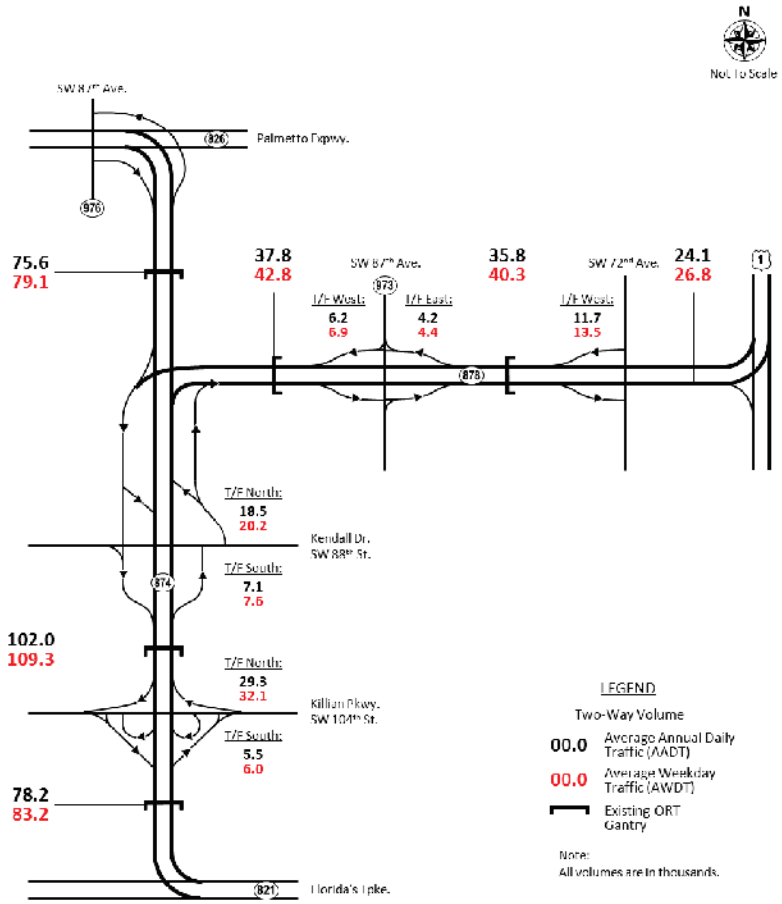
## Travel Times and Speeds

The difference between free-flow speeds and observed peak period speeds is primarily a function of roadway congestion. Given that slower speeds increase travel times and influence the choice of route, the collection of updated travel time and speed data was essential to the calibration of the updated model.

For this study, speed data were collected from three sources. The 2011 INRIX speed database was provided by FDOT for all of Miami-Dade County. The database provides observed speeds on major Miami-Dade County roadways in 5-minute increments for the entire year. From this database, selected major roadways were summarized, providing the 2011 speeds on major Miami-Dade County roadways for the average day in 5-minute increments. This data was verified against and supplemented by speed delay runs conducted by CDM Smith in August 2013 as well as by TTI data on I-95, I-195 and SR 826 available from FDOT. Figure 3-15 illustrates the locations of the processed INRIX, CDM Smith speed delay, and FDOT TTI speed data. The speed data collected covers the major expressways and arterials in Miami-Dade County as well as the major competing arterials for SR 836 and SR 112.

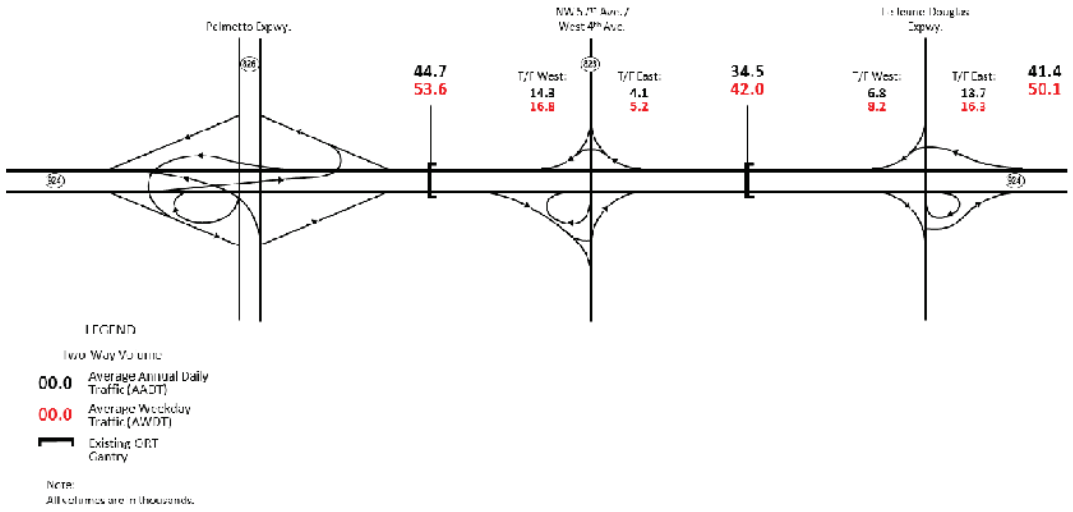







**ESTIMATED FY 2013 AVERAGE DAILY TRAFFIC VOLUMES**
**SR 874 - DON SHULA EXPRESSWAY AND**
**SR 878 - SNAPPER CREEK EXPRESSWAY**

FIGURE 3-13




**ESTIMATED FY 2013 AVERAGE DAILY TRAFFIC VOLUMES**
**SR 924 - GRATIGNY PARKWAY**
FIGURE 3-14





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**SPEED DATA LOCATION MAP**
FIGURE 3-15





## INRIX Speed Data on MDX Expressways

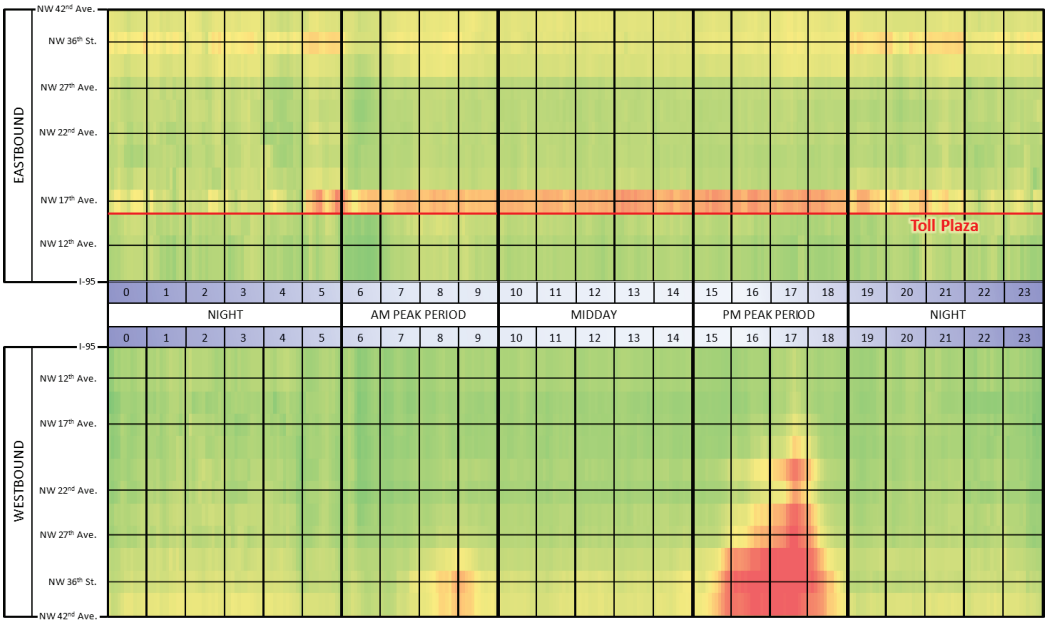
The INRIX speed data were summarized by 5-minute increments for the average data and are displayed by roadway segment in a "heat map" format in Figures 3-16 to 3-19 in order to show speeds by time of day and by location. Speeds greater than 50 miles per hour are shown in green, while lower speeds are shown in yellow and red.

INRIX speed data for SR 112 are shown in Figure 3-16. The eastbound direction shows slightly lower speeds west of NW 27th Avenue for all time periods, which may be a result of traffic merging on from the arterial network. Reduced speeds also occur eastbound at the current toll plaza east of NW 17th Avenue. These reduced speeds do not back up too far past NW 17th Ave. These speed reductions will mostly likely be eliminated following the conversion to ORT. In the westbound direction, reduced speeds occur during the PM Peak Period (3:30 – 6:30 PM), stretching from NW 17th Avenue to NW 42nd Avenue, as increased peak hour volumes lead to congestion on the exit ramps at the western end of the expressway. Additionally, there are some slow speeds apparent during all time periods just east of NW 42nd Avenue, most likely due to the transition to the arterial network.

The summarized INRIX speed data for SR 836 are shown in Figure 3-17. SR 836 eastbound experiences reduced speeds and travel times during the AM peak period (6:30 – 9:30 AM), starting around 7:00 AM, between 107th Avenue to NW 57th Avenue. Speed reductions remain through the midday and into the PM Peak Period between SR 826 and NW 57th Avenue. These speed reductions may be related to construction activities at the SR 836 / SR 826 interchange and to the merging of on-coming traffic from NW 87th Avenue, SR 826 and NW 72nd Avenue. Minor delays are also experienced at NW 12th Avenue in the AM and PM Peak Periods, most likely due to congestion on the I-95 entrance ramps. There are freeflow speeds on SR 836 westbound for most of the day, with the exception of the PM Peak Period. At this time, weaving and exiting traffic at NW 72nd Avenue and SR 826 lead to significant traffic congestion as far east as I-95. These delays may be reduced following the reconstruction of the SR 836 / SR 826 interchange, which will reduce weaving and channel exiting traffic into CD roads.

INRIX Speed data for the ORT Expressways are shown by direction in Figures 3-18 and 3-19. Eastbound and Northbound speeds are mostly free flow throughout the day, with some congestion during the AM Peak Period, most likely due to the transition to the connecting roadways at the termini of the expressways. On SR 874, some reduced speeds are evident between SR 826 and Kendall Drive as well as from the southern toll gantry to HEFT. On SR 878, some speed reduction occurs in the AM Peak Period and PM Peak Period at the intersection with U.S. Route 1 at the eastern end of the expressway. Also, speed reductions occur on SR 924 as the roadway transitions from expressway to arterial at NW 38th Avenue.

Westbound and Southbound speeds are mostly free flow throughout the day, with some slight speed reductions related to accelerating traffic at the termini of the expressways. The only exception is SR 874, where additional delays are experienced in the PM Peak Period. The congestion in the area of Kendall Drive is most likely related to construction activities occurring in that area at the time the speed data were collected. The speed reductions south of SR 826 may also be related to traffic accelerating as it enters SR 874 from SR 826.

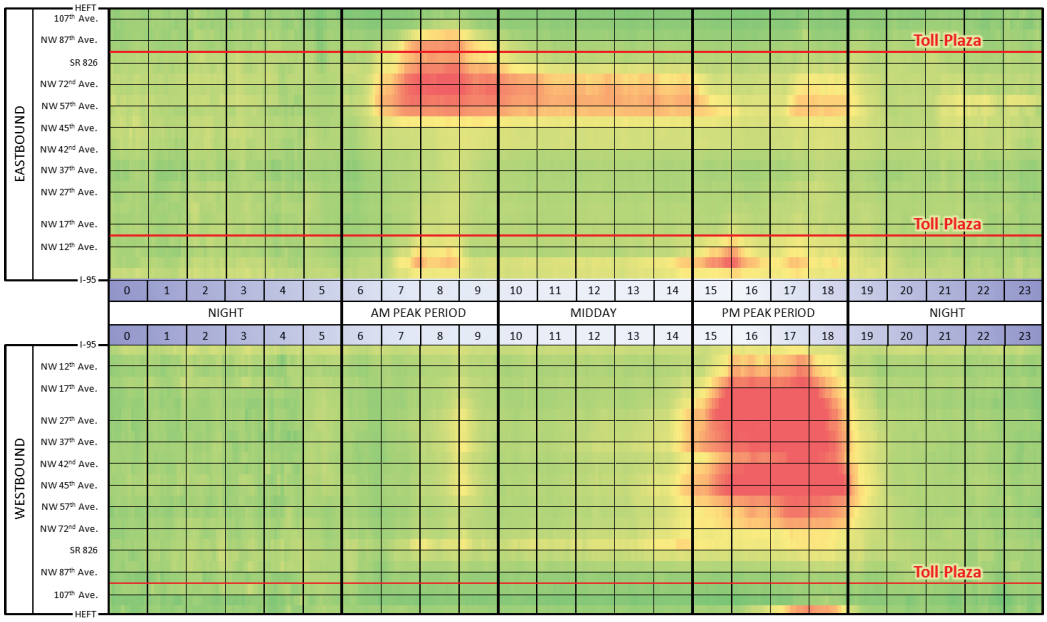



**2011 SPEED DATA IN 5-MINUTE TIME INCREMENTS**
**SR 112 - AIRPORT EXPRESSWAY**
FIGURE 3-16





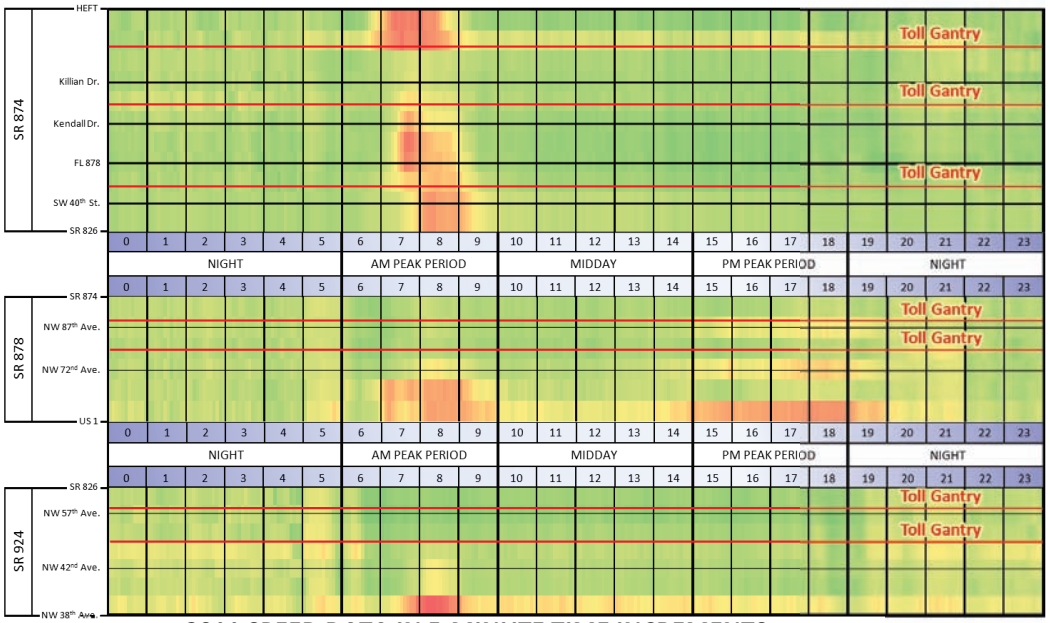
CPM Smith
FINAL April 25, 2014




**2011 SPEED DATA IN 5-MINUTE TIME INCREMENTS**
**SR 836 - DOLPHIN EXPRESSWAY**
FIGURE 3-17



Chapter 3 • Traffic Data Collection

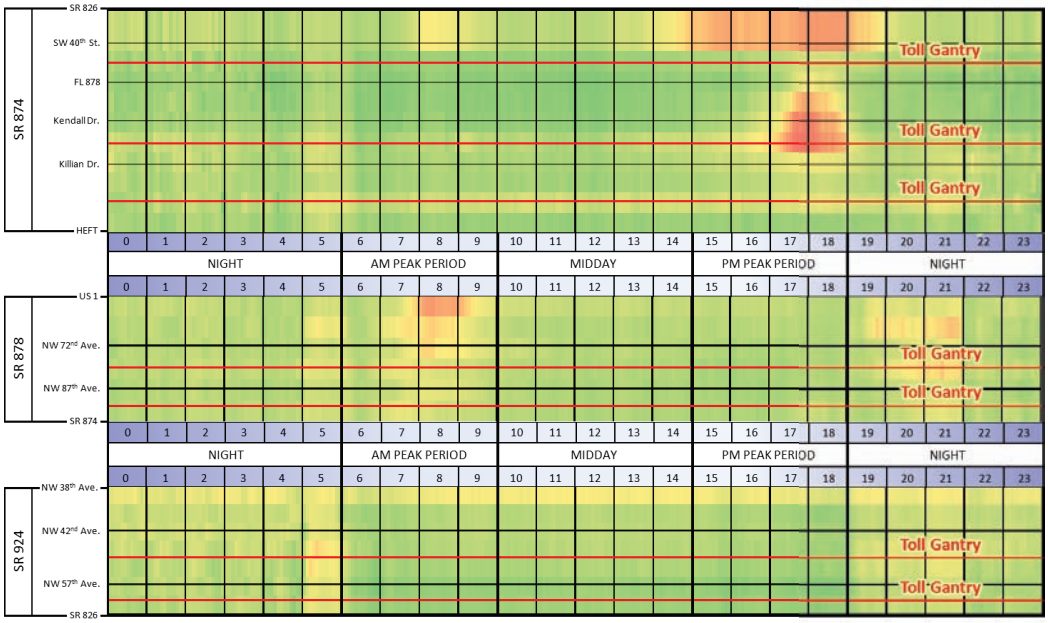



**2011 SPEED DATA IN 5-MINUTE TIME INCREMENTS**
**ORT EXPRESSWAYS - NORTHBOUND/EASTBOUND**
FIGURE 3-18





CDM Smith
FINAL April 25, 2014




**2011 SPEED DATA IN 5-MINUTE TIME INCREMENTS**
**ORT EXPRESSWAYS - SOUTHBOUND/WESTBOUNDD**
FIGURE 3-19



Chapter 3 • Traffic Data Collection

## Observed Speeds and Travel Times on SR 836 and Alternative Roadways

Based on the INRIX data and speed and delay runs performed, CDM Smith analyzed free flow and congested speeds and travel times on SR 836 and alternative roadways. The purpose of the analysis was to estimate the time savings experienced by SR 836 users compared to the various arterial alternatives, as well as the potential for improved travel speeds on SR 836 itself. The results of the analysis are shown for the PM Peak Period in the peak westbound direction in Figures 3-20 and 3-21 as a comparison between major roadway segments. In terms of travel speeds, SR 836 continues to experience faster speeds for most segments when compared to the various arterial alternatives, except in the area between NW 42nd Avenue and NW 17th Avenue, where speeds on SR 836 are reduced below those experienced on the competing arterials. SR 112 may serve as an effective expressway alternative to SR 836 in this area due to the faster travel speeds available. Although travel times are greater than free-flow speeds during the PM Peak Period, SR 836 remains the fastest east-west roadway for long distance travel. A PM Peak Period trip from I-95 to HEFT will take 21.1 minutes on SR 836, 27.5 minutes on US 41, 27.8 minutes on NW 36th/41st Street, and 32.6 minutes on NW 12th / 14th Street. The difference between free-flow travel time and congested travel time for the same trip on SR 836 is 9.2 minutes, which represents the maximum potential time savings from any improvements in travel speeds.



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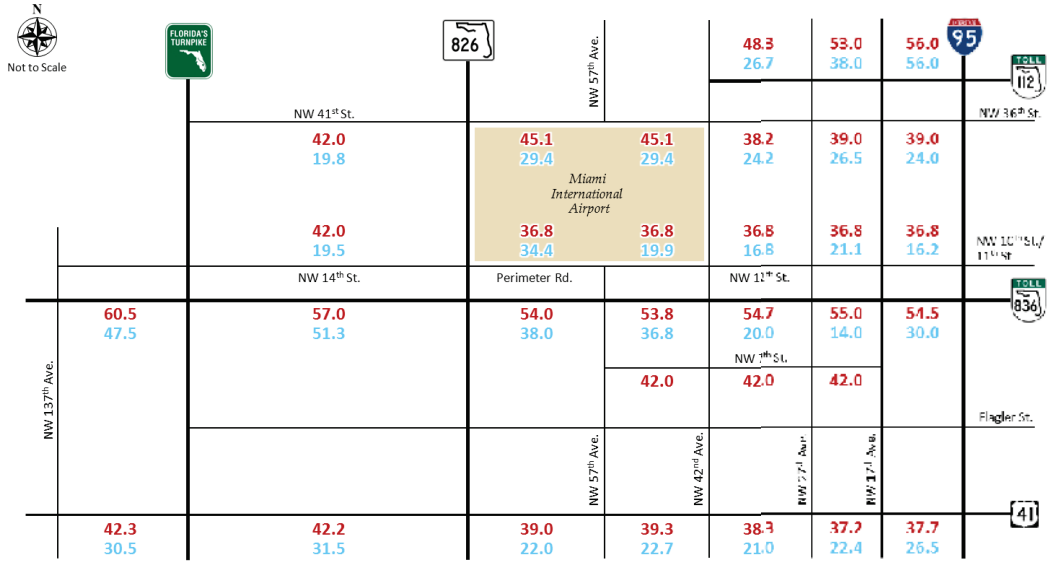



LEGEND

**00.0** Freeflow Westbound Speed (mph)
**00.0** PM Peak Period Westbound Speed (mph)
Note: PM Peak Period is 3:30 pm to 6:30 pm.

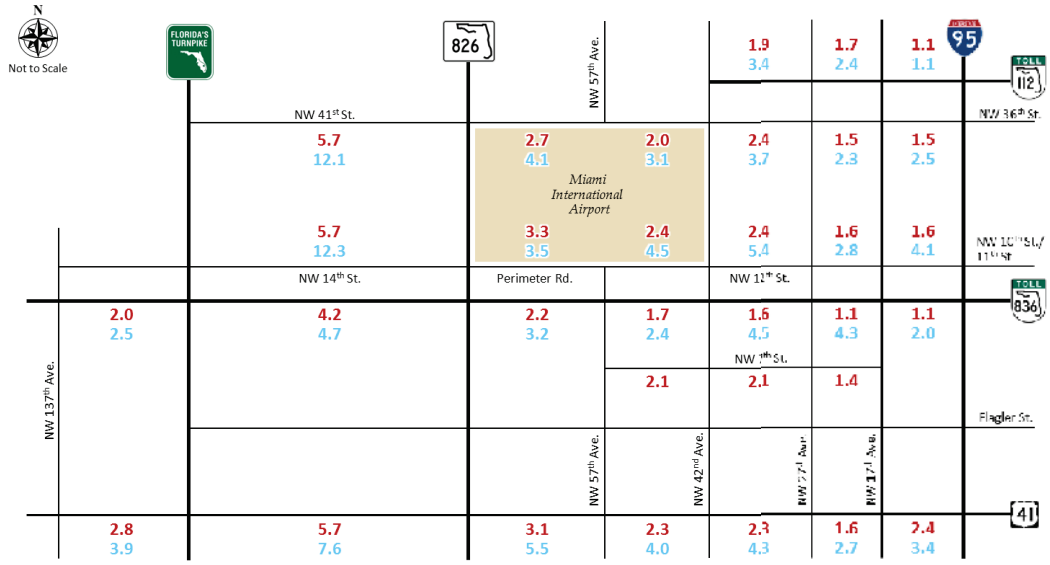
## SR 836 AND ALTERNATIVE ROADWAY
## PM PEAK PERIOD AND FREEFLOW AVERAGE SPEEDS

FIGURE 3-20










LEGEND

**00.0** Freeflow Westbound Travel Time (min)
**00.0** PM Peak Period Westbound Travel Time (min)
Note: PM Peak Period is 3:30 pm to 6:30 pm.

## SR 836 AND ALTERNATIVE ROADWAY
## PM PEAK PERIOD AND FREEFLOW TRAVEL TIMES

FIGURE 3-21

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# Chapter 4

# Travel Pattern and Trip Characteristics Survey

In August and September of 2013, Resource Systems Group, Inc. (RSG) and CDM Smith conducted an origin and destination (O-D) survey for SunPass® customers who use any of the five Miami-Dade Expressway Authority (MDX) expressways in Miami-Dade County, which are shown in Figure 4-1. The survey was conducted to better understand the actual travel patterns and trip characteristics of travelers who drive on MDX Expressways. In addition to this, the data were used to aid in the calibration of the travel demand model. Furthermore, data such as trip frequency were also collected to aid in developing traffic and revenue impacts associated with alternative toll pricing programs such as volume or frequent user discounts. The questionnaire collected data about respondents' most recent trip using an MDX expressway, including origin-destination location, which expressways were used, access and egress ramps, trip purpose, travel time, and trip frequency. The survey also asked about schedule flexibility and driver's propensity to shift their travel times to off-peak periods in exchange for discounted toll rates.

**Figure 4-1: Map of MDX Expressways**

The survey approach employed a computer-assisted self-interview (CASI) technique developed by RSG. The stated preference survey instrument was customized for each respondent by presenting questions and modifying wording based on respondents' previous answers. These dynamic survey

features provide an accurate and efficient means of data collection and allow the presentation of realistic questions that correspond with respondents' reported experiences.

The survey was administered to SunPass® account holders through an email invitation campaign authorized by MDX. SunPass® account holders who had made at least one transaction on an MDX expressway during the month of August 2013 were invited to participate in the study. This would ensure that the data collected represented the most recent travel patterns and characteristics. The invitation to potential respondents contained a brief introduction to the purpose of the study, an explanation of the prize drawing available to respondents who completed the survey, and a direct link to the survey website. Respondents had the option of completing the survey in either English or Spanish, and could change the survey language at any point in the questionnaire.

From a total of 1.16 million SunPass® account holders who made at least one transaction during the month of August, a pool of 105,000 email addresses were randomly selected to receive survey invitations. This represented about 9 percent of the total pool of SunPass® account holders. Due to the time involved in sending each batch of emails and the project schedule, additional invitations could not be sent. Over the course of the 16 day administration period, a total of 2,658 respondents completed the survey, yielding a response rate of 2.5 percent. This response rate is comparable to other surveys that have been conducted of SunPass® account holders in Miami-Dade County.

This chapter documents the content of the questionnaire, presents the survey results, and summarizes the main findings from the data analysis. As previously noted, a copy of the full report addressing technical details of the survey along with additional survey tabulations and figures is included in Appendix B to this report.

## Survey Questionnaire

At the beginning of the survey questionnaire, respondents were presented with an introduction to the purpose of the survey, the estimated time required to complete the questionnaire, and instructions for how to navigate through the computer-based instrument. A project email address was included on this and all subsequent screens to provide online respondents with a way to contact the survey team with any technical comments or questions about the survey. Each screen also included a link to RSG's privacy policy and a progress bar showing the approximate position of each question in the survey

Following the introduction, the survey included questions organized in two main sections: trip qualification questions, which determined respondent eligibility, and trip detail questions, which asked both about respondents' most recent trip using an MDX expressway and about other travel preferences. A full print out of the survey questionnaire is provided in Appendix B.

### Survey Introduction and Trip Qualification Questions

After being presented with basic instructions about how to navigate the computer-based instrument and a brief introduction to the purpose of the study, respondents were asked if they had a made a recent qualifying trip. Figure 4-2 shows the trip qualification screen from the online questionnaire. To be eligible to take part in the survey, respondents must have made a trip that:

- Was made within the last 30 days;
- Took at least 10 minutes from start to finish; and





- Used at least one of the following MDX expressways;
  - SR-112 – Airport Expressway;
  - SR-836 – Dolphin Expressway;
  - SR-874 – Don Shula Expressway;
  - SR-878 – Snapper Creek Expressway; or
  - SR 924 – Gratigny Expressway.

**Figure 4-2: Trip Qualification Screen**

### Trip Characteristic Questions

Qualifying respondents continued on to answer a series of questions about their most recent trip in the study area. This most recent trip, referred to as the respondent's "reference trip", formed the basis for the rest of the questions in this section of the survey.

Respondents were instructed to think of the one-way portion of their trip, rather than their entire round trip, and were asked a series of questions regarding the specific details of their reference trip and travel patterns using MDX expressways, including:

- Day of the week of most recent trip;

- MDX expressways used;
- Trip purpose;
- Origin and destination locations;
- MDX expressway access and egress ramps used;
- If tolls were paid on each MDX expressway;
- Trip departure time;
- Travel time;
- Travel delay due to traffic congestion;
- Arrival time flexibility;
- Likelihood of shifting departure time for a toll discount;
- Return trip route and travel time;
- Vehicle type;
- Trip frequency;
- Weekend use of MDX Expressways;
- Residency and length of stay for non-residents;
- Home zip code; and
- Interest in participating in future studies.

Respondents were first asked to report the day of the week their trip took place, the primary purpose for their trip, and which MDX expressways they used. Respondents were allowed to select multiple MDX expressways if appropriate for their trip. Respondents were then asked to indicate the general locations their trips began and ended at; either at home, a regular work place, or another place. Next, the precise geographic beginning and ending locations for the trip were collected using a Google Maps interface. Respondents had the option of entering a full address, street intersection, or business name to identify the location or to select the location using an interactive map, a sample of which is shown in Figure 4-3.

The location information was geocoded using a Google Maps application programming interface (API) that provided the latitude and longitude for the trip origin and destination. Estimates of the total trip distance and travel time were also calculated within the application.

If a respondent entered a trip that started and ended in the same location, they were asked if they needed to make a correction. Respondents who reported 'yes' were brought back to the origin location page. Respondents who reported 'no' were brought back the screener page and asked if they had made another recent qualifying trip.





After the origin and destination questions, respondents were asked to indicate which ramps they utilized to access and egress each MDX expressway they used. Next, respondents were asked to indicate if they paid any tolls on their trip and, if so, on which MDX expressways they paid the toll.

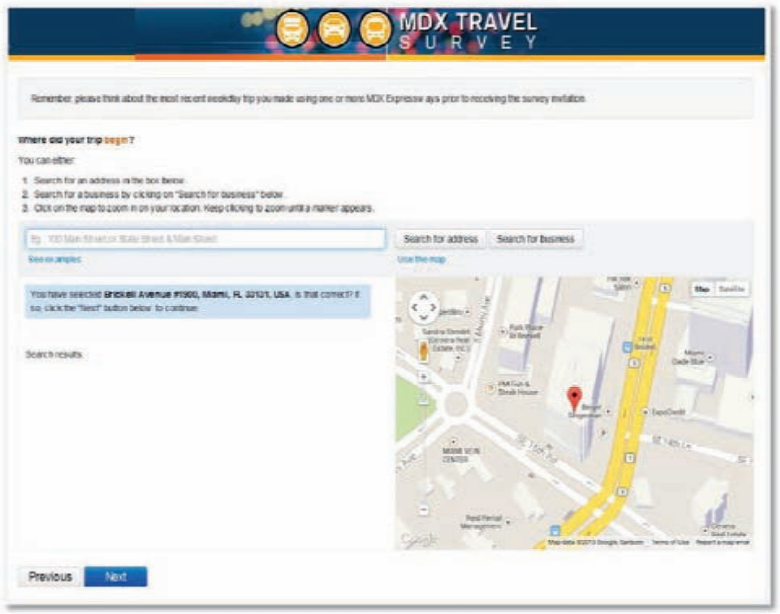


**Figure 4-3: Origin Location Address and Map Interface**

Respondents then were asked to enter their trip departure time and their travel duration. When reporting a trip travel time, respondents were instructed to only include time spent driving, and to not include time spent at any stops made along the way. A sample screen of the trip travel time question is shown in Figure 4-4. If a respondent entered a trip duration that was significantly shorter or longer than the travel time calculated by the Google Maps driving directions algorithm, the respondent was shown a warning screen stating that the travel time they reported for their trip appeared to be too short or too long. The respondent was then given the option of changing their travel time or continuing on with the survey without changing their travel time.

**Figure 4-4: Trip Travel Time**

Next, respondents were asked if they experienced any delays as a result of traffic congestion on any of the MDX Expressways they used. Respondents who experienced delay were asked a follow-up question to indicate how long their trip would take without congestion on any MDX expressways. The survey then asked all respondents how much flexibility they had to arrive either earlier or later to their destination.

Respondents who began their trip during a peak travel period (Monday-Friday, 6-9 AM or 4-7PM) were asked if discounted tolls during non-peak hours would persuade them to shift their departure time outside of the peak period. Next, respondents were asked if they use the same route in the reverse direction and, if so, how long they estimate their reverse trip might take discounting any stops made along the way.

Respondents were then asked to indicate the type of vehicle they were traveling in, how often they made the same trip in the same direction, and if they use MDX Expressways for any discretionary weekend trips.

To conclude the survey, respondents were asked about their residency status, including if they are a resident of Miami-Dade County or a visitor, how long they were planning to stay in Miami-Dade County if they were a visitor, and their home zip code. Respondents were then offered the chance to enter the prize drawing and provide any comments or suggestions they had about the survey or travel on MDX expressways in general before they were asked to click, "finish" to end the survey. Respondents were then thanked for their time and told they could exit out of the survey by closing their browsers.





## Survey Administration

The survey was administered entirely online to SunPass® account holders with a valid email address who had used at least one MDX expressway during the 30-day period between July 30 and August 28, 2013. This represented more than 1.16 million SunPass® account holders. From this pool of eligible SunPass® users, a total of 105,000 email addresses were randomly selected, representing about 9 percent of the total pool of SunPass® account holders. Invitations to these addresses were sent in three batches; the first batch of 25,000, corresponding with the opening day of the survey, was sent August 28th, a second batch of 40,000 was sent the following night, and a final batch of 40,000 was sent on September 5th. Due to the time involved in sending each batch of emails and the project schedule, additional invitations could not be sent. Once the project team was satisfied by the number of completed surveys, the survey link was shut down on September 12th, 2013. The survey dates of late August and early September, 2013 were chosen so that a majority of trips reported in the survey would occur after Miami-Dade public schools resumed sessions on August 19.

SunPass® account holders selected to participate received an email invitation that described the purpose of the study, a description of the prize drawing for one of three $500.00 Visa Check Cards, and a direct link to the survey website. Respondents accessed the survey by clicking on the link or copying and pasting it into their web browser's address bar.

Over the course of the 16 day administration period, a total of 2,658 respondents completed the survey, yielding a response rate of 2.5 percent. This response rate is comparable to other surveys that have been conducted of SunPass® account holders in Miami-Dade County.

## Passenger Vehicle Survey Results

A total of 2,658 passenger vehicle travelers completed the O-D survey during the administration period in from late August to mid-September 2013 after the summer vacation for schools in South Florida. Respondents were given the choice of completing the survey in English or Spanish, with the option of switching between languages at any time during the survey by clicking on the language toggle button which was located at the bottom of every survey screen.

### Data Cleaning

Each observation in the dataset was checked for reasonableness and consistency by looking at a number of key variables, including the origin and destination locations, reported travel time, and reported delay. The number of completed survey records was reduced to 2,604 after completing data checks and outlier analysis. Fifty-four unique records were removed from the final analysis for one or more of the following reasons (the numbers presented below are not mutually exclusive);

- Respondents with calculated travel speeds (60 * calculated travel distance/reported travel time) that were less than 3 mph (29 respondents);
- Respondents with calculated travel speeds (60 * calculated travel distance/reported travel time) that were greater than 120 mph (7 respondents);
- Respondents whose reported amount of delay due to congestion was greater than 80 percent of their total travel time (8 respondents); and

- Respondents whose trip origins and destinations precluded reasonable use of any MDX expressways (16 respondents).

The descriptive analysis of the data presented here is based on the 2,604 respondents who were included in the final dataset.

## Trip Detail Questions

Much of the analysis in this section is presented by the MDX expressway or expressways respondents indicated they used on their reference trip. It should be noted that some respondents used more than one expressway on their reference trip and that this should be kept in mind when interpreting the results presented herein.

Table 4-1 identifies the number of respondents and the percent of the total sample that used each of the MDX expressways. A majority of the sample indicated they drove on the Dolphin Expressway (56 percent). The next most frequently traveled expressway, the Don Shula Expressway, was used by 28 percent of respondents. Both the Gratigny and Snapper Creek Expressways had the fewest travelers in the sample, with approximately 10 percent using both. As indicated in Table 4-2, most respondents used only one MDX expressway on their trip (78 percent), while 20 percent of respondents used two, and 1.5 percent of the sample used three MDX expressways. No respondents used more than three expressways on their reference trip.

**Table 4-1**
**Distribution by Expressway**

| Expressway Used | Count | Percent |
|---|---|---|
| SR 112 – Airport Expy. | 476 | 18.3 |
| SR 836 – Dolphin Expy. | 1,457 | 56.0 |
| SR 874 – Don Shula Expy. | 730 | 28.0 |
| SR 878 – Snapper Creek Expy. | 260 | 10.0 |
| SR 924 – Gratigny Pkwy. | 281 | 10.8 |
| **Total Respondents** | **2,604** | --- |

**Table 4-2**
**Number of MDX Expressways Used**

| Number of Expressways Used | Count | Percent |
|---|---|---|
| 1 Expressway | 2,043 | 78.5 |
| 2 Expressways | 522 | 20.0 |
| 3 Expressways | 39 | 1.5 |
| **Total** | **2,604** | **100.0** |





Table 4-3 shows reported trip purposes by MDX expressway. The most commonly reported trip purpose across all expressways was commuting to or from work. This accounted for roughly half of all trip purposes across all expressways. The next most reported trip purpose was a business related trip, with ranges between 8 percent and 20 percent of trip purposes depending on the expressway. Social and recreational trips, along with personal business trips, were reported with less frequency, while other trip purposes such as tourism-related, shopping or school trips represent only a small proportion of reported trip purposes.

**Table 4-3**
**Trip Purpose by Expressway**

| | SR 112 Airport Expy. | | SR 836 Dolphin Expy. | | SR 874 Don Shula Expy. | | SR 878 Snapper Creek Expy. | | SR 924 Gratigny Pkwy. | | MDX System | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Trip Purpose** | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent |
| To/from work | 220 | 46.2 | 669 | 45.9 | 382 | 52.3 | 131 | 50.4 | 146 | 52.0 | **1,251** | **48.0** |
| Business-Related | 73 | 15.3 | 263 | 18.1 | 94 | 12.9 | 23 | 8.8 | 55 | 19.6 | **406** | **15.6** |
| To/from school | 9 | 1.9 | 62 | 4.3 | 37 | 5.1 | 14 | 5.4 | 19 | 6.8 | **115** | **4.4** |
| Shopping | 6 | 1.3 | 30 | 2.1 | 19 | 2.6 | 13 | 5.0 | 8 | 2.8 | **60** | **2.3** |
| Social or Recreational | 46 | 9.7 | 174 | 11.9 | 83 | 11.4 | 39 | 15.0 | 23 | 8.2 | **294** | **11.3** |
| Tourism-Related | 4 | 0.8 | 24 | 1.6 | 8 | 1.1 | 4 | 1.5 | 1 | 0.4 | **33** | **1.3** |
| To/from the airport | 85 | 17.9 | 87 | 6.0 | 18 | 2.5 | - | - | 1 | 0.4 | **172** | **6.6** |
| Personal Business | 33 | 6.9 | 148 | 10.2 | 89 | 12.2 | 36 | 13.8 | 28 | 10.0 | **273** | **10.5** |
| **Total** | **476** | **100.0** | **1,457** | **100.0** | **730** | **100.0** | **260** | **100.0** | **281** | **100.0** | **2,604** | **100.0** |

The latitude and longitude coordinates for each respondent's origin-destination pair were used to calculate a network trip distance using a Google Maps driving directions algorithm. Median calculated trip distances, as well as respondent reported travel times, are displayed in Table 4-4 by expressway. Overall, the median travel time for the entire sample was 45 minutes and median trip distance was 18 miles. This included the entire trip; not just the part on MDX Expressways. Reported trip times and calculated distances were similar across expressways, with the exception of respondents who travelled on the Snapper Creek Expressway. Respondents who reported using this expressway tended to have shorter median trip time and median trip distances.

**Table 4-4**
**Median Travel Time and Median Travel Distance by Expressway**

| Trip Distance/Time | SR 112 Airport Expy. | SR 836 Dolphin Expy. | SR 874 Don Shula Expy. | SR 878 Snapper Creek Expy. | SR 924 Gratigny Pkwy. | MDX System |
|---|---|---|---|---|---|---|
| Calculated Travel Distance (Miles) | 19.1 | 18.6 | 18.9 | 12.5 | 19.1 | **17.6** |
| Median reported travel time (Minutes) | 45.0 | 45.0 | 45.0 | 35.0 | 40.0 | **45.0** |

Trip origins and destinations, stratified by distance traveled, are displayed in Figure 4-5 and Figure 4-6, respectively. The survey was aimed at drivers who use MDX expressways, a discontinuous freeway system extending over a large area of Miami-Dade County. As such, trip clusters or patterns are difficult to distinguish using a macro view; however, the origin-destination maps do reveal shorter distance trips of less than 10 miles in length concentrated closer to downtown Miami and in Miami Beach, while medium and longer distance trips tend to begin and end further away and in adjacent counties, such as in Broward and Palm Beach Counties and at the terminus of the HEFT extension. Table 4-5 presents an origin-destination matrix of survey trips by superdistricts for Miami-Dade

County. The travel demand model used to identify where trips begin and end consists of almost 1,500 traffic analysis zones (TAZ). Each TAZ covers a small geographic area, typically consisting of a few neighborhood blocks. In order to better understand the O-D data, it was aggregated to the 37 traffic analysis superdistricts shown in Figure 4-7.

**Figure 4-5: Trip Origins by Trip Distance**

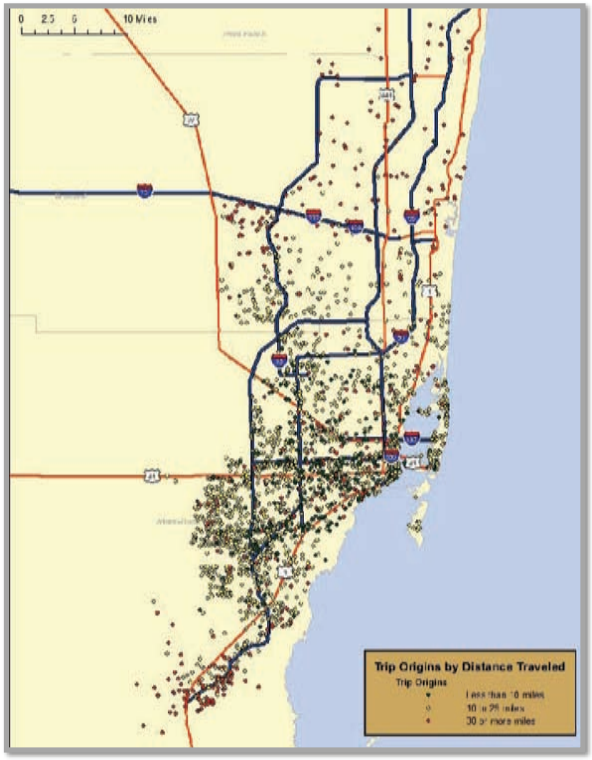






**Figure 4-6: Trip Destinations by Trip Distance**

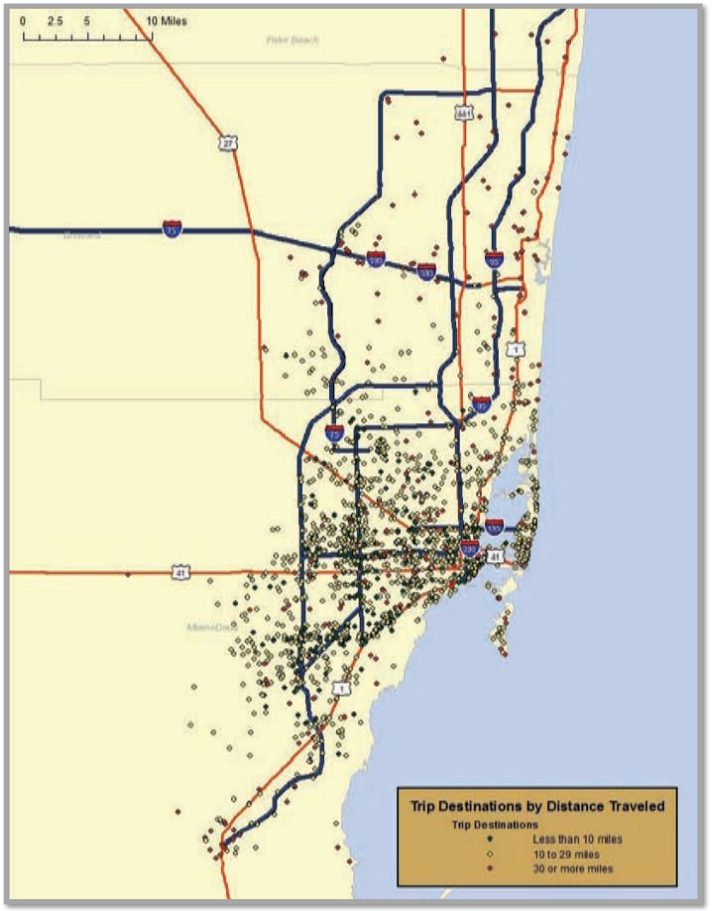

**Table 4-5**
**Origin and Destination Matrix by Miami-Dade County Transportation Analysis SuperDistrict (TAS)**
**Based on the valid Origin and Destination Responses form the 2013 Travel Pattern and Trip Characteristic Survey**

| | Destination TAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Origin TAS** | Outside Miami | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | **Total** |
| Outside Miami | 7 | 16 | 2 | 10 | 4 | 39 | 16 | 12 | 20 | - | 1 | 1 | 5 | 12 | 1 | 15 | 1 | - | - | 2 | 1 | 9 | 7 | 92 | 26 | 2 | 33 | 4 | 8 | - | 1 | 2 | - | 1 | 3 | 3 | 1 | 4 | **361** |
| 1 | 4 | - | - | - | - | 1 | 3 | 2 | - | - | - | 2 | - | 1 | 2 | 9 | 1 | - | 2 | 2 | 1 | 4 | 10 | 15 | 2 | - | 9 | 1 | 5 | - | 2 | 1 | - | - | - | 1 | 3 | - | **83** |
| 2 | 2 | - | - | - | - | - | - | - | - | - | - | 1 | - | 1 | 1 | 4 | 1 | - | - | 1 | - | - | 7 | 4 | 5 | - | 2 | - | 1 | - | - | - | - | - | - | - | - | - | **30** |
| 3 | 2 | - | - | - | - | 1 | 2 | - | 1 | - | - | 1 | 1 | 1 | - | 6 | - | - | - | - | 2 | 1 | 7 | 6 | 2 | - | 5 | 3 | 3 | 2 | - | - | - | - | 1 | - | - | - | **47** |
| 4 | 8 | - | - | - | - | - | - | - | - | - | - | - | - | 2 | 1 | 6 | - | - | - | 1 | - | 1 | 7 | 5 | 3 | - | 4 | - | 4 | 1 | 1 | - | - | - | - | - | - | - | **44** |
| 5 | 9 | - | - | - | - | 3 | 2 | 2 | 1 | - | 1 | 1 | 2 | 3 | 1 | 20 | 3 | - | 1 | 3 | 3 | 7 | 10 | 14 | 3 | - | 8 | 1 | 5 | 2 | 1 | 1 | - | 1 | 1 | 3 | 6 | - | **118** |
| 6 | 3 | - | - | 1 | - | - | - | - | - | - | - | 2 | - | 1 | - | 2 | - | - | - | 2 | 2 | 4 | 5 | - | - | - | - | 1 | 2 | 1 | - | - | - | - | 1 | - | 2 | - | **29** |
| 7 | 4 | 2 | 1 | - | 1 | - | 1 | - | 1 | 2 | - | 2 | - | 1 | - | 1 | - | - | - | - | - | - | - | 1 | - | 1 | - | - | 1 | 1 | - | - | - | - | - | - | 2 | - | **22** |
| 8 | 8 | - | - | - | - | - | - | - | - | - | - | 8 | 3 | 1 | 1 | 4 | 1 | - | - | - | 1 | - | 2 | 1 | 3 | - | 2 | - | 2 | - | - | - | - | - | 2 | - | 1 | - | **40** |
| 9 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | 1 | 1 | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | **5** |
| 10 | 1 | - | - | - | - | - | - | - | - | - | - | 1 | - | - | 1 | - | - | - | - | - | - | - | 1 | 1 | 2 | - | - | - | 1 | 1 | - | 1 | - | - | 1 | 1 | - | - | **12** |
| 11 | - | 3 | - | 3 | 2 | 5 | 5 | 5 | 10 | - | - | - | - | 3 | 1 | 3 | - | - | - | 1 | 1 | 3 | - | 2 | 1 | - | 8 | - | 1 | - | - | - | - | - | 1 | 1 | - | 2 | **61** |
| 12 | 2 | 1 | 1 | - | 1 | 5 | 1 | - | 1 | 1 | - | - | - | - | - | - | - | - | 1 | 1 | - | - | 3 | - | 4 | - | 1 | - | - | 1 | - | - | - | - | - | - | - | - | **24** |
| 13 | 8 | 8 | 2 | 3 | - | 9 | - | - | 1 | - | - | 1 | - | - | - | 3 | - | - | 2 | 2 | 3 | 3 | 2 | 1 | 2 | - | - | 1 | 3 | 1 | - | - | - | - | 1 | 2 | - | 1 | **59** |
| 14 | 10 | 3 | 1 | - | 4 | 10 | 2 | - | 2 | 1 | - | - | 2 | - | - | 1 | - | - | - | - | 1 | - | - | 1 | 2 | - | - | - | 2 | - | - | 2 | - | - | 2 | - | 1 | - | **47** |
| 15 | 1 | 5 | - | 4 | 5 | 18 | 4 | 1 | 1 | - | - | - | 1 | - | - | - | 1 | - | - | 1 | 3 | 1 | 2 | 6 | 7 | - | 9 | - | 3 | 1 | 1 | - | - | - | 2 | - | 2 | - | **79** |
| 16 | 2 | 1 | - | 3 | - | 6 | 2 | 1 | - | - | - | - | 1 | 2 | - | - | 1 | - | - | - | - | - | - | 3 | 2 | - | 6 | - | 1 | 1 | - | - | - | 2 | - | - | - | 1 | **35** |
| 18 | 2 | - | 1 | - | - | 2 | 2 | - | 1 | - | - | - | - | 1 | - | 1 | - | - | - | - | - | - | 1 | 3 | 3 | - | 1 | - | - | - | - | - | - | - | - | - | - | - | **18** |
| 19 | 4 | 9 | 1 | 2 | 4 | 9 | 4 | 1 | - | - | - | 3 | - | 2 | 3 | 4 | 1 | - | - | - | - | - | 1 | 15 | 8 | - | 4 | - | - | - | - | 1 | - | - | - | - | - | - | **76** |
| 20 | 6 | 9 | 1 | 1 | 1 | 16 | 11 | 3 | 2 | - | 1 | 2 | 1 | 8 | 1 | 6 | 2 | 1 | - | - | - | 1 | - | 18 | 11 | - | 8 | - | - | - | - | - | - | - | - | - | 4 | **114** |
| 21 | 7 | 10 | - | 2 | 5 | 16 | 2 | 2 | 2 | - | 1 | 1 | - | 6 | - | 5 | 2 | - | - | - | - | 1 | 3 | 6 | 10 | - | 21 | - | 7 | 2 | - | 1 | - | 3 | 1 | 1 | 2 | - | **119** |
| 22 | 9 | 13 | 3 | 3 | 2 | 17 | 4 | 3 | 2 | - | - | 1 | - | 5 | 2 | 2 | 2 | - | - | - | 2 | 3 | 1 | 5 | 10 | 1 | 1 | 2 | 1 | 3 | - | - | - | 2 | 2 | 2 | 3 | 1 | **107** |
| 23 | 23 | 12 | - | 5 | 3 | 7 | 1 | - | 1 | - | - | - | - | - | - | 2 | 1 | - | 1 | 2 | - | 3 | - | 1 | 2 | 1 | 1 | - | 1 | 1 | - | 1 | 1 | - | - | - | 1 | - | **71** |
| 24 | 19 | 9 | 2 | 1 | 3 | 11 | 6 | - | 2 | - | - | 2 | - | - | 1 | 20 | 6 | - | - | 5 | 1 | 9 | 11 | 10 | 4 | - | 1 | 1 | 8 | 1 | - | 2 | - | 1 | - | - | - | **136** |
| 25 | 3 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 3 | - | - | - | - | - | - | 2 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | **9** |
| 26 | 23 | 8 | 4 | 5 | 12 | 15 | 9 | - | 6 | - | - | 2 | 2 | - | 1 | 5 | - | - | 1 | - | 3 | 10 | 4 | 4 | - | - | - | 2 | 9 | 5 | 2 | 5 | - | 1 | 8 | 3 | 9 | 1 | **159** |
| 27 | 4 | 1 | - | - | 2 | 5 | 6 | 1 | - | - | - | 1 | - | - | 1 | 3 | 1 | - | - | - | 2 | 2 | 2 | 7 | 1 | - | - | - | - | - | - | 1 | - | - | 1 | 1 | - | 1 | **43** |
| 28 | 9 | 2 | 4 | 3 | 3 | 10 | 9 | 1 | 3 | - | - | 3 | 3 | 3 | 1 | 7 | 1 | - | - | - | - | 6 | 3 | 6 | 4 | - | 20 | 1 | 6 | 1 | 1 | 4 | - | - | 4 | 4 | 3 | 1 | **126** |
| 29 | 4 | 3 | - | - | 3 | 4 | 3 | 3 | 1 | - | - | 1 | - | 2 | 1 | 3 | - | - | 1 | - | - | 3 | 4 | 10 | 4 | - | 4 | 1 | 2 | 1 | - | - | - | - | - | 1 | - | - | **59** |
| 30 | 1 | 1 | - | - | - | 1 | 3 | - | - | - | - | - | 1 | - | - | 1 | 2 | - | - | - | - | 1 | 1 | 1 | 1 | - | 4 | - | 2 | - | - | - | - | - | - | - | 1 | - | **21** |
| 31 | 5 | 3 | - | 1 | 1 | 14 | 5 | 3 | 2 | - | 1 | 1 | - | 1 | 4 | 10 | - | - | - | 1 | - | - | 1 | 12 | 11 | - | 8 | 2 | 7 | 1 | - | - | - | - | 1 | - | 1 | - | **96** |
| 32 | 1 | - | - | - | - | 2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | 1 | - | - | 1 | - | 1 | - | - | - | - | - | - | - | - | 1 | **7** |
| 33 | 1 | - | 1 | 1 | - | 3 | 2 | 1 | - | - | - | - | - | - | - | 1 | - | - | - | 1 | - | 2 | - | 4 | 1 | - | 4 | 1 | 4 | - | - | - | - | - | - | - | - | - | **27** |
| 34 | 3 | 1 | - | 1 | 1 | 5 | 2 | - | 2 | - | - | 1 | 1 | - | 3 | 6 | 1 | - | - | - | - | 2 | 3 | 7 | 7 | 1 | 18 | 2 | 4 | - | - | - | - | - | 1 | - | - | - | **72** |
| 35 | 4 | 2 | - | - | 2 | 4 | 5 | 3 | 1 | - | - | - | - | 1 | 2 | 2 | 2 | 1 | - | - | - | 4 | 2 | 6 | 6 | - | 11 | 1 | 5 | - | - | - | - | - | - | - | - | 1 | **65** |
| 36 | 3 | 9 | - | - | 2 | 18 | 9 | - | 2 | - | - | 2 | 1 | 2 | 3 | 15 | 1 | - | - | - | - | 1 | 2 | 10 | 8 | - | 27 | 1 | 3 | - | - | - | - | - | - | - | - | 3 | **122** |
| 37 | - | - | - | - | - | - | - | - | 2 | - | - | - | - | 2 | 1 | 2 | - | - | 1 | - | - | 1 | 1 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | **10** |
| **Total** | **202** | **131** | **24** | **49** | **61** | **256** | **121** | **44** | **67** | **4** | **5** | **40** | **24** | **61** | **33** | **172** | **31** | **2** | **10** | **25** | **27** | **82** | **106** | **280** | **157** | **6** | **221** | **25** | **101** | **28** | **9** | **22** | **1** | **11** | **32** | **24** | **38** | **21** | **2,553** |



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**Figure 4-7: Miami-Dade County Traffic Analysis Superdistricts**

All respondents were asked which on and off ramps they used to access and egress the MDX expressways they used on their reference trip. Table 4-6 to Table 4-10 show the access and egress ramp distributions for each of the five MDX expressways. Tables providing the full interchange-to-interchange movements for each expressway as provided by the survey respondents are included in Appendix B.

**Table 4-6**
**Access and Egress Ramps: SR 112 – Airport Expressway**

| Ramp | Access Ramp | | Egress Ramp | |
|---|---|---|---|---|
| | Count | Percent | Count | Percent |
| MIA / NW 21st Street | 16 | 3.4 | 43 | 9.0 |
| NW 42nd Avenue / S LeJeune Road | 112 | 23.5 | 109 | 22.9 |
| NW 36th Street | 66 | 13.9 | 32 | 6.7 |
| US 27 / S Okeechobee | 38 | 8.0 | 19 | 4.0 |
| NW 27th Avenue | 18 | 3.8 | 23 | 4.8 |
| NW 22nd Avenue | 11 | 2.3 | 11 | 2.3 |
| I-95 | 112 | 23.5 | 116 | 24.4 |
| I-95 Express Lanes | 61 | 12.8 | 36 | 7.6 |
| I-195 | 42 | 8.8 | 66 | 13.9 |
| NW 17th Avenue (via NW 40th Street) | -- | -- | 11 | 2.3 |
| NW 12th Avenue (via NW 39th Street) | -- | -- | 10 | 2.1 |
| **Total** | **476** | **100.0** | **476** | **100.0** |

**Table 4-7**
**Access and Egress Ramps: SR 836 – Dolphin Expressway**

| Ramp | Access Ramp Count | Access Ramp Percent | Egress Ramp Count | Egress Ramp Percent |
|---|---|---|---|---|
| NW 42nd Avenue / S LeJeune Road | 106 | 7.3 | 219 | 15.0 |
| I-95 | 220 | 15.1 | 277 | 19.0 |
| NW 137th Avenue | 106 | 7.3 | 23 | 1.6 |
| SR 821 / Florida's Turnpike | 277 | 19.0 | 139 | 9.5 |
| NW 107th Avenue | 56 | 3.8 | 84 | 5.8 |
| NW 87th Avenue | 50 | 3.4 | 77 | 5.3 |
| SR 826 / Palmetto Expressway | 391 | 26.8 | 258 | 17.7 |
| NW 72nd Avenue / Milam Dairy Road | 17 | 1.2 | 31 | 2.1 |
| NW 57th Avenue / N Red Road | 66 | 4.5 | 75 | 5.1 |
| NW 45th Avenue | 7 | 0.5 | 19 | 1.3 |
| NW 37th Avenue | 19 | 1.3 | 19 | 1.3 |
| NW 27th Avenue | 42 | 2.9 | 54 | 3.7 |
| NW 17th Avenue | 35 | 2.4 | 85 | 5.8 |
| NW 12th Avenue | 5 | 0.3 | 12 | 0.8 |
| I-395 | 60 | 4.1 | 85 | 5.8 |
| **Total** | **1,457** | **100.0** | **1,457** | **100.0** |

**Table 4-8**
**Access and Egress Ramps: SR 874 – Don Shula Expressway**

| Ramp | Access Ramp Count | Access Ramp Percent | Egress Ramp Count | Egress Ramp Percent |
|---|---|---|---|---|
| SR 821 / Florida's Turnpike | 297 | 40.7 | 111 | 15.2 |
| SR 826 / Palmetto Expressway | 127 | 17.4 | 321 | 44.0 |
| Killian Parkway | 138 | 18.9 | 62 | 8.5 |
| SW 88th St / N Kendall Drive | 108 | 14.8 | 73 | 10.0 |
| SR 878 / Snapper Creek Expressway | 60 | 8.2 | 163 | 22.3 |
| **Total** | **730** | **100.0** | **730** | **100.0** |





**Table 4-9**
**Access and Egress Ramps: SR 878 – Snapper Creek Expressway**

| Ramp | Access Ramp Count | Access Ramp Percent | Egress Ramp Count | Egress Ramp Percent |
|---|---|---|---|---|
| SR 874 / Don Shula Expressway | 169 | 65.0 | 58 | 22.3 |
| SW 87th Avenue | 24 | 9.2 | 38 | 14.6 |
| SW 72nd Avenue | 17 | 6.5 | 51 | 19.6 |
| US 1 / Dixie Highway | 50 | 19.2 | 113 | 43.5 |
| **Total** | **260** | **100.0** | **260** | **100.0** |

**Table 4-10**
**Access and Egress Ramps: SR 924 – Gratigny Parkway**

| Ramp | Access Ramp Count | Access Ramp Percent | Egress Ramp Count | Egress Ramp Percent |
|---|---|---|---|---|
| SR 826 / Palmetto Expressway | 59 | 21.0 | 37 | 13.2 |
| I-75 | 113 | 40.2 | 42 | 14.9 |
| NW 138th Street (via I-75) | 7 | 2.5 | 5 | 1.8 |
| W 4th Avenue / NW 57 Red Road | 25 | 8.9 | 49 | 17.4 |
| NW 42nd Avenue / N LeJeune Road | 13 | 4.6 | 15 | 5.3 |
| NW 119th Street (End of SR 924 Expy.) | 64 | 22.8 | 133 | 47.3 |
| **Total** | **281** | **100.0** | **281** | **100.0** |

Table 4-11 shows the distribution of trips at the time the trip began, by hour, on each of the five MDX expressways. Most respondents reported a trip that took place in the morning, consistent with the fact that many respondents reported a work commute trip as their reference trip. Across all expressways, more than one third (39 percent) of respondents indicated their trip began during the morning peak period (between 6:00 and 8:59 AM). A much smaller proportion of respondents (14 percent) recounted a trip made in the afternoon peak hours (between 4:00 and 6:59PM).

The frequency that respondents indicated they make the same trip, in the same direction and for the same purpose is shown in Table 4-12. Forty-three percent of all reported trips were made four or more times per week, with moderate variation across the different MDX expressways. Respondents who used the Don Shula Expressway made the same trip most frequently, while respondents who used the Airport Expressway made their reference trip slightly less frequently.

**Table 4-11**
**Trip Begin Time by Expressway**

| Trip Begin Time | SR 112 Airport Expy. Count | SR 112 Airport Expy. Percent | SR 836 Dolphin Expy. Count | SR 836 Dolphin Expy. Percent | SR 874 Don Shula Expy. Count | SR 874 Don Shula Expy. Percent | SR 878 Snapper Creek Expy. Count | SR 878 Snapper Creek Expy. Percent | SR 924 Gratigny Pkwy. Count | SR 924 Gratigny Pkwy. Percent | MDX System Count | MDX System Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12AM - 12:59AM | 2 | 0.4 | - | - | - | - | - | - | 1 | 0.4 | **3** | **0.1** |
| 1AM - 1:59AM | 1 | 0.2 | - | - | - | - | - | - | - | - | **1** | **0.0** |
| 2AM - 2:59AM | 1 | 0.2 | 6 | 0.4 | 1 | 0.1 | - | - | 1 | 0.4 | **8** | **0.3** |
| 3AM - 3:59AM | 2 | 0.4 | 6 | 0.4 | 4 | 0.5 | 2 | 0.8 | 1 | 0.4 | **11** | **0.4** |
| 4AM - 4:59AM | 7 | 1.5 | 16 | 1.1 | 10 | 1.4 | 1 | 0.4 | 1 | 0.4 | **28** | **1.1** |
| 5AM - 5:59AM | 12 | 2.5 | 40 | 2.7 | 32 | 4.4 | 4 | 1.5 | 4 | 1.4 | **76** | **2.9** |
| 6AM - 6:59AM | 34 | 7.1 | 115 | 7.9 | 89 | 12.2 | 32 | 12.3 | 28 | 10.0 | **231** | **8.9** |
| 7AM - 7:59AM | 75 | 15.8 | 229 | 15.7 | 122 | 16.7 | 35 | 13.5 | 56 | 19.9 | **421** | **16.2** |
| 8AM - 8:59AM | 64 | 13.4 | 204 | 14.0 | 88 | 12.1 | 30 | 11.5 | 41 | 14.6 | **354** | **13.6** |
| 9AM - 9:59AM | 41 | 8.6 | 139 | 9.5 | 69 | 9.5 | 24 | 9.2 | 21 | 7.5 | **230** | **8.8** |
| 10AM - 10:59AM | 35 | 7.4 | 95 | 6.5 | 45 | 6.2 | 23 | 8.8 | 15 | 5.3 | **168** | **6.5** |
| 11AM - 11:59AM | 16 | 3.4 | 65 | 4.5 | 28 | 3.8 | 9 | 3.5 | 9 | 3.2 | **101** | **3.9** |
| 12PM - 12:59PM | 19 | 4.0 | 65 | 4.5 | 24 | 3.3 | 8 | 3.1 | 9 | 3.2 | **105** | **4.0** |
| 1PM - 1:59PM | 16 | 3.4 | 77 | 5.3 | 35 | 4.8 | 8 | 3.1 | 15 | 5.3 | **126** | **4.8** |
| 2PM - 2:59PM | 27 | 5.7 | 68 | 4.7 | 24 | 3.3 | 9 | 3.5 | 13 | 4.6 | **118** | **4.5** |
| 3PM - 3:59PM | 20 | 4.2 | 65 | 4.5 | 26 | 3.6 | 10 | 3.8 | 11 | 3.9 | **117** | **4.5** |
| 4PM - 4:59PM | 22 | 4.6 | 69 | 4.7 | 34 | 4.7 | 16 | 6.2 | 17 | 6.0 | **126** | **4.8** |
| 5PM - 5:59PM | 29 | 6.1 | 70 | 4.8 | 36 | 4.9 | 18 | 6.9 | 19 | 6.8 | **143** | **5.5** |
| 6PM - 6:59PM | 13 | 2.7 | 43 | 3.0 | 20 | 2.7 | 15 | 5.8 | 9 | 3.2 | **85** | **3.3** |
| 7PM - 7:59PM | 12 | 2.5 | 36 | 2.5 | 16 | 2.2 | 9 | 3.5 | 7 | 2.5 | **64** | **2.5** |
| 8PM - 8:59PM | 10 | 2.1 | 28 | 1.9 | 16 | 2.2 | 5 | 1.9 | 1 | 0.4 | **44** | **1.7** |
| 9PM - 9:59PM | 8 | 1.7 | 11 | 0.8 | 4 | 0.5 | 1 | 0.4 | 1 | 0.4 | **22** | **0.8** |
| 10PM - 10:59PM | 6 | 1.3 | 5 | 0.3 | 3 | 0.4 | - | - | 1 | 0.4 | **13** | **0.5** |
| 11PM - 11:59PM | 4 | 0.8 | 5 | 0.3 | 4 | 0.5 | 1 | 0.4 | - | - | **9** | **0.3** |
| **Total** | **476** | **100.0** | **1,457** | **100.0** | **730** | **100.0** | **260** | **100.0** | **281** | **100.0** | **2,604** | **100.0** |

**Table 4-12**
**Trip Frequency by Expressway**

| Trip Frequency | SR 112 Airport Expy. Count | SR 112 Airport Expy. Percent | SR 836 Dolphin Expy. Count | SR 836 Dolphin Expy. Percent | SR 874 Don Shula Expy. Count | SR 874 Don Shula Expy. Percent | SR 878 Snapper Creek Expy. Count | SR 878 Snapper Creek Expy. Percent | SR 924 Gratigny Pkwy. Count | SR 924 Gratigny Pkwy. Percent | MDX System Count | MDX System Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5 or more times per week | 162 | 34.0 | 513 | 35.2 | 316 | 43.3 | 108 | 41.5 | 113 | 40.2 | **967** | **37.1** |
| 4 times per week | 21 | 4.4 | 96 | 6.6 | 47 | 6.4 | 16 | 6.2 | 16 | 5.7 | **161** | **6.2** |
| 2-3 times per week | 82 | 17.2 | 268 | 18.4 | 124 | 17.0 | 53 | 20.4 | 41 | 14.6 | **450** | **17.3** |
| 1 time per week | 41 | 8.6 | 131 | 9.0 | 55 | 7.5 | 21 | 8.1 | 24 | 8.5 | **222** | **8.5** |
| 2-3 times per month | 74 | 15.5 | 177 | 12.1 | 76 | 10.4 | 24 | 9.2 | 39 | 13.9 | **312** | **12.0** |
| 1 time per month | 37 | 7.8 | 99 | 6.8 | 32 | 4.4 | 13 | 5.0 | 17 | 6.0 | **174** | **6.7** |
| Less than 1 time per month | 59 | 12.4 | 173 | 11.9 | 80 | 11.0 | 25 | 9.6 | 31 | 11.0 | **318** | **12.2** |
| **Total** | **476** | **100.0** | **1,457** | **100.0** | **730** | **100.0** | **260** | **100.0** | **281** | **100.0** | **2,604** | **100.0** |

Respondents were also asked to report the amount of traffic congestion they experienced on MDX expressways during their reference trip. The amount of delay due to traffic congestion is presented by expressway in Table 4-13. Overall, one-half (50 percent) of respondents did not experience any delay during their trip; however the proportion of those who encountered delay and the amount they experienced varied by the expressways they drove on and by the time of day they indicated to have started their trip. Sixty-three percent of respondents who drove during the morning or afternoon peak periods encountered at least some delay, compared to 37 percent of respondents who travelled during the non-peak periods. The proportion of those who experienced at least some delay was highest among those who used the Dolphin Expressway (58 percent) and lowest for those who used Gratigny Expressway (35 percent).





**Table 4-13**
**Amount of Reported Delay by Expressway**

| Amount of Delay | SR 112 Airport Expy. Count | SR 112 Airport Expy. Percent | SR 836 Dolphin Expy. Count | SR 836 Dolphin Expy. Percent | SR 874 Don Shula Expy. Count | SR 874 Don Shula Expy. Percent | SR 878 Snapper Creek Expy. Count | SR 878 Snapper Creek Expy. Percent | SR 924 Gratigny Pkwy. Count | SR 924 Gratigny Pkwy. Percent | MDX System Count | MDX System Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No delay | 279 | 58.6 | 604 | 41.5 | 355 | 48.6 | 154 | 59.2 | 182 | 64.8 | **1,303** | **50.0** |
| Less than 15 minutes | 46 | 9.7 | 222 | 15.2 | 88 | 12.1 | 34 | 13.1 | 24 | 8.5 | **343** | **13.2** |
| 15-29 minutes | 85 | 17.9 | 388 | 26.6 | 154 | 21.1 | 44 | 16.9 | 53 | 18.9 | **592** | **22.7** |
| 30 or more minutes | 66 | 13.9 | 243 | 16.7 | 133 | 18.2 | 28 | 10.8 | 22 | 7.8 | **366** | **14.1** |
| **Total** | **476** | **100.0** | **1,457** | **100.0** | **730** | **100.0** | **260** | **100.0** | **281** | **100.0** | **2,604** | **100.0** |

Trip flexibility was measured by asking respondents if they could have arrived at their final destination any earlier or later than their actual arrival time. In both cases, approximately half of all respondents indicated they did not have any arrival flexibility for their trip and could not arrive any earlier or any later at their destination. Table 4-14 and Table 4-15 show trip arrival time flexibility by expressway. Across all expressways, a plurality of respondents indicated they could arrive earlier or later at their destination by between fifteen and thirty minutes. This relatively narrow amount of trip flexibility is typical of a sample where the primary trip purpose is work or work-related.

**Table 4-14**
**Flexibility to Arrive Earlier by Expressway**

| Flexibility to Arrive Earlier by Time | SR 112 Airport Expy. Count | SR 112 Airport Expy. Percent | SR 836 Dolphin Expy. Count | SR 836 Dolphin Expy. Percent | SR 874 Don Shula Expy. Count | SR 874 Don Shula Expy. Percent | SR 878 Snapper Creek Expy. Count | SR 878 Snapper Creek Expy. Percent | SR 924 Gratigny Pkwy. Count | SR 924 Gratigny Pkwy. Percent | MDX System Count | MDX System Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No earlier | 236 | 49.6 | 690 | 47.4 | 378 | 51.8 | 148 | 56.9 | 165 | 58.7 | **1,314** | **50.5** |
| Up to 15 min earlier | 143 | 30.0 | 483 | 33.2 | 222 | 30.4 | 77 | 29.6 | 61 | 21.7 | **793** | **30.5** |
| Up to 30 min earlier | 58 | 12.2 | 155 | 10.6 | 69 | 9.5 | 16 | 6.2 | 30 | 10.7 | **276** | **10.6** |
| Up to 1 hr earlier | 20 | 4.2 | 67 | 4.6 | 32 | 4.4 | 10 | 3.8 | 18 | 6.4 | **119** | **4.6** |
| More than 1 hr earlier | 19 | 4.0 | 62 | 4.3 | 29 | 4.0 | 9 | 3.5 | 7 | 2.5 | **102** | **3.9** |
| **Total** | **476** | **100.0** | **1,457** | **100.0** | **730** | **100.0** | **260** | **100.0** | **281** | **100.0** | **2,604** | **100.0** |

**Table 4-15**
**Flexibility to Arrive Later by Expressway**

| Flexibility to Arrive Later by Time | SR 112 Airport Expy. Count | SR 112 Airport Expy. Percent | SR 836 Dolphin Expy. Count | SR 836 Dolphin Expy. Percent | SR 874 Don Shula Expy. Count | SR 874 Don Shula Expy. Percent | SR 878 Snapper Creek Expy. Count | SR 878 Snapper Creek Expy. Percent | SR 924 Gratigny Pkwy. Count | SR 924 Gratigny Pkwy. Percent | MDX System Count | MDX System Percent |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| No later | 243 | 51.1 | 791 | 54.3 | 421 | 57.7 | 152 | 58.5 | 150 | 53.4 | **1,413** | **54.3** |
| Up to 15 min later | 134 | 28.2 | 394 | 27.0 | 187 | 25.6 | 67 | 25.8 | 75 | 26.7 | **699** | **26.8** |
| Up to 30 min later | 58 | 12.2 | 145 | 10.0 | 56 | 7.7 | 19 | 7.3 | 29 | 10.3 | **266** | **10.2** |
| Up to 1 hr later | 22 | 4.6 | 60 | 4.1 | 29 | 4.0 | 7 | 2.7 | 14 | 5.0 | **104** | **4.0** |
| More than 1 hr later | 19 | 4.0 | 67 | 4.6 | 37 | 5.1 | 15 | 5.8 | 13 | 4.6 | **122** | **4.7** |
| **Total** | **476** | **100.0** | **1,457** | **100.0** | **730** | **100.0** | **260** | **100.0** | **281** | **100.0** | **2,604** | **100.0** |

Despite little reported trip flexibility—where the large majority of respondents indicated either they could not change their arrival time, or if they could, only by a small amount—over 20 percent of respondents who traveled during the peak periods indicated a strong interest in shifting their trip

start time to take advantage of lower tolls. Table 4-16 shows the propensity of peak period travelers for shifting into an off peak travel period. Thirty-eight percent of drivers who used Dolphin Expressway indicted they would be likely to, or definitely would, switch to non-peak hours if discounts were offered. Drivers who used the Snapper Creek or Gratigny Expressways expressed the least interest in shifting to non-peak hours for a toll discount.

**Table 4-16**
**Propensity to Shift Trip Start Time by Expressway**

| Propensity to Shift Trip Start Time for Reduced Tolls | SR 112 Airport Expy. | | SR 836 Dolphin Expy. | | SR 874 Don Shula Expy. | | SR 878 Snapper Creek Expy. | | SR 924 Gratigny Pkwy. | | MDX System | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent |
| Would Definitely change start time to non-peak hours | 24 | 18.2 | 107 | 24.7 | 56 | 20.1 | 17 | 16.2 | 20 | 17.7 | **184** | **21.5** |
| Would be More likely to change start time to non-peak hours | 18 | 13.6 | 58 | 13.4 | 38 | 13.7 | 13 | 12.4 | 14 | 12.4 | **116** | **13.6** |
| No difference in start time or Not sure | 69 | 52.3 | 227 | 52.4 | 144 | 51.8 | 59 | 56.2 | 61 | 54.0 | **447** | **52.3** |
| Would be Less likely to change start time to non-peak hours | 21 | 15.9 | 41 | 9.5 | 40 | 14.4 | 16 | 15.2 | 18 | 15.9 | **107** | **12.5** |
| **Total** | **132** | **100.0** | **433** | **100.0** | **278** | **100.0** | **105** | **100.0** | **113** | **100.0** | **854** | **100.0** |

A following question asked if respondents would make their return trip using the same route in reverse or if they would use an alternate route. Table 4-17 shows that the majority of respondents across all expressways use the same route as their reference trip in reverse. Respondents who used the Gratigny Expressway were slightly less likely to use their same route in reverse, with 36 percent indicting they take an alternate route. Respondents who use the same route in reverse were asked to estimate how long their return trip takes. Overall, median reported travel times were 45 minutes (the same as their estimated reference trip time) across all expressways. Table 4-18 shows respondents reported trip time and their estimated return trip time. Most respondents estimated their return trip would take an equal amount of time as their reference trip.

**Table 4-17**
**Reverse Trip Route Choice by Expressway**

| Reverse Trip Route Choice | SR 112 Airport Expy. | | SR 836 Dolphin Expy. | | SR 874 Don Shula Expy. | | SR 878 Snapper Creek Expy. | | SR 924 Gratigny Pkwy. | | MDX System | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent |
| Same route in reverse | 332 | 69.7 | 1,030 | 70.7 | 523 | 71.6 | 187 | 71.9 | 180 | 64.1 | **1,834** | **70.4** |
| Different route in reverse | 144 | 30.3 | 427 | 29.3 | 207 | 28.4 | 73 | 28.1 | 101 | 35.9 | **770** | **29.6** |
| **Total** | **476** | **100.0** | **1,457** | **100.0** | **730** | **100.0** | **260** | **100.0** | **281** | **100.0** | **2,604** | **100.0** |





**Table 4-18**
**Median Reference Trip and Return Trip Times by Expressway**

| Reference Trip/Return Trip Travel Time in Minutes | SR 112 Airport Expy. | SR 836 Dolphin Expy. | SR 874 Don Shula Expy. | SR 878 Snapper Creek Expy. | SR 924 Gratigny Pkwy. | MDX System |
|---|---|---|---|---|---|---|
| Reported Reference Trip Time | 45.0 | 45.0 | 45.0 | 35.0 | 40.0 | **45.0** |
| Estimated Return Trip Time | 45.0 | 45.0 | 45.0 | 35.0 | 45.0 | **45.0** |

Respondents were next asked if they used MDX expressways for discretionary trips on the weekends. At least three quarters of respondents use MDX expressways for shopping or recreational trips on the weekends. Table 4-19 shows the weekend use of MDX expressways by expressway.

**Table 4-19**
**Weekend Use of MDX System by Expressway**

| Weekend Trips made on MDX Expressways | SR 112 Airport Expy. | | SR 836 Dolphin Expy. | | SR 874 Don Shula Expy. | | SR 878 Snapper Creek Expy. | | SR 924 Gratigny Pkwy. | | MDX System | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent |
| Yes | 358 | 75.2 | 1,228 | 84.3 | 651 | 89.2 | 230 | 88.5 | 215 | 76.5 | **2,153** | **82.7** |
| No | 118 | 24.8 | 229 | 15.7 | 79 | 10.8 | 30 | 11.5 | 66 | 23.5 | **451** | **17.3** |
| **Total** | **476** | **100.0** | **1,457** | **100.0** | **730** | **100.0** | **260** | **100.0** | **281** | **100.0** | **2,604** | **100.0** |

At the conclusion of the survey, respondents were asked if they were full-time residents of either Miami-Dade or Broward Counties, part-time residents of those counties, or if they were visitors. Table 4-20 shows that the vast majority of respondents, irrespective of the expressway they used, are full time residents of either Miami-Dade or Broward counties.

**Table 4-20**
**Residency by Expressway**

| Residency | SR 112 Airport Expy. | | SR 836 Dolphin Expy. | | SR 874 Don Shula Expy. | | SR 878 Snapper Creek Expy. | | SR 924 Gratigny Pkwy. | | MDX System | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent | Count | Percent |
| Part Time Resident | 6 | 1.3 | 16 | 1.1 | 4 | 0.5 | - | - | 3 | 1.1 | **24** | **0.9** |
| Full Time Resident | 443 | 93.1 | 1,394 | 95.7 | 716 | 98.1 | 260 | 100.0 | 266 | 94.7 | **2,492** | **95.7** |
| Visitor | 27 | 5.7 | 47 | 3.2 | 10 | 1.4 | - | - | 12 | 4.3 | **88** | **3.4** |
| **Total** | **476** | **100.0** | **1,457** | **100.0** | **730** | **100.0** | **260** | **100.0** | **281** | **100.0** | **2,604** | **100.0** |

## Conclusion

RSG and CDM Smith, in conjunction with assistance from staff of the Miami-Dade Expressway Authority, successfully developed and implemented an origin destination survey questionnaire that gathered information from 2,604 SunPass® account holders who used at least one MDX expressway on a trip within the past month. The questionnaire collected data on their current travel behavior, their trip flexibility, and their propensity to shift their departure times for discounted toll rates.

Some key take-always from the collected data include:

- The majority of respondents used an MDX expressway (expressways) to get to or from work. Fewer respondents used MDX expressways for less time sensitive trip purposes such as shopping or recreation.
- Although many respondents indicated a small amount or no flexibility, either earlier or later, in their arrival times to their final destination, drivers who traveled in either morning or evening peak periods expressed a willingness to shift to an off-peak period to take advantage of discounted tolls.
- While many respondents reported a peak-work or peak-work related trip, over three quarters of the sample of travelers reported they use also MDX expressways for discretionary trips on the weekend.

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# Chapter 5
# Economic Growth Analysis

Socioeconomic growth is a major factor determining future utilization of any toll expressway. The five tolled expressways in the MDX System have been successfully operating for years, and are mostly mature expressways that tend to experience moderate levels of annual traffic growth. The trends on these expressways in recent years have been affected by various factors including toll increases, fluctuations in the price of motor fuels, as well as the recent economic recession, and an ongoing recovery.

The purpose of this socioeconomic analysis is to derive socioeconomic forecast input into the travel demand model through the 2030 time horizon.

At the study outset, the CDM Smith/WEG Team obtained latest-available socioeconomic forecasts from the Miami-Dade, Broward, and Palm Beach County Metropolitan Planning Organizations (MPOs)[1]. These forecasts of population, households, employment, vehicles, and other variables serve as inputs in the Southeast Regional Planning Model (SERPM) travel demand modeling process, which is described in greater detail in Chapter 6. However, the socioeconomic/demographic forecasts developed by the area MPOs were prepared prior to the recent economic recession, and adopted in 2009. It is important that an independent review of the current MPO forecasts be conducted to consider the following in preparing updated projections, if necessary:

- Are future year 2035 socioeconomic/demographic forecasts prepared by the MPOs prior-to the recession still considered reasonable?;
- What will be the annual growth rate in the socioeconomic/ demographic variables from the base year levels, given the recent population growth slowdown in Florida overall, and Miami-Dade and Broward Counties in particular, combined with job losses and elevated unemployment rates relative to pre-recessionary conditions in Southeast Florida?; and
- Based on the recent recession and recovery, will there be structural changes in the regional economy that would warrant broader changes to the forecasts?

To address these and other issues, CDM Smith enlisted the support of an independent local economic consulting firm, WEG (Washington Economic Group, Inc.). As part of the study model input development, a review of the 2035 MPO socioeconomic/demographics forecast was completed by WEG.

Full detail of the work performed by WEG is documented in the independent economic consultant report, included as Appendix C to this report. WEG reviewed the recently updated 2010 Base socioeconomic conditions, and the 2035 forecast at a regional level of detail throughout the three Southeast Florida Counties. From their analysis and in consideration of the current economic

[1] The Study Team was informed by the Miami-Dade MPO that determined that while a new set of forecast (through 2040) data is currently under development, the South Florida MPOs are still working with the 2035 data sets as the officially adopted ones for planning and forecasting purposes.





conditions, WEG proposed alternative interim year demographic growth forecasts. Furthermore, largely based on their expectation of the re-emergence of migration patterns positively impacting the residential and employment bases offsetting the negative effects of the recent recession, WEG concluded that the 2009-based 2035 demographic forecasts prepared by the MPOs were reasonable and continue to reflect the current and projected economic and social activity in the tri-county region.

## Review of Historical Socioeconomic Growth

Presented herein are historical socioeconomic growth trends in the study area. This assessment begins by presenting the pertinent historical values in the two key variables in the travel model - population and employment - dating back to year 1990. Historical socioeconomic growth trends used on the study draw primarily on various Federal and State data sources.

### Total Population and Employment Historical Growth Trends

As shown in Table 5-1, according to the U.S. Census data, total population growth in the study area averaged (in terms of CAAGR - compound average annual growth rate) about 1.6 percent per year between 1990 and the model base year of 2010.

Over the years, the area's historical population growth has decelerated from 2.1 percent per year in the 1990s to 1.1 percent per year between 2000 and 2010. Since 1990, Palm Beach County has been the fastest overall growing county in the study area, with average growth of 2.1 percent per annum, while Miami Dade average only 1.3 percent per year, which was also below the Statewide average of 1.9 percent. The growth rates in the study area and in the State of Florida are still recovering from the most recent recession, but are expected to gradually return to normal levels over the next few years.

**Table 5-1**
**Population - Historical Growth Trend**

| | Compound Average Annual Growth Rate (Percent) | | | |
|---|---|---|---|---|
| **Area** | 1990 - '00 | 2000 - '10 | 2010 - '12 | 1990 - 2010 |
| Miami-Dade Co. | 1.5% | 1.0% | 1.9% | 1.3% |
| Broward Co. | 2.6% | 0.7% | 1.9% | 1.7% |
| Palm Beach Co. | 2.7% | 1.6% | 1.4% | 2.1% |
| Area Total | 2.1% | 1.1% | 1.8% | 1.6% |
| Florida (Statewide) | 2.1% | 1.6% | 1.4% | 1.9% |

Source: U.S. Census data, 2013

Historical growth in total employment generally showed a similar pattern of change, with stronger growth in the 1990s, followed by a significant deceleration in the 2000's decade. The average total employment growth rate between 1990 and 2010 was 1.9 percent per year in the study area, which

matched the statewide pace, while Miami-Dade underperformed in growth terms at 1.5 percent per annum as shown in Table 5-2.

**Table 5-2**
**Total Employment - Historical Growth Trend**

| Area | Compound Average Annual Growth Rate (Percent) | | |
|---|---|---|---|
| | 1990 - '00 | 2000 - '10 | 1990 - 2010 |
| Miami-Dade Co. | 1.7% | 1.2% | 1.5% |
| Broward Co. | 3.0% | 1.6% | 2.3% |
| Palm Beach Co. | 3.3% | 1.3% | 2.3% |
| Area Total | 2.5% | 1.4% | 1.9% |
| Florida (Statewide) | 2.8% | 1.1% | 1.9% |

Source: Bureau of Economic Analysis data, 2013

## Background

In the summer of 2013, WEG reviewed population and socio-economic data prepared by the Metropolitan Planning Organizations (MPO) of Miami-Dade, Broward, and Palm Beach Counties. WEG focused on data sets for years 2010 and 2035. These data sets contain a range of population and socio-economic data for each county, and each data set carries a full set of population and socio-economic forecasts at the traffic analysis zone (TAZ) level for the entire region. The entire model study area has been divided into about 4,100 TAZs, specifically 921 TAZs in Broward County, 1,066 in Miami Dade, and 1,719 in Palm Beach County, with each zone containing only a few blocks of residential and/or commercial properties. Figures illustrating the MPO's 2010 and 2035 allocations of population by TAZ within the tri-county regional Study area are presented in Figures 5-1 and 5-2.

WEG prepared annual forecasts for each population and socio-economic variables between 2010 and 2035, including model year 2030. The 2010-2030 forecasted population change in the tri-county Region by TAZ is summarized in Figure 5-3. These forecasts were provided to CDM Smith for use as inputs into the travel demand model. To prepare these forecast of population and other socioeconomic variables, WEG utilized the 2010 and 2035 MPO data set values as the endpoints of the forecast for each variable. The 2010 data sets are the anchoring point of the forecast. In WEG's professional opinion, these values are the best data available at the Traffic Analysis Zone level of detail for South Florida.

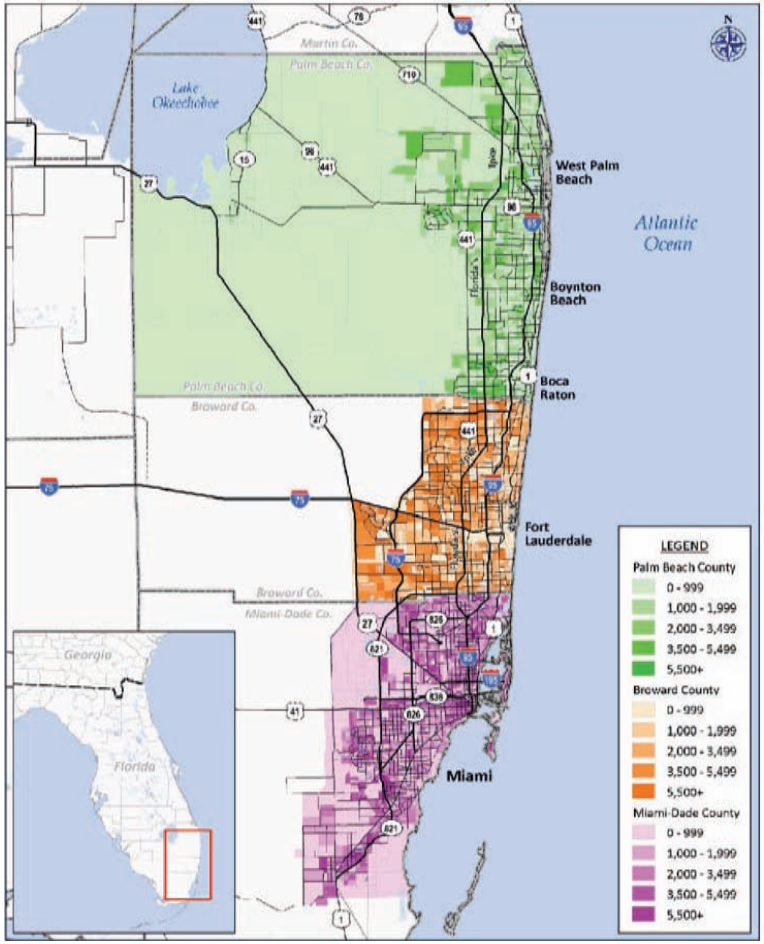
## Comparison to Current State Projections

### Population

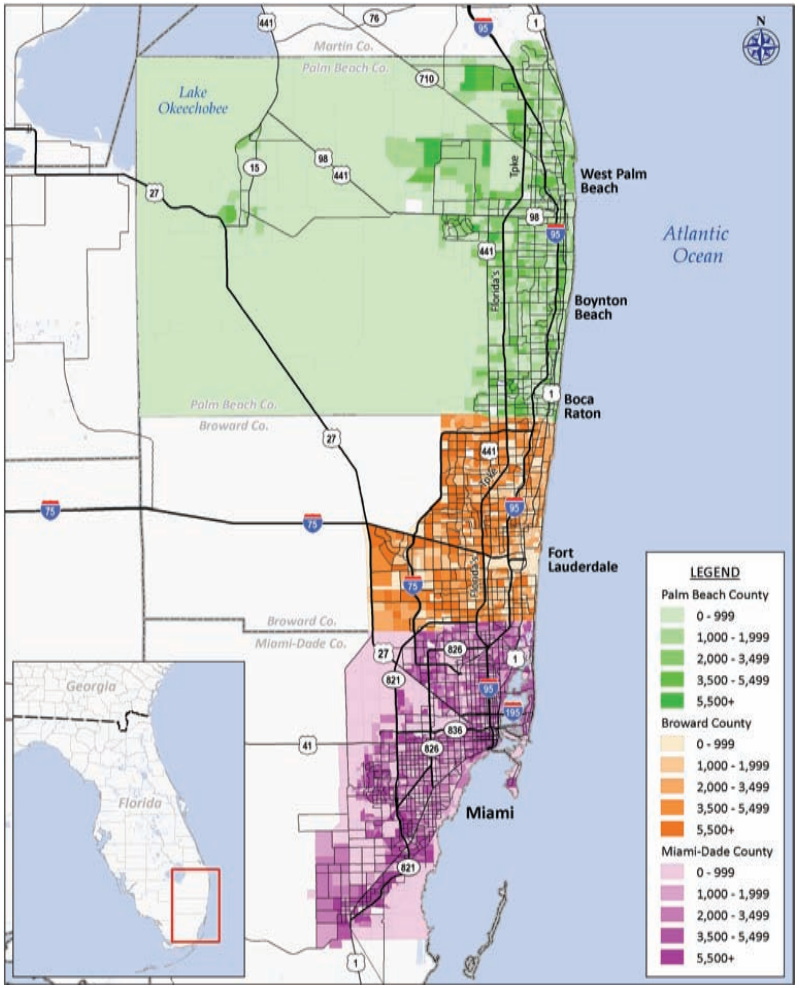
For the review, WEG obtained MPO data for Miami-Dade, Broward, and Palm Beach County for the years 2010 and 2035. While the base year has been updated from 2005 to 2010, there is no change in the 2035 forecasts since the last WEG analysis in 2009. Additionally, the latest long-range population projections for each county and the State of Florida were obtained from the Florida Legislature's Office








**2010 POPULATION BY TRAFFIC ANALYSIS ZONE**
FIGURE 5-1

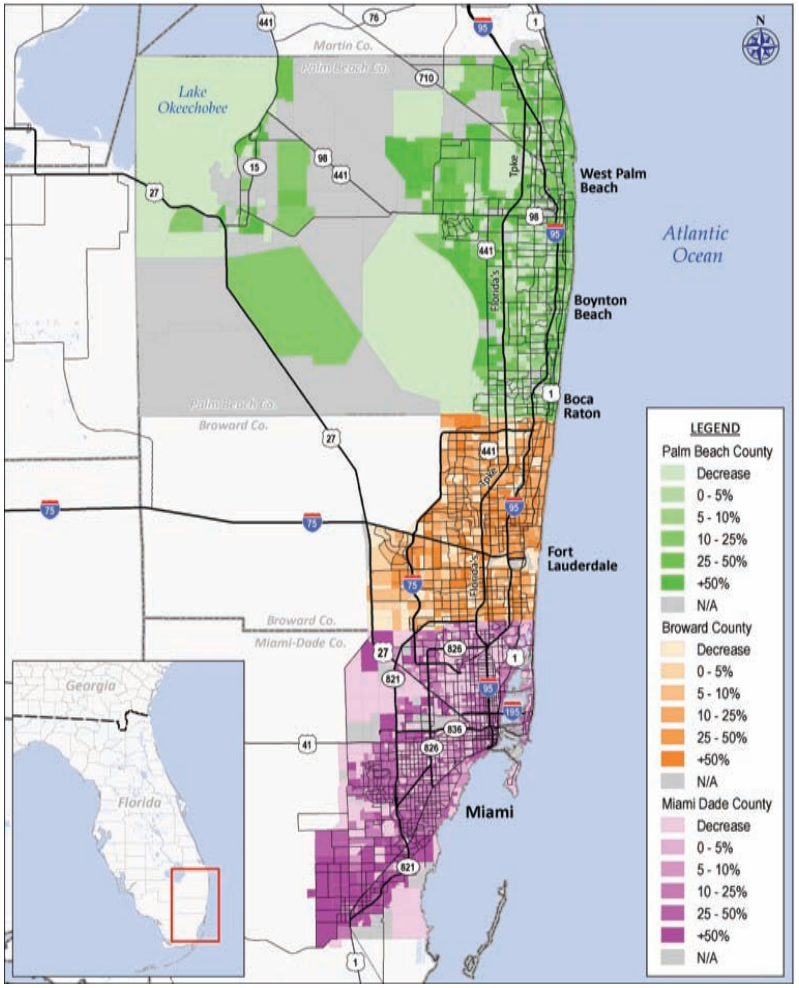



**2035 POPULATION BY TRAFFIC ANALYSIS ZONE**

FIGURE 5-2







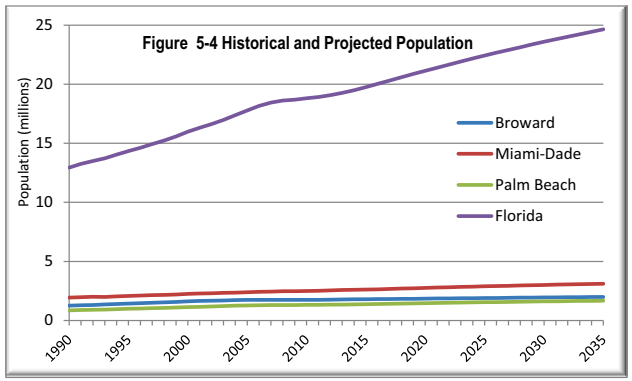

**2010-2030 PERCENT CHANGE IN POPULATION BY TRAFFIC ANALYSIS ZONE**

FIGURE 5-3

of Economic and Demographic Research (EDR), and the University of Florida's Bureau of Economic and Business Research (BEBR).

The EDR is responsible for the preparation of the State's official projections of population and a wide range of economic variables. The EDR draws on a wide range of government and academic resources in the preparation of these estimates, and, as a result, they reflect the best and latest thinking about the economic and social trends that are likely to shape Florida in the years ahead. The EDR is currently projecting that between 2010 and 2030, Florida's population will increase by 4.8 million, or 26 percent in total terms, from 18.8 million to 23.6 million residents. BEBR projects that Miami-Dade County's population will increase by 0.5 million people, or 21 percent, from about 2.5 million to 3.0 million. Broward County's population is projected to increase by 0.2 million people, or 11 percent, from 1.7 million to 1.9 million, and Palm Beach County's population is projected to increase by almost 0.4 million people, or 22 percent, from 1.3 million to 1.6 million. These projections reflect the EDR's/BEBR's expectation that the focus of population growth will shift away from Southeast Florida to other areas of the State in the future. These trends are shown graphically in Figure 5-4.

The BEBR's[2] long-range population projections for Miami-Dade, Broward, and Palm Beach Counties were compared to the population projections contained in the MPO data sets to test the reasonableness of the latter. Table 5-3 summarizes the differences in year 2035 forecasts for each county. As shown in the table, differences in population projections are relatively minor, with the 2035 differential of about 430,000 (or 6 percent) more residents in the MPO datasets compared to the latest BEBR projection.




Sources: County data are based on the results from the Florida Demographic Estimating Conference, February 2013 and UF, BEBR, Florida Population Studies, Volume 46, Bulletin 165, March 2013 medium county projections. Statewide projections are from Florida EDR, Mid-year Forecasts, July 2013.

[2] BEBR, Florida Population Studies, Volume 46, Bulletin 165, March 2013 medium county projections.





**Table 5-3**
**Comparison of Population Projections for 2035**

| Geography | MPO Projection | BEBR Projection | Absolute Difference | % Difference |
|---|---|---|---|---|
| Miami-Dade | 3,278,155 | 3,111,600 | 166,555 | 5.1% |
| Broward | 2,250,830 | 1,992,200 | 258,630 | 11.5% |
| Palm Beach | 1,682,599 | 1,678,100 | 4,499 | 0.3% |
| Area Total | 7,211,584 | 6,781,900 | 429,684 | 6.0% |

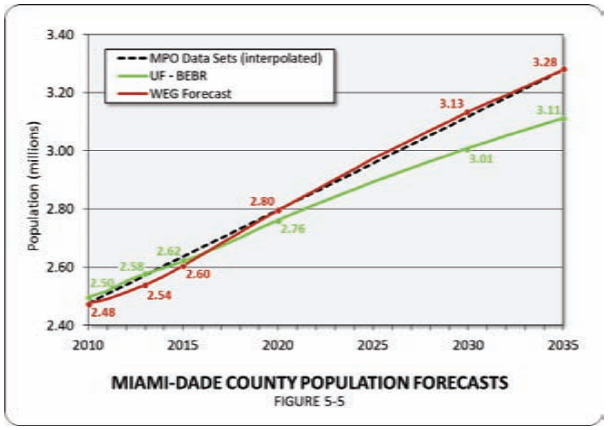
Sources: Miami-Dade, Broward, and Palm Beach Metropolitan Planning Organizations (MPOs), and BEBR projections, March 2013.

Figure 5-5 presents the BEBR's annual population projections for Miami-Dade County (green line), a straight-line interpolated projection based on the MPO's data sets (purple line), and the WEG projections (red line). Figure 5-2 shows that over the near and medium term, all three projections track closely. It is only in the more distant future that there is a significant divergence between the MPO projections (and WEG) and the latest projections from BEBR. The MPO population projections are approximately 167,000 persons (or 5.1 percent) higher than the BEBR's latest by 2035, and about 108,000 (or 3.5 percent) by 2030. Given that these are at least two decades into the future beyond the base year, the differences are not unexpected. According to WEG, minor changes in assumptions such as net in-migration from outside of the area, changes in birth and death rates, and geopolitical issues in the intervening period could easily account for this difference, which WEG evaluated.

Figure 5-6 presents the BEBR's annual population projections for Broward County (green line), a straight-line interpolated projection based on the MPO's data sets (purple line), and the projections from WEG (red line). Figure 5-3 shows that, over the near-term, all three projections track closely. However, beyond 2015 there is a significant divergence between the MPO and WEG projections that continue to track closely and the latest projections from BEBR. In 2035 the MPO/WEG population projections are close to 300,000 (or about 12 percent) higher than BEBR's, while the corresponding difference in 2030 is about 200,000 (or 9.2 percent).

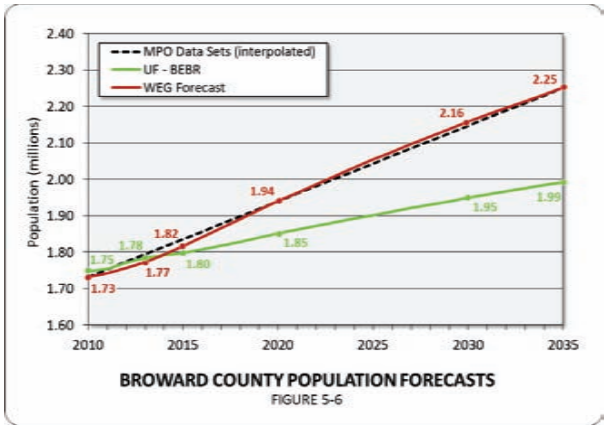
Again, WEG claims that for Miami-Dade County and increasingly in Broward County, the BEBR projections may underestimate likely population growth due to the flow of new immigrants from around the world. Historically, immigrants to South Florida come mostly from the Caribbean, Central, and South America. These flows are difficult to project, given unpredictable political events that commonly occur in these regions. Over the last four decades, these inflows have grown faster than most projections, first from Cuba and in recent decades from Nicaragua and more recently from Venezuela.

Figure 5-7 presents the BEBR's annual population projections for Palm Beach County (green line), a straight-line projection based on the MPO's data sets (purple line), and the WEG projections (red line).




MIAMI-DADE COUNTY POPULATION FORECASTS
FIGURE 5-5

Sources: 1. UF, BEBR, Florida Population Studies, Volume 46, Bulletin 165, March 2013 medium county projections; 2. MPO Data Values are for years 2010 and 2035 only, with intermediate years based on straight line interpolation between years by WEG; and 3. WEG.

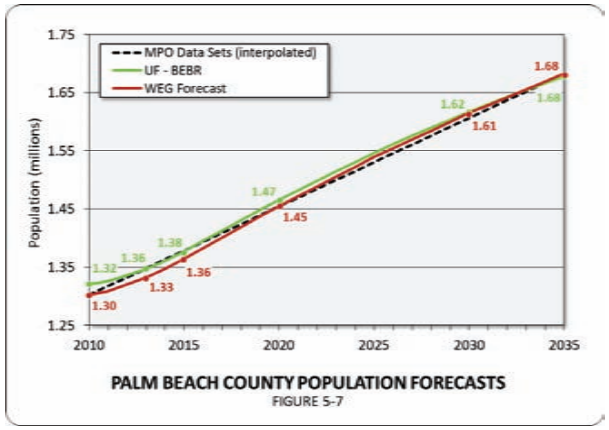



BROWARD COUNTY POPULATION FORECASTS
FIGURE 5-6

Sources: 1. UF, BEBR, Florida Population Studies, Volume 46, Bulletin 165, March 2013 medium county projections; 2. MPO Data Values are for years 2010 and 2035 only, with intermediate years based on straight line interpolation between years by WEG; and 3. WEG.








PALM BEACH COUNTY POPULATION FORECASTS
FIGURE 5-7

Sources: 1. UF, BEBR, Florida Population Studies, Volume 46, Bulletin 165, March 2013 medium county projections; 2. MPO Data Values are for years 2010 and 2035 only, with intermediate years based on straight line interpolation between years by WEG; and 3. WEG.

The figure shows that, over the forecast horizon, all three projections track very closely, with the 2030 and 2035 differentials between the MPO/WEG and the BEBR population series at less than 0.7 percent, which is well within an acceptable margin of error.

## Employment

Neither the EDR nor BEBR issues long-range employment projections at the County level. In addition, available long-run employment projections are not directly comparable among forecast sources as different definitions of employment are used in the MPO data sets and other forecasts.

In order to derive an approximation of the employment growth patterns of WEG/MPO's relative to other sources of employment forecasts in the tri-county area, a comparison of compound average annual growth rates (in percentage terms) among such available sources was assembled, and is shown in Table 5-4 below.

According to WEG's interpolation of the MPOs' forecasts, the Study area's total employment is projected to increase by about 1.3 percent annually through 2030 (see Table 5-4). The average total employment projection by the other three sources is about 1.5 percent annually, with Woods and Poole Economics calling for 1.8 percent yearly growth, while Moody's Analytics projects 1.3 percent, and University of Central Florida expects 1.4 percent per annum on average through 2030. It is, however, the distribution of future total employment among the Area's three counties that varies to a larger degree among these available sources. The MPOs/WEG's forecasts call for most robust (i.e., 2.0 percent) average annual growth to occur in Miami-Dade County, while Woods and Poole, and Moody's Analytics project Palm Beach County to continue to generate fastest employment growth within the Study area.

**Table 5-4**
**Comparison of MPOs/WEG's Growth (CAAGR) Employment Projections through 2030 - Relative to Other Sources**

| Geography | MPO (Interpolated)* | Woods & Poole Economics** | Moody's Analytics*** | UCF**** |
|---|---|---|---|---|
| Miami-Dade | 2.0% | 1.8% | 1.0% | N/A |
| Broward | 0.6% | 1.8% | 1.4% | N/A |
| Palm Beach | 0.9% | 2.1% | 1.7% | N/A |
| Area Total | 1.3% | 1.8% | 1.3% | 1.4% |

Sources: * WEG's interpolation of MPOs' data.
** Woods and Poole Economics, Inc., 2013. Woods and Poole does not guarantee the accuracy of this data. The use of the Woods and Poole data and the conclusions drawn from it are solely the responsibility of the Consultant
*** Moody's Analytics, August 2013
**** University of Central Florida (UCF) Institute for Economic Competitiveness, Florida & Metro Forecast, July 2013
UCF does not produce employment forecasts at the county level; the Miami-Ft. Lauderdale-Pompano Beach Metro is used in this case.

## Key Long-Term Patterns in Economic Behavior in the Area

The global and the tri-county economies were severely impacted by the recent economic recession, and are now undergoing a recovery as evidenced in growth in asset, labor, and other markets WEG's forecasts are predicated on the concept of mean reversion, meaning that once financial and economic markets stabilize, old patterns of activity and behavior will be re-established. As a consequence, WEG has predicted that growth and activity will accelerate and revert to the long-term trends that are embodied in the MPO data sets.

However, medium- and long-term population projections, especially for Miami-Dade County but also increasingly for Broward County, have a high degree of uncertainty due to immigration from Cuba, the Caribbean, and increasingly from Venezuela. These uncertain factors could significantly alter current population projections.

Within Miami-Dade County, WEG has identified the following summary trends:

- People want to live in the southern portions of the County, primarily the Southwest sub-Region;
- Currently, and in the foreseeable future, employment will be in the northern portions of the County;
- Distances between the workplace and the residential communities are significant;
- Transportation assets are not currently oriented toward meeting these future needs; and
- Significant investments in additional transportation assets, of all types, will be required if these emerging needs are to be accommodated, particularly in the southern and western portions of Miami-Dade County.





## Year 2030 Forecasts

Based on incorporating the previously-listed overall expected growth patterns, and growth/re-curve scalars, WEG developed its socioeconomic growth projections input for the travel demand model terminal year of 2030. The WEG forecasts of population and other socioeconomic variables are primarily based on socioeconomic data sets for the years 2010 and 2035 prepared by the MPOs of Miami-Dade, Broward, and Palm Beach Counties. For those years, each MPO prepared data sets of population and other relevant model variables for each TAZ in their respective counties. These data sets incorporate information from each county government's planning processes as well as information from the state and federal governments available at the time. Following the preparation of these data sets, each goes through a review and approval process. When the process is completed, each data set represents the official long-range outlook of its respective county government.

For the analysis forecasts year of 2030 as well as the interim years (as shown in the following subsection below), WEG calculated growth rates for all socioeconomic variables based directly on the projected population growth. Population growth was chosen by WEG as the underlying determinant of growth in each of the socioeconomic variables in the model. The initial step in WEG's preparation of the forecast for each County was to scale the long-run statewide annual rates of population growth developed by the Florida EDR such that the statewide pattern of annual growth rates matched the MPO growth rate over the 2010 to 2035 period. These adjustments were relatively minor, resulting in less than a five percent deviation from the statewide rates of population growth as determined by the EDR. The summaries of such forecasts for year 2030 by model variable and county are presented in Tables 5-5 through 5-7 below, while a study area map of the projected changes in population by TAZ over the 2010 to 2030 timeframe was previously shown in Figure 5-3.

A comparison of WEG's 2030 population forecasts relative to the (interpolated) MPOs', and BEBR's by county are presented in Tables 5-8 and 5-9, respectively. The first of these tables shows that, in comparison to the MPOs' projections, WEG's forecasts are about 0.5 percent higher for year 2030 population. When compared to the current 2030 county population projections from BEBR, WEG's forecasts are overall close to five percent above (or 332,000 people) on the area wide basis, with Palm Beach County about the same as BEBR's, while the relative overestimations for Miami-Dade and Broward are about four and 10 percent, respectively (Table 5-9).

## Interim Year Forecasts

In preparing interim year forecasts, WEG utilized the 2010 and 2035 MPO data set values as fixed endpoints for each of the model variables. The 2010 data sets are the starting point of the forecast, and were assumed to represent the best data available at the traffic analysis zone level of detail.

The economic recession started in late 2007 and continued through the end of 2009. The recession reflected national and international factors such as the sharp reduction in financial flows to the construction sector and a decline in GDP growth. At the international level, the recession in South Florida was exacerbated by negative growth in 2008 and in 2009 among the key trade partners in Europe and in Latin America.

For the last few decades, South Florida has experienced consistent population growth, and after several years of a slowdown, WEG expects the demographic and economic growth to come back to the area. This is expected to be boosted by the post-recessionary resumption of domestic and international in-migration into the tri-county area, and Miami-Dade in particular. Moreover, the lift is

also anticipated to come from the ongoing infrastructure investments, and recovery of the housing markets as evidenced by the pick-up of recent activity in the Study area, all of which should have positive impacts on the area's attractiveness for residential and employment growth. Therefore, WEG's professional opinion is that the 2035 MPO datasets are sufficient to still reflect the longer-term future socioeconomic conditions throughout the Study area.

Most forecasts of population growth assume that population will grow steadily over time with little change in the rate of growth over the time period, i.e., population growth will approximate a straight line between the two endpoints. The "typical" population growth rate is based on a steady percentage growth. However, a wide range of factors, particularly in-migration, make population growth rates for South Florida more variable. Furthermore, WEG chose to alter the growth path slightly in order to take into account the impacts of the recent economic downturn, and the ensuing recovery. WEG is projecting that overall population growth in the Study area will rebound in the short and medium-term, an then decelerate converging closer to the long-run trend projected by the MPOs and BEBR. The results of WEG's socioeconomic forecasts for the interim years of 2013, 2015, and 2020 by variable and county are shown in the Tables 5-10 through 5-12.

**Table 5-5**
**WEG's Projections for Miami - Dade County**

| Variable | | 2010 Value | 2030 Value | Absolute Change | Total % Change | 2010-2030 CAAGR |
|---|---|---|---|---|---|---|
| **Lifestyle Variables** | Households Without Children | 550,916 | 726,144 | 175,228 | 31.81% | 1.4% |
| | Households With Children | 312,717 | 378,639 | 65,922 | 21.08% | 1.0% |
| | Vehicles in Households Without Children | 818,237 | 1,214,909 | 396,672 | 48.48% | 2.0% |
| | Vehicles in Households With Children | 662,905 | 947,545 | 284,640 | 42.94% | 1.8% |
| | Workers in Households Without Children | 747,456 | 943,430 | 195,974 | 26.22% | 1.2% |
| | Workers in Households With Children | 550,604 | 669,149 | 118,545 | 21.53% | 1.0% |
| | Persons in Households Without Children | 1,218,460 | 1,557,734 | 339,274 | 27.84% | 1.2% |
| | Persons in Households With Children | 1,256,795 | 1,576,103 | 319,308 | 25.41% | 1.1% |
| **Total Population** | Total Population | 2,475,255 | 3,133,837 | 658,582 | 26.61% | 1.2% |
| **School Enrollment** | Elementary | 158,404 | 207,142 | 48,738 | 30.77% | 1.4% |
| | Middle | 79,192 | 90,817 | 11,625 | 14.68% | 0.7% |
| | High | 102,726 | 122,257 | 19,531 | 19.01% | 0.9% |
| | Private | 52,735 | 119,140 | 66,405 | 125.92% | 4.2% |
| | College/University Enrollment | 260,295 | 308,008 | 47,713 | 18.33% | 0.8% |
| **Employment** | Industrial | 169,095 | 155,778 | -13,317 | -7.88% | -0.4% |
| | Commercial | 248,329 | 273,957 | 25,628 | 10.32% | 0.5% |
| | Service Sector | 831,759 | 1,430,563 | 598,804 | 71.99% | 2.7% |
| | Total Employment | 1,249,183 | 1,860,298 | 611,115 | 48.92% | 2.0% |
| **Hotel Data** | Total Hotel - Motel Rooms | 37,839 | 61,612 | 23,773 | 62.83% | 2.5% |

Source: WEG's Data





**Table 5-6**
**WEG's Projections for Broward County**

| Variable | | 2010 Value | 2030 Value | Absolute Change | Total % Change | 2010-2030 CAAGR |
|---|---|---|---|---|---|---|
| **Lifestyle Variables** | Households Without Children | 461,015 | 495,300 | 34,285 | 7.44% | 0.4% |
| | Households With Children | 220,359 | 315,365 | 95,006 | 43.11% | 1.8% |
| | Vehicles in Households Without Children | 614,925 | 679,962 | 65,037 | 10.58% | 0.5% |
| | Vehicles in Households With Children | 471,380 | 616,529 | 145,149 | 30.79% | 1.4% |
| | Workers in Households Without Children | 413,599 | 458,392 | 44,793 | 10.83% | 0.5% |
| | Workers in Households With Children | 421,424 | 554,567 | 133,143 | 31.59% | 1.4% |
| | Persons in Households Without Children | 783,681 | 909,436 | 125,755 | 16.05% | 0.7% |
| | Persons in Households With Children | 948,172 | 1,248,814 | 300,642 | 31.71% | 1.4% |
| **Total Population** | Total Population | 1,731,853 | 2,158,250 | *426,397* | *24.62%* | 1.1% |
| **School Enrollment** | Elementary | 104,651 | 151,262 | 46,611 | 44.54% | 1.9% |
| | Middle | 52,334 | 76,240 | 23,906 | 45.68% | 1.9% |
| | High | 67,754 | 88,542 | 20,788 | 30.68% | 1.3% |
| | Private | 55,959 | 88,087 | 32,128 | 57.41% | 2.3% |
| | College/University Enrollment | 101,712 | 123,943 | 22,231 | 21.86% | 1.0% |
| **Employment** | Industrial | 123,007 | 133,941 | 10,934 | 8.89% | 0.4% |
| | Commercial | 173,577 | 310,756 | 137,179 | 79.03% | 3.0% |
| | Service Sector | 571,063 | 540,965 | -30,098 | -5.27% | -0.3% |
| | Total Employment | 867,647 | 985,662 | 118,015 | 13.60% | 0.6% |
| **Hotel Data** | Total Hotel - Motel Rooms | 37,471 | 33,323 | -4,148 | -11.07% | *-0.6%* |

Source: WEG's Data

**Table 5-7**
**WEG's Projections for Palm Beach County**

| Variable | | 2010 Value | 2030 Value | Absolute Change | Total % Change | 2010-2030 CAAGR |
|---|---|---|---|---|---|---|
| **Lifestyle Variables** | Households Without Children | 387,563 | 469,575 | 82,012 | 21.16% | 1.0% |
| | Households With Children | 143,518 | 191,951 | 48,433 | 33.75% | 1.5% |
| | Vehicles in Households Without Children | 565,717 | 691,691 | 125,974 | 22.27% | 1.0% |
| | Vehicles in Households With Children | 285,820 | 364,139 | 78,319 | 27.40% | 1.2% |
| | Workers in Households Without Children | 323,169 | 410,930 | 87,761 | 27.16% | 1.2% |
| | Workers in Households With Children | 239,540 | 306,068 | 66,528 | 27.77% | 1.2% |
| | Persons in Households Without Children | 704,627 | 850,991 | 146,364 | 20.77% | 0.9% |
| | Persons in Households With Children | 597,436 | 763,882 | 166,446 | 27.86% | 1.2% |
| **Total Population** | Total Population | 1,302,063 | 1,614,872 | *312,809* 0 | *24.02%* | 1.1% |
| **School Enrollment** | Elementary | 83,412 | 90,609 | 7,197 | 8.63% | 0.4% |
| | Middle | 41,690 | 43,249 | 1,559 | 3.74% | 0.2% |
| | High | 48,810 | 52,719 | 3,909 | 8.01% | 0.4% |
| | Private | 21,490 | 71,637 | 50,147 | 233.35% | 6.2% |
| | College/University Enrollment | 55,861 | 63,053 | 7,192 | 12.87% | 0.6% |
| **Employment** | Industrial | 85,721 | 117,828 | 32,107 | 37.46% | 1.6% |
| | Commercial | 108,537 | 199,013 | 90,476 | 83.36% | 3.1% |
| | Service Sector | 443,827 | 454,378 | 10,551 | 2.38% | 0.1% |
| | Total Employment | 638,085 | 771,220 | 133,135 | 20.86% | 1.0% |
| **Hotel Data** | Total Hotel - Motel Rooms | 19,459 | 20,465 | 1,006 | 5.17% | *0.3%* |

Source: WEG's Data

**Table 5-8**
**Comparison of WEG's Population Projections for 2030 - Relative to MPOs'**

| Geography | WEG Projection | MPO (Interpolated) | Absolute Difference | % Difference |
|---|---|---|---|---|
| Miami-Dade | 3,133,837 | 3,117,575 | 16,262 | 0.5% |
| Broward | 2,158,250 | 2,147,033 | 11,217 | 0.5% |
| Palm Beach | 1,614,872 | 1,606,492 | 8,380 | 0.5% |
| Area Total | 6,906,959 | 6,871,100 | 35,859 | 0.5% |

Sources: WEG's derived projections

**Table 5-9**
**Comparison of WEG's Population Projections for 2030 - Relative to BEBR's**

| Geography | WEG Projection | BEBR Projection | Absolute Difference | % Difference |
|---|---|---|---|---|
| Miami-Dade | 3,133,837 | 3,009,309 | 124,528 | 4.0% |
| Broward | 2,158,250 | 1,948,726 | 209,524 | 9.7% |
| Palm Beach | 1,614,872 | 1,616,867 | -1,995 | -0.1% |
| Area Total | 6,906,959 | 6,574,902 | 332,057 | 4.8% |

Sources: WEG's derived projections, and BEBR projections, March 2013.

**Table 5-10**
**WEG's Projections for Miami - Dade County - Interim Years**

| Variable | | 2010 Value | 2013 Value | 2015 Value | 2020 Value | 2010-2020 CAAGR |
|---|---|---|---|---|---|---|
| **Lifestyle Variables** | Households Without Children | 550,916 | 567,664 | 585,279 | 636,052 | 1.4% |
| | Households With Children | 312,717 | 319,018 | 325,645 | 344,746 | 1.0% |
| | Vehicles in Households Without Children | 818,237 | 856,150 | 896,027 | 1,010,963 | 2.1% |
| | Vehicles in Households With Children | 662,905 | 690,110 | 718,725 | 801,200 | 1.9% |
| | Workers in Households Without Children | 747,456 | 766,187 | 785,888 | 842,672 | 1.2% |
| | Workers in Households With Children | 550,604 | 561,934 | 573,851 | 608,200 | 1.0% |
| | Persons in Households Without Children | 1,218,460 | 1,250,887 | 1,284,994 | 1,383,299 | 1.3% |
| | Persons in Households With Children | 1,256,795 | 1,287,313 | 1,319,414 | 1,411,933 | 1.2% |
| **Total Population** | Total Population | 2,475,255 | 2,538,200 | 2,604,408 | 2,795,233 | 1.2% |
| **School Enrollment** | Elementary | 158,404 | 167,962 | 167,962 | 182,084 | 1.4% |
| | Middle | 79,192 | 81,472 | 81,472 | 84,840 | 0.7% |
| | High | 102,726 | 106,556 | 106,556 | 112,215 | 0.9% |
| | Private | 52,735 | 65,758 | 65,758 | 84,999 | 4.9% |
| | College/University Enrollment | 260,295 | 264,855 | 269,652 | 283,477 | 0.9% |
| **Employment** | Industrial | 169,095 | 167,822 | 166,483 | 162,625 | -0.4% |
| | Commercial | 248,329 | 250,778 | 253,355 | 260,781 | 0.5% |
| | Service Sector | 831,759 | 888,991 | 949,189 | 1,122,693 | 3.0% |
| | Total Employment | 1,249,183 | 1,307,591 | 1,369,027 | 1,546,099 | 2.2% |
| **Hotel Data** | Total Hotel - Motel Rooms | 37,839 | 40,111 | 42,501 | 49,389 | 2.7% |

Source: WEG's Data





**Table 5-11**
**WEG's Projections for Broward County - Interim Years**

| Variable | | 2010 Value | 2013 Value | 2015 Value | 2020 Value | 2010-2020 CAAGR |
|---|---|---|---|---|---|---|
| **Lifestyle Variables** | Households Without Children | 461,015 | 464,316 | 467,782 | 477,741 | 0.4% |
| | Households With Children | 220,359 | 229,505 | 239,111 | 266,707 | 1.9% |
| | Vehicles in Households Without Children | 614,925 | 621,186 | 627,762 | 646,653 | 0.5% |
| | Vehicles in Households With Children | 471,380 | 485,354 | 500,029 | 542,190 | 1.4% |
| | Workers in Households Without Children | 413,599 | 417,911 | 422,440 | 435,451 | 0.5% |
| | Workers in Households With Children | 421,424 | 434,242 | 447,703 | 486,377 | 1.4% |
| | Persons in Households Without Children | 783,681 | 795,788 | 808,502 | 845,030 | 0.8% |
| | Persons in Households With Children | 948,172 | 977,115 | 1,007,511 | 1,094,838 | 1.4% |
| **Total Population** | Total Population | 1,731,853 | 1,772,903 | 1,816,013 | 1,939,867 | 1.1% |
| **School Enrollment** | Elementary | 104,651 | 109,138 | 113,851 | 127,390 | 2.0% |
| | Middle | 52,334 | 54,636 | 57,053 | 63,997 | 2.0% |
| | High | 67,754 | 69,755 | 71,857 | 77,895 | 1.4% |
| | Private | 55,959 | 59,052 | 62,300 | 71,633 | 2.5% |
| | College/University Enrollment | 101,712 | 103,852 | 106,100 | 112,557 | 1.0% |
| **Employment** | Industrial | 123,007 | 124,060 | 125,165 | 128,341 | 0.4% |
| | Commercial | 173,577 | 186,784 | 200,653 | 240,499 | 3.3% |
| | Service Sector | 571,063 | 568,165 | 565,122 | 556,380 | -0.3% |
| | Total Employment | 867,647 | 879,009 | 890,940 | 925,220 | 0.6% |
| **Hotel Data** | Total Hotel - Motel Rooms | 37,471 | 37,072 | 36,652 | 35,447 | -0.6% |

Source: WEG's Data

**Table 5-12**
**WEG's Projections for Palm Beach County - Interim Years**

| Variable | | 2010 Value | 2013 Value | 2015 Value | 2020 Value | 2010-2020 CAAGR |
|---|---|---|---|---|---|---|
| **Lifestyle Variables** | Households Without Children | 387,563 | 395,476 | 403,782 | 427,621 | 1.0% |
| | Households With Children | 143,518 | 148,191 | 153,096 | 167,175 | 1.5% |
| | Vehicles in Households Without Children | 565,717 | 577,871 | 590,630 | 627,248 | 1.0% |
| | Vehicles in Households With Children | 285,820 | 293,376 | 301,308 | 324,074 | 1.3% |
| | Workers in Households Without Children | 323,169 | 331,636 | 340,525 | 366,035 | 1.3% |
| | Workers in Households With Children | 239,540 | 245,959 | 252,697 | 272,035 | 1.3% |
| | Persons in Households Without Children | 704,627 | 718,749 | 733,572 | 776,117 | 1.0% |
| | Persons in Households With Children | 597,436 | 613,495 | 630,352 | 678,735 | 1.3% |
| **Total Population** | Total Population | 1,302,063 | 1,332,244 | 1,363,924 | 1,454,853 | 1.1% |
| **School Enrollment** | Elementary | 83,412 | 84,106 | 84,835 | 86,927 | 0.4% |
| | Middle | 41,690 | 41,840 | 41,998 | 42,452 | 0.2% |
| | High | 48,810 | 49,187 | 49,583 | 50,719 | 0.4% |
| | Private | 21,490 | 26,328 | 31,407 | 45,984 | 7.9% |
| | College/University Enrollment | 55,861 | 56,555 | 57,283 | 59,374 | 0.6% |
| **Employment** | Industrial | 85,721 | 88,819 | 92,071 | 101,404 | 1.7% |
| | Commercial | 108,537 | 117,266 | 126,430 | 152,729 | 3.5% |
| | Service Sector | 443,827 | 444,845 | 445,914 | 448,981 | 0.1% |
| | Total Employment | 638,085 | 650,930 | 664,414 | 703,114 | 1.0% |
| **Hotel Data** | Total Hotel - Motel Rooms | 19,459 | 19,556 | 19,658 | 19,950 | 0.2% |

Source: WEG's Data

# Airports and Port of Miami

A trend analysis of airport passengers and port activity at the major hub expressways near the MDX corridors is presented in this section.

## Passenger Activity Trends at MIA and FLL Airports

Airport passenger trends from the Miami International Airport (MIA), and Fort Lauderdale/ Hollywood International Airport (FLL) were both included in the analysis.

According to the Miami-Dade Aviation Department website, the Miami International Airport is among the world's busiest airports, with over 80 airlines serving MIA to about 150 destinations around the globe[3]. Passenger Traffic at the Miami International Airport averaged about 1.6 percent annually during the 1990 through 2010 timeframe, with strong growth prior to and after the 2000 to 2010 decade as shown in Table 5-13.

**Table 5-13**
**MIA & FLL Total Enplanements - Historical & Forecasted Growth Trends**

| | Compound Average Annual Growth Rate (Percent) | | | | | |
|---|---|---|---|---|---|---|
| | 1990 - '00 | 2000 - '10 | 2010 - '11 | 2011 - '12 | 1990 - 2010 | 2010 - 2030 |
| **MIA Enplanements** | 3.3% | -0.1% | 6.7% | 3.7% | 1.6% | 2.6% |
| **FLL Enplanements** | 5.6% | 3.2% | 7.7% | -0.2% | 4.4% | 2.7% |

Source: U.S. DOT FAA TAF Data

A number of improvement projects in the Capital Improvement Program of MIA, including the completion of the forth runway, have increased the efficiency and capacity of the Airport. These improvements also include the South Terminal, opened in 2007 and the North Terminal, which will be fully completed in 2014 to serve more than 300 daily flights. According to the MIA[4], the North Terminal is used by American Airlines as its Latin American and Caribbean hub, serving about 25 million passengers annually. Furthermore, the Miami Intermodal Center (MIC) is now operational, supporting passenger mobility throughout the region. The Miami International Airport (MIA) Mover at the Airport is a newly added 1.25-mile long automated rail system that transports passengers within MIA and to/from MIA to the Miami Rental Center (part of the MIC). In the next few years it is highly likely that the MIC will boost passenger growth through MIA, and to a lesser extent Fort Lauderdale/Hollywood International Airport (FLL).These improvements have already started paying off for the Airport passenger traffic, and will continue to do so going forward.

[3] Miami-Dade Aviation Department. (2013). Airport Statistics. Retrieved from: http://www.miami-airport.com/airport_stats.asp
[4] Miami International Airport. (2013). Gateway to the Americas. Retrieved from: http://www.miami-airport.com/capital_improvement.asp





While the Miami-Dade Aviation Department does not officially publish passenger volume forecasts for the MIA, the Federal Aviation Administration makes such forecasts available. According to the FAA, the Airport's passenger enplanement volumes are projected to increase by 2.6 percent on average between years 2010 and 2030.

According to Broward County website[5], the Fort Lauderdale-Hollywood International Airport serves the needs of over 23 million annual passengers throughout South Florida. FLL facilitates over 300 departure and 300 arrival flights per day offering non-stop service to more than 100 U.S. cities, as well as internationally to Canada, Mexico, the Caribbean, Europe, and Latin America.

This Airport experienced a relatively robust growth during the 1990-2010 period, averaging 4.4 percent annually as shown in Table 5-13. As part of the FLL Airport Improvements and Renovations Program (FLLAIR), the Airport will see a new south runway, as well as expanded (from 10 to 14 gates) Terminal 4[6]. Going forward, the FAA forecasts FLL Airport passenger enplanements growth throughout the 2010 to 2030 timeframe to average 2.7 percent per year.

## Port of Miami Activity Trends

Port of Miami experienced mixed trends between 2000 and 2010, during which its cargo movement slightly declined, while its passenger cruise ship business grew by about 2.1 percent per annum as shown in Table 5-14. The Port of Miami has suffered from a combination of growing operating costs and increased competition from other ports in Florida, the U.S. and the Caribbean.

The new Miami Port Tunnel, now under construction, will directly link the Port to multimodal transportation arteries and logistics hubs such as I-95, rail, including the All-Aboard Florida passenger rail line to begin construction in early 2014, MIA and surrounding warehouse districts. This is expected to decrease the costs to shippers and other commercial vehicles utilizing the Port. Additional improvements to the Port will allow it to serve larger ships able to transit the expanded Panama Canal. A key element of these expansion plans will be that many ships currently providing trans-pacific service will be able to call at Port of Miami helping to increase the Port's importance for ocean commerce in the southeastern United States and in expanding Asian and European markets.

As shown in Table 5-14, according to the Port's 2009 Master Plan[7], the cargo/TEU activity at the Port is forecasted to grow by 4.6 percent annually, while the passenger-related growth is anticipated to increase by 1.7 percent per year.

[5] Broward County. (2013). Fort Lauderdale-Hollywood International Airport: About Us. Retrieved from: http://www.broward.org/Airport/About/Pages/Default.aspx
[6] ibid
[7] PortMiami. 2035 Master Plan. Retrieved from: http://www.miamidade.gov/portmiami/library/2035-master-plan/complete-master-plan.pdf

**Table 5-14**
**Port of Miami - Historical & Forecasted Growth Trends**

| | CAAGR | |
|---|---|---|
| **Activity Type** | **2000 - '10** | **2009 - '35** |
| **Cargo** | -0.5% | 4.6% |
| **Passengers** | 2.1% | 1.7% |

Source: Port of Miami, Master Plan

## Summary/Conclusion

Using historical growth trends and the available long-term MPO projections data, WEG completed their forecast analysis of population and socio-economic projections for the Southeast Florida tri-county regional model study area that comprises Miami-Dade, Broward, and Palm Beach Counties. It is WEG's professional judgment that the projections contained herein are reasonable and properly reflect the current and forecasted projections of economic and social activity in the tri-county region.

CDM Smith reviewed WEG's "independent" socioeconomics, and when compared against historical trends and projections available from other sources, the WEG forecasts could be considered somewhat aggressive, particularly in Miami-Dade County. Therefore, a sensitivity test is suggested where the trip table growth through 2030 is reduced by about 5 to 10 percent.

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# Chapter 6
# Traffic and Revenue Analysis

Chapter 6 summarizes the development of the estimates of future year transactions and toll revenue for the Miami-Dade Expressway Authority (MDX) expressways under system-wide Open Road Tolling (ORT). Estimates were prepared for both a Fixed Rate scenario, where FY 2015 toll rates were used throughout the FY 2015 to FY 2030 forecast period, and a Base Case scenario, which assumed CPI-adjusted toll rates throughout the forecast period.

This chapter also details the refinement and calibration process of the Southeast Florida Regional Planning Model (SERPM) 6.5.3 used in developing the forecasts, as well as the assumptions underlying the traffic and revenue forecasts, such as proposed tolling alternatives and toll rates, value of time and vehicle operating costs. The integration of the socioeconomic forecasts, following an independent review by Washington Economics Group (WEG), into the travel demand model is also discussed.

The resulting transaction and toll revenue forecasts based on the implementation of system-wide ORT are presented in this chapter. Currently, SR 874, SR 878 and SR 924 already operate under ORT. The future year forecasts of transactions and toll revenue assume the implementation of ORT on the remaining expressways, SR 112 and SR 836, in FY 2015. Open Road Tolling is assumed to begin on the SR 112 and SR 836 mainlines no later than December 1, 2014 and at the SR 836 ramp locations no later than January 1, 2015. Estimates of traffic and revenue were initially made that assume the currently adopted ORT toll rates and assumed ORT implementation dates for SR 836 and SR 112 excluding CPI adjustments. By excluding toll rate adjustments, it was easier to isolate the estimated impacts associated with system-wide ORT implementation.

A traffic and revenue forecast, referred to as the Base Case, is also provided. This forecast includes assumed CPI-based adjustments to toll rates at each of the ORT toll gantries, along with the revenue impact of the MDX Board-approved Customer Rewards/Volume Frequency Program.

## Traffic Model Development

As part of this comprehensive traffic and revenue study, a regional travel demand model was employed to assist with the estimation of the future year transactions and toll revenue estimates. The development of that travel demand model, which is based on the Southeast Florida Regional Planning Model (SERPM) 6.5.3, is described in the following section with an emphasis on the various model assumptions. In particular, these include the highway network assumptions, land use and socioeconomic assumptions, toll rate assumptions, and estimated value of time and vehicle operating costs. The model calibration and validation process is also described, where the model results were compared to and adjusted based on actual traffic volumes, speeds and travel pattern data.

The forecasting process for this study generally involved three major steps identified below and depicted schematically in Figure 6-1:

- Development of a regional travel demand model based on the SERPM 6.5.3 regional travel demand model and calibrated against actual traffic volumes, speeds and travel pattern data for a base year (2013) and several future years (2015, 2020 and 2030);





- Development of trip tables for years 2013, 2015, 2020, and 2030 based on updates to socioeconomic data growth schedules and highway networks; and
- Estimation of year 2013, 2015, 2020 and 2030 traffic demand with the highway assignment component of the travel demand model using revised trip tables, updated highway networks, and other model inputs described in this chapter.

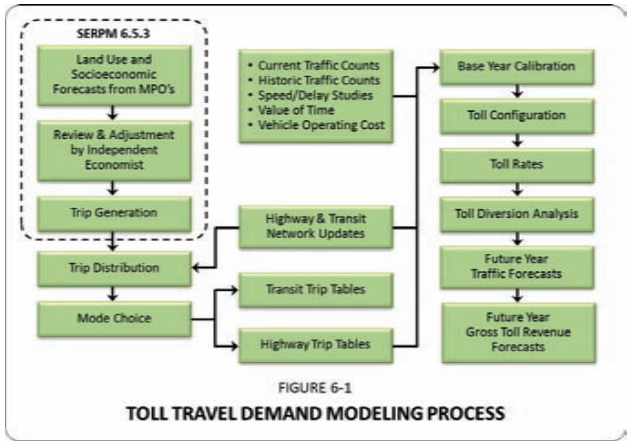


FIGURE 6-1
**TOLL TRAVEL DEMAND MODELING PROCESS**

## Regional Transportation Demand Model

The model used for this study is based on the SERPM, version 6.5.3, developed by the District 4 office of the Florida Department of Transportation (FDOT). SERPM is a modification of the Florida State Urban Travel Model System (FSUTMS) and is run using the Cube Voyager software package.

The model area covers Miami-Dade, Broward and Palm Beach Counties and is divided into approximately 4,300 traffic analysis zones (TAZ). TAZs generally contain only a few blocks of residential and/or commercial properties. This allows the model to receive detailed socioeconomic data inputs, such as population, households and employment, and to estimate trip movements with the same level of geographic detail.

CDM Smith also employs the time-of-day model, meaning that the model is run separately for the AM peak period (6:30-9:30 AM), the PM peak period (3:30-6:30 PM), and the off-peak period (remaining hours). This is important in the analysis of toll facilities in urban areas since congestion levels vary by time of day and direction.

The SERPM model runs the complete four-step travel demand modeling process – trip generation, trip distribution, mode choice and traffic assignment. Trip generation uses socio-economic information to calculate the number of trips produced and attracted to each TAZ. Trip distribution calculates the number of trips that move between zones. Mode split determines which mode of transport these trips

will use. Finally, traffic assignment allocates these trips to routings throughout the highway and transit networks.

FDOT supplied CDM Smith with the SERPM, version 6.5.3, which included data for two model years: 2005 and 2035. These were then used to create the 2013 base year and interim future year models used in this study. The process for developing models and networks for years 2013, 2015, 2020 and 2030 are described below.

## Transportation Demand Model Modifications

CDM Smith used the SERPM model to run the trip generation, trip distribution and mode choice steps of the travel demand model. The output of these steps is a set of trip tables that estimate travel demand between the various TAZs based on the socioeconomic assumptions and basic highway network information, such as roadway distances and speeds.

In order to ensure that the SERPM model reasonably reflected travel patterns in Miami-Dade County, the socioeconomic assumptions and highway networks were reviewed and modified. The socioeconomic data for 2005 and 2035 provided with the SERPM Model was developed and adopted by the local MPOs in 2005. The growth and land use assumptions underlying the socioeconomic variables needed to be reviewed in light of the most recent economic data and forecasts. More detail on this review, which was conducted by Washington Economics Group (WEG), is provided in Chapter 3. A copy of the WEG independent report is also included as an appendix to this report.

The trip tables from the SERPM model did not reflect the differences in SunPass®, Toll-by-Plate and Cash toll payment categories. These were subdivided by CDM Smith for purposes of this traffic analysis. Lastly, the original highway networks provided by FDOT were not in all cases coded with the most current MDX mainline and ramp configurations, number of lanes, free flow speeds or other roadway characteristics. Therefore, updates were needed in these major areas, as well as other variables such as value of time and vehicle operating costs.

The following sections discuss the various changes and updates made to the SERPM model, including those made to the highway networks, the development of modified trip tables, a description of the tolled traffic assignment procedure, and a summary of basic model assumptions.

## Traffic Network Development

As part of the prior 2010 Investment Grade Traffic and Revenue Study conducted for MDX, highway networks were developed for the model year 2010. This network incorporated the latest highway improvement assumptions at the time, as well as detailed coding of the 2010 configuration of the MDX Expressways and Miami-Dade highway and arterial network. Instead of replicating this work for the current study effort, CDM Smith used the 2010 network as the starting point for developing the highway networks for this study, conducting a thorough review of the highway and arterial networks, the MDX capital improvement plan and the latest regional transportation improvement program.

CDM Smith compared the 2010 highway network developed for the prior 2010 Investment Grade Traffic and Revenue Study against actual FY 2013 Miami-Dade highway and arterial roadway aerials and data. The first step was to update the network with the regional highway improvements completed since 2010. The list of projects previously assumed during the prior study to be completed by FY 2013 was compared against the actual FY 2013 Miami-Dade highway and arterial network. In addition, the projects completed under the Regional Transportation Improvement Program for Miami-Dade County for FY 2011, FY 2012 and FY 2013 were reviewed in order to ensure that they were





incorporated into the FY 2013 highway network. Additionally, the remaining highway and arterial system in the FY 2013 highway network was reviewed to ensure that it correctly represented the actual FY 2013 Miami-Dade highway and arterial network. The primary roadways reviewed included the MDX Expressways, HEFT, I-95, I-395, I-195, SR 826, and U.S. Route 1. The most recent MDX roadway schematics, FDOT straight-line diagrams, and current aerial images were used in order to confirm and update roadway configurations, distances, and number of lanes. Using these updated roadway characteristics and the SERPM roadway capacity guidelines, the capacities for the MDX expressways and major highways were checked and updated where necessary. Lastly, updated free flow speed information collected from the 2011 INRIX speed database, discussed in detail in Chapter 3, was input into the model by roadway segment for the MDX expressways and major highways. These updates and modifications ensured that the latest FY 2013 highway network data would be used as the basis for the SERPM model calculations of zone to zone movements, as well as in the cost-ratio calculations employed in the modified traffic assignment procedure.

In order to estimate future traffic patterns, highway networks needed to be developed for the future year traffic assignments. Future year highway improvements included in the model were based upon the MDX Five-Year Capital Improvement Program, the Miami-Dade MPO Regional Transportation Improvement Program (TIP), and the Miami-Dade MPO Long Range Transportation Plan (LRTP). Special attention was given to the MDX Expressways and potential competing routes, major Miami-Dade highways and the adjacent arterial roadways. The resulting list of projects, construction schedules and project configurations were confirmed with MDX, FDOT, and Florida's Turnpike Enterprise prior to their being included in the model networks. CDM Smith only incorporated cost-feasible projects into the model, ensuring a conservative estimate of future highway network development. A complete list of the projects included in the future year networks is provided in Table 6-1(see edits), and illustrated in Figure 6-2. The nature of each improvement, including the number of travel lanes before and after expansion, as well as the specific traffic network year for each of the improvements is provided.

A significant number of important transportation improvements are currently programmed for the MDX System corridors and along principal competing freeways and routes. Many of the new roadways and the existing roadway expansions are being constructed in order to accommodate existing traffic volumes or in anticipation of the socioeconomic growth projected by the local MPOs. While the projected growth in population, households and employment is expected to increase travel demand, the additional capacity being constructed to support this growth may also provide additional competition to some of the existing MDX expressways in the future.

As shown in Figure 6-3, the SR 836 / SR 826 interchange, currently under construction since late 2011, is scheduled to be completed in 2015. The existing loop ramp from SR 836 westbound to SR 826 southbound will be replaced by a new flyover ramp. A new flyover ramp will be constructed to allow for the SR 826 southbound to SR 836 westbound movement, which was not possible under the previous interchange configuration. Additional ramps will be constructed in order to channel and direct traffic more efficiently through the interchange. As well as reconstructing and repaving the mainlines, new collector-distributor (CD) roadways will be constructed to separate through traffic from entering and exiting traffic. Lastly, a "Texas-Turnaround" will be constructed west of SR 826. The "Texas-Turnaround" is a U-turn ramp that will allow traffic heading westbound on SR 836 to "turnaround" and head in the eastbound direction without having to exit and re-enter the expressway. In this case, for example, the "turnaround" will permit more direct movements between NW 72nd

**Table 6-1**
**Programmed Regional Highway Improvements**

| Year of Improvement | Model Network Year | Facility | Project Name | From | To | Improvement | Number of Lanes | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Existing | Future |
| 2014 | 2015 | FDOT | Port of Miami Tunnel | Port of Miaml | I-395 | New Road Construction | - | 4 |
| 2014 | 2015 | FDOT | I-595 Express Lanes | I-75 | Florida's Turnpike | New Express Lanes | - | 2 |
| 2014 | 2015 | FDOT | I-95 Express Lanes | Golden Glades Interchange | Broward County Line | New Express Lanes | - | 2 |
| 2014 | 2015 | Arterial | SR 823 / NW 57th Avenue / Red Road | W 53th Street | W 65th Street | Add Lanes and Reconstruct | 4 | 6 |
| 2014 | 2015 | Arterial | SR 823 / NW 57th Avenue / Red Road | W 65th Street | W 84th Street | Add Lanes and Reconstruct | 4 | 6 |
| 2014 | 2015 | Arterial | SR 948 / NW 36th Street | SR 953 / S Le Jeune Road | US 27 / Okeechobee Road | Bridge - Replace and Add Lanes | 3 | 4 |
| 2015 | 2015 | FTPKE | HEFT | NW 74th Street | NW 106th Street | Add Auxiliary Lane | 3/4 | 4/5 |
| 2015 | 2015 | MDX | SR 112 | | | ORT Implementation | - | - |
| 2015 | 2015 | MDX | SR 836 (East Section) | | | ORT Implementation | - | - |
| 2015 | 2015 | MDX | SR 836 (West Section) | | | ORT Implementation | - | - |
| 2015 | 2015 | MDX | SR 836 Extension WB Access | SW 107th Avenue | SR 836 Extension | New Ramp | - | 1 |
| 2015 | 2015 | MDX | SR 836 / SR 826 Interchange | SW 82nd Avenue | SW 57th Avenue | Interchange Reconstruction and Add CD Roads | - | - |
| 2015 | 2015 | MDX | SR 874 Mainline Reconstruction | SR 94 / Kendall Drive | SR 826 | Add Lanes | 4 | 6 |
| 2015 | 2015 | Arterial | SR 997 / Krome Avenue | SR 94 / Kendall Drive | 1 Mile North of SW 8th Street | Add Lanes and Reconstruct | 2 | 4 |
| 2016 | 2016 | FTPKE | HEFT | Mill Drive | SW 184th Street / Eureka Drive | Add Lanes | 4/6 | 6/8/10 |
| 2016 | 2016 | Arterial | NW 87th Avenue | NW 74th Street | NW 103rd Street | New Road Construction | - | 4 |
| 2016 | 2016 | Arterial | SR 985 / SW 107 Avenue | SW 12 Street | SW 4 Street | Add Lanes and Rehabilitate Pavement | 6 | 8 |
| 2016 | 2016 | Arterial | SR 997/ Krome Avenue | SW 136th Street | SR 94 / Kendall Drive | Add Lanes and Reconstruct | 2 | 4 |
| 2017 | 2020 | FDOT | SR 826 Eastbound Ramp | SR 9A / I-95 Northbound | | New Interchange Ramp | - | 1 |
| 2017 | 2020 | MDX | SR 836 / NW 87th Avenue | NW 82nd Avenue | NW 97th Avenue | Interchange Reconstruction | - | - |
| 2018 | 2020 | FTPKE | HEFT Express Lanes | SW 104th Street | SR 836 | New Express Lanes | - | 1/2 |
| 2018 | 2020 | FDOT | SR 826 / I-75 Express Lanes | Flagler Street / SR 826 | NW 154th Street / NW 170th Street | Add Express Lanes | - | 2/4 |
| 2018 | 2020 | MDX | SR 836 | NW 57th Avenue | NW 42nd Avenue | Interchange Reconfiguration and Widening | 8 | 11 |
| 2018 | 2020 | MDX | SR 837 | NW 42nd Avenue | NW 17th Avenue | Interchange Reconfiguration and Widening | 6 | 8 |
| 2018 | 2020 | MDX | SR 874 Extension | HEFT | SW 128th Street | Interchange Reconfiguration and New Ramp | - | 4 |
| 2018 | 2020 | Arterial | SR 997 / Krome Avenue | North of SW 8th Street | MP 2.754 | Add Lanes and Reconstruct | 2 | 4 |
| 2019 | 2020 | FTPKE | HEFT Express Lanes | SW 184th Street / Eureka Drive | SW 120th Street | New Express Lanes | - | 1 |
| 2019 | 2020 | FTPKE | HEFT Express Lanes - Connect to SR 836 | HEFT Express Lanes | SR 836 | Direct Connector | - | 1 |
| 2019 | 2020 | MDX | SR 836 / I-95 Interchange | NW 17th Avenue | I-95 | Interchange Reconstruction and Add CD Roads | 6 | 8+ |
| 2020 | 2020 | FDOT | I-95 NB Ramp | I-95 | Florida's Turnpike / SR 826 | Add Auxilliary Lane | 2 | 3 |
| 2020 | 2020 | Arterial | NW 107th Avenue | 1000 ft N of NW 122nd Street | Okeechobee Road | Miami Canal Bridge - Add Lanes | 2 | 4 |
| 2020 | 2020 | Arterial | NW 107th Avenue | NW 41st Street | NW 25th Street | Add Lanes | 4 | 6 |
| 2020 | 2020 | Arterial | NW 14th Street | Civic Center | Biscayne Boulevard | Add Lanes | 2 | 3 |
| 2020 | 2020 | FDOT | NW 25th Street Viaduct | SR 826 | NW 87th Court | Add Lanes | - | 2 |
| 2020 | 2020 | Arterial | NW 87th Avenue | NW 36th Street | NW 58th Street | Add Lanes | 4 | 6 |
| 2020 | 2020 | Arterial | NW South River Drive | NW 19th Street | NW 23rd Avenue | Tamiami Swing Bridge - Add Lanes | 2 | 4 |
| 2020 | 2020 | Arterial | SR 823 / NW 57th Avenue / Red Road | W 23rd Street | W 46th Street | Add Lanes | 4 | 6 |
| 2020 | 2020 | Arterial | SR 860 / NW 186th Street / Miami Gardens Driv | NW 97th Avenue | I-75 | New Road Construction | - | 4 |
| 2020 | 2020 | Arterial | SW 137th Avenue | SW 24th Street | SW 8th Street | Add Lanes | 4 | 6 |
| 2020 | 2020 | Arterial | SW 137th Avenue | US 1 | SW 184th Street | Add Lanes | 2 | 4 |
| 2020 | 2020 | Arterial | SW 320th Street / Mowry Drive | S Dixie Highway | SW 187th Avenue | Add Lanes | 2 | 4 |
| 2020 | 2020 | Arterial | W 24th Avenue | W 52nd Street | W 76th Street | Add Lanes | 2 | 5 |
| 2022 | 2030 | FTPKE | Florida's Turnpike | Atlantic Boulevard | North of Sawgrass Expressway | Add Lanes | 3/4 | 4/5 |
| 2022 | 2030 | FTPKE | Florida's Turnpike | HEFT | Hollywood Boulevard | Add Lanes | 3/4 | 4/5 |
| 2023 | 2030 | FTPKE | Florida's Turnpike | Johnson Street | Griffin Road | Add Lanes | 3/4 | 4/5 |
| 2024 | 2030 | FTPKE | Florida's Turnpike | Lake Worth Road | Okeechobee Boulevard | Add Lanes | 3/4 | 4/5 |
| 2025 | 2030 | FTPKE | Florida's Turnpike | Boynton Beach Boulevard | Lake Worth Road | Add Lanes | 3/4 | 4/5 |
| 2030 | 2030 | FDOT | Downtown / Port Access | NW 6th Street | | New Ramp | - | 2 |
| 2030 | 2030 | Arterial | SW 127th Avenue | SW 120th Street | SW 144th Street | New Road Construction | - | 4 |
| 2030 | 2030 | Arterial | SW 162nd Ave | SW 312th Street | SW 328th Street | Add Lanes | 2 | 4 |
| 2030 | 2030 | Arterial | SW 152nd Street | SW 147th Avenue | SW 157th Avenue | Add Lanes | 2 | 4 |





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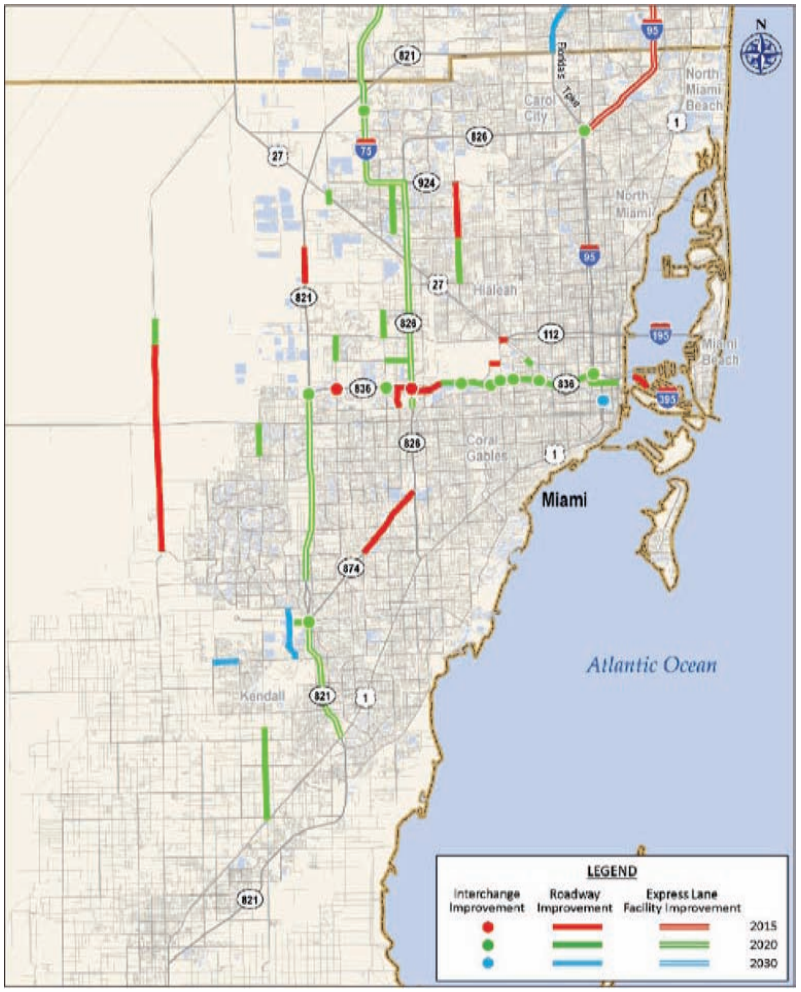
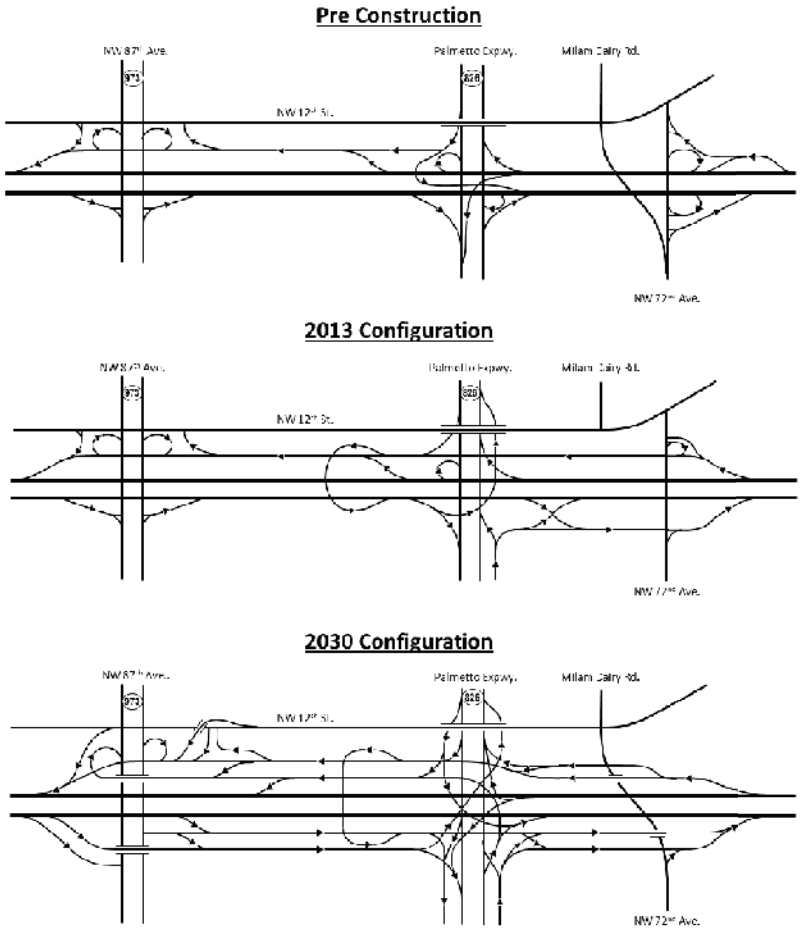



**MAJOR PROGRAMMED**
**REGIONAL HIGHWAY IMPROVEMENTS**
FIGURE 6-2








**SR 836 IMPROVEMENTS**
**BETWEEN NW 87th AVENUE AND NW 72nd AVENUE**
FIGURE 6-3

Avenue and SR 826 Southbound. The new ramps, CD roads, Texas-Turnaround, and mainline reconstruction are expected to be completed by FY 2015. Once the SR 836 / SR 826 interchange reconstruction is complete, the SR 836 and NW 87th Avenue interchange is also expected to be reconstructed. A new access ramp between NW 107th Avenue and the SR 836 Extension westbound is also planned for construction and is expected to be completed by FY 2015. The new ramp was originally planned for emergency use only, but has been redesigned to accommodate general use.

Major improvements are also planned on the eastern half of SR 836 between NW 57th Avenue and NW 17th Avenue. These include the addition of a fourth travel lane in both directions and the reconfiguration of multiple interchanges, including NW 27th Avenue, NW 35th Avenue, and NW 42nd Avenue. The major changes at NW 42nd Avenue will be the addition of a ramp from NW 42nd Avenue Southbound directly onto SR 836 and the removal of the ramp from SR 836 westbound to NW 42nd Avenue Southbound. Instead, motorists will exit to NW 14th Street and turn left onto NW 42nd Avenue to make the southbound movement. The new interchange improvements are expected to decrease weaving segments and provide greater safety and mobility for travelers. The SR 836 capacity improvements are expected to be completed by FY 2018.

Another major project located on SR 836 is the addition of new ramps and CD roads connecting NW 12th Avenue directly to I-95 in both travel directions. These new ramps are expected to be completed by FY 2019.

SR 874 also has several major construction projects programmed that are expected to increase capacity, provide greater access, and simplify existing movements. On the northern half of SR 874, between SW 88th Street / Kendall Parkway and SR 826, the mainline is being widened to six lanes, completing the widening of SR 874 begun in FY 2011. This project is expected to be completed by FY 2015.

Additionally, the SR 874 / SR 826 interchange is programmed to be reconstructed as part of the HEFT widening and Express Lane construction. The HEFT express lanes will be constructed in two segments, one originating at SW 184th Street and terminating just north of SR 874, with intermediate access points, and the other originating at SW 104th Street and terminating just north of SR 836, including direct connections to and from SR 836. The reconfigured SR 874 / HEFT interchange will provide access to the HEFT, to SW 152nd Street via CD roads and the new HEFT Express Lanes. Included in the interchange reconstruction is the construction of the SR 874 ramp connector, which will connect SR 874 directly to SW 128th Street. The project is expected to be completed by FY 2018.

Table 6-2 provides a summary of critical capacity improvements underway or programmed for SR 836 and SR 874. All these improvements were assumed to be in place before 2020, in the development of future traffic and revenue forecasts.

Other major roadways in Miami-Dade County also have programmed improvements that may affect traffic on MDX expressways. The new Port of Miami Tunnel, connecting the Port of Miami directly to I-395, is expected to channel traffic directly onto the highway network and out of the downtown area. The new tunnel, which is expected to open in FY 2014, may allow traffic from the Port of Miami to more easily access SR 836. By contrast, the NW 25th Street viaduct, which connects the Miami International Airport Cargo Terminal directly to SR 826 and to NW 82nd Avenue, may provide some competition to SR 836. Other major improvements included in the highway networks were assumed on Florida's Turnpike, NW 57th Avenue, Krome Avenue, NW 36th Street, NW 14th Street and various other local roadways.





**Table 6-2**
**Summary of MDX Expressway Widening Projects**

| SR 874 Mainline Segment | | Number of Through Lanes by Direction | | | |
|---|---|---|---|---|---|
| | | North(east)bound | | South(west)bound | |
| From | To | Current | Widened | Current | Widened |
| HEFT | Killian Parkway | 3 | 3 | 3 | 3 |
| Killian Parkway | Kendall Drive | 4 | 4 | 4 | 4 |
| Kendall Drive | SR 878 | 4 | 4 | 4 | 4 |
| SR 878 | SR 826 | 2 | 3 | 2 | 3 |
| **SR 874 Mainline Segment** | | **Eastbound** | | **Westbound** | |
| From | To | Current | Widened | Current | Widened |
| NW 137 Ave | HEFT | 2 | 2 | 2 | 2 |
| HEFT | NW 107th Avenue | 4 | 4 | 4 | 4 |
| NW 107th Avenue | NW 87th Avenue | 4 | 4 | 4 | 4 |
| NW 87th Avenue | SR 826 | 3 + 2 | 3 + 2 | 3 + 2 | 3 + 2 |
| SR 826 | NW 72nd Avenue | 3 + 2 | 3 + 2 | 3 + 2 | 3 + 2 |
| NW 72nd Avenue | NW 57th Avenue | 6 | 6 | 6 | 6 |
| NW 57th Avenue | NW 45th Avenue | 4 | 5 | 4 | 6 |
| NW 45th Avenue | NW 42nd Avenue | 4 | 4 + 2 | 3 | 4 + 2 |
| NW 42nd Avenue | NW 37th Avenue | 3 | 4 | 3 | 4 |
| NW 37th Avenue | NW 27th Avenue | 3 | 4 | 3 | 4 |
| NW 27th Avenue | NW 17th Avenue | 3 | 4 | 3 | 4 |
| NW 17th Avenue | NW 12th Avenue | 3 | 4 | 3 | 4 |
| NW 12th Avenue | I-95 | 3 | 3 + 2 | 4 | 4 + 2 |

A significant change to the prior highway improvement assumptions is the addition of Express Lanes to several major roadways, many of which are expected to have direct connections to existing MDX expressways. The existing I-95Express lanes are currently being expanded to the north to the Broward County line in both directions, with additional access points between the Golden Glades interchange and the interchange with I-595. The expansion is expected to be completed by FY 2015. In addition to the HEFT Express Lanes mentioned previously, new express lanes are also planned for construction on SR 826, I-75 and I-595. The I-595 express lanes are currently planned to connect I-75 directly to Florida's Turnpike, with no intermediate access points. The new express lanes are planned to operate eastbound only during the AM Peak Period and westbound only during the PM Peak Period. Construction is expected to be completed by FY 2015. The SR 826 Express Lanes are currently planned to begin at Flagler Street and end at NW 154th Street with various intermediate access and egress locations. The planned configuration also includes a direct connection to the I-75 express lanes, which begin at SR 826 and end at a direct connection to the I-595 express lanes. Both the SR 826 and I-75 Express Lanes are expected be completed by FY 2019. Taken together, the I-95, I-595, I-75, SR 826 and HEFT Express Lanes will form a new Express Lane network across Miami-Dade and southern Broward Counties.

## Land Use and Socioeconomic Assumptions

Land use and socioeconomic data prepared by the MPOs and included in the SERPM model for years 2005 and 2035 were reviewed by independent economist, WEG.

As discussed in Chapter 5, WEG reviewed the MPO forecasts and, based on their review, determined that the 2035 MPO forecasts were reasonable and properly reflected forecasted economic and demographic activity in the tri-county region. WEG then developed a revised schedule of growth for the 18 socioeconomic variables used by the SERPM model that incorporated the most recent short-term forecasts from Economic and Demographic Research (EDR), and the University of Florida's Bureau of Economic and Business Research (BEBR). The future year estimates of population, households, employment and various other socioeconomic variables used in the development of the model trip tables were then based on this revised schedule of growth provided by WEG.

## Trip Table Development

The socioeconomic data provided by the MPO and reviewed by WEG, along with the revised traffic networks, were input into the SERPM model. CDM Smith ran the SERPM model at FY 2013, FY 2015 FY 2020 and FY 2030 levels using the full four-step process of trip generation, trip distribution, mode split and traffic assignment, as described below.

The various socioeconomic variables discussed in Chapter 5 were used by the model during the trip generation step to estimate the number of trips that were produced and attracted by each TAZ. For example, a TAZ with a large number of households with children would tend to produce more trips than a TAZ with less households or a TAZ with the same number of households without children. Additionally, a TAZ with a greater number of employment opportunities would tend to attract a greater number of trips.

The trip distribution phase was then run, which uses the relative amount of trip productions and trip attractions per zone and the distance between zones, to create a matrix of trip movements called a "trip table". The updated traffic networks were used during this phase to estimate the real distance between zones. Mode split was then run to determine which mode of transport these trips would use. The results of these three steps of the SERPM model, trip generation, trip distribution and mode split, were the production of highway trip tables at FY 2013, FY 2015, FY 2020 and FY 2030 levels.

## Toll Collection Percentages by Payment Type

The final trip tables for traffic assignment that are used in the SERPM model are partitioned into four purposes: "drive alone" trips, HOV2, HOV3+ and trucks. This, however, prevents the model from adequately recognizing the difference between SunPass®, Toll-by-Plate and Cash toll charges. Therefore, the trip tables output from SERPM model process were apportioned so that the different toll charges for SunPass® and combined Toll-by-Plate and Cash customers could be taken into account. The percentages used for passenger cars and commercial vehicles were based on FY 2013 transaction data on the MDX system.

Table 6-3 provides the assumptions for the percentage of SunPass® and combined Toll-by-Plate and Cash customers used for disaggregating trip tables. Due to the elimination of Cash payment under full ORT implementation and the current small percentage of Cash customers, Toll-by-Plate and Cash customers were combined for the purposes of the travel demand model traffic assignment step. These model "input assumptions" of the current SunPass® market share were based on recent historic trends and estimated future SunPass® percentages for the model area, which includes Miami-Dade,





Broward and Palm Beach Counties. It should be noted that these "input percentages" were used as the starting point in apportioning the total number of trips into theoretical market shares of SunPass®, Toll-by-Plate and Cash customers. Since SunPass® customers would be subjected to lower toll rates than Toll-by-Plate customers, the model "output percentages" for SunPass® customers would tend to be higher; hence, the output proportion of SunPass® customers would be higher than the input assumptions when the traffic assignment step of the model is run.

Based on recent transaction data, market share penetration of SunPass® has begun to flatten in recent years. As such an increase in market penetration of 2 percent was assumed during the forecast period, with no increases in SunPass® market penetration occurring after FY 2020.

**Table 6-3**
**Traffic Model Input Assumptions**
**Trip Table Method of Payment**

| | Passenger Car | |
|---|---|---|
| **Model Year** | Percent Sunpass® | Percent Toll-by-Plate |
| FY 2013 | 78.7 | 21.3 |
| FY 2015 | 79.2 | 20.8 |
| FY 2020 | 80.7 | 19.3 |
| FY 2030 | 80.7 | 19.3 |
| | **Commercial Vehicle** | |
| **Model Year** | Percent Sunpass® | Percent Toll-by-Plate |
| FY 2013 | 73.6 | 26.4 |
| FY 2015 | 74.1 | 25.9 |
| FY 2020 | 75.6 | 24.4 |
| FY 2030 | 75.6 | 24.4 |

## Value of Time and Vehicle Operation Costs

In addition to tolls, two major costs are considered when calculating the total cost of a trip. Value of time is the cost per minute of a specific trip as perceived by the traveler. Vehicle operating costs take into account drivers' perception of the wear and tear on a vehicle as expressed in maintenance costs, tires, and other variable costs such as oil and fuel. The average passenger car value of time and the overall passenger car vehicle operating costs used in the travel demand model are provided in Table 6-4.

**Table 6-4**
**Average Estimated Values of Time and Passenger Car Vehicle Operating Costs**

| Year | Value of Time (Per Minute) | Vehicle Operating Cost (Cents per Mile) |
|---|---|---|
| 2013 | $ 0.243 | $ 0.232 |
| 2015 | $ 0.253 | $ 0.241 |
| 2020 | $ 0.286 | $ 0.273 |
| 2030 | $ 0.366 | $ 0.350 |

Note: Reflects average values per minute of all traffic zones in SERPM model. Individual values for each traffic zone were used in the actual traffic assignment process.

Motorists' perception of their value of time is a key component of the decision to use a toll facility or an alternate route. People attach different values to their time depending on the purpose of their trip. For the toll diversion analysis employed in the traffic assignment step, where the relative advantage of driving on the MDX Expressways is weighed against taking a local route or an alternate route on a major highway, values of time for each zone were computed based on socioeconomic data, trip generation data from the travel demand model, and the most recent available data from the 2011 American Community Survey.

First, the number of households, the median household income and the numbers of hours worked were collected by census tract, based on the 2011 American Community Survey published by the U.S. Census Bureau. These data were used to calculate an average cost per minute by census tract. Each census tract was then associated with one of the 37 Miami-Dade Transportation Analysis Super Districts (TASs), and an average cost per minute for each TAS was developed. The average cost per minute for each TAS was then assumed for each of the TAZs located within it. The average cost per minute for Broward County and Palm Beach County were calculated on a county-wide basis separately.

These average costs per minute were then weighted with the amount of trips from the trip tables generated in each TAZ for home-based trips to work, non-work related trips from home, and business trips, and a perception factor was applied for each trip purpose. This was done by time period in





order to account for the greater number of home-based work trips during the AM and PM Peak Period. Based on past studies and surveys, value of time for commuter trips were estimated at 50 percent of the wage rate in each zone, business trips at 100 percent of the wage rate and non-work purposes at 30 percent of the wage rate. As a result, an individual 2011 value of time for each TAZ was developed for the AM peak, PM peak and Off-Peak periods, representing the income structure and the subjective perception of the cost of time for each TAZ. These values were then inflated to FY 2013 levels by a factor of 1.015, based on CPI data for the Miami-Fort-Lauderdale metropolitan area from the Bureau of Labor Statistics. The value of time for commercial vehicle trips was assumed to be 2.0 times the value for passenger cars, based on past study experience by CDM Smith.

For FY 2013, the average value of time for the three county model area was estimated at $0.243 per minute, or $14.58 per hour. These values were inflated to reflect future year values of time based on estimated future inflation rates of roughly 2.4 percent per year. By FY 2030, the average value of time for the three county model area was estimated to reach $0.366 per minute, or $21.96 per hour, a total increase of just over 50 percent.

As a result of inflating the values of time, the real value of tolls decreases over time (if tolls are not increased). For example, at the assumed inflation rate of 2.4 percent per year, a $1.00 toll in 2013 would effectively be worth $0.95 in 2015, $0.85 in 2020 and $0.67 in 2030. Therefore, by inflating the value of time, the toll rate is effectively lowered through inflation and tolled facilities tend to become more attractive. Furthermore, this means that traffic growth on MDX facilities under a constant toll rate will tend to be higher than those for demographic variables forecast for the region by WEG. A tolling scenario estimating the impacts of toll rate adjustments based on estimated future inflation rate (CPI Adjusted) was conducted as part of this study and is discussed later in this chapter.

A vehicle operating cost of $0.232 per mile for passenger cars in was assumed in FY 2013. This was estimated based on the average cost of gasoline for Florida provided by the Energy Information Administration, the average cost of tire and maintenance by passenger car vehicle type provided in the 2013 Your Driving Costs report published by AAA, and the passenger car vehicle type distribution for the State of Florida published in the 2013 National Automobile Dealers Association (NADA) annual Report. Factors such as depreciation and insurance are not included in the operating cost estimate. By FY 2030, average passenger car vehicle operating costs for the three county model area are estimated to be $0.350 per mile. Vehicle Operating Costs for commercial vehicles are difficult to calculate using these methods, due to the variation in truck sizes and driver wages. For this study, the vehicle operating costs for commercial vehicle trips were assumed to be $1.00 per mile. For all future years, the estimated vehicle operating costs were inflated at a rate of about 2.4 percent per year. Higher values of time would tend to encourage motorists to find the shortest route to their destination, making shorter tolled routes more attractive over time compared to long diversion routes. However, longer tolled routes used by motorists to avoid congestion may also become less attractive over time compared with shorter, congested, toll-free routes.

## Toll Traffic Assignments

Once the networks, trip tables and other traffic assignment inputs were finalized, traffic assignments were run separately for AM Peak Period (6:30-9:30 AM), PM Peak Period (3:30-6:30 PM) and Off-Peak Periods. These time periods are inherent in the original SERPM 6.5.3 model and were reviewed for reasonableness against actual hourly traffic data from the MDX Expressways. In SERPM, the standard equilibrium traffic assignment procedure is used to calculate congestion in the model. The equilibrium methodology employed by SERPM was employed to calculate congestion levels. A special toll

diversion algorithm was used, not the "time penalty" process included in the SERPM model. Toll diversion was calculated for trips in each zone-to-zone pair in the trip table. Two paths were built: one passing through an MDX toll location (if applicable), and one using the next best alternative toll-free route. For non-MDX toll locations, a toll penalty was calculated using standard SERPM calculations and the latest toll rate information. This was necessary so that other toll facilities would not be excluded from the same routings that MDX toll locations were excluded from in the path building process.

The total travel cost, or generalized cost, including time cost, distance cost and toll cost was calculated for each of the two competing paths. Travel time was converted into a cost by multiplying the total travel time by average value of time of the origin and destination TAZs, expressed as a cost per minute. Travel distance was converted into a cost by multiplying the total distance by the vehicle operating costs previously discussed.

The total travel costs for the tolled and non-tolled paths were then compared and a portion of each zone-to-zone movement was assigned to each path based on the relationship of the costs of the two paths. For example, if the travel costs between the MDX and toll-free alternate route were equal, then an equal number of trips were assigned to both paths. If the total cost for the MDX route was less than the total cost for the toll-free route, more traffic was assigned to the MDX path.

This comparison of path costs was performed at each iteration of the equilibrium model. As in typical SERPM runs, each traffic assignment run consisted of two phases. A "warm-up" run of 30 iterations was run first to generate initial congestion levels. This output network was used to calculate delays at freeway ramp junctions. This network was then used as the input into the "final" runs, which allocated traffic to the alternative paths.

## Model Calibration and Validation

The FY 2013 model output volumes from the traffic assignment step were then compared to the actual FY 2013 average annual daily traffic (AADT) volumes included in the balanced traffic profiles. Estimated FY 2013 AADT volumes based on the additional traffic counts conducted or from FDOT count data were utilized for other non-MDX roadways. Additional information regarding these AADT volumes is provided in Chapter 3. The goal of the validation process was to have the model assign FY 2013 traffic volumes that replicated the actual FY 2013 AADT volumes on the MDX expressways and other major roadways. As calibration progressed, minor adjustments and corrections to the model inputs were made in an attempt to obtain a better fit between the actual FY 2013 AADT volumes and the assigned volumes. These corrections included the correction of highway network errors, minor capacity or input speed changes, and adjustments to specific movements within the trip tables. These adjustments were based upon the observed origin-destination (OD) patterns of MDX Expressway customers, detailed in Chapter 4 of this report, the INRIX speed data collected as part of this study, as well as professional judgment based on experience with the SERPM model and Cube Voyager platform.

Several assessments of the reasonableness of the traffic assignments in light of the actual FY 2013 AADT volumes and observed travel speeds were conducted, the results of which have been provided in Appendix D. In general, the results of the traffic assignments performed by CDM Smith indicated that, across the various screenlines and at the MDX toll locations, the updated travel demand model performed reasonably well. Specifically, the updated travel demand model is able to reasonably estimate the relative impacts of various tolling scenarios and highway improvements. However, the





raw model assignment results on individual roadways and road segments, particularly non-tolled freeways, indicated that the model results should always be compared with real world counts in determining the best forecasts. Within the limitations of travel demand the results of the calibration indicated that the updated travel demand model was a good tool for developing the transaction and toll revenue forecasts in combination with professional judgment and historical performance of the MDX Expressways.

## Toll Rate Assumptions

Based on the current toll rates on the MDX Expressways and the toll policy adopted by the MDX Board of Directors, toll rate assumptions were developed for the Existing Toll Collection System, which includes cash toll collection on SR 836 and SR 112, as well as under System-wide ORT. These toll rates are presented below.

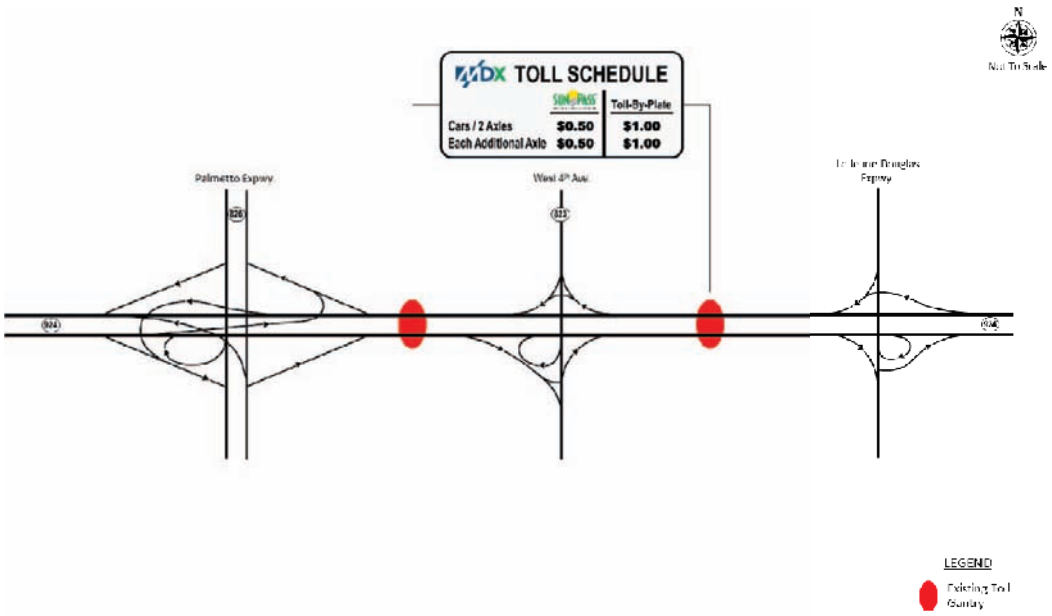
### Existing Toll Collection System

A summary of toll rates under the Existing Toll Collection System, which includes SunPass®, Toll-by-Plate and Cash toll collection, is presented in Figures 6-4 through 6-8. The Existing Toll Collection System assumes ORT on SR 874, SR 878 and SR 924, where Cash toll collection was eliminated in FY 2010. On SR 112, SunPass®, Toll-by-Plate and Cash tolls are collected at a single eastbound only toll plaza east of NW 17th Avenue. On SR 836, SunPass®, Toll-by-Plate and Cash tolls are collected at a toll plaza west of NW 87th Avenue. As of July 21, 2013, Cash toll collections were ended at the eastbound only toll plaza west of NW 17th Avenue. Tolls on the SR 836 Extension east of NW 137th Avenue are collected by SunPass® and Toll-by-Plate only. Rates shown in the figures are for passenger cars; toll rates for commercial vehicles would be proportionally higher based on the number of axles. Actual FY 2013 toll rates were used in the FY 2013 traffic assignments and the rates in Figures 6-4 through 6-8 have been assumed for FY 2014 and the first half of FY 2015 prior to implementation of System-wide ORT.

### System-wide Open Road Tolling

The MDX Board has determined that ORT will be the future on MDX Expressways. Under system-wide ORT, the toll rates for SR 874, SR 878 and SR 924 would remain the same as those assumed under the Existing Toll Collection System. However, cash collections would cease on SR 836 and SR 112 under system-wide ORT, and several new toll locations would be added. These new toll locations are intended to "close" the system and eliminate free movements on SR 836 and SR 112, making the system more equitable for all users. The toll locations and toll rates for SR 836 and SR 112 are provided in Figures 6-9 through 6-11. Rates shown in the figures are for passenger cars; toll rates for commercial vehicles would be proportionally higher based on the number of axles.

Based on the current schedule, ORT is assumed to be implemented on SR 112 and at the SR 836 Mainline toll locations on December 1, 2014. At the SR 836 Ramp toll locations, ORT is assumed to start on January 1, 2015.

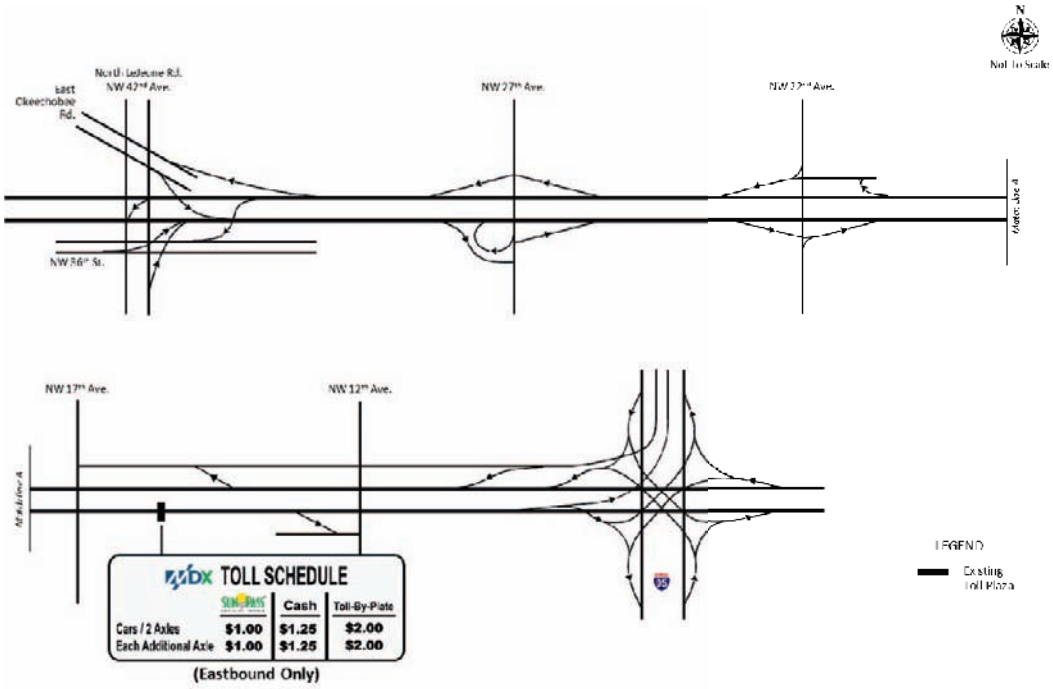



**TOLL RATES FOR EXISTING TOLL SYSTEM**
**SR 924 - GRATIGNY PARKWAY**
FIGURE 6-4

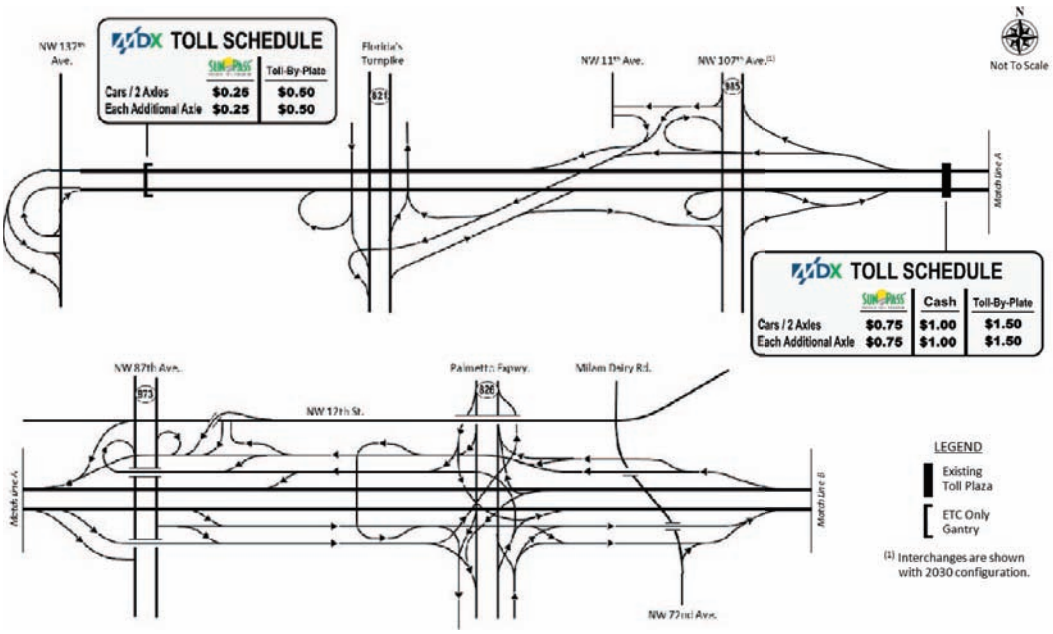









**TOLL RATES FOR EXISTING TOLL SYSTEM**
**SR 112 - AIRPORT EXPRESSWAY**
FIGURE 6-5

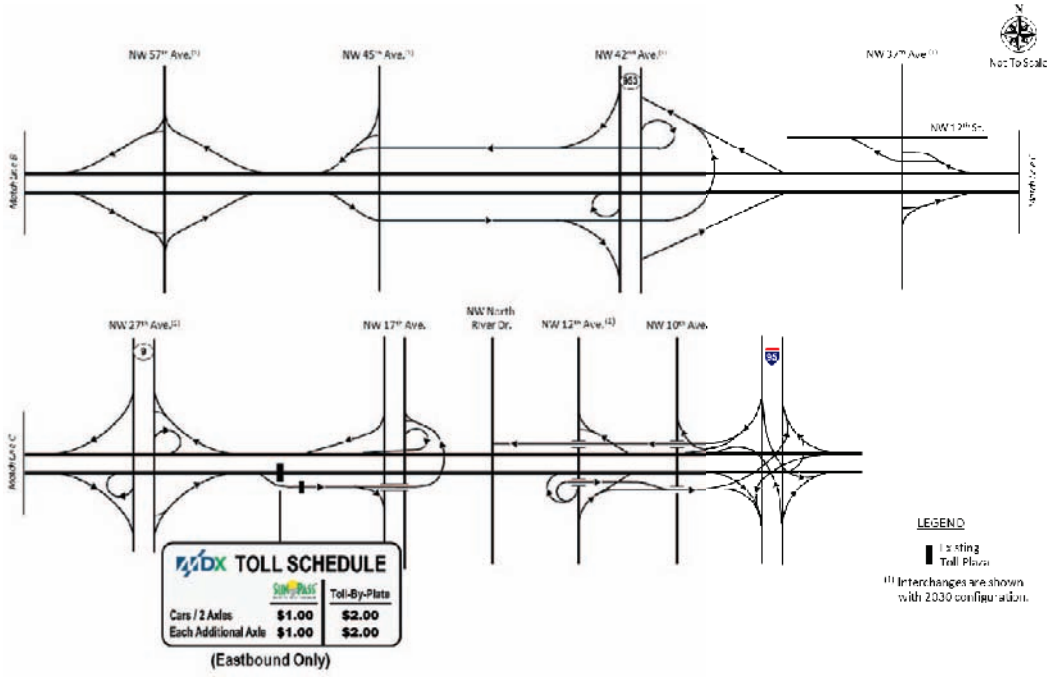



**TOLL RATES FOR EXISTING TOLL SYSTEM**
**SR 836 - DOLPHIN EXPRESSWAY**
FIGURE 6-6

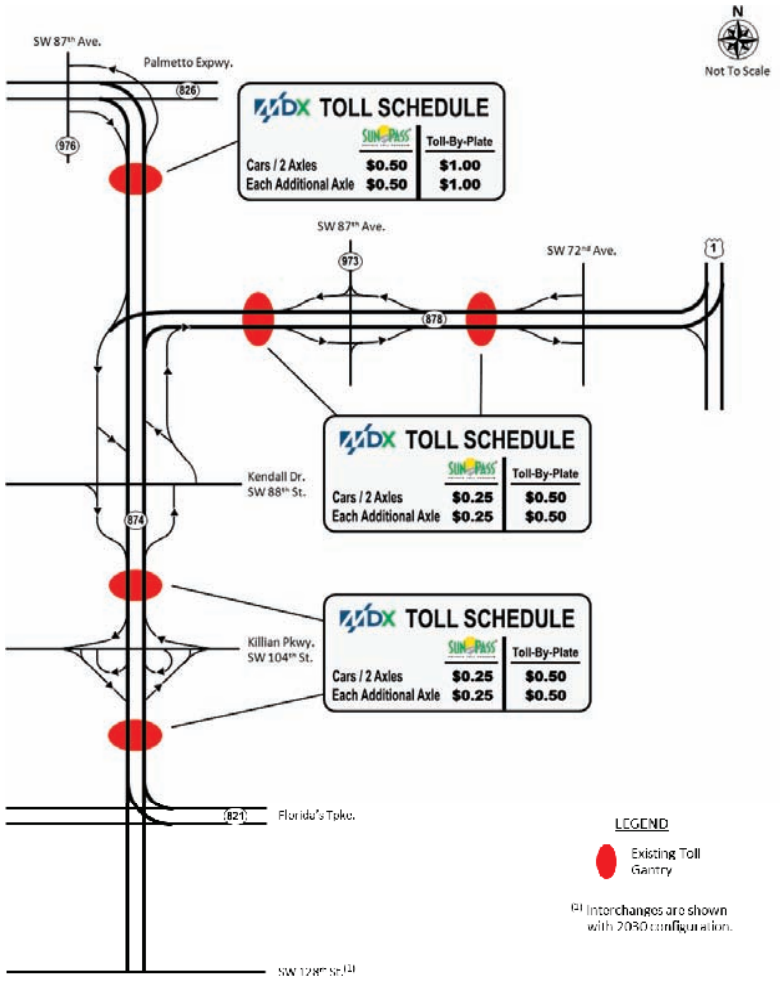









**TOLL RATES FOR EXISTING TOLL SYSTEM**
**SR 836 - DOLPHIN EXPRESSWAY**
FIGURE 6-7




**TOLL RATES FOR EXISTING SYSTEM**
**SR 874 - DON SHULA EXPRESSWAY**
**AND SR 878 - SNAPPER CREEK EXPRESSWAY**

FIGURE 6-8



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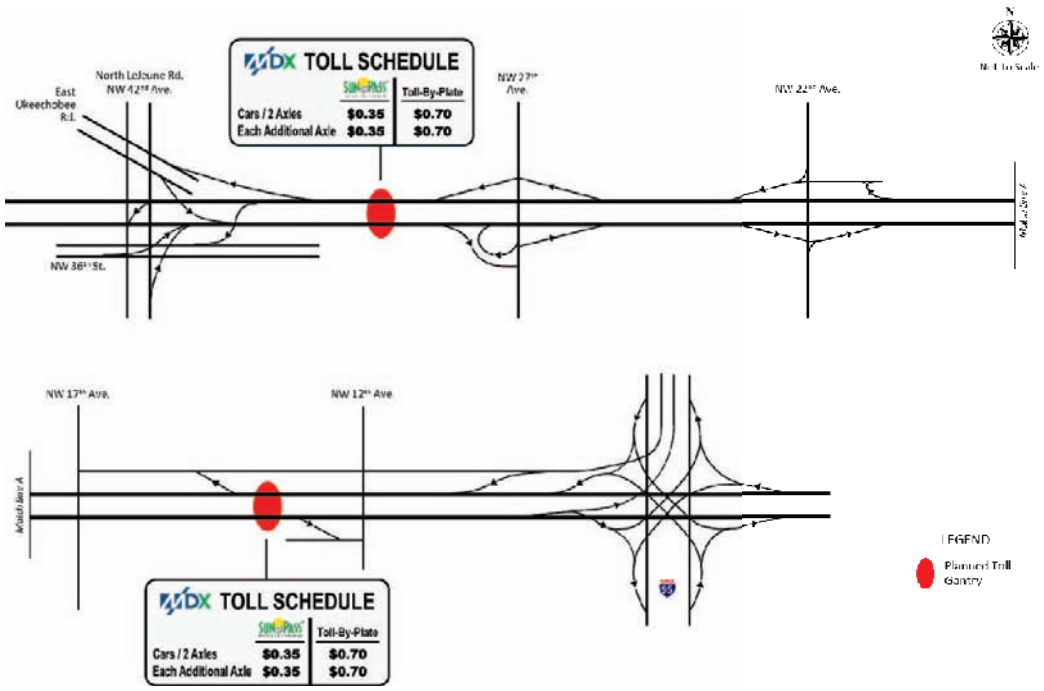


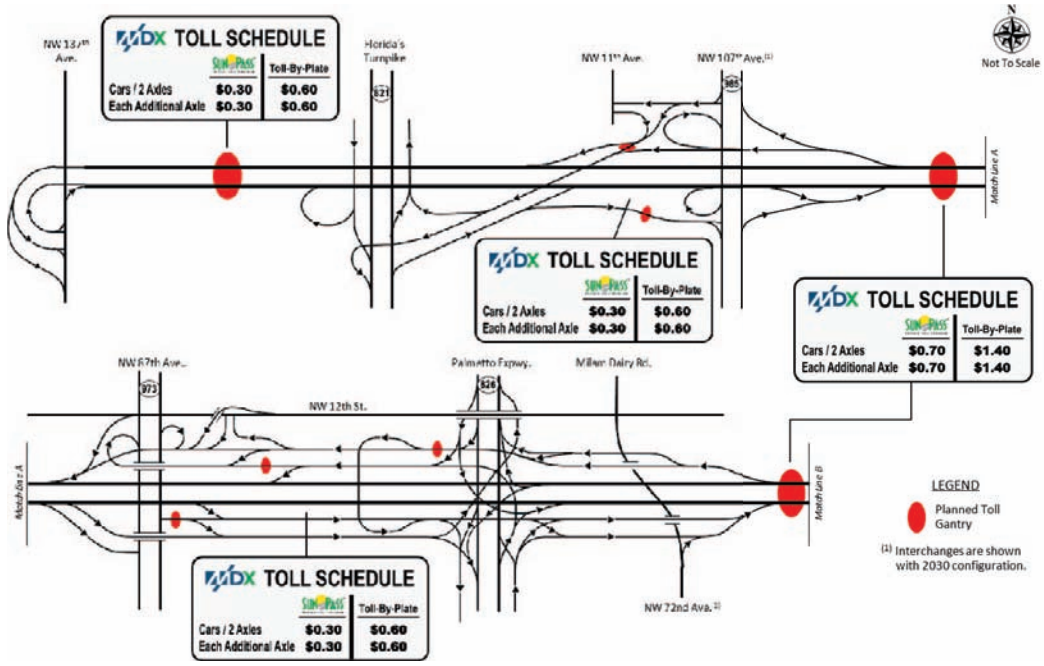

**TOLL RATES FOR OPEN ROAD TOLL SYSTEM**
**SR 112 - AIRPORT EXPRESSWAY**

FIGURE 6-9



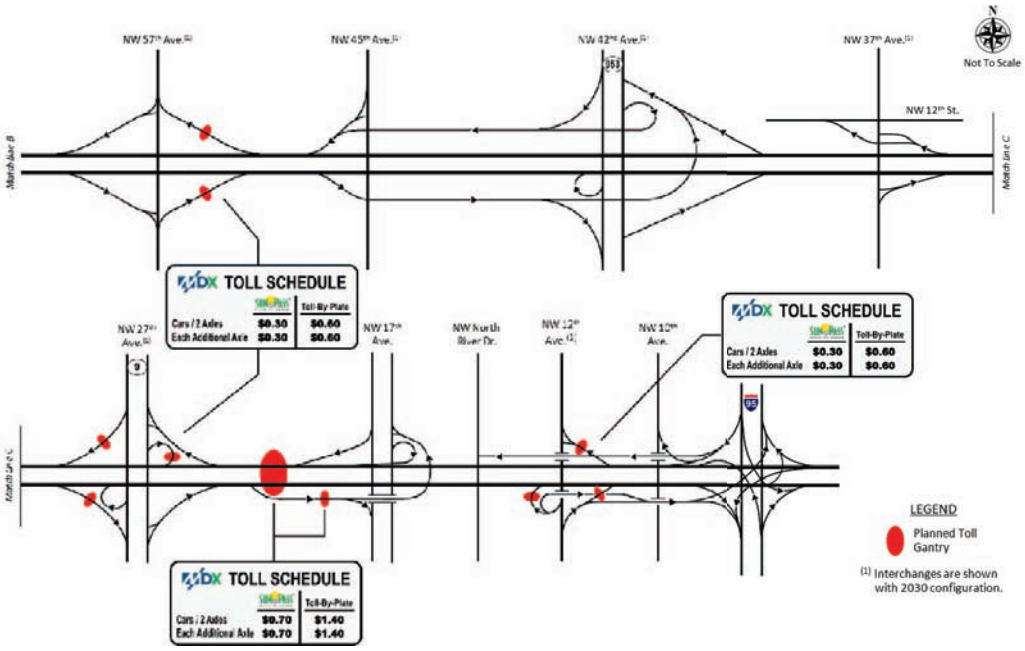







**TOLL RATES FOR OPEN ROAD TOLL SYSTEM**
**SR 836 - DOLPHIN EXPRESSWAY**

FIGURE 6-10




**TOLL RATES FOR OPEN ROAD TOLL SYSTEM**
**SR 836 - DOLPHIN EXPRESSWAY**
FIGURE 6-11

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## Basic Assumptions

Traffic and toll revenue estimates for the MDX system are predicated upon the following basic assumptions, which are considered reasonable for purposes of our traffic and revenue forecast:

1. No toll changes other than those noted in this report, such as system-wide ORT implementation or CPI toll rate adjustments, are assumed in the revenue forecasts included in this report;
2. The toll collection concepts and toll schedules for the system-wide ORT scenario as shown in this report have been adopted. Both SunPass® and Toll-by-Plate Tolling options will be employed;
3. SR 874, SR 878 and SR 924 are assumed to remain under ORT toll collection throughout the forecast period;
4. SR 112, Airport Expressway, is assumed to convert from its current open-barrier form of toll collection to ORT on December 1, 2014;
5. SR 836, Dolphin Expressway, is assumed to convert from its current open-barrier form of toll collection to ORT, with mainline toll locations implementing ORT on December 1, 2014 and ramp toll locations implementing ORT on January 1, 2015;
6. The percentage of SunPass® and Toll-by-Plate market shares in the MDX travel market will be estimated and presented in Table 6-3;
7. Capacity improvements to the MDX Expressways as described in this chapter will be fully implemented by FY 2020;
8. Other improvements to the present highway and local road system in the travel corridor will be limited to those described in this report, with no other competing facilities, or capacity expansions other than those documented, occurring during the forecast period;
9. The current economic trends in the study area will continue, and will be generally as forecasted by the Miami-Dade, Broward and Palm Beach County Metropolitan Planning Organizations as reviewed and refined by the independent economist for use in this study, as documented in Chapter 3;
10. No major recession, local or national, will occur which will significantly alter the pattern of growth in traffic and revenue;
11. Over the long term, motor fuel will remain in adequate supply, with no unexpected or substantial increases in fuel prices other than those due to seasonal or inflationary causes, throughout the forecast period;
12. Inflation will average 2.4 percent per year over the forecast period based on the CPI for the Miami, Fort Lauderdale, Pompano Beach Metropolitan Statistical Area as per Moody's Analytics, May 2013 forecast;
13. Revenue leakage due to unreadable Toll-by-Plate images or unpaid Toll-by-Plate transactions will be as assumed and specified in the traffic and revenue analysis;





14. The MDX System will continue to be effectively maintained, efficiently operated, properly signed, and promoted to encourage maximum usage;
15. No natural disasters will occur that could significantly alter travel patterns in and through the area; and
16. No local, regional, or national emergency will arise that would abnormally restrict the use of motor vehicles.

Any significant departure from these basic assumptions could materially affect estimated traffic and toll revenue for the MDX System.

# Estimated Traffic and Revenue

A summary of estimated transaction and toll revenue forecasts from FY 2013 through FY 2030, including ORT implementation on SR 836 and SR 112, is presented in this section by toll collection location and method of payment. The forecasts were developed based on traffic assignments at FY 2013, FY 2015, FY 2020 and FY 2030 levels using the modeling procedures and basic assumptions previous described. In addition, a hypothetical toll rate sensitivity analysis was conducted in order to describe potential elasticities and revenue impacts if toll rates were increased (or decreased) from current levels.

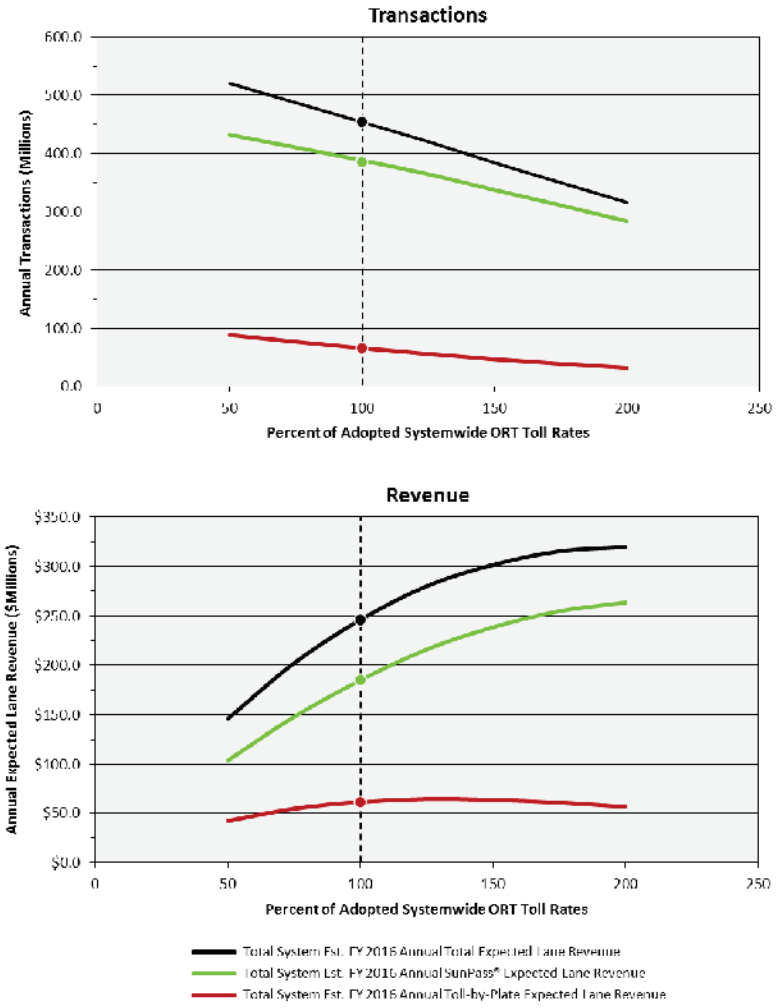
## Toll Rate Sensitivity Analysis

An analysis of hypothetical toll rate sensitivity was conducted at 2015 levels in order to provide an indication of where currently planned full system-wide ORT toll rate lie with respect to revenue maximization. Toll rate sensitivity estimates the impacts to transactions and revenue of increases or decreases in toll rates. The resulting transaction and toll revenue estimates can then be plotted on a graph as a toll sensitivity curve, illustrating the diversion trends. In this case, the toll sensitivity analysis is hypothetical, since assumed rates have already been adopted by the MDX Board.

Toll sensitivity traffic assignments were run at FY 2015 levels assuming toll rates at 50, 75, 125, 150, 175 and 200 percent of the assumed system-wide ORT toll rates. The system was studied as a whole in order to avoid diversion from one MDX expressway to another based on differences in toll rates. The impacts of increasing or decreasing the system-wide ORT toll rates were then reviewed and applied to the FY 2016 transaction and revenue forecast, which is the first full year of system-wide ORT implementation. Nominal rate increases and decreases were simply applied as a percentage change from currently adopted levels.

As Figure 6-12 illustrates, the toll sensitivity analysis estimates that the "top" of the toll sensitivity revenue curve occurs at about twice the currently assumed system-wide ORT toll rates. This means at that rate toll revenue will be maximized. Raising toll rates beyond this point would likely reduce total toll revenues due to increasing traffic diversion. Based on the toll rate sensitivity analysis, doubling the assumed system-wide ORT toll rates is estimated to increase annual expected lane revenues by $73.7 million in FY 2016, or roughly 30 percent.

This hypothetical toll sensitivity assessment demonstrates that current rates on the MDX System, including the implicit rate increases which will occur as a result of converting SR 112 and SR 836 to full ORT, are not yet at the point of revenue maximization. Considerable opportunity to increase




**TOLL SENSITIVITY CURVES**
FIGURE 6-12





revenue, through rate increases beyond those assumed in this analysis, is demonstrated in the toll sensitivity curves shown in Figure 6-12. It is emphasized, however, that the base traffic and revenue forecast included in this report assumes the rates currently approved by the MDX Board, and future toll increases are not assumed. An alternative revenue forecast is also provided, which assumes hypothetical increases in toll rates in direct proportion to inflation. However, in "real" terms, this alternative revenue scenario actually reflects the current rate structure, as approved by the Board. The toll sensitivity analysis shown in Figure 6-12 is for illustrative purposes only.

## Estimated Average Daily Traffic Volumes with Fixed Toll Rates

Figures 6-13 through 6-17 present two-way annual average daily traffic (AADT) volumes for SR 924, SR 112, SR 836, SR 874 and SR 878. The estimates incorporate all of the analyses and assumptions described in this chapter, including the proposed regional and MDX capital improvement programs, traffic model assumptions for SunPass® and Toll-by-Plate market shares, system-wide ORT implementation on SR 836 and SR 112 in FY 2015 and no subsequent toll rate increases throughout the forecast period. All volumes are shown in thousands and estimates are provided for FY 2013 (actual), FY 2015 under system-wide ORT, FY 2020 and FY 2030. The estimated AADT volumes for FY 2020 and FY 2030 presented in this section do not include CPI adjustments, meaning toll rates are fixed at FY 2015 levels. This was done so that the estimated impacts associated with normal growth and system-wide ORT implementation could be more easily identified.

### SR 924 – Gratigny Parkway

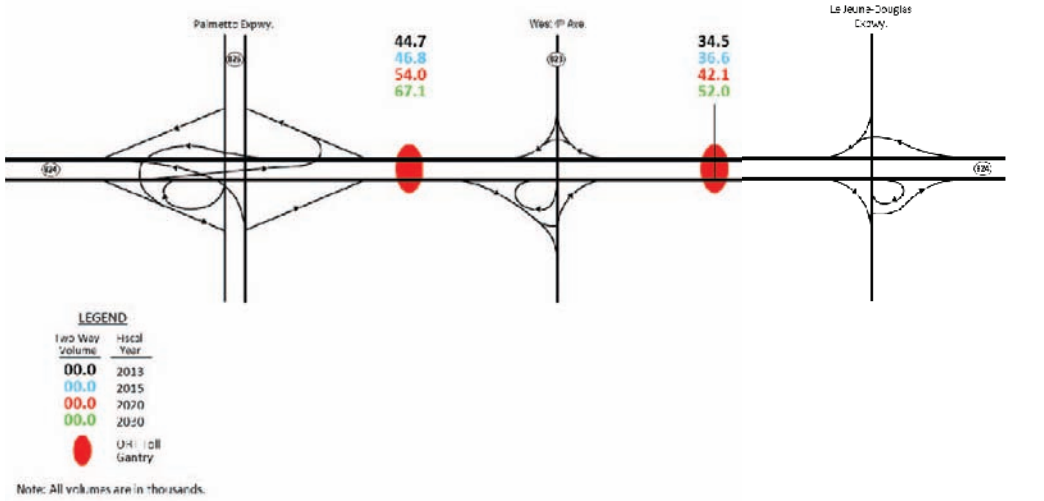
Estimated two-way AADT volumes for SR 924, the Gratigny Parkway, are shown in Figure 6-13. No changes from the existing toll rates or toll locations are planned under system-wide ORT. As such, traffic volumes are expected to be relatively unaffected by the implementation of system-wide ORT. The FY 2013 two-way AADT volume west of NW 42nd Avenue / Le Juene-Douglas Expressway was 34,500 vehicles. This is estimated to increase to an AADT volume of 36,600 vehicles by FY 2015, representing an annual average percent change (AAPC) of 3.0 percent. The AADT volume is estimated to increase by 2.8 percent per annum to 42,100 vehicles by FY 2020. In FY 2030, two-way AADT volumes increase to an estimated 52,000 vehicles.

The highest traffic volumes on SR 924 are located between SR 826 and West 4th Avenue. Traffic volumes on this segment are expected to increase from 44,700 vehicles in FY 2013 to an estimated 46,800 vehicles in FY 2015. By FY 2020, the estimated two-way AADT volume at this location increases to 54,000, and to 67,100 vehicles in FY 2030.

### SR 112 – Airport Expressway

Estimated two-way AADT volumes for SR 112, the Airport Expressway, are shown in Figure 6-14. The traffic volumes provided assume the existing toll system on SR 112 for FY 2013 and ORT implementation in FY 2015. Due to the addition of new tolling locations west of NW 42nd Avenue and east of NW 17th Avenue westbound, traffic volumes in FY 2015 are slightly lower than what they would have been under the existing toll system, with some locations actually having lower volumes in FY 2015 than in FY 2013.

At the existing eastbound mainline toll plaza location between NW 17th Avenue and NW 12th Avenue, eastbound AADT volumes are estimated to increase from 40,100 in FY 2013 to 50,200 in FY 2015. This increase of 25 percent is due primarily to the reduction of toll rates at this location from $1.00 for passenger car SunPass® customers under the current system to $0.35 under system-wide ORT. Two-way volumes at this location are estimated to increase from 95,000 vehicles per day in FY 2013 to

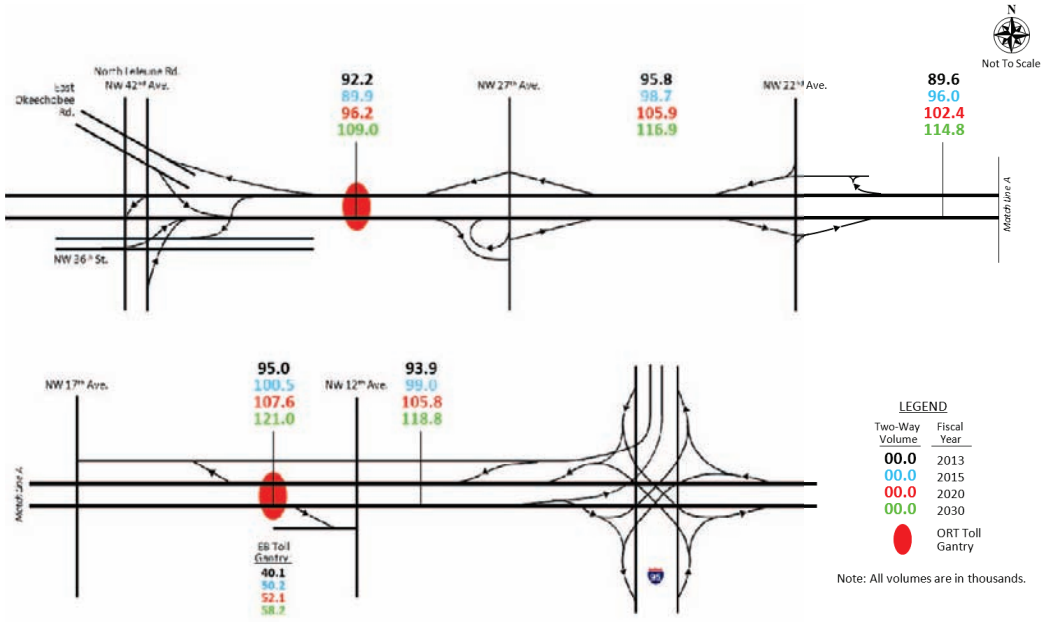



**ESTIMATED AVERAGE DAILY TRAFFIC VOLUMES**
**SR 924 – GRATIGNY PARKWAY**
FIGURE 6-13










**ESTIMATED AVERAGE DAILY TRAFFIC VOLUMES**
**SR 112 - AIRPORT EXPRESSWAY**
FIGURE 6-14

100,500 vehicles per day in FY 2015 under system-wide ORT, with two-way volumes being roughly balanced directionally after the introduction of a $0.35 toll in the westbound direction. After FY 2015, traffic growth is expected to continue with an AAPC of 1.2 percent between FY 2015 and FY 2035. Estimated AADT volumes at this location are 107,600 vehicles in FY 2020 and 121,000 vehicles in FY 2030.

With the implementation of system-wide ORT, an additional mainline toll location will be added on SR 112 east of NW 42nd Avenue. Under the existing toll collection system, actual FY 2013 AADT volumes are 92,200 vehicles. This is expected to decrease slightly in FY 2015 to 89,900 vehicles per day due to the introduction of a two-way $0.35 toll at this location under system-wide ORT. Traffic volumes are estimated to recover to current levels before FY 2020 as a result of normal traffic growth. Estimated AADT volumes in FY 2020 are 96,200 vehicles and 109,000 vehicles in FY 2030, representing an AAPC of 1.3 percent per year between FY 2015 and FY 2030.

### SR 836 – Dolphin Expressway

Estimated two-way ADT volumes on SR 836, Dolphin Expressway, are shown for the western and eastern sections of the expressway in Figures 6-15 and 6-16, respectively. The traffic volumes provided assume the existing toll system on SR 836 for FY 2013 and ORT implementation in FY 2015. Due to the addition of new mainline and ramp tolling locations, traffic volumes in FY 2015 are slightly lower than what they would have been under the existing toll system, with some locations actually having lower volumes in FY 2015 than in FY 2013.

In FY 2013, the traffic volume on the SR 386 Extension between NW 137th Avenue and the HEFT was 21,600 vehicles. Under system-wide ORT, the current toll gantry would remain in place, but the SunPass® passenger car toll rate would be changed from $0.25 to $0.30. Following the implementation of system-wide ORT, FY 2015 traffic volumes are estimated at an average of 22,000 vehicles per day. Two-way AADT volumes are estimated to increase from FY 2015 levels to 25,300 vehicles in FY 2020 and to 33,200 vehicles in FY 2030. This represents an average growth rate in traffic of 2.7 percent per annum between FY 2015 and FY 2030.

At the current SR 836 western mainline plaza, located near NW 97th Avenue, the two-way ADT volume was 114,900 vehicles in FY 2013. Under system-wide ORT, the mainline plaza would be replaced by a toll gantry and the SunPass® passenger car toll rate would be changed from $0.75 to $0.70. the impacts of these changes are estimated to produce AADT volumes at this location of 119,000 vehicles in FY 2015. Following system-wide ORT implementation in FY 2015, traffic growth is expected to continue at this location with an AAPC of 3.4 percent between FY 2015 and FY 2035. This level of growth is the result of not just normal growth but various highway improvements scheduled between FY 2015 and FY 2035 that are expected to positively impact traffic volumes on the western end of SR 836. Estimated AADT volumes at this location are 143,000 vehicles in FY 2020 and 196,500 vehicles in FY 2030.

The impact of capacity improvements on SR 836 cannot be overemphasized. This expressway currently experiences considerable congestion, primarily due to bottleneck conditions at the SR 826/SR 836 interchange, and in the vicinity of NW 57th Avenue. The forecasted volumes along the entire corridor, show relatively significant growth; this growth could likely only be accommodated with the completion of major capacity improvements, such as the SR 826 interchange reconstruction, complete reconfiguration of the CD road and ramp system between NW 87th Avenue and NW 72nd Avenue and the addition of one to two lanes in each travel direction in the vicinity of the NW 57th



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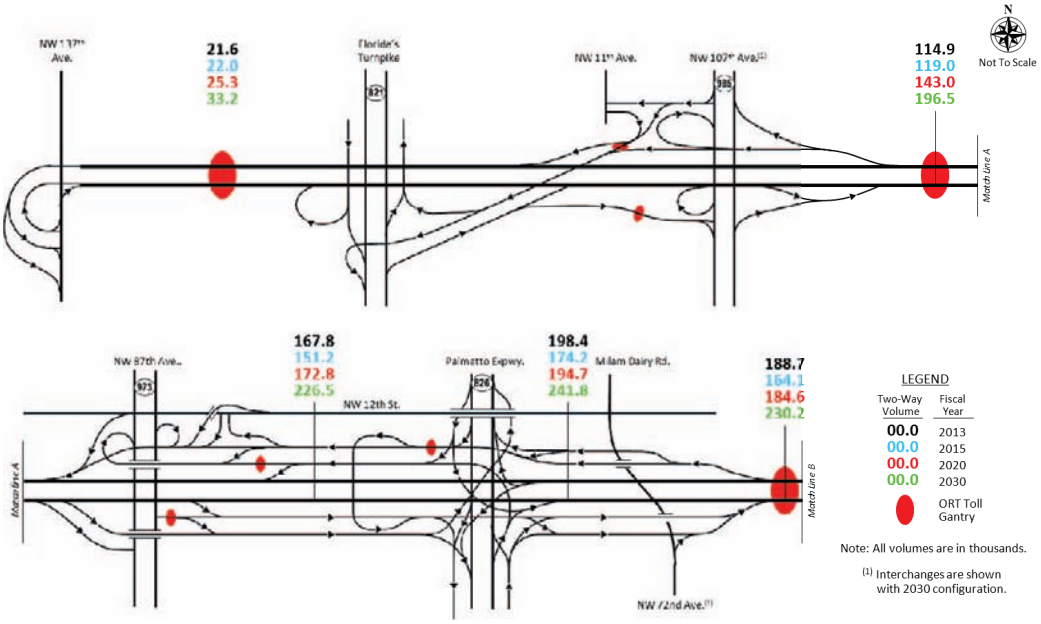
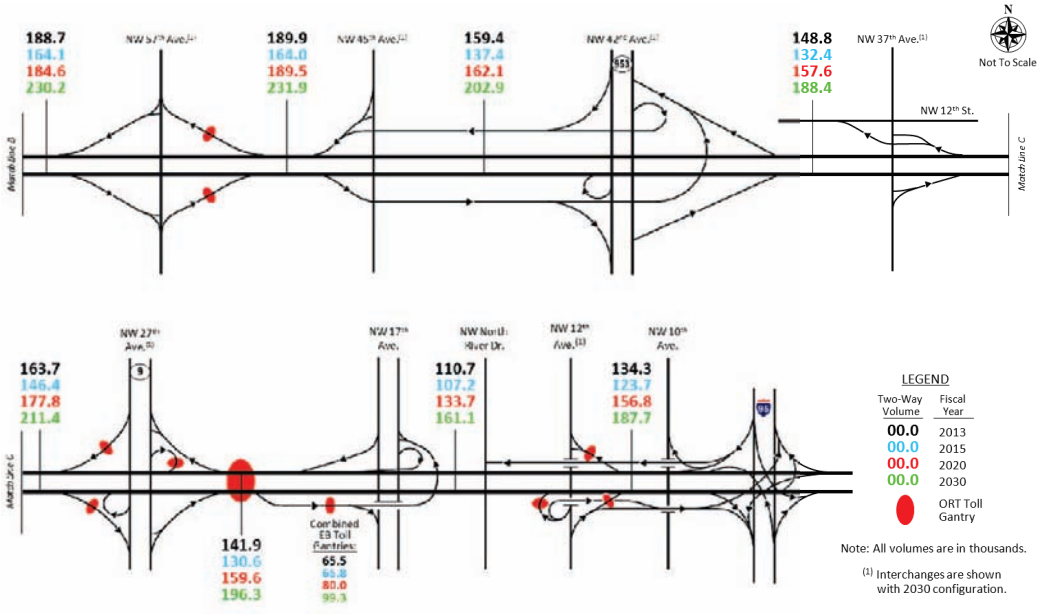



**ESTIMATED AVERAGE DAILY TRAFFIC VOLUMES**
**SR 836 - DOLPHIN EXPRESSWAY**
FIGURE 6-15










**ESTIMATED AVERAGE DAILY TRAFFIC VOLUMES**
**SR 836 - DOLPHIN EXPRESSWAY**
FIGURE 6-16

Avenue interchange eastward to I-95. These capacity improvement projects are critical to the achievement of traffic and revenue forecasts for SR 836, in particular.

The highest volume section of SR 836 is between SR 826 and NW 42nd Avenue, as it is the only major east-west highway connection between these roadways south of SR 924. With the implementation of system-wide ORT, an additional mainline toll location will be added on SR 836 west of NW 57th Avenue. Under the existing toll collection system, actual FY 2013 AADT volumes are 188,700 vehicles. This is expected to decrease in FY 2015 to 164,100 vehicles per day due to the introduction of a two-way $0.70 toll at this location under system-wide ORT. Based on the estimated traffic growth rates at this location of 2.3 percent per year between FY 2015 and FY 2030, traffic volumes do not recover to FY 2013 levels until after FY 2020. Estimated AADT volumes in FY 2020 are 184,600 vehicles and 230,200 vehicles in FY 2030.

At the existing eastbound mainline toll plaza location between NW 27th Avenue and NW 17th Avenue, eastbound AADT volumes are estimated to increase slightly from 65,500 in FY 2013 to 65,800 in FY 2015. Although the eastbound toll rates at this location decrease from $1.00 for passenger car SunPass® customers under the current system to $0.70 under system-wide ORT, the impacts of the new NW 57th Avenue toll location may be dampening the traffic growth at this location. Two-way volumes at this location are estimated to decrease from 141,900 vehicles per day in FY 2013 to 130,600 vehicles per day in FY 2015 under system-wide ORT, after the introduction of a $0.70 toll in the westbound direction. Following system-wide ORT implementation, traffic volumes west of NW 17th Avenue are estimated to be mostly balanced by direction as a result of both directions being tolled. After FY 2015, traffic growth is expected to continue with an AAPC of 2.8 percent between FY 2015 and FY 2035, aided by capacity improvements in FY 2018. Estimated AADT volumes at this location are 159,600 vehicles in FY 2020 and 196,300 vehicles in FY 2030.

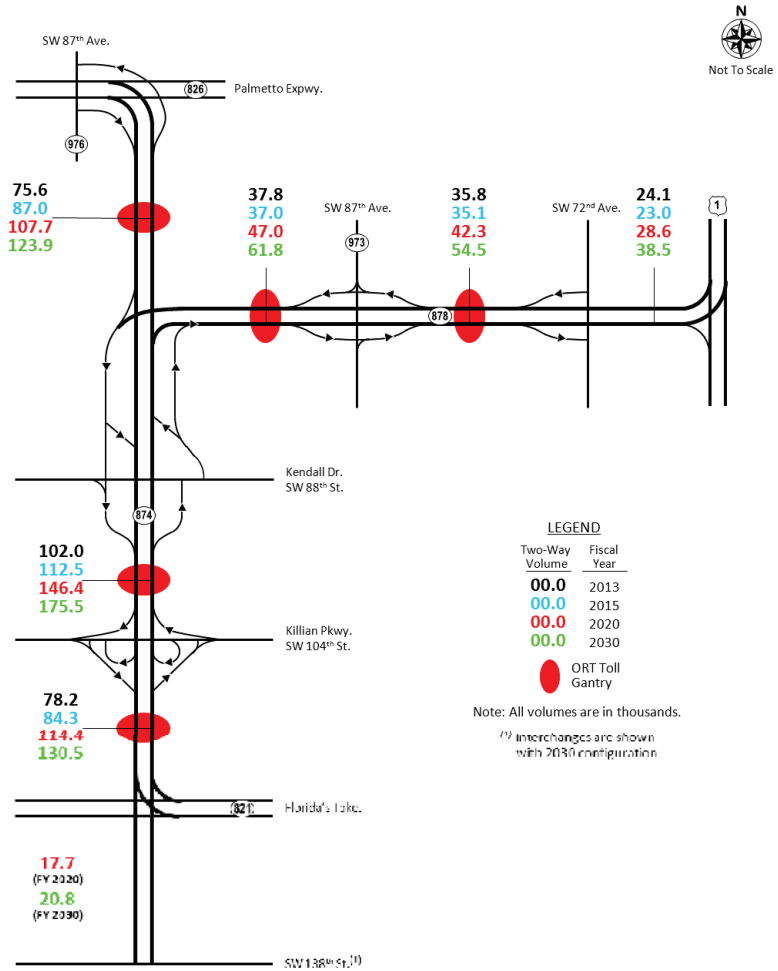
### SR 874 – Don Shula Expressway and SR 878 – Snapper Creek Expressway

Estimated two-way AADT volumes for SR 874 and SR 878, Don Shula and Snapper Creek Expressways, are shown in Figure 6-17. No changes from the existing toll rates or toll locations are planned under system-wide ORT as SR 874, SR 878 and SR 924 were already converted to ORT in June and July 2010. However, due to the use of SR 874 as a major north-south connector between HEFT and SR 836, some impacts are estimated for these roadways as a result of system-wide ORT implementation. It is also important to note that significant capacity improvements are also being made on SR 874; these are reflected in the estimated future traffic levels.

The FY 2013 two-way AADT volume on SR 874 north of HEFT was 78,200 vehicles. This is estimated to increase to an AADT volume of 84,300 vehicles by FY 2015, representing an annual average percent change (AAPC) of 3.8 percent. This level of growth includes not only normal growth but the impacts of widening the northern section of SR 874 and the impacts of system-wide ORT implementation. In FY 2018 the SR 874 Extension is expected to be completed, providing a direct connection to SW 128th Street. This is expected to increase traffic volumes on SR 874, particularly on the southern end. The AADT volume in FY 2020 is estimated to be 114,400 on SR 874 north of HEFT, with 17,700 vehicles entering from SW 128th Avenue. The AADT volume in FY 2020 is estimated to be 114,400 on SR 874 north of HEFT, with 17,700 vehicles entering from SW 128th Avenue. This is estimated to increase to 130,500 vehicles by FY 2030, with 20,800 vehicles entering from SW 128th Avenue. This represents an estimated AAPC of 1.3 percent between FY 2020 and FY 2030.








**ESTIMATED AVERAGE DAILY TRAFFIC VOLUMES, SR 874 - DON SHULA EXPRESSWAY AND SR 878 - SNAPPER CREEK EXPRESSWAY**

FIGURE 6-17

The highest volume section of SR 874 is between Killian Parkway and Kendall Drive. Actual FY 2013 AADT volumes are 102,000 vehicles and this location and are estimated to increase to 112,500 vehicles per day in FY 2015. The opening of the SR 874 Extension is expected to impact traffic volumes on this segment as well, with estimated FY 2020 AADT volumes reaching 146,400 vehicles. This is estimated to increase to 175,500 vehicles by FY 2030, representing an estimated AAPC of 1.8 percent between FY 2020 and FY 2030.

South of SR 826, the FY 2013 two-way AADT volume was 75,600 vehicles. This is estimated to increase to an AADT volume of 87,000 vehicles by FY 2015, representing an annual average percent change (AAPC) of 7.3 percent. This level of growth includes not only normal growth but the impacts of widening the SR 874 in this section as well as the impacts of system-wide ORT implementation. In FY 2020, the opening of the SR 874 Extension is expected to impact traffic volumes on this segment as well, although not to the same degree as the other two mainline segments of SR 874. Traffic volumes in FY 2020 are estimated at an average of 107,700 vehicles per day. The AADT volume is estimated to increase by 1.4 percent per annum to 123,900 vehicles by FY 2030.

On SR 878, Snapper Creek Expressway, no changes from the existing toll rates or toll locations are planned under system-wide ORT. Actual FY 2013 AADT volumes on SR 878 were 37,800 and 35,800 vehicles at the two mainline toll locations. By FY 2015 AADT volumes are estimated to decrease slightly to 37,000 and 35,100 vehicles as some vehicles shift from SR 878 to SR 874 as a result of the completion of the widening on the northern section of SR 874. In FY 2020, the opening of the SR 874 Extension is expected to have some minimal impacts on traffic volumes on SR 878. Traffic volumes in FY 2020 are estimated at an average of 47,000 and 42,300 vehicles per day at the SR 878 mainline toll locations. The AADT volumes on SR 878 are estimated to increase by an average of 2.7 percent per annum between FY 2020 and FY 2030 to 61,800 and 54,500 vehicles at the two mainline toll locations in FY 2030.

## Estimated Average Daily Transactions and Revenue with Fixed Toll Rates

Tables 6-5 through 6-9 present a summary of estimated average daily transactions and revenue by MDX Expressway at each toll location for years FY 2013, FY 2014, FY 2015 under system-wide ORT, FY 2020 and FY 2035. The estimated average daily transactions and revenue for FY 2020 and FY 2030 presented in this section do not include CPI adjustments to toll rates. Therefore, for the purposes of this analysis, FY 2015 toll rates have been retained throughout the forecast period. This was done so that the estimated impacts associated with normal growth and system-wide ORT implementation could be more easily identified.

In FY 2013, actual average daily system-wide SunPass® and Toll-by-Plate transactions were 547,680 and 74,400, respectively. In FY 2014, average daily system-wide SunPass® and Toll-by-Plate transactions are estimated to be 569,210 and 68,590, respectively. FY 2013 Cash transactions, which include transactions from the SR 112 mainline, the SR 836 toll plaza west of NW 87th Avenue and the eastbound SR 836 toll plaza west of NW 17th Avenue, were 24,630 vehicles. In FY 2014, Cash transactions are estimated to decrease to 15,430 vehicles per day based on the removal of Cash collections at the NW 17th Avenue toll plaza. Total average daily system-wide transactions, including non-revenue vehicles, were 650,860 in FY 2013 and are estimated to be 664,380 by FY 2014.

Following system-wide ORT implementation, average daily SunPass® and Toll-by-Plate transactions are estimated to increase to 1,023,880 and 167,330 vehicles in FY 2015, respectively. The majority of the new transactions result from the conversion of the SR 836 and SR 112 to ORT and the addition of





**Table 6-5**
**Average Daily Transactions and Revenue**
FY 2013 - Current Tolls

| Toll Location | Average Daily Transactions | | | | |
|---|---|---|---|---|---|
| | SunPass * | Cash | Toll-by-Plate | Non-Revenue | Total |
| ML btwn NW 42nd Ave. and NW 27th Ave. | - | - | - | - | - |
| ML btwn NW 17th Ave. and NW 12th Ave. | 28,470 | 8,360 | 3,060 | 180 | **40,070** |
| **SR 112 Total** | **28,470** | **8,360** | **3,060** | **180** | **40,070** |
| ML btwn NW 137th Ave. and HEFT | 19,150 | - | 2,310 | 140 | **21,600** |
| NW 107th Ave Ramps to/from West | - | - | - | - | - |
| ML btwn NW 107th Ave. and NW 87th Ave. | 95,200 | 6,970 | 11,890 | 830 | **114,890** |
| NW 87th Ave. EB Entrance Ramp | - | - | - | - | - |
| WB CD Road btwn Texas Turnaround and SR 826 | - | - | - | - | - |
| WB Slip Ramp to NW 87th Ave. Exit Ramps | - | - | - | - | - |
| ML btwn NW 72nd Ave. to NW 57th Ave. | - | - | - | - | - |
| NW 57th Ave. Ramps to/from East | - | - | - | - | - |
| NW 27th Ave. Ramps to/from West | - | - | - | - | - |
| WB ML btwn NW 27th Ave. and NW 17th Ave. | - | - | - | - | - |
| NW 17th Ave. EB Exit Ramp | 7,570 | 800 | 810 | 170 | **9,350** |
| EB ML West of NW 17th Ave. | 42,390 | 8,500 | 5,040 | 270 | **56,200** |
| NW 12th Ave. Ramps to/from East | - | - | - | - | - |
| **SR 836 Total** | **164,310** | **16,270** | **20,050** | **1,410** | **202,040** |
| ML btwn HEFT and Killian Pkwy. | 67,330 | - | 10,400 | 480 | **78,210** |
| ML btwn Killian Pkwy. and Kendall Dr. | 88,570 | - | 12,880 | 580 | **102,030** |
| ML btwn Kendall Dr. and SR 826 | 65,550 | - | 9,660 | 400 | **75,610** |
| **SR 874 Total** | **221,450** | **-** | **32,940** | **1,460** | **255,850** |
| ML btwn Kendall Dr. and NW 87th Ave. | 33,300 | - | 4,330 | 220 | **37,850** |
| ML btwn NW 87th Ave. and NW 72nd Ave. | 31,690 | - | 3,960 | 170 | **35,820** |
| **SR 878 Total** | **64,990** | **-** | **8,290** | **390** | **73,670** |
| ML btwn SR 826 and NW 57th Ave. | 38,720 | - | 5,670 | 360 | **44,750** |
| ML btwn NW 57th Ave. and NW 42nd Ave. | 29,740 | - | 4,390 | 350 | **34,480** |
| **SR 924 Total** | **68,460** | **-** | **10,060** | **710** | **79,230** |
| **MDX Total** | **547,680** | **24,630** | **74,400** | **4,150** | **650,860** |

| Toll Location | Average Daily Revenue | | | | | |
|---|---|---|---|---|---|---|
| | | | Toll-by-Plate | | | Total |
| | SunPass * | Cash | Indicated [1] | Billable [2] | Collectible [3] | Collectible [3] |
| ML btwn NW 42nd Ave. and NW 27th Ave. | $ - | $ - | $ - | $ - | $ - | $ - |
| ML btwn NW 17th Ave. and NW 12th Ave. | 30,600 | 10,380 | 4,040 | 2,550 | 2,700 | **43,680** |
| **SR 112 Total** | **30,600** | **10,380** | **4,040** | **2,550** | **2,700** | **43,680** |
| ML btwn NW 137th Ave. and HEFT | 5,110 | - | 960 | 700 | 690 | **5,800** |
| NW 107th Ave Ramps to/from West | - | - | - | - | - | - |
| ML btwn NW 107th Ave. and NW 87th Ave. | 74,320 | 6,980 | 12,340 | 9,010 | 8,870 | **90,170** |
| NW 87th Ave. EB Entrance Ramp | - | - | - | - | - | - |
| WB CD Road btwn Texas Turnaround and SR 826 | - | - | - | - | - | - |
| WB Slip Ramp to NW 87th Ave. Exit Ramps | - | - | - | - | - | - |
| ML btwn NW 72nd Ave. to NW 57th Ave. | - | - | - | - | - | - |
| NW 57th Ave. Ramps to/from East | - | - | - | - | - | - |
| NW 27th Ave. Ramps to/from West | - | - | - | - | - | - |
| WB ML btwn NW 27th Ave. and NW 17th Ave. | - | - | - | - | - | - |
| NW 17th Ave. EB Exit Ramp | 7,810 | 1,000 | 1,140 | 760 | 750 | **9,560** |
| EB ML West of NW 17th Ave. | 43,720 | 10,640 | 6,570 | 4,840 | 4,630 | **58,990** |
| NW 12th Ave. Ramps to/from East | - | - | - | - | - | - |
| **SR 836 Total** | **130,960** | **18,620** | **21,010** | **15,310** | **14,940** | **164,520** |
| ML btwn HEFT and Killian Pkwy. | 17,270 | - | 4,790 | 4,260 | 3,810 | **21,080** |
| ML btwn Killian Pkwy. and Kendall Dr. | 22,720 | - | 5,930 | 5,270 | 4,730 | **27,450** |
| ML btwn Kendall Dr. and SR 826 | 32,710 | - | 7,220 | 6,420 | 5,750 | **38,460** |
| **SR 874 Total** | **72,700** | **-** | **17,940** | **15,950** | **14,290** | **86,990** |
| ML btwn Kendall Dr. and NW 87th Ave. | 8,520 | - | 1,660 | 1,520 | 1,390 | **9,910** |
| ML btwn NW 87th Ave. and NW 72nd Ave. | 8,110 | - | 1,520 | 1,390 | 1,280 | **9,390** |
| **SR 878 Total** | **16,630** | **-** | **3,180** | **2,910** | **2,670** | **19,300** |
| ML btwn SR 826 and NW 57th Ave. | 20,910 | - | 4,820 | 3,870 | 3,580 | **24,490** |
| ML btwn NW 57th Ave. and NW 42nd Ave. | 16,060 | - | 3,740 | 3,000 | 2,770 | **18,830** |
| **SR 924 Total** | **36,970** | **-** | **8,560** | **6,870** | **6,350** | **43,320** |
| **MDX Total** | **$ 287,860** | **$ 29,000** | **$ 54,730** | **$ 43,590** | **$ 40,950** | **$ 357,810** |

[1] Represents Indicated Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
[2] Represents Billable Revenue, which includes Expected Lane Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
[3] Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.

**Table 6-6**
**Average Daily Transactions and Revenue**
FY 2014 - Current Tolls

| Toll Location | Average Daily Transactions | | | | |
|---|---|---|---|---|---|
| | SunPass * | Cash | Toll-by-Plate | Non-Revenue | Total |
| ML btwn NW 42nd Ave. and NW 27th Ave. | - | - | - | - | - |
| ML btwn NW 17th Ave. and NW 12th Ave. | 29,060 | 8,400 | 2,940 | 140 | **40,540** |
| **SR 112 Total** | **29,060** | **8,400** | **2,940** | **140** | **40,540** |
| ML btwn NW 137th Ave. and HEFT | 19,630 | - | 2,640 | 130 | **22,400** |
| NW 107th Ave Ramps to/from West | - | - | - | - | - |
| ML btwn NW 107th Ave. and NW 87th Ave. | 99,580 | 7,030 | 11,380 | 580 | **118,570** |
| NW 87th Ave. EB Entrance Ramp | - | - | - | - | - |
| WB CD Road btwn Texas Turnaround and SR 826 | - | - | - | - | - |
| WB Slip Ramp to NW 87th Ave. Exit Ramps | - | - | - | - | - |
| ML btwn NW 72nd Ave. to NW 57th Ave. | - | - | - | - | - |
| NW 57th Ave. Ramps to/from East | - | - | - | - | - |
| NW 27th Ave. Ramps to/from West | - | - | - | - | - |
| WB ML btwn NW 27th Ave. and NW 17th Ave. | - | - | - | - | - |
| NW 17th Ave. EB Exit Ramp (1) | 7,520 | - | 1,110 | 140 | **8,770** |
| EB ML West of NW 17th Ave. (1) | 44,280 | - | 8,940 | 260 | **53,480** |
| NW 12th Ave. Ramps to/from East | - | - | - | - | - |
| **SR 836 Total** | **171,010** | **7,030** | **24,070** | **1,110** | **203,220** |
| ML btwn HEFT and Killian Pkwy. | 70,490 | - | 10,040 | 400 | **80,930** |
| ML btwn Killian Pkwy. and Kendall Dr. | 92,590 | - | 12,580 | 470 | **105,640** |
| ML btwn Kendall Dr. and SR 826 | 67,920 | - | 9,350 | 320 | **77,590** |
| **SR 874 Total** | **231,000** | **-** | **31,970** | **1,190** | **264,160** |
| ML btwn Kendall Dr. and NW 87th Ave. | 34,270 | - | 4,050 | 170 | **38,490** |
| ML btwn NW 87th Ave. and NW 72nd Ave. | 32,250 | - | 3,810 | 140 | **36,200** |
| **SR 878 Total** | **66,520** | **-** | **7,860** | **310** | **74,690** |
| ML btwn SR 826 and NW 57th Ave. | 40,430 | - | 5,410 | 280 | **46,120** |
| ML btwn NW 57th Ave. and NW 42nd Ave. | 31,190 | - | 4,200 | 260 | **35,650** |
| **SR 924 Total** | **71,620** | **-** | **9,610** | **540** | **81,770** |
| **MDX Total** | **569,210** | **15,430** | **68,590** | **3,290** | **664,380** |

| Toll Location | Average Daily Revenue | | | | | |
|---|---|---|---|---|---|---|
| | | | Toll-by-Plate [2] | | | Total |
| | SunPass * | Cash | Indicated [3] | Billable [4] | Collectible [5] | Collectible [5] |
| ML btwn NW 42nd Ave. and NW 27th Ave. | $ - | $ - | $ - | $ - | $ - | $ - |
| ML btwn NW 17th Ave. and NW 12th Ave. | 30,880 | 10,500 | 4,380 | 3,340 | 1,490 | **42,870** |
| **SR 112 Total** | **30,880** | **10,500** | **4,380** | **3,340** | **1,490** | **42,870** |
| ML btwn NW 137th Ave. and HEFT | 5,130 | - | 1,160 | 990 | 440 | **5,570** |
| NW 107th Ave Ramps to/from West | - | - | - | - | - | - |
| ML btwn NW 107th Ave. and NW 87th Ave. | 77,090 | 7,050 | 14,170 | 12,140 | 5,300 | **89,440** |
| NW 87th Ave. EB Entrance Ramp | - | - | - | - | - | - |
| WB CD Road btwn Texas Turnaround and SR 826 | - | - | - | - | - | - |
| WB Slip Ramp to NW 87th Ave. Exit Ramps | - | - | - | - | - | - |
| ML btwn NW 72nd Ave. to NW 57th Ave. | - | - | - | - | - | - |
| NW 57th Ave. Ramps to/from East | - | - | - | - | - | - |
| NW 27th Ave. Ramps to/from West | - | - | - | - | - | - |
| WB ML btwn NW 27th Ave. and NW 17th Ave. | - | - | - | - | - | - |
| NW 17th Ave. EB Exit Ramp (1) | 7,730 | - | 2,090 | 1,520 | 1,210 | **8,940** |
| EB ML West of NW 17th Ave. (1) | 45,500 | - | 15,820 | 13,880 | 5,520 | **51,020** |
| NW 12th Ave. Ramps to/from East | - | - | - | - | - | - |
| **SR 836 Total** | **135,450** | **7,050** | **33,240** | **28,530** | **12,470** | **154,970** |
| ML btwn HEFT and Killian Pkwy. | 18,060 | - | 4,860 | 4,520 | 2,120 | **20,180** |
| ML btwn Killian Pkwy. and Kendall Dr. | 23,720 | - | 6,080 | 5,660 | 2,650 | **26,370** |
| ML btwn Kendall Dr. and SR 826 | 34,350 | - | 8,260 | 7,690 | 3,610 | **37,960** |
| **SR 874 Total** | **76,130** | **-** | **19,200** | **17,870** | **8,380** | **84,510** |
| ML btwn Kendall Dr. and NW 87th Ave. | 8,710 | - | 1,800 | 1,710 | 800 | **9,510** |
| ML btwn NW 87th Ave. and NW 72nd Ave. | 8,200 | - | 1,700 | 1,610 | 750 | **8,950** |
| **SR 878 Total** | **16,910** | **-** | **3,500** | **3,320** | **1,550** | **18,460** |
| ML btwn SR 826 and NW 57th Ave. | 21,730 | - | 5,130 | 4,470 | 2,240 | **23,970** |
| ML btwn NW 57th Ave. and NW 42nd Ave. | 16,770 | - | 4,030 | 3,510 | 1,750 | **18,520** |
| **SR 924 Total** | **38,500** | **-** | **9,160** | **7,980** | **3,990** | **42,490** |
| **MDX Total** | **$ 297,870** | **$ 17,550** | **$ 69,480** | **$ 61,040** | **$ 27,880** | **$ 343,300** |

[1] Cash Toll Collection on SR 836 EB West of NW 17th Ave. and at the EB Exit Ramp to NW 17th Ave. was suspended on July 21, 2013.
[2] Toll-by-Plate Toll Rates were increased to be Double the SunPass® Toll Rates on July 1, 2013.
[3] Represents Indicated Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
[4] Represents Billable Revenue, which includes Expected Lane Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
[5] Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.





**Table 6-7**
**Average Daily Transactions and Revenue**
FY 2015 - Full ORT

| Toll Location | Average Daily Transactions | | | |
|---|---|---|---|---|
| | SunPass * | Toll-by-Plate | Non-Revenue | Total |
| ML btwn NW 42nd Ave. and NW 27th Ave. | 68,430 | 20,370 | 1,060 | **89,860** |
| ML btwn NW 17th Ave. and NW 12th Ave. | 76,320 | 23,020 | 1,200 | **100,540** |
| **SR 112 Total** | **144,750** | **43,390** | **2,260** | **190,400** |
| ML btwn NW 137th Ave. and HEFT | 19,170 | 2,690 | 150 | **22,010** |
| NW 107th Ave Ramps to/from West | 10,340 | 2,060 | 120 | **12,520** |
| ML btwn NW 107th Ave. and NW 87th Ave. | 102,110 | 15,950 | 960 | **119,020** |
| NW 87th Ave. EB Entrance Ramp | 25,650 | 4,050 | 230 | **29,930** |
| WB CD Road btwn Texas Turnaround and SR 826 | 16,490 | 2,460 | 140 | **19,090** |
| WB Slip Ramp to NW 87th Ave. Exit Ramps | 11,010 | 2,130 | 120 | **13,260** |
| ML btwn NW 72nd Ave. to NW 57th Ave. | 140,690 | 22,130 | 1,330 | **164,150** |
| NW 57th Ave. Ramps to/from East | 14,640 | 2,390 | 140 | **17,170** |
| NW 27th Ave. Ramps to/from West | 24,310 | 3,720 | 210 | **28,240** |
| WB ML btwn NW 27th Ave. and NW 17th Ave. | 55,740 | 8,690 | 350 | **64,780** |
| NW 17th Ave. EB Exit Ramp | 7,320 | 770 | 130 | **8,220** |
| EB ML West of NW 17th Ave. | 49,260 | 7,960 | 320 | **57,540** |
| NW 12th Ave. Ramps to/from East | 13,840 | 2,560 | 150 | **16,550** |
| **SR 836 Total** | **490,570** | **77,560** | **4,350** | **572,480** |
| ML btwn HEFT and Killian Pkwy. | 74,070 | 9,770 | 420 | **84,260** |
| ML btwn Killian Pkwy. and Kendall Dr. | 99,490 | 12,470 | 510 | **112,470** |
| ML btwn Kendall Dr. and SR 826 | 77,050 | 9,550 | 360 | **86,960** |
| **SR 874 Total** | **250,610** | **31,790** | **1,290** | **283,690** |
| ML btwn Kendall Dr. and NW 87th Ave. | 33,140 | 3,710 | 170 | **37,020** |
| ML btwn NW 87th Ave. and NW 72nd Ave. | 31,360 | 3,630 | 150 | **35,140** |
| **SR 878 Total** | **64,500** | **7,340** | **320** | **72,160** |
| ML btwn SR 826 and NW 57th Ave. | 41,290 | 5,230 | 300 | **46,820** |
| ML btwn NW 57th Ave. and NW 42nd Ave. | 32,160 | 4,130 | 290 | **36,580** |
| **SR 924 Total** | **73,450** | **9,360** | **590** | **83,400** |
| **MDX Total** | **1,023,880** | **167,330** | **8,810** | **1,202,130** |

| Toll Location | Average Daily Revenue | | | | |
|---|---|---|---|---|---|
| | | Toll-by-Plate | | | Total |
| | SunPass * | Indicated [1] | Billable [2] | Collectible [3] | Collectible [3] |
| ML btwn NW 42nd Ave. and NW 27th Ave. | $ 25,190 | $ 15,100 | $ 11,800 | $ 7,080 | $ **32,270** |
| ML btwn NW 17th Ave. and NW 12th Ave. | 28,090 | 17,060 | 13,340 | 8,010 | **36,100** |
| **SR 112 Total** | **53,280** | **32,160** | **25,140** | **15,090** | **68,370** |
| ML btwn NW 137th Ave. and HEFT | 5,880 | 1,710 | 1,440 | 880 | **6,760** |
| NW 107th Ave Ramps to/from West | 3,170 | 1,320 | 1,110 | 670 | **3,840** |
| ML btwn NW 107th Ave. and NW 87th Ave. | 73,070 | 23,750 | 20,060 | 12,130 | **85,200** |
| NW 87th Ave. EB Entrance Ramp | 7,870 | 2,580 | 2,180 | 1,310 | **9,180** |
| WB CD Road btwn Texas Turnaround and SR 826 | 5,060 | 1,570 | 1,320 | 790 | **5,850** |
| WB Slip Ramp to NW 87th Ave. Exit Ramps | 3,380 | 1,360 | 1,150 | 690 | **4,070** |
| ML btwn NW 72nd Ave. to NW 57th Ave. | 100,660 | 32,960 | 27,840 | 16,830 | **117,490** |
| NW 57th Ave. Ramps to/from East | 4,490 | 1,530 | 1,290 | 770 | **5,260** |
| NW 27th Ave. Ramps to/from West | 7,450 | 2,370 | 2,000 | 1,200 | **8,650** |
| WB ML btwn NW 27th Ave. and NW 17th Ave. | 39,880 | 12,710 | 10,810 | 6,240 | **46,120** |
| NW 17th Ave. EB Exit Ramp | 5,240 | 1,260 | 1,010 | 860 | **6,100** |
| EB ML West of NW 17th Ave. | 35,250 | 11,640 | 9,910 | 5,720 | **40,970** |
| NW 12th Ave. Ramps to/from East | 4,250 | 1,630 | 1,380 | 830 | **5,080** |
| **SR 836 Total** | **295,650** | **96,390** | **81,500** | **48,920** | **344,570** |
| ML btwn HEFT and Killian Pkwy. | 18,950 | 5,310 | 4,960 | 2,970 | **21,920** |
| ML btwn Killian Pkwy. and Kendall Dr. | 25,460 | 6,770 | 6,330 | 3,790 | **29,250** |
| ML btwn Kendall Dr. and SR 826 | 39,430 | 10,350 | 9,670 | 5,810 | **45,240** |
| **SR 874 Total** | **83,840** | **22,430** | **20,960** | **12,570** | **96,410** |
| ML btwn Kendall Dr. and NW 87th Ave. | 8,380 | 1,970 | 1,870 | 1,120 | **9,500** |
| ML btwn NW 87th Ave. and NW 72nd Ave. | 7,930 | 1,920 | 1,830 | 1,100 | **9,030** |
| **SR 878 Total** | **16,310** | **3,890** | **3,700** | **2,220** | **18,530** |
| ML btwn SR 826 and NW 57th Ave. | 22,150 | 6,190 | 5,450 | 3,280 | **25,430** |
| ML btwn NW 57th Ave. and NW 42nd Ave. | 17,260 | 4,960 | 4,370 | 2,610 | **19,870** |
| **SR 924 Total** | **39,410** | **11,150** | **9,820** | **5,890** | **45,300** |
| **MDX Total** | **$ 488,490** | **$ 166,020** | **$ 141,120** | **$ 84,690** | **$ 573,180** |

Note: ORT is Assumed to begin on SR 112 and at the SR 836 Mainlines on December 1, 2014 and at the SR 836 Ramp Locations on January 1, 2015.
Average Daily Transactions and Revenue for FY 2015 provided in this table represent the average of a full year of ORT Implementation.
[1] Represents Indicated Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
[2] Represents Billable Revenue, which includes Expected Lane Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
[3] Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.

**Table 6-8**
**Average Daily Transactions and Revenue**
FY 2020 - Full ORT

| Toll Location | Average Daily Transactions | | | |
|---|---|---|---|---|
| | SunPass * | Toll-by-Plate | Non-Revenue | Total |
| ML btwn NW 42nd Ave. and NW 27th Ave. | 74,110 | 20,990 | 1,060 | **96,160** |
| ML btwn NW 17th Ave. and NW 12th Ave. | 83,590 | 22,850 | 1,150 | **107,590** |
| **SR 112 Total** | **157,700** | **43,840** | **2,210** | **203,750** |
| ML btwn NW 137th Ave. and HEFT | 22,360 | 2,750 | 150 | **25,260** |
| NW 107th Ave Ramps to/from West | 13,020 | 2,180 | 130 | **15,330** |
| ML btwn NW 107th Ave. and NW 87th Ave. | 124,710 | 17,320 | 1,000 | **143,030** |
| NW 87th Ave. EB Entrance Ramp | 19,770 | 3,200 | 180 | **23,150** |
| WB CD Road btwn Texas Turnaround and SR 826 | 20,270 | 4,010 | 230 | **24,510** |
| WB Slip Ramp to NW 87th Ave. Exit Ramps | 10,580 | 1,500 | 90 | **12,170** |
| ML btwn NW 72nd Ave. to NW 57th Ave. | 162,710 | 20,640 | 1,200 | **184,550** |
| NW 57th Ave. Ramps to/from East | 20,440 | 3,150 | 180 | **23,770** |
| NW 27th Ave. Ramps to/from West | 30,170 | 3,960 | 230 | **34,360** |
| WB ML btwn NW 27th Ave. and NW 17th Ave. | 69,600 | 9,650 | 380 | **79,630** |
| NW 17th Ave. EB Exit Ramp | 7,330 | 610 | 100 | **8,040** |
| EB ML West of NW 17th Ave. | 62,570 | 9,010 | 350 | **71,930** |
| NW 12th Ave. Ramps to/from East | 19,900 | 3,030 | 180 | **23,110** |
| **SR 836 Total** | **583,430** | **81,010** | **4,400** | **668,840** |
| ML btwn HEFT and Killian Pkwy. | 102,320 | 11,640 | 480 | **114,440** |
| ML btwn Killian Pkwy. and Kendall Dr. | 131,460 | 14,330 | 570 | **146,360** |
| ML btwn Kendall Dr. and SR 826 | 97,220 | 10,070 | 360 | **107,650** |
| **SR 874 Total** | **331,000** | **36,040** | **1,410** | **368,450** |
| ML btwn Kendall Dr. and NW 87th Ave. | 42,810 | 4,040 | 180 | **47,030** |
| ML btwn NW 87th Ave. and NW 72nd Ave. | 38,470 | 3,700 | 140 | **42,310** |
| **SR 878 Total** | **81,280** | **7,740** | **320** | **89,340** |
| ML btwn SR 826 and NW 57th Ave. | 49,070 | 4,630 | 260 | **53,960** |
| ML btwn NW 57th Ave. and NW 42nd Ave. | 37,170 | 4,610 | 310 | **42,090** |
| **SR 924 Total** | **86,240** | **9,240** | **570** | **96,050** |
| **MDX Total** | **1,239,650** | **177,870** | **8,910** | **1,426,430** |

| Toll Location | Average Daily Revenue | | | | |
|---|---|---|---|---|---|
| | | Toll-by-Plate | | | Total |
| | SunPass * | Indicated [1] | Billable [2] | Collectible [3] | Collectible [3] |
| ML btwn NW 42nd Ave. and NW 27th Ave. | $ 27,350 | $ 15,520 | $ 12,340 | $ 8,640 | $ **35,990** |
| ML btwn NW 17th Ave. and NW 12th Ave. | 30,860 | 16,900 | 13,430 | 9,400 | **40,260** |
| **SR 112 Total** | **58,210** | **32,420** | **25,770** | **18,040** | **76,250** |
| ML btwn NW 137th Ave. and HEFT | 6,840 | 1,740 | 1,500 | 1,060 | **7,900** |
| NW 107th Ave Ramps to/from West | 3,980 | 1,390 | 1,190 | 830 | **4,810** |
| ML btwn NW 107th Ave. and NW 87th Ave. | 89,040 | 25,730 | 22,010 | 15,490 | **104,530** |
| NW 87th Ave. EB Entrance Ramp | 6,050 | 2,030 | 1,740 | 1,220 | **7,270** |
| WB CD Road btwn Texas Turnaround and SR 826 | 6,200 | 2,550 | 2,180 | 1,530 | **7,730** |
| WB Slip Ramp to NW 87th Ave. Exit Ramps | 3,240 | 960 | 820 | 570 | **3,810** |
| ML btwn NW 72nd Ave. to NW 57th Ave. | 116,170 | 30,670 | 26,240 | 18,460 | **134,630** |
| NW 57th Ave. Ramps to/from East | 6,250 | 2,000 | 1,710 | 1,200 | **7,450** |
| NW 27th Ave. Ramps to/from West | 9,230 | 2,520 | 2,160 | 1,510 | **10,740** |
| WB ML btwn NW 27th Ave. and NW 17th Ave. | 49,690 | 14,080 | 12,150 | 8,300 | **57,990** |
| NW 17th Ave. EB Exit Ramp | 5,230 | 990 | 800 | 710 | **5,940** |
| EB ML West of NW 17th Ave. | 44,670 | 13,150 | 11,350 | 7,750 | **52,420** |
| NW 12th Ave. Ramps to/from East | 6,090 | 1,930 | 1,650 | 1,160 | **7,250** |
| **SR 836 Total** | **352,680** | **99,740** | **85,500** | **59,790** | **412,470** |
| ML btwn HEFT and Killian Pkwy. | 26,070 | 6,310 | 5,930 | 4,440 | **30,510** |
| ML btwn Killian Pkwy. and Kendall Dr. | 33,500 | 7,760 | 7,290 | 5,470 | **38,970** |
| ML btwn Kendall Dr. and SR 826 | 49,550 | 10,880 | 10,220 | 7,670 | **57,220** |
| **SR 874 Total** | **109,120** | **24,950** | **23,440** | **17,580** | **126,700** |
| ML btwn Kendall Dr. and NW 87th Ave. | 10,810 | 2,140 | 2,040 | 1,530 | **12,340** |
| ML btwn NW 87th Ave. and NW 72nd Ave. | 9,710 | 1,950 | 1,860 | 1,400 | **11,110** |
| **SR 878 Total** | **20,520** | **4,090** | **3,900** | **2,930** | **23,450** |
| ML btwn SR 826 and NW 57th Ave. | 26,230 | 5,440 | 4,850 | 3,640 | **29,870** |
| ML btwn NW 57th Ave. and NW 42nd Ave. | 19,870 | 5,490 | 4,890 | 3,660 | **23,530** |
| **SR 924 Total** | **46,100** | **10,930** | **9,740** | **7,300** | **53,400** |
| **MDX Total** | **$ 586,630** | **$ 172,130** | **$ 148,350** | **$ 105,640** | **$ 692,270** |

[1] Represents Indicated Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
[2] Represents Billable Revenue, which includes Expected Lane Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
[3] Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.





**Table 6-9**
**Average Daily Transactions and Revenue**
FY 2030 - Full ORT

| Toll Location | Average Daily Transactions | | | |
|---|---|---|---|---|
| | SunPass * | Toll-by-Plate | Non-Revenue | Total |
| ML btwn NW 42nd Ave. and NW 27th Ave. | 83,900 | 23,930 | 1,200 | **109,030** |
| ML btwn NW 17th Ave. and NW 12th Ave. | 94,170 | 25,570 | 1,290 | **121,030** |
| **SR 112 Total** | **178,070** | **49,500** | **2,490** | **230,060** |
| ML btwn NW 137th Ave. and HEFT | 29,460 | 3,580 | 190 | **33,230** |
| NW 107th Ave Ramps to/from West | 15,170 | 2,360 | 140 | **17,670** |
| ML btwn NW 107th Ave. and NW 87th Ave. | 171,000 | 24,120 | 1,400 | **196,520** |
| NW 87th Ave. EB Entrance Ramp | 25,520 | 3,730 | 220 | **29,470** |
| WB CD Road btwn Texas Turnaround and SR 826 | 26,810 | 5,690 | 330 | **32,830** |
| WB Slip Ramp to NW 87th Ave. Exit Ramps | 12,340 | 1,330 | 80 | **13,750** |
| ML btwn NW 72nd Ave. to NW 57th Ave. | 201,950 | 26,690 | 1,550 | **230,190** |
| NW 57th Ave. Ramps to/from East | 22,200 | 3,290 | 190 | **25,680** |
| NW 27th Ave. Ramps to/from West | 26,040 | 3,050 | 180 | **29,270** |
| WB ML btwn NW 27th Ave. and NW 17th Ave. | 84,680 | 11,810 | 460 | **96,950** |
| NW 17th Ave. EB Exit Ramp | 10,550 | 940 | 150 | **11,640** |
| EB ML West of NW 17th Ave. | 76,380 | 10,890 | 430 | **87,700** |
| NW 12th Ave. Ramps to/from East | 23,160 | 3,320 | 190 | **26,670** |
| **SR 836 Total** | **725,260** | **100,800** | **5,510** | **831,570** |
| ML btwn HEFT and Killian Pkwy. | 116,460 | 13,510 | 560 | **130,530** |
| ML btwn Killian Pkwy. and Kendall Dr. | 157,090 | 17,680 | 700 | **175,470** |
| ML btwn Kendall Dr. and SR 826 | 111,440 | 12,010 | 430 | **123,880** |
| **SR 874 Total** | **384,990** | **43,200** | **1,690** | **429,880** |
| ML btwn Kendall Dr. and NW 87th Ave. | 56,240 | 5,320 | 240 | **61,800** |
| ML btwn NW 87th Ave. and NW 72nd Ave. | 49,580 | 4,780 | 190 | **54,550** |
| **SR 878 Total** | **105,820** | **10,100** | **430** | **116,350** |
| ML btwn SR 826 and NW 57th Ave. | 61,150 | 5,620 | 310 | **67,080** |
| ML btwn NW 57th Ave. and NW 42nd Ave. | 45,880 | 5,760 | 390 | **52,030** |
| **SR 924 Total** | **107,030** | **11,380** | **700** | **119,110** |
| **MDX Total** | **1,501,170** | **214,980** | **10,820** | **1,726,970** |

| Toll Location | Average Daily Revenue | | | | |
|---|---|---|---|---|---|
| | | Toll-by-Plate | | | Total |
| | SunPass * | Indicated [1] | Billable [2] | Collectible [3] | Collectible [3] |
| ML btwn NW 42nd Ave. and NW 27th Ave. | $ 30,770 | $ 17,680 | $ 15,040 | $ 12,030 | $ **42,800** |
| ML btwn NW 17th Ave. and NW 12th Ave. | 34,530 | 18,900 | 16,080 | 12,860 | **47,390** |
| **SR 112 Total** | **65,300** | **36,580** | **31,120** | **24,890** | **90,190** |
| ML btwn NW 137th Ave. and HEFT | 9,010 | 2,270 | 2,030 | 1,630 | **10,640** |
| NW 107th Ave Ramps to/from West | 4,640 | 1,500 | 1,350 | 1,080 | **5,720** |
| ML btwn NW 107th Ave. and NW 87th Ave. | 122,060 | 35,820 | 32,060 | 25,720 | **147,780** |
| NW 87th Ave. EB Entrance Ramp | 7,810 | 2,380 | 2,130 | 1,700 | **9,510** |
| WB CD Road btwn Texas Turnaround and SR 826 | 8,200 | 3,620 | 3,240 | 2,590 | **10,790** |
| WB Slip Ramp to NW 87th Ave. Exit Ramps | 3,780 | 840 | 760 | 600 | **4,380** |
| ML btwn NW 72nd Ave. to NW 57th Ave. | 144,140 | 39,640 | 35,480 | 28,470 | **172,610** |
| NW 57th Ave. Ramps to/from East | 6,790 | 2,090 | 1,870 | 1,500 | **8,290** |
| NW 27th Ave. Ramps to/from West | 7,970 | 1,940 | 1,740 | 1,390 | **9,360** |
| WB ML btwn NW 27th Ave. and NW 17th Ave. | 60,440 | 17,230 | 15,520 | 12,230 | **72,670** |
| NW 17th Ave. EB Exit Ramp | 7,530 | 1,530 | 1,320 | 1,220 | **8,750** |
| EB ML West of NW 17th Ave. | 54,520 | 15,890 | 14,310 | 11,290 | **65,810** |
| NW 12th Ave. Ramps to/from East | 7,090 | 2,110 | 1,890 | 1,510 | **8,600** |
| **SR 836 Total** | **443,980** | **126,860** | **113,700** | **90,930** | **534,910** |
| ML btwn HEFT and Killian Pkwy. | 29,780 | 7,390 | 7,060 | 6,000 | **35,780** |
| ML btwn Killian Pkwy. and Kendall Dr. | 40,180 | 9,650 | 9,230 | 7,840 | **48,020** |
| ML btwn Kendall Dr. and SR 826 | 56,980 | 13,090 | 12,510 | 10,640 | **67,620** |
| **SR 874 Total** | **126,940** | **30,130** | **28,800** | **24,480** | **151,420** |
| ML btwn Kendall Dr. and NW 87th Ave. | 14,180 | 2,810 | 2,720 | 2,310 | **16,490** |
| ML btwn NW 87th Ave. and NW 72nd Ave. | 12,500 | 2,510 | 2,430 | 2,060 | **14,560** |
| **SR 878 Total** | **26,680** | **5,320** | **5,150** | **4,370** | **31,050** |
| ML btwn SR 826 and NW 57th Ave. | 32,380 | 6,500 | 5,990 | 5,090 | **37,470** |
| ML btwn NW 57th Ave. and NW 42nd Ave. | 24,310 | 6,760 | 6,220 | 5,280 | **29,590** |
| **SR 924 Total** | **56,690** | **13,260** | **12,210** | **10,370** | **67,060** |
| **MDX Total** | **$ 719,590** | **$ 212,150** | **$ 190,980** | **$ 155,040** | **$ 874,630** |

[1] Represents Indicated Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
[2] Represents Billable Revenue, which includes Expected Lane Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
[3] Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.

various new tolling locations. After system-wide ORT implementation, Cash toll collections will be ended. Total system-wide transactions, including non-revenue vehicles are estimated to increase from 1,202,130 vehicles in FY 2015 to 1,726,970 vehicles in FY 2030, an average annual increase of 2.4 percent.

Average daily toll revenue for each toll location was computed by method of payment using the nominal toll at each of the tolling locations. An average toll based on the average number of commercial vehicle axles developed from FY 2013 data was applied to commercial vehicle transactions. Toll-by-Plate revenues are provided under three columns:

- "Indicated Revenue" reflects the maximum potential revenue if all video transactions were properly recorded, with readable images and identifiable motor vehicle owner records. In essence, this represents "expected revenue" if all Toll-by-Plate vehicles were properly invoiced, and all paid the full amount;
- "Billable Revenue" represents the portion of expected video revenue which can actually be invoiced to Toll-by-Plate customers; and reflects the elimination of unreadable plates, mismatched DMV records or those with incorrect information on vehicle owner name and address; and
- "Collectible Revenue" represents the estimated proportion of the billable revenue assumed to be paid within a reasonable time frame, recognizing some portion of invoiced revenue may go uncollected. With the implementation of system-wide ORT in FY 2015, system-wide collectible revenues are estimated to reach and average of $573,180 per day. Between FY 2015 and FY 2030, average daily SunPass® revenues are estimated to increase from $488,490 to $719,590, while average daily Toll-by-Plate collectible revenues are estimated to increase from $84,690 to $155,040. Total systemwide average daily revenues are estimated to increase to $874,630 in FY 2030, representing an AAPC of 2.9 percent.

## Estimated Annual Transactions and Revenue with Fixed Toll Rates

Tables 6-10 through 6-15 provide a summary of estimated annual transactions and revenue for the MDX system assuming system-wide ORT implementation. The revenue streams provided assume ORT implementation on SR 112 and at the SR 836 mainlines on December 1, 2014 and at the SR 836 ramp locations on January 1, 2015. For each year, estimated annual transactions and revenue for SunPass®, Cash, Toll-by-Plate and Non-Revenue vehicles are provided. Revenues are presented in "current" year dollars. Moreover, the forecasts recognize the slight increase, about 0.2 percent, in transactions and revenue generated in leap years by the additional day in February.

While traffic assignments used to develop the estimates were run for "benchmark" years FY 2013, FY 2015, FY 2020, and FY 2030, estimates for all interim years have been developed through interpolation based on the average annual percent change between the appropriate analysis years, with the exception of FY 2018. Due to the major highway improvements coming online in FY 2018, interpolating between FY 2015 and FY 2020 would have overstated transactions and revenue in FY 2016 and FY 2017 and understated transactions and revenue in FY 2019. As a result, CDM Smith used a traffic assignment with FY 2020 socioeconomic assumptions and FY 2015 highway network assumptions to isolate the impacts of the various highway improvements. The impacts of these improvements were then applied in FY 2018 in order to replicate the impacts of the opening of the various highway improvement projects, such as the SR 836 capacity improvement or the SR 874 Extension.





**Table 6-10**
**Estimated Annual Transactions and Revenue**
SR 924 - Gratigny Parkway

| Fiscal Year | Annual Transactions (000s) SunPass® | Cash | Toll-by-Plate | Non-Revenue | Total | Percent Change |
|---|---|---|---|---|---|---|
| 2013 [1] | 24,986 | - | 3,669 | 257 | **28,912** | - |
| 2014 [2][3] | 26,141 | - | 3,507 | 196 | **29,844** | 3.2 |
| 2015 [4][5] | 26,824 | - | 3,433 | 217 | **30,474** | 2.1 |
| 2016 [6] | 27,880 | - | 3,423 | 215 | **31,518** | 3.4 |
| 2017 | 28,839 | - | 3,417 | 214 | **32,470** | 3.0 |
| 2018 [7] | 29,421 | - | 3,367 | 210 | **32,998** | 1.6 |
| 2019 | 30,368 | - | 3,361 | 208 | **33,937** | 2.8 |
| 2020 [6] | 31,564 | - | 3,383 | 208 | **35,155** | 3.6 |
| 2021 | 32,396 | - | 3,415 | 209 | **36,020** | 2.5 |
| 2022 | 33,209 | - | 3,473 | 212 | **36,894** | 2.4 |
| 2023 | 33,890 | - | 3,551 | 217 | **37,658** | 2.1 |
| 2024 [6] | 34,680 | - | 3,641 | 223 | **38,544** | 2.4 |
| 2025 | 35,294 | - | 3,713 | 227 | **39,234** | 1.8 |
| 2026 | 36,018 | - | 3,797 | 232 | **40,047** | 2.1 |
| 2027 | 36,757 | - | 3,883 | 238 | **40,878** | 2.1 |
| 2028 [6] | 37,613 | - | 3,981 | 244 | **41,838** | 2.3 |
| 2029 | 38,280 | - | 4,060 | 249 | **42,589** | 1.8 |
| 2030 | 39,064 | - | 4,151 | 256 | **43,471** | 2.1 |

| Fiscal Year | Annual Revenue ($000s) SunPass® | Cash | Toll-by-Plate Indicated [8] | Toll-by-Plate Billable [9] | Toll-by-Plate Collectible [10] | Total Collectible [10] |
|---|---|---|---|---|---|---|
| 2013 [1] | 13,490 | - | 3,125 | 2,508 | 2,315 | **15,805** |
| 2014 [2][3] | 14,051 | - | 3,342 | 2,911 | 1,455 | **15,506** |
| 2015 [4][5] | 14,379 | - | 4,087 | 3,598 | 2,159 | **16,538** |
| 2016 [6] | 14,948 | - | 4,074 | 3,589 | 2,153 | **17,101** |
| 2017 | 15,451 | - | 4,059 | 3,587 | 2,360 | **17,811** |
| 2018 [7] | 15,750 | - | 3,993 | 3,538 | 2,502 | **18,252** |
| 2019 | 16,245 | - | 3,980 | 3,536 | 2,577 | **18,822** |
| 2020 [6] | 16,873 | - | 3,999 | 3,564 | 2,673 | **19,546** |
| 2021 | 17,304 | - | 4,031 | 3,604 | 2,759 | **20,063** |
| 2022 | 17,723 | - | 4,094 | 3,672 | 2,857 | **20,580** |
| 2023 | 18,069 | - | 4,180 | 3,762 | 2,959 | **21,028** |
| 2024 [6] | 18,473 | - | 4,280 | 3,864 | 3,073 | **21,546** |
| 2025 | 18,782 | - | 4,358 | 3,948 | 3,175 | **21,957** |
| 2026 | 19,149 | - | 4,450 | 4,044 | 3,289 | **22,438** |
| 2027 | 19,523 | - | 4,544 | 4,143 | 3,407 | **22,930** |
| 2028 [6] | 19,959 | - | 4,652 | 4,256 | 3,539 | **23,498** |
| 2029 | 20,294 | - | 4,737 | 4,348 | 3,655 | **23,949** |
| 2030 | 20,692 | - | 4,836 | 4,454 | 3,786 | **24,478** |

[1] Actual.
[2] Toll-by-Plate Toll Rates were increased to be Double the SunPass® Toll Rates on July 1, 2013.
[3] Cash Toll Collection on SR 836 EB West of NW 17th Ave. and at the EB Exit Ramp to NW 17th Ave. was suspended on July 21, 2013.
[4] ORT is assumed to begin on SR 112 and at the SR 836 Mainlines on December 1, 2014 and at the SR 836 Ramp Locations on January 1, 2015.
[5] SR 836 / SR 826 Interchange Improvements are assumed to be completed by FY 2015.
[6] Leap Year.
[7] SR 836 Capacity Improvements and the SR 874 Extension to SW 128th Street are assumed to open October 1, 2017.
[8] Represents Indicated Lane Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
[9] Represents Billable Revenue, which includes Indicated Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
[10] Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.

**Table 6-11**
**Estimated Annual Transactions and Revenue**
SR 112 - Airport Expressway

| Fiscal Year | Annual Transactions (000s) SunPass® | Cash | Toll-by-Plate | Non-Revenue | Total | Percent Change |
|---|---|---|---|---|---|---|
| **2013** [1] | 10,392 | 3,050 | 1,115 | 65 | **14,622** | - |
| **2014** [2][3] | 10,606 | 3,065 | 1,071 | 50 | **14,792** | 1.2 |
| **2015** [4][5] | 35,408 | 1,344 | 9,665 | 505 | **46,922** | 217.2 |
| **2016** [6] | 54,772 | - | 16,172 | 838 | **71,782** | 53.0 |
| **2017** | 56,474 | - | 16,424 | 845 | **73,743** | 2.7 |
| **2018** [7] | 54,983 | - | 15,753 | 804 | **71,540** | (3.0) |
| **2019** | 55,704 | - | 15,715 | 796 | **72,215** | 0.9 |
| **2020** [6] | 57,718 | - | 16,046 | 806 | **74,570** | 3.3 |
| **2021** | 58,871 | - | 16,246 | 813 | **75,930** | 1.8 |
| **2022** | 59,867 | - | 16,466 | 823 | **77,156** | 1.6 |
| **2023** | 60,485 | - | 16,658 | 833 | **77,976** | 1.1 |
| **2024** [6] | 61,277 | - | 16,899 | 846 | **79,022** | 1.3 |
| **2025** | 61,741 | - | 17,049 | 854 | **79,644** | 0.8 |
| **2026** | 62,379 | - | 17,248 | 865 | **80,492** | 1.1 |
| **2027** | 63,023 | - | 17,449 | 876 | **81,348** | 1.1 |
| **2028** [6] | 63,848 | - | 17,701 | 889 | **82,438** | 1.3 |
| **2029** | 64,332 | - | 17,859 | 898 | **83,089** | 0.8 |
| **2030** | 64,996 | - | 18,069 | 908 | **83,973** | 1.1 |

| Fiscal Year | Annual Revenue ($000s) SunPass® | Cash | Toll-by-Plate Indicated [8] | Toll-by-Plate Billable [9] | Toll-by-Plate Collectible [10] | Total Collectible [10] |
|---|---|---|---|---|---|---|
| **2013** [1] | 11,169 | 3,788 | 1,473 | 929 | 984 | **15,941** |
| **2014** [2][3] | 11,273 | 3,833 | 1,599 | 1,219 | 545 | **15,651** |
| **2015** [4][5] | 16,261 | 1,693 | 7,808 | 6,105 | 3,663 | **21,617** |
| **2016** [6] | 20,173 | - | 11,981 | 9,377 | 5,626 | **25,799** |
| **2017** | 20,811 | - | 12,162 | 9,562 | 6,087 | **26,898** |
| **2018** [7] | 20,273 | - | 11,659 | 9,187 | 6,154 | **26,427** |
| **2019** | 20,551 | - | 11,625 | 9,201 | 6,305 | **26,856** |
| **2020** [6] | 21,305 | - | 11,864 | 9,431 | 6,602 | **27,907** |
| **2021** | 21,729 | - | 12,009 | 9,599 | 6,837 | **28,566** |
| **2022** | 22,088 | - | 12,170 | 9,788 | 7,078 | **29,166** |
| **2023** | 22,299 | - | 12,312 | 9,972 | 7,303 | **29,602** |
| **2024** [6] | 22,574 | - | 12,489 | 10,187 | 7,555 | **30,129** |
| **2025** | 22,727 | - | 12,600 | 10,350 | 7,774 | **30,501** |
| **2026** | 22,944 | - | 12,747 | 10,544 | 8,021 | **30,965** |
| **2027** | 23,163 | - | 12,895 | 10,742 | 8,275 | **31,438** |
| **2028** [6] | 23,448 | - | 13,081 | 10,974 | 8,561 | **32,009** |
| **2029** | 23,608 | - | 13,197 | 11,149 | 8,808 | **32,416** |
| **2030** | 23,834 | - | 13,350 | 11,358 | 9,087 | **32,921** |

[1] Actual.
[2] Toll-by-Plate Toll Rates were increased to be Double the SunPass® Toll Rates on July 1, 2013.
[3] Cash Toll Collection on SR 836 EB West of NW 17th Ave. and at the EB Exit Ramp to NW 17th Ave. was suspended on July 21, 2013.
[4] ORT is assumed to begin on SR 112 and at the SR 836 Mainlines on December 1, 2014 and at the SR 836 Ramp Locations on January 1, 2015.
[5] SR 836 / SR 826 Interchange Improvements are assumed to be completed by FY 2015.
[6] Leap Year.
[7] SR 836 Capacity Improvements and the SR 874 Extension to SW 128th Street are assumed to open October 1, 2017.
[8] Represents Indicated Lane Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
[9] Represents Billable Revenue, which includes Indicated Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
[10] Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.





**Table 6-12**
**Estimated Annual Transactions and Revenue**
SR 836 - Dolphin Expressway

| Fiscal Year | Annual Transactions (000s) SunPass® | Cash | Toll-by-Plate | Non-Revenue | Total | Percent Change |
|---|---|---|---|---|---|---|
| **2013** [1] | 59,974 | 5,939 | 7,314 | 515 | **73,742** | - |
| **2014** [2][3] | 62,418 | 2,728 | 8,783 | 404 | **74,333** | 0.8 |
| **2015** [4][5] | 128,583 | 1,173 | 20,342 | 1,147 | **151,245** | 103.5 |
| **2016** [6] | 185,367 | - | 28,514 | 1,592 | **215,473** | 42.5 |
| **2017** | 190,868 | - | 28,588 | 1,582 | **221,038** | 2.6 |
| **2018** [7] | 199,275 | - | 29,128 | 1,590 | **229,993** | 4.1 |
| **2019** | 206,476 | - | 29,408 | 1,597 | **237,481** | 3.3 |
| **2020** [6] | 213,532 | - | 29,647 | 1,605 | **244,784** | 3.1 |
| **2021** | 218,629 | - | 29,972 | 1,621 | **250,222** | 2.2 |
| **2022** | 223,893 | - | 30,523 | 1,651 | **256,067** | 2.3 |
| **2023** | 228,630 | - | 31,244 | 1,691 | **261,565** | 2.1 |
| **2024** [6] | 234,107 | - | 32,069 | 1,737 | **267,913** | 2.4 |
| **2025** | 238,408 | - | 32,737 | 1,774 | **272,919** | 1.9 |
| **2026** | 243,453 | - | 33,510 | 1,817 | **278,780** | 2.1 |
| **2027** | 248,604 | - | 34,301 | 1,861 | **284,766** | 2.1 |
| **2028** [6] | 254,560 | - | 35,207 | 1,912 | **291,679** | 2.4 |
| **2029** | 259,236 | - | 35,940 | 1,953 | **297,129** | 1.9 |
| **2030** | 264,721 | - | 36,789 | 2,002 | **303,512** | 2.1 |

| Fiscal Year | Annual Revenue ($000s) SunPass® | Cash | Toll-by-Plate Indicated [8] | Toll-by-Plate Billable [9] | Toll-by-Plate Collectible [10] | Total Collectible [10] |
|---|---|---|---|---|---|---|
| **2013** [1] | 47,803 | 6,797 | 7,666 | 5,587 | 5,452 | **60,052** |
| **2014** [2][3] | 49,437 | 2,773 | 12,131 | 10,412 | 4,550 | **56,760** |
| **2015** [4][5] | 83,651 | 1,178 | 28,027 | 23,699 | 14,262 | **99,091** |
| **2016** [6] | 111,592 | - | 35,305 | 29,886 | 17,933 | **129,525** |
| **2017** | 114,779 | - | 35,267 | 29,962 | 19,071 | **133,850** |
| **2018** [7] | 120,412 | - | 36,017 | 30,669 | 20,522 | **140,934** |
| **2019** | 124,908 | - | 36,321 | 31,035 | 21,231 | **146,139** |
| **2020** [6] | 129,082 | - | 36,499 | 31,294 | 21,877 | **150,959** |
| **2021** | 132,197 | - | 36,882 | 31,747 | 22,586 | **154,783** |
| **2022** | 135,490 | - | 37,599 | 32,500 | 23,477 | **158,967** |
| **2023** | 138,556 | - | 38,591 | 33,508 | 24,515 | **163,071** |
| **2024** [6] | 142,080 | - | 39,717 | 34,642 | 25,669 | **167,749** |
| **2025** | 144,898 | - | 40,654 | 35,618 | 26,732 | **171,630** |
| **2026** | 148,177 | - | 41,726 | 36,723 | 27,914 | **176,091** |
| **2027** | 151,530 | - | 42,827 | 37,862 | 29,149 | **180,679** |
| **2028** [6] | 155,384 | - | 44,077 | 39,143 | 30,522 | **185,906** |
| **2029** | 158,466 | - | 45,116 | 40,247 | 31,785 | **190,251** |
| **2030** | 162,051 | - | 46,305 | 41,494 | 33,191 | **195,242** |

[1] Actual.
[2] Toll-by-Plate Toll Rates were increased to be Double the SunPass® Toll Rates on July 1, 2013.
[3] Cash Toll Collection on SR 836 EB West of NW 17th Ave. and at the EB Exit Ramp to NW 17th Ave. was suspended on July 21, 2013.
[4] ORT is assumed to begin on SR 112 and at the SR 836 Mainlines on December 1, 2014 and at the SR 836 Ramp Locations on January 1, 2015.
[5] SR 836 / SR 826 Interchange Improvements are assumed to be completed by FY 2015.
[6] Leap Year.
[7] SR 836 Capacity Improvements and the SR 874 Extension to SW 128th Street are assumed to open October 1, 2017.
[8] Represents Indicated Lane Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
[9] Represents Billable Revenue, which includes Indicated Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
[10] Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.

**Table 6-13**
**Estimated Annual Transactions and Revenue**
SR 874 - Don Shula Expressway

| Fiscal Year | Annual Transactions (000s) SunPass® | Cash | Toll-by-Plate | Non-Revenue | Total | Percent Change |
|---|---|---|---|---|---|---|
| **2013** [1] | 80,827 | - | 12,022 | 529 | **93,378** | - |
| **2014** [2][3] | 84,317 | - | 11,668 | 434 | **96,419** | 3.3 |
| **2015** [4][5] | 92,036 | - | 11,924 | 483 | **104,443** | 8.3 |
| **2016** [6] | 95,495 | - | 11,746 | 473 | **107,714** | 3.1 |
| **2017** | 99,147 | - | 11,829 | 472 | **111,448** | 3.5 |
| **2018** [7] | 109,402 | - | 12,660 | 503 | **122,565** | 10.0 |
| **2019** | 116,138 | - | 13,027 | 514 | **129,679** | 5.8 |
| **2020** [6] | 121,144 | - | 13,192 | 516 | **134,852** | 4.0 |
| **2021** | 124,164 | - | 13,341 | 520 | **138,025** | 2.4 |
| **2022** | 126,745 | - | 13,560 | 528 | **140,833** | 2.0 |
| **2023** | 128,390 | - | 13,818 | 538 | **142,746** | 1.4 |
| **2024** [6] | 130,412 | - | 14,120 | 550 | **145,082** | 1.6 |
| **2025** | 131,744 | - | 14,349 | 559 | **146,652** | 1.1 |
| **2026** | 133,454 | - | 14,622 | 570 | **148,646** | 1.4 |
| **2027** | 135,186 | - | 14,900 | 581 | **150,667** | 1.4 |
| **2028** [6] | 137,316 | - | 15,225 | 594 | **153,135** | 1.6 |
| **2029** | 138,717 | - | 15,472 | 604 | **154,793** | 1.1 |
| **2030** | 140,517 | - | 15,767 | 617 | **156,901** | 1.4 |

| Fiscal Year | Annual Revenue ($000s) SunPass® | Cash | Toll-by-Plate Indicated [8] | Toll-by-Plate Billable [9] | Toll-by-Plate Collectible [10] | Total Collectible [10] |
|---|---|---|---|---|---|---|
| **2013** [1] | 26,535 | - | 6,545 | 5,822 | 5,215 | **31,750** |
| **2014** [2][3] | 27,789 | - | 7,009 | 6,519 | 3,059 | **30,848** |
| **2015** [4][5] | 30,819 | - | 8,439 | 7,883 | 4,730 | **35,549** |
| **2016** [6] | 31,902 | - | 8,273 | 7,730 | 4,639 | **36,541** |
| **2017** | 33,077 | - | 8,311 | 7,779 | 5,118 | **38,195** |
| **2018** [7] | 36,231 | - | 8,821 | 8,263 | 5,847 | **42,078** |
| **2019** | 38,336 | - | 9,038 | 8,479 | 6,182 | **44,518** |
| **2020** [6] | 39,936 | - | 9,131 | 8,579 | 6,435 | **46,371** |
| **2021** | 40,905 | - | 9,227 | 8,683 | 6,648 | **47,553** |
| **2022** | 41,744 | - | 9,379 | 8,841 | 6,878 | **48,622** |
| **2023** | 42,292 | - | 9,567 | 9,034 | 7,107 | **49,399** |
| **2024** [6] | 42,965 | - | 9,786 | 9,257 | 7,364 | **50,329** |
| **2025** | 43,410 | - | 9,955 | 9,434 | 7,588 | **50,998** |
| **2026** | 43,980 | - | 10,155 | 9,640 | 7,840 | **51,820** |
| **2027** | 44,557 | - | 10,359 | 9,851 | 8,101 | **52,658** |
| **2028** [6] | 45,266 | - | 10,596 | 10,094 | 8,393 | **53,659** |
| **2029** | 45,735 | - | 10,779 | 10,287 | 8,649 | **54,384** |
| **2030** | 46,335 | - | 10,996 | 10,512 | 8,936 | **55,271** |

[1] Actual.
[2] Toll-by-Plate Toll Rates were increased to be Double the SunPass® Toll Rates on July 1, 2013.
[3] Cash Toll Collection on SR 836 EB West of NW 17th Ave. and at the EB Exit Ramp to NW 17th Ave. was suspended on July 21, 2013.
[4] ORT is assumed to begin on SR 112 and at the SR 836 Mainlines on December 1, 2014 and at the SR 836 Ramp Locations on January 1, 2015.
[5] SR 836 / SR 826 Interchange Improvements are assumed to be completed by FY 2015.
[6] Leap Year.
[7] SR 836 Capacity Improvements and the SR 874 Extension to SW 128th Street are assumed to open October 1, 2017.
[8] Represents Indicated Lane Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
[9] Represents Billable Revenue, which includes Indicated Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
[10] Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.





**Table 6-14**
**Estimated Annual Transactions and Revenue**
SR 878 - Snapper Creek Expressway

| Fiscal Year | Annual Transactions (000s) SunPass® | Cash | Toll-by-Plate | Non-Revenue | Total | Percent Change |
|---|---|---|---|---|---|---|
| **2013** [1] | 23,722 | - | 3,027 | 143 | **26,892** | - |
| **2014** [2][3] | 24,279 | - | 2,867 | 114 | **27,260** | 1.4 |
| **2015** [4][5] | 23,432 | - | 2,661 | 115 | **26,208** | (3.9) |
| **2016** [6] | 24,665 | - | 2,708 | 116 | **27,489** | 4.9 |
| **2017** | 25,702 | - | 2,723 | 116 | **28,541** | 3.8 |
| **2018** [7] | 27,090 | - | 2,769 | 117 | **29,976** | 5.0 |
| **2019** | 28,417 | - | 2,801 | 118 | **31,336** | 4.5 |
| **2020** [6] | 29,747 | - | 2,832 | 118 | **32,697** | 4.3 |
| **2021** | 30,714 | - | 2,874 | 119 | **33,707** | 3.1 |
| **2022** | 31,653 | - | 2,940 | 121 | **34,714** | 3.0 |
| **2023** | 32,450 | - | 3,024 | 125 | **35,599** | 2.5 |
| **2024** [6] | 33,359 | - | 3,119 | 129 | **36,607** | 2.8 |
| **2025** | 34,105 | - | 3,200 | 133 | **37,438** | 2.3 |
| **2026** | 34,964 | - | 3,292 | 137 | **38,393** | 2.6 |
| **2027** | 35,845 | - | 3,386 | 141 | **39,372** | 2.5 |
| **2028** [6] | 36,849 | - | 3,493 | 146 | **40,488** | 2.8 |
| **2029** | 37,674 | - | 3,583 | 150 | **41,407** | 2.3 |
| **2030** | 38,623 | - | 3,687 | 154 | **42,464** | 2.6 |

| Fiscal Year | Annual Revenue ($000s) SunPass® | Cash | Toll-by-Plate Indicated [8] | Toll-by-Plate Billable [9] | Toll-by-Plate Collectible [10] | Total Collectible [10] |
|---|---|---|---|---|---|---|
| **2013** [1] | 6,069 | - | 1,159 | 1,061 | 975 | **7,044** |
| **2014** [2][3] | 6,173 | - | 1,276 | 1,210 | 564 | **6,737** |
| **2015** [4][5] | 5,924 | - | 1,411 | 1,341 | 805 | **6,729** |
| **2016** [6] | 6,235 | - | 1,435 | 1,364 | 819 | **7,054** |
| **2017** | 6,495 | - | 1,442 | 1,372 | 903 | **7,398** |
| **2018** [7] | 6,844 | - | 1,465 | 1,395 | 987 | **7,831** |
| **2019** | 7,176 | - | 1,480 | 1,411 | 1,029 | **8,205** |
| **2020** [6] | 7,510 | - | 1,495 | 1,427 | 1,071 | **8,581** |
| **2021** | 7,753 | - | 1,516 | 1,449 | 1,110 | **8,863** |
| **2022** | 7,989 | - | 1,550 | 1,483 | 1,155 | **9,144** |
| **2023** | 8,189 | - | 1,594 | 1,527 | 1,203 | **9,392** |
| **2024** [6] | 8,417 | - | 1,644 | 1,577 | 1,256 | **9,673** |
| **2025** | 8,604 | - | 1,686 | 1,620 | 1,304 | **9,908** |
| **2026** | 8,819 | - | 1,734 | 1,668 | 1,358 | **10,177** |
| **2027** | 9,040 | - | 1,783 | 1,718 | 1,414 | **10,454** |
| **2028** [6] | 9,292 | - | 1,839 | 1,774 | 1,476 | **10,768** |
| **2029** | 9,498 | - | 1,886 | 1,822 | 1,533 | **11,031** |
| **2030** | 9,736 | - | 1,941 | 1,877 | 1,596 | **11,332** |

[1] Actual.
[2] Toll-by-Plate Toll Rates were increased to be Double the SunPass® Toll Rates on July 1, 2013.
[3] Cash Toll Collection on SR 836 EB West of NW 17th Ave. and at the EB Exit Ramp to NW 17th Ave. was suspended on July 21, 2013.
[4] ORT is assumed to begin on SR 112 and at the SR 836 Mainlines on December 1, 2014 and at the SR 836 Ramp Locations on January 1, 2015.
[5] SR 836 / SR 826 Interchange Improvements are assumed to be completed by FY 2015.
[6] Leap Year.
[7] SR 836 Capacity Improvements and the SR 874 Extension to SW 128th Street are assumed to open October 1, 2017.
[8] Represents Indicated Lane Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
[9] Represents Billable Revenue, which includes Indicated Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
[10] Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.

**Table 6-15**
**Estimated Annual Transactions and Revenue**
MDX System Total

| Fiscal Year | Annual Transactions (000s) SunPass® | Cash | Toll-by-Plate | Non-Revenue | Total | Percent Change |
|---|---|---|---|---|---|---|
| 2013 [1] | 199,901 | 8,989 | 27,147 | 1,509 | **237,546** | - |
| 2014 [2][3] | 207,761 | 5,793 | 27,896 | 1,198 | **242,648** | 2.1 |
| 2015 [4][5] | 306,283 | 2,517 | 48,025 | 2,467 | **359,292** | 48.1 |
| 2016 [6] | 388,179 | - | 62,563 | 3,234 | **453,976** | 26.4 |
| 2017 | 401,030 | - | 62,981 | 3,229 | **467,240** | 2.9 |
| 2018 [7] | 420,171 | - | 63,677 | 3,224 | **487,072** | 4.2 |
| 2019 | 437,103 | - | 64,312 | 3,233 | **504,648** | 3.6 |
| 2020 [6] | 453,705 | - | 65,100 | 3,253 | **522,058** | 3.4 |
| 2021 | 464,774 | - | 65,848 | 3,282 | **533,904** | 2.3 |
| 2022 | 475,367 | - | 66,962 | 3,335 | **545,664** | 2.2 |
| 2023 | 483,845 | - | 68,295 | 3,404 | **555,544** | 1.8 |
| 2024 [6] | 493,835 | - | 69,848 | 3,485 | **567,168** | 2.1 |
| 2025 | 501,292 | - | 71,048 | 3,547 | **575,887** | 1.5 |
| 2026 | 510,268 | - | 72,469 | 3,621 | **586,358** | 1.8 |
| 2027 | 519,415 | - | 73,919 | 3,697 | **597,031** | 1.8 |
| 2028 [6] | 530,186 | - | 75,607 | 3,785 | **609,578** | 2.1 |
| 2029 | 538,239 | - | 76,914 | 3,854 | **619,007** | 1.5 |
| 2030 | 547,921 | - | 78,463 | 3,937 | **630,321** | 1.8 |

| Fiscal Year | Annual Revenue ($000s) SunPass® | Cash | Toll-by-Plate Indicated [8] | Billable [9] | Collectible [10] | Total Collectible [10] |
|---|---|---|---|---|---|---|
| 2013 [1] | 105,066 | 10,585 | 19,968 | 15,907 | 14,941 | **130,592** |
| 2014 [2][3] | 108,723 | 6,606 | 25,357 | 22,271 | 10,173 | **125,502** |
| 2015 [4][5] | 151,034 | 2,871 | 49,772 | 42,626 | 25,619 | **179,524** |
| 2016 [6] | 184,850 | - | 61,068 | 51,946 | 31,170 | **216,020** |
| 2017 | 190,613 | - | 61,241 | 52,262 | 33,539 | **224,152** |
| 2018 [7] | 199,510 | - | 61,955 | 53,052 | 36,012 | **235,522** |
| 2019 | 207,216 | - | 62,444 | 53,662 | 37,324 | **244,540** |
| 2020 [6] | 214,706 | - | 62,988 | 54,295 | 38,658 | **253,364** |
| 2021 | 219,888 | - | 63,665 | 55,082 | 39,940 | **259,828** |
| 2022 | 225,034 | - | 64,792 | 56,284 | 41,445 | **266,479** |
| 2023 | 229,405 | - | 66,244 | 57,803 | 43,087 | **272,492** |
| 2024 [6] | 234,509 | - | 67,916 | 59,527 | 44,917 | **279,426** |
| 2025 | 238,421 | - | 69,253 | 60,970 | 46,573 | **284,994** |
| 2026 | 243,069 | - | 70,812 | 62,619 | 48,422 | **291,491** |
| 2027 | 247,813 | - | 72,408 | 64,316 | 50,346 | **298,159** |
| 2028 [6] | 253,349 | - | 74,245 | 66,241 | 52,491 | **305,840** |
| 2029 | 257,601 | - | 75,715 | 67,853 | 54,430 | **312,031** |
| 2030 | 262,648 | - | 77,428 | 69,695 | 56,596 | **319,244** |

[1] Actual.
[2] Toll-by-Plate Toll Rates were increased to be Double the SunPass® Toll Rates on July 1, 2013.
[3] Cash Toll Collection on SR 836 EB West of NW 17th Ave. and at the EB Exit Ramp to NW 17th Ave. was suspended on July 21, 2013.
[4] ORT is assumed to begin on SR 112 and at the SR 836 Mainlines on December 1, 2014 and at the SR 836 Ramp Locations on January 1, 2015.
[5] SR 836 / SR 826 Interchange Improvements are assumed to be completed by FY 2015.
[6] Leap Year.
[7] SR 836 Capacity Improvements and the SR 874 Extension to SW 128th Street are assumed to open October 1, 2017.
[8] Represents Indicated Lane Revenue, which is the revenue that would be received if all recorded transactions paid the toll.
[9] Represents Billable Revenue, which includes Indicated Revenue with Revenue Adjustments for Non-Revenue Vehicles, and Duplicate and Bad Toll-by-Plate Images.
[10] Represents Collectible Revenue, which includes Billable Revenue with Revenue Adjustments for Unpaid Toll-by-Plate transactions.





No toll increases have been assumed during the forecast period. As such, the estimated annual transactions and revenue for FY 2020 and FY 2030 presented in this section do not include CPI-based toll adjustments and fixed at FY 2015 levels through the forecast period. This was done so that the estimated impacts associated with normal growth and system-wide ORT implementation could be more easily identified in the annual revenue streams.

### SR 924 – Gratigny Parkway

Table 6-10 provides estimated annual transactions and revenue for SR 924, the Gratigny Parkway. Annual SunPass® transactions are estimated to increase from 25.0 million in FY 2013 to 27.9 million in FY 2016, the first full year of system-wide ORT implementation. Toll-by-Plate transactions are estimated to decrease from 3.7 million in FY 2013 to 3.4 million in FY 2016 as a result of assumed increases in overall SunPass® market share. Total transactions are estimated to increase from 28.9 million in FY 2013 to 31.5 million in FY 2016, representing an average annual increase of 2.9 percent.

By FY 2030, the final year of the forecast period, annual SunPass® transactions are estimated to reach 39.1 million or 89.9 percent of total transactions, while Toll-by-Plate transactions are estimated to reach 4.2 million. Total transactions are estimated at 43.5 million in FY 2030, representing an average annual increase of 2.3 percent between FY 2016 and FY 2030.

Annual SunPass® toll revenue is expected to increase from $13.5 million in FY 2013 to $14.9 million in FY 2016. Annual Toll-by-Plate collectible toll revenue is estimated to decrease slightly from $2.3 million in FY 2013 to $2.2 million in FY 2016, primarily due to increases in assumed leakage rates resulting from the implementation of system-wide ORT. Total collectible revenues are estimated to increase from $15.8 million in FY 2013 to $17.1 million in FY 2016. By 2030, annual SunPass® and Toll-by Plate collectible revenues are estimated to be $20.7 million and $3.8 million, respectively. Total annual collectible revenue is estimated to be $24.5 million in FY 2030, representing an average annual increase of 2.6 percent between FY 2016 and FY 2030. This rate of revenue growth is slightly greater than the rate of transaction growth primarily due to assumed improvements in Toll-by-Plate billing and collections over the forecast period.

### SR 112 – Airport Expressway

Table 6-11 provides estimated annual transactions and revenue for SR 112, Airport Expressway. SR 112 is assumed to convert to ORT no later than December 1, 2014. Annual SunPass® transactions on SR 112 are estimated to increase from 10.4 million in FY 2013 to 54.8 million in FY 2016, the first full year of system-wide ORT implementation. Annual Toll-by-Plate transactions are estimated to increase from 1.1 million in FY 2013 to 16.2 million in FY 2016. Cash transactions, which were 3.1 million in FY 2013, are scheduled to be eliminated by FY 2016. Total annual transactions are estimated to increase from 14.6 million in FY 2013 to 71.8 million in FY 2016, representing an overall increase of 390 percent or an average annual increase of 70.0 percent. This increase is due primarily to the addition of a new toll gantry on the SR 112 mainline west of NW 42nd Avenue and the addition of a westbound toll gantry east of NW 17th Avenue.

By FY 2030, the final year of the forecast period, annual SunPass® transactions are estimated to reach 65.0 million or 77.4 percent of total transactions, while Toll-by-Plate transactions are estimated to reach 18.1 million. Total transactions are estimated at 84.0 million in FY 2030, representing an average annual increase of 1.1 percent between FY 2016 and FY 2030.

Annual SunPass® toll revenue is expected to increase from $11.2 million in FY 2013 to $20.2 million in FY 2016, while annual Toll-by-Plate collectible revenue is estimated to increase from $1.0 million in

FY 2013 to $5.6 million in FY 2016. Cash toll revenues, which were $3.8 million in FY 2013, are scheduled to be eliminated by FY 2016 with the implementation of system-wide ORT. By FY 2030, annual SunPass® and Toll-by-Plate collectible revenues are estimated to be $23.8 million and $9.1 million, respectively. Total annual revenues are estimated to increase from $15.9 million in FY 2013 to $25.8 million in FY 2016, and then to $32.9 million in FY 2030. This represents an average annual increase of 1.8 percent between FY 2016 and FY 2030, reflecting assumed improvements in Toll-by-Plate billing and collections over the forecast period.

### SR 836 – Dolphin Expressway

Table 6-12 provides estimated annual transactions and revenue for SR 836, Dolphin Expressway. SR 836 is scheduled to be converted to ORT in two phases, with the SR 836 mainline toll locations converting to ORT no later than December 1, 2014 and the SR 836 ramp toll locations converting to ORT no later than January 1, 2015. Annual SunPass® transactions on SR 836 are estimated to increase from 60.0 million in FY 2013 to 185.4 million in FY 2016, the first full year of system-wide ORT implementation. Toll-by-Plate transactions are also expected to increase between FY 2013 and FY 2016, with transactions estimated to grow from 7.3 million to 28.5 million in those years. Cash transactions, which were 5.9 million in FY 2013, are scheduled to be eliminated by FY 2016. Total annual transactions are estimated to increase from 73.7 million in FY 2013 to 215.5 million in FY 2016, representing an overall increase of 192 percent or an average annual increase of 43.0 percent. As with SR 112, this increase can be explained by the addition of a new toll gantry on the SR 836 mainline west of NW 57th Avenue, the addition of a westbound toll gantry west of NW 17th Avenue and the addition of several new ramp toll locations.

Annual SunPass® transactions are estimated to reach 264.7 million or 87.2 percent of total transactions in FY 2030, the final year of the forecast period, while Toll-by-Plate transactions are estimated to reach 36.8 million in FY 2030. Total transactions are estimated at 303.5 million in FY 2030, representing an average annual increase of 2.5 percent between FY 2016 and FY 2030.

Annual SunPass® toll revenue on SR 836 is expected to increase from $47.8 million in FY 2013 to an estimated $111.6 million in FY 2016, while annual Toll-by-Plate collectible revenue is estimated to increase from $5.5 million in FY 2013 to $17.9 million in FY 2016. Cash toll revenues, which were $6.8 million in FY 2013, are scheduled to be eliminated by FY 2016 with the implementation of system-wide ORT. By FY 2030, annual SunPass® and Toll-by-Plate collectible revenues are estimated to be $162.1 million and $33.2 million, respectively. Total annual revenues are estimated to increase from $60.1 million in FY 2013 to $129.5 million in FY 2016, and then to $195.2 million in FY 2030. This represents an AAPC of 3.0 percent between FY 2016 and FY 2030, reflecting assumed improvements in Toll-by-Plate billing and collections over the forecast period.

### SR 874 – Don Shula Expressway

Table 6-13 provides estimated annual transactions and revenue for SR 874, Don Shula Expressway. In FY 2013, annual SunPass® transactions were 80.8 million. Annual Toll-by-Plate transactions were 12.0 million. In FY 2016, the first full fiscal year after system-wide ORT implementation, annual SunPass® transactions are estimated to be 95.5 million while annual Toll-by-Plate transactions are estimated to be 11.7 million. Total annual transactions in FY 2016 are estimated to be 107.7 million. By 2030, annual SunPass® and Toll-by-Plate transactions are estimated to increase to 140.5 million and 15.8 million, respectively. At these levels, SunPass® transactions will represent an estimated 89.6 percent of total transaction. Total transactions are estimated at 156.9 million in FY 2030 with an estimated AAPC between FY 2016 and FY 2030 of 2.7 percent.





In FY 2013, annual SunPass® revenue was $26.5 million. Annual Toll-by-Plate collectible revenue was $5.2 million. Total collectible revenue was $31.8 million in FY 2013. After system-wide ORT implementation is completed, annual SunPass® toll revenue is expected to increase to $31.9 million in FY 2016, while annual Toll-by-Plate collectible revenue is to be $4.6 million in FY 2016. By FY 2030, annual SunPass® and Toll-by-Plate collectible revenues are estimated to be $46.3 million and $8.9 million, respectively. Total annual revenues are estimated to increase from $36.5 million in FY 2016 to $55.3 million in FY 2030, representing an average annual increase of 3.0 percent between FY 2016 and FY 2030. This rate of revenue growth is slightly greater than the rate of transaction growth primarily due to assumed improvements in Toll-by-Plate billing and collections over the forecast period.

### SR 878 – Snapper Creek Expressway

Table 6-14 provides estimated annual transactions and revenue for SR 878, Snapper Creek Expressway. Annual SunPass® transactions are estimated to increase from 23.7 million in FY 2013 to 24.7 million in FY 2016, the first full year of system-wide ORT implementation. Toll-by-Plate transactions are estimated to decrease from 3.0 million in FY 2013 to 2.7 million in FY 2016 primarily as a result of assumed increases in overall SunPass® market share. Total transactions are estimated to increase from 26.9 million in FY 2013 to 27.5 million in FY 2016.

By FY 2030, the final year of the forecast period, annual SunPass® transactions are estimated to reach 38.6 million or 91.0 percent of total transactions, while Toll-by-Plate transactions are estimated to reach 3.7 million. Total transactions are estimated at 42.5 million in FY 2030, representing an average annual increase of 3.2 percent between FY 2016 and FY 2030.

Annual SunPass® toll revenue is expected to increase from $6.1 million in FY 2013 to $6.2 million in FY 2016. Annual Toll-by-Plate collectible toll revenue is estimated to decrease from $1.0 million in FY 2013 to $0.8 million in FY 2016, primarily due to increases in assumed leakage rates resulting from the implementation of system-wide ORT. Total collectible revenues are estimated to remain at approximately $7.0 million between FY 2013 and FY 2016. By 2030, annual SunPass® and Toll-by Plate collectible revenues are estimated to be $9.7 million and $1.6 million, respectively. Total annual collectible revenue is estimated to be $11.3 million in FY 2030, representing an average annual increase of 3.4 percent between FY 2016 and FY 2030. This rate of revenue growth is slightly greater than the rate of transaction growth primarily due to assumed improvements in Toll-by-Plate billing and collections over the forecast period.

### Total MDX System

As shown in Table 6-15, annual SunPass® transactions for the total MDX System are estimated to increase from almost 200.0 million in FY 2013 to 388.2 million in FY 2016, the first full year of system-wide ORT implementation. Toll-by-Plate transactions are also expected to increase between FY 2013 and FY 2016, with transactions estimated to grow from 27.1 million to 62.6 million in those years. Cash transactions, which were 9.0 million in FY 2013, are scheduled to be eliminated by FY 2016. Total annual transactions are estimated to increase from 237.5 million in FY 2013 to 454.0 million in FY 2016, representing an overall increase of 91 percent. This large increase is explained by the addition of the various new mainline and ramp toll locations on SR 112 and SR 836.

Annual SunPass® transactions are estimated to reach 547.9 million or 86.9 percent of total transactions in FY 2030, the final year of the forecast period, while Toll-by-Plate transactions are estimated to reach 78.5 million in FY 2030. Total transactions are estimated at 630.3 million in FY

2030, representing an average annual increase of 2.4 percent between FY 2016 and FY 2030, over the entire system.

Annual SunPass® toll revenue for the MDX System is expected to increase from $105.1 million in FY 2013 to an estimated $184.9 million in FY 2016, while annual Toll-by-Plate collectible revenue is estimated to increase from $14.9 million in FY 2013 to $31.2 million in FY 2016. Cash toll revenues, which were $10.6 million in FY 2013, are scheduled to be eliminated by FY 2016 with the implementation of system-wide ORT. By FY 2030, annual SunPass® and Toll-by-Plate collectible revenues are estimated to be $262.6 million and $56.6 million, respectively. Total annual revenues are estimated to increase from $130.6 million in FY 2013 to $216.0 million in FY 2016, and then to $319.2 million in FY 2030. This represents an AAPC of 2.8 percent between FY 2016 and FY 2030, reflecting assumed improvements in Toll-by-Plate billing and collections over the forecast period.

The average toll is also expected to vary slightly during the forecast period for a variety of factors. Assumed increases in SunPass® market participation will tend to decrease the average toll rate. Between FY 2016 and FY 2035, the average annual indicated toll rate is estimated to decrease slightly from $0.542 to $0.540. Although average toll rates are estimated to decrease as a result of increased SunPass® participation, transactions are estimated to increase such that estimated revenues also increase during the forecast period. However, these slight decreases in average toll revenue are expected to offset by assumed improvements in Toll-by-Plate billing and collections, with the average toll rate from collectible revenue expected to increase from $0.476 to $0.507 between FY 2016 and FY 2030. Again, the base forecast assumes no change in toll rates after FY 2015.

## Alternative Pricing Strategies

At the time that the transaction and revenue forecasts were being developed for this comprehensive traffic and revenue study, the MDX Board of Directors was considering implementation of a possible volume discount program for SunPass® users. Two alternative program concepts were evaluated. The assessment of the range of potential programs, and the range of potential impacts on traffic and revenue described in this section was utilized by MDX Staff and the MDX Board of Directors in determining the specific details of a preferred strategy. A brief discussion of the SunPass® discount program analysis is provided below.

Two alternative SunPass® program concepts were developed in partnership with MDX staff, based on general parameters which had been established in various discussions with the MDX Board. These included:

- Frequent User Discount with a Percent Rebate; and
- Frequent User Discount with a Fixed Rebate.

### Frequent User Discount – Percent Discount

The purpose of the Frequent User Discount with a percent discount would be to offer a discount to SunPass® passenger car customers who used the system on a regular basis. In order to be eligible to receive a discount, a SunPass® passenger car customer would first have to register for the program. During each 90-day quarter the user would then have to make at least one transaction, anywhere on the MDX System, on 66 days out of the 90 days. Based on the amount of tolls paid, MDX would provide a rebate to the user. In addition, a cap on the rebate amount was also considered under this program.





CDM Smith relied upon the responses provided by SunPass® customers during the Origin and Destination (OD) Survey conducted in August 2013 in order to develop the estimated revenue impacts of the proposed program. Using the trip frequency data provided by the survey respondents, CDM Smith identified the survey respondents who would qualify for the proposed frequent user discount program. Then, based on the trip information of the qualifying and non-qualifying survey participants, CDM Smith estimated the number transactions and the amount of toll revenue paid under system-wide ORT assumption for each user. Using the respondents' answers regarding whether they made the same reverse trip or whether they made additional weekend trips, the maximum percent of quarterly SunPass® transactions and toll revenue that would fall under the program was calculated. On a system-wide basis, 43 percent of SunPass® passenger car transactions could possibly be subject to a discount and 42 percent of SunPass® passenger car toll revenue.

A number of discount percentages, discount caps and program registration rates were tested. The findings for the estimated annual revenue impacts of the volume discount program are shown in Table 6-16 at FY 2015 levels assuming full system-wide ORT implementation. The table summarizes the various discount levels, ranging from 5 percent to 25 percent, and the different cap amounts for the rebate, ranging from $20 per quarter to no cap. Different registration rates are also presented. A "base" rate of registration is given, which provides the most likely registration rate for each discount percent offered. It is assumed that as the discount percentage increases program registration rates will also increase, as the potential savings from the program attract additional customers. These base registration rates are based on professional experience with other similar programs for other toll agencies. In addition, a "low" rate and a "high" rate of registration for each discount level are also presented to provide a range of possible revenue impacts at each discount level.

As would be expected, the revenue impacts increase as the discount percent and maximum discount cap increase. For a 5 percent discount with a $20 maximum rebate and a 40 percent registration rate, the system-wide revenue impact would be a $1.38 million. Removing the cap on the maximum rebate would increase the impact to $1.43 million. A 10 percent discount with a 50 percent registration rate is estimated to produce a system-wide revenue impact of ranging from $2.74 million with a $20 discount cap to $3.57 million with no cap. Under a 15 percent discount with a $20 maximum rebate and a 60 percent registration rate, the system-wide revenue impact would be a $3.83 million. Removing the cap on the maximum rebate would increase the estimated revenue impacts to $6.43 million dollars. The highest estimated revenue impact would come from a 25 percent discount with no discount cap and a 100 percent registration rate. The system-wide revenue impact of under these conditions is estimated to be $17.85 million.

### Frequent User Discount – Fixed Rebate

The Frequent User Discount with a fixed discount would operate similarly to the Frequent User Discount with a percent discount. As with the previous program discussed, a SunPass® passenger car customer would first have register for the program in order to be eligible to receive a discount. During each 90-day quarter the user would then have to make at least one transaction on 66 days out of the 90 days. Based on the amount of tolls paid, MDX would provide a fixed rebate amount to the user. The primary difference would be that a fixed rebate would be credited to registered and qualifying SunPass® patrons, based on established 90-day revenue ranges.

CDM Smith used the same analysis methodology as was used under the Frequent User Discount with a percent discount in order to estimate the maximum number of SunPass® transactions and toll revenue that would qualify for the program. It was assumed that the distribution of tolls paid by quarter of the

**Table 6-16**
**Estimated Annual Revenue Impact of Volume Discount Program**

| Discount Percent | Discount Cap | Discount Program Revenue Impacts[1] ($000s) Low Rate of Registration | Assumed Rate of Registration | High Rate of Registration |
|---|---|---|---|---|
| | | 20 Percent Registered | 40 Percent Registered | 60 Percent Registered |
| 5 | $ 20 | $ (689) | $ (1,379) | $ (2,068) |
| 5 | 30 [2] | $ (714) | $ (1,428) | $ (2,142) |
| 5 | 50 [2] | $ (714) | $ (1,428) | $ (2,142) |
| 5 | No Cap [2] | $ (714) | $ (1,428) | $ (2,142) |
| | | 30 Percent Registered | 50 Percent Registered | 70 Percent Registered |
| 10 | $ 20 | $ (1,641) | $ (2,736) | $ (3,830) |
| 10 | 30 | $ (1,915) | $ (3,192) | $ (4,469) |
| 10 | 50 | $ (2,138) | $ (3,564) | $ (4,989) |
| 10 | No Cap | $ (2,142) | $ (3,570) | $ (4,999) |
| | | 40 Percent Registered | 60 Percent Registered | 80 Percent Registered |
| 15 | $ 20 | $ (2,556) | $ (3,834) | $ (5,112) |
| 15 | 30 | $ (3,283) | $ (4,924) | $ (6,565) |
| 15 | 50 | $ (3,953) | $ (5,930) | $ (7,906) |
| 15 | No Cap | $ (4,284) | $ (6,427) | $ (8,569) |
| | | 50 Percent Registered | 70 Percent Registered | 90 Percent Registered |
| 20 | $ 20 | $ (3,405) | $ (4,767) | $ (6,130) |
| 20 | 30 | $ (4,651) | $ (6,512) | $ (8,372) |
| 20 | 50 | $ (5,986) | $ (8,381) | $ (10,775) |
| 20 | No Cap | $ (7,141) | $ (9,997) | $ (12,853) |
| | | 60 Percent Registered | 80 Percent Registered | 100 Percent Registered |
| 25 | $ 20 | $ (4,214) | $ (5,618) | $ (7,023) |
| 25 | 30 | $ (5,902) | $ (7,870) | $ (9,837) |
| 25 | 50 | $ (8,207) | $ (10,942) | $ (13,678) |
| 25 | No Cap | $ (10,711) | $ (14,281) | $ (17,852) |

[1] Impacts shown are to collected revenue, which includes revenue adjustments for bad and duplicate Toll-by-Plate images and unpaid Toll-by-Plate transactions.
[2] Discounts assumed under the program do not exceed the discount cap level.





O-D survey participants was representative of the overall SunPass® customer base. This distribution was then used to separate participating users into four groups: those who made less than $50 worth of toll transactions per quarter, those who made between $50 and $150, those who made between $150 and $250, and those who made more than $250 in toll transactions per quarter. Fixed discounts were then applied to users in each of these categories.

A number of discount amounts and program registration rates were tested. The findings for the estimated annual revenue impacts of the volume discount program are shown in Table 6-17 at FY 2015 levels assuming full system-wide ORT implementation. It was assumed that qualifying users making less than $50 in toll transactions per quarter would not be offered a rebate. For customers making $50 to $150 in toll transactions, $5, $10 and $15 discounts were considered. These discount amounts were increased proportionally for users falling under the other discount categories, as shown in the table. Similarly to the prior program discussed, a base, low and high rate of registration are also presented. The registration rates presented in Table 6-17 are similar to those presented under comparable discount levels under Frequent User Discount with a percent discount.

**Table 6-17**
**Estimated Annual Revenue Impact of Volume Discount Program with Fixed Discounts**

| Tolls Paid per Customer per Quarter | | | Discount Program Revenue Impacts[1] ($000s) | | |
|---|---|---|---|---|---|
| $50 to $150 | $150 to $250 | More than $250 | Low Rate of Registration | Assumed Rate of Registration | High Rate of Registration |
| Discount Amount per Quarter | | | 20 Percent Registered | 40 Percent Registered | 60 Percent Registered |
| $ 5 | $ 10 | $ 15 | $ (633) | $ (1,265) | $ (1,898) |
| | | | 30 Percent Registered | 50 Percent Registered | 70 Percent Registered |
| $ 10 | $ 20 | $ 30 | $ (1,898) | $ (3,163) | $ (4,428) |
| | | | 40 Percent Registered | 60 Percent Registered | 80 Percent Registered |
| $ 15 | $ 30 | $ 45 | $ (3,795) | $ (5,693) | $ (7,590) |

[1] Impacts shown are to collected revenue, which includes revenue adjustments for bad and duplicate Toll-by-Plate images and unpaid Toll-by-Plate transactions.

Estimated revenue impacts increase as the discount amount increases. For discounts of $5, $10 and $15 under a 40 percent registration rate, the system-wide revenue impact would be a $1.3 million. This revenue varied by roughly $1.2 million based on the high and low registration rates. A discount of $10, $20 and $30 is estimated to produce a system-wide revenue impact of ranging from $1.9 million under the low registration rate condition to $4.4 million under the high registration rate condition. For discounts of $15, $30 and $45 under a 60 percent registration rate, the system-wide revenue impact would be a $5.7 million. This revenue varied by roughly $3.8 million based on the high and low registration rates.

## Preferred Strategy

Following a review by MDX Staff and the MDX Board of Directors, a final decision on the specific parameters of the preferred strategy for the SunPass® customer discount program was made. On February 25, 2014 the MDX Board of Directors voted to implement a Customer Rewards/Volume Frequency Program with a 10 percent discount provided to registered SunPass® passenger car customers who made transactions on 66 days or more each quarter. The discount will be capped at $30 per quarter.

For purposes of this forecast, a program registration rate of 70 percent was assumed. Although this was estimated to be the "High Rate" of registration, as previously presented in Table 6-16, it was believed by MDX Staff and CDM-Smith to be a conservative estimate of assumed motorists' participation in the program.

## Estimates of Transactions and Revenue under Fixed Toll Rates with Discount Program

Table 6-18 presents the system-wide transaction and revenue forecast under Fixed Toll Rates with the estimated revenue impacts of the Customer Rewards/Volume Frequency Program applied. In the first year the discount program is offered, FY 2016, the revenue impact is estimated at $4.6 million, with total system-wide collectible toll revenues at $211.4 million. This represents a 2.1 percent reduction in estimated revenue. This percent reduction remains relatively constant throughout the forecast period. By FY 2030, the estimated revenue impact of discount program to the Fixed Toll Rate scenario is estimated at $6.6 million, with total system-wide collectible toll revenues at $312.6 million.

## Alternative Forecasts with Assumed Annual CPI-Based Toll Rate Adjustments

In addition to the Fixed Toll Rate transaction and toll revenue forecasts, an analysis of estimated transactions and toll revenue assuming annual CPI-based toll increases was also studied. Using inflation rates based on the CPI for the Miami, Fort Lauderdale, and Pompano Beach Metropolitan Statistical Area prepared by Moody's Analytics, CDM Smith developed toll rates at FY 2020 and FY 2030 levels, as shown in Table 6-19. These toll rates, which were rounded to the nearest penny, assume that the first year of CPI increases will be FY 2018, with CPI adjustments pegged to FY 2017 levels.

In order to estimate the impacts to toll transactions and revenue, future year traffic assignments were run with the CPI-adjusted toll rates under FY 2020 and FY 2030 socioeconomic and highway improvement assumptions. The resulting traffic assignments were then compared against the Fixed Toll Rate assignments to estimate the traffic and revenue impacts of implementing CPI-adjusted tolls. These impacts were then applied to the FY 2020 and FY 2030 transaction and toll revenue forecasts presented earlier in this chapter to estimated transaction and toll revenues under a CPI-adjusted toll rate scenario for FY 2020 and FY 2030. Estimates of transactions and toll revenue under CPI-adjusted toll rates for all interim years were then developed through interpolation based on the average annual percent change between the appropriate analysis years, similar to the manner used for the Fixed Toll Rate forecast.

The estimates of annual transactions and toll revenues resulting from the CPI-adjusted toll analysis are presented in Table 6-20 by year and by expressway. Since CPI-adjusted toll rate increases are not expected to begin until FY 2018, transactions and toll revenues between FY 2013 and FY 2017 are the same as under the Fixed Toll Rate forecast.





**Table 6-18**
**Estimated Annual Transactions and Revenue with Estimated Discount Program Cost**
MDX System Total

| Fiscal Year | Annual Revenue ($000s) Total Collectible [9] | Estimated Discount Progam Cost [10] | Total Collectible [9] with Discount | Percent Difference |
|---|---|---|---|---|
| 2013 [1] | $ 130,592 | $ - | $ 130,592 | - |
| 2014 [2][3] | 125,502 | - | 125,502 | - |
| 2015 [4][5] | 179,524 | - | 179,524 | - |
| 2016 [6][7] | 216,020 | (4,636) | 211,384 | (2.1) |
| 2017 | 224,152 | (4,782) | 219,370 | (2.1) |
| 2018 [8] | 235,522 | (5,009) | 230,513 | (2.1) |
| 2019 | 244,540 | (5,205) | 239,335 | (2.1) |
| 2020 [6] | 253,364 | (5,396) | 247,968 | (2.1) |
| 2021 | 259,828 | (5,528) | 254,300 | (2.1) |
| 2022 | 266,479 | (5,659) | 260,820 | (2.1) |
| 2023 | 272,492 | (5,771) | 266,721 | (2.1) |
| 2024 [6] | 279,426 | (5,901) | 273,525 | (2.1) |
| 2025 | 284,994 | (6,001) | 278,993 | (2.1) |
| 2026 | 291,491 | (6,119) | 285,372 | (2.1) |
| 2027 | 298,159 | (6,240) | 291,919 | (2.1) |
| 2028 [6] | 305,840 | (6,381) | 299,459 | (2.1) |
| 2029 | 312,031 | (6,489) | 305,542 | (2.1) |
| 2030 | 319,244 | (6,618) | 312,626 | (2.1) |

[1] Actual.
[2] Toll-by-Plate Toll Rates were increased to be Double the SunPass® Toll Rates on July 1, 2013.
[3] Cash Toll Collection on SR 836 EB West of NW 17th Ave. and at the EB Exit Ramp to NW 17th Ave. was suspended on July 21, 2013.
[4] ORT is assumed to begin on SR 112 and at the SR 836 Mainlines on December 1, 2014 and at the SR 836 Ramp Locations on January 1, 2015.
[5] SR 836 / SR 826 Interchange Improvements are assumed to be completed by FY 2015.
[6] Leap Year.
[7] Discount Program is assumed to begin providing discounts as of July 1, 2015.
[8] SR 836 Capacity Improvements and the SR 874 Extension to SW 128th Street are assumed to open July 1, 2017.
[9] Represents Collectible Revenue, which includes Revenue Adjustments for Non-Revenue Vehicles, Duplicate and Bad Toll-by-Plate Images, and Unpaid Toll-by-Plate Transactions.
[10] Represents an estimated revenue impact of the MDX Board approved user discount program which is a 10 percent discount to registered qualifying customers, with a maximum discount of $30. A participation rate of 70 percent was assumed for the purposes of this forecast.

**Table 6-19**
**System-wide Open Road Tolling Toll Rate Assumptions with CPI-Adjustments**
**Passenger Car-Based SunPass® Toll Rates**

| Expressway | Toll Location: Location | Type | Direction | Assumed SunPass® Toll Rate: FY 2015 | FY 2020 | FY 2030 |
|---|---|---|---|---|---|---|
| SR 924 | West of NW 42nd Avenue | Mainline | Both | $ 0.50 | $ 0.54 | $ 0.69 |
| | West of W 4th Avenue | Mainline | Both | 0.50 | 0.54 | 0.69 |
| SR 112 | West of NW 27th Street | Mainline | Both | $ 0.35 | $ 0.38 | $ 0.49 |
| | East of 17th Avenue | Mainline | Both | 0.35 | 0.38 | 0.49 |
| SR 836 | NW 12th Avenue | Ramp | T/F East | $ 0.30 | $ 0.33 | $ 0.42 |
| | West of NW 17th Avenue | Mainline | Both | 0.70 | 0.76 | 0.97 |
| | NW 17th Avenue | Ramp | T/F West | 0.70 | 0.76 | 0.97 |
| | NW 27th Avenue | Ramp | T/F West | 0.30 | 0.33 | 0.42 |
| | NW 57th Avenue | Ramp | T/F East | 0.30 | 0.33 | 0.42 |
| | West of NW 57th Avenue | Mainline | Both | 0.70 | 0.76 | 0.97 |
| | NW 87th Avenue | Ramp | EB On Ramp | 0.30 | 0.33 | 0.42 |
| | CD Road West of SR 826 | CD Road | WB Only | 0.30 | 0.33 | 0.42 |
| | Slip Ramp to NW 87th Avenue Ramps | Slip Ramp | WB Only | 0.30 | 0.33 | 0.42 |
| | West of NW 97th Avenue | Mainline | Both | 0.70 | 0.76 | 0.97 |
| | NW 107th Avenue | Ramp | T/F West | 0.30 | 0.33 | 0.42 |
| | East of NW 137th Avenue | Mainline | Both | 0.30 | 0.33 | 0.42 |
| SR 874 | North of HEFT | Mainline | Both | $ 0.25 | $ 0.27 | $ 0.35 |
| | North of SW 104th Street | Mainline | Both | 0.25 | 0.27 | 0.35 |
| | South of SR 826 | Mainline | Both | 0.50 | 0.54 | 0.69 |
| SR 878 | West of SR 874 | Mainline | Both | $ 0.25 | $ 0.27 | $ 0.35 |
| | West of SW 87th Avenue | Mainline | Both | 0.25 | 0.27 | 0.35 |

T/F = to/from





**Table 6-20**
**Estimated "Base Case" Annual Transactions and Revenue with Annual CPI-Based Toll Adjustments**
MDX System Total

| Fiscal Year | Annual Transactions (000s): SR 924 | SR 112 | SR 836 | SR 874 | SR 878 | Total | Percent Change |
|---|---|---|---|---|---|---|---|
| 2013 [1] | 28,912 | 14,622 | 73,742 | 93,378 | 26,892 | **237,546** | - |
| 2014 [2][3] | 29,844 | 14,792 | 74,333 | 96,419 | 27,260 | **242,648** | 2.1 |
| 2015 [4][5] | 30,474 | 46,922 | 151,245 | 104,443 | 26,208 | **359,292** | 48.1 |
| 2016 [6] | 31,518 | 71,782 | 215,473 | 107,714 | 27,489 | **453,976** | 26.4 |
| 2017 | 32,470 | 73,743 | 221,038 | 111,448 | 28,541 | **467,240** | 2.9 |
| 2018 [7][8] | 32,710 | 71,085 | 228,449 | 121,899 | 29,684 | **483,827** | 3.6 |
| 2019 | 33,350 | 71,285 | 234,216 | 128,344 | 30,754 | **497,948** | 2.9 |
| 2020 [6] | 34,267 | 73,153 | 239,787 | 132,857 | 31,823 | **511,887** | 2.8 |
| 2021 | 34,882 | 74,117 | 243,920 | 135,641 | 32,678 | **521,238** | 1.8 |
| 2022 | 35,528 | 74,993 | 248,673 | 138,216 | 33,607 | **531,017** | 1.9 |
| 2023 | 36,098 | 75,531 | 253,367 | 140,099 | 34,514 | **539,609** | 1.6 |
| 2024 [6] | 36,778 | 76,281 | 258,857 | 142,397 | 35,543 | **549,856** | 1.9 |
| 2025 | 37,266 | 76,619 | 263,023 | 143,943 | 36,402 | **557,253** | 1.3 |
| 2026 | 37,864 | 77,169 | 267,988 | 145,904 | 37,384 | **566,309** | 1.6 |
| 2027 | 38,472 | 77,723 | 273,047 | 147,892 | 38,393 | **575,527** | 1.6 |
| 2028 [6] | 39,197 | 78,495 | 278,964 | 150,318 | 39,537 | **586,511** | 1.9 |
| 2029 | 39,717 | 78,843 | 283,453 | 151,950 | 40,493 | **594,456** | 1.4 |
| 2030 | 40,355 | 79,408 | 288,806 | 154,022 | 41,587 | **604,178** | 1.6 |

| Fiscal Year | Annual Collectible Revenue ($000s) [9]: SR 924 | SR 112 | SR 836 | SR 874 | SR 878 | Total | Estimated Discount Progam Cost [10] | Collectible Revenue [9] with Discount |
|---|---|---|---|---|---|---|---|---|
| 2013 [1] | 15,805 | 15,941 | 60,052 | 31,750 | 7,044 | $ **130,592** | $ - | $ **130,592** |
| 2014 [2][3] | 15,506 | 15,651 | 56,760 | 30,848 | 6,737 | **125,502** | - | **125,502** |
| 2015 [4][5] | 16,538 | 21,617 | 99,091 | 35,549 | 6,729 | **179,524** | - | **179,524** |
| 2016 [6] | 17,101 | 25,799 | 129,525 | 36,541 | 7,054 | **216,020** | (4,636) | **211,384** |
| 2017 | 17,811 | 26,898 | 133,850 | 38,195 | 7,398 | **224,152** | (4,782) | **219,370** |
| 2018 [7][8] | 18,558 | 26,967 | 143,937 | 42,914 | 7,948 | **240,325** | (5,100) | **235,225** |
| 2019 | 19,483 | 28,010 | 152,563 | 46,395 | 8,470 | **254,922** | (5,564) | **249,358** |
| 2020 [6] | 20,566 | 29,691 | 160,813 | 49,285 | 8,995 | **269,350** | (5,771) | **263,579** |
| 2021 | 21,491 | 31,036 | 168,308 | 51,672 | 9,486 | **281,993** | (5,982) | **276,011** |
| 2022 | 22,462 | 32,376 | 176,474 | 54,091 | 10,023 | **295,426** | (6,236) | **289,190** |
| 2023 | 23,409 | 33,593 | 184,846 | 56,351 | 10,580 | **308,779** | (6,520) | **302,259** |
| 2024 [6] | 24,462 | 34,951 | 194,146 | 58,866 | 11,199 | **323,624** | (6,836) | **316,788** |
| 2025 | 25,424 | 36,166 | 202,801 | 61,158 | 11,790 | **337,339** | (7,128) | **330,211** |
| 2026 | 26,496 | 37,525 | 212,422 | 63,713 | 12,446 | **352,602** | (7,453) | **345,149** |
| 2027 | 27,613 | 38,935 | 222,500 | 66,375 | 13,138 | **368,561** | (7,793) | **360,768** |
| 2028 [6] | 28,856 | 40,509 | 233,694 | 69,338 | 13,907 | **386,304** | (8,170) | **378,134** |
| 2029 | 29,990 | 41,917 | 244,113 | 72,037 | 14,640 | **402,697** | (8,519) | **394,178** |
| 2030 | 31,252 | 43,492 | 255,695 | 75,048 | 15,454 | **420,941** | (8,907) | **412,034** |

[1] Actual.
[2] Toll-by-Plate Toll Rates were increased to be Double the SunPass® Toll Rates on July 1, 2013.
[3] Cash Toll Collection on SR 836 EB West of NW 17th Ave. and at the EB Exit Ramp to NW 17th Ave. was suspended on July 21, 2013.
[4] ORT is Assumed to begin on SR 112 and at the SR 836 Mainlines on December 1, 2014 and at the SR 836 Ramp Locations on January 1, 2015.
[5] SR 836 / SR 826 Interchange Improvements are assumed to be completed by FY 2015.
[6] Leap Year.
[7] SR 836 Capacity Improvements and the SR 874 Extension to SW 128th Street are assumed to open October 1, 2017.
[8] First Year of Assumed CPI Toll Adjustments. Tolls are assumed to increase an average of 2.4 percent per year.
[9] Represents Collected Revenue, which includes Revenue Adjustments for Non-Revenue Vehicles, Duplicate and Bad Toll-by-Plate Images, and Unpaid Toll-by-Plate Transactions.
[10] Represents an estimated revenue impact of the MDX Board approved user discount program, which is a 10 percent discount to registered qualifying customers, with a maximum discount of $30. A participation rate of 70 percent was assumed for the purposes of this forecast.

Under CPI-adjusted toll rates, total transactions are estimated at 604.2 million in FY 2030, representing an average annual increase of 2.1 percent between FY 2016 and FY 2030. This is slightly lower than the average annual increase estimated under the Fixed Rate scenario due to the estimated diversion of traffic from the MDX Expressways as a result of the annual CPI-adjusted toll rate increases.

Annual collectible toll revenue is estimated to increase from $216.0 million in FY 2016 to an estimated $420.9 million in FY 2030 under the assumed CPI-adjusted toll rate increases. This represents an AAPC of 4.9 percent between FY 2016 and FY 2030, reflecting both the impacts of traffic growth and an average annual increase in toll rates of 2.4 percent.

The estimated impacts of the discount program are also assumed to be different under the assumed CPI-adjusted toll rate increases. By FY 2030, the estimated revenue impact of discount program is estimated at $10.6 million, with total system-wide collectible toll revenues at $410.3 million. Despite the increase in the nominal amount of the discount program under CPI-adjusted tolls, the impact of the Customer Rewards/Volume Frequency Program still represents an estimated 2.1 percent of SunPass® revenue throughout the forecast period.

Table 6-21 provides a comparison of the estimated annual transactions and collectible toll revenues under both the Fixed Toll Rate and CPI-Adjusted Toll Rate scenarios, assuming the implementation of the Customer Rewards/Volume Frequency Program. In FY 2018, the first year of CPI-adjusted toll rate increases, the differences in annual system-wide transactions and annual system-wide collectible toll revenues between the Fixed Toll Rate and the CPI-Adjusted Toll Rate scenarios are 3.2 million transactions and $4.7 million, respectively. This is represents a 0.7 percent reduction in annual system-wide transactions and a 2.0 percent increase in annual system-wide collectible toll revenues.

With each year of CPI-based toll rate increases, the differences between the Fixed Toll Rate and the CPI-Adjusted Toll Rate scenarios increase, as would be expected. By FY 2030, the differences in annual system-wide transactions and annual system-wide collectible toll revenues between the Fixed Toll Rate and the CPI-Adjusted Toll Rate scenarios are 26.1 million transactions and $99.0 million, respectively. This represents a 4.1 percent reduction in annual system-wide transactions and a 31.8 percent increase in annual system-wide collectible toll revenues. The percent impacts on transactions increases over time, because both forecasts assumed inflationary adjustments in values of time and vehicle operating cost. Hence, the Fixed Toll Rate scenario, without toll increases, actually reflects a decrease in toll rates in real terms over the years. When the CPI adjustments are applied, this has the effect of keeping rates constant in "real" terms. As such, the estimated differences in the traffic forecasts increase over time.





**Table 6-21**
**Comparison of Estimated Annual System-wide Toll Transactions and Revenue**
With and Without CPI Adjusted Tolls

| Fiscal Year | Annual System-wide Transactions (000s) — Base Case with Fixed Toll Rates with Discount [1] | Base Case with CPI-Adjusted Tolls and Discount [1] | Difference | Percent Difference |
|---|---|---|---|---|
| 2013 [2] | 237,546 | 237,546 | - | - |
| 2014 [3][4] | 242,648 | 242,648 | - | - |
| 2015 [5][6] | 359,292 | 359,292 | - | - |
| 2016 [7] | 453,976 | 453,976 | - | - |
| 2017 | 467,240 | 467,240 | - | - |
| 2018 [8][9] | 487,072 | 483,827 | (3,245) | (0.7) |
| 2019 | 504,648 | 497,948 | (6,700) | (1.3) |
| 2020 [7] | 522,058 | 511,887 | (10,171) | (1.9) |
| 2021 | 533,904 | 521,238 | (12,666) | (2.4) |
| 2022 | 545,664 | 531,017 | (14,647) | (2.7) |
| 2023 | 555,544 | 539,609 | (15,935) | (2.9) |
| 2024 [7] | 567,168 | 549,856 | (17,312) | (3.1) |
| 2025 | 575,887 | 557,253 | (18,634) | (3.2) |
| 2026 | 586,358 | 566,309 | (20,049) | (3.4) |
| 2027 | 597,031 | 575,527 | (21,504) | (3.6) |
| 2028 [7] | 609,578 | 586,511 | (23,067) | (3.8) |
| 2029 | 619,007 | 594,456 | (24,551) | (4.0) |
| 2030 | 630,321 | 604,178 | (26,143) | (4.1) |

| Fiscal Year | Annual System-wide Collectible Revenue ($000s) [9] — Base Case with Fixed Toll Rates with Discount [1] | Base Case with CPI-Adjusted Tolls with Discount [1] | Difference | Percent Difference |
|---|---|---|---|---|
| 2013 [1] | $ 130,592 | $ 130,592 | $ - | - |
| 2014 [2][3] | 125,502 | 125,502 | - | - |
| 2015 [4][5] | 179,524 | 179,524 | - | - |
| 2016 [6] | 211,384 | 211,384 | - | - |
| 2017 | 219,370 | 219,370 | - | - |
| 2018 [7][8] | 230,513 | 235,225 | 4,712 | 2.0 |
| 2019 | 239,335 | 249,358 | 10,023 | 4.2 |
| 2020 [6] | 247,968 | 263,579 | 15,611 | 6.3 |
| 2021 | 254,300 | 276,011 | 21,711 | 8.5 |
| 2022 | 260,820 | 289,190 | 28,370 | 10.9 |
| 2023 | 266,721 | 302,259 | 35,538 | 13.3 |
| 2024 [6] | 273,525 | 316,788 | 43,263 | 15.8 |
| 2025 | 278,993 | 330,211 | 51,218 | 18.4 |
| 2026 | 285,372 | 345,149 | 59,777 | 20.9 |
| 2027 | 291,919 | 360,768 | 68,849 | 23.6 |
| 2028 [6] | 299,459 | 378,134 | 78,675 | 26.3 |
| 2029 | 305,542 | 394,178 | 88,636 | 29.0 |
| 2030 | 312,626 | 412,034 | 99,408 | 31.8 |

[1] Includes the estimated revenue impact of the MDX Board approved user discount program which is a 10 percent discount to registered qualifying customers, with a maximum discount of $30. A participation rate of 70 percent was assumed for the purposes of this forecast.
[2] Actual.
[3] Toll-by-Plate Toll Rates were increased to be Double the SunPass® Toll Rates on July 1, 2013.
[3] Cash Toll Collection on SR 836 EB West of NW 17th Ave. and at the EB Exit Ramp to NW 17th Ave. was suspended on July 21, 2013.
[4] ORT is assumed to begin on SR 112 and at the SR 836 Mainlines on December 1, 2014 and at the SR 836 Ramp Locations on January 1, 2015.
[5] SR 836 / SR 826 Interchange Improvements are assumed to be completed by FY 2015.
[6] Leap Year.
[7] SR 836 Capacity Improvements and the SR 874 Extension to SW 128th Street are assumed to open October 1, 2017.
[8] First Year of Assumed CPI Toll Adjustments. Tolls are assumed to increase an average of 2.4 percent per year.
[9] Represents Collectible Revenue, which includes Revenue Adjustments for Non-Revenue Vehicles, Duplicate and Bad Toll-by-Plate Images, and Unpaid Toll-by-Plate Transactions.

## Disclaimer

CDM Smith serves as Traffic and Revenue Consultant for MDX. As further described in Chapter 1 of this report, this report is an investment grade traffic and revenue study and is intended to be used in support of additional bond financing by MDX. CDM Smith acknowledges and agrees to the inclusion of this report in the Official Statement related to the issuance by MDX of its Toll System Revenue Bonds, Series 2014A.

Current accepted professional practices and procedures were used in the development of these updated traffic and revenue forecasts. However, as with any forecast of the future, it should be understood that there may be differences between forecasted and actual results caused by events and circumstances beyond the control of CDM Smith. CDM Smith does not specifically guarantee or warrant any forecasts of projections contained within this report. In formulating its forecasts, CDM Smith has reasonably relied upon the accuracy and completeness of information provided (both written and oral) by the MDX and other local and state agencies. CDM Smith also has relied upon the reasonable assurances of some independent parties and is not aware of any facts that would make such information misleading.

CDM Smith has made qualitative judgments related to several key variables in the development and analysis of the traffic and revenue forecasts that must be considered as a whole; therefore selecting portions of any individual results without consideration of the intent of the whole may create a misleading or incomplete view of the results and the underlying methodologies used to obtain the results. CDM Smith gives no opinion as to the value or merit to partial information extracted from this report.

CDM Smith takes no responsibility or assumes any obligations to advise of any change following the date of this report that may affect its assumptions contained with the report.

CDM Smith is not and has not been a municipal advisor as defined in Federal law (the Dodd Frank Bill) to MDX and does not owe a fiduciary duty pursuant to Section 15B of the Exchange Act to MDX with respect to the information and material contained in this report. CDM Smith is not recommending and has not recommended any action to MDX. MDX should discuss the information and material contained in this report with any and all internal and external advisors that it deems appropriate before acting on this information.



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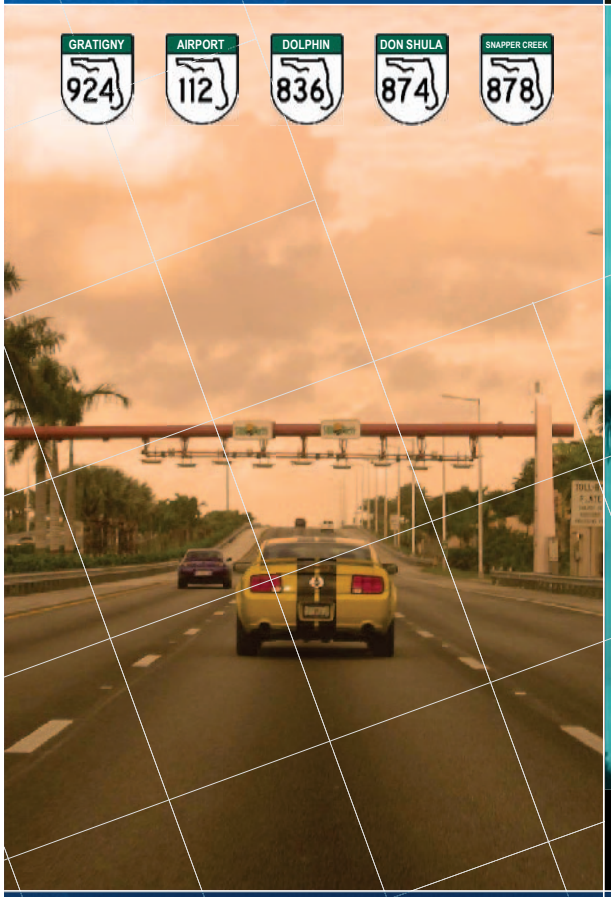
# MDX Investment-Grade Traffic and Revenue Study




## Appendices

April 2014

MDX
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# Appendix A

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## Appendix A.1 Traffic Count Data

## Appendix A.2 Bluetooth Interchange-to-Interchange Movement Data

## Appendix A.3 INRIX Speed Data

# Appendix A.1

# Traffic Count Data

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# Appendix A.1
## Traffic Count Data

**Table A.1-1**
**Weekday Traffic Count Data By Hour**

| Location Number | Expressway | Dir | Ramp or Mainline | Location | | Hour Beginning | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 21 | SR 112 | EB | Mainline | West of NW 42nd Ave | Raw Count | **11,146** | 216 | 56 | 66 | 66 | 129 | 267 | 411 | 488 | 491 | 493 | 411 | 462 | 469 | 611 | 757 | 867 | 824 | 882 | 761 | 675 | 503 | 490 | 495 | 261 |
| | | | | | AWDT | **10,554** | 205 | 53 | 62 | 62 | 122 | 252 | 389 | 462 | 465 | 467 | 389 | 437 | 444 | 578 | 716 | 820 | 780 | 835 | 720 | 639 | 476 | 464 | 468 | 247 |
| | | | | | Balanced AWDT | **10,554** | 205 | 53 | 62 | 62 | 122 | 252 | 389 | 462 | 465 | 467 | 389 | 437 | 444 | 578 | 716 | 820 | 780 | 835 | 720 | 639 | 476 | 464 | 468 | 247 |
| 22 | SR 112 | WB | Mainline | West of NW 42nd Ave | Raw Count | **11,587** | 97 | 42 | 47 | 143 | 271 | 480 | 575 | 560 | 660 | 579 | 483 | 545 | 521 | 753 | 820 | 835 | 853 | 973 | 809 | 480 | 364 | 290 | 261 | 152 |
| | | | | | AWDT | **10,972** | 92 | 39 | 45 | 135 | 256 | 455 | 544 | 530 | 625 | 548 | 457 | 516 | 493 | 713 | 776 | 791 | 807 | 921 | 766 | 454 | 345 | 275 | 247 | 144 |
| | | | | | Balanced AWDT | **10,972** | 92 | 39 | 45 | 135 | 256 | 455 | 544 | 530 | 625 | 548 | 457 | 516 | 493 | 713 | 776 | 791 | 807 | 921 | 766 | 454 | 345 | 275 | 247 | 144 |
| 23 | SR 112 | WB | Exit | Le Jeune Road / NW 42nd Avenue SB | Raw Count | **18,701** | 205 | 115 | 84 | 170 | 219 | 378 | 640 | 1,164 | 1,329 | 1,128 | 830 | 927 | 940 | 1,069 | 1,216 | 1,434 | 1,375 | 1,487 | 1,342 | 862 | 491 | 424 | 426 | 446 |
| | | | | | AWDT | **17,708** | 194 | 109 | 80 | 161 | 207 | 358 | 606 | 1,102 | 1,258 | 1,068 | 786 | 878 | 890 | 1,012 | 1,151 | 1,358 | 1,302 | 1,408 | 1,271 | 816 | 465 | 401 | 403 | 422 |
| | | | | | Balanced AWDT | **10,419** | 175 | 103 | 81 | 155 | 198 | 358 | 619 | 1,009 | 1,118 | 1,013 | 764 | 797 | 841 | 906 | 945 | 1,240 | 1,302 | 1,290 | 1,073 | 731 | 521 | 441 | 415 | 322 |
| 24 | SR 112 | EB | Entrance | Le Jeune Road / NW 42nd Avenue NB | Raw Count | **12,720** | 200 | 89 | 52 | 46 | 81 | 184 | 464 | 814 | 940 | 741 | 571 | 554 | 571 | 616 | 651 | 756 | 951 | 1,056 | 1,039 | 715 | 490 | 431 | 405 | 303 |
| | | | | | AWDT | **12,045** | 189 | 84 | 49 | 44 | 77 | 174 | 439 | 771 | 890 | 702 | 541 | 525 | 541 | 583 | 616 | 716 | 901 | 1,000 | 984 | 677 | 464 | 408 | 383 | 287 |
| | | | | | Balanced AWDT | **10,921** | 165 | 90 | 45 | 40 | 65 | 149 | 391 | 717 | 813 | 648 | 488 | 482 | 502 | 531 | 599 | 615 | 742 | 811 | 792 | 632 | 452 | 410 | 420 | 324 |
| 25 | SR 112 | EB | Entrance | NW 36th Street EB | Raw Count | **15,110** | 152 | 71 | 47 | 56 | 74 | 184 | 468 | 1,112 | 1,376 | 1,023 | 813 | 715 | 750 | 703 | 739 | 875 | 1,056 | 1,346 | 1,332 | 814 | 475 | 371 | 317 | 241 |
| | | | | | AWDT | **14,308** | 144 | 67 | 45 | 53 | 70 | 174 | 443 | 1,053 | 1,303 | 969 | 770 | 677 | 710 | 666 | 700 | 829 | 1,000 | 1,275 | 1,261 | 771 | 450 | 351 | 300 | 228 |
| | | | | | Balanced AWDT | **12,896** | 125 | 72 | 41 | 49 | 60 | 149 | 399 | 979 | 1,190 | 894 | 695 | 617 | 659 | 606 | 680 | 712 | 824 | 1,034 | 1,015 | 719 | 438 | 352 | 329 | 258 |
| 26 | SR 112 | WB | Exit | NW 36th Street WB | Raw Count | **13,746** | 142 | 84 | 61 | 78 | 104 | 307 | 646 | 992 | 1,114 | 917 | 701 | 708 | 699 | 758 | 950 | 974 | 884 | 886 | 1,021 | 578 | 333 | 303 | 242 | 264 |
| | | | | | AWDT | **13,016** | 134 | 80 | 58 | 74 | 98 | 291 | 612 | 939 | 1,055 | 868 | 664 | 670 | 662 | 718 | 900 | 922 | 837 | 839 | 967 | 547 | 315 | 287 | 229 | 250 |
| | | | | | Balanced AWDT | **12,067** | 121 | 76 | 59 | 71 | 94 | 291 | 625 | 860 | 937 | 824 | 645 | 609 | 626 | 642 | 738 | 843 | 837 | 769 | 816 | 490 | 354 | 315 | 236 | 191 |
| 27 | SR 112 | EB | Entrance | US 27 / S Okeechobee Road SB | Raw Count | **15,485** | 112 | 88 | 58 | 80 | 122 | 368 | 1,032 | 1,387 | 1,568 | 1,083 | 949 | 828 | 877 | 888 | 830 | 809 | 760 | 873 | 770 | 603 | 457 | 376 | 349 | 218 |
| | | | | | AWDT | **14,663** | 106 | 83 | 55 | 76 | 116 | 348 | 977 | 1,313 | 1,485 | 1,026 | 899 | 784 | 830 | 841 | 786 | 766 | 720 | 827 | 729 | 571 | 433 | 356 | 330 | 206 |
| | | | | | Balanced AWDT | **13,336** | 92 | 89 | 50 | 69 | 98 | 298 | 869 | 1,221 | 1,356 | 946 | 812 | 721 | 771 | 765 | 763 | 659 | 593 | 670 | 587 | 533 | 421 | 357 | 362 | 233 |
| 28 | SR 112 | WB | Exit | US 27 / S Okeechobee Road NB | Raw Count | **14,968** | 193 | 100 | 71 | 71 | 101 | 191 | 443 | 762 | 926 | 719 | 700 | 771 | 764 | 791 | 1,002 | 1,184 | 1,287 | 1,246 | 1,208 | 884 | 524 | 365 | 312 | 353 |
| | | | | | AWDT | **14,173** | 183 | 95 | 67 | 67 | 96 | 181 | 419 | 722 | 877 | 681 | 663 | 730 | 723 | 749 | 949 | 1,121 | 1,219 | 1,180 | 1,144 | 837 | 496 | 346 | 295 | 334 |
| | | | | | Balanced AWDT | **13,148** | 164 | 90 | 68 | 65 | 91 | 181 | 429 | 660 | 779 | 646 | 644 | 663 | 684 | 670 | 779 | 1,024 | 1,219 | 1,081 | 965 | 750 | 557 | 379 | 304 | 255 |
| 29 | SR 112 | EB | Mainline | Between NW 42nd Avenue and NW 27th Avenue | Raw Count | **51,280** | 621 | 320 | 210 | 233 | 365 | 895 | 2,230 | 3,516 | 3,879 | 3,121 | 2,519 | 2,390 | 2,510 | 2,619 | 2,913 | 2,964 | 3,474 | 3,802 | 3,712 | 2,665 | 1,888 | 1,672 | 1,669 | 1,121 |
| | | | | | AWDT | **48,557** | 588 | 303 | 199 | 220 | 346 | 847 | 2,092 | 3,329 | 3,673 | 2,955 | 2,385 | 2,263 | 2,376 | 2,480 | 2,758 | 2,807 | 3,289 | 3,600 | 3,514 | 2,523 | 1,787 | 1,583 | 1,580 | 1,061 |
| | | | | | Balanced AWDT | **47,707** | 588 | 303 | 199 | 220 | 346 | 847 | 2,042 | 3,379 | 3,823 | 2,955 | 2,385 | 2,263 | 2,376 | 2,480 | 2,758 | 2,807 | 2,939 | 3,350 | 3,114 | 2,523 | 1,787 | 1,583 | 1,580 | 1,061 |
| 30 | SR 112 | WB | Mainline | Between NW 27th Avenue and NW 42nd Avenue | Raw Count | **52,599** | 583 | 326 | 267 | 449 | 675 | 1,356 | 2,941 | 3,231 | 3,653 | 3,202 | 2,652 | 2,730 | 2,792 | 3,096 | 3,420 | 3,853 | 3,343 | 3,075 | 3,400 | 2,561 | 1,876 | 1,489 | 1,270 | 964 |
| | | | | | AWDT | **49,806** | 552 | 308 | 252 | 425 | 639 | 1,284 | 2,217 | 3,059 | 3,459 | 3,032 | 2,511 | 2,585 | 2,644 | 2,931 | 3,238 | 3,648 | 3,166 | 2,911 | 3,219 | 2,425 | 1,776 | 1,409 | 1,203 | 912 |
| | | | | | Balanced AWDT | **52,606** | 552 | 308 | 252 | 425 | 639 | 1,284 | 2,217 | 3,059 | 3,459 | 3,032 | 2,511 | 2,585 | 2,644 | 2,931 | 3,238 | 3,648 | 4,166 | 4,061 | 3,619 | 2,425 | 1,776 | 1,409 | 1,203 | 912 |
| 31 | SR 112 | EB | Exit | NW 27th Avenue | Raw Count | **5,171** | 70 | 35 | 22 | 30 | 52 | 129 | 294 | 388 | 405 | 363 | 323 | 382 | 382 | 333 | 331 | 267 | 307 | 307 | 203 | 175 | 114 | 109 | 91 | 59 |
| | | | | | AWDT | **4,896** | 66 | 33 | 21 | 28 | 49 | 122 | 278 | 367 | 383 | 344 | 306 | 362 | 362 | 315 | 313 | 253 | 291 | 291 | 192 | 166 | 108 | 103 | 86 | 56 |
| | | | | | Balanced AWDT | **5,461** | 107 | 58 | 33 | 46 | 65 | 151 | 300 | 334 | 351 | 330 | 345 | 368 | 413 | 375 | 368 | 272 | 313 | 310 | 206 | 228 | 134 | 130 | 129 | 97 |
| 32 | SR 112 | EB | Entrance | NW 27th Avenue SB | Raw Count | **1,113** | 11 | 2 | 14 | 16 | 30 | 70 | 98 | 86 | 64 | 52 | 60 | 68 | 77 | 76 | 73 | 66 | 87 | 43 | 27 | 19 | 16 | 17 | 11 | 30 |
| | | | | | AWDT | **1,054** | 10 | 2 | 13 | 15 | 28 | 66 | 93 | 81 | 61 | 49 | 57 | 64 | 73 | 72 | 69 | 62 | 82 | 41 | 26 | 18 | 15 | 16 | 10 | 28 |
| | | | | | Balanced AWDT | **912** | 4 | 0 | 6 | 6 | 20 | 51 | 85 | 89 | 66 | 51 | 50 | 63 | 63 | 58 | 57 | 58 | 76 | 38 | 24 | 11 | 11 | 12 | 5 | 8 |
| 33 | SR 112 | WB | Exit | NW 27th Avenue | Raw Count | **8,569** | 106 | 65 | 56 | 44 | 80 | 141 | 301 | 421 | 523 | 481 | 481 | 579 | 562 | 570 | 657 | 749 | 732 | 677 | 573 | 343 | 146 | 86 | 82 | 114 |
| | | | | | AWDT | **8,114** | 100 | 62 | 53 | 42 | 76 | 134 | 285 | 399 | 495 | 455 | 455 | 548 | 532 | 540 | 622 | 709 | 693 | 641 | 543 | 325 | 138 | 81 | 78 | 108 |
| | | | | | Balanced AWDT | **8,651** | 131 | 67 | 58 | 50 | 90 | 133 | 287 | 387 | 493 | 506 | 511 | 587 | 598 | 624 | 700 | 713 | 668 | 590 | 504 | 345 | 190 | 134 | 134 | 150 |
| 34 | SR 112 | WB | Entrance | NW 27th Avenue | Raw Count | **5,321** | 62 | 40 | 28 | 57 | 55 | 128 | 241 | 364 | 288 | 261 | 251 | 317 | 321 | 358 | 381 | 367 | 306 | 302 | 260 | 223 | 183 | 212 | 194 | 122 |
| | | | | | AWDT | **5,038** | 59 | 38 | 27 | 54 | 52 | 121 | 228 | 345 | 273 | 247 | 238 | 300 | 304 | 339 | 361 | 348 | 290 | 286 | 246 | 211 | 173 | 201 | 184 | 116 |
| | | | | | Balanced AWDT | **4,452** | 41 | 34 | 24 | 43 | 42 | 122 | 227 | 355 | 274 | 220 | 209 | 279 | 266 | 286 | 316 | 346 | 300 | 309 | 264 | 198 | 108 | 70 | 50 | 70 |
| 35 | SR 112 | EB | Entrance | NW 27th Avenue | Raw Count | **5,051** | 37 | 21 | 15 | 24 | 49 | 107 | 208 | 378 | 437 | 320 | 266 | 279 | 312 | 334 | 366 | 344 | 346 | 335 | 276 | 215 | 119 | 112 | 83 | 68 |
| | | | | | AWDT | **4,783** | 35 | 20 | 14 | 23 | 46 | 101 | 197 | 358 | 414 | 303 | 252 | 264 | 295 | 316 | 347 | 326 | 328 | 317 | 261 | 204 | 113 | 106 | 79 | 64 |
| | | | | | Balanced AWDT | **4,245** | 13 | 5 | 6 | 9 | 32 | 78 | 181 | 301 | 449 | 315 | 220 | 259 | 253 | 257 | 286 | 302 | 303 | 296 | 242 | 127 | 85 | 79 | 40 | 18 |
| 39 | SR 112 | EB | Exit | NW 22nd Avenue | Raw Count | **9,801** | 188 | 92 | 74 | 69 | 87 | 195 | 385 | 540 | 521 | 463 | 403 | 436 | 497 | 524 | 574 | 631 | 745 | 870 | 714 | 470 | 371 | 340 | 356 | 256 |
| | | | | | AWDT | **9,281** | 178 | 87 | 70 | 65 | 82 | 185 | 365 | 511 | 493 | 438 | 382 | 413 | 471 | 496 | 544 | 597 | 705 | 824 | 676 | 445 | 351 | 322 | 337 | 242 |
| | | | | | Balanced AWDT | **6,388** | 67 | 59 | 51 | 86 | 108 | 208 | 392 | 399 | 351 | 265 | 263 | 301 | 335 | 325 | 336 | 328 | 326 | 242 | 237 | 305 | 342 | 360 | 494 | 267 |
| 37 | SR 112 | EB | Entrance | NW 22nd Avenue | Raw Count | **3,274** | 28 | 30 | 16 | 17 | 34 | 44 | 179 | 283 | 270 | 235 | 174 | 179 | 203 | 186 | 178 | 191 | 203 | 177 | 171 | 130 | 101 | 96 | 87 | 62 |
| | | | | | AWDT | **3,100** | 27 | 28 | 15 | 16 | 32 | 42 | 169 | 268 | 256 | 223 | 165 | 169 | 192 | 176 | 169 | 181 | 192 | 168 | 162 | 123 | 96 | 91 | 82 | 59 |
| | | | | | Balanced AWDT | **2,724** | 10 | 7 | 6 | 6 | 22 | 32 | 156 | 292 | 277 | 232 | 144 | 166 | 165 | 141 | 139 | 167 | 178 | 156 | 150 | 77 | 73 | 67 | 41 | 16 |
| 38 | SR 112 | WB | Exit | NW 22nd Avenue | Raw Count | **5,251** | 72 | 67 | 44 | 37 | 33 | 80 | 163 | 177 | 202 | 226 | 196 | 246 | 245 | 232 | 266 | 393 | 536 | 889 | 537 | 293 | 98 | 72 | 38 | 109 |
| | | | | | AWDT | **4,972** | 68 | 63 | 42 | 35 | 31 | 76 | 154 | 168 | 191 | 214 | 186 | 233 | 232 | 220 | 252 | 372 | 508 | 842 | 508 | 277 | 93 | 68 | 36 | 103 |
| | | | | | Balanced AWDT | **5,211** | 89 | 70 | 45 | 42 | 37 | 76 | 155 | 163 | 191 | 238 | 208 | 249 | 261 | 254 | 283 | 374 | 489 | 774 | 472 | 295 | 128 | 113 | 62 | 143 |
| 36 | SR 112 | WB | Entrance | NW 22nd Avenue | Raw Count | **5,851** | 44 | 36 | 34 | 57 | 87 | 178 | 384 | 464 | 405 | 292 | 246 | 312 | 310 | 289 | 302 | 322 | 320 | 240 | 233 | 234 | 291 | 302 | 306 | 163 |
| | | | | | AWDT | **5,540** | 42 | 34 | 32 | 54 | 82 | 169 | 364 | 439 | 383 | 276 | 233 | 295 | 294 | 274 | 286 | 305 | 303 | 227 | 221 | 222 | 276 | 286 | 290 | 154 |
| | | | | | Balanced AWDT | **8,298** | 124 | 79 | 64 | 52 | 67 | 185 | 362 | 526 | 495 | 390 | 335 | 384 | 412 | 419 | 476 | 595 | 731 | 890 | 724 | 417 | 220 | 112 | 92 | 148 |

(1) Actual Average Weekday Volumes from October 2012
(2) Location not included in balanced profile





**Table A.1-1 (cont'd)**
**Weekday Traffic Count Data By Hour**

| Location Number | Expressway | Dir | Ramp or Mainline | Location | | Hour Beginning | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 40 | SR 112 | WB | Mainline | Between NW 17th Avenue and NW 22nd Avenue | Raw Count | **56,729** | 640 | 351 | 283 | 447 | 695 | 1,252 | 2,187 | 2,881 | 3,563 | 3,342 | 2,838 | 2,913 | 2,983 | 3,278 | 3,623 | 4,271 | 4,533 | 4,464 | 3,811 | 2,587 | 1,865 | 1,557 | 1,327 | 1,043 |
| | | | | | AWDT | **53,717** | 606 | 332 | 268 | 423 | 658 | 1,186 | 2,071 | 2,728 | 3,373 | 3,165 | 2,687 | 2,758 | 2,825 | 3,104 | 3,430 | 4,044 | 4,292 | 4,227 | 3,608 | 2,450 | 1,766 | 1,474 | 1,256 | 988 |
| | | | | | Balanced AWDT | **53,717** | 606 | 332 | 268 | 423 | 658 | 1,186 | 2,071 | 2,728 | 3,373 | 3,165 | 2,687 | 2,758 | 2,825 | 3,104 | 3,430 | 4,044 | 4,292 | 4,227 | 3,608 | 2,450 | 1,766 | 1,474 | 1,256 | 988 |
| 41 | SR 112 | EB | Mainline | Between NW 17th Avenue and NW 12th Avenue - Toll Plaza | Count [2] | **43,627** | 440 | 198 | 133 | 109 | 246 | 647 | 1,768 | 3,409 | 3,902 | 2,950 | 2,184 | 2,078 | 2,103 | 2,233 | 2,530 | 2,727 | 2,850 | 3,279 | 3,080 | 2,198 | 1,477 | 1,248 | 1,100 | 738 |
| | | | | | Actual AWDT | **43,740** | 441 | 199 | 133 | 110 | 247 | 649 | 1,773 | 3,418 | 3,912 | 2,958 | 2,190 | 2,083 | 2,108 | 2,238 | 2,537 | 2,734 | 2,858 | 3,287 | 3,088 | 2,204 | 1,480 | 1,251 | 1,103 | 740 |
| | | | | | Balanced AWDT | **43,740** | 441 | 199 | 133 | 110 | 247 | 649 | 1,773 | 3,418 | 3,912 | 2,958 | 2,190 | 2,083 | 2,108 | 2,238 | 2,537 | 2,734 | 2,858 | 3,287 | 3,088 | 2,204 | 1,480 | 1,251 | 1,103 | 740 |
| 42 | SR 112 | WB | Exit | NW 17th Avenue via NW 40th Street | Raw Count | **6,216** | 120 | 77 | 56 | 54 | 45 | 74 | 204 | 327 | 220 | 278 | 326 | 332 | 377 | 361 | 363 | 466 | 545 | 538 | 467 | 342 | 188 | 171 | 119 | 171 |
| | | | | | AWDT | **5,886** | 113 | 72 | 53 | 51 | 43 | 70 | 193 | 310 | 208 | 263 | 309 | 314 | 357 | 341 | 344 | 441 | 516 | 509 | 442 | 323 | 178 | 162 | 113 | 161 |
| | | | | | Balanced AWDT | **5,886** | 113 | 72 | 53 | 51 | 43 | 70 | 193 | 310 | 208 | 263 | 309 | 314 | 357 | 341 | 344 | 441 | 516 | 509 | 442 | 323 | 178 | 162 | 113 | 161 |
| 43 | SR 112 | EB | Exit | NW 12th Ave via NW 39th Street | Raw Count | **1,263** | 10 | 8 | 7 | 6 | 5 | 17 | 45 | 104 | 139 | 107 | 76 | 75 | 97 | 97 | 85 | 93 | 75 | 60 | 45 | 41 | 26 | 21 | 14 | 14 |
| | | | | | AWDT | **1,196** | 9 | 8 | 6 | 6 | 4 | 16 | 42 | 98 | 132 | 101 | 72 | 71 | 92 | 92 | 80 | 88 | 71 | 56 | 43 | 39 | 25 | 20 | 13 | 13 |
| | | | | | Balanced AWDT | **1,196** | 9 | 8 | 6 | 6 | 4 | 16 | 42 | 98 | 132 | 101 | 72 | 71 | 92 | 92 | 80 | 88 | 71 | 56 | 43 | 39 | 25 | 20 | 13 | 13 |
| 48 | SR 836 | EB | Mainline | Between NW 137th Avenue and HEFT - Toll Gantry | Count [2] | **11,083** | 52 | 28 | 22 | 44 | 86 | 313 | 1,180 | 1,786 | 1,476 | 892 | 665 | 496 | 455 | 486 | 448 | 414 | 390 | 413 | 407 | 339 | 225 | 201 | 169 | 95 |
| | | | | | Actual AWDT | **10,932** | 52 | 28 | 22 | 43 | 85 | 308 | 1,164 | 1,762 | 1,456 | 880 | 656 | 489 | 449 | 479 | 442 | 409 | 385 | 407 | 401 | 335 | 222 | 198 | 166 | 94 |
| | | | | | Balanced AWDT | **10,932** | 52 | 28 | 22 | 43 | 85 | 308 | 1,164 | 1,762 | 1,456 | 880 | 656 | 489 | 449 | 479 | 442 | 409 | 385 | 407 | 401 | 335 | 222 | 198 | 166 | 94 |
| 49 | SR 836 | WB | Mainline | Between HEFT and NW 137th Avenue - Toll Gantry | Count [2] | **12,594** | 197 | 92 | 51 | 37 | 57 | 104 | 195 | 309 | 302 | 312 | 322 | 411 | 481 | 597 | 703 | 915 | 1,291 | 1,708 | 1,495 | 985 | 731 | 552 | 437 | 309 |
| | | | | | Actual AWDT | **12,341** | 193 | 90 | 50 | 36 | 56 | 102 | 191 | 303 | 296 | 306 | 315 | 403 | 472 | 585 | 689 | 897 | 1,265 | 1,673 | 1,465 | 965 | 717 | 541 | 429 | 303 |
| | | | | | Balanced AWDT | **12,341** | 193 | 90 | 50 | 36 | 56 | 102 | 191 | 303 | 296 | 306 | 315 | 403 | 472 | 585 | 689 | 897 | 1,265 | 1,673 | 1,465 | 965 | 717 | 541 | 429 | 303 |
| 50 | SR 836 | EB | Entrance | HEFT SB | Raw Count | **8,070** | 32 | 22 | 9 | 22 | 21 | 65 | 254 | 660 | 801 | 595 | 471 | 389 | 405 | 439 | 447 | 429 | 597 | 858 | 707 | 321 | 194 | 155 | 114 | 68 |
| | | | | | AWDT | **7,695** | 31 | 21 | 9 | 21 | 20 | 62 | 242 | 629 | 764 | 567 | 449 | 370 | 386 | 418 | 426 | 409 | 569 | 818 | 674 | 306 | 185 | 147 | 108 | 64 |
| | | | | | Balanced AWDT | **8,412** | 30 | 18 | 7 | 21 | 21 | 63 | 284 | 714 | 817 | 631 | 480 | 396 | 417 | 440 | 466 | 459 | 612 | 899 | 751 | 353 | 205 | 148 | 117 | 62 |
| 51 | SR 836 | EB | Entrance | HEFT NB | Raw Count | **29,584** | 197 | 120 | 97 | 142 | 269 | 722 | 2,081 | 3,027 | 2,971 | 2,439 | 2,003 | 1,818 | 1,706 | 1,670 | 1,545 | 1,435 | 1,295 | 1,257 | 1,102 | 1,004 | 853 | 777 | 671 | 390 |
| | | | | | AWDT | **28,210** | 187 | 114 | 92 | 135 | 256 | 688 | 1,984 | 2,886 | 2,833 | 2,325 | 1,910 | 1,734 | 1,626 | 1,592 | 1,473 | 1,368 | 1,234 | 1,198 | 1,050 | 957 | 813 | 740 | 640 | 371 |
| | | | | | Balanced AWDT | **30,775** | 185 | 99 | 74 | 137 | 270 | 698 | 2,329 | 3,276 | 3,031 | 2,589 | 2,042 | 1,855 | 1,756 | 1,675 | 1,613 | 1,536 | 1,328 | 1,316 | 1,171 | 1,103 | 901 | 743 | 690 | 361 |
| 52 | SR 836 | WB | Exit | HEFT NB | Raw Count | **10,732** | 104 | 51 | 34 | 36 | 43 | 91 | 283 | 549 | 819 | 624 | 450 | 516 | 577 | 584 | 609 | 622 | 816 | 1,185 | 1,010 | 658 | 420 | 279 | 222 | 147 |
| | | | | | AWDT | **10,625** | 103 | 50 | 33 | 36 | 42 | 90 | 280 | 544 | 811 | 618 | 446 | 511 | 572 | 578 | 603 | 616 | 808 | 1,174 | 1,001 | 652 | 416 | 276 | 220 | 145 |
| | | | | | Balanced AWDT | **10,625** | 103 | 50 | 33 | 36 | 42 | 90 | 280 | 544 | 811 | 618 | 446 | 511 | 572 | 578 | 603 | 616 | 808 | 1,174 | 1,001 | 652 | 416 | 276 | 220 | 145 |
| 53 | SR 836 | WB | Exit | HEFT SB | Raw Count | **36,454** | 540 | 286 | 195 | 184 | 159 | 296 | 705 | 1,248 | 1,415 | 1,449 | 1,497 | 1,700 | 1,924 | 1,935 | 2,296 | 2,683 | 3,228 | 3,340 | 2,992 | 2,591 | 1,935 | 1,611 | 1,311 | 940 |
| | | | | | AWDT | **36,123** | 535 | 283 | 193 | 182 | 157 | 293 | 699 | 1,237 | 1,402 | 1,435 | 1,483 | 1,685 | 1,907 | 1,917 | 2,275 | 2,658 | 3,199 | 3,309 | 2,964 | 2,568 | 1,917 | 1,596 | 1,299 | 931 |
| | | | | | Balanced AWDT | **37,773** | 735 | 333 | 193 | 182 | 257 | 293 | 699 | 1,537 | 1,502 | 1,435 | 1,583 | 1,685 | 1,907 | 2,117 | 2,275 | 2,858 | 3,299 | 3,409 | 2,964 | 2,568 | 1,917 | 1,596 | 1,299 | 1,131 |
| 54 | SR 836 | EB | Exit | NW 107th Avenue via Ramp to HEFT NB Exit Ramp | Raw Count | **6,127** | 30 | 9 | 5 | 17 | 34 | 156 | 462 | 825 | 893 | 632 | 316 | 309 | 291 | 234 | 268 | 268 | 248 | 269 | 224 | 193 | 169 | 113 | 110 | 52 |
| | | | | | AWDT | **5,842** | 29 | 9 | 5 | 16 | 32 | 149 | 441 | 787 | 852 | 603 | 301 | 295 | 277 | 223 | 256 | 256 | 236 | 257 | 214 | 184 | 161 | 108 | 105 | 50 |
| | | | | | Balanced AWDT | **5,279** | 29 | 10 | 6 | 16 | 31 | 147 | 364 | 680 | 792 | 534 | 281 | 274 | 255 | 211 | 231 | 224 | 219 | 231 | 189 | 156 | 144 | 107 | 97 | 51 |
| 55 | SR 836 | EB | Entrance | NW 107th Avenue SB | Raw Count | **8,563** | 95 | 21 | 19 | 16 | 20 | 52 | 126 | 197 | 251 | 267 | 379 | 444 | 576 | 597 | 528 | 643 | 684 | 778 | 729 | 532 | 506 | 577 | 347 | 179 |
| | | | | | AWDT | **8,165** | 91 | 20 | 18 | 15 | 19 | 50 | 120 | 188 | 239 | 255 | 361 | 423 | 549 | 569 | 503 | 613 | 652 | 742 | 695 | 507 | 482 | 550 | 331 | 171 |
| | | | | | Balanced AWDT | **8,856** | 89 | 17 | 15 | 15 | 20 | 50 | 141 | 213 | 256 | 284 | 386 | 453 | 593 | 599 | 551 | 688 | 702 | 815 | 775 | 585 | 534 | 552 | 357 | 166 |
| 56 | SR 836 | WB | Exit | HEFT / NW 107th Avenue SB | Raw Count | **39,069** | 510 | 285 | 196 | 174 | 180 | 343 | 776 | 1,455 | 1,706 | 1,826 | 1,583 | 1,840 | 2,106 | 2,134 | 2,359 | 2,835 | 3,389 | 3,652 | 3,241 | 2,640 | 1,961 | 1,548 | 1,305 | 1,025 |
| | | | | | AWDT | **38,715** | 505 | 282 | 194 | 172 | 178 | 340 | 769 | 1,442 | 1,691 | 1,809 | 1,569 | 1,823 | 2,087 | 2,115 | 2,338 | 2,809 | 3,358 | 3,619 | 3,212 | 2,616 | 1,943 | 1,534 | 1,293 | 1,016 |
| | | | | | Balanced AWDT | **39,015** | 705 | 282 | 194 | 172 | 278 | 340 | 769 | 1,442 | 1,691 | 1,609 | 1,569 | 1,823 | 2,087 | 2,115 | 2,338 | 2,809 | 3,358 | 3,619 | 3,212 | 2,616 | 1,943 | 1,534 | 1,293 | 1,216 |
| 57 | SR 836 | EB | Exit | NW 107th Avenue SB via HEFT / NW 107th Avenue SB Ramp | Raw Count | **4,929** | 58 | 40 | 22 | 14 | 27 | 44 | 148 | 148 | 267 | 308 | 224 | 269 | 306 | 301 | 276 | 313 | 359 | 409 | 396 | 318 | 228 | 211 | 140 | 103 |
| | | | | | AWDT | **4,884** | 57 | 40 | 22 | 14 | 27 | 44 | 147 | 147 | 265 | 305 | 222 | 267 | 303 | 298 | 273 | 310 | 356 | 405 | 392 | 315 | 226 | 209 | 139 | 102 |
| | | | | | Balanced AWDT | **5,084** | 57 | 40 | 22 | 14 | 27 | 44 | 147 | 147 | 265 | 305 | 322 | 317 | 303 | 298 | 273 | 310 | 356 | 405 | 392 | 315 | 226 | 209 | 139 | 152 |
| 58 | SR 836 | WB | Entrance | NW 107th Avenue via HEFT / NW 107th Avenue SB Ramp | Raw Count | **10,813** | 84 | 42 | 19 | 36 | 34 | 91 | 280 | 530 | 580 | 446 | 413 | 431 | 496 | 558 | 603 | 794 | 977 | 1,291 | 1,041 | 689 | 465 | 460 | 283 | 170 |
| | | | | | AWDT | **10,715** | 83 | 42 | 19 | 36 | 34 | 90 | 277 | 525 | 575 | 442 | 409 | 427 | 492 | 553 | 598 | 787 | 968 | 1,279 | 1,032 | 683 | 461 | 456 | 280 | 168 |
| | | | | | Balanced AWDT | **10,715** | 83 | 42 | 19 | 36 | 34 | 90 | 277 | 525 | 575 | 442 | 409 | 427 | 492 | 553 | 598 | 787 | 968 | 1,279 | 1,032 | 683 | 461 | 456 | 280 | 168 |
| 63 | SR 836 | EB | Entrance | NW 107th Avenue NB | Raw Count | **5,354** | 44 | 32 | 22 | 24 | 39 | 187 | 439 | 419 | 401 | 310 | 309 | 290 | 292 | 280 | 305 | 304 | 264 | 287 | 283 | 250 | 214 | 178 | 103 | 78 |
| | | | | | AWDT | **5,105** | 42 | 31 | 21 | 23 | 37 | 178 | 419 | 400 | 382 | 296 | 295 | 277 | 278 | 267 | 291 | 290 | 252 | 274 | 270 | 238 | 204 | 170 | 98 | 74 |
| | | | | | Balanced AWDT | **5,568** | 41 | 26 | 17 | 23 | 39 | 181 | 491 | 453 | 409 | 329 | 315 | 296 | 301 | 281 | 318 | 325 | 271 | 301 | 301 | 275 | 226 | 170 | 106 | 72 |
| 64 | SR 836 | EB | Ramp | Connect Ramp from Mainline to NW 107th Avenue NB Entry Ramp | Raw Count | **2,881** | 35 | 18 | 5 | 8 | 12 | 20 | 62 | 121 | 360 | 113 | 110 | 113 | 144 | 178 | 161 | 198 | 191 | 187 | 158 | 161 | 164 | 183 | 108 | 71 |
| | | | | | AWDT | **2,747** | 33 | 17 | 5 | 8 | 11 | 19 | 59 | 115 | 343 | 108 | 105 | 108 | 137 | 170 | 154 | 189 | 182 | 178 | 151 | 154 | 156 | 174 | 103 | 68 |
| | | | | | Balanced AWDT | **2,747** | 33 | 17 | 5 | 8 | 11 | 19 | 59 | 115 | 343 | 108 | 105 | 108 | 137 | 170 | 154 | 189 | 182 | 178 | 151 | 154 | 156 | 174 | 103 | 68 |
| 65X | SR 836 | EB | Mainline | West of NW 97th Avenue - Toll Plaza | Count [2] | **59,499** | 369 | 179 | 128 | 224 | 406 | 1,158 | 4,061 | 5,761 | 5,198 | 4,195 | 3,613 | 3,229 | 3,274 | 3,276 | 3,172 | 3,206 | 3,090 | 3,520 | 3,223 | 2,503 | 1,952 | 1,710 | 1,344 | 706 |
| | | | | | Actual AWDT | **59,264** | 368 | 178 | 128 | 223 | 404 | 1,154 | 4,045 | 5,739 | 5,178 | 4,179 | 3,598 | 3,216 | 3,261 | 3,263 | 3,160 | 3,194 | 3,078 | 3,506 | 3,210 | 2,493 | 1,944 | 1,703 | 1,338 | 704 |
| | | | | | Balanced AWDT | **59,264** | 368 | 178 | 128 | 223 | 404 | 1,154 | 4,045 | 5,739 | 5,178 | 4,179 | 3,598 | 3,216 | 3,261 | 3,263 | 3,160 | 3,194 | 3,078 | 3,506 | 3,210 | 2,493 | 1,944 | 1,703 | 1,338 | 704 |
| 66X | SR 836 | WB | Mainline | West of NW 97th Avenue - Toll Plaza | Count [1] | **65,198** | 1,239 | 643 | 394 | 321 | 439 | 498 | 1,241 | 2,461 | 2,814 | 2,712 | 2,803 | 3,191 | 3,508 | 3,796 | 3,980 | 4,637 | 5,512 | 6,078 | 5,361 | 4,270 | 3,216 | 2,368 | 1,903 | 1,813 |
| | | | | | Actual AWDT | **62,071** | 1,180 | 612 | 375 | 305 | 418 | 474 | 1,181 | 2,343 | 2,679 | 2,582 | 2,669 | 3,038 | 3,340 | 3,614 | 3,789 | 4,415 | 5,247 | 5,786 | 5,104 | 4,065 | 3,062 | 2,254 | 1,812 | 1,726 |
| | | | | | Balanced AWDT | **62,071** | 1,180 | 612 | 375 | 305

**Table A.1-1 (cont'd)**
**Weekday Traffic Count Data By Hour**

| Location Number | Roadway | Dir | Ramp or Mainline | Location | | Hour Beginning | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 90 | SR 836 | EB | Mainline | Between NW 72nd Avenue and NW 57th Avenue | Raw Count | **95,296** | 1,091 | 723 | 509 | 841 | 1,157 | 2,456 | 5,349 | 5,915 | 5,985 | 5,950 | 5,530 | 5,483 | 5,494 | 5,368 | 5,362 | 5,237 | 5,110 | 5,411 | 5,360 | 4,478 | 3,776 | 3,390 | 2,804 | 2,521 |
| | | | | | AWDT | **95,253** | 1,091 | 722 | 509 | 841 | 1,156 | 2,455 | 5,347 | 5,912 | 5,982 | 5,947 | 5,528 | 5,481 | 5,492 | 5,366 | 5,359 | 5,234 | 5,107 | 5,409 | 5,358 | 4,475 | 3,774 | 3,388 | 2,802 | 2,520 |
| | | | | | Balanced AWDT | **95,253** | 1,091 | 722 | 509 | 841 | 1,156 | 2,455 | 5,347 | 5,912 | 5,982 | 5,947 | 5,528 | 5,481 | 5,492 | 5,366 | 5,359 | 5,234 | 5,107 | 5,409 | 5,358 | 4,475 | 3,774 | 3,388 | 2,802 | 2,520 |
| 91 | SR 836 | WB | Mainline | Between NW 57th Avenue and NW 72nd Avenue | Raw Count | **99,890** | 1,546 | 870 | 529 | 489 | 681 | 1,482 | 3,595 | 5,680 | 5,797 | 5,249 | 5,095 | 5,224 | 5,777 | 5,931 | 6,146 | 6,146 | 6,301 | 5,605 | 4,419 | 5,929 | 4,571 | 3,974 | 3,915 | 2,944 |
| | | | | | AWDT | **101,694** | 1,574 | 886 | 538 | 497 | 693 | 1,509 | 3,660 | 5,782 | 5,902 | 5,344 | 5,187 | 5,318 | 5,881 | 6,038 | 6,257 | 6,257 | 6,415 | 5,706 | 4,535 | 6,036 | 4,653 | 4,045 | 3,986 | 2,997 |
| | | | | | Balanced AWDT | **103,894** | 1,574 | 886 | 538 | 497 | 693 | 1,509 | 3,760 | 5,882 | 5,902 | 5,344 | 5,187 | 5,318 | 5,881 | 6,038 | 6,257 | 6,257 | 6,915 | 7,206 | 6,535 | 6,036 | 4,653 | 4,045 | 3,986 | 2,997 |
| 92 | SR 836 | EB | Exit | NW 57th Avenue / Red Road | Raw Count | **9,868** | 96 | 43 | 22 | 57 | 71 | 186 | 337 | 509 | 934 | 842 | 623 | 617 | 568 | 634 | 555 | 526 | 557 | 588 | 521 | 387 | 374 | 366 | 317 | 138 |
| | | | | | AWDT | **9,976** | 97 | 43 | 22 | 58 | 72 | 188 | 341 | 515 | 944 | 851 | 630 | 624 | 574 | 641 | 561 | 532 | 563 | 594 | 527 | 391 | 378 | 370 | 320 | 140 |
| | | | | | Balanced AWDT | **12,134** | 139 | 70 | 37 | 110 | 118 | 259 | 434 | 604 | 1,066 | 864 | 696 | 748 | 696 | 774 | 699 | 669 | 664 | 711 | 644 | 492 | 467 | 490 | 414 | 270 |
| 93 | SR 836 | EB | Entrance | NW 57th Avenue / Red Road | Raw Count | **11,427** | 93 | 45 | 35 | 52 | 92 | 170 | 432 | 815 | 847 | 704 | 625 | 604 | 611 | 680 | 679 | 657 | 701 | 987 | 835 | 614 | 415 | 313 | 247 | 174 |
| | | | | | AWDT | **11,552** | 94 | 45 | 35 | 53 | 93 | 172 | 437 | 824 | 856 | 712 | 632 | 611 | 618 | 687 | 686 | 664 | 709 | 998 | 844 | 621 | 420 | 316 | 250 | 176 |
| | | | | | Balanced AWDT | **13,033** | 92 | 39 | 29 | 34 | 77 | 175 | 476 | 958 | 1,022 | 908 | 765 | 698 | 701 | 782 | 762 | 732 | 821 | 1,144 | 952 | 684 | 469 | 333 | 269 | 199 |
| 94 | SR 836 | WB | Exit | NW 57th Avenue / Red Road SB | Raw Count | **11,158** | 142 | 66 | 58 | 63 | 56 | 123 | 361 | 836 | 1,299 | 932 | 616 | 673 | 642 | 733 | 673 | 552 | 512 | 489 | 454 | 490 | 415 | 343 | 363 | 267 |
| | | | | | AWDT | **11,435** | 146 | 68 | 59 | 65 | 57 | 126 | 370 | 857 | 1,331 | 955 | 631 | 690 | 658 | 751 | 690 | 566 | 525 | 501 | 465 | 502 | 425 | 352 | 372 | 274 |
| | | | | | Balanced AWDT | **12,110** | 147 | 63 | 59 | 71 | 64 | 135 | 396 | 906 | 1,377 | 969 | 669 | 748 | 690 | 802 | 738 | 648 | 632 | 631 | 549 | 497 | 437 | 347 | 328 | 205 |
| 95 | SR 836 | WB | Entrance | NW 57th Avenue / Red Road | Raw Count | **12,714** | 119 | 61 | 32 | 40 | 56 | 130 | 325 | 489 | 523 | 433 | 432 | 542 | 658 | 682 | 717 | 692 | 1,220 | 2,141 | 1,431 | 698 | 410 | 348 | 351 | 184 |
| | | | | | AWDT | **13,029** | 122 | 63 | 33 | 41 | 57 | 133 | 333 | 501 | 536 | 444 | 443 | 555 | 674 | 699 | 735 | 709 | 1,250 | 2,194 | 1,466 | 715 | 420 | 357 | 360 | 189 |
| | | | | | Balanced AWDT | **11,625** | 120 | 67 | 33 | 37 | 50 | 123 | 309 | 472 | 518 | 437 | 416 | 509 | 641 | 652 | 683 | 606 | 994 | 1,623 | 1,203 | 723 | 409 | 361 | 402 | 236 |
| 96 | SR 836 | EB | Exit | NW 45th Avenue | Raw Count | **5,045** | 38 | 30 | 51 | 185 | 193 | 173 | 216 | 160 | 246 | 290 | 237 | 352 | 308 | 373 | 302 | 273 | 279 | 345 | 234 | 188 | 193 | 169 | 123 | 87 |
| | | | | | AWDT | **5,157** | 39 | 31 | 52 | 189 | 197 | 177 | 221 | 164 | 251 | 296 | 242 | 360 | 315 | 381 | 309 | 279 | 285 | 353 | 239 | 192 | 197 | 173 | 126 | 89 |
| | | | | | Balanced AWDT | **4,488** | 40 | 35 | 62 | 121 | 114 | 174 | 201 | 200 | 233 | 215 | 191 | 308 | 272 | 329 | 275 | 251 | 240 | 301 | 209 | 173 | 174 | 163 | 116 | 123 |
| 97 | SR 836 | WB | Entrance | NW 45th Avenue | Raw Count | **28,828** | 488 | 276 | 150 | 188 | 223 | 462 | 999 | 1,423 | 1,472 | 1,439 | 1,196 | 1,322 | 1,426 | 1,546 | 1,596 | 1,694 | 2,230 | 2,341 | 2,176 | 1,741 | 1,409 | 1,198 | 1,127 | 706 |
| | | | | | AWDT | **29,736** | 503 | 285 | 155 | 194 | 230 | 477 | 1,030 | 1,468 | 1,518 | 1,484 | 1,234 | 1,364 | 1,471 | 1,595 | 1,646 | 1,747 | 2,300 | 2,415 | 2,245 | 1,796 | 1,453 | 1,236 | 1,163 | 728 |
| | | | | | Balanced AWDT | **27,507** | 497 | 303 | 155 | 174 | 202 | 442 | 957 | 1,383 | 1,466 | 1,463 | 1,160 | 1,249 | 1,399 | 1,487 | 1,530 | 1,494 | 1,828 | 1,787 | 1,842 | 1,814 | 1,414 | 1,250 | 1,298 | 912 |
| 98 | SR 836 | EB | Exit | Le Jeune Road / NW 42nd Avenue SB | Raw Count | **9,736** | 117 | 59 | 36 | 23 | 43 | 127 | 277 | 405 | 591 | 680 | 646 | 660 | 641 | 589 | 549 | 556 | 555 | 665 | 598 | 539 | 434 | 407 | 338 | 208 |
| | | | | | AWDT | **9,953** | 119 | 60 | 36 | 23 | 44 | 130 | 283 | 414 | 604 | 695 | 660 | 674 | 655 | 602 | 561 | 568 | 567 | 679 | 611 | 551 | 443 | 416 | 345 | 212 |
| | | | | | Balanced AWDT | **8,212** | 115 | 65 | 41 | 29 | 49 | 120 | 242 | 327 | 459 | 475 | 491 | 544 | 534 | 489 | 471 | 481 | 450 | 547 | 502 | 466 | 369 | 371 | 300 | 276 |
| 99 | SR 836 | EB | Exit | Le Jeune Road / NW 42nd Avenue NB | Raw Count | **21,750** | 216 | 139 | 116 | 218 | 393 | 887 | 1,354 | 1,289 | 1,243 | 1,242 | 1,207 | 1,171 | 1,159 | 1,343 | 1,343 | 1,382 | 1,306 | 1,378 | 1,149 | 886 | 737 | 703 | 566 | 329 |
| | | | | | AWDT | **22,235** | 221 | 142 | 118 | 222 | 402 | 907 | 1,384 | 1,318 | 1,270 | 1,269 | 1,234 | 1,197 | 1,184 | 1,372 | 1,373 | 1,413 | 1,335 | 1,408 | 1,175 | 906 | 753 | 718 | 578 | 336 |
| | | | | | Balanced AWDT | **19,697** | 226 | 162 | 140 | 302 | 471 | 891 | 1,259 | 1,103 | 1,024 | 930 | 973 | 1,024 | 1,024 | 1,183 | 1,221 | 1,268 | 1,123 | 1,202 | 1,025 | 813 | 665 | 680 | 533 | 463 |
| 100 | SR 836 | EB | Entrance | Le Jeune Road / NW 42nd Avenue SB | Raw Count | **4,397** | 102 | 49 | 24 | 27 | 47 | 106 | 143 | 196 | 258 | 238 | 239 | 251 | 254 | 239 | 275 | 243 | 217 | 237 | 241 | 258 | 218 | 226 | 207 | 109 |
| | | | | | AWDT | **4,495** | 104 | 50 | 25 | 27 | 48 | 108 | 146 | 200 | 263 | 243 | 244 | 256 | 260 | 244 | 281 | 248 | 222 | 242 | 246 | 263 | 223 | 231 | 211 | 111 |
| | | | | | Balanced AWDT | **4,983** | 101 | 43 | 20 | 17 | 40 | 110 | 159 | 232 | 314 | 330 | 295 | 293 | 295 | 278 | 312 | 273 | 257 | 277 | 278 | 290 | 249 | 243 | 228 | 69 |
| 101 | SR 836 | EB | Entrance | Le Jeune Road / NW 42nd Avenue NB | Raw Count | **6,107** | 65 | 49 | 27 | 24 | 45 | 101 | 245 | 408 | 487 | 443 | 398 | 374 | 365 | 387 | 361 | 347 | 306 | 257 | 278 | 298 | 268 | 243 | 204 | 132 |
| | | | | | AWDT | **6,243** | 66 | 50 | 28 | 24 | 45 | 103 | 250 | 417 | 498 | 453 | 406 | 382 | 373 | 395 | 369 | 354 | 313 | 263 | 284 | 304 | 274 | 248 | 209 | 135 |
| | | | | | Balanced AWDT | **7,015** | 65 | 43 | 22 | 15 | 38 | 105 | 273 | 485 | 594 | 578 | 492 | 437 | 424 | 450 | 410 | 390 | 362 | 301 | 320 | 335 | 306 | 262 | 225 | 84 |
| 102 | SR 836 | WB | Exit | Le Jeune Road / NW 42nd Avenue NB | Raw Count | **5,921** | 76 | 59 | 42 | 65 | 110 | 215 | 309 | 318 | 321 | 333 | 361 | 351 | 402 | 462 | 422 | 297 | 221 | 184 | 201 | 309 | 295 | 228 | 204 | 144 |
| | | | | | AWDT | **6,108** | 78 | 60 | 43 | 67 | 113 | 221 | 318 | 328 | 331 | 343 | 372 | 362 | 414 | 477 | 435 | 306 | 228 | 190 | 207 | 318 | 304 | 235 | 210 | 148 |
| | | | | | Balanced AWDT | **6,932** | 79 | 56 | 43 | 73 | 127 | 237 | 341 | 347 | 342 | 348 | 394 | 392 | 434 | 509 | 465 | 465 | 395 | 365 | 362 | 315 | 312 | 232 | 186 | 111 |
| 103 | SR 836 | WB | Exit | Le Jeune Road / NW 42nd Avenue SB | Raw Count | **6,696** | 110 | 76 | 48 | 47 | 42 | 61 | 139 | 299 | 381 | 358 | 385 | 435 | 415 | 446 | 463 | 444 | 361 | 344 | 416 | 403 | 315 | 267 | 236 | 210 |
| | | | | | AWDT | **6,907** | 113 | 78 | 50 | 48 | 43 | 62 | 143 | 308 | 392 | 369 | 397 | 448 | 428 | 460 | 478 | 457 | 372 | 355 | 429 | 416 | 325 | 275 | 243 | 217 |
| | | | | | Balanced AWDT | **7,588** | 114 | 73 | 49 | 53 | 48 | 67 | 154 | 326 | 406 | 375 | 420 | 486 | 449 | 491 | 511 | 524 | 569 | 573 | 506 | 411 | 334 | 272 | 215 | 162 |
| 88 | SR 836 | WB | Entrance | Le Jeune Road / NW 42nd Avenue SB | Raw Count | **16,609** | 166 | 86 | 75 | 77 | 104 | 218 | 584 | 921 | 1,031 | 822 | 711 | 697 | 808 | 918 | 1,059 | 1,381 | 1,549 | 1,485 | 1,312 | 920 | 611 | 439 | 363 | 276 |
| | | | | | AWDT | **17,132** | 171 | 89 | 77 | 79 | 107 | 225 | 602 | 950 | 1,063 | 848 | 733 | 719 | 833 | 947 | 1,092 | 1,425 | 1,598 | 1,531 | 1,353 | 948 | 630 | 453 | 374 | 285 |
| | | | | | Balanced AWDT | **9,604** | 104 | 58 | 47 | 44 | 58 | 128 | 344 | 551 | 632 | 514 | 424 | 405 | 488 | 543 | 625 | 750 | 782 | 697 | 683 | 590 | 377 | 282 | 257 | 219 |
| 89 | SR 836 | WB | Ramp | Connect Ramp from MIA to NW 45th Avenue | Raw Count | **27,218** | 382 | 206 | 135 | 177 | 205 | 433 | 876 | 1,243 | 1,414 | 1,326 | 1,079 | 1,239 | 1,338 | 1,616 | 1,921 | 1,891 | 2,155 | 2,167 | 2,126 | 1,591 | 1,252 | 987 | 914 | 545 |
| | | | | | AWDT | **28,075** | 394 | 212 | 139 | 183 | 211 | 447 | 904 | 1,282 | 1,459 | 1,368 | 1,113 | 1,278 | 1,380 | 1,667 | 1,982 | 1,951 | 2,223 | 2,235 | 2,193 | 1,641 | 1,291 | 1,018 | 943 | 562 |
| | | | | | Balanced AWDT | **27,507** | 497 | 303 | 155 | 174 | 202 | 442 | 957 | 1,383 | 1,466 | 1,463 | 1,160 | 1,249 | 1,399 | 1,487 | 1,530 | 1,494 | 1,828 | 1,787 | 1,842 | 1,814 | 1,414 | 1,250 | 1,298 | 912 |
| 104 | SR 836 | EB | Entrance | NW 37th Ave / Douglas Road | Raw Count | **6,433** | 120 | 43 | 33 | 30 | 32 | 91 | 184 | 279 | 390 | 325 | 306 | 313 | 332 | 407 | 450 | 395 | 403 | 407 | 456 | 426 | 340 | 303 | 225 | 143 |
| | | | | | AWDT | **6,576** | 123 | 44 | 34 | 31 | 33 | 93 | 188 | 285 | 399 | 332 | 313 | 320 | 339 | 416 | 460 | 404 | 412 | 416 | 466 | 435 | 348 | 310 | 230 | 146 |
| | | | | | Balanced AWDT | **7,798** | 127 | 40 | 29 | 21 | 29 | 101 | 218 | 352 | 506 | 450 | 403 | 389 | 409 | 503 | 543 | 473 | 507 | 507 | 559 | 510 | 413 | 347 | 264 | 96 |
| 105 | SR 836 | WB | Exit | NW 37th Ave / Douglas Road | Raw Count | **12,499** | 138 | 127 | 76 | 98 | 115 | 209 | 319 | 661 | 1,019 | 859 | 739 | 678 | 699 | 735 | 817 | 800 | 647 | 649 | 664 | 796 | 579 | 431 | 376 | 268 |
| | | | | | AWDT | **12,893** | 142 | 131 | 78 | 101 | 119 | 216 | 329 | 682 | 1,051 | 886 | 762 | 699 | 721 | 758 | 843 | 825 | 667 | 669 | 685 | 821 | 597 | 445 | 388 | 276 |
| | | | | | Balanced AWDT | **8,094** | 83 | 70 | 45 | 64 | 76 | 133 | 203 | 414 | 624 | 516 | 464 | 435 | 434 | 465 | 518 | 543 | 531 | 557 | 532 | 467 | 352 | 252 | 197 | 119 |
| 106 | SR 836 | EB | Ramp | NW 27th Avenue SB | Raw Count | **14,685** | 208 | 123 | 61 | 66 | 91 | 271 | 546 | 668 | 764 | 975 | 895 | 782 | 846 | 836 | 861 | 838 | 900 | 886 | 846 | 807 | 703 | 669 | 630 | 413 |
| | | | | | AWDT | **15,178** | 215 | 127 | 63 | 68 | 94 | 280 | 564 | 690 | 790 | 1,008 | 925 | 808 | 874 | 864 | 890 | 866 | 930 | 916 | 874 | 834 | 727 | 691 | 651 | 427 |
| | | | | | Balanced AWDT | **11,361** | 191 | 126 | 65 | 80 | 96 | 239 | 446 | 502 | 553 | 634 | 634 | 601 | 657 | 646 | 687 | 675 | 680 | 679 | 662 | 650 | 557 | 568 | 429 | 304 |

(1) Actual Average Weekday Volumes from October 2012
(2) Location not included in balanced profile





FINAL April 25, 2014

**Table A.1-1 (cont'd)**
**Weekday Traffic Count Data By Hour**

| Location Number | Roadway | Dir | Ramp or Mainline | Location | | Hour Beginning | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | Total | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
| 107 | SR 836 | EB | Entrance | NW 27th Avenue SB | Raw Count | **1,674** | 26 | 8 | 9 | 8 | 9 | 25 | 56 | 103 | 160 | 125 | 107 | 122 | 104 | 105 | 108 | 93 | 78 | 83 | 73 | 84 | 56 | 62 | 40 | 30 |
| | | | | | AWDT | **1,730** | 27 | 8 | 9 | 8 | 9 | 26 | 58 | 106 | 165 | 129 | 111 | 126 | 107 | 109 | 112 | 96 | 81 | 86 | 75 | 87 | 58 | 64 | 41 | 31 |
| | | | | | Balanced AWDT | **4,207** | 57 | 15 | 16 | 11 | 17 | 57 | 136 | 267 | 426 | 355 | 289 | 311 | 263 | 266 | 267 | 228 | 201 | 212 | 183 | 206 | 139 | 146 | 96 | 41 |
| 108 | SR 836 | EB | Exit | NW 27th Avenue NB | Raw Count | **9,999** | 152 | 87 | 65 | 77 | 124 | 251 | 633 | 663 | 564 | 556 | 614 | 689 | 565 | 595 | 584 | 597 | 751 | 733 | 526 | 446 | 390 | 108 | 110 | 119 |
| | | | | | AWDT | **10,335** | 157 | 90 | 67 | 80 | 128 | 259 | 654 | 685 | 583 | 575 | 635 | 712 | 584 | 615 | 604 | 617 | 776 | 758 | 544 | 461 | 403 | 112 | 114 | 123 |
| | | | | | Balanced AWDT | **9,072** | 161 | 103 | 80 | 108 | 150 | 255 | 595 | 574 | 470 | 416 | 501 | 610 | 505 | 530 | 537 | 554 | 653 | 647 | 474 | 414 | 356 | 106 | 105 | 170 |
| 109 | SR 836 | EB | Entrance | NW 27th Avenue NB | Raw Count | **2,720** | 23 | 14 | 10 | 12 | 11 | 39 | 111 | 183 | 207 | 162 | 155 | 194 | 169 | 196 | 177 | 174 | 155 | 150 | 144 | 136 | 87 | 82 | 73 | 56 |
| | | | | | AWDT | **2,811** | 24 | 14 | 10 | 12 | 11 | 40 | 115 | 189 | 214 | 167 | 160 | 201 | 175 | 203 | 183 | 180 | 160 | 155 | 149 | 141 | 90 | 85 | 75 | 58 |
| | | | | | Balanced AWDT | **3,163** | 23 | 12 | 8 | 8 | 9 | 41 | 125 | 220 | 255 | 214 | 194 | 229 | 198 | 231 | 203 | 198 | 186 | 178 | 168 | 155 | 101 | 89 | 81 | 36 |
| 110 | SR 836 | WB | Exit | NW 27th Avenue NB | Raw Count | **3,821** | 349 | 37 | 23 | 20 | 13 | 43 | 69 | 114 | 113 | 155 | 165 | 190 | 200 | 201 | 227 | 311 | 317 | 239 | 323 | 222 | 163 | 122 | 109 | 96 |
| | | | | | AWDT | **3,967** | 362 | 38 | 24 | 21 | 13 | 45 | 72 | 118 | 117 | 161 | 171 | 197 | 208 | 209 | 236 | 323 | 329 | 248 | 335 | 230 | 169 | 127 | 113 | 100 |
| | | | | | Balanced AWDT | **4,086** | 63 | 36 | 24 | 23 | 15 | 48 | 77 | 125 | 121 | 163 | 182 | 214 | 218 | 223 | 252 | 370 | 397 | 439 | 396 | 228 | 174 | 125 | 100 | 75 |
| 111 | SR 836 | WB | Entrance | NW 27th Avenue NB | Raw Count | **10,109** | 125 | 56 | 37 | 62 | 93 | 224 | 441 | 775 | 746 | 605 | 481 | 607 | 618 | 661 | 622 | 568 | 465 | 560 | 442 | 561 | 488 | 405 | 279 | 188 |
| | | | | | AWDT | **10,495** | 130 | 58 | 38 | 64 | 97 | 233 | 458 | 805 | 774 | 628 | 499 | 630 | 642 | 686 | 646 | 590 | 483 | 581 | 459 | 582 | 507 | 420 | 290 | 195 |
| | | | | | Balanced AWDT | **9,965** | 128 | 62 | 39 | 58 | 85 | 216 | 425 | 758 | 748 | 619 | 470 | 577 | 610 | 640 | 600 | 504 | 463 | 430 | 459 | 588 | 493 | 425 | 324 | 244 |
| 112 | SR 836 | WB | Exit | NW 27th Avenue SB | Raw Count | **4,414** | 52 | 41 | 26 | 21 | 29 | 44 | 93 | 185 | 244 | 267 | 266 | 320 | 312 | 305 | 302 | 329 | 222 | 217 | 244 | 271 | 211 | 173 | 135 | 105 |
| | | | | | AWDT | **4,583** | 54 | 43 | 27 | 22 | 30 | 46 | 97 | 192 | 253 | 277 | 276 | 332 | 324 | 317 | 314 | 342 | 230 | 225 | 253 | 281 | 219 | 180 | 140 | 109 |
| | | | | | Balanced AWDT | **5,065** | 55 | 40 | 27 | 24 | 34 | 49 | 103 | 203 | 262 | 281 | 293 | 360 | 340 | 338 | 336 | 391 | 398 | 347 | 299 | 278 | 225 | 177 | 124 | 82 |
| 113 | SR 836 | WB | Entrance | NW 27th Avenue SB | Raw Count | **9,422** | 256 | 55 | 35 | 45 | 71 | 146 | 392 | 590 | 535 | 521 | 481 | 540 | 621 | 648 | 600 | 650 | 646 | 659 | 470 | 453 | 383 | 268 | 207 | 150 |
| | | | | | AWDT | **9,782** | 266 | 57 | 36 | 47 | 74 | 152 | 407 | 613 | 555 | 541 | 499 | 561 | 645 | 673 | 623 | 675 | 671 | 684 | 488 | 470 | 398 | 278 | 215 | 156 |
| | | | | | Balanced AWDT | **8,963** | 114 | 61 | 36 | 42 | 65 | 140 | 378 | 577 | 536 | 533 | 470 | 513 | 613 | 627 | 579 | 577 | 533 | 506 | 482 | 475 | 387 | 282 | 240 | 195 |
| 114 | SR 836 | EB | Mainline | Between NW 17th Avenue and NW 12th Avenue - Toll Gantry | Count [1] | **58,790** | 636 | 305 | 170 | 160 | 291 | 876 | 2,754 | 4,003 | 4,390 | 4,235 | 3,622 | 3,252 | 3,322 | 3,262 | 3,323 | 3,732 | 3,005 | 3,283 | 3,863 | 3,358 | 2,660 | 2,247 | 1,872 | 1,169 |
| | | | | | Actual AWDT | **57,265** | 619 | 297 | 166 | 156 | 283 | 853 | 2,682 | 3,899 | 4,276 | 4,125 | 3,528 | 3,167 | 3,236 | 3,177 | 3,237 | 2,661 | 2,927 | 3,198 | 3,763 | 3,271 | 2,591 | 2,189 | 1,824 | 1,139 |
| | | | | | Balanced AWDT | **57,265** | 619 | 297 | 166 | 156 | 283 | 853 | 2,682 | 3,899 | 4,276 | 4,125 | 3,528 | 3,167 | 3,236 | 3,177 | 3,237 | 2,661 | 2,927 | 3,198 | 3,763 | 3,271 | 2,591 | 2,189 | 1,824 | 1,139 |
| 115 | SR 836 | WB | Mainline | Between NW 17th Avenue and NW 27th Avenue | Raw Count | **61,066** | 950 | 571 | 395 | 389 | 512 | 949 | 2,115 | 3,867 | 3,683 | 3,715 | 3,928 | 3,946 | 3,899 | 4,074 | 4,182 | 3,681 | 2,891 | 2,194 | 2,876 | 3,326 | 2,841 | 2,368 | 2,151 | 1,567 |
| | | | | | AWDT | **63,805** | 993 | 597 | 413 | 406 | 534 | 992 | 2,210 | 4,040 | 3,848 | 3,881 | 4,104 | 4,123 | 4,073 | 4,256 | 4,369 | 3,846 | 3,020 | 2,292 | 3,005 | 3,475 | 2,968 | 2,474 | 2,247 | 1,637 |
| | | | | | Balanced AWDT | **57,209** | 871 | 537 | 404 | 368 | 461 | 739 | 1,861 | 3,119 | 3,901 | 3,498 | 3,293 | 3,169 | 3,179 | 3,283 | 3,292 | 3,153 | 3,050 | 3,599 | 3,558 | 3,436 | 2,654 | 2,280 | 2,062 | 1,441 |
| 116 | SR 836 | EB | Exit | NW 17th Avenue - Toll Gantry | Count [1] | **10,815** | 60 | 37 | 31 | 31 | 63 | 200 | 709 | 1,014 | 889 | 910 | 751 | 630 | 660 | 629 | 636 | 801 | 610 | 604 | 475 | 338 | 250 | 196 | 191 | 102 |
| | | | | | Actual AWDT | **13,224** | 73 | 45 | 37 | 38 | 77 | 245 | 867 | 1,239 | 1,087 | 1,112 | 919 | 770 | 807 | 769 | 778 | 979 | 746 | 739 | 581 | 413 | 306 | 299 | 233 | 125 |
| | | | | | Balanced AWDT | **13,224** | 73 | 45 | 37 | 38 | 77 | 245 | 867 | 1,239 | 1,087 | 1,112 | 919 | 770 | 807 | 769 | 778 | 979 | 746 | 739 | 581 | 413 | 306 | 299 | 233 | 125 |
| 117 | SR 836 | EB | Exit | NW 17th Avenue SB via NW 17th Avenue Exit Ramp | Raw Count | **4,242** | 38 | 18 | 10 | 9 | 24 | 35 | 130 | 244 | 260 | 276 | 308 | 223 | 300 | 305 | 251 | 259 | 333 | 337 | 258 | 195 | 155 | 112 | 104 | 58 |
| | | | | | AWDT | **4,432** | 40 | 19 | 10 | 9 | 25 | 37 | 136 | 255 | 272 | 288 | 322 | 233 | 313 | 319 | 262 | 271 | 348 | 352 | 270 | 204 | 162 | 117 | 109 | 61 |
| | | | | | Balanced AWDT | **4,532** | 40 | 19 | 10 | 9 | 25 | 37 | 136 | 255 | 272 | 288 | 322 | 333 | 313 | 319 | 262 | 271 | 348 | 352 | 270 | 204 | 162 | 117 | 109 | 61 |
| 118 | SR 836 | WB | Entrance | NW 17th Avenue NB | Raw Count | **6,351** | 57 | 48 | 28 | 44 | 68 | 181 | 448 | 525 | 458 | 354 | 336 | 394 | 390 | 392 | 368 | 329 | 279 | 268 | 232 | 298 | 297 | 230 | 192 | 135 |
| | | | | | AWDT | **6,636** | 60 | 50 | 29 | 46 | 71 | 189 | 468 | 549 | 478 | 370 | 351 | 412 | 407 | 410 | 385 | 344 | 292 | 280 | 242 | 311 | 310 | 240 | 201 | 141 |
| | | | | | Balanced AWDT | **8,155** | 101 | 74 | 33 | 45 | 73 | 226 | 394 | 608 | 579 | 378 | 486 | 530 | 501 | 581 | 537 | 537 | 487 | 465 | 348 | 208 | 309 | 252 | 237 | 164 |
| 119 | SR 836 | WB | Entrance | NW 17th Avenue SB | Raw Count | **10,938** | 99 | 51 | 34 | 55 | 79 | 146 | 343 | 602 | 570 | 575 | 669 | 795 | 803 | 714 | 839 | 924 | 921 | 569 | 380 | 537 | 451 | 301 | 244 | 237 |
| | | | | | AWDT | **11,429** | 103 | 53 | 36 | 57 | 83 | 153 | 358 | 629 | 596 | 601 | 699 | 831 | 839 | 746 | 877 | 965 | 962 | 595 | 397 | 561 | 471 | 315 | 255 | 248 |
| | | | | | Balanced AWDT | **14,741** | 176 | 79 | 40 | 57 | 85 | 182 | 302 | 697 | 721 | 614 | 968 | 1,070 | 1,032 | 1,059 | 1,225 | 1,509 | 1,606 | 988 | 570 | 375 | 470 | 330 | 301 | 288 |
| 120 | SR 836 | EB | Entrance | NW 12th Avenue SB | Raw Count | **9,814** | 93 | 45 | 47 | 32 | 48 | 134 | 373 | 549 | 579 | 515 | 532 | 633 | 618 | 623 | 670 | 729 | 715 | 683 | 544 | 540 | 386 | 249 | 220 | 257 |
| | | | | | AWDT | **10,254** | 97 | 47 | 49 | 33 | 50 | 140 | 390 | 574 | 605 | 538 | 556 | 661 | 646 | 651 | 700 | 762 | 747 | 714 | 568 | 564 | 403 | 260 | 230 | 269 |
| | | | | | Balanced AWDT | **8,092** | 33 | 26 | 27 | 29 | 52 | 208 | 731 | 985 | 815 | 824 | 597 | 437 | 494 | 450 | 515 | 709 | 398 | 387 | 311 | 209 | 144 | 122 | 124 | 65 |
| 121 | SR 836 | EB | Entrance | NW 12th Avenue NB | Raw Count | **13,755** | 172 | 106 | 68 | 73 | 114 | 354 | 845 | 1,042 | 1,003 | 728 | 743 | 726 | 687 | 738 | 847 | 844 | 825 | 765 | 718 | 620 | 520 | 443 | 417 | 337 |
| | | | | | AWDT | **14,351** | 180 | 111 | 71 | 76 | 119 | 370 | 883 | 1,089 | 1,048 | 761 | 776 | 759 | 718 | 771 | 885 | 882 | 882 | 799 | 750 | 648 | 543 | 463 | 436 | 352 |
| | | | | | Balanced AWDT | **6,851** | 86 | 53 | 34 | 36 | 57 | 177 | 421 | 520 | 500 | 363 | 371 | 362 | 343 | 368 | 422 | 421 | 412 | 382 | 358 | 309 | 259 | 221 | 208 | 168 |
| 122 | SR 836 | WB | Exit | NW 12th Avenue | Raw Count | **17,647** | 221 | 93 | 77 | 76 | 119 | 342 | 1,051 | 1,407 | 1,287 | 1,080 | 1,028 | 903 | 947 | 1,011 | 998 | 992 | 1,404 | 1,448 | 1,089 | 553 | 440 | 347 | 397 | 337 |
| | | | | | AWDT | **18,438** | 231 | 97 | 80 | 79 | 124 | 357 | 1,098 | 1,470 | 1,345 | 1,128 | 1,074 | 944 | 989 | 1,056 | 1,043 | 1,036 | 1,467 | 1,513 | 1,138 | 578 | 460 | 363 | 415 | 352 |
| | | | | | Balanced AWDT | **13,068** | 69 | 51 | 69 | 80 | 121 | 288 | 1,272 | 1,312 | 1,062 | 1,104 | 662 | 672 | 762 | 614 | 629 | 453 | 485 | 513 | 642 | 769 | 461 | 345 | 340 | 294 |
| 123 | SR 836 | EB | Mainline | Between NW 12th Avenue and I-95 | Raw Count | **87,235** | 1,715 | 1,853 | 1,918 | 1,871 | 2,357 | 3,355 | 4,438 | 5,406 | 5,097 | 5,032 | 4,502 | 4,322 | 4,541 | 4,410 | 4,572 | 4,242 | 4,416 | 4,382 | 4,236 | 3,842 | 3,470 | 2,915 | 2,452 | 1,896 |
| | | | | | AWDT | **91,148** | 1,792 | 1,936 | 2,004 | 1,955 | 2,463 | 3,505 | 4,637 | 5,648 | 5,325 | 5,258 | 4,704 | 4,516 | 4,745 | 4,608 | 4,777 | 4,432 | 4,614 | 4,578 | 4,426 | 4,014 | 3,626 | 3,045 | 2,562 | 1,981 |
| | | | | | Balanced AWDT | **69,370** | 755 | 374 | 225 | 210 | 366 | 1,101 | 3,303 | 4,712 | 5,086 | 4,764 | 4,184 | 3,868 | 3,910 | 3,879 | 4,018 | 3,472 | 3,721 | 3,945 | 4,412 | 3,869 | 3,057 | 2,543 | 2,150 | 1,445 |
| 124 | SR 836 | WB | Mainline | Between I-95 and NW 12th Avenue | Raw Count | **75,576** | 1,145 | 699 | 447 | 416 | 531 | 1,121 | 2,896 | 4,968 | 5,431 | 4,810 | 4,515 | 4,390 | 4,304 | 4,598 | 4,774 | 4,592 | 4,480 | 4,364 | 4,179 | 3,707 | 2,961 | 2,394 | 2,128 | 1,789 |
| | | | | | AWDT | **78,966** | 1,196 | 730 | 467 | 435 | 554 | 1,171 | 3,026 | 5,190 | 5,675 | 5,026 | 4,717 | 4,587 | 4,497 | 4,804 | 4,988 | 4,798 | 4,681 | 4,560 | 4,366 | 3,873 | 3,093 | 2,438 | 2,223 | 1,869 |
| | | | | | Balanced AWDT | **70,277** | 940 | 588 | 473 | 448 | 582 | 1,028 | 3,133 | 4,431 | 4,963 | 4,602 | 3,955 | 3,841 | 3,941 | 3,897 | 3,920 | 3,607 | 3,535 | 4,112 | 4,200 | 4,205 | 3,116 | 2,625 | 2,403 | 1,735 |
| 125 | SR 874 | NB | Mainline | North of HEFT - Toll Gantry | Count [1] | **42,494** | 225 | 130 | 129 | 226 | 414 | 1,474 | 4,231 | 4,465 | 3,947 | 2,984 | 2,533 | 2,233 | 2,101 | 2,185 | 2,256 | 2,200 | 2,089 | 2,202 | 1,952 | 1,464 | 1,057 | 870 | 684 | 442 |
| | | | | | Actual AWDT | **42,369** | 225 | 130 | 128 | 225 | 412 | 1,470 | 4,219 | 4,452 | 3,935 | 2

**Table A.1-1 (cont'd)**
**Weekday Traffic Count Data By Hour**

| Location Number | Roadway | Dir | Ramp or Mainline | Location | | Total | Hour Beginning 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 126 | SR 874 | SB | Mainline | North of HEFT - Toll Gantry | Count [1] | **40,753** | 289 | 156 | 101 | 69 | 128 | 445 | 1,084 | 1,718 | 1,587 | 1,433 | 1,462 | 1,708 | 1,859 | 2,028 | 2,513 | 3,269 | 3,933 | 4,392 | 3,865 | 2,888 | 2,150 | 1,718 | 1,323 | 636 |
| | | | | | Actual AWDT | **40,784** | 289 | 156 | 101 | 69 | 128 | 446 | 1,085 | 1,719 | 1,588 | 1,434 | 1,463 | 1,709 | 1,860 | 2,030 | 2,515 | 3,271 | 3,936 | 4,396 | 3,868 | 2,890 | 2,151 | 1,720 | 1,324 | 636 |
| | | | | | Balanced AWDT | **40,784** | 289 | 156 | 101 | 69 | 128 | 446 | 1,085 | 1,719 | 1,588 | 1,434 | 1,463 | 1,709 | 1,860 | 2,030 | 2,515 | 3,271 | 3,936 | 4,396 | 3,868 | 2,890 | 2,151 | 1,720 | 1,324 | 636 |
| 127 | SR 874 | NB | Exit | Killian Drive / SW 104th Street | Raw Count | **2,825** | 13 | 7 | 7 | 7 | 10 | 24 | 118 | 283 | 374 | 231 | 170 | 145 | 161 | 153 | 153 | 165 | 159 | 205 | 148 | 95 | 69 | 47 | 56 | 25 |
| | | | | | AWDT | **2,840** | 13 | 7 | 7 | 7 | 10 | 24 | 119 | 285 | 376 | 232 | 171 | 146 | 162 | 154 | 154 | 166 | 160 | 206 | 149 | 96 | 69 | 47 | 56 | 25 |
| | | | | | Balanced AWDT | **2,704** | 13 | 10 | 7 | 7 | 11 | 24 | 116 | 238 | 365 | 249 | 182 | 133 | 153 | 165 | 130 | 161 | 162 | 196 | 149 | 81 | 52 | 30 | 47 | 26 |
| 128 | SR 874 | NB | Entrance | Killian Drive / SW 104th Street EB | Raw Count | **13,197** | 57 | 46 | 24 | 43 | 89 | 299 | 915 | 1,498 | 1,538 | 1,165 | 889 | 700 | 709 | 677 | 563 | 681 | 653 | 674 | 601 | 436 | 345 | 233 | 210 | 152 |
| | | | | | AWDT | **13,268** | 57 | 46 | 24 | 43 | 89 | 301 | 920 | 1,506 | 1,546 | 1,171 | 894 | 704 | 713 | 681 | 566 | 685 | 657 | 678 | 604 | 438 | 347 | 234 | 211 | 153 |
| | | | | | Balanced AWDT | **13,878** | 58 | 28 | 26 | 43 | 84 | 302 | 939 | 1,755 | 1,593 | 1,088 | 835 | 763 | 752 | 633 | 654 | 707 | 648 | 710 | 603 | 507 | 432 | 321 | 246 | 150 |
| 129 | SR 874 | NB | Entrance | Killian Drive / SW 104th Street EB | Raw Count | **2,773** | 17 | 11 | 3 | 4 | 12 | 38 | 186 | 297 | 378 | 277 | 202 | 162 | 133 | 142 | 122 | 130 | 105 | 108 | 143 | 117 | 76 | 56 | 44 | 30 |
| | | | | | AWDT | **2,788** | 17 | 11 | 3 | 4 | 12 | 38 | 187 | 299 | 380 | 278 | 203 | 163 | 134 | 143 | 123 | 111 | 106 | 109 | 144 | 118 | 76 | 56 | 44 | 30 |
| | | | | | Balanced AWDT | **2,817** | 17 | 7 | 3 | 4 | 11 | 38 | 191 | 348 | 392 | 259 | 190 | 177 | 141 | 133 | 142 | 114 | 104 | 114 | 143 | 136 | 95 | 77 | 51 | 30 |
| 130 | SR 874 | SB | Exit | SW 107th Avenue NB | Raw Count | **2,214** | 28 | 17 | 10 | 8 | 5 | 4 | 22 | 41 | 79 | 72 | 62 | 93 | 114 | 109 | 114 | 178 | 187 | 271 | 285 | 210 | 116 | 80 | 73 | 36 |
| | | | | | AWDT | **2,216** | 28 | 17 | 10 | 8 | 5 | 4 | 22 | 41 | 79 | 72 | 62 | 93 | 114 | 109 | 114 | 178 | 187 | 271 | 285 | 210 | 116 | 80 | 73 | 36 |
| | | | | | Balanced AWDT | **2,257** | 21 | 12 | 9 | 9 | 3 | 4 | 26 | 47 | 81 | 74 | 68 | 85 | 118 | 117 | 117 | 178 | 204 | 273 | 290 | 215 | 116 | 83 | 76 | 32 |
| 131 | SR 874 | SB | Exit | Killian Drive / SW 104th Street | Raw Count | **12,780** | 120 | 76 | 38 | 27 | 44 | 92 | 214 | 421 | 572 | 482 | 443 | 541 | 553 | 609 | 755 | 977 | 1,267 | 1,734 | 1,420 | 871 | 561 | 416 | 322 | 225 |
| | | | | | AWDT | **12,793** | 120 | 76 | 38 | 27 | 44 | 92 | 214 | 421 | 573 | 482 | 443 | 542 | 554 | 610 | 756 | 978 | 1,268 | 1,736 | 1,421 | 872 | 562 | 416 | 322 | 225 |
| | | | | | Balanced AWDT | **13,096** | 88 | 55 | 34 | 29 | 25 | 94 | 258 | 484 | 586 | 498 | 485 | 492 | 572 | 654 | 778 | 975 | 1,383 | 1,744 | 1,445 | 894 | 561 | 430 | 334 | 199 |
| 132 | SR 874 | SB | Entrance | Killian Drive / SW 104th Street / SW 107th Avenue | Raw Count | **3,363** | 22 | 17 | 9 | 14 | 7 | 22 | 89 | 184 | 188 | 183 | 161 | 182 | 195 | 203 | 205 | 239 | 293 | 289 | 278 | 213 | 138 | 113 | 70 | 49 |
| | | | | | AWDT | **3,366** | 22 | 17 | 9 | 14 | 7 | 22 | 89 | 184 | 188 | 183 | 161 | 182 | 195 | 203 | 205 | 239 | 293 | 289 | 278 | 213 | 138 | 113 | 70 | 49 |
| | | | | | Balanced AWDT | **3,260** | 28 | 10 | 10 | 13 | 10 | 22 | 71 | 157 | 194 | 177 | 146 | 199 | 189 | 186 | 188 | 199 | 240 | 267 | 288 | 274 | 208 | 138 | 109 | 67 | 55 |
| 133 | SR 874 | NB | Mainline | South of Kendall Drive / SW 88th Street - Toll Gantry | Count [1] | **56,859** | 288 | 156 | 152 | 368 | 500 | 1,799 | 5,269 | 6,362 | 5,595 | 4,103 | 3,393 | 3,054 | 2,855 | 2,799 | 2,936 | 2,874 | 2,693 | 2,842 | 2,562 | 2,036 | 1,540 | 1,245 | 938 | 600 |
| | | | | | Actual AWDT | **56,460** | 286 | 155 | 151 | 266 | 497 | 1,787 | 5,232 | 6,317 | 5,556 | 4,074 | 3,369 | 3,033 | 2,835 | 2,780 | 2,916 | 2,853 | 2,674 | 2,822 | 2,544 | 2,022 | 1,529 | 1,236 | 932 | 595 |
| | | | | | Balanced AWDT | **56,460** | 286 | 155 | 151 | 266 | 497 | 1,787 | 5,232 | 6,317 | 5,556 | 4,074 | 3,369 | 3,033 | 2,835 | 2,780 | 2,916 | 2,853 | 2,674 | 2,822 | 2,544 | 2,022 | 1,529 | 1,236 | 932 | 595 |
| 134 | SR 874 | SB | Mainline | South of Kendall Drive / SW 88th Street - Toll Gantry | Count [1] | **52,613** | 368 | 201 | 133 | 93 | 145 | 519 | 1,291 | 2,083 | 2,060 | 1,821 | 1,860 | 2,076 | 2,350 | 2,600 | 3,196 | 4,163 | 5,230 | 6,093 | 5,303 | 3,772 | 2,677 | 2,112 | 1,658 | 809 |
| | | | | | Actual AWDT | **52,876** | 370 | 202 | 134 | 93 | 145 | 522 | 1,298 | 2,093 | 2,070 | 1,830 | 1,870 | 2,086 | 2,362 | 2,613 | 3,212 | 4,184 | 5,256 | 6,124 | 5,330 | 3,791 | 2,691 | 2,123 | 1,667 | 813 |
| | | | | | Balanced AWDT | **52,876** | 370 | 202 | 134 | 93 | 145 | 522 | 1,298 | 2,093 | 2,070 | 1,830 | 1,870 | 2,086 | 2,362 | 2,613 | 3,212 | 4,184 | 5,256 | 6,124 | 5,330 | 3,791 | 2,691 | 2,123 | 1,667 | 813 |
| 135 | SR 874 | NB | Exit | Kendall Drive / SW 88th Street | Raw Count | **4,335** | 26 | 19 | 13 | 11 | 16 | 60 | 218 | 405 | 550 | 354 | 296 | 243 | 221 | 269 | 255 | 257 | 215 | 236 | 236 | 146 | 92 | 83 | 73 | 41 |
| | | | | | AWDT | **4,379** | 26 | 19 | 13 | 11 | 16 | 61 | 220 | 409 | 556 | 358 | 299 | 245 | 223 | 272 | 258 | 260 | 217 | 238 | 238 | 147 | 93 | 84 | 74 | 41 |
| | | | | | Balanced AWDT | **4,107** | 14 | 7 | 8 | 2 | 9 | 62 | 282 | 451 | 463 | 303 | 234 | 228 | 211 | 245 | 252 | 272 | 201 | 228 | 219 | 137 | 88 | 88 | 68 | 37 |
| 137 | SR 874 | SB | Entrance | Kendall Drive / SW 88th Street | Raw Count | **3,536** | 31 | 20 | 19 | 11 | 16 | 19 | 74 | 126 | 122 | 145 | 188 | 176 | 222 | 200 | 227 | 268 | 293 | 387 | 281 | 210 | 160 | 141 | 114 | 86 |
| | | | | | AWDT | **3,532** | 31 | 20 | 19 | 11 | 16 | 19 | 74 | 126 | 122 | 145 | 188 | 176 | 222 | 200 | 227 | 268 | 293 | 387 | 281 | 210 | 160 | 141 | 114 | 86 |
| | | | | | Balanced AWDT | **3,506** | 34 | 22 | 20 | 12 | 13 | 14 | 58 | 115 | 116 | 132 | 172 | 169 | 206 | 186 | 214 | 270 | 300 | 409 | 301 | 220 | 170 | 141 | 112 | 100 |
| 138 | SR 874 | NB | Exit | SR 878 EB | Raw Count | **15,332** | 65 | 37 | 19 | 24 | 57 | 295 | 1,249 | 2,101 | 2,394 | 1,369 | 950 | 720 | 689 | 743 | 713 | 616 | 679 | 700 | 685 | 422 | 291 | 200 | 180 | 134 |
| | | | | | AWDT | **15,765** | 67 | 38 | 20 | 25 | 59 | 303 | 1,284 | 2,160 | 2,462 | 1,408 | 977 | 740 | 708 | 764 | 733 | 633 | 698 | 720 | 704 | 434 | 299 | 206 | 185 | 138 |
| | | | | | Balanced AWDT | **15,044** | 34 | 13 | 13 | 5 | 33 | 310 | 1,645 | 2,381 | 2,053 | 1,193 | 763 | 688 | 670 | 689 | 718 | 664 | 645 | 689 | 648 | 402 | 282 | 215 | 170 | 122 |
| 139 | SR 874 | NB | Entrance | Kendall Drive / SW 88th Street | Raw Count | **3,585** | 19 | 11 | 6 | 8 | 12 | 45 | 166 | 344 | 441 | 305 | 207 | 221 | 220 | 227 | 194 | 176 | 169 | 173 | 194 | 132 | 117 | 85 | 61 | 52 |
| | | | | | AWDT | **3,686** | 20 | 11 | 6 | 8 | 12 | 46 | 171 | 354 | 453 | 314 | 213 | 227 | 226 | 233 | 199 | 181 | 174 | 178 | 199 | 136 | 120 | 87 | 63 | 53 |
| | | | | | Balanced AWDT | **3,910** | 29 | 19 | 8 | 15 | 18 | 45 | 123 | 318 | 529 | 362 | 259 | 243 | 239 | 256 | 204 | 172 | 187 | 185 | 215 | 146 | 127 | 84 | 68 | 59 |
| 140 | SR 874 | SB | Exit | Kendall Drive / SW 88th Street | Raw Count | **6,327** | 87 | 38 | 30 | 26 | 24 | 73 | 133 | 233 | 294 | 281 | 262 | 262 | 307 | 296 | 386 | 445 | 525 | 667 | 654 | 455 | 304 | 259 | 150 | 136 |
| | | | | | AWDT | **6,360** | 87 | 38 | 30 | 26 | 24 | 73 | 134 | 234 | 296 | 282 | 263 | 263 | 309 | 298 | 388 | 447 | 528 | 670 | 657 | 457 | 306 | 260 | 151 | 137 |
| | | | | | Balanced AWDT | **6,387** | 80 | 35 | 28 | 23 | 28 | 92 | 163 | 254 | 309 | 307 | 286 | 274 | 331 | 317 | 410 | 443 | 515 | 632 | 609 | 436 | 286 | 260 | 154 | 115 |
| 142 | SR 874 | NB | Mainline | South of SR 826 - Toll Gantry | Count [1] | **41,278** | 268 | 154 | 138 | 274 | 473 | 1,462 | 3,433 | 3,809 | 3,574 | 2,944 | 2,635 | 2,363 | 2,196 | 2,105 | 2,152 | 2,092 | 2,019 | 2,094 | 1,895 | 1,631 | 1,288 | 1,019 | 764 | 497 |
| | | | | | Actual AWDT | **41,218** | 267 | 153 | 138 | 273 | 473 | 1,460 | 3,428 | 3,803 | 3,568 | 2,940 | 2,632 | 2,360 | 2,193 | 2,102 | 2,149 | 2,089 | 2,016 | 2,091 | 1,892 | 1,629 | 1,286 | 1,017 | 763 | 496 |
| | | | | | Balanced AWDT | **41,218** | 267 | 153 | 138 | 273 | 473 | 1,460 | 3,428 | 3,803 | 3,568 | 2,940 | 2,632 | 2,360 | 2,193 | 2,102 | 2,149 | 2,089 | 2,016 | 2,091 | 1,892 | 1,629 | 1,286 | 1,017 | 763 | 496 |
| 143 | SR 874 | SB | Mainline | South of SR 826 - Toll Gantry | Count [1] | **37,226** | 225 | 110 | 71 | 53 | 121 | 508 | 1,134 | 1,600 | 1,526 | 1,414 | 1,385 | 1,517 | 1,719 | 1,960 | 2,349 | 2,892 | 3,531 | 3,781 | 3,510 | 2,652 | 1,892 | 1,586 | 1,248 | 442 |
| | | | | | Actual AWDT | **37,918** | 230 | 112 | 72 | 54 | 123 | 517 | 1,155 | 1,629 | 1,554 | 1,440 | 1,410 | 1,545 | 1,751 | 1,997 | 2,393 | 2,946 | 3,597 | 3,851 | 3,576 | 2,701 | 1,927 | 1,615 | 1,272 | 450 |
| | | | | | Balanced AWDT | **37,918** | 230 | 112 | 72 | 54 | 123 | 517 | 1,155 | 1,629 | 1,554 | 1,440 | 1,410 | 1,545 | 1,751 | 1,997 | 2,393 | 2,946 | 3,597 | 3,851 | 3,576 | 2,701 | 1,927 | 1,615 | 1,272 | 450 |
| 141 | SR 874 | NB | Entrance | Kendall Drive / SW 88th Street | Raw Count | **5,738** | 37 | 22 | 20 | 35 | 47 | 134 | 353 | 663 | 466 | 370 | 316 | 310 | 296 | 278 | 271 | 268 | 283 | 225 | 192 | 154 | 139 | 118 | 76 |
| | | | | | AWDT | **5,744** | 37 | 22 | 20 | 35 | 47 | 134 | 353 | 664 | 666 | 466 | 370 | 316 | 310 | 296 | 278 | 271 | 268 | 283 | 225 | 192 | 154 | 139 | 118 | 76 |
| | | | | | Balanced AWDT | **5,396** | 47 | 21 | 14 | 15 | 24 | 14 | 277 | 739 | 634 | 381 | 331 | 276 | 267 | 213 | 304 | 313 | 235 | 271 | 237 | 256 | 189 | 158 | 109 | 71 |
| 146 | SR 878 | EB | Mainline | East of SR 874 - Toll Gantry | Count [1] | **20,674** | 82 | 35 | 27 | 20 | 58 | 327 | 1,944 | 3,156 | 2,717 | 1,591 | 1,107 | 975 | 947 | 913 | 1,034 | 989 | 890 | 971 | 895 | 666 | 476 | 377 | 282 | 195 |
| | | | | | Actual AWDT | **20,441** | 81 | 34 | 26 | 20 | 57 | 324 | 1,922 | 3,120 | 2,687 | 1,573 | 1,094 | 964 | 937 | 902 | 1,022 | 977 | 880 | 960 | 885 | 658 | 471 | 373 | 279 | 193 |
| | | | | | Balanced AWDT | **20,441** | 81 | 34 | 26 | 20 | 57 | 324 | 1,922 | 3,120 | 2,687 | 1,573 | 1,094 | 964 | 937 | 902 | 1,022 | 977 | 880 | 960 | 885 | 658 | 471 | 373 | 279 | 193 |
| 147 | SR 878 | WB | Mainline | East of SR 874 - Toll Gantry | Count [1] | **22,714** | 193 | 118 | 74 | 47 | 50 | 109 | 381 | 843 | 915 | 726 | 758 | 834 | 988 | 1,008 | 1,368 | 1,834 | 2,458 | 3,183 | 2,475 | 1,579 | 1,046 | 757 | 578 | 393 |
| | | | | | Actual AWDT | **22,328** | 190 | 116 | 73 | 46 | 49 | 107 | 375 | 828 | 899 | 714 | 745 | 820 | 972 | 991 | 1,345 | 1,803 | 2,417 | 3,129 | 2,433 | 1,552 | 1,028 | 744 | 569 | 386 |
| | | | | | Balanced AWDT | **22,328** | 190 | 116 | 73 | 46 | 49 | 107 | 375 | 828 | 899 | 714 | 745 | 820 | 972 | 991 | 1,345 | 1,803 | 2,417 | 3,129 | 2,433 | 1,552 | 1,028 | 744 | 569 | 386 |

[1] Actual Average Weekday Volumes from October 2012
[2] Location not included in balanced profile







**Table A.1-1 (cont'd)**
**Weekday Traffic Count Data By Hour**

| Location Number | Roadway | Dir | Ramp or Mainline | Location | | Total | Hour Beginning 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 148 | SR 878 | EB | Exit | SW 87th Avenue | Raw Count | **3,003** | 12 | 10 | 5 | 8 | 6 | 38 | 143 | 260 | 447 | 292 | 194 | 161 | 168 | 192 | 179 | 130 | 176 | 145 | 149 | 114 | 66 | 46 | 37 | 25 |
| | | | | | AWDT | **3,100** | 12 | 10 | 5 | 8 | 6 | 39 | 148 | 268 | 461 | 301 | 200 | 166 | 173 | 198 | 185 | 134 | 182 | 150 | 154 | 118 | 68 | 47 | 38 | 26 |
| | | | | | Balanced AWDT | **2,969** | 11 | 9 | 1 | 6 | 5 | 33 | 212 | 300 | 379 | 207 | 191 | 168 | 172 | 192 | 152 | 161 | 179 | 149 | 135 | 115 | 78 | 61 | 31 | 20 |
| 149 | SR 878 | EB | Entrance | SW 87th Avenue | Raw Count | **2,076** | 7 | 6 | 1 | 4 | 3 | 15 | 77 | 161 | 173 | 132 | 148 | 139 | 157 | 145 | 93 | 142 | 158 | 157 | 126 | 92 | 65 | 43 | 17 | 15 |
| | | | | | AWDT | **2,143** | 7 | 6 | 1 | 4 | 3 | 15 | 79 | 166 | 179 | 136 | 153 | 143 | 162 | 150 | 96 | 147 | 163 | 162 | 130 | 95 | 67 | 44 | 18 | 15 |
| | | | | | Balanced AWDT | **2,174** | 8 | 7 | 2 | 5 | 4 | 18 | 45 | 146 | 210 | 179 | 160 | 142 | 164 | 154 | 113 | 117 | 166 | 163 | 146 | 97 | 57 | 31 | 21 | 19 |
| 150 | SR 878 | WB | Exit | SW 87th Avenue | Raw Count | **2,228** | 7 | 4 | 5 | 1 | 4 | 9 | 48 | 74 | 146 | 126 | 113 | 136 | 151 | 172 | 176 | 164 | 166 | 220 | 186 | 124 | 78 | 54 | 39 | 25 |
| | | | | | AWDT | **2,257** | 7 | 4 | 5 | 1 | 4 | 9 | 49 | 75 | 148 | 128 | 114 | 138 | 153 | 174 | 178 | 166 | 168 | 223 | 188 | 126 | 79 | 55 | 40 | 25 |
| | | | | | Balanced AWDT | **2,260** | 9 | 5 | 4 | 1 | 3 | 9 | 41 | 66 | 139 | 137 | 126 | 139 | 152 | 179 | 186 | 187 | 168 | 219 | 170 | 120 | 79 | 56 | 40 | 25 |
| 151 | SR 878 | WB | Entrance | SW 87th Avenue | Raw Count | **3,875** | 17 | 12 | 6 | 4 | 6 | 17 | 47 | 111 | 176 | 198 | 216 | 223 | 260 | 237 | 271 | 338 | 381 | 494 | 319 | 199 | 127 | 93 | 76 | 47 |
| | | | | | AWDT | **3,925** | 17 | 12 | 6 | 4 | 6 | 17 | 48 | 112 | 178 | 201 | 219 | 226 | 263 | 240 | 275 | 342 | 386 | 500 | 323 | 202 | 129 | 94 | 77 | 48 |
| | | | | | Balanced AWDT | **3,901** | 14 | 11 | 7 | 2 | 7 | 17 | 55 | 126 | 189 | 185 | 197 | 224 | 265 | 233 | 263 | 300 | 387 | 509 | 355 | 211 | 129 | 92 | 75 | 48 |
| 152 | SR 878 | EB | Mainline | East of SW 87th Avenue - Toll Gantry | Count [1] | **19,869** | 80 | 32 | 27 | 20 | 56 | 312 | 1,774 | 3,000 | 2,546 | 1,562 | 1,075 | 949 | 939 | 874 | 994 | 944 | 877 | 986 | 906 | 648 | 455 | 347 | 272 | 194 |
| | | | | | Actual AWDT | **19,646** | 79 | 32 | 27 | 19 | 56 | 308 | 1,754 | 2,966 | 2,518 | 1,545 | 1,063 | 939 | 928 | 864 | 983 | 933 | 867 | 975 | 896 | 640 | 450 | 343 | 269 | 192 |
| | | | | | Balanced AWDT | **19,646** | 79 | 32 | 27 | 19 | 56 | 308 | 1,754 | 2,966 | 2,518 | 1,545 | 1,063 | 939 | 928 | 864 | 983 | 933 | 867 | 975 | 896 | 640 | 450 | 343 | 269 | 192 |
| 153 | SR 878 | WB | Mainline | East of SW 87th Avenue - Toll Gantry | Count [1] | **20,931** | 187 | 111 | 70 | 46 | 45 | 101 | 365 | 777 | 859 | 674 | 683 | 744 | 869 | 948 | 1,282 | 1,709 | 2,223 | 2,873 | 2,275 | 1,478 | 989 | 716 | 540 | 367 |
| | | | | | Actual AWDT | **20,688** | 185 | 110 | 70 | 45 | 45 | 99 | 361 | 768 | 849 | 666 | 675 | 735 | 859 | 937 | 1,267 | 1,689 | 2,197 | 2,839 | 2,249 | 1,461 | 978 | 708 | 533 | 363 |
| | | | | | Balanced AWDT | **20,688** | 185 | 110 | 70 | 45 | 45 | 99 | 361 | 768 | 849 | 666 | 675 | 735 | 859 | 937 | 1,267 | 1,689 | 2,197 | 2,839 | 2,249 | 1,461 | 978 | 708 | 533 | 363 |
| 154 | SR 878 | EB | Exit | SW 72nd Avenue | Raw Count | **7,268** | 19 | 12 | 5 | 8 | 10 | 81 | 457 | 1,295 | 1,639 | 740 | 302 | 271 | 291 | 313 | 252 | 241 | 276 | 275 | 309 | 179 | 131 | 81 | 46 | 35 |
| | | | | | AWDT | **7,532** | 20 | 12 | 5 | 8 | 10 | 84 | 474 | 1,342 | 1,698 | 767 | 313 | 281 | 302 | 324 | 261 | 250 | 286 | 285 | 320 | 185 | 136 | 84 | 48 | 36 |
| | | | | | Balanced AWDT | **7,532** | 20 | 12 | 5 | 8 | 10 | 84 | 474 | 1,342 | 1,698 | 767 | 313 | 281 | 302 | 324 | 261 | 250 | 286 | 285 | 320 | 185 | 136 | 84 | 48 | 36 |
| 155 | SR 878 | WB | Entrance | SW 72nd Avenue | Raw Count | **5,920** | 39 | 15 | 7 | 6 | 9 | 14 | 84 | 158 | 180 | 175 | 153 | 169 | 293 | 248 | 318 | 451 | 654 | 1,074 | 889 | 408 | 251 | 160 | 102 | 63 |
| | | | | | AWDT | **6,032** | 40 | 15 | 7 | 6 | 9 | 14 | 86 | 161 | 183 | 178 | 156 | 172 | 299 | 253 | 324 | 459 | 666 | 1,094 | 906 | 416 | 256 | 163 | 104 | 64 |
| | | | | | Balanced AWDT | **6,032** | 40 | 15 | 7 | 6 | 9 | 14 | 86 | 161 | 183 | 178 | 156 | 172 | 299 | 253 | 324 | 459 | 666 | 1,094 | 906 | 416 | 256 | 163 | 104 | 64 |
| 1 | SR 924 | EB | Entrance | SR 826 NB | Raw Count | **8,280** | 48 | 21 | 24 | 34 | 57 | 139 | 441 | 739 | 686 | 578 | 568 | 553 | 556 | 555 | 596 | 556 | 543 | 431 | 302 | 283 | 191 | 163 | 135 | 87 |
| | | | | | AWDT [2] | **8,384** | 48 | 21 | 24 | 34 | 58 | 141 | 446 | 748 | 694 | 585 | 575 | 560 | 563 | 561 | 604 | 563 | 550 | 436 | 305 | 286 | 193 | 165 | 136 | 88 |
| 2 | SR 924 | EB | Exit | SR 826 SB | Raw Count | **1,526** | 7 | 7 | 4 | 7 | 5 | 18 | 72 | 145 | 142 | 111 | 99 | 98 | 87 | 95 | 69 | 80 | 83 | 100 | 91 | 71 | 53 | 40 | 26 | 21 |
| | | | | | AWDT [2] | **1,545** | 7 | 7 | 4 | 7 | 5 | 18 | 73 | 147 | 144 | 112 | 100 | 99 | 88 | 96 | 70 | 81 | 84 | 101 | 92 | 72 | 54 | 41 | 26 | 21 |
| 3 | SR 924 | WB | Exit | SR 826 NB | Raw Count | **2,350** | 17 | 14 | 9 | 4 | 3 | 11 | 35 | 84 | 152 | 125 | 107 | 114 | 130 | 141 | 147 | 150 | 183 | 260 | 209 | 180 | 116 | 73 | 53 | 37 |
| | | | | | AWDT [2] | **2,355** | 17 | 14 | 9 | 4 | 3 | 11 | 35 | 84 | 152 | 125 | 107 | 114 | 130 | 141 | 147 | 150 | 183 | 261 | 209 | 180 | 116 | 73 | 53 | 37 |
| 4 | SR 924 | WB | Entrance | SR 826 SB | Raw Count | **9,872** | 41 | 36 | 31 | 33 | 56 | 130 | 317 | 576 | 739 | 582 | 574 | 630 | 620 | 653 | 715 | 768 | 850 | 854 | 574 | 389 | 273 | 195 | 154 | 85 |
| | | | | | AWDT [2] | **9,891** | 41 | 36 | 31 | 33 | 56 | 130 | 318 | 577 | 740 | 583 | 575 | 631 | 621 | 654 | 716 | 769 | 852 | 856 | 575 | 390 | 273 | 195 | 154 | 85 |
| 5 | SR 924 | EB | Mainline | Between SR 826 and NW 57th Avenue - Toll Gantry | Count [1] | **27,536** | 142 | 78 | 54 | 76 | 129 | 427 | 1,952 | 3,740 | 3,408 | 2,469 | 1,667 | 1,333 | 1,217 | 1,205 | 1,269 | 1,341 | 1,406 | 1,709 | 1,365 | 845 | 563 | 413 | 447 | 283 |
| | | | | | Actual AWDT | **26,482** | 137 | 75 | 52 | 73 | 124 | 410 | 1,877 | 3,597 | 3,277 | 2,375 | 1,603 | 1,282 | 1,170 | 1,159 | 1,221 | 1,289 | 1,352 | 1,644 | 1,312 | 812 | 541 | 397 | 430 | 272 |
| | | | | | Balanced AWDT | **26,482** | 137 | 75 | 52 | 73 | 124 | 410 | 1,877 | 3,597 | 3,277 | 2,375 | 1,603 | 1,282 | 1,170 | 1,159 | 1,221 | 1,289 | 1,352 | 1,644 | 1,312 | 812 | 541 | 397 | 430 | 272 |
| 6 | SR 924 | WB | Mainline | Between NW 57th Avenue and SR 826 - Toll Gantry | Count [1] | **28,009** | 156 | 81 | 68 | 79 | 149 | 299 | 756 | 1,609 | 1,804 | 1,284 | 1,095 | 1,319 | 1,476 | 1,446 | 1,686 | 2,191 | 2,806 | 3,351 | 2,434 | 1,518 | 988 | 699 | 431 | 283 |
| | | | | | Actual AWDT | **27,127** | 151 | 79 | 66 | 77 | 145 | 290 | 732 | 1,559 | 1,747 | 1,243 | 1,060 | 1,277 | 1,430 | 1,401 | 1,633 | 2,122 | 2,718 | 3,246 | 2,357 | 1,471 | 957 | 677 | 417 | 274 |
| | | | | | Balanced AWDT | **27,127** | 151 | 79 | 66 | 77 | 145 | 290 | 732 | 1,559 | 1,747 | 1,243 | 1,060 | 1,277 | 1,430 | 1,401 | 1,633 | 2,122 | 2,718 | 3,246 | 2,357 | 1,471 | 957 | 677 | 417 | 274 |
| 7 | SR 924 | EB | Exit | SW 57th Avenue / W 49th Avenue / Red Road | Raw Count | **7,672** | 42 | 14 | 23 | 34 | 24 | 131 | 395 | 698 | 877 | 604 | 470 | 409 | 411 | 396 | 444 | 426 | 465 | 510 | 467 | 292 | 179 | 150 | 114 | 97 |
| | | | | | AWDT | **7,732** | 42 | 14 | 23 | 34 | 24 | 132 | 398 | 703 | 884 | 609 | 474 | 412 | 414 | 399 | 447 | 429 | 469 | 514 | 471 | 294 | 180 | 151 | 115 | 98 |
| | | | | | Balanced AWDT | **7,557** | 55 | 24 | 18 | 28 | 37 | 130 | 495 | 800 | 753 | 553 | 459 | 390 | 383 | 373 | 430 | 427 | 464 | 450 | 408 | 273 | 165 | 156 | 102 | 118 |
| 8 | SR 924 | EB | Entrance | SW 57th Avenue / W 49th Avenue / Red Road SB | Raw Count | **1,767** | 5 | 5 | - | 5 | 9 | 21 | 76 | 223 | 226 | 131 | 104 | 87 | 100 | 109 | 98 | 96 | 106 | 128 | 92 | 55 | 33 | 26 | 12 | 20 |
| | | | | | AWDT | **1,781** | 5 | 5 | - | 5 | 9 | 21 | 77 | 225 | 228 | 132 | 105 | 88 | 101 | 110 | 99 | 97 | 107 | 129 | 93 | 55 | 33 | 26 | 12 | 20 |
| | | | | | Balanced AWDT | **1,823** | 3 | 2 | 1 | 6 | 4 | 22 | 58 | 194 | 261 | 144 | 108 | 92 | 108 | 117 | 103 | 97 | 108 | 145 | 105 | 59 | 36 | 25 | 7 | 16 |
| 9 | SR 924 | EB | Entrance | SW 57th Avenue / W 49th Avenue / Red Road NB | Raw Count | **671** | 5 | 2 | 4 | 3 | 5 | 5 | 19 | 65 | 51 | 52 | 49 | 41 | 50 | 42 | 35 | 36 | 43 | 44 | 36 | 31 | 12 | 16 | 9 | 16 |
| | | | | | AWDT | **676** | 5 | 2 | 4 | 3 | 5 | 5 | 19 | 66 | 51 | 52 | 49 | 41 | 50 | 42 | 35 | 36 | 43 | 44 | 36 | 31 | 12 | 16 | 9 | 16 |
| | | | | | Balanced AWDT | **689** | 3 | 1 | 5 | 4 | 2 | 5 | 14 | 57 | 59 | 57 | 51 | 44 | 54 | 45 | 37 | 36 | 44 | 50 | 41 | 33 | 13 | 16 | 5 | 13 |
| 10 | SR 924 | WB | Exit | SW 57th Avenue / W 49th Avenue / Red Road | Raw Count | **2,699** | 11 | 10 | 9 | 2 | 10 | 22 | 56 | 117 | 171 | 136 | 152 | 155 | 162 | 168 | 191 | 190 | 241 | 314 | 243 | 141 | 101 | 52 | 21 | 24 |
| | | | | | AWDT | **2,692** | 11 | 10 | 9 | 2 | 10 | 22 | 56 | 117 | 171 | 136 | 152 | 155 | 162 | 168 | 190 | 189 | 240 | 313 | 242 | 141 | 101 | 52 | 21 | 24 |
| | | | | | Balanced AWDT | **2,708** | 12 | 10 | 9 | 3 | 10 | 24 | 61 | 102 | 160 | 146 | 166 | 181 | 176 | 188 | 187 | 167 | 229 | 296 | 242 | 143 | 103 | 52 | 24 | 19 |
| 11 | SR 924 | WB | Entrance | SW 57th Avenue / W 49th Avenue / Red Road SB | Raw Count | **9,362** | 55 | 30 | 25 | 30 | 51 | 126 | 295 | 533 | 646 | 454 | 435 | 504 | 497 | 560 | 573 | 678 | 872 | 1,050 | 742 | 483 | 288 | 203 | 153 | 79 |
| | | | | | AWDT | **9,337** | 55 | 30 | 25 | 30 | 51 | 126 | 294 | 532 | 644 | 453 | 434 | 503 | 496 | 558 | 571 | 676 | 870 | 1,047 | 740 | 482 | 287 | 202 | 153 | 79 |
| | | | | | Balanced AWDT | **9,250** | 48 | 29 | 25 | 20 | 52 | 114 | 269 | 598 | 685 | 419 | 393 | 418 | 453 | 489 | 582 | 758 | 911 | 1,103 | 742 | 475 | 280 | 200 | 133 | 94 |
| 12 | SR 924 | EB | Mainline | West of Le Jeune Douglas Expressway - Toll Gantry | Count [1] | **22,403** | 92 | 56 | 41 | 57 | 98 | 321 | 1,520 | 3,185 | 2,973 | 2,115 | 1,361 | 1,074 | 993 | 990 | 972 | 1,041 | 1,087 | 1,451 | 1,098 | 660 | 445 | 294 | 287 | 191 |
| | | | | | Actual AWDT | **21,437** | 88 | 54 | 40 | 55 | 94 | 307 | 1,455 | 3,048 | 2,844 | 2,023 | 1,303 | 1,028 | 950 | 947 | 930 | 996 | 1,040 | 1,388 | 1,051 | 632 | 426 | 281 | 274 | 183 |
| | | | | | Balanced AWDT | **21,437** | 88 | 54 | 40 | 55 | 94 | 307 | 1,455 | 3,048 | 2,844 | 2,023 | 1,303 | 1,028 | 950 | 947 | 930 | 996 | 1,040 | 1,388 | 1,051 | 632 | 426 | 281 | 274 | 183 |

[1] Actual Average Weekday Volumes from October 2012
[2] Location not included in balanced profile

**Table A.1-1 (cont'd)**
**Weekday Traffic Count Data By Hour**

| Location Number | Roadway | Dir | Ramp or Mainline | Location | | Total | Hour Beginning 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 13 | SR 924 | WB | Mainline | West of Le Jeune Douglas Expressway - Toll Gantry | Count [4] | **21,329** | 120 | 62 | 52 | 62 | 107 | 207 | 544 | 1,103 | 1,269 | 1,007 | 865 | 1,079 | 1,196 | 1,142 | 1,284 | 1,589 | 2,114 | 2,532 | 1,927 | 1,182 | 811 | 549 | 320 | 207 |
| | | | | | Actual AWDT | **20,545** | 116 | 60 | 50 | 59 | 103 | 199 | 524 | 1,062 | 1,222 | 970 | 833 | 1,040 | 1,152 | 1,100 | 1,237 | 1,531 | 2,036 | 2,439 | 1,857 | 1,138 | 781 | 529 | 308 | 199 |
| | | | | | Balanced AWDT | **20,545** | 116 | 60 | 50 | 59 | 103 | 199 | 524 | 1,062 | 1,222 | 970 | 833 | 1,040 | 1,152 | 1,100 | 1,237 | 1,531 | 2,036 | 2,439 | 1,857 | 1,138 | 781 | 529 | 308 | 199 |
| 14 | SR 924 | EB | Exit | Le Jeune Road / Douglas Expressway SB | Raw Count | **2,750** | 19 | 6 | 5 | 11 | 20 | 43 | 132 | 295 | 323 | 227 | 169 | 160 | 152 | 155 | 142 | 133 | 144 | 161 | 155 | 102 | 69 | 49 | 43 | 44 |
| | | | | | AWDT | **2,756** | 19 | 6 | 5 | 11 | 20 | 43 | 132 | 295 | 324 | 227 | 169 | 160 | 152 | 155 | 142 | 133 | 144 | 161 | 155 | 102 | 69 | 49 | 43 | 44 |
| | | | | | Balanced AWDT | **2,756** | 19 | 6 | 5 | 11 | 20 | 43 | 132 | 295 | 324 | 227 | 169 | 160 | 152 | 155 | 142 | 133 | 144 | 161 | 155 | 102 | 69 | 49 | 43 | 44 |
| 15 | SR 924 | EB | Exit | Le Jeune Road / Douglas Expressway NB | Raw Count | **1,278** | 6 | 3 | 2 | 5 | 4 | 22 | 75 | 143 | 124 | 105 | 101 | 86 | 95 | 74 | 79 | 78 | 95 | 68 | 50 | 25 | 12 | 12 | 11 | 8 |
| | | | | | AWDT | **1,280** | 6 | 3 | 2 | 5 | 4 | 22 | 75 | 143 | 124 | 105 | 101 | 86 | 95 | 74 | 79 | 78 | 95 | 68 | 50 | 25 | 12 | 12 | 11 | 8 |
| | | | | | Balanced AWDT | **1,280** | 6 | 3 | 2 | 5 | 4 | 22 | 75 | 143 | 124 | 105 | 101 | 86 | 95 | 74 | 79 | 78 | 95 | 68 | 50 | 25 | 12 | 12 | 11 | 8 |
| 16 | SR 924 | EB | Entrance | Le Jeune Road / Douglas Expressway | Raw Count | **8,660** | 80 | 55 | 34 | 57 | 129 | 205 | 456 | 606 | 557 | 536 | 431 | 455 | 490 | 456 | 512 | 560 | 554 | 663 | 522 | 394 | 304 | 249 | 209 | 154 |
| | | | | | AWDT | **8,679** | 80 | 55 | 34 | 57 | 129 | 205 | 457 | 607 | 558 | 537 | 431 | 456 | 491 | 457 | 513 | 561 | 555 | 664 | 523 | 395 | 304 | 250 | 209 | 154 |
| | | | | | Balanced AWDT | **8,679** | 80 | 55 | 34 | 57 | 129 | 205 | 457 | 607 | 558 | 537 | 431 | 456 | 491 | 457 | 513 | 561 | 555 | 664 | 523 | 395 | 304 | 250 | 209 | 154 |
| 17 | SR 924 | WB | Exit | Le Jeune Road / Douglas Expressway | Raw Count | **7,719** | 65 | 41 | 23 | 39 | 56 | 129 | 278 | 421 | 455 | 418 | 396 | 425 | 447 | 489 | 485 | 560 | 636 | 681 | 559 | 384 | 286 | 190 | 143 | 119 |
| | | | | | AWDT | **7,658** | 64 | 40 | 22 | 38 | 55 | 128 | 276 | 418 | 451 | 415 | 392 | 421 | 443 | 485 | 481 | 555 | 631 | 675 | 555 | 381 | 284 | 189 | 141 | 118 |
| | | | | | Balanced AWDT | **7,658** | 64 | 40 | 22 | 38 | 55 | 128 | 276 | 418 | 451 | 415 | 392 | 421 | 443 | 485 | 481 | 555 | 631 | 675 | 555 | 381 | 284 | 189 | 141 | 118 |
| 18 | SR 924 | WB | Entrance | Le Jeune Road / Douglas Expressway | Raw Count | **4,196** | 19 | 12 | 18 | 27 | 32 | 40 | 107 | 196 | 264 | 268 | 194 | 220 | 231 | 255 | 254 | 296 | 418 | 481 | 325 | 220 | 142 | 88 | 55 | 40 |
| | | | | | AWDT | **4,163** | 19 | 11 | 18 | 27 | 32 | 39 | 106 | 194 | 262 | 265 | 192 | 218 | 229 | 253 | 252 | 294 | 414 | 477 | 322 | 218 | 140 | 87 | 55 | 39 |
| | | | | | Balanced AWDT | **4,163** | 19 | 11 | 18 | 27 | 32 | 39 | 106 | 194 | 262 | 265 | 192 | 218 | 229 | 253 | 252 | 294 | 414 | 477 | 322 | 218 | 140 | 87 | 55 | 39 |
| 19 | SR 924 | EB | Mainline | West of Le Jeune Road / Douglas Expressway Entry Ramp | Raw Count | **16,308** | 72 | 53 | 48 | 80 | 204 | 732 | 1,609 | 2,033 | 1,736 | 1,101 | 855 | 815 | 778 | 752 | 796 | 846 | 885 | 851 | 667 | 432 | 341 | 281 | 211 | 135 |
| | | | | | AWDT | **16,344** | 72 | 53 | 48 | 80 | 204 | 733 | 1,613 | 2,038 | 1,739 | 1,103 | 857 | 816 | 780 | 754 | 797 | 848 | 887 | 853 | 668 | 433 | 341 | 282 | 211 | 135 |
| | | | | | Balanced AWDT | **17,400** | 64 | 46 | 33 | 39 | 71 | 242 | 1,248 | 2,609 | 2,397 | 1,691 | 1,033 | 782 | 703 | 719 | 730 | 784 | 801 | 1,160 | 846 | 505 | 345 | 221 | 221 | 131 |
| 20 | SR 924 | WB | Mainline | West of Le Jeune Road / Douglas Expressway Exit Ramp | Raw Count | **14,143** | 137 | 84 | 59 | 65 | 107 | 188 | 385 | 671 | 812 | 646 | 593 | 647 | 689 | 659 | 777 | 1,008 | 1,336 | 1,682 | 1,326 | 861 | 572 | 362 | 297 | 186 |
| | | | | | AWDT | **14,013** | 136 | 83 | 59 | 64 | 106 | 187 | 382 | 666 | 805 | 640 | 588 | 642 | 683 | 654 | 770 | 1,000 | 1,325 | 1,669 | 1,316 | 854 | 567 | 359 | 295 | 184 |
| | | | | | Balanced AWDT | **16,382** | 97 | 48 | 32 | 33 | 71 | 160 | 418 | 869 | 960 | 704 | 641 | 822 | 923 | 848 | 985 | 1,237 | 1,622 | 1,962 | 1,534 | 920 | 640 | 442 | 254 | 160 |
| 156 | I-95 | Both | Mainline | North of SR 112 | Raw Count | **198,991** | 3,343 | 1,856 | 1,291 | 1,370 | 2,130 | 4,661 | 9,031 | 12,853 | 14,363 | 12,615 | 11,631 | 11,225 | 11,280 | 11,384 | 12,051 | 12,320 | 11,846 | 11,791 | 11,091 | 8,544 | 7,035 | 5,985 | 5,443 | 3,858 |
| | | | | | AWDT [3] | **195,568** | 3,285 | 1,824 | 1,269 | 1,346 | 2,093 | 4,580 | 8,875 | 12,631 | 14,115 | 12,397 | 11,431 | 11,031 | 11,086 | 11,188 | 11,844 | 12,108 | 11,642 | 11,588 | 10,900 | 8,397 | 6,914 | 5,882 | 5,349 | 3,791 |
| 157N | I-95 | NB | Mainline | South of SR 836 | Raw Count | **69,315** | 960 | 498 | 267 | 235 | 300 | 838 | 2,426 | 4,414 | 4,991 | 4,100 | 3,720 | 3,789 | 3,887 | 4,006 | 4,422 | 4,964 | 4,292 | 3,673 | 4,302 | 4,189 | 3,181 | 2,323 | 1,933 | 1,610 |
| | | | | | AWDT [3] | **71,736** | 994 | 515 | 276 | 243 | 310 | 867 | 2,511 | 4,568 | 5,165 | 4,243 | 3,850 | 3,921 | 4,023 | 4,146 | 4,576 | 5,137 | 4,441 | 3,801 | 4,452 | 4,335 | 3,292 | 2,404 | 2,000 | 1,666 |
| 157S | I-95 | SB | Mainline | South of SR 836 | Raw Count | **80,301** | 1,044 | 552 | 362 | 314 | 360 | 1,048 | 2,849 | 4,727 | 6,305 | 5,298 | 4,921 | 4,477 | 4,397 | 4,295 | 4,451 | 4,564 | 4,971 | 5,534 | 5,386 | 4,199 | 3,320 | 2,699 | 2,525 | 1,707 |
| | | | | | AWDT [3] | **74,734** | 971 | 513 | 337 | 292 | 335 | 975 | 2,651 | 4,399 | 5,868 | 4,930 | 4,580 | 4,167 | 4,092 | 3,997 | 4,142 | 4,248 | 4,626 | 5,150 | 5,013 | 3,908 | 3,089 | 2,512 | 2,349 | 1,589 |
| 158E | I-195 | EB | Mainline | East of I-95 | Raw Count | **68,362** | 816 | 461 | 252 | 234 | 378 | 1,015 | 2,867 | 4,474 | 4,909 | 4,299 | 3,762 | 3,311 | 3,423 | 3,440 | 3,872 | 3,918 | 4,119 | 4,583 | 4,752 | 3,750 | 3,071 | 2,594 | 2,440 | 1,628 |
| | | | | | AWDT [3] | **64,732** | 772 | 436 | 239 | 221 | 358 | 961 | 2,714 | 4,236 | 4,648 | 4,071 | 3,562 | 3,135 | 3,241 | 3,257 | 3,666 | 3,710 | 3,900 | 4,340 | 4,499 | 3,551 | 2,908 | 2,456 | 2,310 | 1,541 |
| 158W | I-195 | WB | Mainline | East of I-95 | Raw Count | **55,780** | 920 | 481 | 289 | 229 | 282 | 570 | 1,413 | 2,998 | 3,721 | 3,530 | 3,197 | 3,072 | 3,131 | 3,071 | 3,247 | 3,654 | 4,110 | 3,998 | 3,591 | 3,028 | 2,426 | 1,878 | 1,609 | 1,340 |
| | | | | | AWDT [3] | **52,818** | 871 | 455 | 274 | 216 | 267 | 540 | 1,338 | 2,838 | 3,523 | 3,343 | 3,027 | 2,909 | 2,964 | 2,908 | 3,075 | 3,460 | 3,891 | 3,785 | 3,400 | 2,867 | 2,297 | 1,778 | 1,523 | 1,269 |
| 159E | I-395 | EB | Mainline | East of I-95 | Raw Count | **34,273** | 527 | 332 | 191 | 176 | 258 | 637 | 1,775 | 2,111 | 2,230 | 2,157 | 2,039 | 1,983 | 1,971 | 1,939 | 1,936 | 1,852 | 1,862 | 1,928 | 1,929 | 1,689 | 1,447 | 1,294 | 1,177 | 838 |
| | | | | | AWDT [3] | **35,052** | 538 | 340 | 195 | 180 | 264 | 651 | 1,815 | 2,158 | 2,281 | 2,206 | 2,085 | 2,028 | 2,016 | 1,983 | 1,980 | 1,894 | 1,904 | 1,971 | 1,972 | 1,727 | 1,479 | 1,323 | 1,203 | 857 |
| 159W | I-395 | WB | Mainline | East of I-95 | Raw Count | **37,029** | 1,003 | 667 | 448 | 381 | 378 | 412 | 690 | 1,368 | 2,088 | 1,885 | 1,714 | 1,767 | 1,906 | 2,000 | 2,265 | 2,645 | 2,809 | 2,693 | 2,401 | 1,870 | 1,667 | 1,525 | 1,199 | 1,254 |
| | | | | | AWDT [3] | **37,870** | 1,026 | 682 | 458 | 390 | 386 | 421 | 705 | 1,399 | 2,135 | 1,928 | 1,753 | 1,807 | 1,949 | 2,045 | 2,316 | 2,705 | 2,872 | 2,754 | 2,456 | 1,913 | 1,705 | 1,559 | 1,226 | 1,282 |
| 160N | SR 826 | NB | Mainline | North of SR 836 | Raw Count | **121,835** | 1,227 | 650 | 505 | 558 | 957 | 2,550 | 5,781 | 7,146 | 6,879 | 6,354 | 6,628 | 6,768 | 6,984 | 6,920 | 7,612 | 8,282 | 8,671 | 8,063 | 7,890 | 6,432 | 5,011 | 4,187 | 3,565 | 2,222 |
| | | | | | AWDT [3] | **123,728** | 1,246 | 660 | 512 | 566 | 972 | 2,589 | 5,871 | 7,257 | 6,985 | 6,452 | 6,730 | 6,873 | 7,092 | 7,028 | 7,730 | 8,410 | 8,806 | 8,188 | 8,012 | 6,532 | 5,088 | 4,252 | 3,620 | 2,256 |
| 160S | SR 826 | SB | Mainline | North of SR 836 | Raw Count | **119,199** | 927 | 550 | 457 | 579 | 1,122 | 2,969 | 7,192 | 9,261 | 10,209 | 8,866 | 7,267 | 6,950 | 6,944 | 6,584 | 6,822 | 6,887 | 6,654 | 6,025 | 5,665 | 5,183 | 4,224 | 3,560 | 2,716 | 1,590 |
| | | | | | AWDT [3] | **121,051** | 941 | 558 | 464 | 588 | 1,139 | 3,015 | 7,304 | 9,404 | 10,367 | 9,004 | 7,380 | 7,058 | 7,052 | 6,686 | 6,928 | 6,994 | 6,757 | 6,119 | 5,753 | 5,263 | 4,290 | 3,615 | 2,758 | 1,614 |
| 161 | SR 826 | Both | Mainline | South of SR 836 | Raw Count | **180,439** | 2,248 | 1,223 | 839 | 1,083 | 1,605 | 4,120 | 8,930 | 10,978 | 10,858 | 10,662 | 9,839 | 9,838 | 10,124 | 10,302 | 10,695 | 11,284 | 11,696 | 12,008 | 11,159 | 9,149 | 7,422 | 6,118 | 4,886 | 3,373 |
| | | | | | AWDT [3] | **183,243** | 2,283 | 1,242 | 852 | 1,100 | 1,630 | 4,184 | 9,069 | 11,149 | 11,027 | 10,828 | 9,992 | 9,991 | 10,281 | 10,462 | 10,861 | 11,459 | 11,878 | 12,195 | 11,332 | 9,291 | 7,537 | 6,213 | 4,962 | 3,425 |
| 144 | SR 826 | NB | Mainline | South of SR 874 | Raw Count | **55,693** | 471 | 240 | 176 | 137 | 244 | 681 | 2,247 | 3,375 | 3,412 | 3,205 | 2,784 | 2,805 | 2,890 | 3,149 | 3,535 | 3,710 | 3,830 | 4,347 | 4,212 | 3,416 | 2,497 | 1,909 | 1,634 | 794 |
| | | | | | AWDT [3] | **56,558** | 478 | 243 | 179 | 139 | 247 | 692 | 2,281 | 3,427 | 3,465 | 3,255 | 2,827 | 2,849 | 2,934 | 3,198 | 3,589 | 3,768 | 3,889 | 4,414 | 4,277 | 3,469 | 2,536 | 1,939 | 1,659 | 806 |
| 145 | SR 826 | SB | Mainline | South of SR 874 | Raw Count | **44,710** | 370 | 226 | 172 | 238 | 449 | 1,097 | 2,550 | 3,370 | 2,687 | 2,459 | 2,451 | 2,407 | 2,486 | 2,450 | 2,561 | 2,863 | 2,929 | 3,260 | 2,490 | 2,053 | 1,721 | 1,504 | 1,177 | 745 |
| | | | | | AWDT [3] | **45,405** | 375 | 229 | 175 | 242 | 456 | 1,114 | 2,589 | 3,422 | 2,729 | 2,497 | 2,489 | 2,444 | 2,525 | 2,488 | 2,601 | 2,907 | 2,974 | 3,311 | 2,528 | 2,084 | 1,748 | 1,527 | 1,195 | 756 |
| 162N | HEFT | NB | Mainline | North of SR 836 | Raw Count | **54,070** | 310 | 210 | 199 | 260 | 623 | 1,775 | 4,149 | 5,453 | 5,284 | 3,410 | 2,629 | 2,359 | 2,508 | 2,585 | 2,715 | 3,035 | 3,526 | 3,657 | 2,896 | 1,941 | 1,575 | 1,292 | 1,053 | 631 |
| | | | | | AWDT [3] | **54,478** | 312 | 211 | 201 | 262 | 627 | 1,788 | 4,180 | 5,494 | 5,324 | 3,436 | 2,649 | 2,376 | 2,526 | 2,604 | 2,735 | 3,058 | 3,552 | 3,685 | 2,918 | 1,956 | 1,587 | 1,301 | 1,061 | 635 |
| 162S | HEFT | SB | Mainline | North of SR 836 | Raw Count | **67,432** | 544 | 330 | 282 | 441 | 934 | 1,944 | 2,952 | 3,932 | 4,230 | 3,523 | 3,184 | 3,069 | 3,207 | 3,542 | 4,180 | 5,050 | 5,609 | 5,589 | 4,720 | 3,387 | 2,541 | 1,808 | 1,430 | 1,010 |
| | | | | | AWDT [3] | **66,830** | 539 | 327 | 279 | 437 | 926 | 1,926 | 2,926 | 3,897 | 4,192 | 3,491 | 3,155 | 3,041 | 3,178 | 3,510 | 4,143 | 5,004 | 5,559 | 5,539 | 4,678 | 3,356 | 2,518 | 1,792 | 1,417 | 1,001 |
| 163 | HEFT | Both | Mainline | South of SR 836 | Raw Count | **127,472** | 1,487 | 865 | 585 | 609 | 1,053 | 2,484 | 6,023 | 9,322 | 9,873 | 7,678 | 6,591 | 6,421 | 6,468 | 6,716 | 7,089 | 7,395 | 9,130 | 9,768 | 8,210 | 5,965 | 4,705 | 3,908 | 3,134 | 2,003 |
| | | | | | AWDT [3] | **127,385** | 1,486 | 864 | 585 | 609 | 1,052 | 2,482 | 6,019 | 9,316 | 9,866 | 7,673 | 6,586 | 6,417 | 6,464 | 6,711 | 7,084 | 7,390 | 9,124 | 9,751 | 8,204 | 5,961 | 4,702 | 3,905 | 3,132 | 2,002 |

[3] Actual Average Weekday Volumes from October 2012
[4] Location not included in balanced profile





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**Table A.1-2**
**Average Annual Daily Traffic Volumes by Time Period**

| Location Number | Roadway | Dir | Ramp or Mainline | Location | Total | AM Peak Period (6:30 - 9:30am) | PM Peak Period (3:30 - 6:30pm) | Off-Peak |
|---|---|---|---|---|---|---|---|---|
| 21 | SR 112 | EB | Mainline | West of NW 42nd Ave | **9,789** | 1,121 | 2,071 | 6,598 |
| 22 | SR 112 | WB | Mainline | West of NW 42nd Ave | **10,131** | 1,405 | 2,335 | 6,391 |
| 23 | SR 112 | WB | Exit | Le Jeune Road / NW 42nd Avenue SB | **15,103** | 2,462 | 3,321 | 9,320 |
| 24 | SR 112 | EB | Entrance | Le Jeune Road / NW 42nd Avenue NB | **10,040** | 1,701 | 1,974 | 6,364 |
| 25 | SR 112 | EB | Entrance | NW 36th Street EB | **11,783** | 2,340 | 2,361 | 7,082 |
| 26 | SR 112 | WB | Exit | NW 36th Street WB | **11,064** | 2,092 | 2,133 | 6,839 |
| 27 | SR 112 | EB | Entrance | US 27 / S Okeechobee Road SB | **12,194** | 2,887 | 1,633 | 7,675 |
| 28 | SR 112 | WB | Exit | US 27 / S Okeechobee Road NB | **12,149** | 1,605 | 2,909 | 7,635 |
| 29 | SR 112 | EB | Mainline | Between NW 42nd Avenue and NW 27th Avenue | **43,806** | 8,048 | 8,039 | 27,719 |
| 30 | SR 112 | WB | Mainline | Between NW 27th Avenue and NW 42nd Avenue | **48,446** | 7,563 | 10,698 | 30,185 |
| 31 | SR 112 | EB | Exit | NW 27th Avenue | **5,024** | 899 | 815 | 3,310 |
| 32 | SR 112 | EB | Entrance | NW 27th Avenue SB | **836** | 173 | 132 | 531 |
| 33 | SR 112 | WB | Exit | NW 27th Avenue | **7,995** | 1,064 | 1,842 | 5,090 |
| 34 | SR 112 | WB | Entrance | NW 27th Avenue | **4,096** | 696 | 788 | 2,613 |
| 35 | SR 112 | EB | Entrance | NW 27th Avenue | **3,869** | 840 | 743 | 2,286 |
| 39 | SR 112 | EB | Exit | NW 22nd Avenue | **5,905** | 943 | 787 | 4,175 |
| 37 | SR 112 | EB | Entrance | NW 22nd Avenue | **2,477** | 607 | 413 | 1,458 |
| 38 | SR 112 | WB | Exit | NW 22nd Avenue | **4,819** | 464 | 1,687 | 2,669 |
| 36 | SR 112 | WB | Entrance | NW 22nd Avenue | **7,632** | 1,153 | 2,029 | 4,449 |
| 40 | SR 112 | WB | Mainline | Between NW 17th Avenue and NW 22nd Avenue | **49,533** | 7,241 | 11,411 | 30,882 |
| 41 | SR 112 | EB | Mainline | Between NW 17th Avenue and NW 12th Avenue - Toll Plaza | **40,060** | 7,827 | 7,724 | 24,509 |
| 42 | SR 112 | WB | Exit | NW 17th Avenue via NW 40th Street | **5,455** | 616 | 1,349 | 3,490 |
| 43 | SR 112 | EB | Exit | NW 12th Ave via NW 39th Street | **1,090** | 255 | 174 | 661 |
| 48 | SR 836 | EB | Mainline | Between NW 137th Avenue and HEFT - Toll Gantry | **10,025** | 3,354 | 1,254 | 5,417 |
| 49 | SR 836 | WB | Mainline | Between HEFT and NW 137th Avenue - Toll Gantry | **11,580** | 783 | 2,988 | 7,809 |
| 50 | SR 836 | EB | Entrance | HEFT SB | **7,872** | 1,629 | 2,049 | 4,194 |
| 51 | SR 836 | EB | Entrance | HEFT NB | **23,861** | 5,482 | 3,155 | 15,223 |
| 52 | SR 836 | WB | Exit | HEFT NB | **10,057** | 1,656 | 2,471 | 5,930 |
| 53 | SR 836 | WB | Exit | HEFT SB | **36,090** | 3,654 | 8,472 | 23,963 |
| 54 | SR 836 | EB | Exit | NW 107th Avenue via Ramp to HEFT NB Exit Ramp | **4,790** | 1,691 | 646 | 2,454 |
| 55 | SR 836 | EB | Entrance | NW 107th Avenue SB | **8,565** | 522 | 2,157 | 5,887 |
| 56 | SR 836 | WB | Exit | HEFT / NW 107th Avenue SB | **37,300** | 3,984 | 8,677 | 24,639 |
| 57 | SR 836 | WB | Exit | NW 107th Avenue SB via HEFT / NW 107th Avenue SB Ramp | **4,868** | 581 | 998 | 3,289 |
| 58 | SR 836 | WB | Entrance | NW 107th Avenue via HEFT / NW 107th Avenue SB Ramp | **10,126** | 1,286 | 2,928 | 5,912 |
| 63 | SR 836 | EB | Entrance | NW 107th Avenue NB | **5,261** | 1,008 | 812 | 3,442 |
| 64 | SR 836 | EB | Ramp | Connect Ramp from Mainline to NW 107th Avenue NB Entry Ramp | **2,579** | 444 | 529 | 1,606 |
| 65X | SR 836 | EB | Mainline | West of NW 97th Avenue - Toll Plaza | **55,488** | 12,085 | 9,352 | 34,051 |
| 66X | SR 836 | WB | Mainline | West of NW 97th Avenue - Toll Plaza | **59,400** | 6,175 | 13,774 | 39,451 |
| 90 | SR 836 | EB | Mainline | Between NW 72nd Avenue and NW 57th Avenue | **89,735** | 14,500 | 15,569 | 59,666 |
| 91 | SR 836 | WB | Mainline | Between NW 57th Avenue and NW 72nd Avenue | **98,973** | 14,578 | 17,964 | 66,430 |
| 92 | SR 836 | EB | Exit | NW 57th Avenue / Red Road | **11,416** | 2,040 | 1,992 | 7,384 |
| 93 | SR 836 | EB | Entrance | NW 57th Avenue / Red Road | **12,224** | 2,200 | 2,806 | 7,217 |
| 94 | SR 836 | WB | Exit | NW 57th Avenue / Red Road SB | **11,420** | 2,652 | 1,666 | 7,102 |
| 95 | SR 836 | WB | Entrance | NW 57th Avenue / Red Road | **10,988** | 1,240 | 3,307 | 6,441 |
| 96 | SR 836 | EB | Exit | NW 45th Avenue | **4,283** | 467 | 747 | 3,069 |
| 97 | SR 836 | WB | Entrance | NW 45th Avenue | **26,296** | 3,650 | 4,710 | 17,936 |
| 98 | SR 836 | EB | Exit | Le Jeune Road / NW 42nd Avenue SB | **7,812** | 974 | 1,441 | 5,396 |
| 99 | SR 836 | EB | Exit | Le Jeune Road / NW 42nd Avenue NB | **18,672** | 2,641 | 3,395 | 12,636 |
| 100 | SR 836 | EB | Entrance | Le Jeune Road / NW 42nd Avenue SB | **4,625** | 622 | 712 | 3,291 |
| 101 | SR 836 | EB | Entrance | Le Jeune Road / NW 42nd Avenue NB | **6,456** | 1,249 | 910 | 4,298 |
| 102 | SR 836 | WB | Exit | Le Jeune Road / NW 42nd Avenue NB | **6,630** | 874 | 1,022 | 4,735 |
| 103 | SR 836 | WB | Exit | Le Jeune Road / NW 42nd Avenue SB | **7,246** | 852 | 1,409 | 4,985 |
| 88 | SR 836 | WB | Entrance | Le Jeune Road / NW 42nd Avenue SB | **9,112** | 1,451 | 1,986 | 5,675 |
| 104 | SR 836 | EB | Entrance | NW 37th Ave / Douglas Road | **7,215** | 1,008 | 1,342 | 4,865 |
| 105 | SR 836 | WB | Exit | NW 37th Ave / Douglas Road | **7,695** | 1,200 | 1,385 | 5,109 |
| 106 | SR 836 | EB | Exit | NW 27th Avenue SB | **10,752** | 1,362 | 1,997 | 7,392 |
| 107 | SR 836 | EB | Entrance | NW 27th Avenue SB | **3,870** | 766 | 545 | 2,559 |
| 108 | SR 836 | EB | Exit | NW 27th Avenue NB | **8,554** | 1,282 | 1,835 | 5,437 |
| 109 | SR 836 | EB | Entrance | NW 27th Avenue NB | **2,908** | 543 | 495 | 1,870 |
| 110 | SR 836 | WB | Exit | NW 27th Avenue NB | **3,897** | 314 | 1,035 | 2,548 |
| 111 | SR 836 | WB | Entrance | NW 27th Avenue NB | **9,470** | 1,809 | 1,224 | 6,436 |
| 112 | SR 836 | WB | Exit | NW 27th Avenue SB | **4,839** | 561 | 931 | 3,346 |
| 113 | SR 836 | WB | Entrance | NW 27th Avenue SB | **8,516** | 1,427 | 1,435 | 5,654 |
| 114 | SR 836 | EB | Mainline | Between NW 17th Avenue and NW 12th Avenue - Toll Gantry | **56,193** | 10,012 | 9,213 | 36,968 |
| 115 | SR 836 | WB | Mainline | Between NW 17th Avenue and NW 27th Avenue | **76,341** | 11,452 | 12,510 | 52,379 |
| 116 | SR 836 | EB | Exit | NW 17th Avenue - Toll Gantry | **9,346** | 2,140 | 1,805 | 5,401 |
| 117 | SR 836 | EB | Exit | NW 17th Avenue SB via NW 17th Avenue Exit Ramp | **3,242** | 500 | 766 | 1,976 |





**Table A.1-2 (cont'd)**
**Average Annual Daily Traffic Volumes by Time Period**

| Location Number | Roadway | Dir | Ramp or Mainline | Location | Total | AM Peak Period (6:30 - 9:30am) | PM Peak Period (3:30 - 6:30pm) | Off-Peak |
|---|---|---|---|---|---|---|---|---|
| 118 | SR 836 | WB | Entrance | NW 17th Avenue NB | **7,754** | 1,354 | 1,151 | 5,248 |
| 119 | SR 836 | WB | Entrance | NW 17th Avenue SB | **14,071** | 1,562 | 2,930 | 9,579 |
| 120 | SR 836 | EB | Entrance | NW 12th Avenue SB | **4,965** | 690 | 1,101 | 3,173 |
| 121 | SR 836 | EB | Entrance | NW 12th Avenue NB | **6,416** | 1,176 | 1,188 | 4,053 |
| 122 | SR 836 | WB | Exit | NW 12th Avenue | **12,233** | 3,348 | 1,951 | 6,934 |
| 123 | SR 836 | EB | Mainline | Between NW 12th Avenue and I-95 | **67,574** | 11,878 | 11,502 | 44,194 |
| 124 | SR 836 | WB | Mainline | Between I-95 and NW 12th Avenue | **66,748** | 11,884 | 10,379 | 44,485 |
| 125 | SR 874 | NB | Mainline | North of HEFT - Toll Gantry | **40,237** | 9,825 | 6,313 | 24,099 |
| 126 | SR 874 | SB | Mainline | North of HEFT - Toll Gantry | **37,968** | 3,954 | 9,311 | 24,703 |
| 127 | SR 874 | NB | Exit | Killian Drive / SW 104th Street | **2,552** | 692 | 498 | 1,361 |
| 128 | SR 874 | NB | Entrance | Killian Drive / SW 104th Street EB | **12,762** | 3,498 | 2,042 | 7,222 |
| 129 | SR 874 | NB | Entrance | Killian Drive / SW 104th Street EB | **2,671** | 773 | 344 | 1,554 |
| 130 | SR 874 | SB | Exit | SW 107th Avenue NB | **11,856** | 1,270 | 3,217 | 7,368 |
| 131 | SR 874 | SB | Exit | Killian Drive / SW 104th Street | **2,064** | 158 | 528 | 1,378 |
| 132 | SR 874 | SB | Entrance | Killian Drive / SW 104th Street / SW 107th Avenue | **2,983** | 420 | 865 | 1,698 |
| 133 | SR 874 | NB | Mainline | South of Kendall Drive / SW 88th Street - Toll Gantry | **53,118** | 13,404 | 8,200 | 31,514 |
| 134 | SR 874 | SB | Mainline | South of Kendall Drive / SW 88th Street - Toll Gantry | **48,906** | 4,963 | 12,191 | 31,752 |
| 135 | SR 874 | NB | Exit | Kendall Drive / SW 88th Street | **3,755** | 940 | 642 | 2,173 |
| 137 | SR 874 | SB | Entrance | Kendall Drive / SW 88th Street | **3,284** | 351 | 1,136 | 1,798 |
| 138 | SR 874 | NB | Exit | SR 878 EB | **13,265** | 4,615 | 1,949 | 6,701 |
| 139 | SR 874 | NB | Entrance | Kendall Drive / SW 88th Street | **3,763** | 940 | 578 | 2,245 |
| 140 | SR 874 | SB | Exit | Kendall Drive / SW 88th Street | **5,765** | 559 | 1,050 | 4,157 |
| 142 | SR 874 | NB | Mainline | South of SR 826 - Toll Gantry | **39,860** | 8,789 | 6,186 | 24,885 |
| 143 | SR 874 | SB | Mainline | South of SR 826 - Toll Gantry | **35,740** | 3,873 | 8,415 | 23,452 |
| 141 | SR 878 | NB | Entrance | Kendall Drive / SW 88th Street | **3,763** | 940 | 578 | 2,245 |
| 146 | SR 878 | EB | Mainline | East of SR 874 - Toll Gantry | **18,107** | 5,883 | 2,718 | 9,506 |
| 147 | SR 878 | WB | Mainline | East of SR 874 - Toll Gantry | **19,740** | 1,782 | 5,032 | 12,926 |
| 148 | SR 878 | EB | Exit | SW 87th Avenue | **2,739** | 724 | 476 | 1,539 |
| 149 | SR 878 | EB | Entrance | SW 87th Avenue | **2,090** | 396 | 435 | 1,258 |
| 150 | SR 878 | WB | Exit | SW 87th Avenue | **2,070** | 369 | 835 | 865 |
| 151 | SR 878 | WB | Entrance | SW 87th Avenue | **3,441** | 233 | 409 | 2,799 |
| 152 | SR 878 | EB | Mainline | East of SW 87th Avenue - Toll Gantry | **17,457** | 5,555 | 2,677 | 9,225 |
| 153 | SR 878 | WB | Mainline | East of SW 87th Avenue - Toll Gantry | **18,369** | 1,918 | 5,458 | 10,992 |
| 154 | SR 878 | EB | Exit | SW 72nd Avenue | **6,495** | 3,032 | 844 | 2,619 |
| 155 | SR 878 | WB | Entrance | SW 72nd Avenue | **5,274** | 437 | 1,993 | 2,843 |
| 5 | SR 924 | EB | Mainline | Between SR 826 and NW 57th Avenue - Toll Gantry | **22,221** | 7,171 | 3,678 | 11,373 |
| 6 | SR 924 | WB | Mainline | Between NW 57th Avenue and SR 826 - Toll Gantry | **22,521** | 3,476 | 6,086 | 12,960 |
| 7 | SR 924 | EB | Exit | SW 57th Avenue / W 4th Avenue / Red Road | **6,581** | 1,674 | 1,236 | 3,671 |
| 8 | SR 924 | EB | Entrance | SW 57th Avenue / W 4th Avenue / Red Road SB | **1,468** | 438 | 288 | 741 |
| 9 | SR 924 | EB | Entrance | SW 57th Avenue / W 4th Avenue / Red Road NB | **562** | 118 | 107 | 337 |
| 10 | SR 924 | WB | Exit | SW 57th Avenue / W 4th Avenue / Red Road | **2,077** | 494 | 976 | 607 |
| 11 | SR 924 | WB | Entrance | SW 57th Avenue / W 4th Avenue / Red Road SB | **7,795** | 494 | 976 | 6,325 |
| 12 | SR 924 | EB | Mainline | West of Le Jeune Douglas Expressway - Toll Gantry | **17,670** | 6,053 | 2,837 | 8,780 |
| 13 | SR 924 | WB | Mainline | West of Le Jeune Douglas Expressway - Toll Gantry | **16,803** | 3,476 | 6,086 | 7,242 |
| 14 | SR 924 | EB | Exit | Le Jeune Road / Douglas Expressway SB | **2,279** | 676 | 367 | 1,235 |
| 15 | SR 924 | EB | Exit | Le Jeune Road / Douglas Expressway NB | **1,060** | 290 | 186 | 584 |
| 16 | SR 924 | EB | Entrance | Le Jeune Road / Douglas Expressway | **7,378** | 1,313 | 1,571 | 4,494 |
| 17 | SR 924 | WB | Exit | Le Jeune Road / Douglas Expressway | **6,350** | 978 | 1,529 | 3,843 |
| 18 | SR 924 | WB | Entrance | Le Jeune Road / Douglas Expressway | **3,401** | 728 | 1,194 | 1,480 |
| 19 | SR 924 | EB | Mainline | West of Le Jeune Road / Douglas Expressway Entry Ramp | **14,332** | 5,086 | 2,284 | 6,962 |
| 20 | SR 924 | WB | Mainline | West of Le Jeune Road / Douglas Expressway Exit Ramp | **13,402** | 2,748 | 4,892 | 5,762 |

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# Appendix A.2

# Bluetooth Interchange-to-Interchange Movement Data

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# Appendix A.2

# Bluetooth Interchange-to-Interchange Movement Data

**Table A.2-1**
**BluFAX Bluetooth Reader Locations**

| Reader Number | Roadway | Road Segment | Specific Location | |
|---|---|---|---|---|
| 1 | HEFT | N of SR 836 | SB Signpost for Exit 25A-27 (Median Post) | Between NW 25th St. and Exit 25A-27 Off Ramp |
| 2 | HEFT | S of SR 836 | NB Signpost for Exit 26 (Median Post) | Between SW 8th St. and Flagler St. |
| 3 | HEFT | S of SR 874 | NB Signpost for Exit 17 (Median Post) | Between Exit 16 and SR 874 Ramps |
| 4 | SR 836 | E of NW 137th Ave. | Electronic Toll Gantry (Median Post) | East of NW 137th Ave. Ramps |
| 5 | SR 836 | E of NW 97th Ave. | Center Lightpost in "Welcome Miami-Dade" Bush Garden | Between Toll Gantry and NW 87th Ave Ramps |
| 6 | NW 87th Ave. | S of SR 836 | Traffic Lightpost on SW Corner of Intersection with NW 800 BLK (Sandalwood Rentals) | Between SR 836 and NW 8th St. |
| 7 | NW 13th Terrace | W of NW 87th Ave. | Lighpost W of Entrance to Porcelanosa (Prior to NW 87th Ave. Turning Lanes) | |
| 8 | NW 12th St. | E of NW 89th Ct. | Traffic Lightpost on NE Corner of Intersection | |
| 9 | SR 826 | N of SR 836 | NB Signpost for NW 25th St Exit (Median Post) | South of NW 25th St. |
| 10 | SR 826 | S of SR 836 | NB Signpost for SR 836 Exit (Median Post) | Just North of Flagler Street On-Ramp |
| 11 | Perimeter Rd. | E of NW 72nd Ave. | Lighpost W of Entrance to AP Atlantic Entrance | |
| 12 | NW 72nd Ave. | S of NW 7th St. | Traffic Lightpost on SW Corner of Intersection (in Front of MedPlan) | |
| 13 | SR 836 | E of 57th Ave. | EB Signpost for NW 57th Ave. Exit W of 57th Ave. Ramps (Median Post) | Between NW 72nd Ave. and NW 57th Ave. |
| 14 | NW 57th Ave | S of SR 836 | SB Lightpost S of Canal Bridge | |
| 15 | SR 836 | W of 57th Ave. | EB Signpost for LeJeune and NW 45th St. W of Lake Bridge (Median Post) | Between NW 57th Ave. and NW 45th Ave. |
| 16 | NW 42nd Ave. | N of NW 27th St. | Cell Phone Lot Sign in Median (Across from NW 27th St.) | |
| 17 | NW 11th St. | W of NW 42nd Ave. | Lightpost W of Catch of the Day (Near Fire Hydrant) | |
| 18 | NW 21st St | E of MIA | 1/2/3/4/5 Signpost W of 5 Ramp (Median Post) | |
| 19 | SR 836 | E of NW 42nd Ave. | WB Signpost for NW 42nd Ave. Exit west of NW 37th Ave. (Median Post) | Between NW 42nd Ave. and NW 37th Ave. |
| 20 | SR 836 | W of NW 27th Ave. | EB Signpost for NW 27th Ave. Exit (on South Side) | Between NW 37th Ave. and NW 27th Ave. |
| 21 | NW 14th St. | E of NW 27th Ave. | Lightpost on SE of Intersection in front of El Morro Supermarket | |
| 22 | NW 9th St. | W of NW 27th Ave. | Lightpost W of Intersection in front of Botanica Nena | |
| 23 | SR 836 | E of NW 27th Ave. | EB Signpost with Toll Schedule W of NW 17th Ave Toll Plaza / Gantry | Between NW 27th Ave. and NW 17th Ave. |
| 24 | NW 7th Ave. | W of NW 17th Ave. | Electric Pole on corner of NW 17th Ct. behind Bowl Bar | |
| 25 | SR 112 | E of NW 42nd Ave. | WB Signpost for NW 42nd Ave. Exit west of Elevated Transit Line (Median Post) | |
| 26 | SR 836 | W of I-95 | EB Signpost for I-95 North / I-395 / I-95 South Exit (Median Post) | Just West of I-95 Ramps |
| 27 | I-95 | S of SR 836 | NB Signpost for I-95 Express Lanes 2 Miles (Median Post) | |
| 28 | I-395 | E of I-95 | Signpost between I-95 and NE 1st Ave. | Between I-95 and NE 1st Ave. |
| 29 | SR 112 | N of 21st St | NB Railroad Crossing Signpost (Medan Post) | |
| 30 | NW 38th Ave. | E of NW 27th Ave. | Electric Pole with 20 MPH Curve Sign | Between NW 29th Ave. and NW 27th Ave. |
| 31 | NW 27th Ave. | N of SR 112 | NB Lightpost across from NW 45th St. in front of MTS Power Product | |
| 32 | SR 112 | W of NW 27th Ave. | Palm Tree in Median across from NW 22nd Ave Metro Rail Sign | Between NW 27th Ave. and NW 22nd Ave. |
| 33 | SR 112 | E of NW 17th Ave. | WB Signpost for NW 22nd Ave. MetroRail Sign (Median Post) W of NW 17th Ave. Toll Plaza | Between NW 17th Ave. and NW 12th Ave. |
| 34 | I-95 | N of SR 112 | SB Signpost for Variable Message Sign S of NW 62nd Ave. On Ramps | Between NW 62nd Ave. and SR 836 / I-395 |
| 35 | I-195 | E of I-95 | Median Signpost for SR 112 West Keep Left | Between I-95 and N Miami Ave. |

**Table A.2-2**
**Summary of Recorded Trip Data**

| | Observed Trips | Percent of Total |
|---|---|---|
| Logical Trips | 127,135 | 77.8 |
| Logical Trips missing one or more BluFAX Readers | 22,790 | 13.9 |
| **Total Trips Included in Interchange-to-Interchange Movement Analysis** | **149,925** | **91.8** |
| Bad Trip Data (ie. Illogical movement, Too many missing BluFAX Readers, etc…) | 13,469 | 8.2 |
| **Total Trips Recorded** | **163,394** | **100.0** |

Source: Interchange-to-Interchange Movement Survey, August 2013.

**Table A.2-3**
**Summary of Trip Data by MDX Expressway Used**

| | Observed Trips | Percent of Total |
|---|---|---|
| Trips on SR 836 Only | 44,831 | |
| Trips on SR 112 Only | 18,901 | |
| Trips on both SR 836 and SR 112 | 1,181 | |
| **Total Trips on MDX Expressways** | **64,913** | **43.3** |
| **Trips not using an MDX Expressway** | **85,012** | **56.7** |
| **Total Trips Included in Interchange-to-Interchange Movement Analysis** | **149,925** | **100.0** |

Source: Interchange-to-Interchange Movement Survey, August 2013.





**Table A.2-4**
**Observed SR 836 Eastbound Movements**
Eastbound Movements Based on Bluetooth Survey Conducted August 2013

| Entrance | | | Exit: NW 107th Avenue | NW 87th Avenue | SR 826 | NW 72nd Avenue | NW 57th Avenue | NW 45th Avenue | NW 42nd Avenue | NW 27th Avenue | NW 17th Avenue | I-95 / I-395 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HEFT | Observed | | 1 | 1535 | 1111 | 167 | 249 | 251 | 572 | 233 | 268 | 889 | 5276 |
| | % of Entrance | | 0.0% | 29.1% | 21.1% | 3.2% | 4.7% | 4.8% | 10.8% | 4.4% | 5.1% | 16.8% | |
| | % of Exit | | 100.0% | 77.7% | 35.0% | 15.4% | 15.1% | 13.1% | 14.9% | 9.2% | 12.5% | 10.9% | |
| NW 137th Avenue | Observed | | | 441 | 357 | 38 | 93 | 55 | 168 | 69 | 78 | 196 | 1495 |
| | % of Entrance | | | 29.5% | 23.9% | 2.5% | 6.2% | 3.7% | 11.2% | 4.6% | 5.2% | 13.1% | |
| | % of Exit | | | 22.3% | 11.2% | 3.5% | 5.7% | 2.9% | 4.4% | 2.7% | 3.6% | 2.4% | |
| NW 107th Avenue | Observed | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | % of Entrance | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| | % of Exit | | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| NW 87th Avenue | Observed | | | | 1709 | 343 | 468 | 346 | 730 | 373 | 230 | 1215 | 5414 |
| | % of Entrance | | | | 31.6% | 6.3% | 8.6% | 6.4% | 13.5% | 6.9% | 4.2% | 22.4% | |
| | % of Exit | | | | 53.8% | 31.7% | 28.4% | 18.0% | 19.0% | 14.8% | 10.7% | 14.9% | |
| SR 826 | Observed | | | | | 534 | 690 | 553 | 1220 | 704 | 481 | 1455 | 5637 |
| | % of Entrance | | | | | 9.5% | 12.2% | 9.8% | 21.6% | 12.5% | 8.5% | 25.8% | |
| | % of Exit | | | | | 49.4% | 41.9% | 28.8% | 31.7% | 27.9% | 22.4% | 17.8% | |
| NW 72nd Avenue | Observed | | | | | | 145 | 75 | 187 | 131 | 99 | 341 | 978 |
| | % of Entrance | | | | | | 14.8% | 7.7% | 19.1% | 13.4% | 10.1% | 34.9% | |
| | % of Exit | | | | | | 8.8% | 3.9% | 4.9% | 5.2% | 4.6% | 4.2% | |
| NW 57th Avenue | Observed | | | | | | | 639 | 971 | 577 | 417 | 1122 | 3726 |
| | % of Entrance | | | | | | | 17.1% | 26.1% | 15.5% | 11.2% | 30.1% | |
| | % of Exit | | | | | | | 33.3% | 25.2% | 22.9% | 19.4% | 13.7% | |
| NW 42nd Avenue | Observed | | | | | | | | | 80 | 109 | 565 | 754 |
| | % of Entrance | | | | | | | | | 10.6% | 14.5% | 74.9% | |
| | % of Exit | | | | | | | | | 3.2% | 5.1% | 6.9% | |
| NW 37th Avenue | Observed | | | | | | | | | 354 | 422 | 1318 | 2094 |
| | % of Entrance | | | | | | | | | 16.9% | 20.2% | 62.9% | |
| | % of Exit | | | | | | | | | 14.0% | 19.6% | 16.1% | |
| NW 27th Avenue | Observed | | | | | | | | | | 45 | 158 | 203 |
| | % of Entrance | | | | | | | | | | 22.2% | 77.8% | |
| | % of Exit | | | | | | | | | | 2.1% | 1.9% | |
| NW 12th Avenue | Observed | | | | | | | | | | | 917 | 917 |
| | % of Entrance | | | | | | | | | | | 100.0% | |
| | % of Exit | | | | | | | | | | | 11.2% | |
| Total | Observed | | 1 | 1976 | 3177 | 1082 | 1645 | 1919 | 3848 | 2521 | 2149 | 8176 | 26494 |

**Table A.2-4 (Cont'd)**
**Observed SR 836 Movements**
Westbound Movements Based on Bluetooth Survey Conducted August 2013

| Entrance | | | Exit: NW 12th Avenue | NW 27th Avenue | NW 37th Avenue | NW 42nd Avenue | NW 57th Avenue | NW 72nd Avenue | SR 826 | NW 87th Avenue | NW 107th Avenue | NW 137th Avenue | HEFT | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| I-95 / I-395 | Observed | | 2360 | 222 | 527 | 1027 | 379 | 104 | 685 | 1022 | 0 | 418 | 323 | 7067 |
| | % of Entrance | | 33.4% | 3.1% | 7.5% | 14.5% | 5.4% | 1.5% | 9.7% | 14.5% | 0.0% | 5.9% | 4.6% | |
| | % of Exit | | 100.0% | 72.3% | 53.0% | 62.9% | 23.2% | 26.5% | 17.5% | 20.8% | 0.0% | 25.2% | 19.5% | |
| NW 17th Avenue | Observed | | | 85 | 231 | 391 | 167 | 52 | 319 | 432 | 0 | 55 | 66 | 1798 |
| | % of Entrance | | | 4.7% | 12.8% | 21.7% | 9.3% | 2.9% | 17.7% | 24.0% | 0.0% | 3.1% | 3.7% | |
| | % of Exit | | | 27.7% | 23.2% | 24.0% | 10.2% | 13.2% | 8.1% | 8.8% | 0.0% | 3.3% | 4.0% | |
| NW 27th Avenue | Observed | | | | 236 | 214 | 144 | 32 | 324 | 316 | 0 | 100 | 90 | 1456 |
| | % of Entrance | | | | 16.2% | 14.7% | 9.9% | 2.2% | 22.3% | 21.7% | 0.0% | 6.9% | 6.2% | |
| | % of Exit | | | | 23.7% | 13.1% | 8.8% | 8.1% | 8.3% | 6.4% | 0.0% | 6.0% | 5.4% | |
| NW 42nd Avenue | Observed | | | | | | 675 | 90 | 662 | 914 | 0 | 277 | 258 | 2876 |
| | % of Entrance | | | | | | 23.5% | 3.1% | 23.0% | 31.8% | 0.0% | 9.6% | 9.0% | |
| | % of Exit | | | | | | 41.4% | 22.9% | 16.9% | 18.6% | 0.0% | 16.7% | 15.6% | |
| NW 45th Avenue | Observed | | | | | | 266 | 18 | 282 | 242 | 0 | 37 | 29 | 874 |
| | % of Entrance | | | | | | 30.4% | 2.1% | 32.3% | 27.7% | 0.0% | 4.2% | 3.3% | |
| | % of Exit | | | | | | 16.3% | 4.6% | 7.2% | 4.9% | 0.0% | 2.2% | 1.7% | |
| NW 57th Avenue | Observed | | | | | | | 97 | 871 | 1344 | 0 | 168 | 145 | 2625 |
| | % of Entrance | | | | | | | 3.7% | 33.2% | 51.2% | 0.0% | 6.4% | 5.5% | |
| | % of Exit | | | | | | | 24.7% | 22.2% | 27.3% | 0.0% | 10.1% | 8.7% | |
| NW 72nd Avenue | Observed | | | | | | | | 773 | 364 | 0 | 108 | 92 | 1337 |
| | % of Entrance | | | | | | | | 57.8% | 27.2% | 0.0% | 8.1% | 6.9% | |
| | % of Exit | | | | | | | | 19.7% | 7.4% | 0.0% | 6.5% | 5.5% | |
| SR 826 | Observed | | | | | | | | | 284 | 0 | 263 | 267 | 814 |
| | % of Entrance | | | | | | | | | 34.9% | 0.0% | 32.3% | 32.8% | |
| | % of Exit | | | | | | | | | 5.8% | 0.0% | 15.8% | 16.1% | |
| NW 87th Avenue | Observed | | | | | | | | | | 0 | 236 | 241 | 477 |
| | % of Entrance | | | | | | | | | | 0.0% | 49.5% | 50.5% | |
| | % of Exit | | | | | | | | | | 0.0% | 14.2% | 14.5% | |
| NW 107th Avenue | Observed | | | | | | | | | | | | 147 | 147 |
| | % of Entrance | | | | | | | | | | | | 100.0% | |
| | % of Exit | | | | | | | | | | | | 8.9% | |
| Total | Observed | | 2360 | 307 | 994 | 1632 | 1631 | 393 | 3916 | 4918 | 0 | 1662 | 1658 | 19471 |

**Table A.2-5**
**Observed SR 112 Eastbound Movements**
Movements Based on Bluetooth Survey Conducted August 2013

| EASTBOUND | | | Exit | | | | |
|---|---|---|---|---|---|---|---|
| | | | NW 27th Ave. | NW 22nd Ave. | NW 12th Ave. via NW 39th St. | I-95 / I-95 Express / I-195 | Total |
| Entrance | W of NW Le Jeune / MIA | Observed | 0 | 0 | 0 | 0 | 0 |
| | | % of Entrance | 0.0% | 0.0% | 0.0% | 0.0% | |
| | | % of Exit | 0.0% | 0.0% | 0.0% | 0.0% | |
| | Le Jeune Rd NB / NW 36th St. / US 27 | Observed | 1,474 | 0 | 441 | 3,026 | 4,941 |
| | | % of Entrance | 29.8% | 0.0% | 8.9% | 61.2% | |
| | | % of Exit | 100.0% | 0.0% | 24.3% | 42.4% | |
| | NW 27th Ave. | Observed | | 0 | 0 | 0 | 0 |
| | | % of Entrance | | 0.0% | 0.0% | 0.0% | |
| | | % of Exit | | 0.0% | 0.0% | 0.0% | |
| | NW 22nd Ave. | Observed | | | 1,372 | 4,105 | 5,477 |
| | | % of Entrance | | | 25.1% | 74.9% | |
| | | % of Exit | | | 75.7% | 57.6% | |
| Total | | Observed | 1,474 | 0 | 1,813 | 7,131 | 10,418 |

| WESTBOUND | | | Exit | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | NW 17th Ave. via NW 40th St. | NW 22nd Ave. | NW 27th Ave. | Le Jeune Rd NB / NW 36th St. / US 27 | W of NW Le Jeune / MIA | Total |
| Entrance | I-95 / I-95 Express / I-195 | Observed | 117 | 3,264 | 0 | 4,686 | 0 | 8,067 |
| | | % of Entrance | 1.5% | 40.5% | 0.0% | 58.1% | 0.0% | |
| | | % of Exit | 100.0% | 100.0% | 0.0% | 74.6% | 0.0% | |
| | NW 22nd Ave. | Observed | | | 0 | 0 | 0 | 0 |
| | | % of Entrance | | | 0.0% | 0.0% | 0.0% | |
| | | % of Exit | | | 0.0% | 0.0% | 0.0% | |
| | NW 27th Ave. | Observed | | | | 1,597 | 0 | 1,597 |
| | | % of Entrance | | | | 100.0% | 0.0% | |
| | | % of Exit | | | | 25.4% | 0.0% | |
| Total | | Observed | 117 | 3,264 | 0 | 6,283 | 0 | 9,664 |

# Appendix A.3

# INRIX Speed Data

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# Appendix A.3

# INRIX Speed Data

The speed data provided in this appendix are based on the 2011 INRIX Speed Database provided by FDOT and represent the average of all speeds observed in 5-minute increments for all days in 2011, summarized and averaged by segment and by time period as noted.

**Table A.3 - 1**
**INRIX Speed Data Summary**
**State Route 112 - Airport Expressway**

**Eastbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 112 EB Mainline | 45 | | | | | |
| Off Ramp Le Jeune Rd/NW 42nd Ave NB | 30 | | | | | |
| SR 112 EB Mainline | 55 | 39 | 30 | 43 | 40 | 44 |
| On Ramp LE Jeune Rd/NW 42nd Ave SB | 30 | | | | | |
| On Ramp NW 36th St | 30 | | | | | |
| SR 112 EB Mainline | 55 | 44 | 52 | 44 | 46 | 43 |
| On Ramp US 27/Okeechobee Rd | 30 | | | | | |
| SR 112 EB Mainline | 55 | 46 | 54 | 47 | 48 | 47 |
| Off Ramp NW 27th Ave Via 38th St | 25 | | | | | |
| SR 112 EB Mainline | 55 | 53 | 56 | 52 | 53 | 52 |
| On Ramp NW 27th Ave SB Via 38th St | 20 | | | | | |
| SR 112 EB Mainline | 55 | 53 | 56 | 52 | 53 | 52 |
| On Ramp NW 27th Ave | 30 | | | | | |
| SR 112 EB Mainline | 55 | 53 | 45 | 52 | 53 | 52 |
| Off Ramp NW 22nd Ave | 30 | | | | | |
| SR 112 EB Mainline | 55 | 53 | 43 | 53 | 53 | 52 |
| On Ramp NW 22nd Ave | 30 | | | | | |
| SR 112 EB Mainline at Toll Gantry | 55 | 44 | 48 | 46 | 42 | 48 |
| Off Ramp NW 12th Ave Via 39th St | 25 | | | | | |
| SR 112 EB Mainline | 55 | 54 | 45 | 54 | 54 | 54 |
| Off Ramp I-95 And I-95 Express | 30 | | | | | |
| Off Ramp I-95 Express NB | 30 | | | | | |
| Off Ramp I-95 | 30 | | | | | |
| Off Ramp I-95 SB | 30 | | | | | |
| Off Ramp I-95 NB | 30 | | | | | |
| I-195 EB Mainline | 55 | 46 | 46 | 45 | 46 | 45 |
| On Ramp I-95 SB | 30 | | | | | |
| On Ramp I-95 NB | 45 | | | | | |
| On Ramp I-95 | 45 | | | | | |
| I-195 EB Mainline | 55 | 52 | 51 | 50 | 50 | 48 |

**Westbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 112 WB Mainline | 45 | 34 | 27 | 37 | 30 | 40 |
| On Ramp Le Jeune Rd/NW 42nd Ave SB | 30 | | | | | |
| SR 112 WB Mainline | 55 | 43 | 28 | 44 | 44 | 45 |
| Off Ramp Le Jeune Rd/NW 42nd Ave NB | 30 | | | | | |
| SR 112 WB Mainline | 55 | 44 | 23 | 45 | 45 | 46 |
| Off Ramp NW 36 St | 30 | | | | | |
| SR 112 WB Mainline | 55 | 44 | 22 | 48 | 46 | 49 |
| Off Ramp US 27/Okeechobee Rd | 30 | | | | | |
| SR 112 WB Mainline | 55 | 49 | 26 | 50 | 50 | 50 |
| On Ramp NW 27th Ave Via 41st St | 30 | | | | | |
| SR 112 WB Mainline | 55 | 54 | 35 | 53 | 53 | 53 |
| Off Ramp NW 27th Ave Via 41st St | 30 | | | | | |
| SR 112 WB Mainline | 55 | 55 | 38 | 54 | 54 | 53 |
| On Ramp NW 22nd Ave | 30 | | | | | |
| SR 112 WB Mainline | 55 | 57 | 44 | 56 | 56 | 55 |
| Off Ramp NW 22nd Ave | 25 | | | | | |
| SR 112 WB Mainline | 55 | 58 | 54 | 57 | 57 | 56 |
| Off Ramp NW 17th Ave Via 40th St | 30 | | | | | |
| SR 112 WB Mainline Toll Gantry | 55 | 57 | 56 | 56 | 56 | 56 |
| On Ramp I-95 Express Lane SB | 30 | | | | | |
| I-195 WB Mainline | 55 | | | | | |
| On Ramp I-95 | 30 | | | | | |
| On Ramp I-95 NB | 30 | | | | | |
| On Ramp I-95 SB | 30 | | | | | |
| I-195 WB Mainline | 55 | 46 | 39 | 44 | 46 | 44 |
| Off Ramp I-95 NB | 30 | | | | | |
| Off Ramp I-95 SB | 30 | | | | | |
| Off Ramp I-95 | 30 | | | | | |
| I-195 WB Mainline | 55 | 41 | 39 | 43 | 47 | 47 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*

**Table A.3 - 2**
**INRIX Speed Data Summary**
**State Route 836 - Dolphin Expressway**

**Eastbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 836 EB Mainline | 55 | | | | | |
| SW 137th Ave | 40 | | | | | |
| SR 836 EB Mainline at Toll Gantry | 55 | | | | | |
| On Ramp SR 821/FL Turnpike SB | 30 | | | | | |
| SR 836 EB Mainline | 55 | | | | | |
| On Ramp SR 821/FL Turnpike NB COnnect SR 821/FL Turnpike NB On Ramp to Mainline | 30 | | | | | |
| | 55 | | | | | |
| SR 836 EB Mainline | 55 | | | | | |
| Off Ramp NW 107th Ave | 30 | | | | | |
| SR 836 EB Mainline | 55 | 58 | 61 | 60 | 60 | 59 |
| On Ramp NW 107th Ave SB | 25 | | | | | |
| SR 836 EB Mainline | 55 | 58 | 61 | 60 | 60 | 59 |
| On Ramp NW 107th Ave NB Connect ML to 107th Ave EB On Ramp NB | 30 | | | | | |
| | 55 | | | | | |
| SR 836 EB Mainline at Toll Gantry | 55 | | | | | |
| SR 836 EB CD Road at Toll Plaza | 30 | | | | | |
| SR 836 EB Mainline | 55 | 47 | 59 | 58 | 58 | 57 |
| Off Ramp NW 87th Ave | 30 | | | | | |
| SR 836 EB Mainline | 55 | 34 | 55 | 53 | 49 | 54 |
| On Ramp NW 87th Ave | 30 | | | | | |
| SR 836 EB Mainline | 55 | 25 | 48 | 45 | 33 | 51 |
| Off Ramp SR 826/Palmetto Expwy SB | 30 | | | | | |
| SR 836 EB Mainline | 55 | 25 | 48 | 45 | 33 | 51 |
| On Ramp SR 826/Palmetto Expwy SB | 30 | | | | | |
| SR 836 EB Mainline | 55 | 25 | 48 | 45 | 33 | 51 |
| Off Ramp SR 826/Palmetto Expwy NB | 30 | | | | | |
| SR 836 EB Mainline | 55 | 25 | 48 | 45 | 33 | 51 |
| On Ramp SR 826/Palmetto Expwy NB | 30 | | | | | |
| SR 836 EB Mainline | 55 | 25 | 48 | 45 | 33 | 51 |
| Off Ramp NW 72nd Ave | 30 | | | | | |
| SR 836 EB Mainline | 55 | 23 | 46 | 44 | 29 | 52 |
| On Ramp NW 72nd Ave | 30 | | | | | |
| SR 836 EB Mainline | 55 | 24 | 42 | 42 | 27 | 49 |
| Off Ramp NW 57th Ave/Red Rd | 30 | | | | | |
| SR 836 EB Mainline | 55 | 28 | 39 | 44 | 30 | 50 |
| On Ramp NW 57th Ave/Red Rd | 30 | | | | | |
| SR 836 EB Mainline | 55 | 43 | 46 | 49 | 44 | 51 |
| Off Ramp NW 45th Ave | 30 | | | | | |
| SR 836 EB Mainline | 55 | 49 | 49 | 51 | 48 | 52 |
| Off Ramp Le Jeune Rd/NW 42nd Ave SB | 25 | | | | | |
| Off Ramps Le Jeune Rd/NW 42nd Ave SB | 25 | | | | | |
| SR 836 EB Mainline | 55 | 53 | 54 | 54 | 53 | 55 |
| Off Ramp MIC Connector/Le Jeune Rd NB | 25 | | | | | |
| SR 836 EB Mainline | 55 | 53 | 54 | 54 | 53 | 55 |
| On Ramp Le Jeune Rd/NW 42nd Ave | 30 | | | | | |
| SR 836 EB Mainline | 55 | 53 | 54 | 54 | 53 | 55 |
| On Ramp Le Jeune Rd/NW 42nd Ave | 30 | | | | | |

**Westbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 836 WB Mainline | 45 | | | | | |
| Off Ramp SW 137th Ave | 35 | | | | | |
| SR 836 WB Mainline at Toll Gantry | 48 | | | | | |
| Off Ramp SR 821/FL Turnpike SB | 30 | | | | | |
| Off Ramp SR 821/FL Turnpike NB | 30 | | | | | |
| SR 836 WB CD Road | 50 | 57 | 43 | 58 | 58 | 58 |
| On Ramp NW 107th Ave / NW 11th Ave | 30 | | | | | |
| SR 836 WB CD Road | 50 | 62 | 61 | 61 | 62 | 61 |
| Off Ramp NW 107th Ave | 30 | | | | | |
| SR 836 WB CD Road | 50 | 60 | 60 | 58 | 60 | 58 |
| Off Ramp NW 107th Ave NB | 30 | | | | | |
| Off Ramp NW 107th Ave/ NB/SB Turnpike | 30 | | | | | |
| SR 836 WB CD Road | 45 | 60 | 60 | 58 | 60 | 58 |
| SR 836 WB Mainline at Toll Gantry | 55 | | | | | |
| SR 836 WB CD Road at Toll Plaza | 45 | 60 | 60 | 58 | 60 | 58 |
| SR 836 WB Mainline | 55 | | | | | |
| SR 836 WB CD Road | 45 | 60 | 60 | 58 | 60 | 58 |
| SR 836 WB Mainline | 55 | 55 | 53 | 56 | 55 | 56 |
| On Ramp NW 87th Ave Via 12th Ave | 30 | | | | | |
| SR 836 WB CD Road | 45 | 60 | 60 | 58 | 60 | 58 |
| Off Ramp NW 87th Ave SB | 25 | | | | | |
| SR 836 WB CD Road | 45 | | | | | |
| On Ramp NW 87th Ave NB | 30 | | | | | |
| SR 836 WB CD Road | 45 | | | | | |
| Off Ramp SW 87th Ave Via 12th Ave | 30 | | | | | |
| SR 836 WB CD Road | 45 | | | | | |
| Off Ramp SW 87th Ave | 30 | | | | | |
| SR 836 WB Mainline | 55 | 49 | 42 | 51 | 45 | 54 |
| SR 836 WB CD Road | 45 | | | | | |
| On Ramp SR 826/Palmetto Expwy SB | 30 | | | | | |
| Off Ramp SR 826/Palmetto Expwy SB | 25 | | | | | |
| SR 836 WB Mainline | 55 | 49 | 42 | 51 | 45 | 54 |
| Off Ramp SR 826/Palmetto Expwy SB | 40 | | | | | |
| SR 836 WB Mainline | 55 | 49 | 42 | 51 | 45 | 54 |
| Off Ramp SR 826/Palmetto Expwy NB | 30 | | | | | |
| SR 836 WB Mainline | 55 | 49 | 42 | 51 | 45 | 54 |
| On Ramp NW 72nd Ave | 30 | | | | | |
| SR 836 WB Mainline | 55 | 54 | 41 | 53 | 49 | 55 |
| On Ramp Palmetto/836 WB | 30 | | | | | |
| SR 836 WB Mainline | 55 | 54 | 41 | 53 | 49 | 55 |
| Off Ramp NW 72nd Ave | 35 | | | | | |
| Off Ramp NW 72nd Ave/Palmetto | 35 | | | | | |
| SR 836 WB Mainline | 55 | 55 | 34 | 53 | 50 | 54 |
| On Ramp NW 57th Ave/Red Rd | 30 | | | | | |
| SR 836 WB Mainline | 55 | 55 | 30 | 54 | 51 | 55 |
| Off Ramp NW 57th Ave/Red Rd | 20 | | | | | |
| SR 836 WB Mainline | 55 | 54 | 26 | 52 | 49 | 54 |
| On Ramp NW 45th Ave | 30 | | | | | |
| SR 836 WB Mainline | 55 | 52 | 17 | 51 | 48 | 53 |
| On Ramp Le Jeune Rd/NW 42nd Ave NB | 30 | | | | | |
| On Ramp MIC/Airport/NW 42nd Ave SB | 30 | | | | | |
| SR 836 WB Mainline | 55 | 53 | 19 | 53 | 50 | 54 |
| Off Ramp Le Jeune Rd/NW 42nd Ave SB | 30 | | | | | |
| SR 836 WB Mainline | 55 | 53 | 19 | 53 | 50 | 54 |
| Off Ramps MIC Connector/Le Jeune Rd NB | 40 | | | | | |
| Off Ramp MIC Connector/Le Jeune Rd NB | 30 | | | | | |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*





**Table A.3 - 2 (cont'd)**
**INRIX Speed Data Summary**
**State Route 836 - Dolphin Expressway**

**Eastbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 836 EB Mainline | 55 | 53 | 55 | 56 | 55 | 56 |
| On Ramp NW 37th Ave/Douglas Rd | 30 | | | | | |
| SR 836 EB Mainline | 55 | 54 | 53 | 55 | 55 | 56 |
| Off Ramp NW 27th Ave SB | 25 | | | | | |
| SR 836 EB Mainline | 55 | 53 | 53 | 55 | 54 | 55 |
| On Ramp NW 27th Ave SB | 25 | | | | | |
| SR 836 EB Mainline | 55 | 53 | 53 | 55 | 54 | 55 |
| Off Ramp NW 27th Ave NB | 25 | | | | | |
| SR 836 EB Mainline | 55 | 53 | 53 | 55 | 54 | 55 |
| On Ramp NW 27th Ave NB | 30 | | | | | |
| SR 836 EB Mainline | 55 | 53 | 53 | 55 | 54 | 56 |
| Off Ramp NW 17th Ave at Toll Plaza | 30 | | | | | |
| Off Ramp NW 17th Ave SB | 20 | | | | | |
| Off Ramp NW 17th Ave NB / NW 16th Ave | 30 | | | | | |
| Off Ramp NW 16th Ave | 30 | | | | | |
| Off Ramp NW 17th Ave NB | 30 | | | | | |
| SR 836 EB Mainline | 55 | 51 | 44 | 53 | 52 | 54 |
| On Ramp NW 12th Ave SB | 30 | | | | | |
| SR 836 EB Mainline | 55 | 48 | 41 | 61 | 52 | 60 |
| On Ramp NW 12th Ave NB | 30 | | | | | |
| SR 836 EB Mainline | 55 | 43 | 33 | 49 | 44 | 52 |
| Off Ramp I-95 SB | 35 | | | | | |
| I-395 EB Mainline | 55 | | | | | |
| Off Ramp I-95 NB | 30 | | | | | |
| I-395 EB Mainline | 55 | | | | | |
| On Ramps I-95 NB | 30 | | | | | |
| On Ramps I-95 SB | 30 | | | | | |
| On Ramps I-95 | 30 | | | | | |
| I-395 EB Mainline | 55 | 52 | 49 | 50 | 50 | 50 |

**Westbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 836 WB Mainline | 55 | 54 | 24 | 53 | 51 | 54 |
| Off Ramp NW 37th Ave/Douglas Rd | 30 | | | | | |
| SR 836 WB Mainline | 53 | 53 | 18 | 53 | 49 | 55 |
| On Ramp NW 27th Ave SB | 30 | | | | | |
| SR 836 WB Mainline | 50 | 52 | 18 | 53 | 49 | 55 |
| Off Ramp NW 27th Ave SB | 25 | | | | | |
| SR 836 WB Mainline | 50 | 52 | 18 | 53 | 49 | 55 |
| On Ramp NW 27th Ave NB | 30 | | | | | |
| SR 836 WB Mainline | 50 | 52 | 18 | 53 | 49 | 55 |
| Off Ramp NW 27th Ave NB | 25 | | | | | |
| SR 836 WB Mainline | 50 | 54 | 14 | 53 | 51 | 55 |
| On Ramp NW 17th Ave SB | 30 | | | | | |
| SR 836 WB Mainline | 50 | 55 | 19 | 54 | 53 | 56 |
| On Ramp NW 17th Ave NB | 30 | | | | | |
| SR 836 WB Mainline | 50 | 54 | 24 | 53 | 52 | 54 |
| Off Ramp NW 12th Ave | 25 | | | | | |
| SR 836 WB Mainline | 50 | 54 | 36 | 54 | 53 | 55 |
| On Ramps I-95 | 30 | | | | | |
| On Ramp I-95 NB | 30 | | | | | |
| On Ramp I-95 SB | 30 | | | | | |
| I-395 WB Mainline | 55 | | | | | |
| Off Ramp I-95 SB | 30 | | | | | |
| I-395 WB Mainline | 55 | | | | | |
| Off Ramp I-95 NB | 30 | | | | | |
| I-395 WB Mainline | 55 | 49 | 48 | 50 | 49 | 51 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*

**Table A.3 - 3**
**INRIX Speed Data Summary**
**State Route 874 - Don Shula Expressway**

**Northbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 874 NB Mainline at Toll Gantry | 60 | 36 | 59 | 51 | 49 | 52 |
| Off Ramp Killian Dr/SW 104th St | 30 | | | | | |
| SR 874 NB Mainline | 60 | 51 | 57 | 55 | 56 | 55 |
| On Ramp Killian Dr/SW 104th St EB | 30 | | | | | |
| SR 874 NB Mainline | 60 | 51 | 57 | 55 | 56 | 55 |
| On Ramp Killian Dr/SW 104th St WB | 30 | | | | | |
| SR 874 NB Mainline at Toll Gantry | 60 | 48 | 57 | 53 | 55 | 52 |
| Off Ramp N Kendall Dr/SW 88th St | 30 | | | | | |
| SR 874 NB Mainline | 60 | 46 | 58 | 56 | 58 | 55 |
| On Ramp N Kendall Dr / SR 878 | 30 | | | | | |
| SR 878 EB Mainline | 60 | 54 | 53 | 53 | 55 | 56 |
| On Ramp N Kendall Dr | 30 | | | | | |
| SR 874 NB Mainline | 60 | 41 | 60 | 57 | 59 | 52 |
| On Ramp N Kendall Dr | 30 | | | | | |
| SR 874 NB Mainline at Toll Gantry | 60 | 41 | 58 | 56 | 56 | 55 |
| Off Ramp SR 826/Palmetto Expwy NB | 30 | | | | | |
| SR 874 NB Mainline | 60 | 40 | 54 | 53 | 51 | 54 |

**Southbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 874 SB Mainline at Toll Gantry | 60 | 52 | 48 | 52 | 50 | 51 |
| On Ramp Killian Dr/SW 104th St | 30 | | | | | |
| SR 874 SB Mainline | 60 | 56 | 47 | 53 | 55 | 52 |
| Off Ramp Killian Dr/SW 104th St WB | 30 | | | | | |
| SR 874 SB Mainline | 60 | 56 | 47 | 53 | 55 | 52 |
| Off Ramp SW 107th Ave /Killian Dr/SW 104th St EB | 30 | | | | | |
| SR 874 SB Mainline at Toll Gantry | 60 | 54 | 36 | 52 | 53 | 51 |
| On Ramp N Kendall Dr | 30 | | | | | |
| SR 874 SB Mainline | 60 | 60 | 42 | 57 | 59 | 56 |
| Off Ramp N Kendall Dr | 30 | | | | | |
| SR 878 WB Mainline | 60 | 48 | 53 | 52 | 54 | 52 |
| SR 878 WB Mainline | 60 | 48 | 53 | 52 | 54 | 52 |
| Off Ramp Kendall Dr/SW 88th Street | 30 | | | | | |
| SR 874 SB Mainline | 60 | 60 | 47 | 58 | 60 | 57 |
| Off Ramp Kendall Dr/SW 88th Street | 30 | | | | | |
| SR 874 SB Mainline at Toll Gantry | 60 | 59 | 52 | 56 | 58 | 55 |
| On Ramp SR 826/Palmetto Expwy CD SB | 30 | | | | | |
| SR 874 SB Mainline | 60 | 48 | 30 | 49 | 48 | 50 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*

**Table A.3 - 4**
**INRIX Speed Data Summary**
**State Route 878 - Snapper Creek Expressway**

**Northbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 878 EB Mainline | 55 | 54 | 53 | 53 | 55 | 56 |
| On Ramp N Kendall Dr | 30 | | | | | |
| SR 878 EB Mainline at Toll Gantry | 55 | 54 | 53 | 53 | 55 | 52 |
| Off Ramp SW 87th Ave | 30 | | | | | |
| SR 878 EB Mainline | 55 | 54 | 54 | 51 | 54 | 50 |
| On Ramp SW 87th Ave | 30 | | | | | |
| SR 878 EB Mainline at Toll Gantry | 55 | 54 | 41 | 52 | 55 | 52 |
| Off Ramp SW 72nd Ave | 30 | | | | | |
| SR 878 EB Mainline | 55 | 34 | 50 | 51 | 50 | 51 |
| Off Ramp S Dixie Hway/US 1 SB | 30 | | | | | |
| Off Ramp S Dixie Hway/US 1 NB | 30 | 36 | 29 | 44 | 41 | 46 |

**Southbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 878 WB Mainline | 55 | 48 | 53 | 52 | 54 | 52 |
| Off Ramp N Kendall Dr | 30 | | | | | |
| SR 878 WB Mainline | 55 | 48 | 53 | 52 | 54 | 52 |
| Off Ramp Kendall Dr/SW 88th St | 30 | | | | | |
| SR 878 WB Mainline at Toll Gantry | 55 | 48 | 53 | 52 | 54 | 52 |
| On Ramp SW 87th Ave | 30 | | | | | |
| SR 878 WB Mainline | 55 | 48 | 55 | 53 | 54 | 52 |
| Off Ramp SW 87th Ave | 30 | | | | | |
| SR 878 WB Mainline at Toll Gantry | 55 | 46 | 55 | 51 | 54 | 50 |
| On Ramp SW 72nd Ave | 30 | | | | | |
| SR 878 WB Mainline | 55 | 42 | 53 | 50 | 53 | 49 |
| On Ramp S Dixie Hway/US 1 SB | 30 | 40 | 52 | 50 | 50 | 50 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*

**Table A.3 - 5**
**INRIX Speed Data Summary**
**State Route 924 - Gratigny Parkway**

**Eastbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| I-75 SB Mainline | 60 | | | | | |
| Off Ramp SR 826/Palmetto Expwy SB | 40 | | | | | |
| I-75 SB Mainline | 60 | | | | | |
| Off Ramp SR 826/Palmetto Expwy NB | 40 | | | | | |
| I-75 SB Mainline | 60 | | | | | |
| On Ramp SR 826/Palmetto Expwy SB | 30 | | | | | |
| SR 924 EB Mainline | 60 | | | | | |
| On Ramp SR 826/Palmetto Expwy NB | 30 | | | | | |
| SR 924 EB Mainline at Toll Gantry | 60 | 59 | 58 | 53 | 57 | 52 |
| Off Ramp SW 57th Ave/W 4th Ave/Red Rd | 30 | | | | | |
| SR 924 EB Mainline | 60 | 60 | 59 | 54 | 59 | 52 |
| On Ramp SW 57th Ave/W 4th Ave/Red Rd SB | 25 | | | | | |
| SR 924 EB Mainline | 60 | 60 | 59 | 54 | 59 | 52 |
| On Ramp SW 57th Ave/W 4th Ave/Red Rd NB | 30 | | | | | |
| SR 924 EB Mainline at Toll Gantry | 59.7 | 57 | 52 | 51 | 55 | 50 |
| Off Ramp Le Jeune Rd/Douglas Expwy SB | 30 | | | | | |
| SR 924 EB Mainline at Toll Gantry | 55 | | | | | |
| Off Ramp Le Jeune Rd/Douglas Expwy NB | 20 | | | | | |
| SR 924 EB Mainline at Toll Gantry | 55 | | | | | |
| On Ramp Le Jeune Rd/Douglas Expwy | 30 | | | | | |
| SR 924 EB Mainline at Toll Gantry | 49 | 33 | 41 | 42 | 39 | 44 |
| From NW 32nd Ave to NW 27th Ave | 40 | 28 | 33 | 37 | 27 | 41 |
| From NW 27th Ave to NW 22nd Ave | 40 | 34 | 38 | 42 | 35 | 45 |
| From NW 22nd Ave to NW 17th Ave | 40 | 32 | 36 | 41 | 33 | 44 |
| From NW 17th Ave to NW 7th Ave | 40 | 30 | 35 | 40 | 31 | 44 |
| From NW 7th Ave to I-95 | 40 | | | | | |

**Westbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| I-75 NB Mainline | 60 | | | | | |
| On Ramp SR 826/Palmetto Expwy NB | 50 | | | | | |
| I-75 NB Mainline | 60 | | | | | |
| On Ramp SR 826/Palmetto Expwy SB | 30 | | | | | |
| I-75 NB Mainline | 60 | | | | | |
| SR 924 WB Mainline | 55 | | | | | |
| Off Ramp SR 826/Palmetto Expwy SB | 30 | | | | | |
| SR 924 WB Mainline | 55 | | | | | |
| Off Ramp SR 826/Palmetto Expwy NB | 30 | | | | | |
| SR 924 WB Mainline at Toll Gantry | 55 | 59 | 59 | 54 | 57 | 53 |
| On Ramp SW 57th Ave/W 4th Ave/Red Rd | 30 | | | | | |
| SR 924 WB Mainline | 55 | 59 | 60 | 55 | 58 | 53 |
| Off Ramp SW 57th Ave/W 4th Ave/Red Rd | 30 | | | | | |
| SR 924 WB Mainline at Toll Gantry | 55 | 56 | 57 | 52 | 55 | 50 |
| On Ramp Le Jeune Rd/Douglas Expwy | 30 | | | | | |
| SR 924 WB Mainline | 55 | | | | | |
| Off Ramp Le Jeune Rd/Douglas Expwy | 30 | | | | | |
| SR 924 WB Mainline | 49 | 44 | 44 | 43 | 41 | 44 |
| From NW 27th Ave to NW 32nd Ave | 40 | 37 | 34 | 38 | 32 | 41 |
| From NW 22nd Ave to NW 27th Ave | 40 | 37 | 31 | 41 | 35 | 44 |
| From NW 17th Ave to NW 22nd Ave | 40 | 38 | 31 | 41 | 34 | 45 |
| From NW 7th Ave to NW 17th Ave | 40 | 39 | 33 | 41 | 34 | 44 |
| From I-95 to NW 7th Ave | 40 | | | | | |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*





**Table A.3 - 6**
**INRIX Speed Data Summary**
**Interstate 95**

**Northbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| I-95 NB Mainline | 42.09 | | | | | |
| On Ramp Rickenbacker Causeway | 25 | | | | | |
| I-95 NB Mainline | 40 | 53 | 52 | 60 | 53 | 54 |
| Off Ramp SW 8th St | 35 | | | | | |
| I-95 NB Mainline | 40 | 54 | 51 | 56 | 54 | 55 |
| On Ramp SW 8th St | 30 | | | | | |
| I-95 NB Mainline | 40 | 54 | 51 | 56 | 54 | 55 |
| On Ramp SW 8th St | 30 | | | | | |
| I-95 NB Mainline | 50.98 | 53 | 48 | 55 | 53 | 53 |
| Off Ramp SR 970 | 30 | | | | | |
| I-95 NB Mainline | 55 | 55 | 45.5 | 55.5 | 54.5 | 55.5 |
| Off Ramp NW 3rd Ave | 30 | | | | | |
| I-95 NB Mainline | 55 | 55 | 45.5 | 55.5 | 54.5 | 55.5 |
| On Ramp SR 970 / S Miami Ave | 30 | | | | | |
| I-95 NB Mainline | 55 | 56 | 44 | 53 | 57 | 57 |
| On Ramp NW 3rd Ave | 30 | | | | | |
| I-95 NB Mainline | 55 | 56 | 44 | 53 | 57 | 57 |
| Off Ramp SR 836 EB | 30 | | | | | |
| I-95 NB Mainline | 55 | 57 | 41 | 62 | 58 | 57 |
| Off Ramp SR 836 WB | 30 | | | | | |
| I-95 NB Mainline | 55 | 57 | 41 | 62 | 58 | 57 |
| On Ramp SR 836 EB | 30 | | | | | |
| I-95 NB Mainline | 55 | 60 | 49 | 59 | 58 | 57 |
| I-95 Express Lane | 55 | | | | | |
| I-95 NB Mainline | 55 | 60 | 49 | 59 | 58 | 57 |
| Off Ramp to SR 112 and I-195 | 40 | | | | | |
| I-95 NB Mainline | 55 | 61.5 | 53 | 57 | 59.5 | 58.5 |
| On Ramp SR 112 EB | 30 | | | | | |
| I-95 NB Mainline | 55 | 61.5 | 53 | 57 | 59.5 | 58.5 |
| EXP On Ramp SR 112 EB | 45 | | | | | |
| I-95 Express Lane | 55 | | | | | |
| I-95 NB Mainline | 55 | 62 | 52 | 59 | 61 | 61 |
| Off Ramp NW 6th Ave | 30 | | | | | |
| I-95 NB Mainline | 55 | 62 | 48 | 60 | 61 | 60 |
| On Ramp NW 6th Ave | 30 | | | | | |
| I-95 NB Mainline | 55 | 62 | 47 | 58 | 61 | 60 |
| On Ramp NW 69th St | 30 | | | | | |
| I-95 NB Mainline | 55 | 59 | 44 | 61 | 57 | 57 |
| Off Ramp SR 934 | 30 | | | | | |
| I-95 NB Mainline | 55 | 61 | 45 | 61 | 60 | 59 |
| On Ramp NW 81st St | 30 | | | | | |
| I-95 NB Mainline | 55 | 62 | 46 | 60 | 60 | 59 |
| Off Ramp NW 95th St | 30 | | | | | |
| I-95 NB Mainline | 55 | 63 | 45 | 61 | 61 | 61 |
| On Ramp NW 95th St | 30 | | | | | |
| I-95 NB Mainline | 55 | 60 | 44 | 61 | 58 | 59 |
| Off Ramp NW 103rd St | 30 | | | | | |
| I-95 NB Mainline | 55 | 60 | 44 | 61 | 60 | 59 |
| On Ramp NW 103rd St | 30 | | | | | |
| I-95 NB Mainline | 55 | 62 | 47 | 59 | 61 | 60 |
| Off Ramp NW 119th St | 30 | | | | | |
| I-95 NB Mainline | 55 | 62 | 39 | 52 | 60 | 59 |
| Off Ramp NW 125th St | 30 | | | | | |
| I-95 NB Mainline | 55 | 62 | 39 | 52 | 60 | 59 |
| On Ramp NW 125th St | 30 | | | | | |
| I-95 NB Mainline | 55 | 62 | 39 | 52 | 60 | 59 |
| Off Ramp NW 135th St | 30 | | | | | |
| I-95 NB Mainline | 55 | 61 | 35 | 58 | 59 | 58 |
| On Ramp NW 6th Ave | 30 | | | | | |
| I-95 NB Mainline | 55 | 60 | 38 | 61 | 58 | 58 |
| Off Ramp NW 151st St | 30 | | | | | |
| I-95 NB Mainline | 55 | 59 | 54 | 57 | 58 | 59 |
| EXP Off Ramp Golden Glades Station | 45 | | | | | |
| I-95 Express Lane | 55 | 50 | 58 | 56 | 57 | 56 |
| Off Ramp Florida's Turnpike NB | 30 | | | | | |
| I-95 NB Mainline | 55 | 59 | 54 | 57 | 58 | 59 |
| Off Ramp SR 826 EB | 30 | | | | | |
| I-95 NB Mainline | 55 | 56 | 50 | 58 | 56 | 58 |
| Off Ramp SR 7 | 30 | | | | | |
| I-95 NB Mainline | 55 | 56 | 50 | 58 | 56 | 58 |
| On Ramp Route 441 / Florida's Turnpike / NW 2nd Ave | 30 | | | | | |
| I-95 NB Mainline | 55 | 56 | 51 | 55 | 57 | 59 |
| I-95 Express Lane | 55 | 52 | 56 | 55 | 57 | 56 |
| I-95 NB Mainline | 55 | 56 | 51 | 55 | 57 | 59 |
| Off Ramp SR 860 | 30 | | | | | |
| I-95 NB Mainline | 55 | 56 | 51 | 55 | 57 | 59 |
| On Ramp SR 860 | 30 | | | | | |
| I-95 NB Mainline | 55 | 58 | 54 | 60 | 60 | 62 |
| Off Ramp Ives Dairy Rd | 30 | | | | | |
| I-95 NB Mainline | 55 | 58 | 54 | 60 | 60 | 62 |
| On Ramp Ives Dairy Rd | 30 | | | | | |
| I-95 NB Mainline | 55 | 62 | 62 | 57 | 63 | 65 |

**Southbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| I-95 SB Mainline | 42.09 | 55 | 47 | 54 | 54 | 55 |
| Off Ramp SW 25th Rd | 30 | | | | | |
| I-95 SB Mainline | 40 | 58 | 52 | 58 | 58 | 58 |
| On Ramp SW 8th St | 30 | | | | | |
| I-95 SB Mainline | 40 | 58 | 52 | 58 | 58 | 58 |
| Off Ramp SW 7th St | 35 | | | | | |
| I-95 SB Mainline | 40 | 51 | 51 | 53 | 52.5 | 53 |
| On Ramp SR 970 / S Miami Ave | 35 | | | | | |
| I-95 SB Mainline | 50.98 | 51 | 55 | 55 | 55 | 55 |
| On Ramp NW 3rd Ct | 35 | | | | | |
| I-95 SB Mainline | 50.98 | 51 | 55 | 55 | 55 | 55 |
| Off Ramp SR 970 | 35 | | | | | |
| I-95 SB Mainline | 50.98 | 51 | 55 | 55 | 55 | 55 |
| Off Ramp NW 8th St | 30 | | | | | |
| I-95 SB Mainline | 50.98 | 51 | 55 | 55 | 55 | 55 |
| On Ramp SR 836 | 30 | | | | | |
| I-95 SB Mainline | 55 | 50 | 57 | 56 | 56 | 57 |
| Off Ramp SR 836 EB | 40 | | | | | |
| I-95 SB Mainline | 55 | 50 | 57 | 56 | 56 | 57 |
| Off Ramp SR 836 WB | 30 | | | | | |
| I-95 SB Mainline | 55 | 48 | 60 | 58 | 58 | 59 |
| I-95 Express Lane | 55 | | | | | |
| I-95 SB Mainline | 55 | 48 | 60 | 58 | 58 | 59 |
| On Ramp from SR 112 and I-195 | 45 | | | | | |
| I-95 SB Mainline | 55 | 48 | 60 | 58 | 58 | 59 |
| Off Ramp SR 112 | 30 | | | | | |
| I-95 SB Mainline | 55 | 48 | 59.5 | 58 | 57 | 59 |
| EXP Off Ramp SR 112 WB | 45 | | | | | |
| I-95 Express Lane | 55 | | | | | |
| I-95 SB Mainline | 55 | 51 | 61 | 59 | 58 | 61 |
| On Ramp NW 62nd St | 30 | | | | | |
| I-95 SB Mainline | 55 | 51 | 61 | 59 | 58 | 61 |
| Off Ramp NW 62nd St | 30 | | | | | |
| I-95 SB Mainline | 55 | 52 | 61 | 60 | 59 | 61 |
| Off Ramp NW 69th St | 30 | | | | | |
| I-95 SB Mainline | 55 | 48 | 59 | 57 | 56 | 59 |
| On Ramp SR 934 | 30 | | | | | |
| I-95 SB Mainline | 55 | 50 | 60 | 59 | 57 | 61 |
| Off Ramp NW 81st St | 30 | | | | | |
| I-95 SB Mainline | 55 | 50 | 60 | 59 | 57 | 61 |
| On Ramp NW 95th St | 30 | | | | | |
| I-95 SB Mainline | 55 | 50 | 61 | 60 | 58 | 62 |
| Off Ramp NW 95th St | 30 | | | | | |
| I-95 SB Mainline | 55 | 51 | 62 | 61 | 59 | 62 |
| On Ramp NW 103rd St | 30 | | | | | |
| I-95 SB Mainline | 55 | 51 | 61 | 60 | 59 | 62 |
| Off Ramp NW 103rd St | 30 | | | | | |
| I-95 SB Mainline | 55 | 50 | 59 | 58 | 57 | 60 |
| On Ramp NW 119th St | 30 | | | | | |
| I-95 SB Mainline | 55 | 52 | 60 | 60 | 59 | 62 |
| On Ramp NW 125th St | 30 | | | | | |
| I-95 SB Mainline | 55 | 53 | 61 | 60 | 59 | 62 |
| Off Ramp NW 125th St | 30 | | | | | |
| I-95 SB Mainline | 55 | 55 | 60 | 60 | 59 | 61 |
| On Ramp NW 135th St | 30 | | | | | |
| I-95 SB Mainline | 55 | 55 | 60 | 60 | 59 | 61 |
| Off Ramp SR 916 | 30 | | | | | |
| I-95 SB Mainline | 55 | 56 | 58 | 59 | 59 | 61 |
| On Ramp NW 151st St | 30 | | | | | |
| I-95 SB Mainline | 55 | 42 | 52 | 55.5 | 51.5 | 57.5 |
| EXP Off Ramp SR 112 WB | 45 | | | | | |
| I-95 Express Lane | 55 | 52 | 55.5 | 55 | 54 | 55 |
| On Ramp Florida's Turnpike SB | 30 | | | | | |
| I-95 SB Mainline | 55 | 33 | 53 | 55 | 51 | 57 |
| On Ramp SR 826 WB | 30 | | | | | |
| I-95 SB Mainline | 55 | 33 | 53 | 55 | 51 | 57 |
| On Ramp SR 7 | 30 | | | | | |
| I-95 SB Mainline | 55 | 48.5 | 51 | 55.5 | 53 | 57.5 |
| Off Ramp US 441 / Florida's Turnpike | 30 | | | | | |
| I-95 SB Mainline | 55 | 55 | 51 | 58 | 55 | 59 |
| I-95 Express Lane | 55 | 55 | 56 | 57 | 58 | 57 |
| I-95 SB Mainline | 55 | 55 | 51 | 58 | 55 | 59 |
| Off Ramp SR 860 | 30 | | | | | |
| I-95 SB Mainline | 55 | 58 | 54 | 60 | 57 | 61 |
| Off Ramp SR 860 | 30 | | | | | |
| I-95 SB Mainline | 55 | 54 | 49 | 60 | 57 | 61 |
| On Ramp Ives Dairy Rd | 30 | | | | | |
| I-95 SB Mainline | 55 | 51 | 43 | 61 | 58 | 62 |
| Off Ramp Ives Dairy Rd | 30 | | | | | |
| I-95 SB Mainline | 55 | 53 | 41 | 62 | 61 | 62 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*

**Table A.3 - 7**
**INRIX Speed Data Summary**
**Interstate 195**

| Eastbound | | | | | | | Westbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] | Roadway Segment | Posted Speed (mph) | Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
| I-195 EB Mainline | 55 | 52 | 51 | 50 | 50 | 48 | I-195 WB Mainline | 55 | 41 | 39 | 43 | 47 | 47 |
| Off Ramp N Miami Dr | 30 | | | | | | On Ramp N Miami Dr | 30 | | | | | |
| I-195 EB Mainline | 55 | 53 | 52 | 49 | 53 | 51 | I-195 WB Mainline | 55 | 41 | 38 | 48 | 49 | 48 |
| Off Ramp SR 5 / US 1 | 25 | | | | | | On Ramp SR 5 / US 1 | 25 | | | | | |
| I-195 EB Mainline | 55 | 56 | 55 | 55 | 55 | 55 | I-195 WB Mainline | 55 | 43 | 40 | 52 | 50 | 53 |
| On Ramp NE 36th St | 30 | | | | | | Off Ramp NE 37th St | 35 | | | | | |
| I-195 EB Mainline | 54.71 | 55 | 56 | 55 | 55 | 56 | I-195 WB Mainline | 55 | 49 | 46 | 54 | 54 | 54 |
| Off Ramp to SR 907 | 35 | | | | | | On Ramp SR 907S | 30 | | | | | |
| | | | | | | | I-195 WB Mainline | 55 | 55 | 52 | 55 | 54 | 55 |
| | | | | | | | On Ramp SR 907N | 30 | | | | | |
| I-195 EB Mainline | 37.05 | 48 | 49 | 49 | 49 | 49 | I-195 WB Mainline | 55 | | | | | |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*

**Table A.3 - 8**
**INRIX Speed Data Summary**
**Interstate 395**

| Eastbound | | | | | | | Westbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] | Roadway Segment | Posted Speed (mph) | Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
| I-395 EB Mainline | 55 | 52 | 49 | 50 | 50 | 50 | I-395 WB Mainline | 50 | 49 | 48 | 50 | 49 | 51 |
| | | | | | | | ON Ramp NE 1st Ave | 30 | | | | | |
| OFF Ramp NE 2nd Ave | 30 | | | | | | I-395 WB Mainline | 50 | 48 | 46 | 49 | 46 | 51 |
| | | | | | | | ON Ramp NE 2nd Ave | 30 | | | | | |
| I-395 EB Mainline | 55 | 48 | 47 | 49 | 47 | 50 | I-395 WB Mainline | 50 | 48 | 48 | 49 | 49 | 49 |
| ON Ramp SR 5 / Biscayne Blvd / N Bayshore Dr | 30 | | | | | | OFF Ramp N Bayshore Dr | 30 | | | | | |
| I-395 EB Mainline | 55 | 52 | 50 | 50 | 50 | 51 | I-395 WB Mainline | 50 | 49 | 48 | 51 | 49 | 52 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*





**Table A.3 - 9**
**INRIX Speed Data Summary**
**US 1**

| Northbound | | | | | | | Southbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] | Roadway Segment | Posted Speed (mph) | Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
| From I-95 to SW 17th Ave | 40 | 38 | 39 | 44 | 37 | 48 | From SW 17th Ave to I-95 | 40 | 35 | 25 | 42 | 31 | 49 |
| From SW 17th Ave to SW 22nd Ave | 44.82 | 32 | 30 | 41 | 29 | 46 | From SW 22nd Ave to SW 17th Ave | 44.82 | 33 | 28 | 42 | 29 | 48 |
| From SW 22nd Ave to SR 9 / SW 27th Ave | 45 | 32 | 32 | 41 | 31 | 46 | From SR 9 / SW 27th Ave to SW 22nd Ave | 45 | 31 | 29 | 41 | 28 | 47 |
| From SR 9 / SW 27th Ave to SR 976 / Bird Rd | 45 | 29 | 27 | 39 | 26 | 46 | From SR 976 / Bird Rd to SR 9 / SW 27th Ave | 45 | 30 | 27 | 42 | 31 | 47 |
| From SR 976 / Bird Rd to SW 37th Ave | 45 | 28 | 27 | 42 | 28 | 44 | From SW 37th Ave to SR 976 / Bird Rd | 45 | 32 | 35 | 42 | 33 | 47 |
| From SW 37th Ave to SR 953 / Le Juene Rd | 45 | 26 | 30 | 41 | 31 | 46 | From SR 953 / Le Juene Rd to SW 37th Ave | 45 | 32 | 32 | 42 | 30 | 47 |
| From SR 953 / Le Juene Rd to SR 959 / W 57th Ave | 42.92 | 26 | 32 | 41 | 30 | 47 | From SR 959 / W 57th Ave to SR 953 / Le Juene Rd | 42.92 | 33 | 25 | 41 | 29 | 47 |
| From SR 959 / W 57th Ave to SW 72nd St | 40 | 28 | 33 | 40 | 26 | 47 | From SW 72nd St to SR 959 / W 57th Ave | 40 | 33 | 28 | 40 | 27 | 46 |
| From SW 72nd St to SW 80th St | 40 | 27 | 35 | 41 | 29 | 47 | From SW 80th St to SW 72nd St | 40 | 35 | 29 | 42 | 31 | 47 |
| From SW 80th St to SR 878 WB Mainline | 43.55 | 24 | 31 | 36 | 25 | 41 | From SR 878 WB Mainline to SW 80th St | 43.55 | 34 | 34 | 40 | 33 | 43 |
| From SR 878 WB Mainline to SW 88th St / Kendall Dr | 45 | 22 | 37 | 41 | 28 | 47 | From SW 88th St / Kendall Dr to SR 878 WB Mainline | 45 | 31 | 36 | 42 | 31 | 47 |
| From SW 88th St / Kendall Dr to SR 826 SB Mainline | 45 | 28 | 39 | 43 | 33 | 48 | From SR 826 SB Mainline to SW 88th St / Kendall Dr | 45 | 34 | 36 | 43 | 31 | 48 |
| From SR 826 SB Mainline to SW 104th St | 45 | 35 | 35 | 40 | 36 | 43 | From SW 104th St to SR 826 SB Mainline | 45 | 36 | 28 | 38 | 31 | 42 |
| From SW 104th St to SR 990 / Killian Dr | 45 | 25 | 34 | 40 | 26 | 47 | From SR 990 / Killian Dr to SW 104th St | 45 | 33 | 30 | 42 | 33 | 46 |
| From SR 990 / Killian Dr to SW 124th St | 45 | 29 | 38 | 42 | 32 | 47 | From SW 124th St to SR 990 / Killian Dr | 45 | 35 | 38 | 45 | 38 | 48 |
| From SW 124th St to SR 973 / SW 132nd St | 45 | 29 | 36 | 41 | 30 | 47 | From SR 973 / SW 132nd St to SW 124th St | 45 | 35 | 29 | 42 | 32 | 46 |
| From SR 973 / SW 132nd St to SW 136th St / Howard Dr | 45 | 30 | 37 | 41 | 30 | 46 | From SW 136th St / Howard Dr to SR 973 / SW 132nd St | 45 | 31 | 30 | 39 | 27 | 45 |
| From SW 136th St / Howard Dr to SW 144th St / Mitchell Dr | 45 | 31 | 33 | 40 | 29 | 46 | From SW 144th St / Mitchell Dr to SW 136th St / Howard Dr | 45 | 34 | 33 | 41 | 32 | 45 |
| From SW 144th St / Mitchell Dr to SW 152nd St | 45 | 27 | 34 | 40 | 27 | 46 | From SW 152nd St to SW 144th St / Mitchell Dr | 45 | 36 | 34 | 42 | 35 | 46 |
| From SW 152nd St to SW 168th St / Richmond Dr | 45 | 28 | 35 | 41 | 32 | 46 | From SW 168th St / Richmond Dr to SW 152nd St | 45 | 35 | 36 | 43 | 34 | 47 |
| From SW 168th St / Richmond Dr to SW 184th St / Eureka Dr | 45 | 33 | 37 | 42 | 32 | 46 | From SW 184th St / Eureka Dr to SW 168th St / Richmond Dr | 45 | 35 | 31 | 40 | 29 | 45 |
| From SW 184th St / Eureka Dr to SR 994 / SW 186th St | 45 | 31 | 35 | 41 | 31 | 45 | From SR 994 / SW 186th St to SW 184th St / Eureka Dr | 45 | 35 | 35 | 42 | 32 | 47 |
| From SR 994 / SW 186th St to Marlin Rd | 45 | 31 | 35 | 41 | 31 | 45 | From Marlin Rd to SR 994 / SW 186th St | 45 | 35 | 35 | 42 | 32 | 47 |
| From Marlin Rd to Caribbean Blvd | 45 | 35 | 39 | 43 | 35 | 46 | From Caribbean Blvd to Marlin Rd | 45 | 38 | 39 | 44 | 36 | 47 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*

**Table A.3 - 10**
**INRIX Speed Data Summary**
**US 27 - NW 36th St**

**Eastbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| From SW 177th Ave to SR 821 | 55 | 54 | 54 | 55 | 54 | 55 |
| US 27 EB Mainline | 55 | 54 | 54 | 55 | 54 | 55 |
| US 27 EB Mainline | 55 | 54 | 54 | 55 | 54 | 55 |
| US 27 EB Mainline | 55 | 54 | 54 | 55 | 54 | 55 |
| From SR 821 to Hialeah-Hia Gardens Blvd | 50 | 36 | 39 | 42 | 38 | 44 |
| From Hialeah-Hia Gardens Blvd to NW 103rd St | 50 | 35 | 35 | 41 | 35 | 43 |
| From NW 103rd St to NW 79th Ave | 50 | 35 | 35 | 41 | 35 | 43 |
| From NW 79th Ave to SR 826 | 50 | 25 | 31 | 38 | 33 | 41 |
| Off Ramp SR 826 SB | 30 | | | | | |
| US 27 EB Mainline | 40 | 22 | 23 | 28 | 22 | 31 |
| On Ramp SR 826 NB | 30 | | | | | |
| From SR 826 to W 29th St | 40 | 35 | 34 | 41 | 34 | 44 |
| From W 29th St to Hialeah Expressway | 40 | 29 | 30 | 39 | 31 | 44 |
| From Hialeah Expressway to Hialeah Dr | 40 | 36 | 37 | 43 | 38 | 45 |
| From Hialeah Dr to East Drive | 40 | 32 | 28 | 41 | 35 | 44 |
| From East Drive to SR 112 | 40 | 24 | 32 | 38 | 29 | 42 |
| Off Ramp SR 112 EB | 30 | | | | | |
| From SR 112 to NW 42nd Ave/ Le Jeune Rd | 30 | 21 | 24 | 32 | 23 | 37 |
| From NW 42nd Ave/ Le Jeune Rd to NW 36th St/NW North River Dr | 30 | 21 | 24 | 32 | 23 | 37 |
| From NW 36th St/NW North River Dr to NW 32nd Ave | 30 | 26 | 27 | 34 | 26 | 38 |
| From NW 32nd Ave to NW 27th Ave | 30 | 26 | 27 | 34 | 26 | 38 |
| From NW 27th Ave to NW 22nd Ave | 30 | 26 | 27 | 33 | 24 | 37 |
| From NW 22nd Ave to NW 17th Ave | 30 | 26 | 27 | 33 | 24 | 37 |
| From NW 17th Ave to NW 12th Ave | 30 | 24 | 22 | 32 | 21 | 37 |
| From NW 12th Ave to NW 7th Ave | 30 | 25 | 23 | 32 | 21 | 37 |

**Westbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| From SR 821 to SW 177th Ave | 55 | 44 | 45 | 49 | 46 | 50 |
| On Ramp SR 821 SB | 30 | | | | | |
| US 27 WB Mainline | 50 | 23 | 26 | 33 | 24 | 38 |
| Off Ramp SR 821 SB | 30 | | | | | |
| US 27 WB Mainline | 50 | 23 | 26 | 33 | 24 | 38 |
| On Ramp SR 821 NB | 30 | | | | | |
| US 27 WB Mainline | 50 | 23 | 26 | 33 | 24 | 38 |
| Off Ramp SR 821 NB | 30 | | | | | |
| From Hialeah-Hia Gardens Blvd to SR 821 | 50 | 41 | 41 | 46 | 43 | 47 |
| From NW 103rd St to Hialeah-Hia Gardens Blvd | 50 | 39 | 41 | 44 | 42 | 45 |
| From NW 79th Ave to NW 103rd St | 50 | 39 | 41 | 44 | 42 | 45 |
| From SR 826 to NW 79th Ave | 50 | 39 | 41 | 44 | 42 | 45 |
| On Ramp SR 826 SB | 30 | | | | | |
| US 27 WB Mainline | 40 | 30 | 24 | 31 | 27 | 33 |
| Off Ramp SR 826 NB | 30 | | | | | |
| From W 29th St to SR 826 | 40 | 26 | 17 | 31 | 24 | 34 |
| From Hialeah Expressway to W 29th St | 40 | 34 | 24 | 36 | 33 | 38 |
| From Hialeah Dr to Hialeah Expressway | 40 | 35 | 31 | 36 | 33 | 37 |
| From SE 4th Ave to Hialeah Drive | 40 | 30 | 31 | 32 | 32 | 32 |
| From SR 112 to SE 4th Ave | 40 | | | | | |
| On Ramp SR 112 WB | 30 | | | | | |
| From NW 42nd Ave/ Le Jeune Rd to SR 112 | 30 | 26 | 20 | 27 | 20 | 30 |
| From NW 36th St/NW North River Dr to NW 42nd Ave/ Le Jeune Rd | 30 | 26 | 20 | 27 | 20 | 30 |
| From NW 32nd Ave to NW 36th St/NW North River Dr | 30 | 29 | 23 | 32 | 25.48 | 34.96 |
| From NW 27th Ave to NW 32nd Ave | 30 | 33 | 29 | 36 | 28 | 40 |
| From NW 22nd Ave to NW 27th Ave | 30 | 31 | 26 | 35 | 25 | 39 |
| From NW 17th Ave to NW 22nd Ave | 30 | 29 | 27 | 34 | 25 | 39 |
| From NW 12th Ave to NW 17th Ave | 30 | 29 | 23 | 33 | 22 | 39 |
| From NW 7th Ave to NW 12th Ave | 30 | 29 | 25 | 33 | 23 | 38 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*





**Table A.3 - 11**
**INRIX Speed Data Summary**
**US 41 - SW 8th St**

**Eastbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| From SW 137th Ave to SW 127th Ave | 45 | 35 | 31 | 39 | 34 | 42 |
| From SW 127th Ave to SR 821 | 45 | 32 | 28 | 37 | 32 | 39 |
| Off Ramp SR 821 SB | 30 | | | | | |
| US 41 EB Mainline | 45 | 34 | 28 | 38 | 33 | 40 |
| On Ramp SR 821 SB | 25 | | | | | |
| US 41 EB Mainline | 45 | 34 | 28 | 38 | 33 | 40 |
| Off Ramp SR 821 NB | 30 | | | | | |
| US 41 EB Mainline | 45 | 33 | 23 | 34 | 30 | 36 |
| On Ramp SR 821 NB | 30 | | | | | |
| From SR 821 to SW 107th Ave | 45 | 28 | 24 | 33 | 25 | 37 |
| From SW 107th Ave to SW 97th Ave | 45 | 34 | 33 | 36 | 32 | 38 |
| From SW 97th Ave to SW 87th Ave | 45 | 30 | 25 | 34 | 30 | 36 |
| From SW 87th Ave to SR 826 | 45 | 27 | 29 | 34 | 31 | 35 |
| Off Ramp SR 826 SB | 25 | | | | | |
| US 41 EB Mainline | 30 | 27 | 32 | 37 | 30 | 41 |
| On Ramp SR 826 SB | 40 | | | | | |
| US 41 EB Mainline | 30 | 27 | 32 | 37 | 30 | 41 |
| Off Ramp SR 826 NB | 20 | | | | | |
| US 41 EB Mainline | 30 | 27 | 32 | 37 | 30 | 41 |
| On Ramp SR 826 NB | 40 | | | | | |
| From SR 826 to SW 67th Ave | 32.5 | 23 | 23 | 28 | 21 | 32 |
| From SW 67th Ave to SW 57th Ave | 35 | 24 | 24 | 29 | 22 | 32 |
| From SW 57th Ave to SW 47th Ave | 35 | 25 | 24 | 30 | 23 | 33 |
| From SW 47th Ave to SW 37th Ave | 35 | 22 | 19 | 26 | 18 | 30 |
| From SW 37th Ave to SW 27th Ave | 35 | 24 | 19 | 26 | 18 | 30 |
| From SW 27th Ave to SW 17th Ave | 35 | 26 | 21 | 26 | 22 | 29 |
| From SW 17th Ave to SW 8th Ave | 35 | 25 | 21 | 27 | 22 | 29 |
| From SW 8th Ave to I-95 | 35 | 24 | 21 | 27 | 22 | 29 |

**Westbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| From SW 127th Ave to SW 137th Ave | 45 | 33 | 33 | 40 | 36 | 42 |
| From SR 821 to SW 127th Ave | 45 | 36 | 28 | 40 | 36 | 43 |
| On Ramp SR 821 SB | 20 | | | | | |
| US 41 WB Mainline | 45 | 36 | 28 | 40 | 36 | 43 |
| US 41 WB Mainline | 45 | 36 | 28 | 40 | 36 | 43 |
| US 41 WB Mainline | 45 | 36 | 28 | 40 | 36 | 43 |
| From SW 107th Ave to SR 821 | 45 | 36 | 32 | 39 | 33 | 42 |
| From SW 97th Ave to SW 107th Ave | 45 | 40 | 29 | 42 | 39 | 43 |
| From SW 87th Ave to SW 97th Ave | 45 | 33 | 34 | 40 | 36 | 42 |
| From SR 826 to SW 87th Ave | 45 | 36 | 31 | 40 | 34 | 42 |
| On Ramp SR 826 SB | 30 | | | | | |
| US 41 WB Mainline | 30 | 33 | 31 | 38 | 32 | 41 |
| Off Ramp SR 826 NB | 30 | | | | | |
| US 41 WB Mainline | 30 | 33 | 31 | 38 | 32 | 41 |
| US 41 WB Mainline | 30 | 33 | 31 | 38 | 32 | 41 |
| From SW 67th Ave to SR 826 | 32.5 | 30 | 20 | 34 | 26 | 38 |
| From SW 57th Ave to SW 67th Ave | 35 | 34 | 24 | 36 | 26 | 40 |
| From SW 47th Ave to SW 57th Ave | 35 | 35 | 26 | 36 | 28 | 41 |
| From SW 37th Ave to SW 47th Ave | 30 | 31 | 17 | 31 | 19 | 37 |
| From SW 27th Ave to SW 37th Ave | 30 | 32 | 23 | 34 | 24 | 39 |
| From SW 17th Ave to SW 27th Ave | 30 | 32 | 22 | 33 | 25 | 37 |
| From SW 8th Ave to SW 17th Ave | 30 | 34 | 27 | 34 | 27 | 38 |
| From I-95 to SW 8th Ave | 30 | 34 | 25 | 34 | 28 | 38 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*

**Table A.3 - 12**
**INRIX Speed Data Summary**
**State Route 9 - SW 27th Ave**

**Northbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| From US 1 to SW 22nd St | 40 | 31 | 39 | 45 | 32 | 51 |
| From SW 22nd St to SW 8th St | 40 | 29 | 38 | 43 | 30 | 49 |
| From SW 8th St to W Flagler St | 40 | 28 | 35 | 42 | 28 | 49 |
| From W Flagler St to NW 7th St | 40 | 32 | 34 | 43 | 31 | 49 |
| From NW 7th St to NW 11th St | 40 | 30 | 31 | 41 | 28 | 48 |
| From NW 11th St to SR 836 | 40 | 30 | 31 | 41 | 28 | 48 |
| Off Ramp SR 836 EB | 30 | | | | | |
| SR 9 NB Mainline | 35 | 30 | 32 | 42 | 29 | 49 |
| On Ramp SR 836 EB | 25 | | | | | |
| SR 9 NB Mainline | 35 | 30 | 32 | 42 | 29 | 49 |
| Off Ramp SR 836 WB | 30 | | | | | |
| SR 9 NB Mainline | 35 | 30 | 32 | 42 | 29 | 49 |
| On Ramp SR 836 WB | 25 | | | | | |
| From SR 836 to NW 14th St | 35 | 30 | 30 | 42 | 28 | 50 |
| From NW 14th St to NW 20th St | 35 | 30 | 30 | 42 | 28 | 50 |
| From NW 20th St to NW 36th St | 35 | 30 | 35 | 43 | 30 | 50 |
| From NW 36th St to NW 41st St | 35 | 27 | 32 | 43 | 28 | 50 |
| From NW 41st St to NW 54th St | 35 | 28 | 31 | 42 | 28 | 49 |
| From NW 54th St to NW 62nd St | 35 | 31 | 36 | 44 | 32 | 50 |
| From NW 62nd St to NW 79th St | 35 | 30 | 35 | 44 | 32 | 50 |
| From NW 79th St to NW 95th St | 37.5 | 33 | 35 | 45 | 34 | 50 |
| From NW 95th St to NW 103rd St | 40 | 33 | 35 | 43 | 32 | 49 |
| From NW 103rd St to NW 119th St/ SR 924 | 40 | 34 | 33 | 44 | 33 | 49 |
| From NW 119th St/ SR 924 to NW 135th St/ SR 916 | 42.5 | 35 | 36 | 44 | 35 | 49 |
| From NW 135th St/ SR 916 to Ali Baba Ave | 45 | | | | | |
| From Ali Baba Ave to NW167th St/ Palmetto | 45 | | | | | |

**Southbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| From SW 22nd St to US 1 | 40 | 30 | 39 | 44 | 33 | 50 |
| From SW 8th St to SW 22nd St | 40 | 31 | 36 | 43 | 31 | 49 |
| From W Flagler St to SW 8th St | 40 | 28 | 35 | 42 | 28 | 49 |
| From NW 7th St to W Flagler St | 37.5 | 29 | 35 | 42 | 28 | 49 |
| From NW 11th St to NW 7th St | 35 | 28 | 32 | 41 | 26 | 49 |
| From SR 836 to NW 11th St | 35 | 28 | 32 | 41 | 26 | 49 |
| On Ramp SR 836 E | 25 | | | | | |
| SR 9 SB Mainline | 35 | 29 | 35 | 43 | 30 | 49 |
| Off Ramp SR 836 E | 30 | | | | | |
| SR 9 SB Mainline | 35 | 29 | 35 | 43 | 30 | 49 |
| On Ramp SR 836 W | 25 | | | | | |
| SR 9 SB Mainline | 35 | 29 | 35 | 43 | 30 | 49 |
| Off Ramp SR 836 W | 30 | | | | | |
| From NW 14th St to SR 836 | 35 | 29 | 35 | 43 | 30 | 49 |
| From NW 20th St to NW 14th St | 35 | 32 | 37 | 45 | 36 | 50 |
| From NW 36th St to NW 20th St | 35 | 31 | 36 | 43 | 30 | 50 |
| From NW 41st St to NW 36th St | 35 | 28 | 36 | 42 | 29 | 49 |
| From NW 54th St to NW 41st St | 35 | 29 | 37 | 43 | 31 | 50 |
| From NW 62nd St to NW 54th St | 35 | 30 | 40 | 44 | 34 | 50 |
| From NW 79th St to NW 62nd St | 35 | 30 | 39 | 44 | 33 | 50 |
| From NW 95th St to NW 79th St | 37.5 | 35 | 36 | 44 | 33 | 50 |
| From NW 103rd St to NW 95th St | 40 | 32 | 39 | 44 | 32 | 50 |
| From NW 119th St/ SR 924 to NW 103rd St | 40 | 32 | 37 | 45 | 35 | 50 |
| From NW 135th St/ SR 916 to NW 119th St/ SR 924 | 42.5 | 31 | 37 | 45 | 36 | 49 |
| From Ali Baba Ave to NW 135th St/ SR 916 | 45 | | | | | |
| From NW167th St/ Palmetto to Ali Baba Ave | 45 | | | | | |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*





**Table A.3 - 13**
**INRIX Speed Data Summary**
**State Route 826**

**Northbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 826 NB Mainline | 55 | | | | | |
| Off Ramp N Kendall Dr EB/WB | 30 | | | | | |
| SR 826 NB Mainline | 55 | | | | | |
| On Ramp N Kendall Dr | 30 | | | | | |
| SR 826 NB Mainline | 55 | 59 | 59 | 62 | 59 | 63 |
| Off Ramp SW 72nd St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 45 | 48 | 57 | 55 | 58 |
| On Ramp SW 72nd St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 41 | 44 | 55 | 40 | 58 |
| Off Ramp SW 56th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 41 | 44.5 | 53.5 | 48.5 | 56 |
| Off Ramp SR 874 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 41 | 44.5 | 53.5 | 48.5 | 56 |
| On Ramp SW 56th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 41 | 44.5 | 53.5 | 48.5 | 56 |
| On Ramp SW 40th St/ SR 976 E | 30 | | | | | |
| SR 826 NB Mainline | 55 | 40 | 53 | 54 | 51 | 55 |
| On Ramp SW 40th St/ SR 976 W | 30 | | | | | |
| SR 826 NB Mainline | 55 | 39 | 53 | 53 | 51 | 54 |
| Off Ramp SW 24th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 35 | 57 | 58 | 55 | 59 |
| On Ramp SW 24th St | 25 | | | | | |
| SR 826 NB Mainline | 55 | 28 | 57 | 58 | 53 | 61 |
| Off Ramp SW 8th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 22 | 53 | 56 | 47 | 60 |
| On Ramp SW 8th St/ US 41 EB | 20 | | | | | |
| SR 826 NB Mainline | 55 | 22 | 53 | 56 | 47 | 60 |
| On Ramp SW 8th St/ US 41 WB | 30 | | | | | |
| SR 826 NB Mainline | 55 | 23 | 50 | 53 | 43 | 58 |
| Off Ramp W Flagler St/ SR 986 | 30 | | | | | |
| SR 826 NB Mainline | 55 | | | | | |
| Off Ramp SR 836 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 28 | 49 | 53 | 44 | 58 |
| On Ramp W Flagler St/ SR 986 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 28 | 49 | 53 | 44 | 58 |
| On Ramp SR 836 WB | 30 | | | | | |
| SR 826 NB Mainline | 55 | 34 | 47 | 51 | 42 | 55 |
| On Ramp SR 836 EB | 30 | | | | | |
| SR 826 NB Mainline | 55 | 40 | 48 | 58 | 44 | 57 |
| Off Ramp NW 25th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 55 | 53 | 58 | 55 | 60 |
| On Ramp NW 25th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 58 | 53 | 59 | 57 | 60 |
| Off Ramp NW 36th St/ SR 948 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 61 | 49 | 61 | 60 | 61 |
| On Ramp NW 36th St/ SR 948 EB | 25 | | | | | |
| SR 826 NB Mainline | 55 | 61 | 49 | 61 | 60 | 61 |
| On Ramp NW 36th St/ SR 948 WB | 30 | | | | | |
| SR 826 NB Mainline | 55 | 62 | 44 | 61 | 60 | 61 |
| Off Ramp NW 58th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 62 | 41 | 60 | 59 | 61 |
| On Ramp NW 58th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 61 | 39 | 59 | 58 | 60 |
| Off Ramp Hialeah Expy/ SR 934 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 62 | 39 | 60 | 59 | 60 |
| On Ramp Hialeah Expy/ SR 934 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 59 | 37 | 58 | 57 | 59 |
| Off Ramp Okeechobee Rd/ US 27 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 62 | 36 | 60 | 59 | 60 |
| On Ramp Okeechobee Rd/ US 27 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 61 | 38 | 59 | 58 | 59 |
| Off Ramp W 49th St/ SR 932 | 30 | | | | | |

**Southbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 826 NB Mainline | 55 | | | | | |
| On Ramp N Kendall Dr | 30 | | | | | |
| SR 826 NB Mainline | 55 | | | | | |
| Off Ramp N Kendall Dr EB/WB | 25 | | | | | |
| SR 826 NB Mainline | 55 | 56 | 56 | 52 | 58 | 58 |
| On Ramp SW 72nd St/ SR 986 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 49 | 49 | 52 | 49 | 54 |
| Off Ramp SW 72nd St/ Sr 986 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 49 | 49 | 52 | 49 | 54 |
| On Ramp SW 56th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 48 | 48 | 51 | 47 | 52 |
| Off Ramp SW 56th St/ SR 874 SB | 30 | | | | | |
| SR 826 NB Mainline | 55 | 38 | 28 | 46 | 38 | 50 |
| On Ramp SW 40th St/ SR 976 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 44 | 26 | 49 | 45 | 50 |
| Off Ramp SW 40th St/ SR 976 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 52 | 24 | 53 | 51 | 53 |
| On Ramp SW 24th St | 25 | | | | | |
| SR 826 NB Mainline | 55 | 59 | 31 | 57 | 57 | 57 |
| Off Ramp SW 24th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 59 | 40 | 58 | 58 | 58 |
| On Ramp SW 8th St/ US 41 | 25 | | | | | |
| SR 826 NB Mainline | 55 | 59 | 45 | 58 | 58 | 58 |
| Off Ramp SW 8th St/ US 41 EB/WB | 30 | | | | | |
| SR 826 NB Mainline | 55 | 55 | 46 | 55 | 54 | 56 |
| On Ramp W Flagler St/ SR 986 | 25 | | | | | |
| SR 826 NB Mainline | 55 | 54 | 44 | 53 | 52 | 54 |
| Off Ramp W Flagler St/ SR 986 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 54 | 46 | 55 | 53 | 56 |
| On Ramp SR 836 EB | 25 | | | | | |
| SR 826 NB Mainline | 55 | 52 | 37 | 52 | 45 | 56 |
| On Ramp SR 836 WB | 25 | | | | | |
| SR 826 NB Mainline | 55 | 52 | 37 | 52 | 45 | 56 |
| Off Ramp SR 836 WB | 30 | | | | | |
| SR 826 NB Mainline | 55 | 52 | 37 | 52 | 45 | 56 |
| On Ramp NW 25th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 54 | 19 | 52 | 42 | 57 |
| Off Ramp NW 25th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 55 | 15 | 54 | 47 | 58 |
| On Ramp NW 36th St/ SR 948 EB | 30 | | | | | |
| SR 826 NB Mainline | 55 | 57 | 16 | 56 | 52 | 58 |
| On Ramp NW 36th St/ SR 948 WB | 25 | | | | | |
| SR 826 NB Mainline | 55 | 57 | 16 | 56 | 52 | 58 |
| Off Ramp NW 36th St/ SR 948 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 57 | 31 | 58 | 56 | 59 |
| On Ramp NW 58th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 59 | 44 | 61 | 59 | 62 |
| Off Ramp NW 58th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 58 | 53 | 61 | 59 | 62 |
| On Ramp Hialeah Expy/. SR 934 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 58 | 58 | 61 | 60 | 62 |
| Off Ramp Hialeah Expy/ SR 934 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 55 | 57 | 59 | 57 | 60 |
| On Ramp Okeechobee Rd/ US 27 | 25 | | | | | |
| SR 826 NB Mainline | 55 | 58 | 60 | 62 | 60 | 62 |
| Off Ramp Okeechobee Rd/ US 27 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 58 | 60 | 62 | 60 | 62 |
| On Ramp NW 77th Ave | 30 | | | | | |
| SR 826 NB Mainline | 55 | 55 | 57 | 60 | 57 | 61 |
| On Ramp W 49th St WB | 25 | | | | | |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*

**Table A.3 - 13 (cont'd)**
**INRIX Speed Data Summary**
**State Route 826**

**Northbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 826 NB Mainline | 55 | 60 | 50 | 59 | 58 | 60 |
| On Ramp W 49th St/ SR 932 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 60 | 51 | 59 | 58 | 60 |
| Off Ramp NW 122nd St/ W 68th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 60 | 52 | 60 | 59 | 60 |
| On Ramp NW 122nd St/ W 68th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 61 | 54 | 60 | 59 | 61 |
| Off Ramp SR 924 WB | 30 | | | | | |
| SR 826 NB Mainline | 55 | 61 | 57 | 61 | 60 | 61 |
| Off Ramp SR 924 EB | 30 | | | | | |
| SR 826 NB Mainline | 55 | 61 | 57 | 61 | 60 | 61 |
| Off Ramp NW 154th St / Miami Lakes Dr | 30 | | | | | |
| SR 826 NB Mainline | 55 | 61 | 57 | 61 | 60 | 61 |
| On Ramp SR 924 | 30 | | | | | |
| SR 826 NB Mainline | 55 | 59 | 57 | 60 | 60 | 61 |
| On Ramp NW 77th Ave | 30 | | | | | |
| SR 826 NB Mainline | 55 | 59 | 57 | 60 | 60 | 61 |
| Off Ramp NW 67th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 58 | 59 | 62 | 61 | 62 |
| On Ramp NW 67th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 55 | 59 | 61 | 60 | 62 |
| Off Ramp NW 57th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 53 | 59 | 61 | 60 | 62 |
| On Ramp NW 57th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 52 | 58 | 61 | 59 | 61 |
| Off Ramp NW 47th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 52 | 59 | 61 | 59 | 61 |
| On Ramp NW 47th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 52 | 57 | 60 | 58 | 61 |
| Off Ramp NW 37th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 54 | 59 | 61 | 59 | 61 |
| On Ramp NW 37th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | | | | | |

**Southbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 826 NB Mainline | 55 | 55 | 57 | 60 | 57 | 61 |
| Off Ramp W 49th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 43 | 52 | 57 | 59 | 60 |
| On Ramp NW 122nd St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 32 | 55 | 59 | 53 | 61 |
| Off Ramp NW 122nd St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 34 | 57 | 59 | 55 | 61 |
| On Ramp SR 924 EB | 30 | | | | | |
| SR 826 NB Mainline | 55 | 36 | 58 | 59 | 57 | 60 |
| Off Ramp SR 924 WB and W 84th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 36 | 58 | 59 | 57 | 60 |
| Off Ramp SR 924 WB | 30 | | | | | |
| SR 826 NB Mainline | 55 | 35 | 58 | 60 | 57 | 61 |
| On Ramp NW 154th St/ Miami Lakes Dr | 30 | | | | | |
| SR 826 NB Mainline | 55 | 35 | 58 | 60 | 57 | 61 |
| Off Ramp NW 154th St/ Miami Lakes Dr | | | | | | |
| SR 826 NB Mainline | 55 | 39 | 58 | 59 | 57 | 60 |
| On Ramp NW 67th Ave | 30 | | | | | |
| SR 826 NB Mainline | 55 | 46 | 58 | 61 | 59 | 61 |
| Off Ramp NW 67th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 55 | 52 | 60 | 59 | 61 |
| On Ramp NW 57th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 57 | 50 | 59 | 57 | 60 |
| Off Ramp NW 57th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 57 | 53 | 60 | 59 | 61 |
| On Ramp NW 47th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 59 | 54 | 60 | 58 | 60 |
| Off Ramp Nw 47th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 60 | 53 | 60 | 59 | 61 |
| On Ramp NW 37th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 59 | 51 | 60 | 59 | 60 |
| Off Ramp NW 37th Ave Via NW 167th St | 30 | | | | | |
| SR 826 NB Mainline | 55 | 61 | 56 | 61 | 60 | 62 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*





**Table A.3 - 14**
**INRIX Speed Data Summary**
**State Route 916 - NW 135th St**

**Eastbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| From SR 826 Off Ramp to W 16th Ave | 30 | 31 | 29 | 43 | 32 | 49 |
| From W 16th Ave to NW 67th Ave | 30 | 31 | 29 | 43 | 32 | 49 |
| From NW 67th Ave to W 4th Ave | 30 | 28 | 24 | 41 | 27 | 49 |
| From W 4th Ave to NW 57th Ave/ Red Rd | 30 | 35 | 34 | 44 | 35 | 49 |
| From NW 57th Ave/ Red Rd to NW 42nd Ave/ Le Jeune Rd | 40 | 35 | 34 | 44 | 35 | 49 |
| From NW 42nd Ave/ Le Jeune Rd to Le Jeune Douglas Expy/NW 37th | 40 | 27 | 34 | 42 | 30 | 48 |
| From Le Jeune Douglas Expy/NW 37th to NW 27th Ave | 40 | 23 | 33 | 41 | 28 | 48 |
| From NW 27th Ave to NW 22nd Ave | 40 | 28 | 33 | 42 | 29 | 48 |
| From NW 22nd Ave to NW 17th Ave | 40 | 31 | 35 | 43 | 31 | 48 |
| From NW 17th Ave to NW 7th Ave | 40 | 34 | 36 | 43 | 33 | 49 |
| From NW 7th Ave to I-95 | 40 | 26 | 27 | 40 | 27 | 47 |

**Westbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| From W 16th Ave to SR 826 On Ramp | 30 | 31 | 32 | 44 | 31 | 50 |
| From NW 67th Ave to W 16th Ave | 30 | 31 | 32 | 44 | 31 | 50 |
| From W 8th Ave to NW 67th Ave | 30 | 28 | 29 | 43 | 29 | 50 |
| From NW 57th Ave/ Red Rd to W 8th Ave | 30 | 33 | 34 | 45 | 35 | 49 |
| From NW 42nd Ave/ Le Jeune Rd to NW 57th Ave/ Red Rd | 40 | 33 | 34 | 45 | 35 | 49 |
| From Le Jeune Douglas Expy to NW 42nd Ave/ Le Jeune Rd | 40 | 32 | 32 | 43 | 35 | 46 |
| From NW 27th Ave to Le Jeune Douglas Expy | 40 | 29.5 | 30.5 | 41.5 | 32 | 46 |
| From NW 22nd Ave to NW 27th Ave | 40 | 30 | 28 | 43 | 32 | 48 |
| From NW 17th Ave to NW 22nd Ave | 40 | 31 | 31 | 43 | 32 | 48 |
| From NW 7th Ave to NW 17th Ave | 40 | 36 | 38 | 46 | 38 | 50 |
| From I-95 to NW 7th Ave | 40 | 27 | 26 | 41 | 28 | 47 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*

**Table A.3 - 15**
**INRIX Speed Data Summary**
**State Route 948 - NW 41st St / NW 36th St**

**Eastbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| From SR 821 to NW 107th Ave | 40 | | | | | |
| From NW 107th Ave to NW 97th Ave | 40 | | | | | |
| From NW 97th Ave to NW 87th Ave | 40 | | | | | |
| From NW 87th Ave to SR 826 | 40 | | | | | |
| Off Ramp SR 826 SB | 30 | | | | | |
| SR 948 EB Mainline | 45 | 26 | 26 | 38 | 25 | 44 |
| Off Ramp SR 826 NB | 25 | | | | | |
| SR 948 EB Mainline | 45 | 26 | 26 | 38 | 25 | 44 |
| On Ramp SR 826 NB | 30 | | | | | |
| From SR 826 to SR 953/ SE 8th Ave | 40 | 32.0 | 33.9 | 42.1 | 31.6 | 46.2 |
| From SR 953/ SE 8th Ave to NW North River Dr | 30 | 27.1 | 26.6 | 37.1 | 23.1 | 44.1 |
| From NW 36th St/NW North River Dr to NW 32nd Ave | 30 | 26 | 27 | 34 | 26 | 38 |
| From NW 32nd Ave to NW 27th Ave | 30 | 26 | 27 | 34 | 26 | 38 |
| From NW 27th Ave to NW 22nd Ave | 30 | 26 | 27 | 33 | 24 | 37 |
| From NW 22nd Ave to NW 17th Ave | 30 | 26 | 27 | 33 | 24 | 37 |
| From NW 17th Ave to NW 12th Ave | 30 | 24 | 22 | 32 | 21 | 37 |
| From NW 12th Ave to NW 7th Ave | 30 | 25 | 23 | 32 | 21 | 37 |

**Westbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| From NW 107th Ave to SR 821 | 40 | | | | | |
| From NW 97th Ave to NW 107th Ave | 40 | | | | | |
| From NW 87th Ave to NW 97th Ave | 40 | | | | | |
| From SR 826 to NW 87th Ave | 40 | | | | | |
| On Ramp SR 826 SB | 30 | | | | | |
| SR 948 WB Mainline | 40 | 26 | 27 | 37 | 25 | 42 |
| SR 948 WB Mainline | 40 | 26 | 27 | 37 | 25 | 42 |
| Off Ramp SR 826 SB/NB | 30 | | | | | |
| From SR 953/ SE 8th Ave to SR 826 | 40 | 31.5 | 29.4 | 39.3 | 31.0 | 45.1 |
| From NW North River Dr to SR 953/ SE 8th Ave | 30 | 25.5 | 19.7 | 37.0 | 22.3 | 44.4 |
| From NW 32nd Ave to NW 36th St/NW North River Dr | 30 | 29 | 23 | 32 | 25 | 35 |
| From NW 27th Ave to NW 32nd Ave | 30 | 33 | 29 | 36 | 28 | 40 |
| From NW 22nd Ave to NW 27th Ave | 30 | 31 | 26 | 35 | 25 | 39 |
| From NW 17th Ave to NW 22nd Ave | 30 | 29 | 27 | 34 | 25 | 39 |
| From NW 12th Ave to NW 17th Ave | 30 | 29 | 23 | 33 | 22 | 39 |
| From NW 7th Ave to NW 12th Ave | 30 | 29 | 25 | 33 | 23 | 38 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*

**Table A.3 - 16**
**INRIX Speed Data Summary**
**State Route 953 - SW 42nd St / Le Jeune Rd**

**Northbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| From US 1 to SW 40th St | 38.38 | 28 | 31 | 38 | 26 | 44 |
| From SW 40th St to SW 8th St/ Tamiami Trail/ US 41 | 40 | 29 | 24 | 38 | 24 | 47 |
| From SW 8th St/ Tamiami Trail/ US 41 to W Flagler St/ SR 968 | 40 | 31 | 31 | 39 | 30 | 47 |
| From W Flagler St/ SR 968 to NW 7th St | 40 | 29 | 31 | 38 | 29 | 46 |
| From NW 7th St to SR 836 | 40 | 30 | 31 | 40 | 29 | 44 |
| Off Ramp SR 836 EB | 30 | | | | | |
| SR 953 NB Mainline | 40 | 32 | 34 | 39 | 35 | 46 |
| Off Ramp SR 836 WB | 30 | | | | | |
| SR 953 NB Mainline | 40 | 32 | 34 | 39 | 35 | 46 |
| On Ramp SR 836 WB | 30 | | | | | |
| From SR 836 to NW 36th St/ SR 948 | 40 | | | | | |
| From NW 36th St/ SR 948 to SE 8th St | 35 | | | | | |
| From SE 8th St to Hialeah Dr/ NW 54th St | 37.5 | | | | | |
| From Hialeah Dr/ NW 54th St to E 9th St/ NW 62nd St | 40 | | | | | |
| From E 9th St/ NW 62nd St to E 25th St/ NW 79th St | 40 | | | | | |
| From E 25th St/ NW 79th St to E 49th St | 40 | | | | | |
| From E 49th St to E 65th St | 40 | | | | | |
| From E 65th St to NW 135th St | 40 | | | | | |

**Southbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| From SW 40th St to US 1 | 38.38 | 24 | 27 | 37 | 23 | 44 |
| From SW 8th St/ Tamiami Trail/ US 41 to SW 40th St | 40 | 28 | 30 | 39 | 27 | 45 |
| From W Flagler St/ SR 968 to SW 8th St/ Tamiami Trail/ US 41 | 40 | 27 | 33 | 38 | 24 | 46 |
| From NW 7th St to W Flagler St/ SR 968 | 40 | 26 | 31 | 38 | 24 | 45 |
| From SR 836 to NW 7th St | 40 | 29 | 31 | 38 | 29 | 46 |
| On Ramp SR 836 EB | 30 | | | | | |
| SR 953 SB Mainline | 40 | 30 | 34 | 42 | 35 | 45 |
| SR 953 SB Mainline | 40 | 30 | 34 | 42 | 35 | 45 |
| Off Ramp SR 836 EB | 30 | | | | | |
| From NW 36th St/ SR 948 to SR 836 | 40 | | | | | |
| From SE 8th St to NW 36th St/ SR 948 | 35 | | | | | |
| From Hialeah Dr/ NW 54th St to SE 8th St | 37.5 | | | | | |
| From E 9th St/ NW 62nd St to Hialeah Dr/ NW 54th St | 40 | | | | | |
| From E 25th St/ NW 79th St to E 9th St/ NW 62nd St | 40 | | | | | |
| From E 49th St to E 25th St/ NW 79th St | 40 | | | | | |
| From E 65th St to E 49th St | 40 | | | | | |
| From NW 135th St to E 65th St | 40 | | | | | |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*





**Table A.3 - 17**
**INRIX Speed Data Summary**
**State Route 821 - Homestead Extention of Florida's Turnpike (HEFT)**

**Northbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 821 NB Mainline | 55 | 48 | 62 | 61 | 62 | 61 |
| Off Ramp SR 874 | 55 | | | | | |
| SR 821 NB Mainline | 55 | 49 | 61 | 62 | 61 | 63 |
| Off Ramp SW 120th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 43 | 64 | 64 | 63 | 65 |
| Off Ramp SW 120th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 43 | 64 | 64 | 63 | 65 |
| On Ramp SW 120th St | 30 | | | | | |
| SR 878 NB Mainline | 55 | 43 | 64 | 64 | 63 | 65 |
| On Ramp SW 120th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 37 | 64 | 65 | 64 | 65 |
| Off Ramp SW 88th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 28 | 65 | 65 | 64 | 66 |
| On Ramp SW 88th St | 25 | | | | | |
| SR 821 NB Mainline | 55 | 28 | 65 | 65 | 64 | 66 |
| On Ramp SW 88th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 33 | 63 | 62 | 61 | 63 |
| Off Ramp SW 117th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 34 | 65 | 65 | 63 | 66 |
| On Ramp SW 117th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 35.77 | 64 | 64 | 62.6 | 65 |
| Off Ramp SW 8th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 59 | 65 | 65 | 64 | 66 |
| On Ramp SW 8th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 63 | 66 | 66 | 65 | 66 |
| Off Ramp SR 836 | 30 | | | | | |
| SR 821 NB Mainline | 55 | 64.62 | 67.08 | 66.54 | 66.54 | 66.54 |
| On Ramp SR 836 | 30 | | | | | |
| SR 821 NB Mainline | 55 | 66 | 67 | 66 | 67 | 66 |
| Off Ramp NW 12th St | 25 | | | | | |
| SR 821 NB Mainline | 55 | 66 | 67 | 66 | 67 | 66 |
| On Ramp NW 12th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 66 | 67 | 66 | 67 | 66 |
| Off Ramp NW 41st St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 67 | 68 | 67 | 67 | 67 |
| On Ramp NW 41st St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 65 | 65 | 65 | 65 | 65 |
| Off Ramp NW 74th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 65 | 63 | 65 | 65 | 64 |
| On Ramp NW 74th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 68 | 67 | 68 | 68 | 67 |
| Off Ramp NW 106th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 68 | 67 | 68 | 68 | 67 |
| On Ramp NW 106th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 67 | 66 | 67 | 67 | 67 |
| Off Ramp Okeechobee Rd/US 27 | 25 | | | | | |
| SR 821 NB Mainline | 55 | 69 | 69 | 69 | 69 | 69 |
| On Ramp Okeechobee Rd/US 27 | 30 | | | | | |
| SR 821 NB Mainline | 55 | 67 | 67 | 67 | 68 | 67 |
| Off Ramp Interstate 75 | 30 | | | | | |
| SR 821 NB Mainline | 55 | 67 | 68 | 68 | 68 | 67 |

**Southbound**

| Roadway Segment | Posted Speed (mph) | INRIX Speed Data (mph)[1] Peak AM[2] | Peak PM[2] | Offpeak Total | Offpeak Midday[2] | Offpeak Night[2] |
|---|---|---|---|---|---|---|
| SR 821 NB Mainline | 55 | 62 | 59 | 61 | 62 | 61 |
| On Ramp SR 874 | 55 | | | | | |
| SR 821 NB Mainline | 55 | 61 | 44 | 60 | 60 | 60 |
| On Ramp SW 120th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 64 | 45 | 63 | 63 | 62 |
| On Ramp SW 120th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 64 | 45 | 63 | 63 | 62 |
| Off Ramp SW 120th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 64 | 45 | 63 | 63 | 62 |
| Off Ramp SW 120th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 65 | 61 | 64 | 64 | 64 |
| On Ramp SW 88th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 66 | 63 | 61 | 65 | 65 |
| On Ramp SW 88th St | 25 | | | | | |
| SR 821 NB Mainline | 55 | 66 | 63 | 61 | 65 | 65 |
| Off Ramp SW 88th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 63 | 57 | 61 | 62 | 61 |
| On Ramp SW 40th St | 25 | | | | | |
| SR 821 NB Mainline | 55 | 35.39 | 42.86 | 63.1 | 64.39 | 62.32 |
| Off Ramp SW 40th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 35.39 | 42.86 | 63.1 | 64.39 | 62.32 |
| On Ramp SW 8th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 66 | 34 | 63 | 65 | 62 |
| Off Ramp SW 8th St | 25 | | | | | |
| SR 821 NB Mainline | 55 | 66 | 34 | 63 | 65 | 62 |
| On Ramp SR 836 | 30 | | | | | |
| SR 821 NB Mainline | 55 | 68.38 | 42.71 | 65.76 | 67.76 | 64.76 |
| On Ramp NW 12th St | 25 | | | | | |
| SR 821 NB Mainline | 55 | 68 | 63 | 66 | 67 | 66 |
| Off Ramp NW 12th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 68 | 63 | 66 | 67 | 66 |
| On Ramp NW 41st St | 25 | | | | | |
| SR 821 NB Mainline | 55 | 69 | 66 | 67 | 68 | 67 |
| Off Ramp NW 41st St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 67 | 65 | 65 | 66 | 65 |
| On Ramp NW 74th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 65 | 63 | 65 | 65 | 64 |
| Off Ramp NW 74th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 65 | 63 | 65 | 65 | 64 |
| On Ramp NW 106th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 68 | 67 | 68 | 69 | 68 |
| Off Ramp NW 106th St | 30 | | | | | |
| SR 821 NB Mainline | 55 | 67 | 68 | 67 | 68 | 69 |
| On Ramp Okeechobee Rd/US 27 | 25 | | | | | |
| SR 821 NB Mainline | 55 | 67 | 69 | 69 | 69 | 68 |
| Off Ramp Okeechobee Rd/US 27 | 30 | | | | | |
| SR 821 NB Mainline | 55 | 67 | 69 | 68 | 68 | 68 |
| On Ramp Interstate 75 | 30 | | | | | |
| SR 821 NB Mainline | 55 | 68 | 68 | 68 | 68 | 68 |

[1] *Based on 2011 INRIX Speed Data provoided by FDOT*
[2] *AM Peak: 6:30 - 9:30 AM*
*PM Peak: 3:30 - 6:30 PM*
*Midday: 9:30 AM - 3:30 PM*
*Night: 6:30 PM - 9:30 AM*

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# Appendix B

## Appendix B.1 Travel Pattern and Trip Characteristics Survey - Screen Captures

## Appendix B.2 Travel Pattern and Trip Characteristics Survey - Survey Response Tabulations

## Appendix B.3 Travel Pattern and Trip Characteristics Survey – Interchange-to-Interchange Movement Tables

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# Appendix B.1

# Travel Pattern and Trip Characteristics Survey - Screen Captures

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# Appendix B.1

## Travel Pattern and Trip Characteristics Survey - Screen Captures

**Figure B.1-1: Survey Instructions**

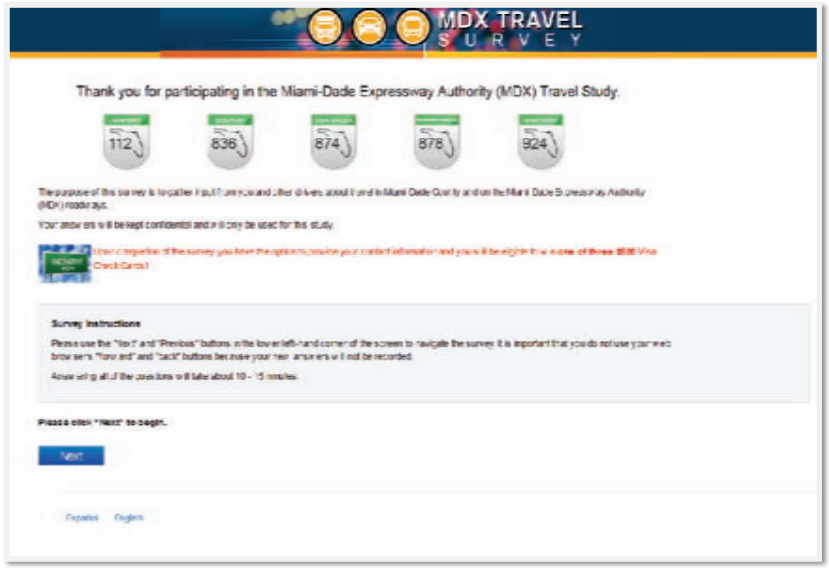


**Figure B.1-2: Trip Qualification**

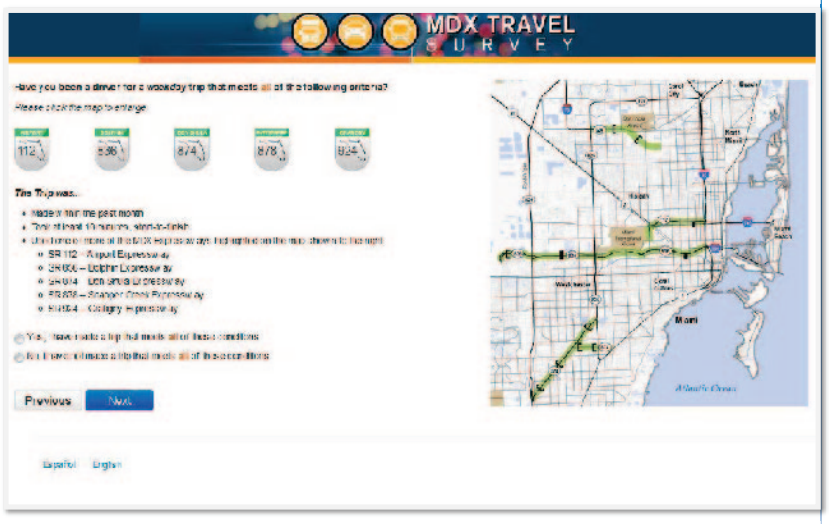


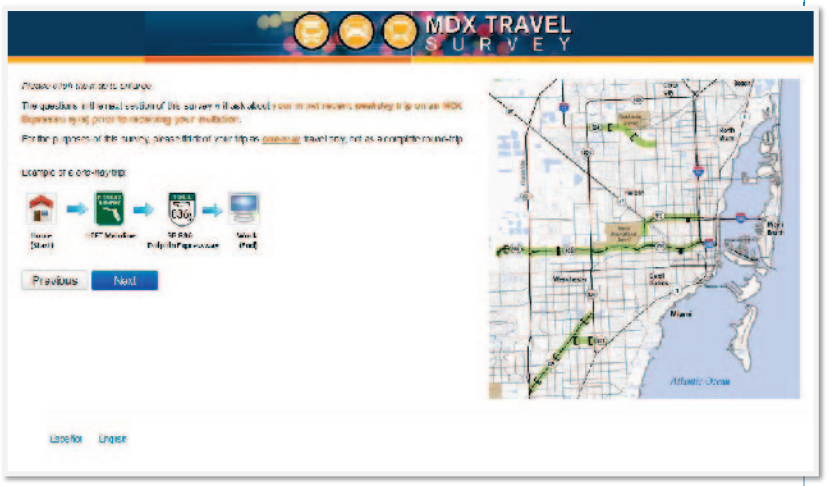

**Figure B.1-3: Termination**

*If respondent does not meet screening criteria*





**Figure B.1-4: One-way Trip Definition**



## Trip Characteristic Questions

**Figure B.1-5: Travel Date**

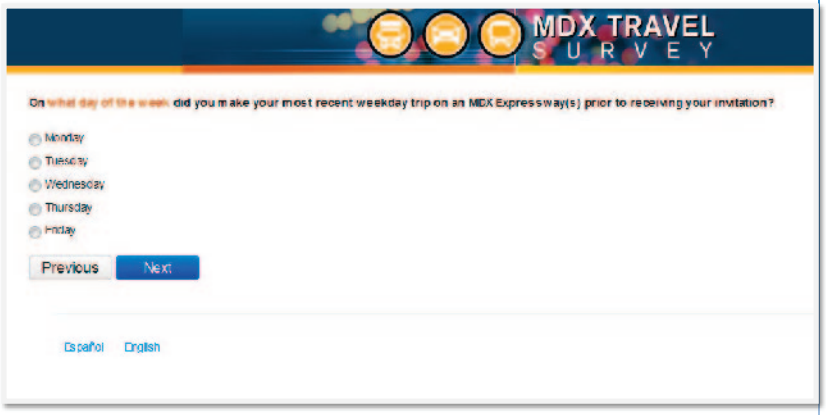



**Figure B.1-6: Roads Used**

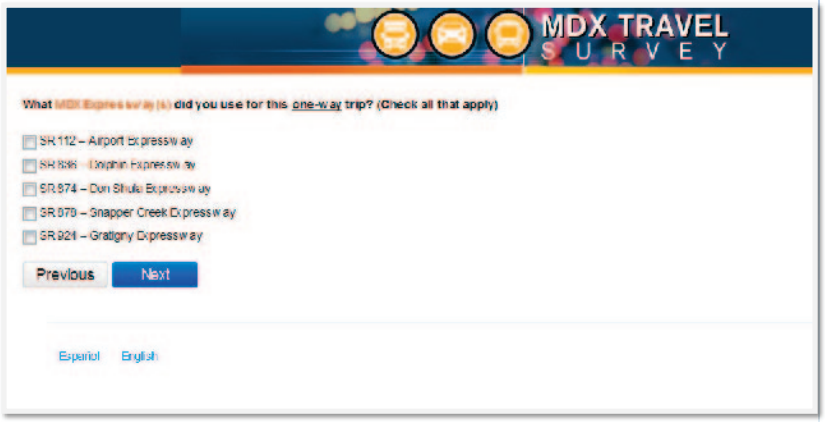







**Figure B.1-1: Trip Purpose**

**Figure B.1-2: Beginning and Ending Location**

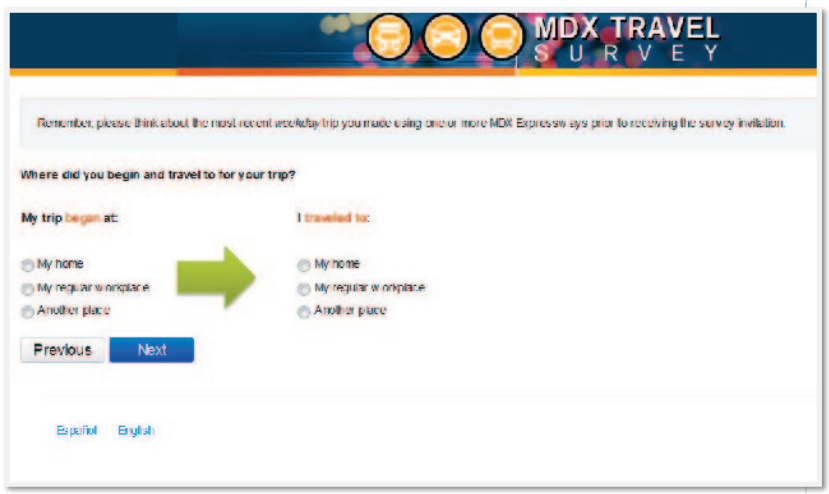
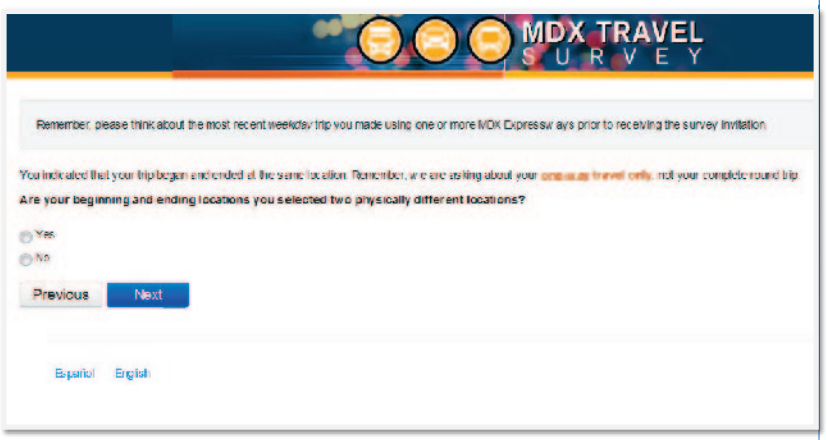


**Figure B.1-3: Trip Confirmation**




*If beginning and ending locations are the same. If 'yes' send back to Screener*





**Figure B.1-4: Origin Address and Map Interface**

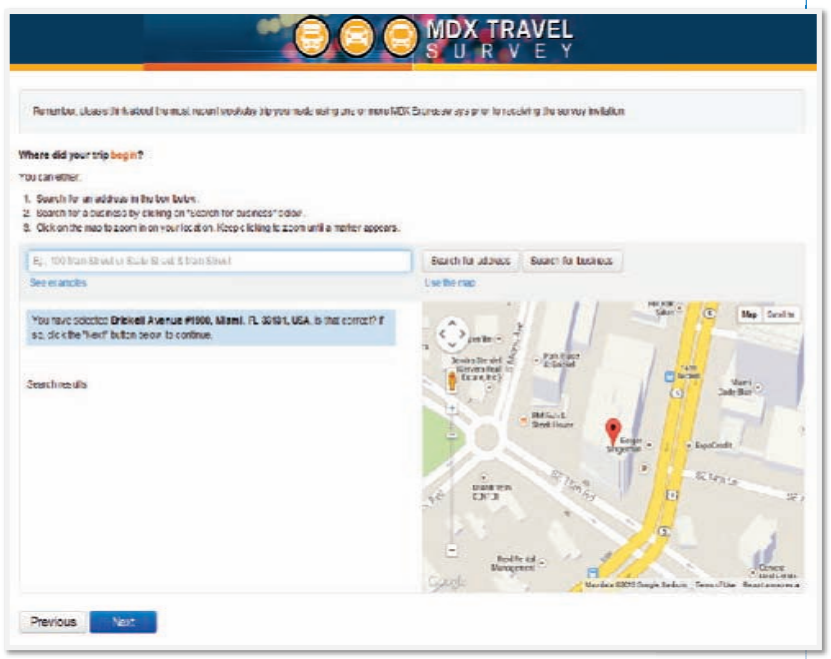


**Figure B.1-11: Destination Address and Map Interface**

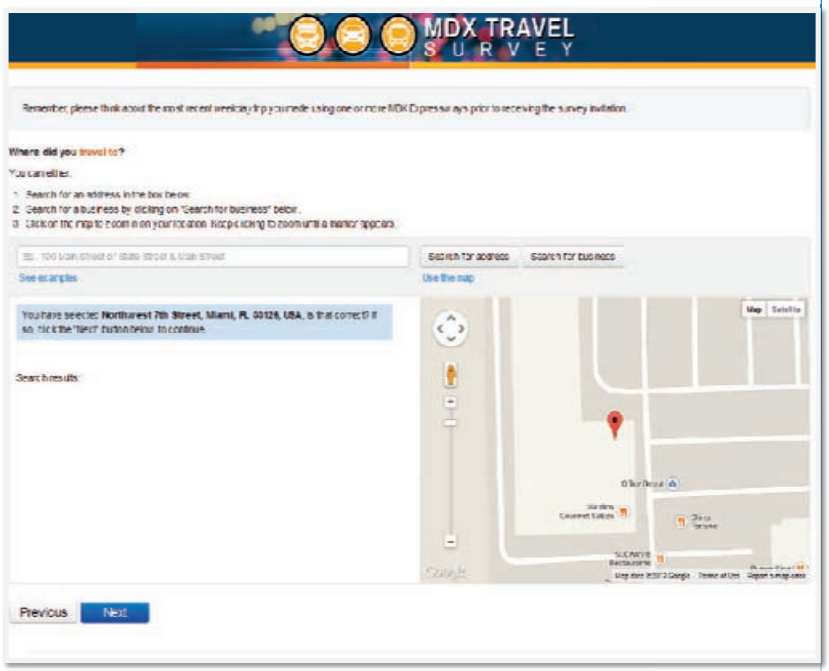







**Figure B.1-12: Location Warning**

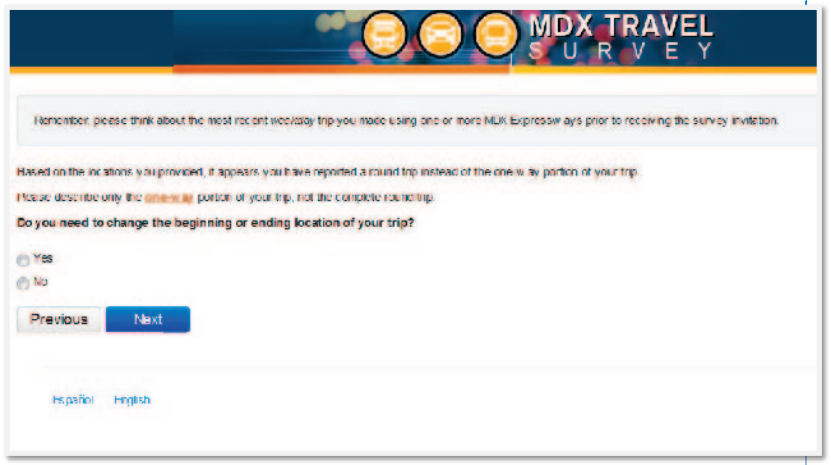
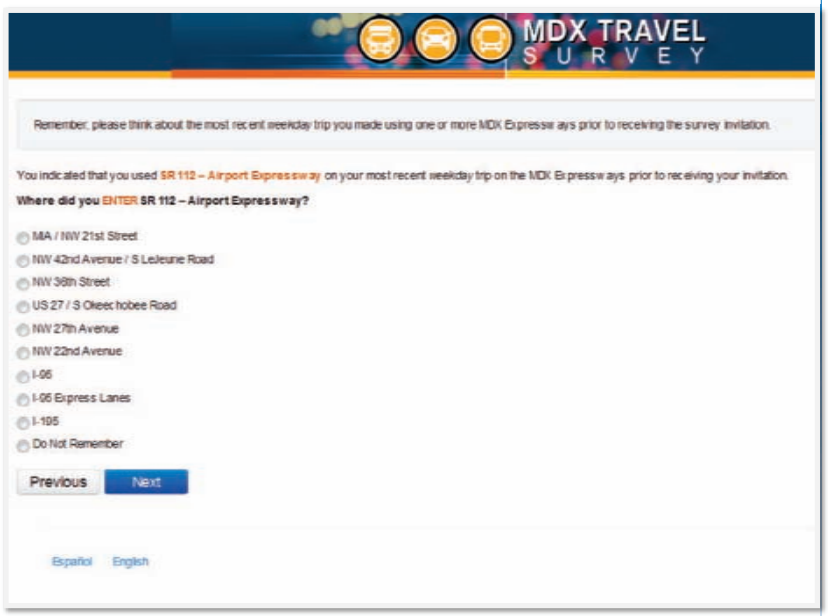


**Figure B.1-13: Airport Expressway Entrance Ramp**

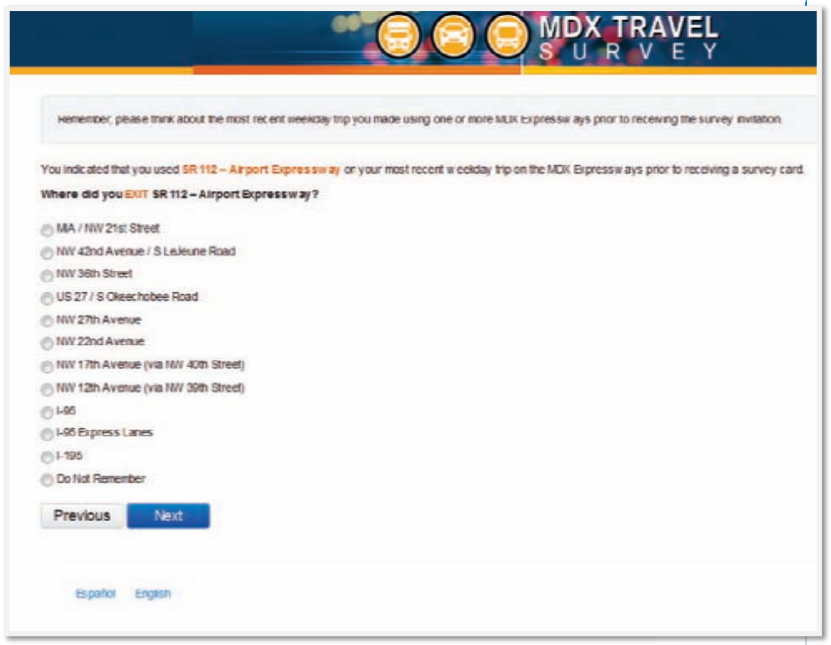



*If used Airport Expressway*



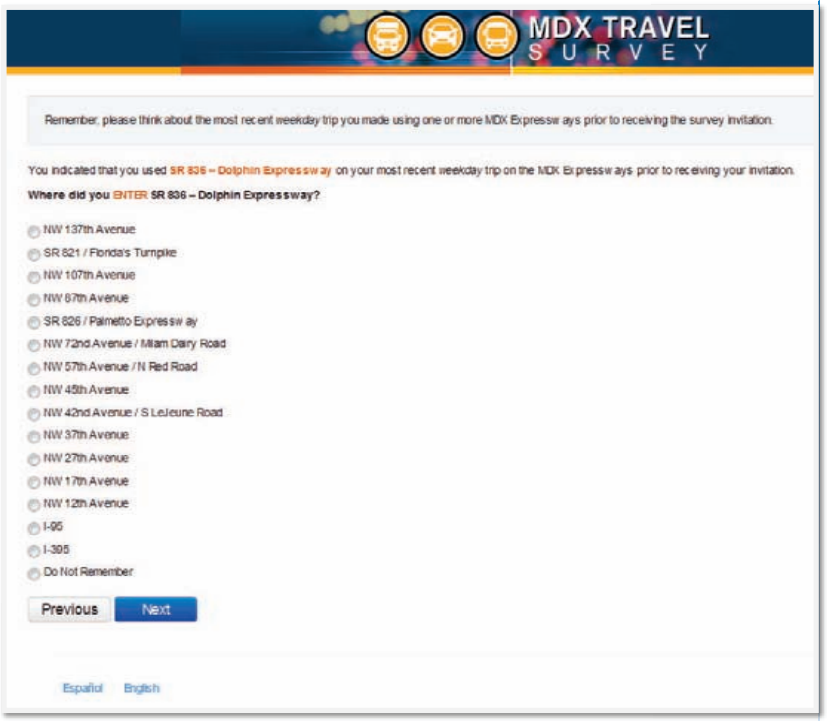


**Figure B.1-14: Airport Expressway Exit Ramp**




*If used Airport Expressway*

**Figure B.1-15: Dolphin Expressway Entrance Ramp**

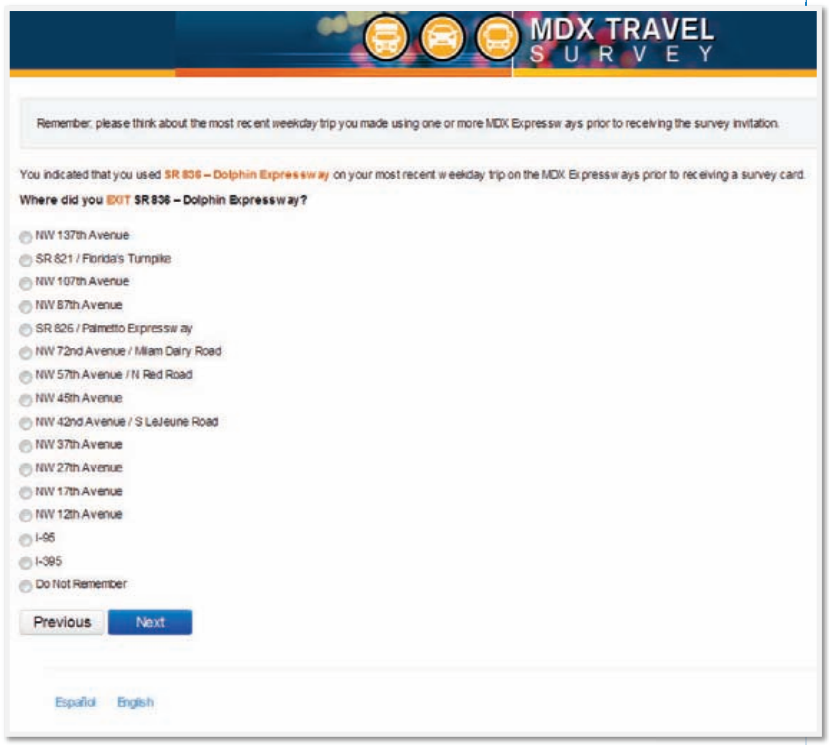



*If used Dolphin Expressway*



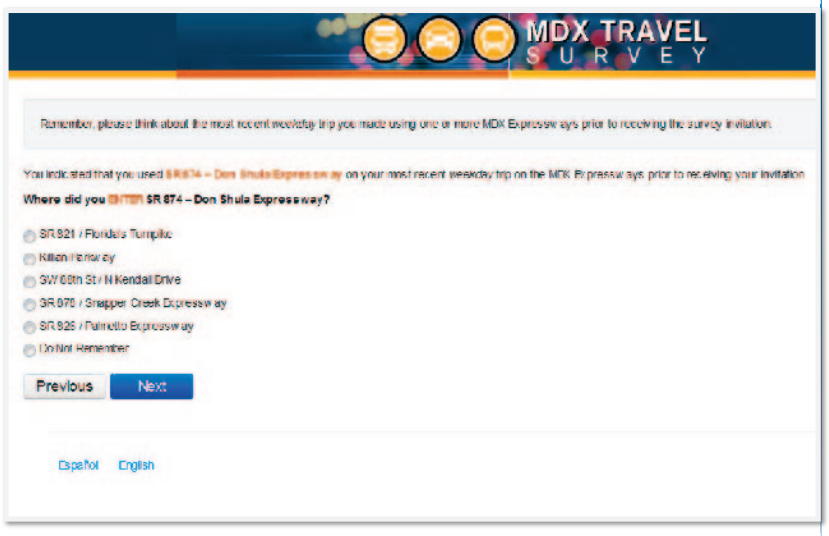


**Figure B.1-16: Dolphin Expressway Exit Ramp**




*If used Dolphin Expressway*

**Figure B.1-17: Don Shula Expressway Entrance Ramp**

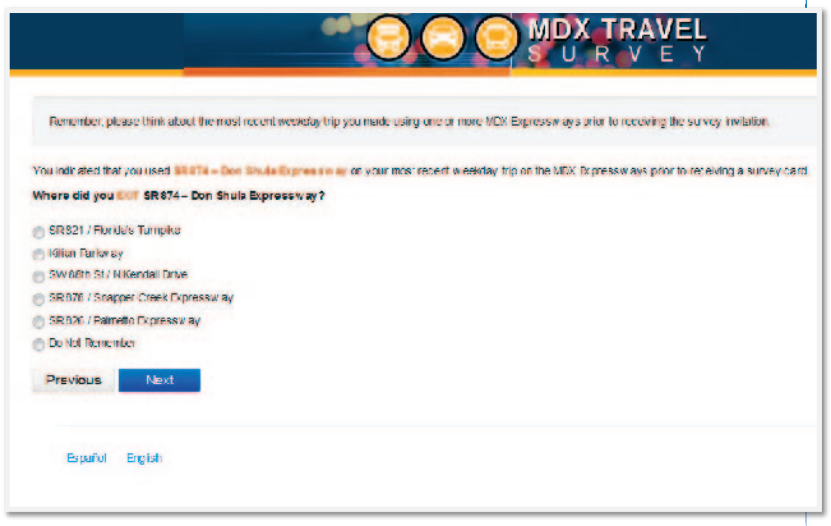



*If used Don Shula Expressway*



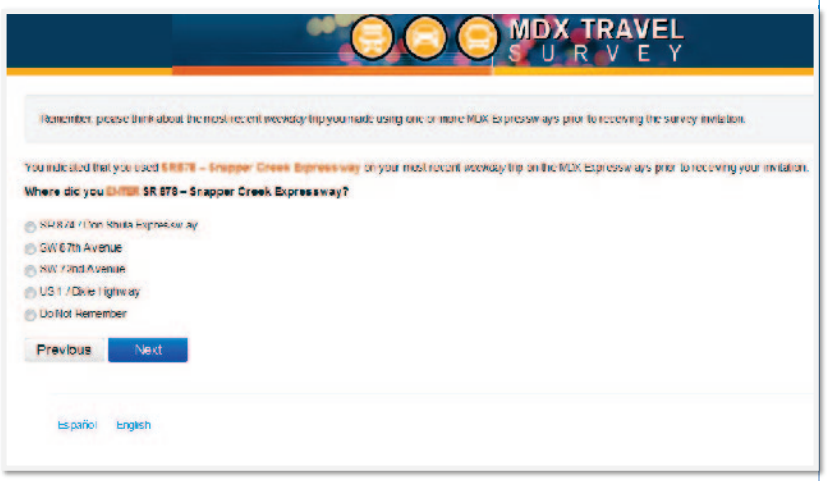


**Figure B.1-18: Don Shula Expressway Exit Ramp**




*If used Don Shula Expressway*

**Figure B.1-19: Snapper Creek Expressway Entrance Ramp**




*If used Snapper Creek Expressway*

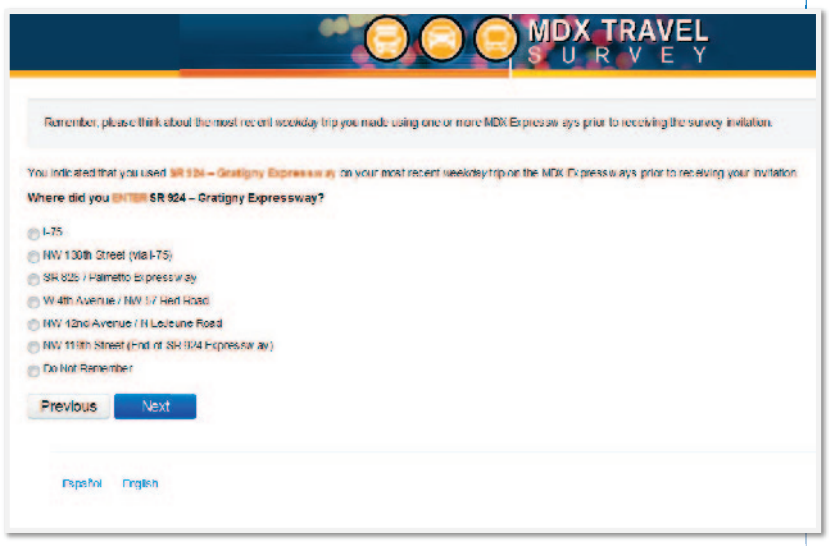
**Figure B.1-20: Snapper Creek Expressway Exit Ramp**

*If used Snapper Creek Expressway*



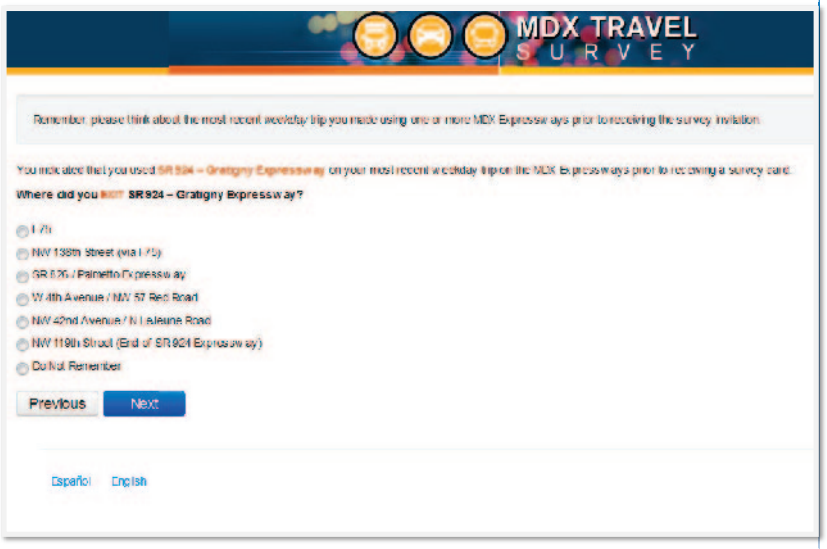


**Figure B.1-21: Gratigny Expressway Entrance**




*If used Gratigny Expressway*

**Figure B.1-22: Gratigny Expressway Exit**




*If used Gratigny Expressway*

**Figure B.1-23: Toll Payment**

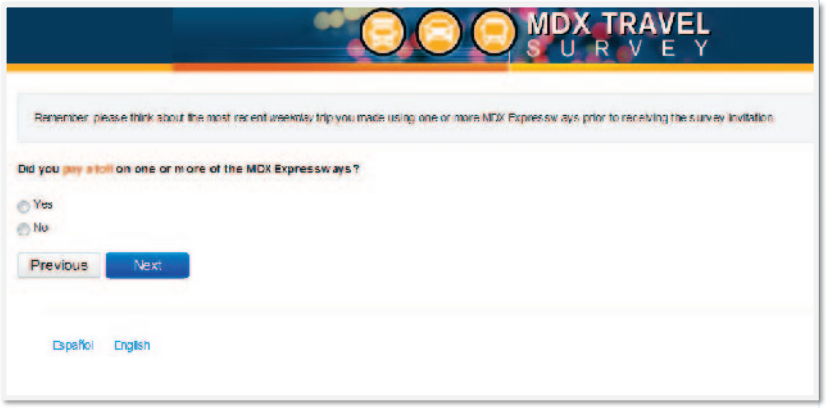







**Figure B.1-24: Roads Where Tolled**

**Figure B.1-25: Trip Departure Time**

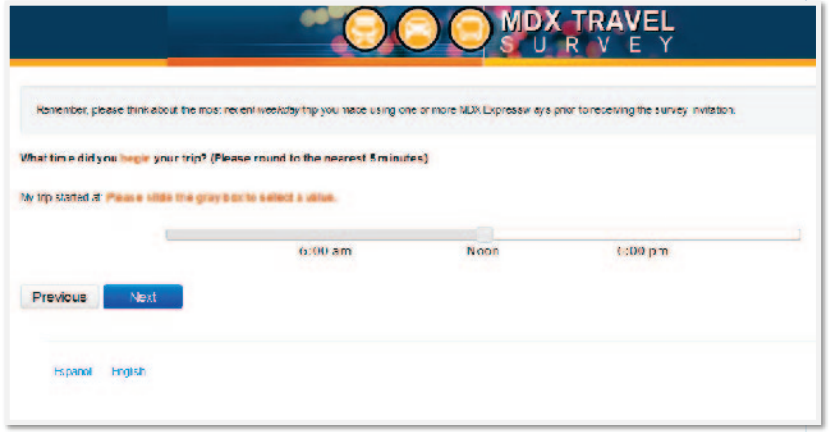


**Figure B.1-26: Travel Time**

**Figure B.1-27: Travel Time Confirmation**

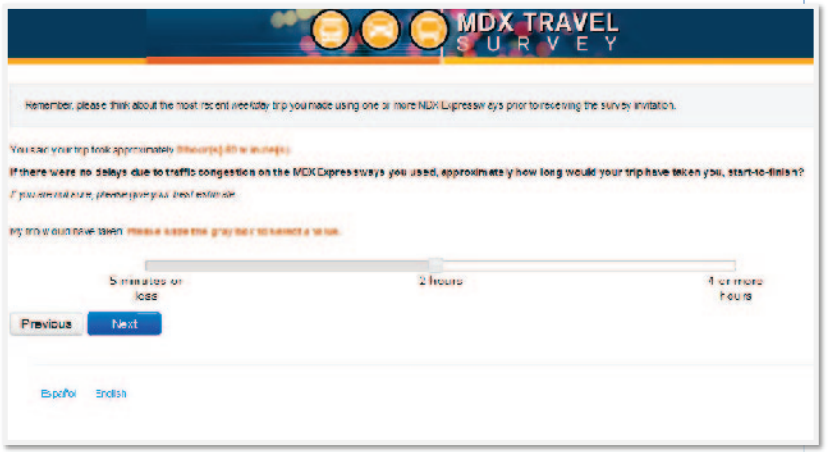
*If travel time is greater than 2.5 times or less than 0.75 times the Google-calculated travel time. If 'Yes,' send back to travel time question*





**Figure B.1-28: Delay Due to Traffic Congestion**

**Figure B.1-29: Travel Time without Delay**




*If experienced delay*

**Figure B.1-30: Arrival Time Flexibility**

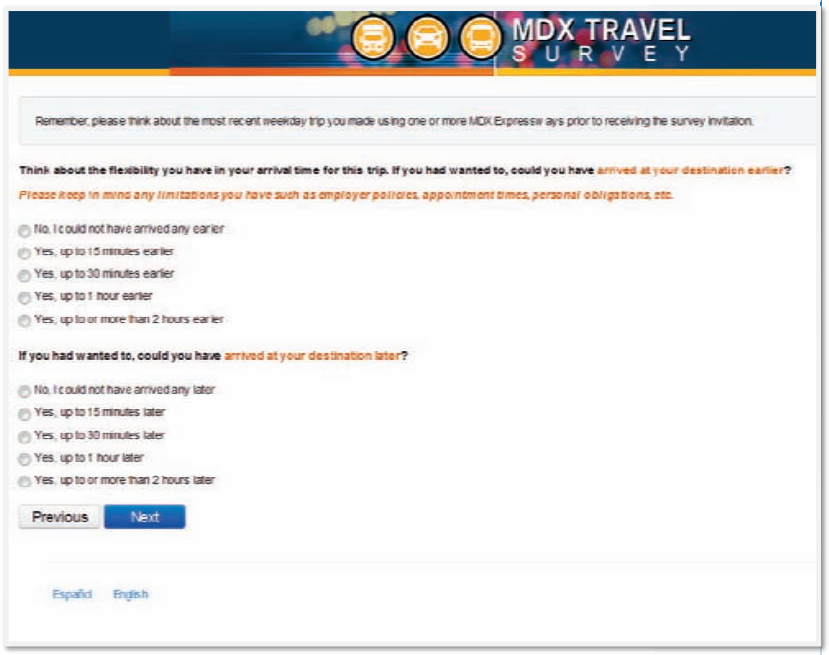







**Figure B.1-31: Toll Discount**

*If traveled during peak hours (6-9AM or 3-7PM)*

**Figure B.1-32: Return Trip**

**Figure B.1-33: Return Trip Time**

*If used the same route on return trip*

**Figure B.1-34: Vehicle Type**

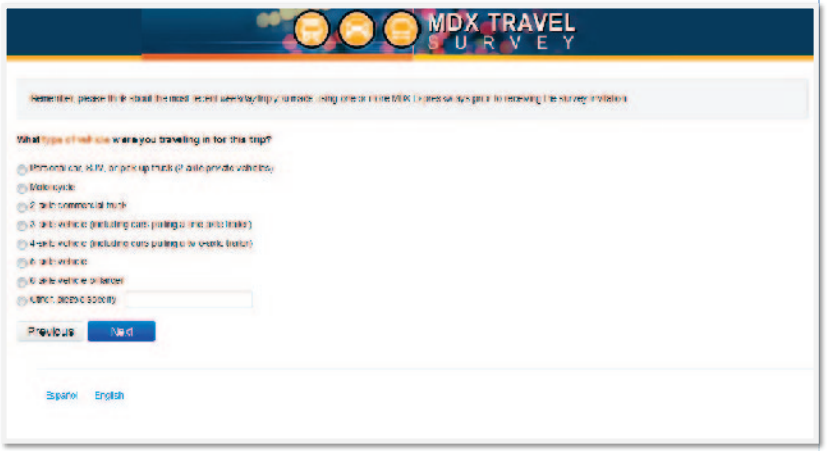







**Figure B.1-35: Trip Frequency**

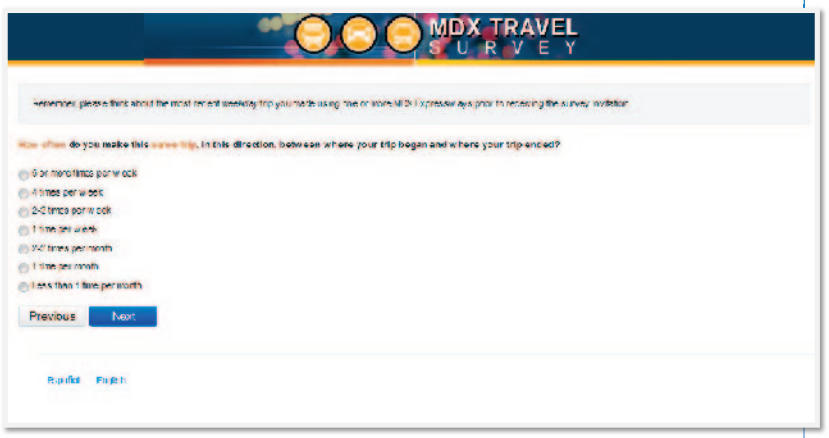



**Figure B.1-36: Weekend Trips on MDX Facilities**

**Figure B.1-37: Miami-Dade Resident**

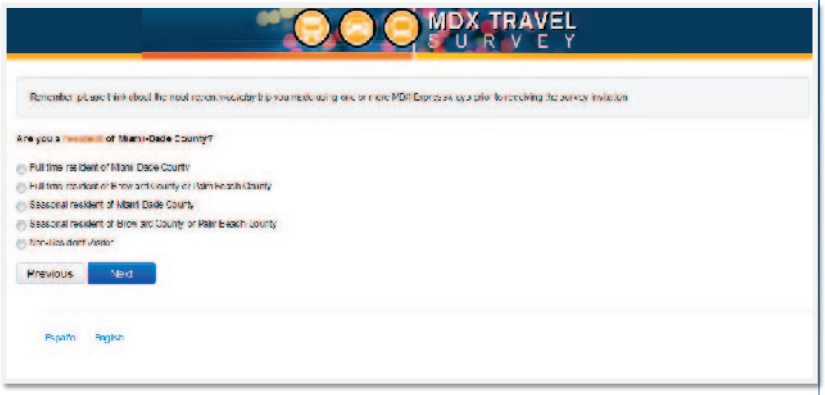
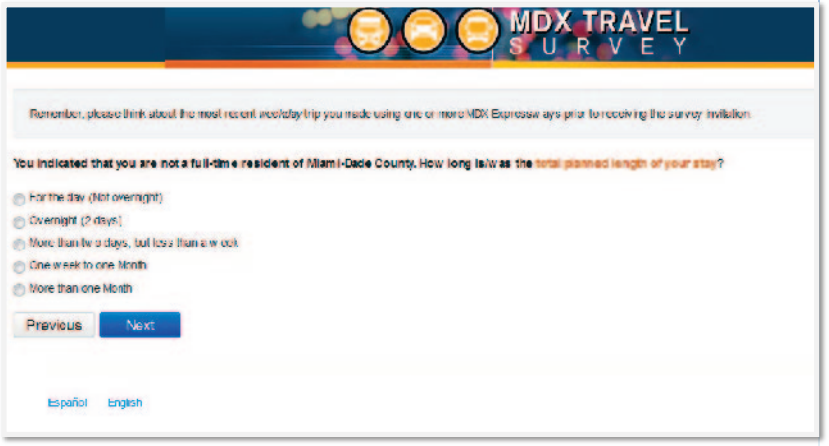



**Figure B.1-38: Length of Stay**




*If respondent is not a full time resident of Miami-Dade County*





**Figure B.1-39: Zip Code**

**Figure B.1-40: Prize Drawing Participation**

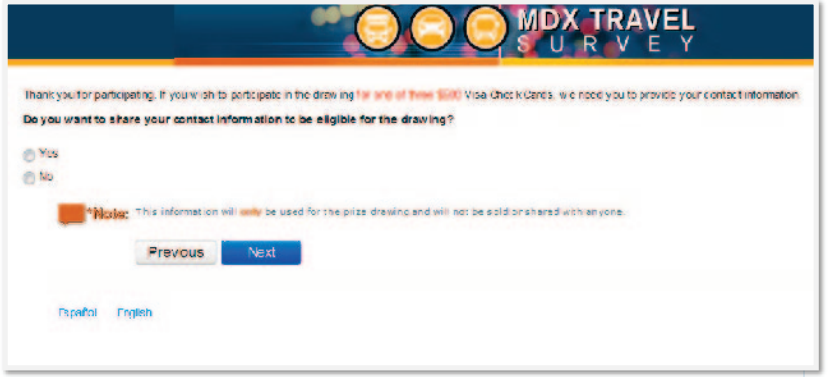
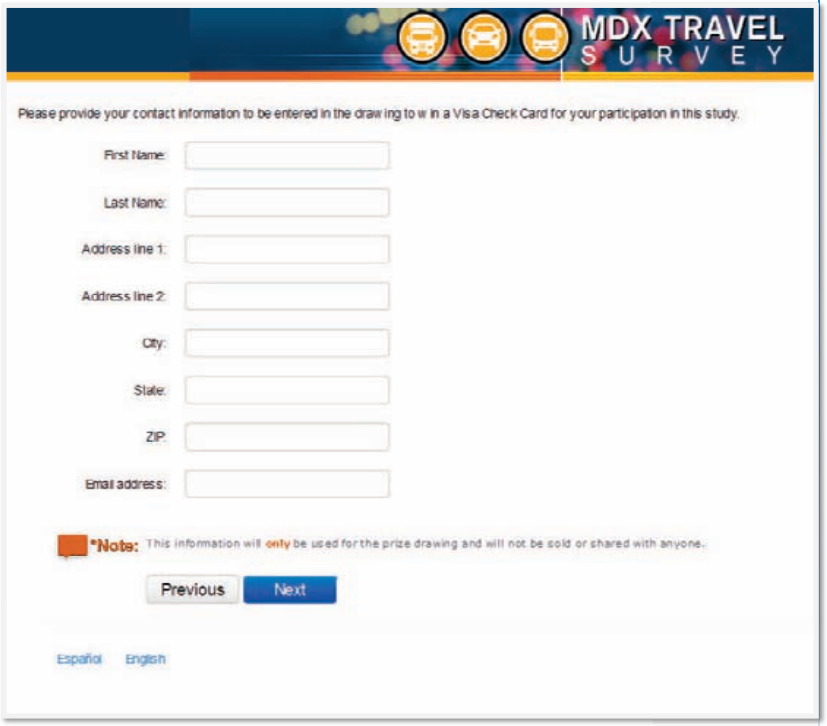


**Figure B.1-41: Contact Information**




*If indicated 'yes' to participating in the draw*





**Figure B.1-42: Survey Comments**

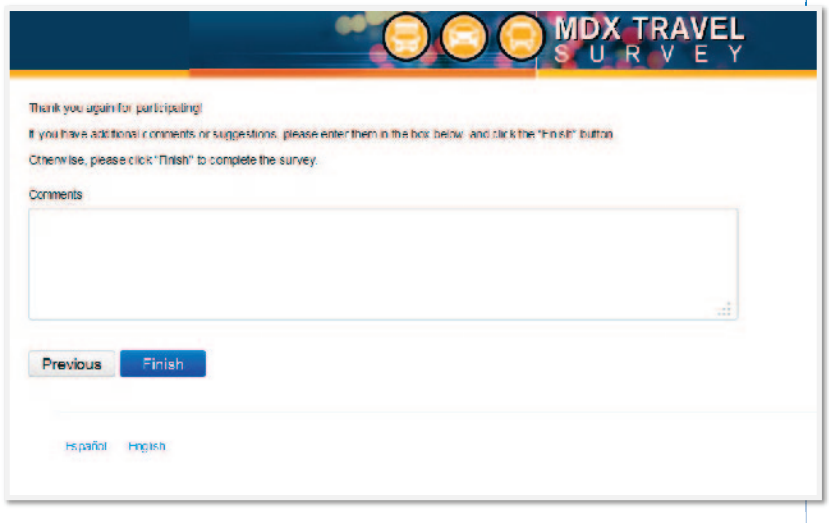



**Figure B.1-43: Thank You Screen**

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# Appendix B.2

# Travel Pattern and Trip Characteristics Survey - Survey Response Tabulations

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# Appendix B.2
# Travel Pattern and Trip Characteristics Survey - Survey Response Tabulations

**On what day of the week did you make your most recent weekday trip on an MDX Expressway(s) prior to receiving your invitation?**

| | Count | Percent |
|---|---|---|
| Monday | 337 | 12.9% |
| Tuesday | 384 | 14.7% |
| Wednesday | 598 | 23.0% |
| Thursday | 728 | 28.0% |
| Friday | 557 | 21.4% |
| Total | 2604 | 100.0% |

**Which MDX facilities did you use on your most recent trips?**

| | Count | Percent |
|---|---|---|
| SR 112 – Airport Expressway | 476 | 18.3% |
| SR 836 – Dolphin Expressway | 1457 | 56.0% |
| SR 874 – Don Shula Expressway | 730 | 28.0% |
| SR 878 – Snapper Creek Expressway | 260 | 10.0% |
| SR 924 – Gratigny Expressway | 281 | 10.8% |
| Total | 2604 | 100.0% |

**What was the primary purpose of your trip?**

| | Count | Percent |
|---|---|---|
| Travel to or from Work | 1251 | 48% |
| Business-Related Travel (such as a meeting, sales call, etc.) | 406 | 16% |
| Go to or from School/College/University or to Drop-off or pick-up a Student | 115 | 4% |
| Shopping | 60 | 2% |
| Social or Recreational (such as a restaurant, visiting a friend, or a sporting event) | 294 | 11% |
| Tourism-Related (such as a beach, museum, or a hotel) | 33 | 1% |
| Travel to or from the Airport | 172 | 7% |
| Other Personal Business (such as a medical appointment) | 273 | 10% |
| Total | 2604 | 100% |

**Where did you begin your trip?**

| | Count | Percent |
|---|---|---|
| My Home | 2038 | 78.3% |
| My regular workplace | 387 | 14.9% |
| Another place | 179 | 6.9% |
| Total | 2604 | 100.0% |

**Where did you end your trip?**

| | Count | Percent |
|---|---|---|
| My home | 264 | 10.1% |
| My regular workplace | 1077 | 41.4% |
| Another place | 1263 | 48.5% |
| Total | 2604 | 100.0% |

**Where did you ENTER SR 112 – Airport Expressway?**

| | Count | Percent |
|---|---|---|
| MIA / NW 21st Street | 16 | 3.4% |
| NW 42nd Avenue / S LeJeune Road | 112 | 23.5% |
| W 36th Street | 66 | 13.9% |
| US 27 / S Okeechobee Road | 38 | 8.0% |
| NW 27th Avenue | 18 | 3.8% |
| NW 22nd Avenue | 11 | 2.3% |
| I-95 | 112 | 23.5% |
| I-95 Express Lanes | 61 | 12.8% |
| I-195 | 42 | 8.8% |
| Total | 476 | 100.0% |

***If used Airport Expressway***





**Where did you EXIT SR 112 – Airport Expressway?**

| | Count | Percent |
|---|---|---|
| MIA / NW 21st Street | 43 | 9.0% |
| NW 42nd Avenue / S LeJeune Road | 109 | 22.9% |
| NW 36th Street | 32 | 6.7% |
| US 27 / S Okeechobee Road | 19 | 4.0% |
| NW 27th Avenue | 23 | 4.8% |
| NW 22nd Avenue | 11 | 2.3% |
| I-95 | 116 | 24.4% |
| I-95 Express Lanes | 36 | 7.6% |
| I-195 | 66 | 13.9% |
| NW 17th Avenue (via NW 40th Street) | 11 | 2.3% |
| NW 12th Avenue (via NW 39th Street) | 10 | 2.1% |
| Total | 476 | 100.0% |

***If used Airport Expressway***

**Where did you ENTER SR 836 – Dolphin Expressway?**

| | Count | Percent |
|---|---|---|
| NW 42nd Avenue / S LeJeune Road | 106 | 7.3% |
| I-95 | 220 | 15.1% |
| NW 137th Avenue | 106 | 7.3% |
| SR 821 / Florida's Turnpike | 277 | 19.0% |
| NW 107th Avenue | 56 | 3.8% |
| NW 87th Avenue | 50 | 3.4% |
| SR 826 / Palmetto Expressway | 391 | 26.8% |
| NW 72nd Avenue / Milam Dairy Road | 17 | 1.2% |
| NW 57th Avenue / N Red Road | 66 | 4.5% |
| NW 45th Avenue | 7 | .5% |
| NW 37th Avenue | 19 | 1.3% |
| NW 27th Avenue | 42 | 2.9% |
| NW 17th Avenue | 35 | 2.4% |
| NW 12th Avenue | 5 | .3% |
| I-395 | 60 | 4.1% |
| Total | 1457 | 100.0% |

***If used Dolphin Expressway***

**Where did you EXIT SR 836 – Dolphin Expressway?**

| | Count | Percent |
|---|---|---|
| NW 42nd Avenue / S LeJeune Road | 219 | 15.0% |
| I-95 | 277 | 19.0% |
| NW 137th Avenue | 23 | 1.6% |
| SR 821 / Florida's Turnpike | 139 | 9.5% |
| NW 107th Avenue | 84 | 5.8% |
| NW 87th Avenue | 77 | 5.3% |
| SR 826 / Palmetto Expressway | 258 | 17.7% |
| NW 72nd Avenue / Milam Dairy Road | 31 | 2.1% |
| NW 57th Avenue / N Red Road | 75 | 5.1% |
| NW 45th Avenue | 19 | 1.3% |
| NW 37th Avenue | 19 | 1.3% |
| NW 27th Avenue | 54 | 3.7% |
| NW 17th Avenue | 85 | 5.8% |
| NW 12th Avenue | 12 | .8% |
| I-395 | 85 | 5.8% |
| Total | 1457 | 100.0% |

***If used Dolphin Expressway***

**Where did you ENTER SR 874 – Don Shula Expressway?**

| | Count | Percent |
|---|---|---|
| SR 821 / Florida's Turnpike | 297 | 40.7% |
| SR 826 / Palmetto Expressway | 127 | 17.4% |
| Killian Parkway | 138 | 18.9% |
| SW 88th St / N Kendall Drive | 108 | 14.8% |
| SR 878 / Snapper Creek Expressway | 60 | 8.2% |
| Total | 730 | 100.0% |

***If used Don Shula Expressway***

**Where did you EXIT SR 874 – Don Shula Expressway?**

| | Count | Percent |
|---|---|---|
| SR 821 / Florida's Turnpike | 111 | 15.2% |
| SR 826 / Palmetto Expressway | 321 | 44.0% |
| Killian Parkway | 62 | 8.5% |
| SW 88th St / N Kendall Drive | 73 | 10.0% |
| SR 878 / Snapper Creek Expressway | 163 | 22.3% |
| Total | 730 | 100.0% |

***If used Don Shula Expressway***





**Where did you ENTER SR 878 – Snapper Creek Expressway?**

| | Count | Percent |
|---|---|---|
| SR 874 / Don Shula Expressway | 169 | 65.0% |
| SW 87th Avenue | 24 | 9.2% |
| SW 72nd Avenue | 17 | 6.5% |
| US 1 / Dixie Highway | 50 | 19.2% |
| Total | 260 | 100.0% |

***If used Snapper Creek Expressway***

**Where did you EXIT SR 878 – Snapper Creek Expressway?**

| | Count | Percent |
|---|---|---|
| SR 874 / Don Shula Expressway | 58 | 22.3% |
| SW 87th Avenue | 38 | 14.6% |
| SW 72nd Avenue | 51 | 19.6% |
| US 1 / Dixie Highway | 113 | 43.5% |
| Total | 260 | 100.0% |

***If used Snapper Creek Expressway***

**Where did you ENTER SR 924 – Gratigny Parkway?**

| | Count | Percent |
|---|---|---|
| SR 826 / Palmetto Expressway | 59 | 21.0% |
| I-75 | 113 | 40.2% |
| NW 138th Street (via I-75) | 7 | 2.5% |
| W 4th Avenue / NW 57 Red Road | 25 | 8.9% |
| NW 42nd Avenue / N LeJeune Road | 13 | 4.6% |
| NW 119th Street (End of SR 924 Expressway) | 64 | 22.8% |
| Total | 281 | 100.0% |

***If used Gratigny Parkway***

**Where did you EXIT SR 924 – Gratigny Parkway?**

| | Count | Percent |
|---|---|---|
| SR 826 / Palmetto Expressway | 37 | 13.2% |
| I-75 | 42 | 14.9% |
| NW 138th Street (via I-75) | 5 | 1.8% |
| W 4th Avenue / NW 57 Red Road | 49 | 17.4% |
| NW 42nd Avenue / N LeJeune Road | 15 | 5.3% |
| NW 119th Street (End of SR 924 Expressway) | 133 | 47.3% |
| Total | 281 | 100.0% |

***If used Gratigny Parkway***

**What time did you start your trip?**

| | Count | Percent |
|---|---|---|
| 12AM - 12:59AM | 3 | .1% |
| 1AM - 1:59AM | 1 | .0% |
| 2AM - 2:59AM | 8 | .3% |
| 3AM - 3:59AM | 11 | .4% |
| 4AM - 4:59AM | 28 | 1.1% |
| 5AM - 5:59AM | 76 | 2.9% |
| 6AM - 6:59AM | 231 | 8.9% |
| 7AM - 7:59AM | 421 | 16.2% |
| 8AM - 8:59AM | 354 | 13.6% |
| 9AM - 9:59AM | 230 | 8.8% |
| 10AM - 10:59AM | 168 | 6.5% |
| 11AM - 11:59AM | 101 | 3.9% |
| 12PM - 12:59PM | 105 | 4.0% |
| 1PM - 1:59PM | 126 | 4.8% |
| 2PM - 2:59PM | 118 | 4.5% |
| 3PM - 3:59PM | 117 | 4.5% |
| 4PM - 4:59PM | 126 | 4.8% |
| 5PM - 5:59PM | 143 | 5.5% |
| 6PM - 6:59PM | 85 | 3.3% |
| 7PM - 7:59PM | 64 | 2.5% |
| 8PM - 8:59PM | 44 | 1.7% |
| 9PM - 9:59PM | 22 | .8% |
| 10PM - 10:59PM | 13 | .5% |
| 11PM - 11:59PM | 9 | .3% |
| Total | 2604 | 100.0% |

**Approximately how long did your trip take you, from door-to-door?**

| | Count | Percent |
|---|---|---|
| Less than 20 minutes | 132 | 5.1% |
| 20 to 29 minutes | 397 | 15.2% |
| 30 to 39 minutes | 538 | 20.7% |
| 40 to 49 minutes | 522 | 20.0% |
| 50 thru 59 minutes | 280 | 10.8% |
| One hour or more | 735 | 28.2% |
| Total | 2604 | 100.0% |





**Did you experience any delay due to traffic congestion on any of the MDX Expressways you traveled?**

| | Count | Percent |
|---|---|---|
| Yes | 1301 | 50.0% |
| No | 1303 | 50.0% |
| Total | 2604 | 100.0% |

**Amount of delay experienced by all respondents in 4 categories**

| | Count | Percent |
|---|---|---|
| No delay | 1303 | 50.0% |
| Less than 15 minutes | 343 | 13.2% |
| 15-29 minutes | 592 | 22.7% |
| 30 or more minutes | 366 | 14.1% |
| Total | 2604 | 100.0% |

***If experienced delay***

**Could you have arrived at your destination earlier?**

| | Count | Percent |
|---|---|---|
| No, I could not have arrived any earlier | 1314 | 50.5% |
| Yes, up to 15 minutes earlier | 793 | 30.5% |
| Yes, up to 30 minutes earlier | 276 | 10.6% |
| Yes, up to 1 hour earlier | 119 | 4.6% |
| Yes, up to or more than 2 hours earlier | 102 | 3.9% |
| Total | 2604 | 100.0% |

**Could you have arrived at your destination later?**

| | Count | Percent |
|---|---|---|
| No, I could not have arrived any later | 1413 | 54.3% |
| Yes, up to 15 minutes later | 699 | 26.8% |
| Yes, up to 30 minutes later | 266 | 10.2% |
| Yes, up to 1 hour later | 104 | 4.0% |
| Yes, up to or more than 2 hours later | 122 | 4.7% |
| Total | 2604 | 100.0% |

**If tolls were discounted for trips made during non-peak hours, how would this affect the start time of your trip?**

| | Count | Percent |
|---|---|---|
| Definitely change start time to non-peak hours | 184 | 21.5% |
| More likely to change start time to non-peak hours | 116 | 13.6% |
| No difference or Not Sure | 447 | 52.3% |
| Less likely to change start time to non-peak hours | 107 | 12.5% |
| Total | 854 | 100.0% |

***If trip began in the peak period or could have arrived earlier or later***

**For your return trip, do you typically use the same route in reverse or do you use a different route?**

| | Count | Percent |
|---|---|---|
| Yes, I would use the same route in reverse for my return trip | 1834 | 70.4% |
| No, I would use a different route | 770 | 29.6% |
| Total | 2604 | 100.0% |

**Approximately how long does your return trip take you, from door-to-door?**

| | Count | Percent |
|---|---|---|
| Less than 20 minutes | 129 | 5.0% |
| 20 to 29 minutes | 366 | 14.1% |
| 30 to 39 minutes | 482 | 18.5% |
| 40 to 49 minutes | 529 | 20.3% |
| 50 thru 59 minutes | 287 | 11.0% |
| One hour or more | 811 | 31.1% |
| Total | 2604 | 100.0% |





**What type of vehicle were you traveling in for this trip?**

| | Count | Percent |
|---|---|---|
| Personal car, SUV, or pick-up truck (2-axle private vehicles) | 2511 | 96.4% |
| Motorcycle | 6 | .2% |
| 2-axle commercial truck | 35 | 1.3% |
| 3-axle vehicle (including cars pulling a one-axle trailer) | 7 | .3% |
| 4-axle vehicle (including cars pulling a two-axle trailer) | 26 | 1.0% |
| 5-axle vehicle | 1 | .0% |
| 6-axle vehicle or larger | 2 | .1% |
| Other, please specify: | 16 | .6% |
| Total | 2604 | 100.0% |

**How often do you make this same trip?**

| | Count | Percent |
|---|---|---|
| 5 or more times per week | 967 | 37.1% |
| 4 times per week | 161 | 6.2% |
| 2-3 times per week | 450 | 17.3% |
| 1 time per week | 222 | 8.5% |
| 2-3 times per month | 312 | 12.0% |
| 1 time per month | 174 | 6.7% |
| Less than 1 time per month | 318 | 12.2% |
| Total | 2604 | 100.0% |

**Do you also typically use any of the MDX Expressways for discretionary weekend trips, such as trips for shopping, to the beach, or to visit friends or family?**

| | Count | Percent |
|---|---|---|
| Yes | 2153 | 82.7% |
| No | 451 | 17.3% |
| Total | 2604 | 100.0% |

**Are you a resident of Miami-Dade County?**

| | Count | Percent |
|---|---|---|
| Full-time resident of Miami-Dade County | 2127 | 81.7% |
| Full-time resident of Broward County or Palm Beach County | 365 | 14.0% |
| Seasonal resident of Miami-Dade County | 19 | .7% |
| Seasonal resident of Broward County or Palm Beach County | 5 | .2% |
| Non-Resident Visitor | 88 | 3.4% |
| Total | 2604 | 100.0% |

**How long is/was the total planned length of your stay?**

| | Count | Percent |
|---|---|---|
| For the day (Not overnight) | 42 | 37.5% |
| Overnight (2 days) | 16 | 14.3% |
| More than two days, but less than a week | 17 | 15.2% |
| One week to one month | 12 | 10.7% |
| More than one month | 25 | 22.3% |
| Total | 112 | 100.0% |

***If respondent is a visitor to Miami-Dade***



# Appendix B.3

# Travel Pattern and Trip Characteristics

# Survey - Interchange-to-Interchange Movement Tables

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# Appendix B.3
# Travel Pattern and Trip Characteristics Survey - Interchange-to-Interchange Movement Tables

**Table B.3-1**
**Reported SR 924 Movements**
Movements Based on Responses from the
Travel Pattern Survey Conducted August 2013

**EASTBOUND**

| | | | Exit | | | |
|---|---|---|---|---|---|---|
| | | | SR 823 / W 4th Ave. | Le Jeune-Douglas Expy. | NW 119th St. | Total |
| Entrance | I-75 / SR 826 | Observed | 41 | 14 | 123 | 178 |
| | | % of Entrance | 23.0% | 7.9% | 69.1% | |
| | | % of Exit | 100.0% | 100.0% | 93.2% | |
| | SR 823 / W 4th Ave. | Observed | | 0 | 8 | 8 |
| | | % of Entrance | | 0.0% | 100.0% | |
| | | % of Exit | | 0.0% | 6.1% | |
| | Le Jeune-Douglas Expy. | Observed | | | 1 | 1 |
| | | % of Entrance | | | 100.0% | |
| | | % of Exit | | | 0.8% | |
| Total | | Observed | 41 | 14 | 132 | 187 |

**WESTBOUND**

| | | | Exit | | | |
|---|---|---|---|---|---|---|
| | | | Le Jeune-Douglas Expy. | SR 823 / W 4th Ave. | I-75 / SR 826 | Total |
| Entrance | NW 119th St. | Observed | 1 | 7 | 56 | 64 |
| | | % of Entrance | 1.6% | 10.9% | 87.5% | |
| | | % of Exit | 100.0% | 100.0% | 66.7% | |
| | Le Jeune-Douglas Expy. | Observed | | 0 | 12 | 12 |
| | | % of Entrance | | 0.0% | 100.0% | |
| | | % of Exit | | 0.0% | 14.3% | |
| | SR 823 / W 4th Ave. | Observed | | | 16 | 16 |
| | | % of Entrance | | | 100.0% | |
| | | % of Exit | | | 19.0% | |
| Total | | Observed | 1 | 7 | 84 | 92 |

**Table B.3-2**
**Reported SR 112 Movements**
Movements Based on Responses from the Travel Pattern Survey Conducted August 2013

**EASTBOUND**

| | | | Exit | | | | |
|---|---|---|---|---|---|---|---|
| | | | NW 27th Ave. | NW 22nd Ave. | NW 12th Ave. via NW 39th St. | I-95 / I-95 Express / I-195 | Total |
| Entrance | W of NW Le Jeune / MIA | Observed | 0 | 0 | 0 | 16 | 16 |
| | | % of Entrance | 0.0% | 0.0% | 0.0% | 100.0% | |
| | | % of Exit | 0.0% | 0.0% | 0.0% | 7.3% | |
| | Le Jeune Rd NB / NW 36th St. / US 27 | Observed | 14 | 7 | 9 | 186 | 216 |
| | | % of Entrance | 6.5% | 3.2% | 4.2% | 86.1% | |
| | | % of Exit | 100.0% | 100.0% | 90.0% | 85.3% | |
| | NW 27th Ave. | Observed | | 0 | 0 | 9 | 9 |
| | | % of Entrance | | 0.0% | 0.0% | 100.0% | |
| | | % of Exit | | 0.0% | 0.0% | 4.1% | |
| | NW 22nd Ave. | Observed | | | 1 | 7 | 8 |
| | | % of Entrance | | | 12.5% | 87.5% | |
| | | % of Exit | | | 10.0% | 3.2% | |
| Total | | Observed | 14 | 7 | 10 | 218 | 249 |

**WESTBOUND**

| | | | Exit | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | NW 17th Ave. via NW 40th St. | NW 22nd Ave. | NW 27th Ave. | Le Jeune Rd SB / NW 36th St. / US 27 | W of NW Le Jeune / MIA | Total |
| Entrance | I-95 / I-95 Express / I-195 | Observed | 10 | 4 | 9 | 150 | 41 | 214 |
| | | % of Entrance | 4.7% | 1.9% | 4.2% | 70.1% | 19.2% | |
| | | % of Exit | 100.0% | 100.0% | 100.0% | 93.8% | 97.6% | |
| | NW 22nd Ave. | Observed | | | 0 | 3 | 0 | 3 |
| | | % of Entrance | | | 0.0% | 100.0% | 0.0% | |
| | | % of Exit | | | 0.0% | 1.9% | 0.0% | |
| | NW 27th Ave. | Observed | | | | 7 | 1 | 8 |
| | | % of Entrance | | | | 87.5% | 12.5% | |
| | | % of Exit | | | | 4.4% | 2.4% | |
| Total | | Observed | 10 | 4 | 9 | 160 | 42 | 225 |

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**Table B.3-3**
**Reported SR 836 Eastbound Movements**
Eastbound Movements Based on Responses from the Travel Pattern Survey Conducted August 2013

| | | | Exit | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | NW 107th Avenue | NW 87th Avenue | SR 826 | NW 72nd Avenue | NW 57th Avenue | NW 45th Avenue | NW 42nd Avenue | NW 27th Avenue | NW 17th Avenue | I-95 / I-395 | Total |
| Entrance | HEFT | Observed | 14 | 25 | 65 | 12 | 17 | 4 | 54 | 9 | 5 | 63 | 268 |
| | | % of Entrance | 5.2% | 9.3% | 24.3% | 4.5% | 6.3% | 1.5% | 20.1% | 3.4% | 1.9% | 23.5% | |
| | | % of Exit | 100.0% | 78.1% | 63.7% | 60.0% | 37.0% | 21.1% | 29.5% | 19.6% | 8.1% | 16.5% | |
| | NW 137th Avenue | Observed | | 7 | 22 | 2 | 6 | 4 | 16 | 5 | 9 | 31 | 102 |
| | | % of Entrance | | 6.9% | 21.6% | 2.0% | 5.9% | 3.9% | 15.7% | 4.9% | 8.8% | 30.4% | |
| | | % of Exit | | 21.9% | 21.6% | 10.0% | 13.0% | 21.1% | 8.7% | 10.9% | 14.5% | 8.1% | |
| | NW 107th Avenue | Observed | | 0 | 9 | 0 | 1 | 1 | 9 | 3 | 4 | 31 | 58 |
| | | % of Entrance | | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | 0.0% | |
| | | % of Exit | | 0.0% | 8.8% | 0.0% | 2.2% | 5.3% | 4.9% | 6.5% | 6.5% | 8.1% | |
| | NW 87th Avenue | Observed | | | 6 | 0 | 2 | 0 | 15 | 2 | 3 | 14 | 42 |
| | | % of Entrance | | | 14.3% | 0.0% | 4.8% | 0.0% | 35.7% | 4.8% | 7.1% | 33.3% | |
| | | % of Exit | | | 5.9% | 0.0% | 4.3% | 0.0% | 8.2% | 4.3% | 4.8% | 3.7% | |
| | SR 826 | Observed | | | | 6 | 20 | 10 | 82 | 24 | 30 | 141 | 313 |
| | | % of Entrance | | | | 1.9% | 6.4% | 3.2% | 26.2% | 7.7% | 9.6% | 45.0% | |
| | | % of Exit | | | | 30.0% | 43.5% | 52.6% | 44.8% | 52.2% | 48.4% | 37.0% | |
| | NW 72nd Avenue | Observed | | | | | 0 | 0 | 1 | 0 | 0 | 6 | 7 |
| | | % of Entrance | | | | | 0.0% | 0.0% | 14.3% | 0.0% | 0.0% | 85.7% | |
| | | % of Exit | | | | | 0.0% | 0.0% | 0.5% | 0.0% | 0.0% | 1.6% | |
| | NW 57th Avenue | Observed | | | | | | 0 | 6 | 2 | 4 | 29 | 41 |
| | | % of Entrance | | | | | | 0.0% | 14.6% | 4.9% | 9.8% | 70.7% | |
| | | % of Exit | | | | | | 0.0% | 3.3% | 4.3% | 6.5% | 7.6% | |
| | NW 42nd Avenue | Observed | | | | | | | | 1 | 5 | 24 | 30 |
| | | % of Entrance | | | | | | | | 3.3% | 16.7% | 80.0% | |
| | | % of Exit | | | | | | | | 2.2% | 8.1% | 6.3% | |
| | NW 37th Avenue | Observed | | | | | | | | 0 | 2 | 27 | 29 |
| | | % of Entrance | | | | | | | | 0.0% | 6.9% | 93.1% | |
| | | % of Exit | | | | | | | | 0.0% | 3.2% | 7.1% | |
| | NW 27th Avenue | Observed | | | | | | | | | 0 | 11 | 11 |
| | | % of Entrance | | | | | | | | | 0.0% | 100.0% | |
| | | % of Exit | | | | | | | | | 0.0% | 2.9% | |
| | NW 12th Avenue | Observed | | | | | | | | | | 4 | 4 |
| | | % of Entrance | | | | | | | | | | 100.0% | |
| | | % of Exit | | | | | | | | | | 1.0% | |
| | Total | Observed | 14 | 32 | 102 | 20 | 46 | 19 | 183 | 46 | 62 | 381 | 905 |







**Table B.3-3 (Cont'd)**
**Reported SR 836 Movements**
Westbound Movements Based on Responses from the Travel Pattern Survey Conducted August 2013

| | | | Exit | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | NW 12th Avenue | NW 27th Avenue | NW 37th Avenue | NW 42nd Avenue | NW 57th Avenue | NW 72nd Avenue | SR 826 | NW 87th Avenue | NW 107th Avenue | NW 137th Avenue | HEFT | Total |
| Entrance | I-95 / I-395 | Observed | 10 | 7 | 19 | 31 | 23 | 5 | 84 | 20 | 26 | 8 | 45 | 278 |
| | | % of Entrance | 3.6% | 2.5% | 6.8% | 11.2% | 8.3% | 1.8% | 30.2% | 7.2% | 9.4% | 2.9% | 16.2% | |
| | | % of Exit | 100.0% | 87.5% | 100.0% | 91.2% | 79.3% | 45.5% | 55.3% | 44.4% | 0.0% | 34.8% | 32.4% | |
| | NW 17th Avenue | Observed | | 1 | 0 | 2 | 0 | 1 | 13 | 5 | 1 | 2 | 9 | 34 |
| | | % of Entrance | | 2.9% | 0.0% | 5.9% | 0.0% | 2.9% | 38.2% | 14.7% | 2.9% | 5.9% | 26.5% | |
| | | % of Exit | | 12.5% | 0.0% | 5.9% | 0.0% | 9.1% | 8.6% | 11.1% | 0.0% | 8.7% | 6.5% | |
| | NW 27th Avenue | Observed | | | 0 | 1 | 2 | 2 | 10 | 2 | 6 | 0 | 8 | 31 |
| | | % of Entrance | | | 0.0% | 3.2% | 6.5% | 6.5% | 32.3% | 6.5% | 19.4% | 0.0% | 25.8% | |
| | | % of Exit | | | 0.0% | 2.9% | 6.9% | 18.2% | 6.6% | 4.4% | 0.0% | 0.0% | 5.8% | |
| | NW 42nd Avenue | Observed | | | | | 4 | 2 | 33 | 4 | 7 | 2 | 22 | 74 |
| | | % of Entrance | | | | | 5.4% | 2.7% | 44.6% | 5.4% | 9.5% | 2.7% | 29.7% | |
| | | % of Exit | | | | | 13.8% | 18.2% | 21.7% | 8.9% | 0.0% | 8.7% | 15.8% | |
| | NW 45th Avenue | Observed | | | | | 0 | 0 | 3 | 2 | 1 | 1 | 0 | 7 |
| | | % of Entrance | | | | | 0.0% | 0.0% | 42.9% | 28.6% | 14.3% | 14.3% | 0.0% | |
| | | % of Exit | | | | | 0.0% | 0.0% | 2.0% | 4.4% | 0.0% | 4.3% | 0.0% | |
| | NW 57th Avenue | Observed | | | | | | 1 | 8 | 2 | 5 | 0 | 7 | 23 |
| | | % of Entrance | | | | | | 4.3% | 34.8% | 8.7% | 21.7% | 0.0% | 30.4% | |
| | | % of Exit | | | | | | 9.1% | 5.3% | 4.4% | 0.0% | 0.0% | 5.0% | |
| | NW 72nd Avenue | Observed | | | | | | | 1 | 3 | 1 | 2 | 1 | 8 |
| | | % of Entrance | | | | | | | 12.5% | 37.5% | 12.5% | 25.0% | 12.5% | |
| | | % of Exit | | | | | | | 0.7% | 6.7% | 0.0% | 8.7% | 0.7% | |
| | SR 826 | Observed | | | | | | | | 7 | 22 | 6 | 35 | 70 |
| | | % of Entrance | | | | | | | | 10.0% | 31.4% | 8.6% | 50.0% | |
| | | % of Exit | | | | | | | | 15.6% | 0.0% | 26.1% | 25.2% | |
| | NW 87th Avenue | Observed | | | | | | | | | 0 | 2 | 5 | 7 |
| | | % of Entrance | | | | | | | | | 0.0% | 28.6% | 71.4% | |
| | | % of Exit | | | | | | | | | 0.0% | 8.7% | 3.6% | |
| | NW 107th Avenue | Observed | | | | | | | | | | | 7 | 7 |
| | | % of Entrance | | | | | | | | | | | 100.0% | |
| | | % of Exit | | | | | | | | | | | 5.0% | |
| | Total | Observed | 10 | 8 | 19 | 34 | 29 | 11 | 152 | 45 | 69 | 23 | 139 | 539 |

**Table B.3-4**
**Reported SR 874 Movements**
Movements Based on Responses from the Travel Pattern Survey Conducted August 2013

**NORTHBOUND**

| | | | Exit | | | | |
|---|---|---|---|---|---|---|---|
| | | | Killian Pkwy. | SW 88th St. / Kendall Dr. | SR 878 | SR 826 | Total |
| Entrance | HEFT | Observed | 9 | 24 | 69 | 195 | 297 |
| | | % of Entrance | 3.0% | 8.1% | 23.2% | 65.7% | |
| | | % of Exit | 100.0% | 75.0% | 42.3% | 60.7% | |
| | Killian Pkwy. | Observed | | 8 | 55 | 70 | 133 |
| | | % of Entrance | | 6.0% | 41.4% | 52.6% | |
| | | % of Exit | | 25.0% | 33.7% | 21.8% | |
| | SW 88th St. / Kendall Dr. | Observed | | | 39 | 56 | 95 |
| | | % of Entrance | | | 41.1% | 58.9% | |
| | | % of Exit | | | 23.9% | 17.4% | |
| Total | | Observed | 9 | 32 | 163 | 321 | 525 |

**SOUTHBOUND**

| | | | Exit | | | |
|---|---|---|---|---|---|---|
| | | | SW 88th St. / Kendall Dr. | Killian Pkwy. | HEFT | Total |
| Entrance | SR 826 | Observed | 28 | 30 | 69 | 127 |
| | | % of Entrance | 22.0% | 23.6% | 54.3% | |
| | | % of Exit | 68.3% | 56.6% | 62.7% | |
| | SR 878 | Observed | 13 | 20 | 26 | 59 |
| | | % of Entrance | 22.0% | 33.9% | 44.1% | |
| | | % of Exit | 31.7% | 37.7% | 23.6% | |
| | SW 88th St. / Kendall Dr. | Observed | | 3 | 10 | 13 |
| | | % of Entrance | | 23.1% | 76.9% | |
| | | % of Exit | | 5.7% | 9.1% | |
| | Killian Pkwy. | Observed | | | 5 | 5 |
| | | % of Entrance | | | 100.0% | |
| | | % of Exit | | | 4.5% | |
| Total | | Observed | 41 | 53 | 110 | 204 |





**Table B.3-5**
**Reported SR 878 Movements**
Movements Based on Responses from the
Travel Pattern Survey Conducted August 2013

**EASTBOUND**

| | | | Exit | | | |
|---|---|---|---|---|---|---|
| | | | SR 973 / SW 87th Ave. | SW 72nd Ave. | US 1 | Total |
| Entrance | SR 874 | Observed | 20 | 46 | 103 | 169 |
| | | % of Entrance | 11.8% | 27.2% | 60.9% | |
| | | % of Exit | 100.0% | 90.2% | 91.2% | |
| | SR 973 / SW 87th Ave. | Observed | | 5 | 10 | 15 |
| | | % of Entrance | | 33.3% | 66.7% | |
| | | % of Exit | | 9.8% | 8.8% | |
| Total | | Observed | 20 | 51 | 113 | 184 |

**WESTBOUND**

| | | | Exit | | |
|---|---|---|---|---|---|
| | | | SR 973 / SW 87th Ave. | SR 874 | Total |
| Entrance | US 1 | Observed | 16 | 33 | 49 |
| | | % of Entrance | 32.7% | 67.3% | |
| | | % of Exit | 88.9% | 57.9% | |
| | SW 72nd Ave. | Observed | 2 | 15 | 17 |
| | | % of Entrance | 11.8% | 88.2% | |
| | | % of Exit | 11.1% | 26.3% | |
| | SR 973 / SW 87th Ave. | Observed | | 9 | 9 |
| | | % of Entrance | | 100.0% | |
| | | % of Exit | | 15.8% | |
| Total | | Observed | 18 | 57 | 75 |

# Appendix C

## Appendix C.1 Economic Growth, Independent Economist's Report

## Appendix C.2 Population and Employment, Model Input Variables

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# Appendix C.1

# Economic Growth, Independent Economist's Report

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weg The Washington Economics Group, Inc.

# WEG's 2013
## FORECAST REVIEW FOR
## MIAMI-DADE, BROWARD AND PALM BEACH COUNTIES

Prepared for:

CDM Smith

October 21, 2013

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**Professional Opinion of The Washington Economics Group, Inc.**

Based on historical growth data and long-term trends, The Washington Economics Group, Inc. (WEG) has completed its updated forecast analysis of population and socioeconomic projections for Miami-Dade, Broward and Palm Beach Counties. It is WEG's professional opinion that the estimates provided to MDX and CDM Smith in this review are reasonable and best reflect the current and forecasted projections of economic and social activity in the region over the 2013-2035 time period.



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## I. Executive Summary

- Socioeconomic and population data sets for the years 2010 and 2035 were provided to The Washington Economics Group, Inc. (WEG) by the Miami-Dade, Broward and Palm Beach Counties Metropolitan Planning Organizations (MPOs). WEG reviewed the data sets for consistency with actual economic activity over the last few years as well as comparing them to the most recent socioeconomic and population forecasts issued by the State of Florida. These data sets are an integral part of each County's planning and growth management processes. As a consequence, considerable effort is expended by County governments to ensure that the MPO data sets embody their best estimates for the location and magnitude of growth. Further, these data sets undergo an extensive review process prior to their incorporation into the planning process by State and local governments.

- The Florida Legislature's Office of Economic and Demographic Research (EDR) is currently projecting that between 2010 and 2035, the timeframe considered in this analysis, Florida's population will increase by 5.38 million, or 21 percent, from 18.8 million to 24.6 million. For purposes of the Traffic and Revenue forecasts prepared by CDM Smith, year 2030 is being used as the terminal year.

- After reviewing multiple long-range population forecasts at the national, state and local levels, WEG constructed interim year projections of population for the period 2013-2035 based on the State of Florida's long-run population growth forecast prepared by the EDR. It is important to note that the latest "actual" data point available is 2012, therefore WEG constructed estimates for years 2013 through 2035. Based on these interim-year population forecasts, WEG then developed interim-year projections of employment and other socioeconomic variables at the Traffic Analysis Zone (TAZ) level for Miami-Dade, Broward and Palm Beach Counties.

- WEG's forecasts were benchmarked on an ongoing basis to other long-run forecasts of population and socioeconomic variables for Florida. WEG has observed that for Miami-Dade and increasingly in Broward, the University of Florida's Bureau of Economic and Business Research (BEBR), projections may underestimate likely population growth due to the flow of **new** immigrants from around the world[1]. Historically, immigrants to South Florida come mostly from the Caribbean, Central and South America. These flows are difficult to project, given unpredictable political events that commonly occur in these regions. Over the last four decades, these inflows have grown faster than most projections, first from Cuba and in recent decades from Nicaragua and more recently from Venezuela.

[1]Based on US Census, American Community Surveys (ACS) of Population Characteristics in South Florida over time.



- Table ES-1 below highlights the differences between MPO and BEBR projections for the 2035 population forecasts for Miami-Dade, Broward, and Palm Beach Counties showing the relatively small differences between these forecasts.

**Table ES-1. Comparison of Population Projections for 2035**

| County | MPO Projection | BEBR Projection | Difference | % Difference |
|---|---|---|---|---|
| Miami-Dade | 3,278,155 | 3,111,600 | 166,555 | 5.1% |
| Broward | 2,250,830 | 1,992,200 | 258,630 | 11.5% |
| Palm Beach | 1,682,599 | 1,678,100 | 4,499 | 0.3% |

Sources: Miami-Dade, Broward and Palm Beach Metropolitan Planning Organizations (MPOs), 2013 and BEBR Projections 2013.

- Population growth and increases in other socioeconomic variables contained within the MPO data sets are consistent with the goals and objectives that are a part of each County's Comprehensive Development Master Plan in that growth is expected to occur in areas that have already been developed, with the focus on more intensive, as opposed to extensive, uses of available land resources.

- Strengthening WEG's professional opinion of a return to long-term trends are major infrastructure projects currently under development or recently completed, such as the Miami Intermodal Center (MIC) and the PortMiami Tunnel in Miami-Dade County, the expansion of I-595 in Broward County as well as the PortMiami dredging project which will allow the Port to receive Post-Panama Canal expansion ships. These major infrastructure projects, once completed, will significantly improve the mobility of residents and visitors, cruise passengers and the movement of cargo (goods and services) in Miami-Dade and Broward Counties, positioning South Florida for stronger economic growth in the coming years.

- With the stabilization of the financial markets over the last few years, more typical patterns of economic activity and social behavior have re-emerged. As a consequence, following a prolonged period (by historical standards) of below-trend activity and growth, WEG's professional opinion is that population growth and economic activity in South Florida will continue to strengthen and move toward the long-term trends that are embodied in the MPO data sets and re-affirmed by state level forecasts.

## II. Methodology

### Methods Employed by WEG to Disaggregate the MPO Forecasts to the Level of Individual Traffic Analysis Zones for the Interim Years Between 2010 and 2035

WEG's forecast of population and other socioeconomic variables is based on the socioeconomic data sets for the years 2010 and 2035 prepared by the Metropolitan Planning Organizations (MPOs) of Miami-Dade, Broward and Palm Beach Counties. Each MPO has prepared data sets of population and the relevant socioeconomic variables for each Traffic Analysis Zone (TAZ) in their respective Counties. These data sets incorporate information from each County government's planning processes as well as information from the State and federal governments. Further, the 2010 data sets have been benchmarked to information from the 2010 Census of population. Following the preparation of these data sets, each one goes through a review and approval process. When the process is completed, each data set represents the official outlook of its respective County government regarding the current long-range outlook.

To prepare a forecast of population and other socioeconomic variables, WEG utilized the 2010 and 2035 MPO data set values as the endpoints of the forecast for each variable. The 2010 data sets are the starting point of the forecast. In WEG's professional opinion, these values are the best data available at the Traffic Analysis Zone level of detail for South Florida. Data on population trends and economic activity for South Florida suggest that economic activity has grown slowly since 2010, with a slightly faster rate of increase in 2013 when compared to 2011 and 2012.

Forecasts for the variables in each of the intervening years were calculated based on projected statewide population growth rates over the forecast period. The initial step in the preparation of the forecast for each County was to scale the long-run statewide annual rates of population growth developed by the Florida EDR such that the statewide pattern of annual growth rates matched the MPO growth rate over the 2010 to 2035 period. These adjustments were relatively minor, resulting in less than a 5 percent deviation from the statewide rates of population growth as determined by the EDR. The total 2010 population of Miami-Dade, Broward and Palm Beach Counties is approximately 5.5 million, or almost one-third of the State's total population. As a result, WEG's professional opinion asserts that trends at the State level will be closely reflected in these Counties as Southeast Florida is the largest single population cluster in the State, representing approximately one-third of the State's total population. The region contains the largest business center in the State and as such, is the driver for statewide trends. Growth rates for all other socioeconomic variables were then calculated based on the projected population



growth. The rate of population growth was chosen as the underlying determinant of growth for each of the socioeconomic variables based on economic concepts supported by analytical studies that have covered many different time periods[2]. Macroeconomic models constructed to analyze the determinants of growth have concluded that the major forces that drive the *overall* expansion of an economy are population increases and technological advancements. These outcomes are logical. If the number of workers and consumers increase, both demand for goods and services should increase in proportion to the change in the number of individuals in these categories.

**Table 1. Comparison of Annual Forecast Rates of Population Growth**

| Year | EDR FL Population Projection | | Florida | Miami-Dade | Broward | Palm Beach |
|---|---|---|---|---|---|---|
| | Population | Change | Change | % Change | % Change | % Change |
| 2010 | 18,801,332 | 113,885 | 0.6100% | | | |
| 2011 | 18,905,070 | 103,738 | 0.5518% | 0.5729% | 0.5343% | 0.5226% |
| 2012 | 19,074,434 | 169,364 | 0.8959% | 0.9303% | 0.8676% | 0.8485% |
| 2013 | 19,261,633 | 187,199 | 0.9814% | 1.0191% | 0.9504% | 0.9296% |
| 2014 | 19,484,936 | 223,303 | 1.1593% | 1.2038% | 1.1227% | 1.0981% |
| 2015 | 19,745,376 | 260,440 | 1.3366% | 1.3879% | 1.2944% | 1.2660% |
| 2016 | 20,024,054 | 278,678 | 1.4114% | 1.4655% | 1.3668% | 1.3368% |
| 2017 | 20,306,863 | 282,809 | 1.4123% | 1.4666% | 1.3677% | 1.3377% |
| 2018 | 20,587,391 | 280,528 | 1.3814% | 1.4345% | 1.3378% | 1.3085% |
| 2019 | 20,864,297 | 276,906 | 1.3450% | 1.3967% | 1.3025% | 1.2740% |
| 2020 | 21,137,177 | 272,880 | 1.3079% | 1.3581% | 1.2666% | 1.2388% |
| 2021 | 21,396,014 | 258,837 | 1.2246% | 1.2716% | 1.1859% | 1.1599% |
| 2022 | 21,654,851 | 258,837 | 1.2097% | 1.2562% | 1.1715% | 1.1458% |
| 2023 | 21,913,688 | 258,837 | 1.1953% | 1.2412% | 1.1575% | 1.1321% |
| 2024 | 22,172,525 | 258,837 | 1.1812% | 1.2265% | 1.1438% | 1.1188% |
| 2025 | 22,431,360 | 258,835 | 1.1674% | 1.2122% | 1.1305% | 1.1057% |
| 2026 | 22,664,740 | 233,380 | 1.0404% | 1.0804% | 1.0075% | 0.9855% |
| 2027 | 22,898,120 | 233,380 | 1.0297% | 1.0692% | 0.9972% | 0.9753% |
| 2028 | 23,131,500 | 233,380 | 1.0192% | 1.0583% | 0.9870% | 0.9654% |
| 2029 | 23,364,880 | 233,380 | 1.0089% | 1.0477% | 0.9770% | 0.9556% |
| 2030 | 23,598,259 | 233,379 | 0.9988% | 1.0372% | 0.9673% | 0.9461% |
| 2031 | 23,807,432 | 209,173 | 0.8864% | 0.9204% | 0.8584% | 0.8396% |
| 2032 | 24,016,605 | 209,173 | 0.8786% | 0.9123% | 0.8508% | 0.8322% |
| 2033 | 24,225,778 | 209,173 | 0.8710% | 0.9044% | 0.8434% | 0.8249% |
| 2034 | 24,434,951 | 209,173 | 0.8634% | 0.8966% | 0.8362% | 0.8178% |
| 2035 | 24,644,126 | 209,175 | 0.8560% | 0.8889% | 0.8290% | 0.8108% |

Sources: Florida EDR Mid-Year Forecasts, July 2013, Miami-Dade, Broward and Palm Beach Counties MPOs 2013 and The Washington Economics Group, Inc. (WEG).

Table 1 above and Figure 1 on the following page list and compare the annual forecast rates of population growth. Miami-Dade County is 4 percent above the long-run forecast for Florida

[2]EDR Economic Model of Florida shows that population growth is the major determinant of economic growth in the State over time.

while Broward and Palm Beach are 3 and 5 percent below the forecast growth rates for Florida respectively.

Figure 1 below shows the pattern of growth that EDR demographers are expecting over the forecast period. Starting at population growth rates of approximately 0.60 percent per annum in 2011, EDR demographers are expecting steady increases in the rate of population growth over the next five years peaking at approximately 1.4 percent per annum in 2017. From this time forward and until the end of the forecast period in 2035, they then expect the rate of population increase to fall slowly, reaching an approximate rate of growth of 0.85 percent per annum in 2035.

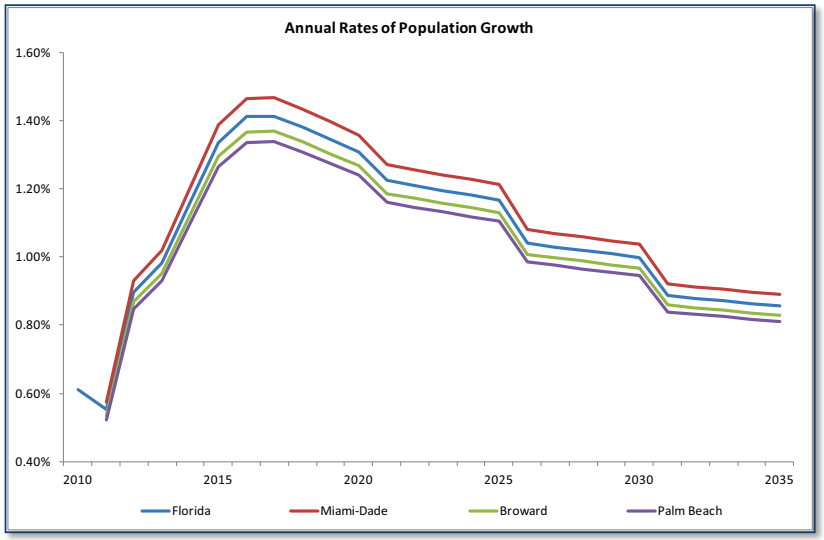


**Figure 1.**
Sources: Florida EDR, Mid-Year Forecasts, July 2013, Miami-Dade, Broward and Palm Beach Counties MPOs 2013 and The Washington Economics Group, Inc. (WEG).



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## III. The MPO Population and Socioeconomic Data Sets for Miami-Dade, Broward and Palm Beach Counties Continue to Reflect Current and Expected Patterns of Economic and Social Activity Properly

### *A. Background*

During the summer of 2013, The Washington Economics Group (WEG) obtained the 2010 Traffic Analysis Zone (TAZ) level population and socioeconomic data sets for Miami-Dade, Broward and Palm Beach Counties. Additionally, WEG determined that while 2040 forecast data sets are currently under development, the South Florida MPOs are still working with the 2035 data sets for planning and forecasting purposes, and WEG has analyzed the 2035 data sets in previous reports. These data sets contain a range of population and socioeconomic data for each County, and each data set carries a full set of population and socioeconomic estimates at the TAZ level for the entire County. Each County has been divided into hundreds of Traffic Analysis Zones, with each containing only a few blocks of residential and/or commercial properties.

As in previous assignments, WEG has prepared annual projections for each of the population and socioeconomic variables in the data set covering the years between 2010 and 2035. These annual forecasts were provided to CDM Smith by WEG for use as inputs into their traffic forecasting and planning analyses.

### *B. MPO Population and Socioeconomic Variable Forecasts are Consistent with Current State Projections for these Variables*

For the current analysis, WEG obtained the 2010 data sets and confirmed that the Miami-Dade, Broward and Palm Beach MPOs are continuing to work with the same data sets for 2035 that have been previously analyzed. Additionally, the latest long-range economic and population projections for each County and the State of Florida were obtained from the Florida Legislature's Office of Economic and Demographic Research (EDR). In addition, long-run population forecasts were obtained from the University of Florida, Bureau of Economic and Business Research (BEBR), and long-run economic forecasts were obtained from the Institute for Economic Competitiveness at the University of Central Florida (UCF).

The EDR is responsible for the preparation of the State's official projections of population including a wide-range of socioeconomic variables. The EDR draws on a wide-range of government, academic and private-sector resources in the preparation of these estimates, and as a result, they reflect the best and latest thinking about the economic and social trends that are likely to shape Florida in the years ahead. The EDR is currently projecting that between 2010 and 2035, Florida's population will increase by 5.85 million, or 31 percent from 18.8 million to 24.6 million as shown in Table 2 below and Figure 2 on the next page.

**Table 2. EDR Florida Population Projection: 2010-2035**

| Forecast Year | Population | Change | % Change |
|---|---|---|---|
| 2010 | 18,801,332 | 113,885 | 0.6100% |
| 2011 | 18,905,070 | 103,738 | 0.5518% |
| 2012 | 19,074,434 | 169,364 | 0.8959% |
| 2013 | 19,261,633 | 187,199 | 0.9814% |
| 2014 | 19,484,936 | 223,303 | 1.1593% |
| 2015 | 19,745,376 | 260,440 | 1.3366% |
| 2016 | 20,024,054 | 278,678 | 1.4114% |
| 2017 | 20,306,863 | 282,809 | 1.4123% |
| 2018 | 20,587,391 | 280,528 | 1.3814% |
| 2019 | 20,864,297 | 276,906 | 1.3450% |
| 2020 | 21,137,177 | 272,880 | 1.3079% |
| 2021 | 21,396,014 | 258,837 | 1.2246% |
| 2022 | 21,654,851 | 258,837 | 1.2097% |
| 2023 | 21,913,688 | 258,837 | 1.1953% |
| 2024 | 22,172,525 | 258,837 | 1.1812% |
| 2025 | 22,431,360 | 258,835 | 1.1674% |
| 2026 | 22,664,740 | 233,380 | 1.0404% |
| 2027 | 22,898,120 | 233,380 | 1.0297% |
| 2028 | 23,131,500 | 233,380 | 1.0192% |
| 2029 | 23,364,880 | 233,380 | 1.0089% |
| 2030 | 23,598,259 | 233,379 | 0.9988% |
| 2031 | 23,807,432 | 209,173 | 0.8864% |
| 2032 | 24,016,605 | 209,173 | 0.8786% |
| 2033 | 24,225,778 | 209,173 | 0.8710% |
| 2034 | 24,434,951 | 209,173 | 0.8634% |
| 2035 | 24,644,126 | 209,175 | 0.8560% |

Sources: Florida EDR, Mid-Year Forecasts, July 2013 and The Washington Economics Group, Inc. (WEG).

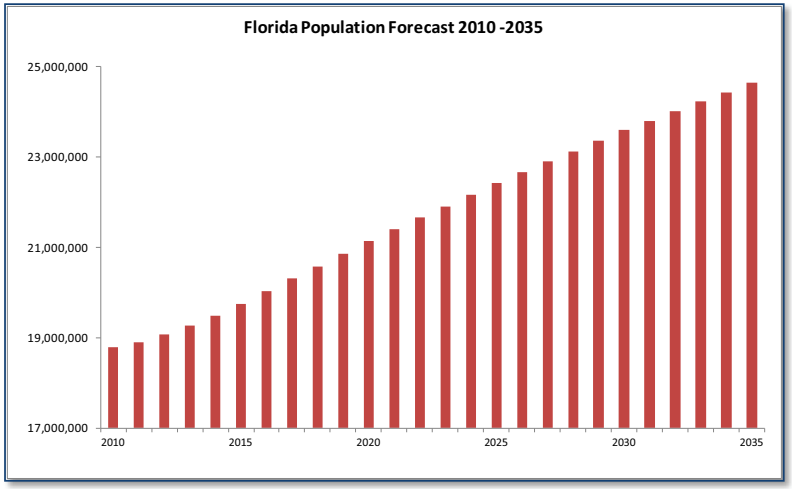


**Figure 2.**
Sources: Florida EDR, Mid-Year Forecasts, July 2013 and The Washington Economics Group, Inc. (WEG).

Figure 3 on the following page illustrates the pattern of population growth that demographers at the EDR have forecast. In conjunction with the modest rates of population and economic growth that have been observed in the last few years, the EDR is forecasting increasing rates of population growth for the next four years.

Population growth rates are expected to increase from a low of 0.55 percent per annum in 2011 to a peak of 1.41 percent per annum in 2017. For the remainder of the forecast period for 2018 to 2035, the annual rate of population growth is then expected to decline gradually reaching a level of 0.86 percent per annum in 2035. It should be noted that this rate of population growth will still result in significant increases in population each year. Over the period from 2030 to 2035, Florida's total population is expected to increase by almost 210,000 each year.



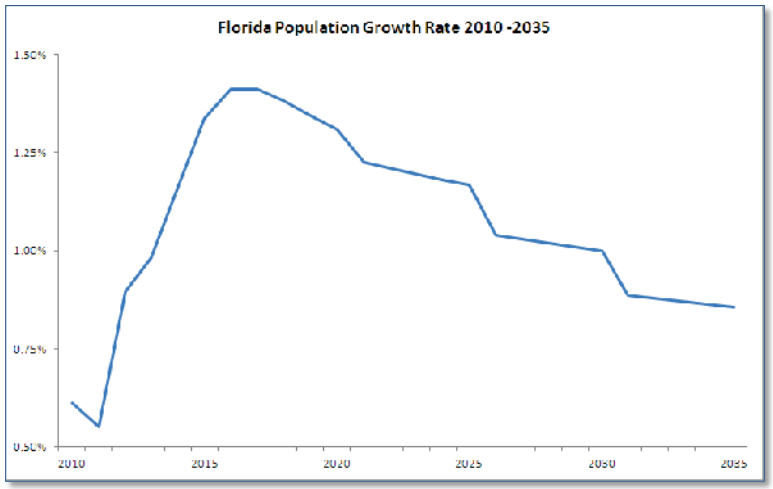


**Figure 3.**
Sources: Florida EDR, Mid-Year Forecasts, July 2013 and The Washington Economics Group, Inc. (WEG).

In addition to preparing regularly updated forecasts of population for the State of Florida, the EDR also prepares forecasts of economic variables that significantly influence the Florida economy. The most recent EDR economic forecasts cover the period from 2013 to 2023 and are consistent with the population forecast as noted below.

Household formation is a key element bridging population and economic activity, as the formation of a new household is one of the biggest economic activities that individuals undertake during their lifetimes. Over the next decade, the EDR is expecting that just over 1 million new households will be formed in Florida. Table 3 on the next page presents EDR's projections that approximately 109,000 total new households will be formed each year during the period from 2012 to 2023. Mirroring the growth patterns seen in their population projections for the next decade, household formation is expected to increase gradually each year, peaking at an increase of 116,000 new households in 2017. Between 2017 and 2023 the household formation drops slightly as shown in Table 3 and Figure 4 on the following page.

**Table 3. Florida Household Estimates 2012-2023**

| Forecast Year | Thousands | Change | % Change |
|---|---|---|---|
| 2012 | 7,537 | 75.4 | 1.01% |
| 2013 | 7,622 | 85.0 | 1.13% |
| 2014 | 7,720 | 98.0 | 1.29% |
| 2015 | 7,832 | 112.0 | 1.45% |
| 2016 | 7,947 | 115.0 | 1.47% |
| 2017 | 8,063 | 116.0 | 1.46% |
| 2018 | 8,176 | 113.0 | 1.40% |
| 2019 | 8,287 | 111.0 | 1.36% |
| 2020 | 8,395 | 108.0 | 1.30% |
| 2021 | 8,508 | 113.0 | 1.35% |
| 2022 | 8,621 | 113.0 | 1.33% |
| 2023 | 8,734 | 113.0 | 1.31% |

Sources: Florida EDR, Mid-Year Forecasts, July 2013 and The Washington Economics Group, Inc. (WEG).

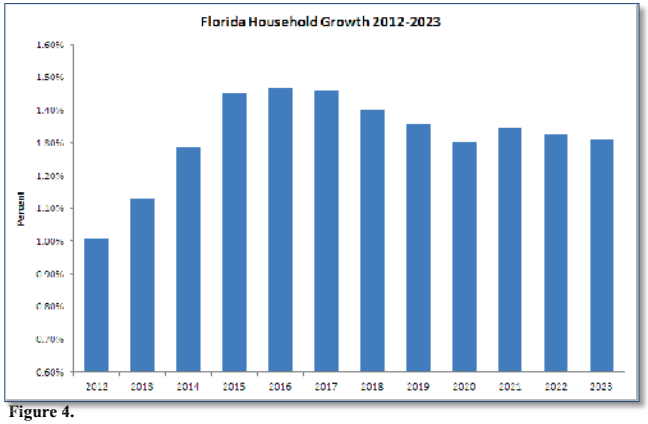


**Figure 4.**
Sources: Florida EDR, Mid-Year Forecasts, July 2013 and The Washington Economics Group, Inc. (WEG).

The EDR estimates that Florida Non-Farm Employment will increase steadily over the next decade with the greatest growth occurring during the first half of the decade. Between 2013 and 2017, Non-Farm Employment growth is expected to increase from 1.5 percent per annum to 2.6 percent per annum. For the remainder of the decade, the rate of Non-Farm Employment growth drops slightly reaching a growth rate of 1.1 percent in 2023. Over this same period, Florida Non-



Farm Employment increases in absolute terms from 7.3 million to 8.9 million as shown in Table 4 and Figure 5 that follow.

**Table 4. Florida Estimated Non-Farm Employment Growth 2012-2023**

| Forecast Year | Level (Thousands) | % Change |
|---|---|---|
| 2012 | 7,330.3 | 1.5% |
| 2013 | 7,463.8 | 1.8% |
| 2014 | 7,602.9 | 1.9% |
| 2015 | 7,782.1 | 2.4% |
| 2016 | 7,985.7 | 2.6% |
| 2017 | 8,167.0 | 2.3% |
| 2018 | 8,314.5 | 1.8% |
| 2019 | 8,439.7 | 1.5% |
| 2020 | 8,566.3 | 1.5% |
| 2021 | 8,668.8 | 1.2% |
| 2022 | 8,765.2 | 1.1% |
| 2023 | 8,859.2 | 1.1% |

Sources: Florida EDR, Mid-Year Forecasts, July 2013 and The Washington Economics Group, Inc. (WEG).

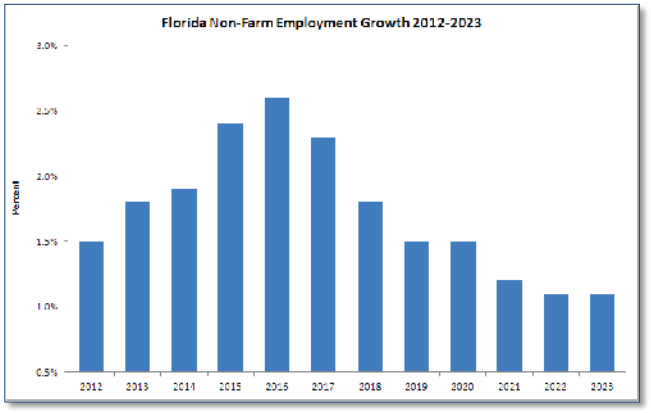


**Figure 5.**
Sources: Florida EDR, Mid-Year Forecasts, July 2013 and The Washington Economics Group, Inc. (WEG).

As shown in Table 5 and Figure 6 on the next page, the Personal Income of Florida residents is forecast to increase steadily over the next decade. Between 2013 and 2017 Personal Income

growth increases from 2.7 percent per annum to 5.7 percent per annum. For the remainder of the decade, the rate slows slightly, dropping to 4.6 percent per annum in 2023. Over this period, the annual Personal Income of Florida residents is forecast to increase from $763 billion to $1.3 trillion per annum.

**Table 5. Florida Estimated Personal Income Growth 2012-2023**

| Forecast Year | Level ($ Millions) | % Change |
|---|---|---|
| 2012 | $763,411.5 | 2.7% |
| 2013 | $790,430.0 | 3.5% |
| 2014 | $824,557.2 | 4.3% |
| 2015 | $869,805.8 | 5.5% |
| 2016 | $916,709.5 | 5.4% |
| 2017 | $968,766.7 | 5.7% |
| 2018 | $1,022,571.0 | 5.6% |
| 2019 | $1,073,656.0 | 5.0% |
| 2020 | $1,126,830.0 | 5.0% |
| 2021 | $1,178,353.0 | 4.6% |
| 2022 | $1,231,860.0 | 4.5% |
| 2023 | $1,288,765.0 | 4.6% |

Sources: Florida EDR, Mid-Year Forecasts, July 2013 and The Washington Economics Group, Inc. (WEG).

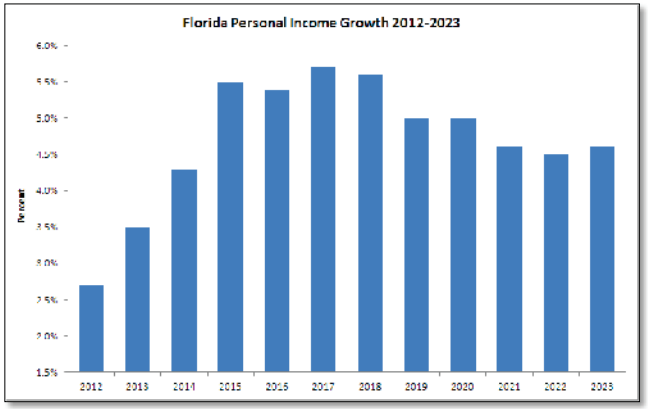


**Figure 6.**
Sources: Florida EDR, Mid-Year Forecasts, July 2013 and The Washington Economics Group, Inc. (WEG).



It should be noted that over the next decade, the annual growth rate for Personal Income is significantly higher than the annual growth rates for population and Non-Farm Employment. This suggests that EDR forecasters may be including increasing inflation rates in their forecasts for later years of the period.

### *C. MPO Population Forecasts are Consistent with Current State Population Projections for Miami-Dade, Broward and Palm Beach Counties*

In order to verify the reasonableness of the population growth rates embodied in the MPO data sets, the population forecasts were compared to the most recent population forecasts (July 2013) prepared by the University of Florida Bureau of Economic and Business Research (BEBR). Table 6 below summarizes the differences in the 2035 population forecasts for each County. Table 6 also presents differences in population projections that are relatively minor and well within an acceptable range of error, based on WEG's professional opinion and on previous experience on these types of studies for South Florida.

**Table 6. Comparison of Population Projections for 2035**

| County | MPO Projection | BEBR Projection | Difference | % Difference |
|---|---|---|---|---|
| Miami-Dade | 3,278,155 | 3,111,600 | 166,555 | 5.1% |
| Broward | 2,250,830 | 1,992,200 | 258,630 | 11.5% |
| Palm Beach | 1,682,599 | 1,678,100 | 4,499 | 0.3% |

Sources: Miami-Dade, Broward, and Palm Beach County Metropolitan Planning Organizations (MPOs), 2013, BEBR Forecasts 2013 and The Washington Economics Group, Inc. (WEG).

Figure 7 on the following page shows actual Miami-Dade County population projections between 2010 and 2035. A linear interpolation of the 2010 and 2035 MPO data sets (red line) is compared to the WEG forecast (green line- population growth rates scaled to the EDR projection for Florida) and the BEBR projection for Miami-Dade County (blue line). The figure shows that the differences between the MPO and WEG forecasts are modest for the next decade, but start to diverge significantly in the final decade of the forecast period.

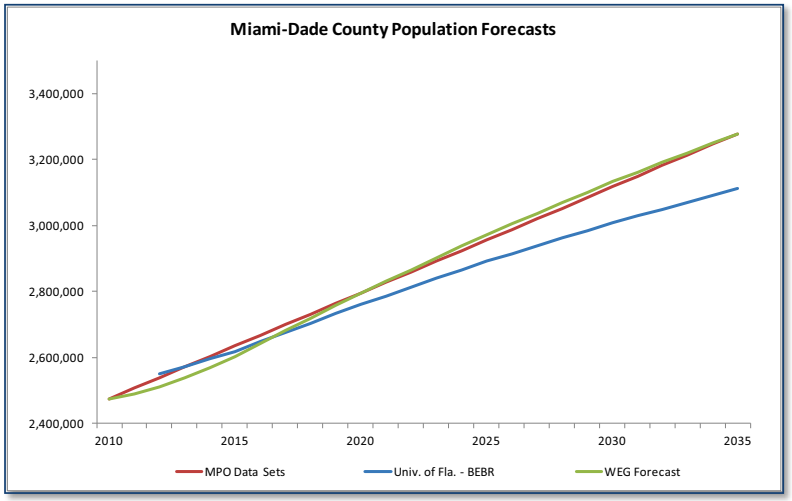


**Figure 7.**
Sources: Miami-Dade County MPO, 2013 and BEBR Forecasts 2013 and The Washington Economics Group, Inc. (WEG).

Table 7 on the following page presents the actual forecast comparison for Miami-Dade County population and associated analyses. Differences between the forecasts are relatively minor, with percentage differences all falling below 3 percent throughout the forecast period from 2010 to 2030, with larger divergences occurring only in the last five years of the forecast period between 2030 and 2035.



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**Table 7. Population Forecasts and Analysis for Miami-Dade County**

| Year | MPO Data Sets | | *Forecasts* University of Florida- BEBR | | WEG | | BEBR vs. MPO | % Difference |
|---|---|---|---|---|---|---|---|---|
| | Level | Change | Level | Change | Level | Change | | |
| 2010 | 2,475,255 | | | | 2,475,255 | | | |
| 2011 | 2,507,371 | 32,116 | | | 2,489,437 | 14,182 | | |
| 2012 | 2,539,487 | 32,116 | 2,551,290 | | 2,512,595 | 23,158 | -11,803 | -0.46% |
| 2013 | 2,571,603 | 32,116 | 2,573,860 | 22,570 | 2,538,200 | 25,605 | -2,257 | -0.09% |
| 2014 | 2,603,719 | 32,116 | 2,596,430 | 22,570 | 2,568,755 | 30,555 | 7,289 | 0.28% |
| 2015 | 2,635,835 | 32,116 | 2,619,000 | 22,570 | 2,604,408 | 35,652 | 16,835 | 0.64% |
| 2016 | 2,667,951 | 32,116 | 2,647,440 | 28,440 | 2,642,576 | 38,168 | 20,511 | 0.77% |
| 2017 | 2,700,067 | 32,116 | 2,675,880 | 28,440 | 2,681,331 | 38,755 | 24,187 | 0.90% |
| 2018 | 2,732,183 | 32,116 | 2,704,320 | 28,440 | 2,719,794 | 38,463 | 27,863 | 1.02% |
| 2019 | 2,764,299 | 32,116 | 2,732,760 | 28,440 | 2,757,780 | 37,986 | 31,539 | 1.14% |
| 2020 | 2,796,415 | 32,116 | 2,761,200 | 28,440 | 2,795,233 | 37,453 | 35,215 | 1.26% |
| 2021 | 2,828,531 | 32,116 | 2,787,440 | 26,240 | 2,830,776 | 35,543 | 41,091 | 1.45% |
| 2022 | 2,860,647 | 32,116 | 2,813,680 | 26,240 | 2,866,335 | 35,560 | 46,967 | 1.64% |
| 2023 | 2,892,763 | 32,116 | 2,839,920 | 26,240 | 2,901,911 | 35,576 | 52,843 | 1.83% |
| 2024 | 2,924,879 | 32,116 | 2,866,160 | 26,240 | 2,937,503 | 35,592 | 58,719 | 2.01% |
| 2025 | 2,956,995 | 32,116 | 2,892,400 | 26,240 | 2,973,111 | 35,608 | 64,595 | 2.18% |
| 2026 | 2,989,111 | 32,116 | 2,915,780 | 23,380 | 3,005,231 | 32,120 | 73,331 | 2.45% |
| 2027 | 3,021,227 | 32,116 | 2,939,160 | 23,380 | 3,037,364 | 32,133 | 82,067 | 2.72% |
| 2028 | 3,053,343 | 32,116 | 2,962,540 | 23,380 | 3,069,509 | 32,145 | 90,803 | 2.97% |
| 2029 | 3,085,459 | 32,116 | 2,985,920 | 23,380 | 3,101,667 | 32,158 | 99,539 | 3.23% |
| 2030 | 3,117,575 | 32,116 | 3,009,300 | 23,380 | 3,133,837 | 32,170 | 108,275 | 3.47% |
| 2031 | 3,149,691 | 32,116 | 3,029,760 | 20,460 | 3,162,681 | 28,844 | 119,931 | 3.81% |
| 2032 | 3,181,807 | 32,116 | 3,050,220 | 20,460 | 3,191,535 | 28,854 | 131,587 | 4.14% |
| 2033 | 3,213,923 | 32,116 | 3,070,680 | 20,460 | 3,220,399 | 28,864 | 143,243 | 4.46% |
| 2034 | 3,246,039 | 32,116 | 3,091,140 | 20,460 | 3,249,272 | 28,873 | 154,899 | 4.77% |
| 2035 | 3,278,155 | 32,116 | 3,111,600 | 20,460 | 3,278,155 | 28,883 | 166,555 | 5.08% |

Notes:

MPO Data Sets Released in 2013

1. MPO Data Values are in Red.
2. Intermediate Years (Black) based on Straight Line Interpolation between years.

University of Florida Bureau of Economic and Business Research (BEBR) Released in 2013

1. BEBR Forecast Released in 2013. Data Points are in Red.
2. Intermediate Years (Black) based on Straight Line Interpolation between forecast points.

WEG Population Forecast

1. Growth Rates based on Florida Legislature July 2013 Demographic Estimating Conference Population forecast for the State of Florida.
2. End Points for Forecast Controlled to MPO Data Sets.

Source: The Washington Economics Group, Inc. (WEG).



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Figure 8 below and Table 8 on the following page presents the actual forecast comparison for Broward County population and associated analyses. Differences between the forecasts are relatively minor, with percentage differences all below 6 percent throughout the forecast period from 2010 to 2025, with larger divergences occurring only in the last ten years of the forecast period between 2025 and 2035.

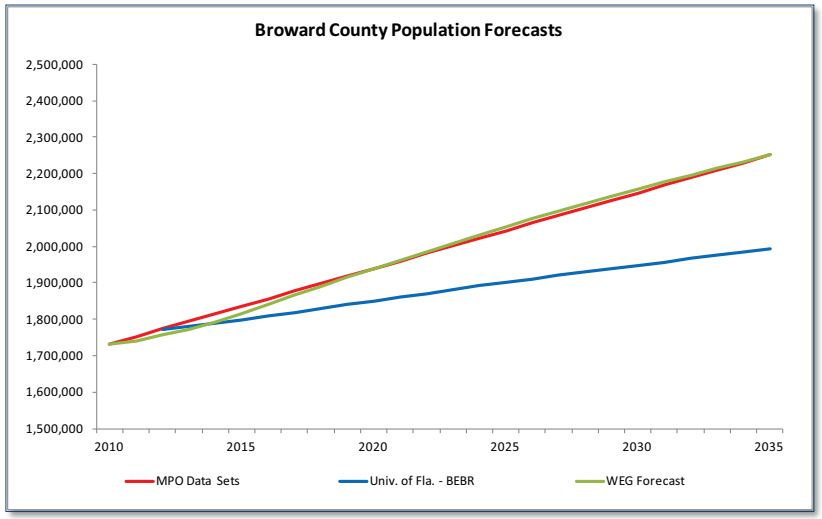


**Figure 8.**
Sources: Broward County MPO 2013, BEBR Forecasts 2013 and The Washington Economics Group, Inc. (WEG).

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**Table 8. Population Forecasts and Analysis for Broward County**

| Year | MPO Data Sets | | *Forecasts* University of Florida- BEBR | | WEG | | BEBR vs. MPO | % Difference |
|---|---|---|---|---|---|---|---|---|
| | Level | Change | Level | Change | Level | Change | | |
| 2010 | 1,731,853 | | | | 1,731,853 | | | |
| 2011 | 1,752,612 | 20,759 | | | 1,741,107 | 9,254 | | |
| 2012 | 1,773,371 | 20,759 | 1,771,099 | | 1,756,212 | 15,105 | 2,272 | 0.13% |
| 2013 | 1,794,130 | 20,759 | 1,780,066 | 8,967 | 1,772,903 | 16,691 | 14,064 | 0.78% |
| 2014 | 1,814,889 | 20,759 | 1,789,033 | 8,967 | 1,792,807 | 19,904 | 25,856 | 1.42% |
| 2015 | 1,835,648 | 20,759 | 1,798,000 | 8,967 | 1,816,013 | 23,206 | 37,648 | 2.05% |
| 2016 | 1,856,407 | 20,759 | 1,808,560 | 10,560 | 1,840,834 | 24,821 | 47,847 | 2.58% |
| 2017 | 1,877,166 | 20,759 | 1,819,120 | 10,560 | 1,866,011 | 25,177 | 58,046 | 3.09% |
| 2018 | 1,897,925 | 20,759 | 1,829,680 | 10,560 | 1,890,975 | 24,964 | 68,245 | 3.60% |
| 2019 | 1,918,684 | 20,759 | 1,840,240 | 10,560 | 1,915,605 | 24,630 | 78,444 | 4.09% |
| 2020 | 1,939,443 | 20,759 | 1,850,800 | 10,560 | 1,939,867 | 24,262 | 88,643 | 4.57% |
| 2021 | 1,960,202 | 20,759 | 1,860,940 | 10,140 | 1,962,872 | 23,005 | 99,262 | 5.06% |
| 2022 | 1,980,961 | 20,759 | 1,871,080 | 10,140 | 1,985,867 | 22,995 | 109,881 | 5.55% |
| 2023 | 2,001,720 | 20,759 | 1,881,220 | 10,140 | 2,008,854 | 22,987 | 120,500 | 6.02% |
| 2024 | 2,022,479 | 20,759 | 1,891,360 | 10,140 | 2,031,832 | 22,978 | 131,119 | 6.48% |
| 2025 | 2,043,238 | 20,759 | 1,901,500 | 10,140 | 2,054,802 | 22,970 | 141,738 | 6.94% |
| 2026 | 2,063,997 | 20,759 | 1,910,940 | 9,440 | 2,075,505 | 20,703 | 153,057 | 7.42% |
| 2027 | 2,084,756 | 20,759 | 1,920,380 | 9,440 | 2,096,201 | 20,696 | 164,376 | 7.88% |
| 2028 | 2,105,515 | 20,759 | 1,929,820 | 9,440 | 2,116,891 | 20,690 | 175,695 | 8.34% |
| 2029 | 2,126,274 | 20,759 | 1,939,260 | 9,440 | 2,137,574 | 20,683 | 187,014 | 8.80% |
| 2030 | 2,147,033 | 20,759 | 1,948,700 | 9,440 | 2,158,250 | 20,676 | 198,333 | 9.24% |
| 2031 | 2,167,792 | 20,759 | 1,957,400 | 8,700 | 2,176,776 | 18,526 | 210,392 | 9.71% |
| 2032 | 2,188,551 | 20,759 | 1,966,100 | 8,700 | 2,195,297 | 18,521 | 222,451 | 10.16% |
| 2033 | 2,209,310 | 20,759 | 1,974,800 | 8,700 | 2,213,813 | 18,516 | 234,510 | 10.61% |
| 2034 | 2,230,069 | 20,759 | 1,983,500 | 8,700 | 2,232,324 | 18,511 | 246,569 | 11.06% |
| 2035 | 2,250,830 | 20,761 | 1,992,200 | 8,700 | 2,250,830 | 18,506 | 258,630 | 11.49% |

Notes:

MPO Data Sets Released in 2013

1. MPO Data Values are in Red.
2. Intermediate Years (Black) based on Straight Line Interpolation between years.

University of Florida, Bureau of Economic and Business Research (BEBR) Released in 2013

1. BEBR Forecast Released in 2013. Data Points are in Red.
2. Intermediate Years (Black) based on Straight Line Interpolation between years.

WEG Population Forecast

1. Growth Rates based on Florida Legislature July 2013 Demographic Estimating Conference Population Forecast for the State of Florida.
2. End Points for Forecast Controlled to MPO Data Sets.

Source: The Washington Economics Group, Inc. (WEG).



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Figure 9 below and Table 9 on the following page present the actual forecast comparisons for Palm Beach County's population and associated analyses. Differences between the forecasts are insignificant, with percentage differences of one percent or below throughout the forecast period.

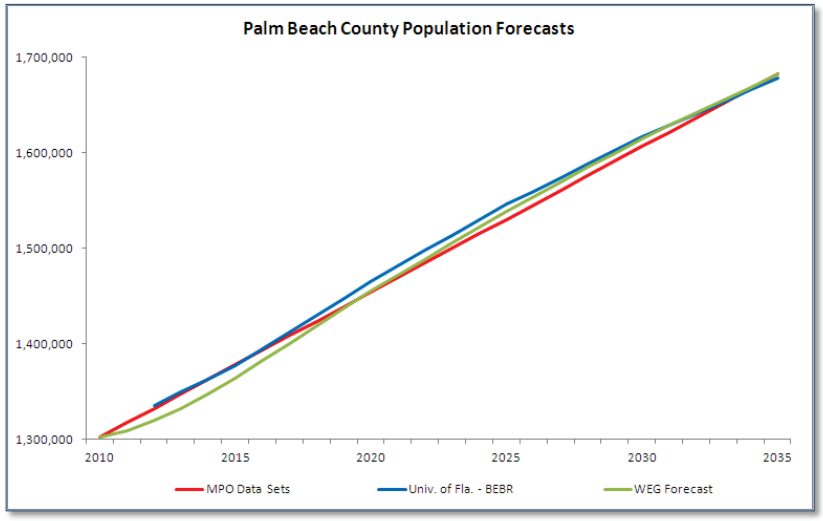


**Figure 9.**
Sources: Palm Beach County MPO 2013, BEBR Forecasts 2013 and The Washington Economics Group, Inc. (WEG).

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**Table 9. Population Forecasts and Analysis for Palm Beach County**

| Year | *Forecasts* MPO Data Sets | | University of Florida- BEBR | | WEG | | BEBR vs. MPO | % Difference |
|---|---|---|---|---|---|---|---|---|
| | Level | Change | Level | Change | Level | Change | | |
| 2010 | 1,302,063 | | | | 1,302,063 | | | |
| 2011 | 1,317,284 | 15,221 | | | 1,308,868 | 6,805 | | |
| 2012 | 1,332,506 | 15,221 | 1,335,415 | | 1,319,974 | 11,106 | -2,909 | -0.22% |
| 2013 | 1,347,727 | 15,221 | 1,349,343 | 13,928 | 1,332,244 | 12,270 | -1,616 | -0.12% |
| 2014 | 1,362,949 | 15,221 | 1,363,271 | 13,928 | 1,346,873 | 14,629 | -322 | -0.02% |
| 2015 | 1,378,170 | 15,221 | 1,377,200 | 13,929 | 1,363,924 | 17,051 | 970 | 0.07% |
| 2016 | 1,393,392 | 15,221 | 1,394,820 | 17,620 | 1,382,157 | 18,233 | -1,428 | -0.10% |
| 2017 | 1,408,613 | 15,221 | 1,412,440 | 17,620 | 1,400,647 | 18,490 | -3,827 | -0.27% |
| 2018 | 1,423,835 | 15,221 | 1,430,060 | 17,620 | 1,418,974 | 18,327 | -6,225 | -0.44% |
| 2019 | 1,439,056 | 15,221 | 1,447,680 | 17,620 | 1,437,051 | 18,077 | -8,624 | -0.60% |
| 2020 | 1,454,277 | 15,221 | 1,465,300 | 17,620 | 1,454,853 | 17,802 | -11,023 | -0.76% |
| 2021 | 1,469,499 | 15,221 | 1,481,440 | 16,140 | 1,471,727 | 16,874 | -11,941 | -0.81% |
| 2022 | 1,484,720 | 15,221 | 1,497,580 | 16,140 | 1,488,590 | 16,863 | -12,860 | -0.87% |
| 2023 | 1,499,942 | 15,221 | 1,513,720 | 16,140 | 1,505,443 | 16,853 | -13,778 | -0.92% |
| 2024 | 1,515,163 | 15,221 | 1,529,860 | 16,140 | 1,522,286 | 16,843 | -14,697 | -0.97% |
| 2025 | 1,530,385 | 15,221 | 1,546,000 | 16,140 | 1,539,117 | 16,831 | -15,615 | -1.02% |
| 2026 | 1,545,606 | 15,221 | 1,560,180 | 14,180 | 1,554,285 | 15,168 | -14,574 | -0.94% |
| 2027 | 1,560,827 | 15,221 | 1,574,360 | 14,180 | 1,569,444 | 15,159 | -13,533 | -0.87% |
| 2028 | 1,576,049 | 15,221 | 1,588,540 | 14,180 | 1,584,595 | 15,151 | -12,491 | -0.79% |
| 2029 | 1,591,270 | 15,221 | 1,602,720 | 14,180 | 1,599,737 | 15,142 | -11,450 | -0.72% |
| 2030 | 1,606,492 | 15,221 | 1,616,900 | 14,180 | 1,614,872 | 15,135 | -10,408 | -0.65% |
| 2031 | 1,621,713 | 15,221 | 1,629,140 | 12,240 | 1,628,430 | 13,558 | -7,427 | -0.46% |
| 2032 | 1,636,935 | 15,221 | 1,641,380 | 12,240 | 1,641,981 | 13,551 | -4,445 | -0.27% |
| 2033 | 1,652,156 | 15,221 | 1,653,620 | 12,240 | 1,655,527 | 13,546 | -1,464 | -0.09% |
| 2034 | 1,667,378 | 15,221 | 1,665,860 | 12,240 | 1,669,066 | 13,539 | 1,518 | 0.09% |
| 2035 | 1,682,599 | 15,221 | 1,678,100 | 12,240 | 1,682,599 | 13,533 | 4,499 | 0.27% |

Notes:
MPO Data Sets Released in 2013
1. MPO Data Values are in Red.
2. Intermediate Years (Black) based on Straight Line Interpolation between years.
University of Florida, Bureau of Economic and Business Research (BEBR) Released in 2013
1. BEBR Forecast Released in 2013. Data Points are in Red.
2. Intermediate Years (Black) based on Straight Line Interpolation between years.
WEG Population Forecast
1. Growth Rates based on Florida Legislature July 2013 Demographic Estimating Conference Population Forecast for the State of Florida.
2. End Points for Forecast Controlled to MPO Data Sets.

Source: The Washington Economics Group, Inc. (WEG).



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### *D. MPO Employment Forecasts are Consistent with Current State Employment Projections for Miami-Dade, Broward and Palm Beach Counties*

Neither the EDR nor BEBR issues long-range employment projections at the County level. In addition, available long-run employment projections are not directly comparable among forecast sources as different definitions of employment are used in the MPO data sets and other forecasts.

For Miami-Dade County, the MPO data sets embody an annual growth rate of almost 1.9 percent over the 2012 to 2035 period. This is higher than either the Department of Economic Opportunity's annual growth rate projection of 0.9 percent over the next decade or UCF's annual growth rate projection of 1.3 percent. To examine the reasonableness of the various forecasts, WEG compared the MPO employment growth rates to rates of employment growth forecast by the Florida Department of Economic Opportunity (DEO) and the Economic Competitiveness Institute of the University of Central Florida (UCF).

Figure 10 and Table 10 that follow summarize the differences in the employment forecasts for Miami-Dade County. The Florida DEO's latest employment data is for 2012, while their long-term projection is for 2020. As a result, WEG created the interim year forecasts by doing a linear interpolation between their actual data for 2012 and their forecasts. As can be seen from Figure 10 on the next page, there are significant differences in levels due to the definitional differences identified above, but the employment growth rates (slopes of the lines) are within acceptable bounds of error for this type of long-range forecast.



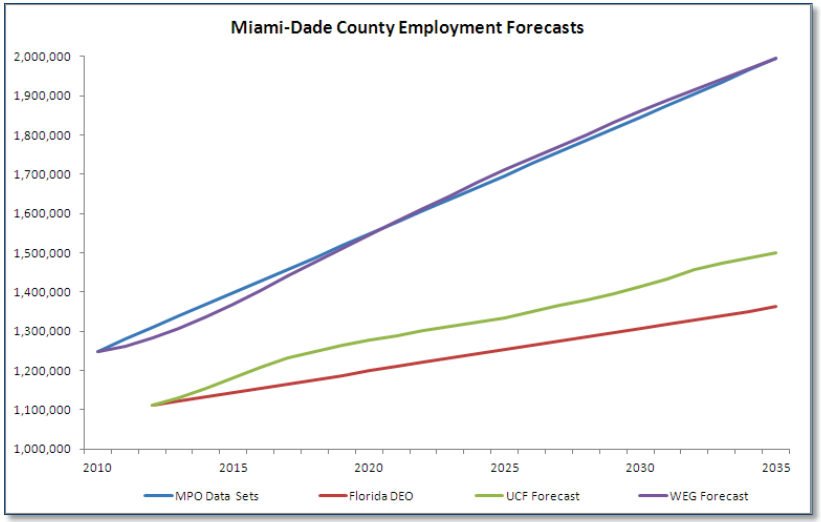


**Figure 10.**
Sources: Miami-Dade County MPO, 2013, Florida DEO Estimates and Projection Year 2012-2020, UCF, July 2013 and The Washington Economics Group, Inc. (WEG).

**Table 10. Employment Forecasts and Analysis for Miami-Dade County**

| Year | *Forecast* | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | MPO Data Sets | | Florida DEO | | UCF Forecast | | WEG Forecast | |
| | Level | Change | Level | Change | Level | Change | Level | Change |
| 2010 | 1,249,183 | | | | | | 1,249,183 | |
| 2011 | 1,278,984 | 29,801 | | | | | 1,262,343 | 13,160 |
| 2012 | 1,308,785 | 29,801 | 1,111,487 | | 1,111,487 | | 1,283,831 | 21,488 |
| 2013 | 1,338,586 | 29,801 | 1,122,372 | 10,885 | 1,130,382 | 18,895 | 1,307,591 | 23,760 |
| 2014 | 1,368,387 | 29,801 | 1,133,257 | 10,885 | 1,152,990 | 22,608 | 1,335,944 | 28,353 |
| 2015 | 1,398,188 | 29,801 | 1,144,142 | 10,885 | 1,180,662 | 27,672 | 1,369,027 | 33,083 |
| 2016 | 1,427,989 | 29,801 | 1,155,027 | 10,885 | 1,208,998 | 28,336 | 1,404,445 | 35,418 |
| 2017 | 1,457,790 | 29,801 | 1,165,912 | 10,885 | 1,231,969 | 22,971 | 1,440,406 | 35,961 |
| 2018 | 1,487,591 | 29,801 | 1,176,797 | 10,885 | 1,249,216 | 17,248 | 1,476,097 | 35,691 |
| 2019 | 1,517,392 | 29,801 | 1,187,682 | 10,885 | 1,264,207 | 14,991 | 1,511,345 | 35,248 |
| 2020 | 1,547,193 | 29,801 | 1,198,565 | 10,883 | 1,276,849 | 12,642 | 1,546,099 | 34,754 |
| 2021 | 1,576,994 | 29,801 | 1,209,450 | 10,885 | 1,288,340 | 11,492 | 1,579,080 | 32,981 |
| 2022 | 1,606,795 | 29,801 | 1,220,335 | 10,885 | 1,301,224 | 12,883 | 1,612,077 | 32,997 |
| 2023 | 1,636,596 | 29,801 | 1,231,220 | 10,885 | 1,312,935 | 11,711 | 1,645,089 | 33,012 |
| 2024 | 1,666,397 | 29,801 | 1,242,105 | 10,885 | 1,322,125 | 9,191 | 1,678,115 | 33,026 |
| 2025 | 1,696,198 | 29,801 | 1,252,990 | 10,885 | 1,334,024 | 11,899 | 1,711,157 | 33,042 |
| 2026 | 1,725,999 | 29,801 | 1,263,875 | 10,885 | 1,350,033 | 16,008 | 1,740,962 | 29,805 |
| 2027 | 1,755,800 | 29,801 | 1,274,760 | 10,885 | 1,364,883 | 14,850 | 1,770,778 | 29,816 |
| 2028 | 1,785,601 | 29,801 | 1,285,645 | 10,885 | 1,379,897 | 15,014 | 1,800,607 | 29,829 |
| 2029 | 1,815,402 | 29,801 | 1,296,530 | 10,885 | 1,396,456 | 16,559 | 1,830,447 | 29,840 |
| 2030 | 1,845,203 | 29,801 | 1,307,415 | 10,885 | 1,413,213 | 16,757 | 1,860,298 | 29,851 |
| 2031 | 1,875,004 | 29,801 | 1,318,300 | 10,885 | 1,432,998 | 19,785 | 1,887,064 | 26,766 |
| 2032 | 1,904,805 | 29,801 | 1,329,185 | 10,885 | 1,455,926 | 22,928 | 1,913,838 | 26,774 |
| 2033 | 1,934,606 | 29,801 | 1,340,070 | 10,885 | 1,473,397 | 17,471 | 1,940,622 | 26,784 |
| 2034 | 1,964,407 | 29,801 | 1,350,955 | 10,885 | 1,486,658 | 13,261 | 1,967,414 | 26,792 |
| 2035 | 1,994,215 | 29,808 | 1,361,840 | 10,885 | 1,498,551 | 11,893 | 1,994,215 | 26,801 |

Notes:
MPO Data Sets Released in 2013
1. MPO Data Values are in Red.
2. Intermediate Years (Black) based on Straight Line Interpolation between years.
State of Florida Department of Economic Opportunity http://www.floridajobs.org. Released in 2013
1. State of Florida Dept of Economic Opportunity Forecast Values are in Red.
2. Intermediate Years (Black) based on Straight Line Interpolation between years for the period 2012 to 2020.
3. Employment Growth for the period 2020 - 2035 assumed to occur at the same no of jobs / yr as 2012 – 2020.
University of Central Florida (UCF) Institute for Economic Competitiveness Florida & Metro Forecast July 2013.
1. Uses state of Florida Dept. of Economic Opportunity Total Employment for 2012 as a starting point.
2. Annual Growth for the period 2013 - 2035 is the growth in total employment for the Miami-Ft. Lauderdale-Pompano Beach MSA.
WEG Forecast
1. Growth Rates based on Florida Legislature July 2013 Demographic Estimating Conference Population Forecast for the State of Florida.
2. End Points for Forecast Controlled to MPO Data Sets.

Source: The Washington Economics Group, Inc. (WEG).



Figure 11 below and Table 11 on the following page summarize the differences in the employment forecasts for Broward County. As seen in Figure 11, both the Florida DEO and UCF are projecting faster rates of employment growth than is embodied in the MPO data sets. Some portion of this difference may be attributable to the differences previously discussed, but the employment growth rates (slopes of the lines) are within acceptable bounds of error for this type of long-range forecast.

For Broward County, the MPO data sets embody an annual growth rate of just over 0.6 percent during the 2012 to 2035 period. This is less than both the DEO's annual growth rate projection of 1.34 percent over the next decade and UCF's annual growth rate projection of 1.3 percent. The faster employment growth rates projected by both the Florida DEO and UCF result in their employment projections for 2035 ending up at approximately 50,000 over the MPO employment projections in 2035.

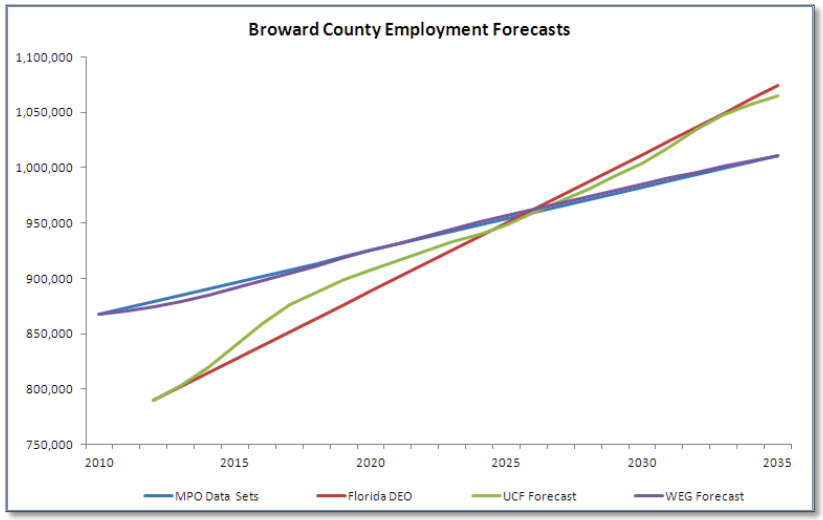


**Figure 11.**
Sources: Broward County MPO 2013, Florida DEO Estimates and Projection Year 2012-2020, UCF, July 2013 and The Washington Economics Group, Inc. (WEG).

**Table 11. Employment Forecasts and Analysis for Broward County**

| Year | *Forecast* MPO Data Sets Level | MPO Data Sets Change | Florida DEO Level | Florida DEO Change | UCF Forecast Level | UCF Forecast Change | WEG Forecast Level | WEG Forecast Change |
|---|---|---|---|---|---|---|---|---|
| 2010 | 867,647 | | | | | | 867,647 | |
| 2011 | 873,393 | 5,746 | | | | | 870,208 | 2,561 |
| 2012 | 879,138 | 5,746 | 790,114 | | 790,114 | | 874,389 | 4,181 |
| 2013 | 884,884 | 5,746 | 802,452 | 12,338 | 803,546 | 13,432 | 879,009 | 4,620 |
| 2014 | 890,629 | 5,746 | 814,790 | 12,338 | 819,617 | 16,071 | 884,517 | 5,508 |
| 2015 | 896,375 | 5,746 | 827,127 | 12,338 | 839,288 | 19,671 | 890,940 | 6,423 |
| 2016 | 902,120 | 5,746 | 839,465 | 12,338 | 859,431 | 20,143 | 897,810 | 6,870 |
| 2017 | 907,866 | 5,746 | 851,803 | 12,338 | 875,760 | 16,329 | 904,778 | 6,968 |
| 2018 | 913,611 | 5,746 | 864,141 | 12,338 | 888,020 | 12,261 | 911,688 | 6,910 |
| 2019 | 919,357 | 5,746 | 876,478 | 12,338 | 898,677 | 10,656 | 918,505 | 6,817 |
| 2020 | 925,103 | 5,746 | 888,816 | 12,338 | 907,663 | 8,987 | 925,220 | 6,715 |
| 2021 | 930,848 | 5,746 | 901,154 | 12,338 | 915,832 | 8,169 | 931,587 | 6,367 |
| 2022 | 936,594 | 5,746 | 913,492 | 12,338 | 924,991 | 9,158 | 937,951 | 6,364 |
| 2023 | 942,339 | 5,746 | 925,829 | 12,338 | 933,316 | 8,325 | 944,313 | 6,362 |
| 2024 | 948,085 | 5,746 | 938,167 | 12,338 | 939,849 | 6,533 | 950,673 | 6,360 |
| 2025 | 953,830 | 5,746 | 950,505 | 12,338 | 948,307 | 8,459 | 957,031 | 6,358 |
| 2026 | 959,576 | 5,746 | 962,843 | 12,338 | 959,687 | 11,380 | 962,761 | 5,730 |
| 2027 | 965,322 | 5,746 | 975,180 | 12,338 | 970,244 | 10,557 | 968,489 | 5,728 |
| 2028 | 971,067 | 5,746 | 987,518 | 12,338 | 980,916 | 10,673 | 974,215 | 5,726 |
| 2029 | 976,813 | 5,746 | 999,856 | 12,338 | 992,687 | 11,771 | 979,940 | 5,725 |
| 2030 | 982,558 | 5,746 | 1,012,194 | 12,338 | 1,004,600 | 11,912 | 985,662 | 5,722 |
| 2031 | 988,304 | 5,746 | 1,024,531 | 12,338 | 1,018,664 | 14,064 | 990,790 | 5,128 |
| 2032 | 994,049 | 5,746 | 1,036,869 | 12,338 | 1,034,963 | 16,299 | 995,916 | 5,126 |
| 2033 | 999,795 | 5,746 | 1,049,207 | 12,338 | 1,047,382 | 12,420 | 1,001,041 | 5,125 |
| 2034 | 1,005,540 | 5,746 | 1,061,545 | 12,338 | 1,056,809 | 9,426 | 1,006,164 | 5,123 |
| 2035 | 1,011,286 | 5,746 | 1,073,882 | 12,338 | 1,065,263 | 8,454 | 1,011,286 | 5,122 |

Notes:
MPO Data Sets Released in 2013
1. MPO Data Values are in Red.
2. Intermediate Years (Black) based on Straight Line Interpolation between years.
State of Florida Department of Economic Opportunity http://www.floridajobs.org Released in 2013
1. State of Florida Dept of Economic Opportunity Forecast Values are in Red.
2. Intermediate Years (Black) based on Straight Line Interpolation between years for the period 2012 to 2020.
3. Employment Growth for the period 2020 - 2035 assumed to occur at the same no of jobs / yr as 2012 – 2020.
University of Central Florida (UCF) Institute for Economic Competitiveness Florida & Metro Forecast July 2013
1. Uses state of Florida Dept. of Economic Opportunity Total Employment for 2012 as a starting point.
2. Annual Growth for the period 2013 - 2035 is the growth in total employment for the Miami-Ft. Lauderdale-Pompano Beach MSA.
WEG Forecast
1. Growth Rates based on Florida Legislature July 2013 Demographic Estimating Conference Population Forecast for the State of Florida.
2. End Points for Forecast Controlled to MPO Data Sets.
Source: The Washington Economics Group, Inc. (WEG).



Figure 12 below and Table 12 on the next page summarize the differences in the employment forecasts for Palm Beach County. As illustrated in Figure 12, both the Florida DEO and UCF are projecting rates of employment growth similar to that which is embodied in the MPO data sets. Terminal year 2035 differences among the forecasts are less than 100,000, well within the bounds of acceptable error for this type of long-range forecast.

For Palm Beach County, the MPO data sets embody an annual growth rate of just over 0.9 percent over the 2012 to 2035 period. This is less than both the Florida DEO's annual growth rate projection of 1.63 percent over the next decade and UCF's annual growth rate projection of 1.3 percent. It should be noted that by 2035, the UCF and Florida DEO's projections are similar to the MPO's 2035 projection for Palm Beach County. The Florida DEO's employment projection is above the MPO employment projection, while the UCF projection is just below the MPO projection.

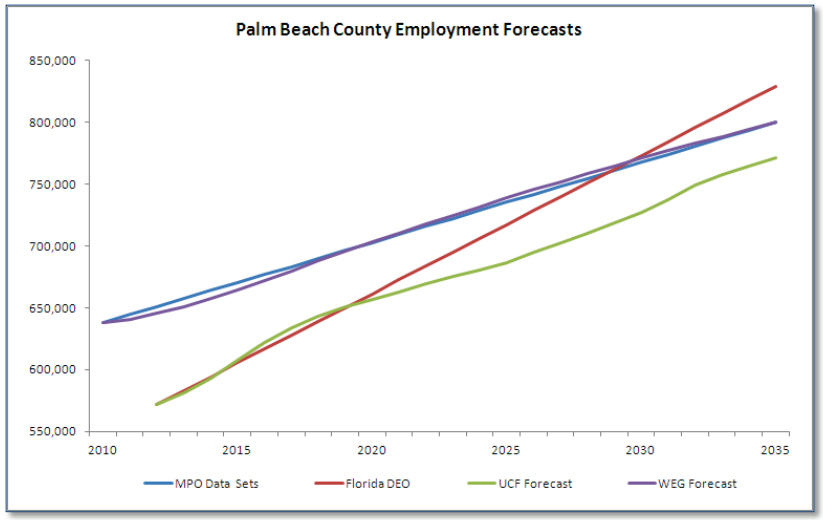


**Figure 12.**
Sources: Palm Beach County MPO 2013, Florida DEO Estimates and Projection Year 2012-2020, UCF, July 2013 and The Washington Economics Group, Inc. (WEG).

**Table 12. Employment Forecasts and Analysis for Palm Beach County**

| Year | *Forecast* | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | MPO Data Sets | | Florida DEO | | UCF Forecast | | WEG Forecast | |
| | Level | Change | Level | Change | Level | Change | Level | Change |
| 2010 | 638,085 | | | | | | 638,085 | |
| 2011 | 644,563 | 6,478 | | | | | 640,981 | 2,896 |
| 2012 | 651,042 | 6,478 | 571,844 | | 790,114 | | 645,708 | 4,727 |
| 2013 | 657,520 | 6,478 | 583,029 | 11,185 | 803,546 | 13,432 | 650,930 | 5,222 |
| 2014 | 663,999 | 6,478 | 594,213 | 11,185 | 819,617 | 16,071 | 657,157 | 6,227 |
| 2015 | 670,477 | 6,478 | 605,398 | 11,185 | 839,288 | 19,671 | 664,414 | 7,257 |
| 2016 | 676,955 | 6,478 | 616,583 | 11,185 | 859,431 | 20,143 | 672,174 | 7,760 |
| 2017 | 683,434 | 6,478 | 627,767 | 11,185 | 875,760 | 16,329 | 680,043 | 7,869 |
| 2018 | 689,912 | 6,478 | 638,952 | 11,185 | 888,020 | 12,261 | 687,843 | 7,800 |
| 2019 | 696,391 | 6,478 | 650,136 | 11,185 | 898,677 | 10,656 | 695,537 | 7,694 |
| 2020 | 702,869 | 6,478 | 661,321 | 11,185 | 907,663 | 8,987 | 703,114 | 7,577 |
| 2021 | 709,347 | 6,478 | 672,506 | 11,185 | 915,832 | 8,169 | 710,296 | 7,182 |
| 2022 | 715,826 | 6,478 | 683,690 | 11,185 | 924,991 | 9,158 | 717,473 | 7,177 |
| 2023 | 722,304 | 6,478 | 694,875 | 11,185 | 933,316 | 8,325 | 724,646 | 7,173 |
| 2024 | 728,783 | 6,478 | 706,060 | 11,185 | 939,849 | 6,533 | 731,814 | 7,168 |
| 2025 | 735,261 | 6,478 | 717,244 | 11,185 | 948,307 | 8,459 | 738,978 | 7,164 |
| 2026 | 741,739 | 6,478 | 728,429 | 11,185 | 959,687 | 11,380 | 745,433 | 6,455 |
| 2027 | 748,218 | 6,478 | 739,613 | 11,185 | 970,244 | 10,557 | 751,885 | 6,452 |
| 2028 | 754,696 | 6,478 | 750,798 | 11,185 | 980,916 | 10,673 | 758,333 | 6,448 |
| 2029 | 761,175 | 6,478 | 761,983 | 11,185 | 992,687 | 11,771 | 764,778 | 6,445 |
| 2030 | 767,653 | 6,478 | 773,167 | 11,185 | 1,004,600 | 11,912 | 771,220 | 6,442 |
| 2031 | 774,131 | 6,478 | 784,352 | 11,185 | 1,018,664 | 14,064 | 776,990 | 5,770 |
| 2032 | 780,610 | 6,478 | 795,537 | 11,185 | 1,034,963 | 16,299 | 782,758 | 5,768 |
| 2033 | 787,088 | 6,478 | 806,721 | 11,185 | 1,047,382 | 12,420 | 788,523 | 5,765 |
| 2034 | 793,567 | 6,478 | 817,906 | 11,185 | 1,056,809 | 9,426 | 794,285 | 5,762 |
| 2035 | 800,045 | 6,478 | 829,090 | 11,185 | 1,065,263 | 8,454 | 800,045 | 5,760 |

Notes:
MPO Data Sets Released in 2013
1. MPO Data Values are in Red.
2. Intermediate Years (Black) based on Straight Line Interpolation between years.
State of Florida Department of Economic Opportunity http://www.floridajobs.org Released in 2013
1. State of Florida Dept of Economic Opportunity Forecast Values are in Red.
2. Intermediate Years (Black) based on Straight Line Interpolation between years for the period 2012 to 2020.
3. Employment Growth for the period 2020 - 2035 assumed to occur at the same no of jobs / yr as 2012 – 2020.
University of Central Florida (UCF) Institute for Economic Competitiveness Florida & Metro Forecast July 2013
1. Uses state of Florida Dept. of Economic Opportunity Total Employment for 2012 as a starting point.
2. Annual Growth for the period 2013 - 2035 is the growth in total employment for the Miami-Ft. Lauderdale-Pompano Beach MSA.
WEG Forecast
1. Growth Rates based on Florida Legislature July 2013 Demographic Estimating Conference Population Forecast for the State of Florida.
2. End Points for Forecast Controlled to MPO Data Sets.

Source: The Washington Economics Group, Inc. (WEG).



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## IV. Forecast Summaries for Miami-Dade, Broward and Palm Beach Counties

Tables 13, 14 and 15 that follow summarize the forecasts of population and other socioeconomic variables provided by WEG to CDM Smith for input into the traffic analysis system. A detailed discussion of the methodology utilized by WEG for this analysis may be found in Section II of this report. Information is set forth on starting and ending points for each variable and its change in both absolute and percentage terms, as well as the starting and ending percentage of each County's total population.

**Table 13. MPO Projections for Miami-Dade County**

| Item | 2010 Value | 2035 Value | Change | % Change | 2010 % of Population | 2035 % of Population |
|---|---|---|---|---|---|---|
| **Lifestyle Variables** | | | | | | |
| Households Without Children | 550,916 | 764,542 | 213,626 | 38.78% | 22.3% | 23.3% |
| Households With Children | 312,717 | 393,085 | 80,368 | 25.70% | 12.6% | 12.0% |
| Vehicles in Households Without Children | 818,237 | 1,301,833 | 483,596 | 59.10% | 33.1% | 39.7% |
| Vehicles in Households With Children | 662,905 | 1,009,920 | 347,015 | 52.35% | 26.8% | 30.8% |
| Workers in Households Without Children | 747,456 | 986,375 | 238,919 | 31.96% | 30.2% | 30.1% |
| Workers in Households With Children | 550,604 | 695,126 | 144,522 | 26.25% | 22.2% | 21.2% |
| Persons in Households Without Children | 1,218,460 | 1,632,081 | 413,621 | 33.95% | 49.2% | 49.8% |
| Persons in Households With Children | 1,256,795 | 1,646,074 | 389,279 | 30.97% | 50.8% | 50.2% |
| Total Households | 863,633 | 1,157,627 | 293,994 | 34.04% | 34.9% | 35.3% |
| Total Vehicles | 1,481,142 | 2,311,753 | 830,611 | 56.08% | 59.8% | 70.5% |
| Total Workers | 1,298,060 | 1,681,501 | 383,441 | 29.54% | 52.4% | 51.3% |
| *Total Population* | *2,475,255* | *3,278,155* | *802,900* | *32.44%* | - - | - - |
| **Primary School Enrollment** | | | | | | |
| Elementary | 158,404 | 217,822 | 59,418 | 37.51% | 6.4% | 6.6% |
| Middle | 79,192 | 93,365 | 14,173 | 17.90% | 3.2% | 2.8% |
| High | 102,726 | 126,537 | 23,811 | 23.18% | 4.2% | 3.9% |
| Private | 52,735 | 133,692 | 80,957 | 153.52% | 2.1% | 4.1% |
| *Total Primary School Enrollment* | *393,057* | *571,416* | *178,359* | *45.38%* | *15.9%* | *17.4%* |
| **Higher Education Enrollment** | | | | | | |
| Total Higher Education Enrollment | 260,295 | 318,464 | 58,169 | 22.35% | 10.5% | 9.7% |
| **Employment** | | | | | | |
| Industrial | 169,095 | 152,860 | -16,235 | -9.60% | 6.8% | 4.7% |
| Commercial | 248,329 | 279,573 | 31,244 | 12.58% | 10.0% | 8.5% |
| Service Sector | 831,759 | 1,561,782 | 730,023 | 87.77% | 33.6% | 47.6% |
| *Total Employment* | *1,249,183* | *1,994,215* | *745,032* | *59.64%* | *50.5%* | *60.8%* |
| **Hotel Data** | | | | | | |
| *Total Hotel - Motel Rooms* | *37,839* | *66,821* | *28,982* | *76.59%* | *1.5%* | *2.0%* |

Sources: Miami-Dade County MPO 2013 and The Washington Economics Group, Inc. (WEG).



**Table 14. MPO Projections for Broward County**

| Item | 2010 Value | 2035 Value | Change | % Change | 2010 % of Population | 2035 % of Population |
|---|---|---|---|---|---|---|
| **Lifestyle Variables** | | | | | | |
| Households Without Children | 461,015 | 502,744 | 41,729 | 9.05% | 26.6% | 22.3% |
| Households With Children | 220,359 | 335,993 | 115,634 | 52.48% | 12.7% | 14.9% |
| Vehicles in Households Without Children | 614,925 | 694,083 | 79,158 | 12.87% | 35.5% | 30.8% |
| Vehicles in Households With Children | 471,380 | 648,044 | 176,664 | 37.48% | 27.2% | 28.8% |
| Workers in Households Without Children | 413,599 | 468,117 | 54,518 | 13.18% | 23.9% | 20.8% |
| Workers in Households With Children | 421,424 | 583,475 | 162,051 | 38.45% | 24.3% | 25.9% |
| Persons in Households Without Children | 783,681 | 936,740 | 153,059 | 19.53% | 45.3% | 41.6% |
| Persons in Households With Children | 948,172 | 1,314,090 | 365,918 | 38.59% | 54.7% | 58.4% |
| Total Households | 681,374 | 838,737 | 157,363 | 23.09% | 39.3% | 37.3% |
| Total Vehicles | 1,086,305 | 1,342,127 | 255,822 | 23.55% | 62.7% | 59.6% |
| Total Workers | 835,023 | 1,051,592 | 216,569 | 25.94% | 48.2% | 46.7% |
| *Total Population* | *1,731,853* | *2,250,830* | *518,977* | *29.97%* | - - | - - |
| **Primary School Enrollment** | | | | | | |
| Elementary | 104,651 | 161,382 | 56,731 | 54.21% | 6.0% | 7.2% |
| Middle | 52,334 | 81,431 | 29,097 | 55.60% | 3.0% | 3.6% |
| High | 67,754 | 93,055 | 25,301 | 37.34% | 3.9% | 4.1% |
| Private | 55,959 | 95,063 | 39,104 | 69.88% | 3.2% | 4.2% |
| *Total Primary School Enrollment* | *280,698* | *430,931* | *150,233* | *53.52%* | *16.2%* | *19.1%* |
| **Higher Education Enrollment** | | | | | | |
| *Total Higher Education Enrollment* | *101,712* | *128,770* | *27,058* | *26.60%* | *5.9%* | *5.7%* |
| **Employment** | | | | | | |
| Industrial | 123,007 | 136,315 | 13,308 | 10.82% | 7.1% | 6.1% |
| Commercial | 173,577 | 340,541 | 166,964 | 96.19% | 10.0% | 15.1% |
| Service Sector | 571,063 | 534,430 | -36,633 | -6.41% | 33.0% | 23.7% |
| *Total Employment* | *867,647* | *1,011,286* | *143,639* | *16.56%* | *50.1%* | *44.9%* |
| **Hotel Data** | | | | | | |
| *Total Hotel - Motel Rooms* | *37,471* | *32,422* | *-5,049* | *-13.47%* | *2.2%* | *1.4%* |

Sources: Broward County MPO 2013 and The Washington Economics Group, Inc. (WEG).

**Table 15. MPO Projections for Palm Beach County**

| Item | 2010 Value | 2035 Value | Change | % Change | 2010 % of Population | 2035 % of Population |
|---|---|---|---|---|---|---|
| **Lifestyle Variables** | | | | | | |
| Households Without Children | 387,563 | 487,331 | 99,768 | 25.74% | 29.8% | 29.0% |
| Households With Children | 143,518 | 202,437 | 58,919 | 41.05% | 11.0% | 12.0% |
| Vehicles in Households Without Children | 565,717 | 718,966 | 153,249 | 27.09% | 43.4% | 42.7% |
| Vehicles in Households With Children | 285,820 | 381,096 | 95,276 | 33.33% | 22.0% | 22.6% |
| Workers in Households Without Children | 323,169 | 429,931 | 106,762 | 33.04% | 24.8% | 25.6% |
| Workers in Households With Children | 239,540 | 320,472 | 80,932 | 33.79% | 18.4% | 19.0% |
| Persons in Households Without Children | 704,627 | 882,680 | 178,053 | 25.27% | 54.1% | 52.5% |
| Persons in Households With Children | 597,436 | 799,919 | 202,483 | 33.89% | 45.9% | 47.5% |
| Total Households | 531,081 | 689,768 | 158,687 | 29.88% | 40.8% | 41.0% |
| Total Vehicles | 851,537 | 1,100,062 | 248,525 | 29.19% | 65.4% | 65.4% |
| Total Workers | 562,709 | 750,403 | 187,694 | 33.36% | 43.2% | 44.6% |
| *Total Population* | *1,302,063* | *1,682,599* | *380,536* | *29.23%* | - - | - - |
| **Primary School Enrollment** | | | | | | |
| Elementary | 83,412 | 92,167 | 8,755 | 10.50% | 6.4% | 5.5% |
| Middle | 41,690 | 43,587 | 1,897 | 4.55% | 3.2% | 2.6% |
| High | 48,810 | 53,565 | 4,755 | 9.74% | 3.7% | 3.2% |
| Private | 21,490 | 82,494 | 61,004 | 283.87% | 1.7% | 4.9% |
| *Total Primary School Enrollment* | *195,402* | *271,813* | *76,411* | *39.10%* | *15.0%* | *16.2%* |
| **Higher Education Enrollment** | | | | | | |
| *Total Higher Education Enrollment* | *55,861* | *64,610* | *8,749* | *15.66%* | *4.3%* | *3.8%* |
| **Employment** | | | | | | |
| Industrial | 85,721 | 124,780 | 39,059 | 45.57% | 6.6% | 7.4% |
| Commercial | 108,537 | 218,602 | 110,065 | 101.41% | 8.3% | 13.0% |
| Service Sector | 443,827 | 456,663 | 12,836 | 2.89% | 34.1% | 27.1% |
| *Total Employment* | *638,085* | *800,045* | *161,960* | *25.38%* | *49.0%* | *47.5%* |
| **Hotel Data** | | | | | | |
| *Total Hotel - Motel Rooms* | *19,459* | *20,683* | *1,224* | *6.29%* | *1.5%* | *1.2%* |

Source: Palm Beach County MPO 2013 and The Washington Economics Group, Inc. (WEG).

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## V. Economic Growth Trends Analysis and Projections: International Trade Activity, Airport Passengers and Annual Visitors to Miami-Dade County

Tables 16 through 20 in this section present a trend analysis (1998-2012) of international trade activity, airport passengers and annual visitors to Miami-Dade County. Airport passenger trends from the Fort Lauderdale/Hollywood International Airport (FLL) are also included as many passengers from that airport have the Miami-Dade County region as their final destination. From the fourteen years (1998-2012) presented in the indicators previously described, the following conclusions can be reached.

### *A. Miami International Airport (MIA) Passenger Activity Trends*

MIA had a strong recovery in passengers following negative growth rates after the tragic events of 9/11 (2001). Indeed the 2008-2012 4-year annual growth rate of 4 percent matched and slightly surpassed the growth rate of the previous 5 years, despite the occurrence of the Great Recession from June 2008 to December 2009. Growth in the past 4 years for which data is available (2008 through 2012) has continued to show steady increases in spite of the aforementioned troubled economic climate (see Table 16 below). Miami International Airport and Fort Lauderdale/Hollywood International Airport do not publish forecasts for passenger or cargo data.

**Table 16. Comparison of MIA and FLL Passenger Trends** (Thousands)

| Year | Miami International Airport (MIA) | | | | Fort Lauderdale/Hollywood International Airport (FLL) | | | |
|---|---|---|---|---|---|---|---|---|
| | Domestic | Int'l | Total | % Change | Domestic | Int'l | Total | % Change |
| 1998 | 18,500 | 15,532 | 34,032 | | 11,212 | 1,242 | 12,454 | |
| 1999 | 18,372 | 15,632 | 34,004 | **-0.1%** | 12,621 | 1,369 | 13,990 | **12.3%** |
| 2000 | 17,441 | 16,180 | 33,621 | **-1.1%** | 14,387 | 1,473 | 15,860 | **13.4%** |
| 2001 | 16,419 | 15,249 | 31,668 | **-5.8%** | 15,013 | 1,395 | 16,408 | **3.5%** |
| 2002 | 15,794 | 14,266 | 30,060 | **-5.1%** | 15,835 | 1,203 | 17,038 | **3.8%** |
| 2003 | 15,739 | 13,856 | 29,595 | **-1.5%** | 16,607 | 1,331 | 17,938 | **5.3%** |
| 2004 | 16,186 | 13,980 | 30,166 | **1.9%** | 19,150 | 1,669 | 20,819 | **16.1%** |
| 2005 | 16,767 | 14,241 | 31,008 | **2.8%** | 20,163 | 2,228 | 22,391 | **7.6%** |
| 2006 | 17,806 | 14,728 | 32,534 | **4.9%** | 18,995 | 2,374 | 21,369 | **-4.6%** |
| 2007 | 18,199 | 15,541 | 33,740 | **3.7%** | 19,824 | 2,858 | 22,682 | **6.1%** |
| 2008 | 17,917 | 16,147 | 34,064 | **1.0%** | 19,579 | 3,043 | 22,622 | **-0.3%** |
| 2009 | 17,916 | 15,970 | 33,886 | **-0.5%** | 18,034 | 3,027 | 21,061 | **-6.9%** |
| 2010 | 18,806 | 16,892 | 35,698 | **5.3%** | 18,965 | 3,447 | 22,412 | **6.4%** |
| 2011 | 19,897 | 18,418 | 38,315 | **7.3%** | 19,741 | 3,609 | 23,350 | **4.2%** |
| 2012 | 20,096 | 19,372 | 39,468 | **3.0%** | 19,972 | 3,598 | 23,570 | **0.9%** |
| **Average Annual % Change** | | | | | | | | |
| 1998-2012 | 0.6% | 1.6% | 1.1% | | 5.9% | 12.6% | 6.0% | |
| 1998-2003 | -3.0% | -2.2% | -2.6% | | 9.6% | 1.4% | 8.8% | |
| 2003-2008 | 2.8% | 3.3% | 3.0% | | 3.6% | 25.7% | 5.2% | |
| 2008-2012 | 3.0% | 5.0% | 4.0% | | 0.5% | 4.6% | 1.0% | |

Sources: Miami International Airport (MIA), Fort Lauderdale/Hollywood International Airport (FLL) and The Washington Economics Group, Inc. (WEG).



**Table 17. Combined MIA and FLL Passenger Trends** (Thousands)

| Year | MIA/FLL Combined Totals | | | | Miami Share | | |
|---|---|---|---|---|---|---|---|
| | Domestic | Int'l | Total | % Change | Domestic | Int'l | Total |
| 1998 | 29,712 | 16,774 | 46,486 | | 62.3 | 92.6 | 73.2 |
| 1999 | 30,993 | 17,001 | 47,994 | **3.2%** | 59.3 | 91.9 | 70.9 |
| 2000 | 31,828 | 17,653 | 49,481 | **3.1%** | 54.8 | 91.7 | 67.9 |
| 2001 | 31,432 | 16,644 | 48,076 | **-2.8%** | 52.2 | 91.6 | 65.9 |
| 2002 | 31,629 | 15,469 | 47,098 | **-2.0%** | 49.9 | 92.2 | 63.8 |
| 2003 | 32,346 | 15,187 | 47,533 | **0.9%** | 48.7 | 91.2 | 62.3 |
| 2004 | 35,336 | 15,649 | 50,985 | **7.3%** | 45.8 | 89.3 | 59.2 |
| 2005 | 36,930 | 16,469 | 53,399 | **4.7%** | 45.4 | 86.5 | 58.1 |
| 2006 | 36,801 | 17,102 | 53,903 | **0.9%** | 48.4 | 86.1 | 60.4 |
| 2007 | 38,023 | 18,399 | 56,422 | **4.7%** | 47.9 | 84.5 | 59.8 |
| 2008 | 37,496 | 19,190 | 56,686 | **0.5%** | 47.8 | 84.1 | 60.1 |
| 2009 | 35,950 | 18,997 | 54,947 | **-3.1%** | 49.8 | 84.1 | 61.7 |
| 2010 | 37,771 | 20,339 | 58,110 | **5.8%** | 49.8 | 83.1 | 61.4 |
| 2011 | 39,638 | 22,027 | 61,665 | **6.1%** | 50.2 | 83.6 | 62.1 |
| 2012 | 40,068 | 22,970 | 63,038 | **2.2%** | 50.2 | 84.3 | 62.6 |
| **Average Annual % Change** | | | | | | | |
| 1998-2012 | 2.3% | 2.5% | 2.4% | | | | |
| 1998-2003 | 1.8% | -1.9% | 0.5% | | | | |
| 2003-2008 | 3.2% | 5.3% | 3.9% | | | | |
| 2008-2012 | 1.9% | 4.9% | 2.9% | | | | |

Sources: Miami International Airport (MIA), Fort Lauderdale/Hollywood International Airport (FLL) and The Washington Economics Group, Inc. (WEG).

The Miami Intermodal Center (MIC) is now operational, supporting passenger mobility throughout the region. The Miami International Airport (MIA) Mover at the Airport is a newly added automated people mover system that connects passengers within MIA and to/from MIA to the Miami Rental Center (part of the MIC). In the next few years it is highly likely that the MIC will boost passenger growth through MIA, and to a lesser extent Fort Lauderdale/Hollywood International Airport (FLL).

### *B. Cargo Trends at MIA*

Cargo activity at MIA accelerated during 2003-2008, paused in 2008 and 2009 before resuming a pattern of strong growth following the ending of the Great Recession (see Table 18 on the next page for the 1998-2012 trends). The completion of a fourth runway has added both passenger and cargo capacity to the airport.

MIA is benefiting from a number of factors that stimulate cargo activity. Among these factors are:

- The operations of new state-of-the-art storage facilities;

- The structural shift toward low-weight, but high value-added international trade that is handled more cost effectively by air rather than by ocean shipments;
- Strong economic performance by many Latin and South American economies; and
- A more streamlined, efficient and integrated PortMiami and MIA system for the transport of goods and services will be realized with the completion of the PortMiami Tunnel in 2014.

**Table 18. Cargo Activity Trends at MIA** (Thousands of Tons)

| Year | Domestic | Int'l | Total | % Change |
|---|---|---|---|---|
| 1998 | 399 | 1,592 | 1,991 | |
| 1999 | 353 | 1,507 | 1,860 | **-6.6%** |
| 2000 | 356 | 1,455 | 1,811 | **-2.6%** |
| 2001 | 443 | 1,365 | 1,808 | **-0.2%** |
| 2002 | 401 | 1,390 | 1,791 | **-0.9%** |
| 2003 | 346 | 1,459 | 1,805 | **0.8%** |
| 2004 | 344 | 1,617 | 1,961 | **8.6%** |
| 2005 | 334 | 1,600 | 1,934 | **-1.4%** |
| 2006 | 322 | 1,696 | 2,018 | **4.3%** |
| 2007 | 327 | 1,794 | 2,121 | **5.1%** |
| 2008 | 270 | 1,722 | 1,992 | **-6.1%** |
| 2009 | 227 | 1,491 | 1,718 | **-13.8%** |
| 2010 | 238 | 1,786 | 2,024 | **17.8%** |
| 2011 | 253 | 1,778 | 2,031 | **0.3%** |
| 2012 | 291 | 1,836 | 2,127 | **4.7%** |
| **Average Annual % Change** | | | | |
| 1998-2012 | -1.8% | 1.0% | 0.5% | |
| 1998-2003 | -2.7% | -1.7% | -1.9% | |
| 2003-2008 | -4.4% | 3.6% | 2.1% | |
| 2008-2012 | 1.9% | 1.7% | 1.7% | |

Sources: Miami International Airport (MIA) Traffic Report and The Washington Economics Group, Inc. (WEG).

### *C. Tourism Trends*

Annual visitors to Miami-Dade County grew at a strong pace over the past few years following the moderate pace of much of the 2000-2009 period, except for the declines induced by the 9/11 (2001) events as shown in Table 19 on the following page. Miami-Dade County enjoys a global brand in the Entertainment and Hospitality Industry. As a consequence, South Florida was one of the first areas in the State to see an upturn in tourism following the end of the recession.

Significant portions of growth in recent years are attributable to the relatively strong economic performances of many Latin and South American economies as well as the continuing strong brand recognition of Miami and Miami Beach in Europe and Russia.



The Capital Improvement Program of MIA has also increased the efficiency and capacity of Miami International Airport. Improvements include the South Terminal, opened in 2007 and the North Terminal, which will be fully completed in 2014 to serve more than 300 daily flights. According to MIA, the North Terminal is used by American Airlines as its Latin American and Caribbean hub, serving 25 million passengers annually.

Other projects include the MIA mover, a 1.25-mile long automated rail system that transports passengers from their terminals to the Miami Rental Car Center, further increasing efficiency and convenience for passengers at MIA[3]. East of the Rental Car Center is the Miami Central Station (MCS), the "crown jewel" of the Miami Intermodal Center Program (part of the Capital Improvement Program). It functions as a transportation hub, giving access to passengers to the Tri-Rail, Amtrak, Greyhound, Miami-Dade Metrobuses, taxis and other modes of transportation around Miami-Dade[4].

**Table 19. Miami-Dade Tourism Trends** (Annual Visitors – Thousands)

| Year | Domestic | Int'l | Total | % Change |
|---|---|---|---|---|
| 1998 | 4,469 | 5,268 | 9,737 | |
| 1999 | 4,426 | 5,470 | 9,896 | **1.6%** |
| 2000 | 5,475 | 5,684 | 11,159 | **12.8%** |
| 2001 | 5,264 | 5,246 | 10,510 | **-5.8%** |
| 2002 | 5,316 | 4,915 | 10,231 | **-2.7%** |
| 2003 | 5,640 | 4,805 | 10,445 | **2.1%** |
| 2004 | 5,727 | 5,235 | 10,962 | **4.9%** |
| 2005 | 6,029 | 5,273 | 11,302 | **3.1%** |
| 2006 | 6,263 | 5,322 | 11,585 | **2.5%** |
| 2007 | 6,473 | 5,493 | 11,966 | **3.3%** |
| 2008 | 6,341 | 5,787 | 12,128 | **1.4%** |
| 2009 | 6,252 | 5,684 | 11,936 | **-1.6%** |
| 2010 | 6,544 | 6,060 | 12,604 | **5.6%** |
| 2011 | 6,949 | 6,496 | 13,445 | **6.7%** |
| 2012 | 7,075 | 6,834 | 13,909 | **3.5%** |
| **Average Annual % Change** | | | | |
| 1998-2012 | 3.9% | 2.0% | 2.9% | |
| 1998-2003 | 5.2% | -1.8% | 1.5% | |
| 2003-2008 | 2.5% | 4.1% | 3.2% | |
| 2008-2012 | 2.9% | 4.5% | 3.7% | |

Sources: Greater Miami and the Beaches 2012 Visitor Industry Overview and The Washington Economics Group, Inc. (WEG).

[3] http://www.miami-airport.com/capital_improvement.asp
[4] http://www.micdot.com/miami_central_station.html.

### *D. PortMiami Activity Trends*

International Cargo activity at PortMiami and at Miami International Airport (MIA) presented a mixed picture from 1998-2011. PortMiami operating trends show sluggish conditions at the Port (see Table 20). Ship visits, cargo activity and passengers were flat-to-negative in the 2003-2012 period. PortMiami is suffering from a combination of growing operating costs and increased competition from other ports. The Port Tunnel will directly link the Port to multimodal transportation arteries and logistics hubs such as I-95, rail, including the All-Aboard Florida passenger rail line to begin construction in early 2014, MIA and surrounding warehouse districts. This is expected to decrease the costs to shippers and other commercial vehicles utilizing the Port. Additional improvements to the Port will allow it to serve larger ships able to transit the expanded Panama Canal. A key element of these expansion plans will be that many ships currently providing trans-pacific service will be able to call at PortMiami helping to increase the Port's importance for ocean commerce in the southeastern United States and in expanding Asian and European markets.

**Table 20. PortMiami Operating Trends** (Thousands)

| Year | Ship Visits | % Change | Cargo | % Change | Passengers | % Change |
|---|---|---|---|---|---|---|
| 1998 | 3,368 | | 7,057 | | 2,960 | |
| 1999 | 3,631 | 7.8% | 6,930 | -1.8% | 3,112 | **5.1%** |
| 2000 | 3,447 | -5.1% | 7,805 | 12.6% | 3,364 | **8.1%** |
| 2001 | 3,350 | -2.8% | 8,247 | 5.7% | 3,391 | **0.8%** |
| 2002 | 3,529 | 5.3% | 8,682 | 5.3% | 3,642 | **7.4%** |
| 2003 | 2,936 | -16.8% | 9,002 | 3.7% | 3,961 | **8.8%** |
| 2004 | 2,872 | -2.2% | 9,230 | 2.5% | 3,500 | **-11.6%** |
| 2005 | 2,733 | -4.8% | 9,474 | 2.6% | 3,605 | **3.0%** |
| 2006 | 2,608 | -4.6% | 8,654 | -8.7% | 3,732 | **3.5%** |
| 2007 | 2,335 | -10.5% | 7,835 | -9.5% | 3,787 | **1.5%** |
| 2008 | 2,413 | 3.3% | 7,430 | -5.2% | 4,138 | **9.3%** |
| 2009 | 2,501 | 3.6% | 6,832 | -8.0% | 4,110 | **-0.7%** |
| 2010 | 2,441 | -2.4% | 7,389 | 8.2% | 4,145 | **0.9%** |
| 2011 | 2,690 | 10.2% | 8,282 | 12.1% | 4,018 | **-3.1%** |
| 2012 | 2,378 | -11.6% | 8,108 | -2.1% | 3,782 | **-5.9%** |
| **Average Annual % Change** | | | | | | |
| 1998-2012 | -1.3% | | 1.2% | | 2.4% | |
| 1998-2003 | -2.6% | | 5.5% | | 6.8% | |
| 2003-2008 | -3.6% | | -3.5% | | 0.9% | |
| 2008-2012 | -0.4% | | 2.3% | | -2.2% | |

Source: Miami-Dade County PortMiami and The Washington Economics Group, Inc. (WEG).

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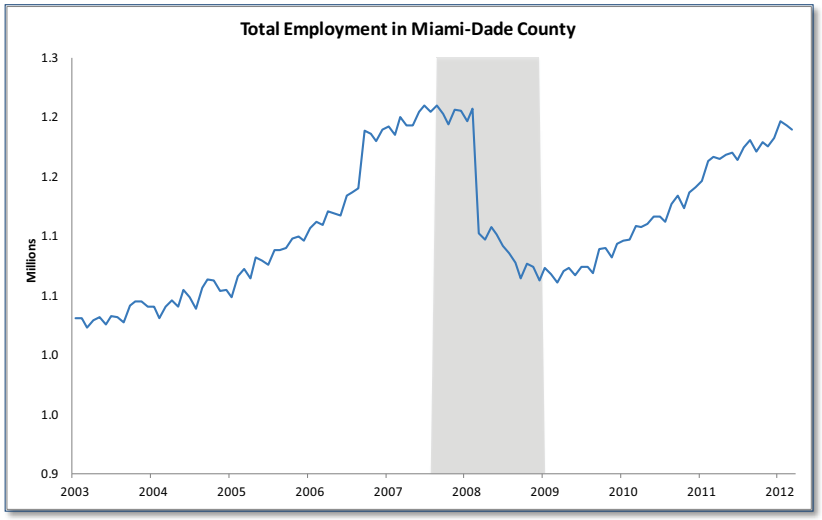
## Appendix I:

## Miami-Dade Indicators, Commuting Patterns, Top Employers in Miami-Dade County and Major Centers of Employment Surrounding MDX Expressway Corridors

## Miami-Dade County Employment

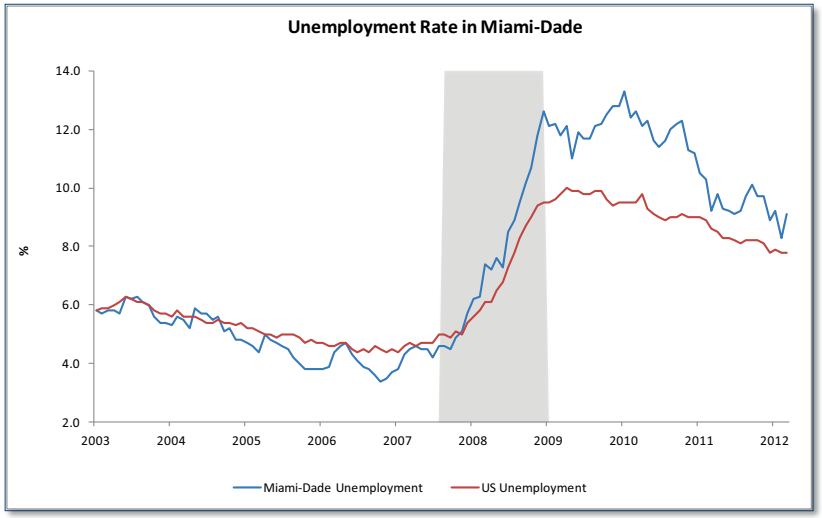
As illustrated in the figure below, employment in Miami-Dade County peaked in November 2007 at about 1.2 million jobs, and reached a trough in September 2009 with a total loss of 148,000 jobs. Since September of 2009 Miami-Dade has seen an increase in employment of 129,000. The levels seen at the end of 2012 have not been seen since June 2008 signaling a steady increase in employment. WEG expects this trend to continue.




Source: Bureau of Labor Statistics (BLS), Household Survey. Shaded area indicates US recessions.

## Miami-Dade County Unemployment Rate

The Unemployment rate in Miami-Dade County since the beginning of the Great Recession (December 2007) has consistently been higher than the average unemployment rate at the national level. As shown in the figure below, the unemployment rate in Miami-Dade peaked at 13.3 percent in August 2010, significantly higher than the national rate's peak of 10 percent in October 2009. By the end of 2012, the disparity could still be seen with the national unemployment rate falling to 7.8 percent and the local unemployment rate at 9.1 percent.




Source: Federal Reserve Bank St. Louis. Shaded area indicates US recessions.

## Occupational Breakdown in Miami-Dade County

The figure below depicts the occupational breakdown for the top 10 occupations in Miami-Dade County in 2012. The majority of occupations within the County fell under the "Office and Administrative Support" category with 19.7 percent of the employment. The top 3 occupations, Office and Administrative Support, Sales and Related and Food Preparation and Serving, comprised 43 percent of occupations in Miami-Dade.

**Source:** Bureau of Labor Statistics, Occupational Employment and Wages in Miami-Miami Beach-Kendall May 2012, released on May 17, 2013.

## Commuting Patterns

Predictably, the counties that Miami-Dade shares the most commuters are those that are nearest. However, WEG's analysis found that there are net positive commuters to Miami-Dade from the surrounding areas. As shown in the table below, from Broward, 125,213 commuters travel to Miami-Dade for work, while only 70,905 Miami-Dade residents commute to Broward, leaving a net positive effect in Miami-Dade. The same effect is seen from both Palm Beach and Monroe Counties.

**Miami-Dade County Commuting Patterns**

| Top 5 Counties Commuting to Miami-Dade | Number |
|---|---|
| 1. Broward | 125,213 |
| 2. Palm Beach | 7,730 |
| 3. Monroe | 1,191 |
| 4. Lee | 907 |
| 5. St. Lucie | 764 |
| **Top 5 Counties Miami-Dade Residents Commute To** | **Number** |
| 1. Broward | 70,905 |
| 2. Palm Beach | 4,266 |
| 3. Monroe | 3,221 |
| 4. Orange | 450 |
| 5. Collier | 405 |

Source: US Census Bureau, 2006-2010.

## Top Employers in Miami-Dade County

Major organizations comprise Miami-Dade County's Top 10 private and public employers. These important companies employ thousands of regional residents who drive MDX roadways to their places of work. A listing of the largest private and public employers in Miami-Dade by number of employees follows in the table below.

**Major Employers in Miami-Dade County**

| Top 10 Private Employers | No. of Employees |
|---|---|
| 1. Baptist Health South Florida | 13,376 |
| 2. University of Miami | 12,720 |
| 3. American Airlines | 9,000 |
| 4. Publix Supermarkets | 4,604 |
| 5. Carnival Cruise Lines | 3,500 |
| 6. Mount Sinai Medical Center | 3,000 |
| 7. Miami Children's Hospital | 2,800 |
| 8. Sedanos Supermarkets | 2,600 |
| 9. Royal Caribbean International/Celebrity Cruises | 2,051 |
| 10. Bank of America Merrill Lynch | 2,000 |
| **Top 10 Public Employers** | **No. of Employees** |
| 1. Miami-Dade County Public Schools | 33,477 |
| 2. Miami-Dade County | 25,502 |
| 3. Federal Government | 19,600 |
| 4. Florida State Government | 18,300 |
| 5. Jackson Health System | 8,208 |
| 6. City of Miami | 3,656 |
| 7. Florida International University | 3,534 |
| 8. Homestead AFB | 3,000 |
| 9. Miami VA Healthcare System | 2,500 |
| 10. Miami Dade College | 2,356 |

Source: The Beacon Council, 2013.

## Top 20 Zip Codes in Miami-Dade County by Employment

**Eighteen (18) of the top 20 zip codes in Miami-Dade (by Employment) are along Miami-Dade Expressway Authority's (MDX) roadways**. The majority of the highest employment concentration areas are along SR 836, also known as the Dolphin Expressway. The zip code with the highest employment, 33126, runs along the Dolphin Expressway between 37th and 87th Avenues. This area includes employment clusters adjacent to the east and west ends of Miami International Airport, while the Downtown Miami and Health District employment cluster is located at the Eastern end of the Dolphin Expressway (zip codes 33136, 33131, 33132, 33139) and employs 98,000 as shown in the table and map that follow. Many of the private- and public-sector offices located in this area draw thousands of additional visitors daily as individuals travel to this vicinity. All these areas are expected to increase steadily in employment over the next decade, given the start of post-Panama Canal expansion with large container ships coming from Asia. In addition, the Health District, with the addition of the University of Miami Life Science and Technology Park, is expected to grow at a steady rate.

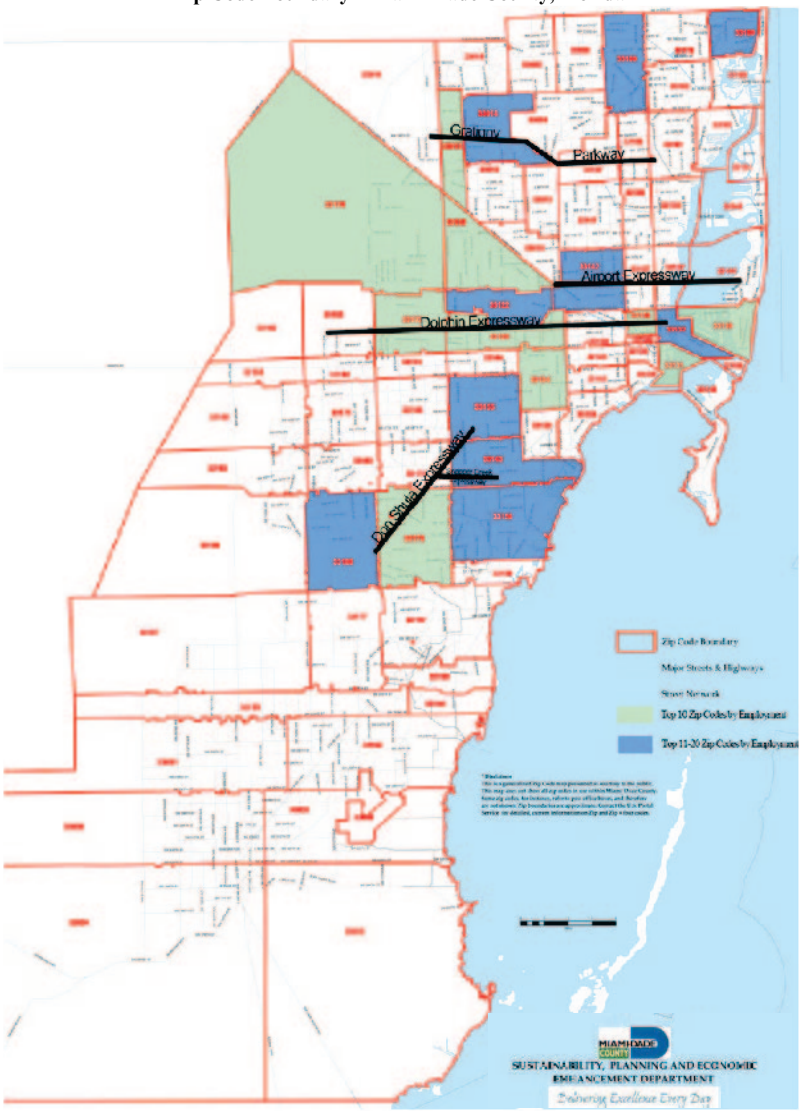
**Miami-Dade County Top 20 Zip Codes by Employment**

| Zip Code | Employment | Near Expressway |
|---|---|---|
| 33126 | 37,628 | Dolphin-SR 836 |
| 33166 | 34,572 | Airport-SR 878 |
| 33178 | 30,884 | Dolphin-SR 836 |
| 33131 | 30,459 | Dolphin-SR 836 |
| 33172 | 28,935 | Dolphin-SR 836 |
| 33139 | 28,473 | Dolphin-SR 836 |
| 33134 | 27,861 | Dolphin-SR 836 |
| 33176 | 23,433 | Don Shula-SR 874 |
| 33136 | 21,560 | Dolphin-SR 836 |
| 33016 | 20,845 | Gratigny Parkway-SR 924 |
| 33122 | 19,327 | Dolphin-SR 836 |
| 33186 | 19,250 | Don Shula-SR 874 |
| 33156 | 18,043 | Snapper Creek-SR 878 |
| 33014 | 17,739 | Gratigny Parkway-SR 924 |
| 33132 | 17,267 | Dolphin-SR 836 |
| 33155 | 17,125 | Don Shula-SR 874 |
| 33142 | 17,085 | Airport-SR 878 |
| 33143 | 16,837 | Snapper Creek-SR878 |

Source: US Census Bureau Count Business Patterns and The Washington Economics Group, Inc. (WEG) calculations.

Another notable employment cluster runs along the Don Shula Expressway and Snapper Creek Expressway corridors, where zip codes 33186, 33176, 33156, 33143, and 33155 employ almost 95,000 individuals although it is a bigger geographical area. The zip code map on the following page highlights the Top 10 zip codes by employment in green and the Top 11-20 zip codes by employment in blue.

**Zip Code Boundary - Miami-Dade County, Florida**



# Appendix C.2

# Population and Employment, Model Input Variables

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**Table C.2-1**
**WEG Forecast for SERPM Model Area**
**Total Population**

| SuperDistrict | 2010 Value | 2035 Value | Pct Chg. | | Forecast Year 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 69,211 | 87,390 | 26.27% | Value: | 69,211 | 69,532 | 70,056 | 70,636 | 71,328 | 72,135 | 72,999 | 73,877 | 74,748 | 75,608 | 76,456 | 77,261 | 78,066 |
| | | | | Percent Change: | - | 0.5% | 0.8% | 0.8% | 1.0% | 1.1% | 1.2% | 1.2% | 1.2% | 1.2% | 1.1% | 1.1% | 1.0% |
| 2 | 61,518 | 72,108 | 17.21% | Value: | 61,518 | 61,705 | 62,010 | 62,348 | 62,751 | 63,221 | 63,725 | 64,236 | 64,743 | 65,244 | 65,738 | 66,207 | 66,676 |
| | | | | Percent Change: | - | 0.3% | 0.5% | 0.5% | 0.6% | 0.7% | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% | 0.7% | 0.7% |
| 3 | 172,264 | 187,082 | 8.60% | Value: | 172,264 | 172,526 | 172,953 | 173,426 | 173,990 | 174,648 | 175,352 | 176,067 | 176,777 | 177,478 | 178,169 | 178,825 | 179,482 |
| | | | | Percent Change: | - | 0.2% | 0.2% | 0.3% | 0.3% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% |
| 4 | 87,181 | 96,844 | 11.08% | Value: | 87,181 | 87,352 | 87,630 | 87,939 | 88,306 | 88,735 | 89,195 | 89,661 | 90,124 | 90,581 | 91,032 | 91,460 | 91,888 |
| | | | | Percent Change: | - | 0.2% | 0.3% | 0.4% | 0.4% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 5 | 56,646 | 130,041 | 129.57% | Value: | 56,646 | 57,942 | 60,059 | 62,400 | 65,193 | 68,452 | 71,941 | 75,484 | 79,000 | 82,472 | 85,898 | 89,145 | 92,396 |
| | | | | Percent Change: | - | 2.3% | 3.7% | 3.9% | 4.5% | 5.0% | 5.1% | 4.9% | 4.7% | 4.4% | 4.2% | 3.8% | 3.6% |
| 6 | 44,888 | 46,122 | 2.75% | Value: | 44,888 | 44,910 | 44,945 | 44,985 | 45,032 | 45,086 | 45,145 | 45,205 | 45,264 | 45,322 | 45,380 | 45,434 | 45,489 |
| | | | | Percent Change: | - | 0.0% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% |
| 7 | 78,843 | 91,518 | 16.08% | Value: | 78,843 | 79,067 | 79,432 | 79,837 | 80,319 | 80,882 | 81,484 | 82,096 | 82,703 | 83,303 | 83,894 | 84,455 | 85,017 |
| | | | | Percent Change: | - | 0.3% | 0.5% | 0.5% | 0.6% | 0.7% | 0.7% | 0.8% | 0.7% | 0.7% | 0.7% | 0.7% | 0.7% |
| 8 | 78,827 | 88,078 | 11.74% | Value: | 78,827 | 78,990 | 79,257 | 79,552 | 79,904 | 80,315 | 80,755 | 81,201 | 81,645 | 82,082 | 82,514 | 82,923 | 83,333 |
| | | | | Percent Change: | - | 0.2% | 0.3% | 0.4% | 0.4% | 0.5% | 0.5% | 0.6% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 9 | 54,625 | 64,445 | 17.98% | Value: | 54,625 | 54,798 | 55,082 | 55,395 | 55,769 | 56,205 | 56,671 | 57,145 | 57,616 | 58,080 | 58,539 | 58,973 | 59,408 |
| | | | | Percent Change: | - | 0.3% | 0.5% | 0.6% | 0.7% | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% | 0.7% | 0.7% |
| 10 | 83,214 | 92,688 | 11.39% | Value: | 83,214 | 83,381 | 83,655 | 83,957 | 84,317 | 84,738 | 85,188 | 85,646 | 86,099 | 86,548 | 86,990 | 87,409 | 87,829 |
| | | | | Percent Change: | - | 0.2% | 0.3% | 0.4% | 0.4% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 11 | 154,376 | 192,042 | 24.40% | Value: | 154,376 | 155,041 | 156,128 | 157,329 | 158,762 | 160,435 | 162,225 | 164,044 | 165,848 | 167,630 | 169,387 | 171,054 | 172,723 |
| | | | | Percent Change: | - | 0.4% | 0.7% | 0.8% | 0.9% | 1.1% | 1.1% | 1.1% | 1.1% | 1.1% | 1.0% | 1.0% | 1.0% |
| 12 | 35,513 | 46,019 | 29.58% | Value: | 35,513 | 35,699 | 36,002 | 36,337 | 36,736 | 37,203 | 37,702 | 38,210 | 38,713 | 39,210 | 39,700 | 40,165 | 40,630 |
| | | | | Percent Change: | - | 0.5% | 0.8% | 0.9% | 1.1% | 1.3% | 1.3% | 1.3% | 1.3% | 1.3% | 1.2% | 1.2% | 1.2% |
| 13 | 155,618 | 168,985 | 8.59% | Value: | 155,618 | 155,854 | 156,240 | 156,666 | 157,175 | 157,768 | 158,404 | 159,049 | 159,699 | 160,322 | 160,945 | 161,537 | 162,129 |
| | | | | Percent Change: | - | 0.2% | 0.2% | 0.3% | 0.3% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% |
| 14 | 12,668 | 17,181 | 35.63% | Value: | 12,668 | 12,748 | 12,878 | 13,022 | 13,194 | 13,394 | 13,608 | 13,826 | 14,043 | 14,258 | 14,467 | 14,666 | 14,866 |
| | | | | Percent Change: | - | 0.6% | 1.0% | 1.1% | 1.3% | 1.5% | 1.6% | 1.6% | 1.6% | 1.5% | 1.5% | 1.4% | 1.4% |
| 15 | 29,848 | 46,053 | 54.29% | Value: | 29,848 | 30,134 | 30,602 | 31,118 | 31,735 | 32,455 | 33,225 | 34,007 | 34,784 | 35,550 | 36,306 | 37,024 | 37,741 |
| | | | | Percent Change: | - | 1.0% | 1.6% | 1.7% | 2.0% | 2.3% | 2.4% | 2.4% | 2.3% | 2.2% | 2.1% | 2.0% | 1.9% |
| 16 | 17,523 | 15,323 | -12.55% | Value: | 17,523 | 17,484 | 17,421 | 17,351 | 17,267 | 17,169 | 17,065 | 16,958 | 16,853 | 16,749 | 16,646 | 16,549 | 16,451 |
| | | | | Percent Change: | - | -0.2% | -0.4% | -0.4% | -0.5% | -0.6% | -0.6% | -0.6% | -0.6% | -0.6% | -0.6% | -0.6% | -0.6% |
| 17 | 443 | 3,713 | 738.15% | Value: | 443 | 501 | 595 | 699 | 824 | 969 | 1,124 | 1,282 | 1,439 | 1,594 | 1,746 | 1,891 | 2,036 |
| | | | | Percent Change: | - | 13.0% | 18.8% | 17.5% | 17.8% | 17.6% | 16.0% | 14.0% | 12.2% | 10.8% | 9.6% | 8.3% | 7.7% |
| 18 | 17,970 | 29,014 | 61.46% | Value: | 17,970 | 18,165 | 18,484 | 18,836 | 19,256 | 19,747 | 20,272 | 20,805 | 21,334 | 21,856 | 22,371 | 22,860 | 23,349 |
| | | | | Percent Change: | - | 1.1% | 1.8% | 1.9% | 2.2% | 2.5% | 2.7% | 2.6% | 2.5% | 2.4% | 2.4% | 2.2% | 2.1% |
| 19 | 68,581 | 76,102 | 10.97% | Value: | 68,581 | 68,714 | 68,931 | 69,171 | 69,457 | 69,791 | 70,148 | 70,511 | 70,872 | 71,227 | 71,578 | 71,911 | 72,244 |
| | | | | Percent Change: | - | 0.2% | 0.3% | 0.3% | 0.4% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 20 | 116,669 | 159,787 | 36.96% | Value: | 116,669 | 117,431 | 118,674 | 120,049 | 121,690 | 123,605 | 125,655 | 127,736 | 129,801 | 131,841 | 133,853 | 135,761 | 137,671 |
| | | | | Percent Change: | - | 0.7% | 1.1% | 1.2% | 1.4% | 1.6% | 1.7% | 1.7% | 1.6% | 1.6% | 1.5% | 1.4% | 1.4% |
| 21 | 76,820 | 90,710 | 18.08% | Value: | 76,820 | 77,065 | 77,466 | 77,909 | 78,438 | 79,054 | 79,715 | 80,385 | 81,050 | 81,708 | 82,356 | 82,970 | 83,586 |
| | | | | Percent Change: | - | 0.3% | 0.5% | 0.6% | 0.7% | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% | 0.7% | 0.7% |
| 22 | 126,566 | 184,968 | 46.14% | Value: | 126,566 | 127,598 | 129,282 | 131,145 | 133,367 | 135,960 | 138,737 | 141,556 | 144,353 | 147,117 | 149,841 | 152,426 | 155,013 |
| | | | | Percent Change: | - | 0.8% | 1.3% | 1.4% | 1.7% | 1.9% | 2.0% | 2.0% | 2.0% | 1.9% | 1.9% | 1.7% | 1.7% |
| 23 | 4,143 | 7,338 | 77.12% | Value: | 4,143 | 4,199 | 4,292 | 4,393 | 4,515 | 4,657 | 4,809 | 4,963 | 5,116 | 5,267 | 5,416 | 5,558 | 5,699 |
| | | | | Percent Change: | - | 1.4% | 2.2% | 2.4% | 2.8% | 3.1% | 3.3% | 3.2% | 3.1% | 3.0% | 2.8% | 2.6% | 2.5% |
| 24 | 187,757 | 230,549 | 22.79% | Value: | 187,757 | 188,513 | 189,747 | 191,112 | 192,740 | 194,640 | 196,675 | 198,740 | 200,790 | 202,815 | 204,811 | 206,705 | 208,600 |
| | | | | Percent Change: | - | 0.4% | 0.7% | 0.7% | 0.9% | 1.0% | 1.0% | 1.1% | 1.0% | 1.0% | 1.0% | 0.9% | 0.9% |
| 25 | 6,834 | 13,180 | 92.86% | Value: | 6,834 | 6,946 | 7,129 | 7,332 | 7,573 | 7,855 | 8,156 | 8,463 | 8,767 | 9,067 | 9,363 | 9,644 | 9,925 |
| | | | | Percent Change: | - | 1.6% | 2.6% | 2.8% | 3.3% | 3.7% | 3.8% | 3.8% | 3.8% | 3.4% | 3.3% | 3.0% | 2.9% |
| 26 | 137,095 | 145,619 | 6.22% | Value: | 137,095 | 137,246 | 137,491 | 137,763 | 138,088 | 138,486 | 138,871 | 139,283 | 139,691 | 140,094 | 140,492 | 140,869 | 141,247 |
| | | | | Percent Change: | - | 0.1% | 0.2% | 0.2% | 0.2% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% |
| 27 | 45,565 | 54,580 | 19.78% | Value: | 45,565 | 45,724 | 45,984 | 46,272 | 46,615 | 47,015 | 47,444 | 47,879 | 48,311 | 48,737 | 49,158 | 49,557 | 49,956 |
| | | | | Percent Change: | - | 0.3% | 0.6% | 0.6% | 0.7% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.8% | 0.8% |
| 28 | 82,688 | 112,817 | 36.44% | Value: | 82,688 | 83,220 | 84,089 | 85,050 | 86,197 | 87,534 | 88,967 | 90,421 | 91,864 | 93,290 | 94,695 | 96,029 | 97,363 |
| | | | | Percent Change: | - | 0.6% | 1.0% | 1.1% | 1.3% | 1.6% | 1.6% | 1.6% | 1.6% | 1.5% | 1.4% | 1.4% | 1.4% |
| 29 | 62,329 | 121,179 | 94.42% | Value: | 62,329 | 63,368 | 65,066 | 66,943 | 69,182 | 71,795 | 74,593 | 77,434 | 80,253 | 83,037 | 85,782 | 88,388 | 90,994 |
| | | | | Percent Change: | - | 1.7% | 2.7% | 2.9% | 3.3% | 3.8% | 3.9% | 3.8% | 3.8% | 3.5% | 3.3% | 3.0% | 2.9% |
| 30 | 20,226 | 45,530 | 125.11% | Value: | 20,226 | 20,673 | 21,403 | 22,210 | 23,173 | 24,296 | 25,499 | 26,721 | 27,933 | 29,130 | 30,310 | 31,431 | 32,551 |
| | | | | Percent Change: | - | 2.2% | 3.5% | 3.8% | 4.3% | 4.8% | 5.0% | 4.8% | 4.5% | 4.3% | 4.1% | 3.7% | 3.6% |
| 31 | 86,499 | 207,498 | 139.88% | Value: | 86,499 | 88,636 | 92,126 | 95,985 | 100,590 | 105,963 | 111,715 | 117,555 | 123,352 | 129,076 | 134,720 | 140,077 | 145,436 |
| | | | | Percent Change: | - | 2.5% | 3.9% | 4.2% | 4.8% | 5.3% | 5.4% | 5.2% | 4.9% | 4.6% | 4.4% | 4.0% | 3.8% |
| 32 | 7,701 | 16,518 | 114.49% | Value: | 7,701 | 7,857 | 8,111 | 8,392 | 8,728 | 9,119 | 9,538 | 9,964 | 10,386 | 10,804 | 11,215 | 11,605 | 11,996 |
| | | | | Percent Change: | - | 2.0% | 3.2% | 3.5% | 4.0% | 4.5% | 4.6% | 4.5% | 4.2% | 4.0% | 3.8% | 3.5% | 3.4% |
| 33 | 39,042 | 69,655 | 78.41% | Value: | 39,042 | 39,583 | 40,466 | 41,442 | 42,607 | 43,966 | 45,422 | 46,899 | 48,366 | 49,814 | 51,242 | 52,597 | 53,953 |
| | | | | Percent Change: | - | 1.4% | 2.2% | 2.4% | 2.8% | 3.2% | 3.3% | 3.3% | 3.1% | 3.0% | 2.9% | 2.6% | 2.6% |
| 34 | 51,902 | 62,103 | 19.65% | Value: | 51,902 | 52,082 | 52,376 | 52,702 | 53,090 | 53,543 | 54,028 | 54,520 | 55,009 | 55,492 | 55,967 | 56,419 | 56,871 |
| | | | | Percent Change: | - | 0.3% | 0.6% | 0.6% | 0.7% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.8% | 0.8% | 0.8% |
| 35 | 57,678 | 89,736 | 55.58% | Value: | 57,678 | 58,244 | 59,169 | 60,191 | 61,411 | 62,835 | 64,359 | 65,906 | 67,442 | 68,959 | 70,454 | 71,873 | 73,293 |
| | | | | Percent Change: | - | 1.0% | 1.6% | 1.7% | 2.0% | 2.3% | 2.4% | 2.4% | 2.3% | 2.2% | 2.2% | 2.0% | 2.0% |
| 36 | 73,464 | 103,536 | 40.93% | Value: | 73,464 | 73,995 | 74,863 | 75,822 | 76,998 | 78,301 | 79,731 | 81,182 | 82,623 | 84,046 | 85,449 | 86,780 | 88,112 |
| | | | | Percent Change: | - | 0.7% | 1.2% | 1.3% | 1.5% | 1.7% | 1.8% | 1.8% | 1.8% | 1.7% | 1.7% | 1.6% | 1.5% |
| 37 | 12,385 | 12,104 | -2.27% | Value: | 12,385 | 12,380 | 12,372 | 12,363 | 12,352 | 12,340 | 12,326 | 12,313 | 12,299 | 12,286 | 12,273 | 12,261 | 12,248 |
| | | | | Percent Change: | - | 0.0% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% |
| **Total (Miami-Dade Co)** | 2,475,120 | 3,278,155 | 32.44% | Value: | 2,475,120 | 2,489,304 | 2,512,466 | 2,536,076 | 2,566,636 | 2,604,294 | 2,642,469 | 2,681,231 | 2,719,700 | 2,757,692 | 2,795,152 | 2,830,701 | 2,866,266 |
| | | | | Percent Change: | - | 0.6% | 0.9% | 1.0% | 1.2% | 1.4% | 1.5% | 1.5% | 1.4% | 1.4% | 1.4% | 1.3% | 1.3% |
| 38 (Broward Co) | 1,731,779 | 2,250,830 | 29.97% | Value: | 1,731,779 | 1,741,034 | 1,756,141 | 1,772,835 | 1,792,742 | 1,815,951 | 1,840,775 | 1,865,956 | 1,890,923 | 1,915,557 | 1,939,823 | 1,962,831 | 1,985,829 |
| | | | | Percent Change: | - | 0.5% | 0.9% | 1.0% | 1.1% | 1.3% | 1.4% | 1.4% | 1.3% | 1.3% | 1.3% | 1.2% | 1.2% |
| 39 (Palm Beach Co) | 1,302,033 | 1,682,599 | 29.23% | Value: | 1,302,033 | 1,308,838 | 1,319,945 | 1,332,216 | 1,346,846 | 1,363,899 | 1,382,133 | 1,400,624 | 1,418,953 | 1,437,031 | 1,454,835 | 1,471,710 | 1,488,575 |
| | | | | Percent Change: | - | 0.5% | 0.8% | 0.9% | 1.1% | 1.3% | 1.3% | 1.3% | 1.3% | 1.3% | 1.2% | 1.2% | 1.1% |
| **Total Model Area** | 7,984,052 | 10,489,739 | 31.38% | TOTAL: | 5,508,932 | 5,539,176 | 5,588,553 | 5,643,127 | 5,708,224 | 5,784,145 | 5,865,378 | 5,947,811 | 6,029,576 | 6,110,281 | 6,189,809 | 6,265,242 | 6,340,671 |
| | | | | Percent Change: | - | 0.5% | 0.9% | 1.0% | 1.2% | 1.3% | 1.4% | 1.4% | 1.4% | 1.3% | 1.3% | 1.2% | 1.2% |





**Table C.2-1 (Cont'd)**
**WEG Forecast for SERPM Model Area**
**Total Population**

| SuperDistrict | 2010 Value | 2035 Value | Pct Chg. | | Forecast Year 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 69,211 | 87,390 | 26.27% | Value: | 78,671 | 79,477 | 80,483 | 81,211 | 81,938 | 82,666 | 83,394 | 84,122 | 84,775 | 85,429 | 86,082 | 86,736 | 87,390 |
| | | | | Percent Change: | 1.0% | 1.0% | 1.0% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% |
| 2 | 61,518 | 72,108 | 17.21% | Value: | 67,145 | 67,615 | 68,085 | 68,508 | 68,932 | 69,356 | 69,780 | 70,204 | 70,585 | 70,966 | 71,346 | 71,727 | 72,108 |
| | | | | Percent Change: | 0.7% | 0.7% | 0.7% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 3 | 172,264 | 187,082 | 8.60% | Value: | 180,138 | 180,795 | 181,452 | 182,045 | 182,638 | 183,231 | 183,825 | 184,419 | 184,951 | 185,483 | 186,016 | 186,549 | 187,082 |
| | | | | Percent Change: | 0.4% | 0.4% | 0.4% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% |
| 4 | 87,181 | 96,844 | 11.08% | Value: | 92,316 | 92,744 | 93,173 | 93,559 | 93,946 | 94,333 | 94,720 | 95,107 | 95,454 | 95,802 | 96,149 | 96,496 | 96,844 |
| | | | | Percent Change: | 0.5% | 0.5% | 0.5% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% |
| 5 | 56,646 | 130,041 | 129.57% | Value: | 95,648 | 98,901 | 102,156 | 105,092 | 108,030 | 110,968 | 113,906 | 116,849 | 119,485 | 122,123 | 124,761 | 127,401 | 130,041 |
| | | | | Percent Change: | 3.5% | 3.4% | 3.3% | 2.9% | 2.8% | 2.7% | 2.6% | 2.6% | 2.3% | 2.2% | 2.2% | 2.1% | 2.1% |
| 6 | 44,888 | 46,122 | 2.75% | Value: | 45,544 | 45,598 | 45,653 | 45,703 | 45,752 | 45,801 | 45,851 | 45,900 | 45,945 | 45,989 | 46,033 | 46,078 | 46,122 |
| | | | | Percent Change: | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% | 0.1% |
| 7 | 78,843 | 91,518 | 16.08% | Value: | 86,578 | 86,140 | 86,702 | 87,209 | 87,717 | 88,224 | 88,732 | 89,240 | 89,695 | 90,151 | 90,606 | 91,062 | 91,518 |
| | | | | Percent Change: | 0.7% | 0.7% | 0.7% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 8 | 78,827 | 88,078 | 11.74% | Value: | 83,743 | 84,153 | 84,563 | 84,933 | 85,304 | 85,674 | 86,045 | 86,415 | 86,748 | 87,080 | 87,413 | 87,745 | 88,078 |
| | | | | Percent Change: | 0.5% | 0.5% | 0.5% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% |
| 9 | 54,625 | 64,445 | 17.98% | Value: | 59,843 | 60,279 | 60,714 | 61,107 | 61,500 | 61,893 | 62,286 | 62,680 | 63,033 | 63,386 | 63,739 | 64,092 | 64,445 |
| | | | | Percent Change: | 0.7% | 0.7% | 0.7% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% |
| 10 | 83,214 | 92,688 | 11.39% | Value: | 88,248 | 88,668 | 89,089 | 89,468 | 89,847 | 90,226 | 90,605 | 90,985 | 91,325 | 91,666 | 92,006 | 92,347 | 92,688 |
| | | | | Percent Change: | 0.5% | 0.5% | 0.5% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% |
| 11 | 154,376 | 192,042 | 24.40% | Value: | 174,391 | 176,061 | 177,732 | 179,236 | 180,740 | 182,254 | 183,763 | 185,272 | 186,625 | 187,978 | 189,333 | 190,687 | 192,042 |
| | | | | Percent Change: | 1.0% | 1.0% | 0.9% | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% | 0.7% | 0.7% | 0.7% | 0.7% | 0.7% |
| 12 | 35,513 | 46,019 | 29.58% | Value: | 41,096 | 41,562 | 42,027 | 42,448 | 42,868 | 43,289 | 43,710 | 44,131 | 44,508 | 44,886 | 45,263 | 45,641 | 46,019 |
| | | | | Percent Change: | 1.1% | 1.1% | 1.1% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% | 0.9% | 0.8% | 0.8% | 0.8% | 0.8% |
| 13 | 155,618 | 168,985 | 8.59% | Value: | 162,721 | 163,314 | 163,907 | 164,441 | 164,976 | 165,511 | 166,047 | 166,582 | 167,063 | 167,543 | 168,023 | 168,504 | 168,985 |
| | | | | Percent Change: | 0.4% | 0.4% | 0.4% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% |
| 14 | 12,668 | 17,181 | 35.63% | Value: | 15,086 | 15,266 | 15,466 | 15,647 | 15,828 | 16,008 | 16,189 | 16,370 | 16,532 | 16,694 | 16,856 | 17,019 | 17,181 |
| | | | | Percent Change: | 1.3% | 1.3% | 1.3% | 1.2% | 1.2% | 1.1% | 1.1% | 1.1% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% |
| 15 | 29,848 | 46,053 | 54.29% | Value: | 38,459 | 39,178 | 39,896 | 40,545 | 41,193 | 41,842 | 42,491 | 43,140 | 43,722 | 44,305 | 44,887 | 45,470 | 46,053 |
| | | | | Percent Change: | 1.9% | 1.9% | 1.8% | 1.6% | 1.6% | 1.6% | 1.5% | 1.5% | 1.3% | 1.3% | 1.3% | 1.3% | 1.3% |
| 16 | 17,523 | 15,323 | -12.55% | Value: | 16,354 | 16,256 | 16,159 | 16,071 | 15,983 | 15,895 | 15,807 | 15,718 | 15,639 | 15,560 | 15,481 | 15,402 | 15,323 |
| | | | | Percent Change: | -0.6% | -0.6% | -0.6% | -0.5% | -0.5% | -0.6% | -0.6% | -0.6% | -0.5% | -0.5% | -0.5% | -0.5% | -0.5% |
| 17 | 443 | 3,713 | 738.15% | Value: | 2,181 | 2,326 | 2,471 | 2,601 | 2,732 | 2,863 | 2,994 | 3,125 | 3,243 | 3,360 | 3,478 | 3,595 | 3,713 |
| | | | | Percent Change: | 7.1% | 6.6% | 6.2% | 5.3% | 5.0% | 4.8% | 4.6% | 4.4% | 3.8% | 3.6% | 3.5% | 3.4% | 3.3% |
| 18 | 17,970 | 29,014 | 61.46% | Value: | 23,839 | 24,328 | 24,818 | 25,260 | 25,702 | 26,144 | 26,586 | 27,029 | 27,426 | 27,823 | 28,220 | 28,617 | 29,014 |
| | | | | Percent Change: | 2.1% | 2.1% | 2.0% | 1.8% | 1.7% | 1.7% | 1.7% | 1.7% | 1.5% | 1.4% | 1.4% | 1.4% | 1.4% |
| 19 | 68,581 | 76,102 | 10.97% | Value: | 72,578 | 72,911 | 73,245 | 73,545 | 73,846 | 74,148 | 74,449 | 74,750 | 75,020 | 75,291 | 75,561 | 75,831 | 76,102 |
| | | | | Percent Change: | 0.5% | 0.5% | 0.5% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% | 0.4% |
| 20 | 116,669 | 159,787 | 36.96% | Value: | 139,582 | 141,493 | 143,405 | 145,130 | 146,856 | 148,582 | 150,309 | 152,037 | 153,586 | 155,135 | 156,685 | 158,236 | 159,787 |
| | | | | Percent Change: | 1.4% | 1.4% | 1.4% | 1.2% | 1.2% | 1.2% | 1.2% | 1.1% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% |
| 21 | 76,820 | 90,710 | 18.08% | Value: | 84,201 | 84,817 | 85,433 | 85,988 | 86,544 | 87,100 | 87,657 | 88,213 | 88,712 | 89,211 | 89,711 | 90,210 | 90,710 |
| | | | | Percent Change: | 0.7% | 0.7% | 0.7% | 0.7% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% |
| 22 | 126,566 | 184,968 | 46.14% | Value: | 157,600 | 160,189 | 162,779 | 165,116 | 167,453 | 169,791 | 172,130 | 174,470 | 176,569 | 178,667 | 180,767 | 182,867 | 184,968 |
| | | | | Percent Change: | 1.7% | 1.6% | 1.6% | 1.4% | 1.4% | 1.4% | 1.4% | 1.4% | 1.2% | 1.2% | 1.2% | 1.2% | 1.1% |
| 23 | 4,143 | 7,338 | 77.12% | Value: | 5,841 | 5,982 | 6,124 | 6,252 | 6,380 | 6,508 | 6,636 | 6,764 | 6,878 | 6,993 | 7,108 | 7,223 | 7,338 |
| | | | | Percent Change: | 2.5% | 2.4% | 2.4% | 2.1% | 2.0% | 2.0% | 2.0% | 1.9% | 1.7% | 1.7% | 1.6% | 1.6% | 1.6% |
| 24 | 187,757 | 230,549 | 22.79% | Value: | 210,496 | 212,393 | 214,291 | 216,003 | 217,716 | 219,429 | 221,143 | 222,857 | 224,395 | 225,932 | 227,471 | 229,010 | 230,549 |
| | | | | Percent Change: | 0.9% | 0.9% | 0.9% | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% | 0.7% | 0.7% | 0.7% | 0.7% | 0.7% |
| 25 | 6,834 | 13,180 | 92.86% | Value: | 10,206 | 10,488 | 10,769 | 11,023 | 11,277 | 11,531 | 11,785 | 12,039 | 12,267 | 12,495 | 12,724 | 12,952 | 13,180 |
| | | | | Percent Change: | 2.8% | 2.8% | 2.7% | 2.4% | 2.3% | 2.3% | 2.2% | 2.2% | 1.9% | 1.9% | 1.8% | 1.8% | 1.8% |
| 26 | 137,095 | 145,619 | 6.22% | Value: | 141,625 | 142,002 | 142,380 | 142,721 | 143,063 | 143,404 | 143,745 | 144,087 | 144,393 | 144,699 | 145,006 | 145,312 | 145,619 |
| | | | | Percent Change: | 0.3% | 0.3% | 0.3% | 0.2% | 0.2% | 0.2% | 0.2% | 0.2% | 0.2% | 0.2% | 0.2% | 0.2% | 0.2% |
| 27 | 45,565 | 54,580 | 19.78% | Value: | 50,356 | 50,755 | 51,155 | 51,516 | 51,876 | 52,237 | 52,598 | 52,960 | 53,283 | 53,607 | 53,932 | 54,256 | 54,580 |
| | | | | Percent Change: | 0.8% | 0.8% | 0.8% | 0.7% | 0.7% | 0.7% | 0.7% | 0.7% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% |
| 28 | 82,688 | 112,817 | 36.44% | Value: | 98,698 | 100,034 | 101,370 | 102,575 | 103,781 | 104,988 | 106,194 | 107,401 | 108,484 | 109,567 | 110,650 | 111,733 | 112,817 |
| | | | | Percent Change: | 1.4% | 1.4% | 1.3% | 1.2% | 1.2% | 1.2% | 1.1% | 1.1% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% |
| 29 | 62,329 | 121,179 | 94.42% | Value: | 93,602 | 96,210 | 98,820 | 101,175 | 103,530 | 105,886 | 108,243 | 110,601 | 112,715 | 114,830 | 116,946 | 119,062 | 121,179 |
| | | | | Percent Change: | 2.9% | 2.8% | 2.7% | 2.4% | 2.3% | 2.3% | 2.2% | 2.2% | 1.9% | 1.9% | 1.8% | 1.8% | 1.8% |
| 30 | 20,226 | 45,530 | 125.11% | Value: | 33,672 | 34,794 | 35,916 | 36,929 | 37,941 | 38,954 | 39,968 | 40,982 | 41,891 | 42,800 | 43,710 | 44,620 | 45,530 |
| | | | | Percent Change: | 3.4% | 3.3% | 3.2% | 2.8% | 2.7% | 2.7% | 2.6% | 2.5% | 2.2% | 2.2% | 2.1% | 2.1% | 2.0% |
| 31 | 86,499 | 207,498 | 139.88% | Value: | 150,797 | 156,161 | 161,527 | 166,368 | 171,210 | 176,055 | 180,901 | 185,749 | 190,096 | 194,444 | 198,794 | 203,145 | 207,498 |
| | | | | Percent Change: | 3.7% | 3.6% | 3.4% | 3.0% | 2.9% | 2.8% | 2.8% | 2.7% | 2.3% | 2.3% | 2.2% | 2.2% | 2.1% |
| 32 | 7,701 | 16,518 | 114.49% | Value: | 12,386 | 12,777 | 13,168 | 13,521 | 13,874 | 14,227 | 14,580 | 14,933 | 15,250 | 15,567 | 15,884 | 16,201 | 16,518 |
| | | | | Percent Change: | 3.3% | 3.2% | 3.1% | 2.7% | 2.6% | 2.5% | 2.5% | 2.4% | 2.1% | 2.1% | 2.0% | 2.0% | 2.0% |
| 33 | 39,042 | 69,655 | 78.41% | Value: | 55,310 | 56,667 | 58,024 | 59,249 | 60,474 | 61,700 | 62,926 | 64,152 | 65,252 | 66,352 | 67,453 | 68,554 | 69,655 |
| | | | | Percent Change: | 2.5% | 2.5% | 2.4% | 2.1% | 2.1% | 2.0% | 2.0% | 1.9% | 1.7% | 1.7% | 1.7% | 1.6% | 1.6% |
| 34 | 51,902 | 62,103 | 19.65% | Value: | 57,323 | 57,775 | 58,227 | 58,635 | 59,044 | 59,452 | 59,861 | 60,269 | 60,636 | 61,002 | 61,369 | 61,736 | 62,103 |
| | | | | Percent Change: | 0.8% | 0.8% | 0.8% | 0.7% | 0.7% | 0.7% | 0.7% | 0.7% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% |
| 35 | 57,678 | 89,736 | 55.58% | Value: | 74,713 | 76,135 | 77,556 | 78,839 | 80,122 | 81,405 | 82,689 | 83,974 | 85,125 | 86,277 | 87,430 | 88,583 | 89,736 |
| | | | | Percent Change: | 1.9% | 1.9% | 1.9% | 1.7% | 1.6% | 1.6% | 1.6% | 1.6% | 1.4% | 1.4% | 1.3% | 1.3% | 1.3% |
| 36 | 73,464 | 103,536 | 40.93% | Value: | 89,444 | 90,777 | 92,111 | 93,314 | 94,517 | 95,721 | 96,926 | 98,131 | 99,211 | 100,292 | 101,373 | 102,454 | 103,536 |
| | | | | Percent Change: | 1.5% | 1.5% | 1.5% | 1.3% | 1.3% | 1.3% | 1.3% | 1.2% | 1.1% | 1.1% | 1.1% | 1.1% | 1.1% |
| 37 | 12,385 | 12,104 | -2.27% | Value: | 12,236 | 12,223 | 12,211 | 12,200 | 12,188 | 12,177 | 12,166 | 12,155 | 12,144 | 12,134 | 12,124 | 12,114 | 12,104 |
| | | | | Percent Change: | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% | -0.1% |
| **Total (Miami-Dade Co)** | 2,475,120 | 3,278,155 | 32.44% | Value: 0 | 2,901,848 | 2,937,448 | 2,973,060 | 3,005,185 | 3,037,323 | 3,069,474 | 3,101,637 | 3,133,813 | 3,162,662 | 3,191,521 | 3,220,389 | 3

**Table C.2-2**
**WEG Forecast for SERPM Model Area**
**Total Employment**

| SuperDistrict | 2010 Value | 2035 Value | Pct Chg. | | Forecast Year 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 57,907 | 96,483 | 66.62% | Value: | 57,907 | 58,588 | 59,701 | 60,931 | 62,399 | 64,112 | 65,946 | 67,808 | 69,656 | 71,481 | 73,281 | 74,988 | 76,697 |
| | | | | Percent Change: | - | 1.2% | 1.9% | 2.1% | 2.4% | 2.7% | 2.9% | 2.8% | 2.7% | 2.6% | 2.5% | 2.3% | 2.3% |
| 2 | 17,957 | 25,468 | 41.83% | Value: | 17,957 | 18,090 | 18,306 | 18,546 | 18,832 | 19,165 | 19,522 | 19,885 | 20,245 | 20,600 | 20,950 | 21,283 | 21,615 |
| | | | | Percent Change: | - | 0.7% | 1.2% | 1.3% | 1.5% | 1.8% | 1.9% | 1.9% | 1.8% | 1.8% | 1.7% | 1.6% | 1.6% |
| 3 | 83,463 | 122,238 | 46.46% | Value: | 83,463 | 84,148 | 85,266 | 86,503 | 87,978 | 89,700 | 91,544 | 93,415 | 95,273 | 97,107 | 98,916 | 100,632 | 102,350 |
| | | | | Percent Change: | - | 0.8% | 1.3% | 1.5% | 1.7% | 2.0% | 2.1% | 2.0% | 2.0% | 1.9% | 1.9% | 1.7% | 1.7% |
| 4 | 35,345 | 48,930 | 38.44% | Value: | 35,345 | 35,585 | 35,977 | 36,410 | 36,927 | 37,530 | 38,176 | 38,832 | 39,483 | 40,125 | 40,759 | 41,360 | 41,962 |
| | | | | Percent Change: | - | 0.7% | 1.1% | 1.2% | 1.4% | 1.6% | 1.7% | 1.7% | 1.7% | 1.6% | 1.6% | 1.5% | 1.5% |
| 5 | 90,231 | 191,708 | 112.46% | Value: | 90,231 | 92,023 | 94,950 | 98,187 | 102,048 | 106,554 | 111,378 | 116,277 | 121,138 | 125,939 | 130,672 | 135,165 | 139,659 |
| | | | | Percent Change: | - | 2.0% | 3.2% | 3.4% | 3.9% | 4.4% | 4.5% | 4.4% | 4.2% | 4.0% | 3.8% | 3.4% | 3.3% |
| 6 | 42,667 | 76,625 | 79.59% | Value: | 42,667 | 43,267 | 44,246 | 45,329 | 46,622 | 48,129 | 49,744 | 51,383 | 53,010 | 54,616 | 56,200 | 57,703 | 59,207 |
| | | | | Percent Change: | - | 1.4% | 2.3% | 2.4% | 2.9% | 3.2% | 3.4% | 3.3% | 3.2% | 3.0% | 2.9% | 2.7% | 2.6% |
| 7 | 34,436 | 63,955 | 85.72% | Value: | 34,436 | 34,957 | 35,809 | 36,750 | 37,874 | 39,184 | 40,588 | 42,012 | 43,427 | 44,823 | 46,200 | 47,507 | 48,814 |
| | | | | Percent Change: | - | 1.5% | 2.4% | 2.6% | 3.1% | 3.5% | 3.6% | 3.5% | 3.4% | 3.2% | 3.1% | 2.8% | 2.8% |
| 8 | 42,248 | 88,093 | 108.51% | Value: | 42,248 | 43,058 | 44,380 | 45,842 | 47,587 | 49,623 | 51,802 | 54,015 | 56,211 | 58,380 | 60,518 | 62,548 | 64,578 |
| | | | | Percent Change: | - | 1.9% | 3.1% | 3.3% | 3.8% | 4.3% | 4.4% | 4.3% | 4.1% | 3.9% | 3.7% | 3.4% | 3.2% |
| 9 | 14,606 | 18,881 | 29.27% | Value: | 14,606 | 14,682 | 14,805 | 14,941 | 15,104 | 15,294 | 15,497 | 15,703 | 15,908 | 16,110 | 16,310 | 16,499 | 16,688 |
| | | | | Percent Change: | - | 0.5% | 0.8% | 0.9% | 1.1% | 1.3% | 1.3% | 1.3% | 1.3% | 1.3% | 1.2% | 1.2% | 1.1% |
| 10 | 13,321 | 18,841 | 41.44% | Value: | 13,321 | 13,418 | 13,578 | 13,754 | 13,964 | 14,209 | 14,471 | 14,738 | 15,002 | 15,263 | 15,521 | 15,765 | 16,010 |
| | | | | Percent Change: | - | 0.7% | 1.2% | 1.3% | 1.5% | 1.8% | 1.8% | 1.8% | 1.8% | 1.7% | 1.7% | 1.6% | 1.6% |
| 11 | 46,981 | 72,185 | 53.65% | Value: | 46,981 | 47,426 | 48,153 | 48,957 | 49,916 | 51,035 | 52,233 | 53,450 | 54,657 | 55,850 | 57,025 | 58,141 | 59,257 |
| | | | | Percent Change: | - | 0.9% | 1.5% | 1.7% | 2.0% | 2.2% | 2.3% | 2.3% | 2.3% | 2.2% | 2.1% | 2.0% | 1.9% |
| 12 | 22,130 | 29,413 | 32.91% | Value: | 22,130 | 22,259 | 22,469 | 22,701 | 22,978 | 23,302 | 23,648 | 23,999 | 24,348 | 24,693 | 25,032 | 25,355 | 25,677 |
| | | | | Percent Change: | - | 0.6% | 0.9% | 1.0% | 1.2% | 1.4% | 1.5% | 1.5% | 1.5% | 1.4% | 1.4% | 1.3% | 1.3% |
| 13 | 55,874 | 90,104 | 61.26% | Value: | 55,874 | 56,479 | 57,466 | 58,558 | 59,860 | 61,380 | 63,007 | 64,660 | 66,299 | 67,919 | 69,516 | 71,031 | 72,547 |
| | | | | Percent Change: | - | 1.1% | 1.7% | 1.9% | 2.2% | 2.5% | 2.7% | 2.6% | 2.5% | 2.4% | 2.4% | 2.2% | 2.1% |
| 14 | 32,784 | 59,460 | 81.37% | Value: | 32,784 | 33,255 | 34,025 | 34,875 | 35,891 | 37,075 | 38,343 | 39,631 | 40,909 | 42,171 | 43,415 | 44,596 | 45,777 |
| | | | | Percent Change: | - | 1.4% | 2.3% | 2.5% | 2.9% | 3.3% | 3.4% | 3.4% | 3.2% | 3.1% | 3.0% | 2.7% | 2.6% |
| 15 | 99,177 | 167,703 | 69.09% | Value: | 99,177 | 100,387 | 102,364 | 104,549 | 107,157 | 110,200 | 113,458 | 116,765 | 120,048 | 123,290 | 126,486 | 129,520 | 132,555 |
| | | | | Percent Change: | - | 1.2% | 2.0% | 2.1% | 2.5% | 2.8% | 3.0% | 2.9% | 2.8% | 2.7% | 2.6% | 2.4% | 2.3% |
| 16 | 40,057 | 71,992 | 79.72% | Value: | 40,057 | 40,621 | 41,542 | 42,561 | 43,776 | 45,194 | 46,712 | 48,254 | 49,783 | 51,294 | 52,784 | 54,198 | 55,612 |
| | | | | Percent Change: | - | 1.4% | 2.3% | 2.5% | 2.9% | 3.2% | 3.4% | 3.3% | 3.2% | 3.0% | 2.9% | 2.7% | 2.6% |
| 17 | 2,444 | 4,149 | 69.76% | Value: | 2,444 | 2,474 | 2,523 | 2,578 | 2,643 | 2,718 | 2,799 | 2,882 | 2,963 | 3,044 | 3,123 | 3,199 | 3,274 |
| | | | | Percent Change: | - | 1.2% | 2.0% | 2.2% | 2.5% | 2.9% | 3.0% | 2.9% | 2.8% | 2.7% | 2.6% | 2.4% | 2.4% |
| 18 | 3,067 | 4,870 | 58.79% | Value: | 3,067 | 3,099 | 3,151 | 3,208 | 3,277 | 3,357 | 3,443 | 3,530 | 3,616 | 3,701 | 3,786 | 3,865 | 3,945 |
| | | | | Percent Change: | - | 1.0% | 1.7% | 1.8% | 2.1% | 2.4% | 2.6% | 2.5% | 2.4% | 2.4% | 2.3% | 2.1% | 2.1% |
| 19 | 15,505 | 13,710 | -11.58% | Value: | 15,505 | 15,473 | 15,422 | 15,364 | 15,296 | 15,216 | 15,131 | 15,044 | 14,958 | 14,873 | 14,790 | 14,710 | 14,631 |
| | | | | Percent Change: | - | -0.2% | -0.3% | -0.4% | -0.4% | -0.5% | -0.6% | -0.6% | -0.6% | -0.6% | -0.6% | -0.5% | -0.5% |
| 20 | 14,845 | 15,915 | 7.21% | Value: | 14,845 | 14,864 | 14,895 | 14,929 | 14,970 | 15,017 | 15,068 | 15,120 | 15,171 | 15,222 | 15,271 | 15,319 | 15,366 |
| | | | | Percent Change: | - | 0.1% | 0.2% | 0.2% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% |
| 21 | 36,462 | 46,748 | 28.21% | Value: | 36,462 | 36,644 | 36,940 | 37,268 | 37,660 | 38,117 | 38,606 | 39,102 | 39,595 | 40,081 | 40,561 | 41,017 | 41,472 |
| | | | | Percent Change: | - | 0.5% | 0.8% | 0.9% | 1.1% | 1.2% | 1.3% | 1.3% | 1.3% | 1.2% | 1.2% | 1.1% | 1.1% |
| 22 | 40,054 | 54,991 | 37.29% | Value: | 40,054 | 40,318 | 40,749 | 41,225 | 41,793 | 42,457 | 43,167 | 43,888 | 44,603 | 45,310 | 46,007 | 46,668 | 47,330 |
| | | | | Percent Change: | - | 0.7% | 1.1% | 1.2% | 1.4% | 1.6% | 1.7% | 1.7% | 1.6% | 1.6% | 1.5% | 1.4% | 1.4% |
| 23 | 46,652 | 93,207 | 99.79% | Value: | 46,652 | 47,474 | 48,817 | 50,302 | 52,073 | 54,141 | 56,354 | 58,601 | 60,831 | 63,034 | 65,205 | 67,266 | 69,328 |
| | | | | Percent Change: | - | 1.8% | 2.8% | 3.0% | 3.5% | 4.0% | 4.1% | 4.0% | 3.8% | 3.6% | 3.4% | 3.2% | 3.1% |
| 24 | 61,599 | 89,187 | 44.79% | Value: | 61,599 | 62,086 | 62,882 | 63,762 | 64,812 | 66,037 | 67,348 | 68,680 | 70,001 | 71,307 | 72,594 | 73,815 | 75,037 |
| | | | | Percent Change: | - | 0.8% | 1.3% | 1.4% | 1.6% | 1.9% | 2.0% | 2.0% | 1.9% | 1.9% | 1.8% | 1.7% | 1.7% |
| 25 | 826 | 1,156 | 39.95% | Value: | 826 | 832 | 841 | 852 | 864 | 879 | 895 | 911 | 927 | 942 | 958 | 972 | 987 |
| | | | | Percent Change: | - | 0.7% | 1.1% | 1.3% | 1.5% | 1.7% | 1.8% | 1.8% | 1.7% | 1.7% | 1.6% | 1.5% | 1.5% |
| 26 | 111,764 | 184,092 | 64.71% | Value: | 111,764 | 113,042 | 115,128 | 117,434 | 120,187 | 123,399 | 126,837 | 130,328 | 133,793 | 137,215 | 140,589 | 143,791 | 146,994 |
| | | | | Percent Change: | - | 1.1% | 1.8% | 2.0% | 2.3% | 2.7% | 2.8% | 2.8% | 2.7% | 2.6% | 2.5% | 2.3% | 2.2% |
| 27 | 30,599 | 35,590 | 16.31% | Value: | 30,599 | 30,687 | 30,831 | 30,990 | 31,180 | 31,402 | 31,639 | 31,880 | 32,119 | 32,355 | 32,588 | 32,809 | 33,030 |
| | | | | Percent Change: | - | 0.3% | 0.5% | 0.5% | 0.6% | 0.7% | 0.8% | 0.8% | 0.7% | 0.7% | 0.7% | 0.7% | 0.7% |
| 28 | 44,335 | 68,540 | 54.60% | Value: | 44,335 | 44,763 | 45,461 | 46,233 | 47,154 | 48,229 | 49,379 | 50,548 | 51,707 | 52,852 | 53,981 | 55,053 | 56,125 |
| | | | | Percent Change: | - | 1.0% | 1.6% | 1.7% | 2.0% | 2.3% | 2.4% | 2.4% | 2.3% | 2.2% | 2.1% | 2.0% | 1.9% |
| 29 | 12,592 | 17,692 | 40.50% | Value: | 12,592 | 12,682 | 12,829 | 12,992 | 13,186 | 13,412 | 13,655 | 13,901 | 14,145 | 14,387 | 14,624 | 14,850 | 15,076 |
| | | | | Percent Change: | - | 0.7% | 1.2% | 1.3% | 1.5% | 1.7% | 1.8% | 1.8% | 1.8% | 1.7% | 1.7% | 1.5% | 1.5% |
| 30 | 3,221 | 4,207 | 30.61% | Value: | 3,221 | 3,238 | 3,267 | 3,299 | 3,336 | 3,380 | 3,426 | 3,474 | 3,521 | 3,568 | 3,614 | 3,658 | 3,701 |
| | | | | Percent Change: | - | 0.5% | 0.9% | 1.0% | 1.1% | 1.3% | 1.4% | 1.4% | 1.4% | 1.3% | 1.3% | 1.2% | 1.2% |
| 31 | 15,361 | 21,112 | 37.44% | Value: | 15,361 | 15,463 | 15,628 | 15,812 | 16,031 | 16,286 | 16,559 | 16,837 | 17,113 | 17,385 | 17,653 | 17,908 | 18,162 |
| | | | | Percent Change: | - | 0.7% | 1.1% | 1.2% | 1.4% | 1.6% | 1.7% | 1.7% | 1.6% | 1.6% | 1.5% | 1.4% | 1.4% |
| 32 | 3,077 | 3,856 | 25.32% | Value: | 3,077 | 3,091 | 3,113 | 3,138 | 3,168 | 3,202 | 3,239 | 3,277 | 3,314 | 3,351 | 3,387 | 3,422 | 3,456 |
| | | | | Percent Change: | - | 0.4% | 0.7% | 0.8% | 0.9% | 1.1% | 1.2% | 1.2% | 1.1% | 1.1% | 1.1% | 1.0% | 1.0% |
| 33 | 17,678 | 21,170 | 19.75% | Value: | 17,678 | 17,740 | 17,840 | 17,952 | 18,085 | 18,240 | 18,406 | 18,574 | 18,742 | 18,907 | 19,070 | 19,224 | 19,379 |
| | | | | Percent Change: | - | 0.3% | 0.6% | 0.6% | 0.7% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.8% | 0.8% |
| 34 | 27,639 | 25,665 | -7.14% | Value: | 27,639 | 27,604 | 27,547 | 27,484 | 27,409 | 27,321 | 27,228 | 27,132 | 27,038 | 26,944 | 26,852 | 26,765 | 26,677 |
| | | | | Percent Change: | - | -0.1% | -0.2% | -0.2% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% |
| 35 | 11,490 | 18,352 | 59.72% | Value: | 11,490 | 11,611 | 11,809 | 12,028 | 12,289 | 12,594 | 12,920 | 13,251 | 13,580 | 13,905 | 14,225 | 14,528 | 14,832 |
| | | | | Percent Change: | - | 1.1% | 1.7% | 1.9% | 2.2% | 2.5% | 2.6% | 2.6% | 2.5% | 2.4% | 2.3% | 2.1% | 2.1% |
| 36 | 15,155 | 19,099 | 26.02% | Value: | 15,155 | 15,225 | 15,338 | 15,464 | 15,614 | 15,789 | 15,977 | 16,167 | 16,356 | 16,543 | 16,727 | 16,901 | 17,076 |
| | | | | Percent Change: | - | 0.5% | 0.7% | 0.8% | 1.0% | 1.1% | 1.2% | 1.2% | 1.2% | 1.1% | 1.1% | 1.0% | 1.0% |
| 37 | 5,634 | 8,828 | 56.69% | Value: | 5,634 | 5,690 | 5,783 | 5,884 | 6,006 | 6,148 | 6,300 | 6,454 | 6,607 | 6,758 | 6,907 | 7,048 | 7,190 |
| | | | | Percent Change: | - | 1.0% | 1.6% | 1.8% | 2.1% | 2.4% | 2.5% | 2.4% | 2.4% | 2.3% | 2.2% | 2.0% | 2.0% |
| **Total (Miami-Dade Co)** | 1,249,183 | 1,994,215 | 59.64% | Value: | 1,249,183 | 1,262,343 | 1,283,831 | 1,307,591 | 1,335,944 | 1,369,027 | 1,404,445 | 1,440,406 | 1,476,097 | 1,511,345 | 1,546,099 | 1,579,080 | 1,612,077 |
| | | | | Percent Change: | - | 1.1% | 1.7% | 1.9% | 2.2% | 2.5% | 2.6% | 2.6% | 2.5% | 2.4% | 2.3% | 2.1% | 2.1% |
| 38 (Broward Co) | 867,647 | 1,011,286 | 16.56% | Value: | 867,647 | 870,208 | 874,389 | 879,099 | 884,517 | 890,940 | 897,810 | 904,778 | 911,688 | 918,505 | 925,220 | 931,587 | 937,951 |
| | | | | Percent Change: | - | 0.3% | 0.5% | 0.5% | 0.6% | 0.7% | 0.8% | 0.8% | 0.8% | 0.7% | 0.7% | 0.7% | 0.7% |
| 39 (Palm Beach Co) | 638,085 | 800,045 | 25.38% | Value: | 638,085 | 640,981 | 645,708 | 650,930 | 657,157 | 664,414 | 672,174 | 680,043 | 687,843 | 695,537 | 703,114 | 710,296 | 717,473 |
| | | | | Percent Change: | - | 0.5% | 0.7% | 0.8% | 1.0% | 1.1% | 1.2% | 1.2% | 1.1% | 1.1% | 1.1% | 1.0% | 1.0% |
| **Total Model Area** | 4,004,098 | 5,799,761 | 44.85% | TOTAL: | 2,754,915 | 2,773,532 | 2,803,928 | 2,837,530 | 2,877,618 | 2,924,381 | 2,974,428 | 3,025,228 | 3,075,628 | 3,125,387 | 3,174,432 | 3,220,963 | 3,267,501 |
| | | | | Percent Change: | - | 0.7% | 1.1% | 1.2% | 1.4% | 1.6% | 1.7% | 1.7% | 1.7% | 1.6% | 1.6% | 1.5% | 1.4% |





**Table C.2-2 (Cont'd)**
**WEG Forecast for SERPM Model Area**
**Total Employment**

| SuperDistrict | 2010 Value | 2035 Value | Pct Chg. | | Forecast Year 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 57,907 | 96,483 | 66.62% | Value: | 78,406 | 80,116 | 81,827 | 83,370 | 84,914 | 86,458 | 88,003 | 89,549 | 90,935 | 92,321 | 93,708 | 95,095 | 96,483 |
| | | | | Percent Change: | 2.2% | 2.2% | 2.1% | 1.9% | 1.9% | 1.8% | 1.8% | 1.8% | 1.5% | 1.5% | 1.5% | 1.5% | 1.5% |
| 2 | 17,957 | 25,468 | 41.83% | Value: | 21,948 | 22,281 | 22,614 | 22,915 | 23,215 | 23,516 | 23,817 | 24,118 | 24,388 | 24,658 | 24,928 | 25,198 | 25,468 |
| | | | | Percent Change: | 1.5% | 1.5% | 1.5% | 1.3% | 1.3% | 1.3% | 1.3% | 1.3% | 1.1% | 1.1% | 1.1% | 1.1% | 1.1% |
| 3 | 83,463 | 122,238 | 46.46% | Value: | 104,068 | 105,787 | 107,506 | 109,057 | 110,609 | 112,162 | 113,715 | 115,268 | 116,661 | 118,055 | 119,449 | 120,843 | 122,238 |
| | | | | Percent Change: | 1.7% | 1.7% | 1.6% | 1.4% | 1.4% | 1.4% | 1.4% | 1.4% | 1.2% | 1.2% | 1.2% | 1.2% | 1.2% |
| 4 | 35,345 | 48,930 | 38.44% | Value: | 42,564 | 43,166 | 43,769 | 44,312 | 44,856 | 45,400 | 45,944 | 46,488 | 46,976 | 47,464 | 47,953 | 48,441 | 48,930 |
| | | | | Percent Change: | 1.4% | 1.4% | 1.4% | 1.2% | 1.2% | 1.2% | 1.2% | 1.2% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% |
| 5 | 90,231 | 191,708 | 112.46% | Value: | 144,155 | 148,654 | 153,154 | 157,214 | 161,275 | 165,338 | 169,402 | 173,466 | 177,113 | 180,760 | 184,408 | 188,058 | 191,708 |
| | | | | Percent Change: | 3.2% | 3.1% | 3.0% | 2.7% | 2.6% | 2.5% | 2.5% | 2.4% | 2.1% | 2.1% | 2.0% | 2.0% | 1.9% |
| 6 | 42,667 | 76,625 | 79.59% | Value: | 60,712 | 62,217 | 63,723 | 65,082 | 66,441 | 67,800 | 69,161 | 70,521 | 71,741 | 72,961 | 74,182 | 75,403 | 76,625 |
| | | | | Percent Change: | 2.5% | 2.5% | 2.4% | 2.1% | 2.1% | 2.0% | 2.0% | 2.0% | 1.7% | 1.7% | 1.7% | 1.6% | 1.6% |
| 7 | 34,436 | 63,955 | 85.72% | Value: | 50,122 | 51,431 | 52,740 | 53,921 | 55,102 | 56,284 | 57,466 | 58,649 | 59,710 | 60,770 | 61,832 | 62,893 | 63,955 |
| | | | | Percent Change: | 2.7% | 2.6% | 2.5% | 2.2% | 2.2% | 2.1% | 2.1% | 2.1% | 1.8% | 1.8% | 1.7% | 1.7% | 1.7% |
| 8 | 42,248 | 88,093 | 108.51% | Value: | 66,610 | 68,642 | 70,675 | 72,509 | 74,344 | 76,179 | 78,016 | 79,853 | 81,500 | 83,147 | 84,795 | 86,444 | 88,093 |
| | | | | Percent Change: | 3.1% | 3.1% | 3.0% | 2.6% | 2.5% | 2.5% | 2.4% | 2.4% | 2.1% | 2.0% | 2.0% | 1.9% | 1.9% |
| 9 | 14,606 | 18,881 | 29.27% | Value: | 16,878 | 17,067 | 17,257 | 17,428 | 17,599 | 17,770 | 17,941 | 18,113 | 18,266 | 18,420 | 18,573 | 18,727 | 18,881 |
| | | | | Percent Change: | 1.1% | 1.1% | 1.1% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% |
| 10 | 13,321 | 18,841 | 41.44% | Value: | 16,254 | 16,499 | 16,744 | 16,965 | 17,186 | 17,407 | 17,628 | 17,849 | 18,047 | 18,245 | 18,444 | 18,642 | 18,841 |
| | | | | Percent Change: | 1.5% | 1.5% | 1.5% | 1.3% | 1.3% | 1.3% | 1.3% | 1.3% | 1.1% | 1.1% | 1.1% | 1.1% | 1.1% |
| 11 | 46,981 | 72,185 | 53.65% | Value: | 60,374 | 61,492 | 62,609 | 63,618 | 64,626 | 65,635 | 66,645 | 67,655 | 68,560 | 69,466 | 70,372 | 71,278 | 72,185 |
| | | | | Percent Change: | 1.9% | 1.9% | 1.8% | 1.6% | 1.6% | 1.6% | 1.5% | 1.5% | 1.3% | 1.3% | 1.3% | 1.3% | 1.3% |
| 12 | 22,130 | 29,413 | 32.91% | Value: | 26,000 | 26,323 | 26,646 | 26,937 | 27,229 | 27,520 | 27,812 | 28,104 | 28,366 | 28,627 | 28,889 | 29,151 | 29,413 |
| | | | | Percent Change: | 1.3% | 1.2% | 1.2% | 1.1% | 1.1% | 1.1% | 1.1% | 1.0% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% |
| 13 | 55,874 | 90,104 | 61.26% | Value: | 74,084 | 75,581 | 77,099 | 78,468 | 79,838 | 81,209 | 82,580 | 83,951 | 85,181 | 86,411 | 87,642 | 88,873 | 90,104 |
| | | | | Percent Change: | 2.1% | 2.0% | 2.0% | 1.8% | 1.7% | 1.7% | 1.7% | 1.7% | 1.5% | 1.4% | 1.4% | 1.4% | 1.4% |
| 14 | 32,784 | 59,460 | 81.37% | Value: | 46,959 | 48,142 | 49,325 | 50,392 | 51,460 | 52,528 | 53,596 | 54,665 | 55,623 | 56,582 | 57,541 | 58,500 | 59,460 |
| | | | | Percent Change: | 2.6% | 2.5% | 2.5% | 2.2% | 2.1% | 2.1% | 2.0% | 2.0% | 1.8% | 1.7% | 1.7% | 1.7% | 1.6% |
| 15 | 99,177 | 167,703 | 69.09% | Value: | 135,591 | 138,629 | 141,668 | 144,409 | 147,152 | 149,895 | 152,640 | 155,386 | 157,848 | 160,310 | 162,774 | 165,238 | 167,703 |
| | | | | Percent Change: | 2.3% | 2.2% | 2.2% | 1.9% | 1.9% | 1.9% | 1.8% | 1.8% | 1.6% | 1.6% | 1.5% | 1.5% | 1.5% |
| 16 | 40,057 | 71,992 | 79.72% | Value: | 57,027 | 58,443 | 59,859 | 61,137 | 62,415 | 63,693 | 64,972 | 66,252 | 67,399 | 68,547 | 69,695 | 70,843 | 71,992 |
| | | | | Percent Change: | 2.5% | 2.5% | 2.4% | 2.1% | 2.1% | 2.0% | 2.0% | 2.0% | 1.7% | 1.7% | 1.7% | 1.6% | 1.6% |
| 17 | 2,444 | 4,149 | 69.76% | Value: | 3,350 | 3,426 | 3,501 | 3,569 | 3,638 | 3,706 | 3,774 | 3,843 | 3,904 | 3,965 | 4,026 | 4,088 | 4,149 |
| | | | | Percent Change: | 2.3% | 2.3% | 2.2% | 1.9% | 1.9% | 1.9% | 1.8% | 1.8% | 1.6% | 1.6% | 1.5% | 1.5% | 1.5% |
| 18 | 3,067 | 4,870 | 58.79% | Value: | 4,025 | 4,105 | 4,185 | 4,257 | 4,329 | 4,401 | 4,474 | 4,546 | 4,611 | 4,675 | 4,740 | 4,805 | 4,870 |
| | | | | Percent Change: | 2.0% | 2.0% | 1.9% | 1.7% | 1.7% | 1.7% | 1.6% | 1.6% | 1.4% | 1.4% | 1.4% | 1.4% | 1.3% |
| 19 | 15,505 | 13,710 | -11.58% | Value: | 14,551 | 14,472 | 14,392 | 14,320 | 14,248 | 14,176 | 14,105 | 14,033 | 13,968 | 13,904 | 13,839 | 13,775 | 13,710 |
| | | | | Percent Change: | -0.5% | -0.5% | -0.6% | -0.5% | -0.5% | -0.5% | -0.5% | -0.5% | -0.5% | -0.5% | -0.5% | -0.5% | -0.5% |
| 20 | 14,845 | 15,915 | 7.21% | Value: | 15,414 | 15,461 | 15,508 | 15,551 | 15,594 | 15,637 | 15,680 | 15,723 | 15,761 | 15,800 | 15,838 | 15,877 | 15,915 |
| | | | | Percent Change: | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.3% | 0.2% | 0.2% | 0.2% | 0.2% | 0.2% |
| 21 | 36,462 | 46,748 | 28.21% | Value: | 41,928 | 42,384 | 42,840 | 43,252 | 43,663 | 44,075 | 44,487 | 44,899 | 45,269 | 45,638 | 46,008 | 46,378 | 46,748 |
| | | | | Percent Change: | 1.1% | 1.1% | 1.1% | 1.0% | 1.0% | 0.9% | 0.9% | 0.9% | 0.8% | 0.8% | 0.8% | 0.8% | 0.8% |
| 22 | 40,054 | 54,991 | 37.29% | Value: | 47,991 | 48,654 | 49,316 | 49,914 | 50,511 | 51,109 | 51,708 | 52,306 | 52,843 | 53,380 | 53,917 | 54,454 | 54,991 |
| | | | | Percent Change: | 1.4% | 1.4% | 1.4% | 1.2% | 1.2% | 1.2% | 1.2% | 1.2% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% |
| 23 | 46,652 | 93,207 | 99.79% | Value: | 71,391 | 73,455 | 75,519 | 77,382 | 79,245 | 81,109 | 82,974 | 84,839 | 86,511 | 88,184 | 89,858 | 91,532 | 93,207 |
| | | | | Percent Change: | 3.0% | 2.9% | 2.8% | 2.5% | 2.4% | 2.3% | 2.3% | 2.2% | 2.0% | 1.9% | 1.9% | 1.9% | 1.8% |
| 24 | 61,599 | 89,187 | 44.79% | Value: | 76,259 | 77,482 | 78,706 | 79,809 | 80,913 | 82,018 | 83,123 | 84,226 | 85,219 | 86,211 | 87,202 | 88,195 | 89,187 |
| | | | | Percent Change: | 1.6% | 1.6% | 1.6% | 1.4% | 1.4% | 1.4% | 1.3% | 1.3% | 1.2% | 1.2% | 1.2% | 1.1% | 1.1% |
| 25 | 826 | 1,156 | 39.95% | Value: | 1,001 | 1,016 | 1,031 | 1,044 | 1,057 | 1,070 | 1,083 | 1,097 | 1,109 | 1,120 | 1,132 | 1,144 | 1,156 |
| | | | | Percent Change: | 1.5% | 1.5% | 1.4% | 1.3% | 1.3% | 1.2% | 1.2% | 1.2% | 1.1% | 1.1% | 1.1% | 1.0% | 1.0% |
| 26 | 111,764 | 184,092 | 64.71% | Value: | 150,199 | 153,405 | 156,613 | 159,506 | 162,401 | 165,296 | 168,193 | 171,091 | 173,690 | 176,289 | 178,889 | 181,490 | 184,092 |
| | | | | Percent Change: | 2.2% | 2.1% | 2.1% | 1.8% | 1.8% | 1.8% | 1.8% | 1.7% | 1.5% | 1.5% | 1.5% | 1.5% | 1.4% |
| 27 | 30,599 | 35,590 | 16.31% | Value: | 33,251 | 33,472 | 33,694 | 33,893 | 34,093 | 34,293 | 34,493 | 34,693 | 34,872 | 35,052 | 35,231 | 35,410 | 35,590 |
| | | | | Percent Change: | 0.7% | 0.7% | 0.7% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% | 0.5% | 0.5% | 0.5% | 0.5% | 0.5% |
| 28 | 44,335 | 68,540 | 54.60% | Value: | 57,197 | 58,270 | 59,344 | 60,312 | 61,281 | 62,250 | 63,219 | 64,189 | 65,059 | 65,929 | 66,799 | 67,669 | 68,540 |
| | | | | Percent Change: | 1.9% | 1.9% | 1.8% | 1.6% | 1.6% | 1.6% | 1.6% | 1.5% | 1.4% | 1.3% | 1.3% | 1.3% | 1.3% |
| 29 | 12,592 | 17,692 | 40.50% | Value: | 15,302 | 15,528 | 15,754 | 15,958 | 16,163 | 16,367 | 16,571 | 16,775 | 16,959 | 17,142 | 17,325 | 17,509 | 17,692 |
| | | | | Percent Change: | 1.5% | 1.5% | 1.5% | 1.3% | 1.3% | 1.3% | 1.2% | 1.2% | 1.1% | 1.1% | 1.1% | 1.1% | 1.0% |
| 30 | 3,221 | 4,207 | 30.61% | Value: | 3,745 | 3,789 | 3,832 | 3,872 | 3,911 | 3,951 | 3,990 | 4,030 | 4,065 | 4,101 | 4,136 | 4,172 | 4,207 |
| | | | | Percent Change: | 1.2% | 1.2% | 1.2% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% |
| 31 | 15,361 | 21,112 | 37.44% | Value: | 18,417 | 18,672 | 18,927 | 19,157 | 19,387 | 19,618 | 19,848 | 20,078 | 20,285 | 20,492 | 20,698 | 20,905 | 21,112 |
| | | | | Percent Change: | 1.4% | 1.4% | 1.4% | 1.2% | 1.2% | 1.2% | 1.2% | 1.2% | 1.0% | 1.0% | 1.0% | 1.0% | 1.0% |
| 32 | 3,077 | 3,856 | 25.32% | Value: | 3,491 | 3,525 | 3,560 | 3,591 | 3,622 | 3,654 | 3,685 | 3,716 | 3,744 | 3,772 | 3,800 | 3,828 | 3,856 |
| | | | | Percent Change: | 1.0% | 1.0% | 1.0% | 0.9% | 0.9% | 0.9% | 0.8% | 0.8% | 0.8% | 0.7% | 0.7% | 0.7% | 0.7% |
| 33 | 17,678 | 21,170 | 19.75% | Value: | 19,534 | 19,688 | 19,843 | 19,983 | 20,123 | 20,263 | 20,402 | 20,542 | 20,668 | 20,793 | 20,919 | 21,044 | 21,170 |
| | | | | Percent Change: | 0.8% | 0.8% | 0.8% | 0.7% | 0.7% | 0.7% | 0.7% | 0.7% | 0.6% | 0.6% | 0.6% | 0.6% | 0.6% |
| 34 | 27,639 | 25,665 | -7.14% | Value: | 26,590 | 26,503 | 26,415 | 26,336 | 26,257 | 26,178 | 26,099 | 26,020 | 25,949 | 25,878 | 25,807 | 25,736 | 25,665 |
| | | | | Percent Change: | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% | -0.3% |
| 35 | 11,490 | 18,352 | 59.72% | Value: | 15,136 | 15,441 | 15,745 | 16,019 | 16,294 | 16,569 | 16,844 | 17,119 | 17,365 | 17,612 | 17,858 | 18,105 | 18,352 |
| | | | | Percent Change: | 2.0% | 2.0% | 2.0% | 1.7% | 1.7% | 1.7% | 1.7% | 1.6% | 1.4% | 1.4% | 1.4% | 1.4% | 1.4% |
| 36 | 15,155 | 19,099 | 26.02% | Value: | 17,251 | 17,426 | 17,601 | 17,758 | 17,916 | 18,074 | 18,232 | 18,390 | 18,532 | 18,674 | 18,815 | 18,957 | 19,099 |
| | | | | Percent Change: | 1.0% | 1.0% | 1.0% | 0.9% | 0.9% | 0.9% | 0.9% | 0.9% | 0.8% | 0.8% | 0.8% | 0.8% | 0.7% |
| 37 | 5,634 | 8,828 | 56.69% | Value: | 7,331 | 7,473 | 7,615 | 7,742 | 7,870 | 7,998 | 8,126 | 8,254 | 8,369 | 8,483 | 8,598 | 8,713 | 8,828 |
| | | | | Percent Change: | 2.0% | 1.9% | 1.9% | 1.7% | 1.7% | 1.6% | 1.6% | 1.6% | 1.4% | 1.4% | 1.4% | 1.3% | 1.3% |
| **Total (Miami-Dade Co)** | 1,249,183 | 1,994,215 | 59.64% | Value: 0 | 1,645,089 | 1,678,115 | 1,711,157 | 1,740,962 | 1,770,778 | 1,800,607 | 1,830,447 | 1,860,286 | 1,887,064 | 1,913,838 | 1,940,622 | 1,967,414 | 1,994,215 |
| | | | | Percent Change: | 2.0% | 2.0% | 2.0% | 1.7% | 1.7% | 1.7% | 1.7% | 

# Appendix D

## Appendix D.1 2013 and 2030 Trip Table Origin and Destination Matrices

## Appendix D.2 Model Calibration and Validation Report

## Appendix D.3 Estimated 2013 and 2030 ADT and Total Trips

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# Appendix D.1

# 2013 and 2030 Trip Table Origin and Destination Matrices

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**Table D.1-1**
**Origin and Destination Matrix by Miami-Dade County Transportation Analysis SuperDistrict (TAS)**
**2013 Trip Table**

| | | Destination TAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Origin TAS** | Outside Miami | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | **Total** |
| Outside Miami | 7,834,524 | 12,096 | 22,239 | 105,530 | 19,301 | 14,921 | 8,162 | 13,192 | 40,183 | 41,781 | 42,678 | 65,425 | 15,415 | 29,743 | 7,153 | 16,099 | 15,710 | 3,482 | 1,419 | 4,830 | 4,421 | 3,383 | 6,663 | 12,536 | 11,910 | 381 | 10,355 | 1,761 | 3,428 | 1,998 | 943 | 7,683 | 984 | 3,675 | 2,644 | 1,848 | 2,598 | 1,350 | **8,392,444** |
| 1 | 12,041 | 104,292 | 18,561 | 10,103 | 10,509 | 21,037 | 6,793 | 6,471 | 4,337 | 1,465 | 1,598 | 2,394 | 847 | 5,222 | 1,451 | 3,137 | 1,018 | 55 | 260 | 806 | 990 | 1,150 | 2,520 | 5,188 | 13,996 | 700 | 7,987 | 987 | 1,221 | 356 | 78 | 215 | 21 | 108 | 434 | 251 | 692 | 1,739 | **251,130** |
| 2 | 22,234 | 18,639 | 27,399 | 24,432 | 7,522 | 4,353 | 1,781 | 2,719 | 4,425 | 2,354 | 1,515 | 2,002 | 822 | 2,669 | 583 | 1,044 | 673 | 46 | 47 | 125 | 119 | 156 | 406 | 1,648 | 2,080 | 79 | 1,435 | 145 | 207 | 45 | 8 | 24 | 3 | 14 | 62 | 32 | 79 | 307 | **132,492** |
| 3 | 105,411 | 10,142 | 24,602 | 141,110 | 23,908 | 9,011 | 4,507 | 7,562 | 24,468 | 18,008 | 11,265 | 11,436 | 4,024 | 8,759 | 1,385 | 2,491 | 2,149 | 206 | 180 | 426 | 420 | 457 | 1,110 | 3,627 | 5,765 | 217 | 3,774 | 417 | 578 | 151 | 37 | 96 | 9 | 51 | 147 | 110 | 220 | 669 | **428,003** |
| 4 | 19,267 | 10,544 | 7,507 | 23,875 | 30,659 | 14,603 | 7,587 | 11,876 | 11,604 | 2,933 | 2,874 | 4,094 | 1,735 | 8,688 | 1,802 | 3,001 | 1,589 | 62 | 143 | 411 | 454 | 586 | 1,410 | 3,533 | 8,852 | 366 | 5,119 | 503 | 685 | 183 | 34 | 103 | 9 | 56 | 225 | 125 | 325 | 929 | **188,348** |
| 5 | 14,788 | 21,037 | 4,323 | 8,964 | 14,546 | 40,771 | 14,094 | 9,594 | 5,754 | 2,029 | 2,202 | 3,221 | 1,116 | 7,400 | 2,105 | 4,411 | 1,411 | 83 | 642 | 1,436 | 1,969 | 2,355 | 4,679 | 5,692 | 36,500 | 1,886 | 18,864 | 2,222 | 3,030 | 976 | 193 | 547 | 55 | 283 | 858 | 657 | 1,265 | 3,805 | **245,566** |
| 6 | 8,081 | 6,807 | 1,776 | 4,501 | 7,583 | 14,137 | 14,875 | 10,024 | 4,092 | 1,076 | 1,330 | 2,623 | 902 | 8,098 | 2,495 | 4,606 | 1,573 | 75 | 360 | 1,066 | 1,043 | 1,300 | 3,541 | 4,897 | 21,580 | 497 | 10,231 | 950 | 1,301 | 409 | 79 | 210 | 21 | 107 | 439 | 295 | 691 | 983 | **144,644** |
| 7 | 13,145 | 6,481 | 2,711 | 7,551 | 11,874 | 9,625 | 10,035 | 22,617 | 12,047 | 1,587 | 2,453 | 4,963 | 1,869 | 16,816 | 3,496 | 5,327 | 2,717 | 87 | 239 | 667 | 618 | 776 | 2,337 | 5,840 | 11,053 | 264 | 6,869 | 575 | 830 | 219 | 44 | 122 | 11 | 65 | 251 | 159 | 362 | 671 | **167,371** |
| 8 | 40,094 | 4,351 | 4,423 | 24,473 | 11,618 | 5,783 | 4,104 | 12,049 | 39,727 | 6,408 | 15,048 | 18,018 | 8,160 | 20,675 | 2,341 | 3,435 | 3,060 | 187 | 217 | 530 | 487 | 506 | 1,472 | 3,808 | 5,573 | 164 | 3,843 | 384 | 569 | 149 | 31 | 91 | 9 | 47 | 147 | 112 | 231 | 448 | **242,774** |
| 9 | 41,789 | 1,470 | 2,354 | 18,029 | 2,938 | 2,040 | 1,078 | 1,593 | 6,424 | 16,449 | 5,866 | 3,751 | 1,209 | 2,138 | 383 | 778 | 795 | 69 | 56 | 152 | 123 | 109 | 295 | 868 | 1,237 | 47 | 859 | 88 | 141 | 32 | 9 | 23 | 3 | 11 | 48 | 28 | 76 | 155 | **113,512** |
| 10 | 42,703 | 1,603 | 1,517 | 11,281 | 2,879 | 2,215 | 1,224 | 2,462 | 15,070 | 5,862 | 23,865 | 11,563 | 3,932 | 5,419 | 1,054 | 2,140 | 2,088 | 135 | 121 | 218 | 176 | 164 | 549 | 1,762 | 1,624 | 43 | 1,256 | 111 | 191 | 45 | 11 | 31 | 4 | 16 | 63 | 42 | 85 | 167 | **143,760** |
| 11 | 65,425 | 2,486 | 2,005 | 11,459 | 4,108 | 3,558 | 2,778 | 4,978 | 18,053 | 3,746 | 11,552 | 78,702 | 15,061 | 32,504 | 7,471 | 16,337 | 18,619 | 847 | 724 | 1,696 | 1,362 | 1,464 | 5,074 | 6,685 | 4,439 | 72 | 4,696 | 764 | 1,489 | 357 | 91 | 250 | 27 | 124 | 462 | 360 | 728 | 261 | **330,794** |
| 12 | 15,181 | 853 | 822 | 4,027 | 1,739 | 1,127 | 907 | 1,871 | 8,166 | 1,205 | 3,923 | 15,037 | 8,848 | 11,772 | 1,901 | 3,266 | 3,263 | 172 | 174 | 363 | 304 | 358 | 1,121 | 1,932 | 1,463 | 28 | 1,424 | 185 | 369 | 76 | 21 | 52 | 5 | 28 | 96 | 70 | 143 | 82 | **92,578** |
| 13 | 29,683 | 5,252 | 2,667 | 8,765 | 8,705 | 7,478 | 8,111 | 16,844 | 20,709 | 2,134 | 5,411 | 32,461 | 11,776 | 77,398 | 14,274 | 19,943 | 14,035 | 358 | 684 | 1,805 | 1,603 | 1,992 | 6,741 | 14,172 | 13,560 | 195 | 11,639 | 1,279 | 2,167 | 519 | 102 | 275 | 27 | 139 | 426 | 395 | 621 | 613 | **344,956** |
| 14 | 7,128 | 1,460 | 582 | 1,385 | 1,801 | 2,130 | 2,500 | 3,499 | 2,344 | 381 | 1,051 | 7,462 | 1,900 | 14,269 | 7,383 | 11,602 | 6,745 | 132 | 692 | 1,906 | 1,703 | 1,941 | 6,446 | 6,012 | 6,182 | 84 | 5,898 | 1,108 | 1,851 | 535 | 116 | 290 | 25 | 139 | 410 | 399 | 627 | 185 | **108,302** |
| 15 | 16,012 | 3,131 | 1,030 | 2,480 | 2,960 | 4,590 | 4,572 | 5,262 | 3,426 | 769 | 2,122 | 16,229 | 3,258 | 19,927 | 11,610 | 64,308 | 17,858 | 675 | 5,187 | 12,615 | 11,328 | 10,047 | 37,427 | 14,601 | 15,657 | 193 | 16,349 | 3,457 | 7,202 | 3,209 | 875 | 2,388 | 192 | 1,032 | 3,279 | 3,297 | 4,889 | 421 | **333,865** |
| 16 | 15,634 | 1,048 | 673 | 2,149 | 1,590 | 1,508 | 1,574 | 2,721 | 3,065 | 792 | 2,082 | 18,586 | 3,263 | 14,038 | 4,751 | 17,892 | 14,908 | 490 | 972 | 2,563 | 2,448 | 2,062 | 6,978 | 4,145 | 3,912 | 62 | 4,200 | 811 | 1,652 | 726 | 182 | 514 | 44 | 233 | 732 | 765 | 1,089 | 131 | **140,986** |
| 17 | 3,469 | 173 | 61 | 206 | 116 | 221 | 131 | 96 | 188 | 69 | 125 | 845 | 172 | 359 | 132 | 674 | 490 | 99 | 79 | 240 | 199 | 133 | 347 | 377 | 519 | 1 | 394 | 36 | 98 | 83 | 25 | 60 | 6 | 24 | 83 | 80 | 127 | 19 | **10,556** |
| 18 | 1,406 | 220 | 35 | 124 | 120 | 386 | 313 | 205 | 164 | 44 | 85 | 583 | 129 | 593 | 616 | 5,085 | 954 | 79 | 4,173 | 3,980 | 2,041 | 1,980 | 4,149 | 1,250 | 1,024 | 7 | 1,406 | 205 | 554 | 196 | 37 | 124 | 12 | 112 | 440 | 228 | 744 | 28 | **32,872** |
| 19 | 4,791 | 681 | 99 | 340 | 342 | 1,249 | 919 | 565 | 463 | 130 | 188 | 1,521 | 316 | 1,595 | 1,689 | 12,053 | 2,490 | 240 | 3,984 | 27,237 | 16,307 | 6,930 | 15,605 | 3,536 | 3,413 | 40 | 7,021 | 1,376 | 3,705 | 994 | 248 | 832 | 150 | 715 | 3,084 | 1,305 | 5,521 | 139 | **131,812** |
| 20 | 4,387 | 797 | 92 | 336 | 367 | 1,706 | 879 | 516 | 416 | 102 | 146 | 1,210 | 268 | 1,370 | 1,458 | 10,690 | 2,339 | 200 | 2,047 | 16,324 | 45,834 | 16,900 | 13,526 | 3,298 | 3,420 | 65 | 11,151 | 3,804 | 9,621 | 1,737 | 385 | 1,410 | 285 | 1,339 | 8,790 | 2,589 | 17,601 | 234 | **187,695** |
| 21 | 3,486 | 1,211 | 168 | 512 | 614 | 2,415 | 1,350 | 811 | 549 | 119 | 182 | 1,582 | 395 | 2,164 | 2,117 | 10,184 | 2,163 | 138 | 989 | 6,926 | 16,863 | 36,068 | 17,938 | 4,702 | 5,319 | 108 | 16,800 | 8,839 | 22,787 | 5,432 | 1,339 | 3,563 | 395 | 1,648 | 8,177 | 6,423 | 13,894 | 303 | **208,693** |
| 22 | 6,576 | 2,376 | 379 | 1,053 | 1,319 | 4,444 | 2,334 | 2,228 | 1,454 | 284 | 542 | 4,971 | 1,126 | 6,740 | 6,442 | 36,872 | 6,867 | 344 | 4,145 | 15,594 | 13,512 | 17,756 | 60,761 | 13,119 | 14,169 | 136 | 24,677 | 4,119 | 10,640 | 2,685 | 749 | 2,018 | 191 | 926 | 3,142 | 2,735 | 5,088 | 462 | **283,976** |
| 23 | 12,077 | 5,161 | 1,696 | 3,627 | 3,530 | 5,677 | 4,907 | 5,841 | 3,797 | 863 | 1,739 | 6,069 | 1,883 | 14,061 | 5,987 | 14,704 | 3,890 | 216 | 1,403 | 4,006 | 3,881 | 4,421 | 13,407 | 13,755 | 18,735 | 235 | 16,689 | 2,740 | 4,136 | 1,294 | 292 | 1,082 | 86 | 557 | 1,536 | 974 | 2,089 | 599 | **187,642** |
| 24 | 11,467 | 14,007 | 2,087 | 5,761 | 8,352 | 16,692 | 21,582 | 11,061 | 5,555 | 1,233 | 1,594 | 3,647 | 1,271 | 13,238 | 5,922 | 15,008 | 3,316 | 187 | 1,129 | 3,588 | 3,635 | 5,057 | 14,242 | 18,733 | 80,772 | 1,722 | 60,545 | 4,309 | 6,242 | 1,516 | 287 | 749 | 68 | 379 | 1,240 | 1,056 | 1,750 | 3,175 | **373,015** |
| 25 | 380 | 702 | 79 | 218 | 367 | 1,897 | 697 | 264 | 164 | 48 | 42 | 64 | 28 | 195 | 82 | 187 | 49 | 1 | 9 | 43 | 66 | 106 | 140 | 235 | 1,732 | 112 | 1,206 | 98 | 161 | 34 | 7 | 16 | 1 | 9 | 28 | 23 | 39 | 220 | **9,550** |
| 26 | 10,141 | 7,986 | 1,435 | 3,775 | 5,121 | 18,943 | 10,245 | 6,883 | 3,846 | 859 | 1,297 | 4,448 | 1,406 | 11,594 | 5,825 | 16,257 | 4,018 | 196 | 1,488 | 6,971 | 10,914 | 16,410 | 24,590 | 16,704 | 60,567 | 1,207 | 122,525 | 15,812 | 22,995 | 5,825 | 1,173 | 3,193 | 264 | 1,491 | 4,264 | 4,179 | 5,958 | 2,814 | **443,619** |
| 27 | 1,749 | 996 | 147 | 621 | 507 | 2,222 | 958 | 582 | 389 | 90 | 113 | 757 | 189 | 1,299 | 1,127 | 3,350 | 822 | 35 | 202 | 1,392 | 3,801 | 8,853 | 4,127 | 2,773 | 4,327 | 98 | 15,851 | 28,906 | 28,305 | 12,426 | 1,758 | 3,884 | 358 | 2,290 | 5,755 | 8,127 | 4,222 | 268 | **153,479** |
| 28 | 3,446 | 1,413 | 219 | 610 | 727 | 3,261 | 1,266 | 877 | 620 | 149 | 200 | 1,572 | 389 | 2,273 | 1,979 | 7,342 | 1,748 | 102 | 548 | 3,725 | 9,580 | 22,763 | 10,774 | 6,390 | 6,411 | 160 | 23,234 | 28,306 | 51,087 | 13,805 | 2,349 | 5,229 | 479 | 3,034 | 11,034 | 12,885 | 9,852 | 386 | **248,280** |
| 29 | 1,957 | 462 | 58 | 190 | 226 | 1,085 | 511 | 270 | 181 | 39 | 56 | 449 | 94 | 626 | 658 | 3,589 | 827 | 88 | 196 | 997 | 1,745 | 5,463 | 2,838 | 1,601 | 1,700 | 35 | 6,118 | 12,456 | 13,874 | 27,872 | 3,589 | 6,097 | 598 | 4,684 | 5,193 | 11,624 | 1,937 | 120 | **119,903** |
| 30 | 930 | 108 | 12 | 49 | 47 | 227 | 107 | 58 | 39 | 11 | 15 | 124 | 27 | 130 | 148 | 991 | 212 | 31 | 47 | 248 | 386 | 1,345 | 795 | 375 | 338 | 7 | 1,247 | 1,764 | 2,364 | 3,600 | 3,754 | 6,989 | 473 | 3,864 | 1,548 | 1,841 | 456 | 23 | **34,728** |
| 31 | 7,661 | 296 | 33 | 128 | 138 | 635 | 284 | 162 | 117 | 29 | 40 | 322 | 68 | 354 | 377 | 2,681 | 595 | 67 | 138 | 836 | 1,417 | 3,589 | 1,343 | 1,427 | 900 | 16 | 3,400 | 3,887 | 5,368 | 6,106 | 6,998 | 65,667 | 5,802 | 32,558 | 5,750 | 4,461 | 1,515 | 69 | **166,053** |
| 32 | 984 | 28 | 3 | 12 | 13 | 63 | 28 | 15 | 12 | 3 | 5 | 36 | 7 | 35 | 32 | 215 | 51 | 7 | 24 | 151 | 288 | 398 | 202 | 115 | 83 | 1 | 283 | 360 | 484 | 601 | 473 | 5,799 | 4,095 | 4,925 | 1,266 | 504 | 255 | 6 | **21,865** |
| 33 | 2,669 | 150 | 19 | 68 | 76 | 327 | 144 | 87 | 60 | 14 | 21 | 163 | 36 | 178 | 180 | 1,162 | 271 | 26 | 112 | 719 | 1,347 | 1,678 | 984 | 737 | 450 | 9 | 1,590 | 2,294 | 3,054 | 4,691 | 3,860 | 32,512 | 4,921 | 33,098 | 5,932 | 3,840 | 1,279 | 39 | **109,796** |
| 34 | 2,648 | 454 | 68 | 217 | 236 | 908 | 463 | 271 | 187 | 57 | 83 | 581 | 129 | 554 | 543 | 3,524 | 817 | 86 | 443 | 3,089 | 8,781 | 8,203 | 3,349 | 1,729 | 1,495 | 31 | 4,613 | 5,760 | 11,086 | 5,185 | 1,543 | 5,730 | 1,261 | 5,909 | 30,827 | 11,496 | 11,571 | 101 | **134,026** |
| 35 | 1,813 | 357 | 45 | 148 | 175 | 782 | 398 | 212 | 146 | 35 | 56 | 474 | 93 | 512 | 531 | 3,750 | 889 | 88 | 229 | 1,310 | 2,600 | 6,453 | 2,928 | 1,281 | 1,279 | 24 | 4,514 | 8,148 | 12,954 | 11,405 | 1,834 | 4,649 | 501 | 3,826 | 11,500 | 14,207 | 3,173 | 82 | **105,200** |
| 36 | 2,603 | 586 | 70 | 240 | 278 | 1,141 | 600 | 319 | 253 | 75 | 94 | 788 | 167 | 692 | 725 | 4,814 | 1,129 | 128 | 748 | 5,534 | 17,658 | 13,964 | 5,240 | 1,961 | 1,851 | 41 | 6,354 | 4,233 | 9,933 | 1,932 | 455 | 1,509 | 253 | 1,271 | 11,588 | 3,163 | 25,442 | 135 | **127,968** |
| 37 | 1,347 | 1,744 | 307 | 670 | 929 | 2,821 | 983 | 673 | 447 | 156 | 167 | 236 | 82 | 612 | 183 | 414 | 115 | 6 | 33 | 149 | 244 | 298 | 473 | 600 | 3,365 | 220 | 2,811 | 268 | 386 | 118 | 22 | 68 | 6 | 38 | 93 | 80 | 129 | 9,930 | **32,225** |
| **Total** | **8,390,325** | **251,598** | **132,306** | **429,020** | **188,341** | **246,835** | **144,806** | **167,326** | **242,921** | **113,387** | **143,551** | **328,439** | **92,502** | **344,709** | **108,402** | **333,364** | **160,263** | **9,516** | **34,085** | **134,671** | **190,679** | **206,579** | **287,347** | **189,696** | **377,261** | **9,562** | **447,269** | **153,447** | **246,841** | **117,522** | **34,040** | **164,008** | **21,667** | **108,846** | **131,995** | **102,567** | **127,421** | **32,365** | **14,925,381** |





FINAL April 25, 2014

**Table D.1-2**
**Origin and Destination Matrix by Miami-Dade County Transportation Analysis SuperDistrict (TAS)**
**2030 Trip Table**

| | | Destination TAS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Origin TAS** | Outside Miami | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | **Total** |
| Outside Miami | 9,811,449 | 13,531 | 25,677 | 132,542 | 20,482 | 20,559 | 10,047 | 16,763 | 53,611 | 46,480 | 47,524 | 77,079 | 19,114 | 35,364 | 9,364 | 18,148 | 21,164 | 3,522 | 1,405 | 3,930 | 5,820 | 2,950 | 7,421 | 9,992 | 13,338 | 548 | 10,753 | 2,285 | 4,454 | 3,212 | 1,457 | 12,466 | 1,395 | 4,827 | 2,500 | 2,174 | 5,376 | 1,237 | **10,479,956** |
| 1 | 13,458 | 130,462 | 20,453 | 11,420 | 11,204 | 33,416 | 8,093 | 7,895 | 5,008 | 1,646 | 1,645 | 2,649 | 934 | 5,332 | 1,748 | 3,827 | 1,296 | 79 | 436 | 976 | 1,337 | 1,126 | 3,466 | 7,868 | 16,241 | 1,019 | 8,447 | 952 | 1,572 | 852 | 243 | 844 | 84 | 348 | 645 | 565 | 1,022 | 1,872 | **310,500** |
| 2 | 25,585 | 20,550 | 33,476 | 32,297 | 8,376 | 5,598 | 2,037 | 3,331 | 5,219 | 2,669 | 1,536 | 2,154 | 929 | 2,975 | 674 | 1,008 | 805 | 51 | 64 | 131 | 159 | 147 | 466 | 1,725 | 2,232 | 102 | 1,388 | 131 | 234 | 132 | 37 | 134 | 13 | 61 | 95 | 89 | 114 | 282 | **157,008** |
| 3 | 132,244 | 11,483 | 32,233 | 194,785 | 28,757 | 12,574 | 5,617 | 9,547 | 30,369 | 22,952 | 13,493 | 13,809 | 5,064 | 10,240 | 1,693 | 2,520 | 2,530 | 205 | 244 | 488 | 488 | 550 | 1,382 | 3,387 | 6,844 | 336 | 3,951 | 490 | 821 | 469 | 143 | 472 | 64 | 269 | 306 | 324 | 482 | 641 | **552,122** |
| 4 | 20,386 | 11,241 | 8,351 | 28,658 | 37,029 | 19,520 | 8,770 | 14,485 | 13,185 | 3,095 | 2,922 | 4,465 | 1,959 | 9,277 | 2,045 | 2,843 | 1,910 | 70 | 201 | 649 | 626 | 569 | 1,626 | 3,993 | 9,655 | 504 | 5,008 | 477 | 796 | 384 | 103 | 372 | 36 | 153 | 309 | 258 | 466 | 866 | **217,058** |
| 5 | 20,432 | 33,373 | 5,557 | 12,474 | 19,421 | 83,719 | 22,748 | 15,516 | 8,411 | 2,736 | 2,833 | 4,493 | 1,601 | 9,725 | 3,229 | 6,368 | 2,329 | 162 | 893 | 1,816 | 3,326 | 3,328 | 6,614 | 9,017 | 53,790 | 3,760 | 24,927 | 2,791 | 4,698 | 2,113 | 589 | 2,022 | 193 | 848 | 1,483 | 1,420 | 2,451 | 4,671 | **385,881** |
| 6 | 9,852 | 8,100 | 2,026 | 5,404 | 8,743 | 22,788 | 20,025 | 14,312 | 5,063 | 1,335 | 1,591 | 3,195 | 1,114 | 9,049 | 3,088 | 4,617 | 1,992 | 108 | 644 | 994 | 1,394 | 1,339 | 3,584 | 5,914 | 26,101 | 847 | 11,193 | 1,044 | 1,658 | 809 | 226 | 756 | 73 | 308 | 642 | 557 | 1,038 | 1,065 | **182,487** |
| 7 | 16,644 | 7,919 | 3,313 | 9,482 | 14,455 | 15,581 | 14,107 | 36,054 | 14,888 | 1,983 | 3,188 | 6,992 | 2,687 | 23,382 | 5,053 | 6,264 | 3,904 | 116 | 638 | 927 | 1,232 | 1,145 | 3,549 | 7,825 | 15,082 | 460 | 8,459 | 777 | 1,292 | 578 | 169 | 563 | 51 | 232 | 643 | 413 | 738 | 749 | **231,473** |
| 8 | 53,348 | 5,031 | 5,210 | 30,314 | 13,208 | 8,467 | 5,096 | 14,932 | 50,365 | 7,993 | 18,509 | 24,583 | 11,523 | 25,060 | 3,172 | 4,076 | 4,136 | 216 | 348 | 705 | 990 | 769 | 2,281 | 4,640 | 6,628 | 264 | 4,184 | 512 | 964 | 396 | 125 | 420 | 42 | 176 | 292 | 286 | 543 | 453 | **310,259** |
| 9 | 46,388 | 1,658 | 2,669 | 22,994 | 3,114 | 2,763 | 1,345 | 2,001 | 8,040 | 19,990 | 6,251 | 3,850 | 1,458 | 2,429 | 448 | 673 | 831 | 61 | 51 | 118 | 135 | 112 | 275 | 786 | 1,363 | 58 | 840 | 84 | 146 | 65 | 20 | 70 | 6 | 28 | 52 | 47 | 102 | 139 | **131,464** |
| 10 | 47,427 | 1,676 | 1,537 | 13,419 | 2,936 | 2,858 | 1,604 | 3,215 | 18,592 | 6,245 | 30,002 | 12,396 | 4,873 | 6,231 | 1,234 | 1,798 | 2,167 | 117 | 126 | 188 | 217 | 157 | 561 | 1,973 | 1,689 | 56 | 1,208 | 94 | 199 | 67 | 24 | 78 | 6 | 33 | 63 | 53 | 124 | 168 | **165,393** |
| 11 | 76,794 | 2,729 | 2,154 | 13,822 | 4,478 | 4,793 | 3,346 | 7,019 | 24,453 | 3,846 | 12,383 | 109,842 | 20,059 | 41,808 | 10,244 | 21,091 | 28,066 | 995 | 1,090 | 2,103 | 2,561 | 1,976 | 7,677 | 7,485 | 4,949 | 110 | 5,079 | 1,000 | 2,307 | 730 | 223 | 728 | 73 | 364 | 566 | 518 | 1,442 | 237 | **429,300** |
| 12 | 19,028 | 939 | 929 | 5,060 | 1,963 | 1,614 | 1,121 | 2,696 | 11,537 | 1,451 | 4,854 | 20,028 | 13,510 | 16,045 | 2,648 | 3,862 | 4,497 | 178 | 230 | 432 | 530 | 492 | 1,592 | 2,205 | 1,624 | 42 | 1,536 | 249 | 600 | 178 | 60 | 185 | 15 | 74 | 138 | 132 | 298 | 86 | **122,658** |
| 13 | 35,153 | 5,274 | 2,968 | 10,205 | 9,278 | 9,823 | 9,061 | 23,427 | 25,050 | 2,415 | 6,195 | 41,701 | 16,008 | 101,767 | 18,557 | 21,333 | 19,354 | 469 | 1,065 | 2,185 | 2,748 | 2,799 | 9,588 | 15,492 | 14,436 | 276 | 11,819 | 1,590 | 3,491 | 1,136 | 326 | 1,085 | 102 | 449 | 842 | 868 | 1,420 | 499 | **430,353** |
| 14 | 9,304 | 1,766 | 672 | 1,689 | 2,040 | 3,260 | 3,091 | 5,049 | 3,165 | 446 | 1,227 | 10,207 | 2,635 | 18,503 | 12,824 | 16,068 | 7,263 | 316 | 1,343 | 2,739 | 3,211 | 3,644 | 11,363 | 7,799 | 7,192 | 127 | 7,087 | 1,977 | 4,159 | 1,189 | 328 | 1,069 | 93 | 420 | 900 | 1,009 | 1,593 | 183 | **157,052** |
| 15 | 18,039 | 3,835 | 997 | 2,514 | 2,804 | 6,523 | 4,580 | 6,198 | 4,061 | 671 | 1,796 | 20,971 | 3,849 | 21,298 | 16,080 | 90,385 | 27,354 | 1,834 | 8,772 | 17,843 | 18,933 | 14,321 | 56,149 | 16,156 | 14,890 | 258 | 17,030 | 4,712 | 11,007 | 3,472 | 1,040 | 3,238 | 302 | 1,326 | 3,945 | 3,236 | 8,241 | 390 | **438,449** |
| 16 | 21,005 | 1,324 | 806 | 2,538 | 1,911 | 2,404 | 1,987 | 3,911 | 4,140 | 832 | 2,170 | 27,962 | 4,491 | 19,351 | 7,370 | 27,365 | 24,539 | 1,002 | 2,292 | 4,633 | 5,487 | 3,798 | 13,719 | 5,205 | 5,082 | 98 | 5,692 | 1,586 | 3,500 | 1,195 | 350 | 1,153 | 110 | 482 | 1,001 | 1,082 | 2,663 | 135 | **214,370** |
| 17 | 3,505 | 197 | 66 | 206 | 124 | 298 | 164 | 125 | 217 | 61 | 117 | 996 | 178 | 471 | 317 | 1,836 | 1,004 | 469 | 234 | 510 | 627 | 303 | 872 | 494 | 598 | 3 | 465 | 58 | 164 | 76 | 29 | 80 | 10 | 30 | 92 | 75 | 291 | 22 | **15,387** |
| 18 | 1,399 | 386 | 52 | 187 | 173 | 825 | 389 | 399 | 294 | 40 | 91 | 948 | 185 | 973 | 1,273 | 8,725 | 2,286 | 235 | 6,149 | 4,415 | 3,380 | 919 | 5,782 | 1,916 | 1,181 | 12 | 1,514 | 191 | 618 | 183 | 70 | 267 | 42 | 166 | 618 | 330 | 1,438 | 32 | **48,082** |
| 19 | 3,915 | 832 | 107 | 407 | 377 | 1,603 | 820 | 827 | 638 | 100 | 165 | 1,924 | 387 | 1,973 | 2,525 | 17,426 | 4,574 | 514 | 4,428 | 24,959 | 16,060 | 5,139 | 16,308 | 3,704 | 3,156 | 36 | 6,727 | 758 | 3,124 | 1,271 | 236 | 856 | 135 | 634 | 2,499 | 1,807 | 5,137 | 111 | **136,197** |
| 20 | 5,867 | 1,125 | 133 | 607 | 535 | 3,025 | 1,200 | 1,116 | 918 | 120 | 194 | 2,407 | 486 | 2,509 | 2,961 | 18,348 | 5,365 | 633 | 2,408 | 16,105 | 56,058 | 20,241 | 39,915 | 4,657 | 4,638 | 77 | 16,235 | 2,769 | 11,197 | 3,032 | 493 | 1,670 | 281 | 1,420 | 6,692 | 3,377 | 20,222 | 293 | **240,230** |
| 21 | 2,988 | 1,161 | 152 | 587 | 575 | 3,272 | 1,370 | 1,161 | 802 | 118 | 165 | 2,075 | 526 | 2,951 | 3,841 | 14,560 | 3,906 | 310 | 922 | 5,118 | 20,082 | 18,368 | 17,845 | 5,998 | 6,165 | 121 | 18,718 | 7,008 | 22,919 | 7,842 | 1,619 | 3,865 | 381 | 2,196 | 6,855 | 8,669 | 15,231 | 312 | **232,360** |
| 22 | 7,300 | 3,312 | 438 | 1,321 | 1,530 | 6,375 | 3,366 | 3,430 | 2,257 | 265 | 557 | 7,545 | 1,595 | 9,560 | 11,394 | 55,833 | 13,635 | 869 | 5,786 | 16,285 | 19,754 | 17,685 | 86,196 | 17,059 | 15,131 | 161 | 24,660 | 3,811 | 12,177 | 3,477 | 822 | 2,406 | 245 | 1,033 | 3,457 | 3,675 | 8,300 | 420 | **372,922** |
| 23 | 9,582 | 7,875 | 1,724 | 3,386 | 3,991 | 9,019 | 5,909 | 7,808 | 4,617 | 781 | 1,948 | 6,881 | 2,155 | 15,360 | 7,771 | 16,282 | 4,966 | 335 | 2,068 | 4,196 | 5,258 | 5,688 | 17,297 | 19,298 | 22,317 | 339 | 19,097 | 3,326 | 6,274 | 2,134 | 645 | 2,463 | 205 | 950 | 1,932 | 1,686 | 3,017 | 763 | **229,341** |
| 24 | 13,033 | 16,250 | 2,227 | 6,804 | 9,634 | 54,056 | 26,083 | 15,052 | 6,580 | 1,354 | 1,659 | 4,286 | 1,545 | 14,092 | 6,934 | 14,293 | 4,528 | 272 | 1,297 | 3,363 | 4,884 | 5,891 | 15,211 | 22,358 | 101,632 | 2,882 | 68,923 | 4,196 | 7,923 | 2,321 | 609 | 1,964 | 184 | 811 | 1,731 | 1,683 | 2,949 | 3,707 | **453,201** |
| 25 | 545 | 1,020 | 102 | 334 | 504 | 3,790 | 848 | 461 | 263 | 57 | 56 | 103 | 42 | 274 | 125 | 253 | 86 | 3 | 14 | 40 | 80 | 120 | 164 | 339 | 2,888 | 230 | 1,729 | 96 | 198 | 54 | 13 | 44 | 4 | 17 | 42 | 38 | 51 | 320 | **15,346** |
| 26 | 10,619 | 8,453 | 1,388 | 3,939 | 5,002 | 25,018 | 11,186 | 8,448 | 4,171 | 838 | 1,206 | 4,882 | 1,520 | 11,748 | 7,013 | 16,991 | 5,539 | 268 | 1,617 | 6,696 | 15,950 | 18,264 | 24,615 | 19,148 | 68,867 | 1,730 | 147,101 | 17,680 | 30,987 | 9,524 | 1,835 | 5,876 | 513 | 2,408 | 6,187 | 7,524 | 11,130 | 2,827 | **528,711** |
| 27 | 2,280 | 951 | 132 | 487 | 475 | 2,786 | 1,040 | 776 | 513 | 85 | 94 | 1,006 | 251 | 1,596 | 1,996 | 4,598 | 1,588 | 56 | 191 | 769 | 2,785 | 7,058 | 3,829 | 3,361 | 4,209 | 96 | 17,816 | 33,046 | 27,929 | 17,193 | 3,393 | 6,602 | 847 | 3,429 | 3,666 | 9,997 | 3,281 | 256 | **170,461** |
| 28 | 4,455 | 1,628 | 239 | 832 | 818 | 4,760 | 1,720 | 1,419 | 983 | 149 | 204 | 2,379 | 618 | 3,583 | 4,304 | 11,151 | 3,587 | 165 | 618 | 3,144 | 11,130 | 22,970 | 12,339 | 6,549 | 8,112 | 200 | 31,414 | 27,918 | 62,618 | 21,955 | 3,655 | 9,688 | 886 | 5,141 | 9,743 | 19,154 | 11,392 | 438 | **312,066** |
| 29 | 2,174 | 915 | 139 | 483 | 465 | 2,567 | 1,057 | 597 | 468 | 98 | 130 | 1,178 | 286 | 1,705 | 1,255 | 3,244 | 777 | 181 | 1,090 | 3,946 | 3,544 | 2,374 | 7,418 | 3,053 | 4,264 | 53 | 9,858 | 17,432 | 21,215 | 44,264 | 6,294 | 12,586 | 1,018 | 9,512 | 4,291 | 15,514 | 4,976 | 195 | **199,235** |
| 30 | 1,440 | 264 | 38 | 148 | 110 | 609 | 246 | 174 | 129 | 22 | 25 | 266 | 63 | 341 | 347 | 1,104 | 364 | 34 | 93 | 231 | 487 | 1,589 | 831 | 712 | 638 | 13 | 1,843 | 3,450 | 3,674 | 6,835 | 9,609 | 12,695 | 706 | 7,686 | 3,094 | 3,536 | 1,708 | 51 | **65,961** |
| 31 | 12,356 | 894 | 138 | 482 | 388 | 2,061 | 834 | 577 | 429 | 73 | 81 | 777 | 192 | 1,121 | 1,117 | 3,380 | 1,182 | 84 | 261 | 839 | 1,644 | 3,838 | 2,418 | 3,759 | 2,046 | 43 | 5,878 | 6,618 | 9,711 | 12,755 | 13,544 | 117,331 | 9,561 | 51,706 | 7,680 | 10,699 | 4,016 | 181 | **289,666** |
| 32 | 1,376 | 87 | 13 | 45 | 35 | 197 | 76 | 52 | 43 | 6 | 7 | 77 | 16 | 105 | 97 | 312 | 113 | 10 | 41 | 133 | 278 | 348 | 246 | 229 | 191 | 3 | 512 | 863 | 893 | 1,031 | 703 | 9,509 | 7,334 | 8,422 | 1,409 | 1,002 | 589 | 16 | **36,638** |
| 33 | 4,760 | 371 | 63 | 209 | 161 | 867 | 330 | 240 | 181 | 29 | 34 | 325 | 78 | 464 | 445 | 1,393 | 497 | 31 | 163 | 629 | 1,419 | 2,165 | 1,039 | 1,105 | 846 | 17 | 2,

# Appendix D.2

# Model Calibration and Validation Report

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# Appendix D.2
# Model Calibration and Validation Report

The FY 2013 model output volumes from the traffic assignment step were compared to the actual FY 2013 average annual daily traffic (AADT) volumes included in the balanced traffic profiles as part of the model calibration and validation. Estimated FY 2013 AADT volumes based on the additional traffic counts conducted or from FDOT count data were utilized for other non-MDX roadways. Additional information regarding these AADT volumes is provided in Chapter 3. The goal of the validation process was to have the model assign FY 2013 traffic volumes that replicated the actual FY 2013 AADT volumes on the MDX expressways and other major roadways to the best possible extent. As calibration progressed, minor adjustments and corrections to the model inputs were made in an attempt to obtain a better fit between the actual FY 2013 AADT volumes and the assigned volumes. Changes made to the highway network include capacity and input speed changes.

Trip table adjustments were made to specific movements on SR 836 to better reflect observed trip lengths on this freeway. As part of this study, surveys were conducted to estimate the percentage of existing traffic that travels from the western mainline toll plaza to the eastern mainline toll plaza,. Travel patterns between traffic on SR 874 and SR 836 were also reviewed. The trip tables tended to show shorter trips on these two freeways than were observed in the surveys. This generally caused ramp volumes in the model to be higher than observed. Using select link analysis, CDM Smith increased the number of trips between zones that would travel farther on SR 836 and reduced the number of trips between zones making shorter trips on SR 836 to better match the observed ramp and mainline volumes on the freeway.

## Screenline Analysis

One assessment of the reasonableness of the results of the tolled traffic assignments is whether the total volume crossing a grouping of parallel routes, called a screenline, compares well with actual traffic volumes. The variation from counts may differ considerably on individual screenline routes, however, if the total assigned volumes crossing the screenlines are reasonably close to the counts, then this is an indication that congestion levels and travel patterns are being simulated fairly well by the model.

FDOT used 52 screenlines throughout the area covered by the model to validate SERPM. For the purposes of modeling traffic on the MDX Expressways, CDM Smith concentrated on several of those Screenlines in Miami-Dade County passing through existing MDX toll locations or parallel to major expressways in the region. A total of 14 screenlines were identified in Miami-Dade County, as shown in Figure D-1.

Table D-1 provides a comparison of assigned AADT volumes versus actual AADT volumes by screenline. Travel demand models such as SERPM are not generally validated on individual corridors, but instead use more regional or global measures with a certain assumed reasonable percent error. In terms of the screenline analysis, a reasonable goal was set to have the total assigned AADT volumes across each screenline within 10 percent of actual AADT volumes. Based on the count data available, the model was able to accomplish this for most of the designated screenlines.

**TRAVEL DEMAND MODEL SCREENLINES**
FIGURE D.2-1

Table D.2-1
Comparison of Total Assigned AADT Volumes to Actual AADT Volumes by Model Screenlines

| Screenline | Location | Total Assigned Volumes | Comparable 2013 AADT Volumes | Difference | Percent Difference |
|---|---|---|---|---|---|
| **48** | **Traffic To and From Miami-Dade County from SR 826 and I-95** | | | | |
| **Total** | **South of 826 (Palmetto Expy) & East of I-95** | **890,103** | **847,957** | **42,146** | **5.0%** |
| EB/NB | | 441,307 | 421,389 | 19,918 | 4.7% |
| WB/SB | | 448,796 | 426,568 | 22,228 | 5.2% |
| **43** | **HEFT, and North Half of SR 826 HOT Lanes and I-95 HOV Lanes** | | | | |
| **Total** | **South of NW 138th / I-75 / SR 924 (Gratigny Expy) / NW 119th** | **1,172,008** | **1,116,050** | **55,958** | **5.0%** |
| NB | | 583,533 | 561,275 | 22,258 | 4.0% |
| SB | | 588,475 | 554,775 | 33,700 | 6.1% |
| **45** | **HEFT, and South Half of SR 826 HOT Lanes and I-95 HOV Lanes** | | | | |
| **Total** | **South of SR 934 / NW 74th / W 21th / NW 79th** | **1,192,823** | **1,098,327** | **94,496** | **8.6%** |
| NB | | 594,031 | 553,813 | 40,218 | 7.3% |
| SB | | 598,792 | 544,514 | 54,278 | 10.0% |
| **47** | **Traffic To and From the Southern Half of Miami-Dade County** | | | | |
| **Total** | **South of SR 836 (Dolphin Expy)** | **1,529,993** | **1,450,052** | **79,941** | **5.5%** |
| NB | | 766,655 | 751,057 | 15,598 | 2.1% |
| SB | | 763,338 | 698,995 | 64,343 | 9.2% |
| **51** | **SR 874 ORT Gantry at SR 826** | | | | |
| **Total** | **South of SW 56th Street** | **775,869** | **697,773** | **78,096** | **11.2%** |
| NB | | 395,638 | 351,290 | 44,348 | 12.6% |
| SB | | 380,231 | 346,483 | 33,748 | 9.7% |
| **49** | **SR 874 ORT Gantry at Killian Parkway** | | | | |
| **Total** | **South of SR 94 (N Kendall / SW 88th)** | **650,491** | **675,343** | **-24,852** | **-3.7%** |
| NB | | 330,839 | 341,877 | -11,038 | -3.2% |
| SB | | 319,652 | 333,466 | -13,814 | -4.1% |
| **52** | **Biscayne Bay Bridges and Tunnels** | | | | |
| **Total** | **Between US 1 and Rt 1A** | **443,624** | **388,264** | **55,360** | **14.3%** |
| EB | | 221,862 | 199,632 | 22,230 | 11.1% |
| WB | | 221,762 | 188,632 | 33,130 | 17.6% |
| **50** | **East End of SR 836, SR 112 and SR 924 Eastern Ext.** | | | | |
| **Total** | **West of I-95** | **1,395,585** | **1,151,401** | **244,184** | **21.2%** |
| EB | | 696,437 | 569,859 | 126,578 | 22.2% |
| WB | | 699,148 | 581,542 | 117,606 | 20.2% |
| **54** | **SR 836 NW 17th Ave. ML Plaza, SR 112 ML Plaza and SR 924 Eastern Ext.** | | | | |
| **Total** | **East of NW 22nd Ave** | **1,030,402** | **983,564** | **46,838** | **4.8%** |
| EB | | 513,167 | 494,657 | 18,510 | 3.7% |
| WB | | 517,235 | 488,907 | 28,328 | 5.8% |
| **46** | **SR 836 and SR 112 East of MIA, and SR 924 ML Plaza** | | | | |
| **Total** | **East of SR 953 / E 8th / NW 42nd S LeJeune** | **1,323,859** | **1,131,036** | **192,823** | **17.0%** |
| EB | | 660,989 | 560,017 | 100,972 | 18.0% |
| WB | | 662,870 | 571,019 | 91,851 | 16.1% |
| **56** | **SR 836 ORT Gantry at NW 57th Ave.** | | | | |
| **Total** | **East of S. Red Rd.** | **707,106** | **637,617** | **69,489** | **10.9%** |
| EB | | 353,565 | 314,136 | 39,429 | 12.6% |
| WB | | 353,541 | 323,481 | 30,060 | 9.3% |
| **44** | **SR 924 ORT Gantry at SR 826, SR 836, SR 878 ORT Gantry at SW 87th Ave** | | | | |
| **Total** | **East of SR 826 (Palmetto Expy)** | **1,487,405** | **1,331,034** | **156,371** | **11.7%** |
| EB | | 741,305 | 662,543 | 78,762 | 11.9% |
| WB | | 746,100 | 668,491 | 77,609 | 11.6% |
| **58** | **SR 836 NW 97th Ave ML Plaza and SR 874 ML Plaza** | | | | |
| **Total** | **West of NW 97th Ave** | **839,189** | **831,305** | **7,884** | **0.9%** |
| EB | | 412,423 | 413,899 | -1,476 | -0.4% |
| WB | | 426,766 | 417,405 | 9,361 | 2.2% |
| **42** | **West End of SR 924 Western Ext., SR 836 and SR 874** | | | | |
| **Total** | **East of SR 821 (HEFT)** | **1,183,195** | **1,115,934** | **67,261** | **6.0%** |
| EB | | 586,023 | 553,441 | 32,582 | 5.9% |
| WB | | 597,172 | 562,493 | 34,679 | 6.2% |
| **60** | **SR 836 Extension ML Plaza** | | | | |
| **Total** | **West of SR 821 (HEFT)** | **411,958** | **380,629** | **31,329** | **8.2%** |
| EB | | 205,782 | 189,261 | 16,521 | 8.7% |
| WB | | 206,176 | 191,368 | 14,808 | 7.7% |





The assigned screenline volumes ranged from 3.7 percent below to 21.2 percent above actual count data. In general, the screenlines where assigned traffic volumes were greater than the actual AADT volumes were north-south screenlines showing the movement of traffic between east and west. On these screenlines the major difference occurs on major freeway segments. During the post-processing stage of the traffic and revenue forecast development process, the assigned volumes on these freeway segments would be adjusted to the extent that these differences would impact the MDX Expressways and to better reflect actual traffic counts.

## MDX Expressway Mainline Segments

Table D-2 presents a comparison of the FY 2013 two-way mainline assigned and actual AADTs along the entire lengths of SR 836, SR 112, SR 924, SR 874 and SR 878.

SR 924 shows a close calibration against the counts on the segment east of the Palmetto Expressway while the mainline toll plaza is over-assigned by 27 percent.

SR 112 is over-assigned on the western sections by about 30 to 40 percent. However, the mainline toll plaza and the eastern section of SR 112 shows a close calibration with the assigned AADT within 10 percent of the actual volumes on the segments. As has been noted by CDM Smith in previous studies, the limitations in modeling one-way tolls most likely contributes to discrepancies in this area.

SR 836, as the longest MDX expressway and the expressway with the greatest variations in traffic volumes by segment, has the greatest variations in assigned versus actual volumes. As Table D-2 shows, most of the non-tolled mainline segments are over-assigned. Since the congestion is very heavy on the east-west arterials parallel to SR 836, SR 836 absorbs a great deal of traffic on segments where there is no toll. The "open" nature of the tolling system, with some movements un-tolled, contributes to this in the model. The mainline toll plaza between NW 137th Avenue and Florida's Turnpike shows very high variation of the assignment AADT against the actual volume. This variation can be partly attributed to the socioeconomic growth in the traffic analysis zones (TAZ), south and west of this toll plaza.

The assignments on the mainline segments on SR 874 compare favorably with the counts. The assigned AADT volumes are within 10 percent of the actual volumes on most segments.

SR 878 similarly shows close calibration with the counts. The assigned AADT volumes are within 10 percent of the actual volumes on all segments but for the mainline near U.S. Route 1.

## General Conclusions

In general, the results of the traffic assignments performed by CDM Smith indicated that, across the various screenlines and at the MDX toll locations, the updated travel demand model performed reasonably well. Specifically, the updated travel demand model is able to reasonably estimate the relative impacts of various tolling scenarios and highway improvements. However, the raw model assignment results on individual roadways and road segments, particularly non-tolled freeways, indicated that the model results should always be compared with real world counts in determining the best forecasts. Within the limitations of travel demand the results of the calibration indicated that the updated travel demand model was a good tool for developing the transaction and toll revenue forecasts in combination with professional judgment and historical performance of the MDX Expressways.

**Table D.2-2**
**Comparison of Actual, FDOT SERPM Assigned and CDM Smith Assigned Average Annual Daily Traffic Volumes**
**MDX Expressway Mainlines**

| | | | Original FDOT SERPM | | 2013 Average Annual Daily Traffic Volumes | | | | | 2030 Average Annual Daily Traffic Volumes | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MDX Facility | Mainline Segment | Location | 2005 | 2035 | Actual | Interpolated FDOT SERPM Assignment | Percent Difference | CDM Smith Assignment | Percent Difference | Interpolated FDOT SERPM Assignment | CDM Smith Assignment | Percent Difference |
| SR 924 | Mainline (TL) [1] | Between SR 826 (Palmetto Expressway) and SR 823 (West 4th Avenue) | 52,845 | 113,810 | 44,550 | 69,102 | 55.1 | 42,087 | (5.5) | 103,649 | 71,678 | (30.8) |
| | Mainline (TL) [1] | Between SR 823 (West 4th Avenue) and Lejeune-Douglas Expressway | 29,690 | 128,430 | 34,870 | 56,021 | 60.7 | 44,292 | 27.0 | 111,973 | 73,189 | (34.6) |
| SR 112 | Mainline | Between NW 42nd Avenue/Okeechobee Road and NW 27th Avenue | 104,749 | 151,212 | 92,223 | 117,139 | 27.0 | 132,277 | 43.4 | 143,468 | 100,210 | (30.2) |
| | Mainline | Between NW 27th Avenue and NW 22nd Avenue | 89,188 | 159,625 | 95,804 | 107,971 | 12.7 | 129,177 | 34.8 | 147,886 | 111,815 | (24.4) |
| | Mainline (TL) [1] | Between NW 22nd Avenue and NW 17th Avenue | 84,061 | 155,889 | 89,562 | 103,215 | 15.2 | 94,945 | 6.0 | 143,918 | 101,579 | (29.4) |
| | Mainline | Between NW 12th Avenue and I-95 | 102,677 | 155,612 | 93,927 | 116,793 | 24.3 | 92,734 | (1.3) | 146,790 | 94,643 | (35.5) |
| SR 836 | Mainline (TL) [1] | Between NW 137th Avenue and Florida's Turnpike | - | 43,726 | 21,673 | 11,660 | (46.2) | 35,897 | 65.6 | 36,438 | 73,157 | 100.8 |
| | Mainline (TL) [1] | Between NW 107th Avenue and NW 87th Avenue | 114,156 | 205,262 | 114,272 | 138,451 | 21.2 | 93,869 | (17.9) | 190,078 | 186,491 | (1.9) |
| | Mainline | Between NW 87th Avenue and SR 826 (Palmetto Expressway) | 126,875 | 220,195 | 167,274 | 151,760 | (9.3) | 138,206 | (17.4) | 204,642 | 203,993 | (0.3) |
| | Mainline | Between SR 826 (Palmetto Expressway) and NW 72nd Avenue | 188,893 | 269,470 | 198,142 | 210,380 | 6.2 | 195,409 | (1.4) | 256,041 | 281,108 | 9.8 |
| | Mainline | Between NW 72nd Avenue and NW 57th Avenue | 196,981 | 269,069 | 188,417 | 216,204 | 14.7 | 231,832 | 23.0 | 257,054 | 251,654 | (2.1) |
| | Mainline | Between NW 57th Avenue and NW 45th Avenue | 190,059 | 246,820 | 189,699 | 205,195 | 8.2 | 230,751 | 21.6 | 237,360 | 206,708 | (12.9) |
| | Mainline | Between NW 45th Avenue and NW 42nd Avenue | 172,361 | 241,624 | 159,221 | 190,831 | 19.9 | 198,018 | 24.4 | 230,080 | 233,704 | 1.6 |
| | Mainline | Between NW 42nd Avenue NW 37th Avenue and | 167,421 | 194,419 | 148,918 | 174,620 | 17.3 | 177,502 | 19.2 | 189,919 | 192,568 | 1.4 |
| | Mainline | Between NW 37th Avenue and NW 27th Avenue | 177,845 | 216,724 | 164,004 | 188,213 | 14.8 | 188,086 | 14.7 | 210,244 | 212,888 | 1.3 |
| | Mainline (TL) [1] | Between NW 27th Avenue and NW 17th Avenue | 146,944 | 221,185 | 142,343 | 166,742 | 17.1 | 136,008 | (4.5) | 208,812 | 190,464 | (8.8) |
| | Mainline | Between NW 17th Avenue and NW 12th Avenue | 127,540 | 177,287 | 107,853 | 140,806 | 30.6 | 105,601 | (2.1) | 168,996 | 159,011 | (5.9) |
| | Mainline | Between NW 12th Avenue and I-95 | 132,648 | 189,409 | 131,135 | 147,784 | 12.7 | 145,024 | 10.6 | 179,949 | 173,780 | (3.4) |
| SR 874 | Mainline (TL) [1] | Between SR 821 (Florida's Turnpike) and SW 104th Street | 88,861 | 169,280 | 77,289 | 110,306 | 42.7 | 96,916 | 25.4 | 155,877 | 184,767 | 18.5 |
| | Mainline (TL) [1] | Between SW 104th Street and SW 88th Street | 122,383 | 220,009 | 101,495 | 148,417 | 46.2 | 100,929 | (0.6) | 203,738 | 191,596 | (6.0) |
| | Mainline | Between SW 88th Street and SR 878 (Snapper Creek Expressway) | 137,893 | 245,340 | 103,956 | 166,546 | 60.2 | 110,393 | 6.2 | 227,432 | 182,679 | (19.7) |
| | Mainline (TL) [1] | Between SR 878 (Snapper Creek Expressway) and SR 826 (Florida's Turnpike) | 93,471 | 209,862 | 73,806 | 124,509 | 68.7 | 76,320 | 3.4 | 190,464 | 143,608 | (24.6) |
| SR 878 | Mainline (TL) [1] | Between SR 874 (Don Shula Expressway) and SW 87th Avenue | 62,531 | 72,149 | 39,299 | 65,096 | 65.6 | 38,327 | (2.5) | 70,546 | 69,575 | (1.4) |
| | Mainline (TL) [1] | Between SW 87th Avenue and SW 72nd Avenue | 58,005 | 65,055 | 37,093 | 59,885 | 61.4 | 38,815 | 4.6 | 63,880 | 64,713 | 1.3 |
| | Mainline | Between SW 72nd Avenue and US 1 | 40,328 | 45,615 | 24,867 | 41,738 | 67.8 | 19,393 | (22.0) | 44,734 | 35,348 | (21.0) |

[1] TL - Mainline Toll Location.





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# Appendix D.3

# Estimated 2013 and 2030 ADT and Total Trips

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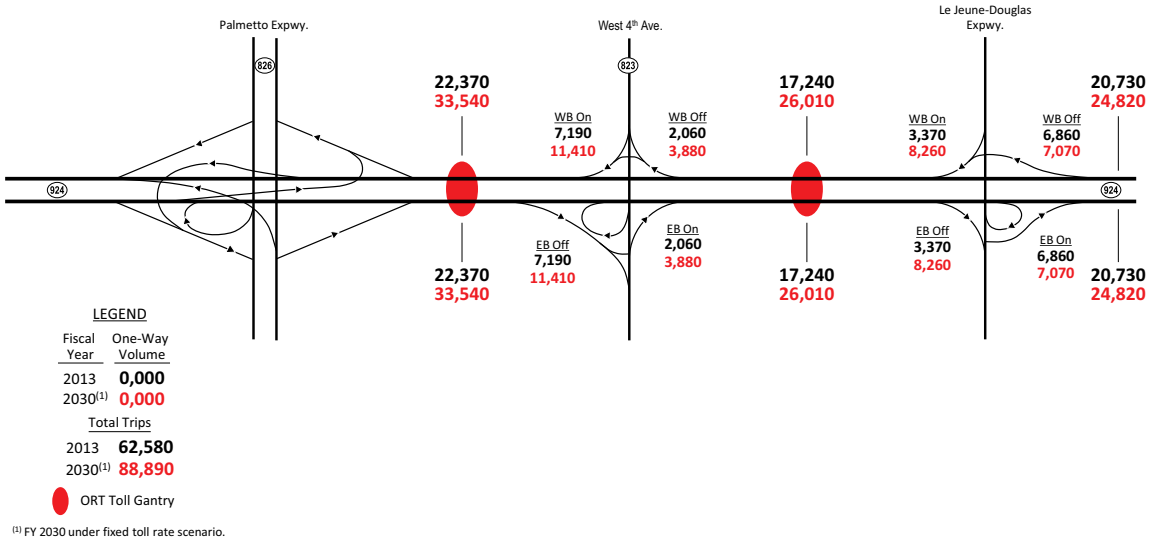
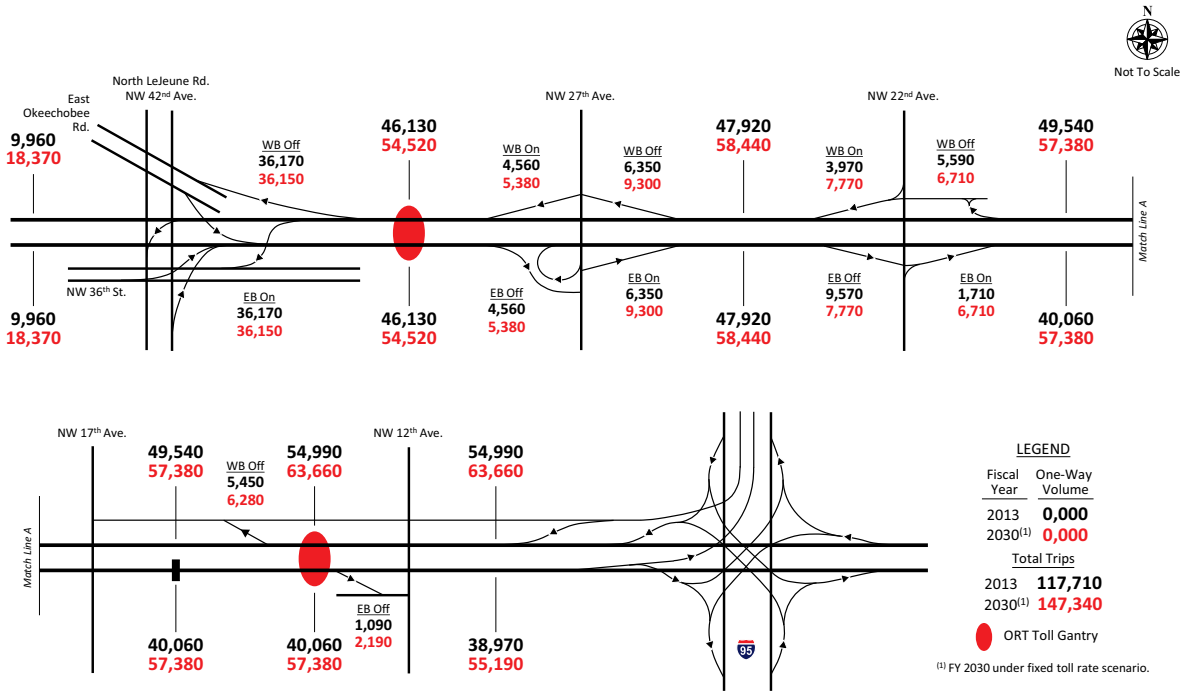



(1) FY 2030 under fixed toll rate scenario.

## ESTIMATED AVERAGE DAILY TRAFFIC VOLUMES
## SR 924 - GRATIGNY PARKWAY

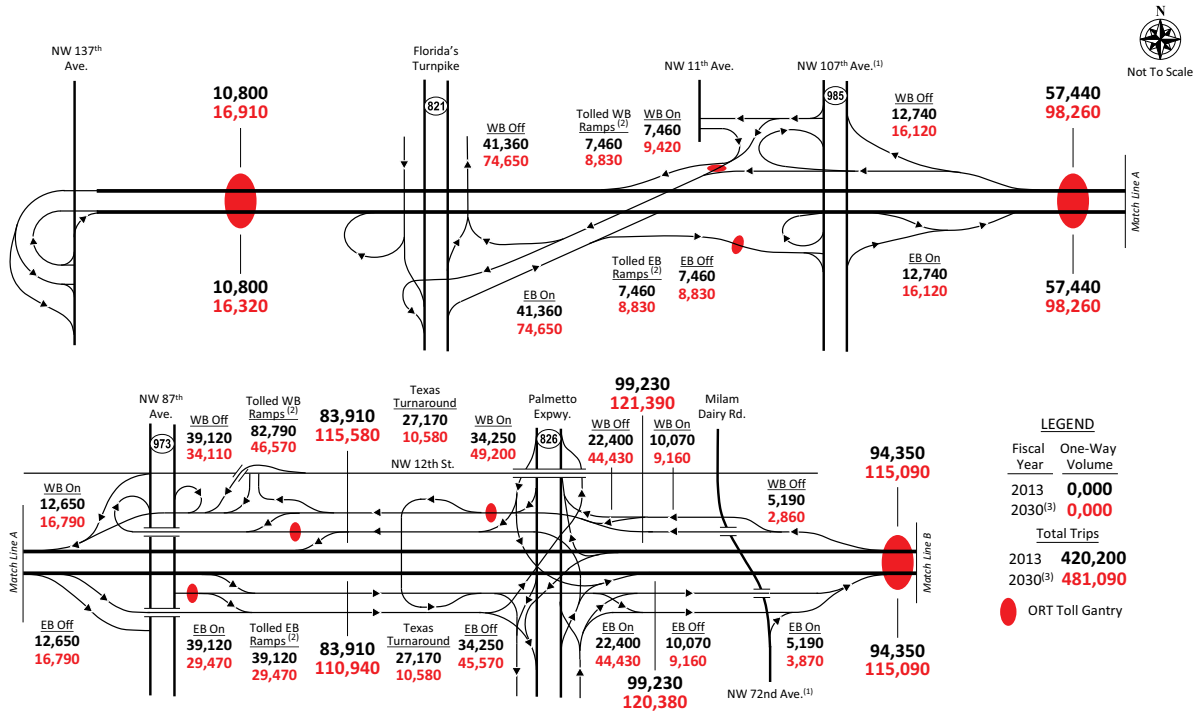
FIGURE D.3-1




## ESTIMATED AVERAGE DAILY TRAFFIC VOLUMES
## SR 112 - AIRPORT EXPRESSWAY

FIGURE D.3-2

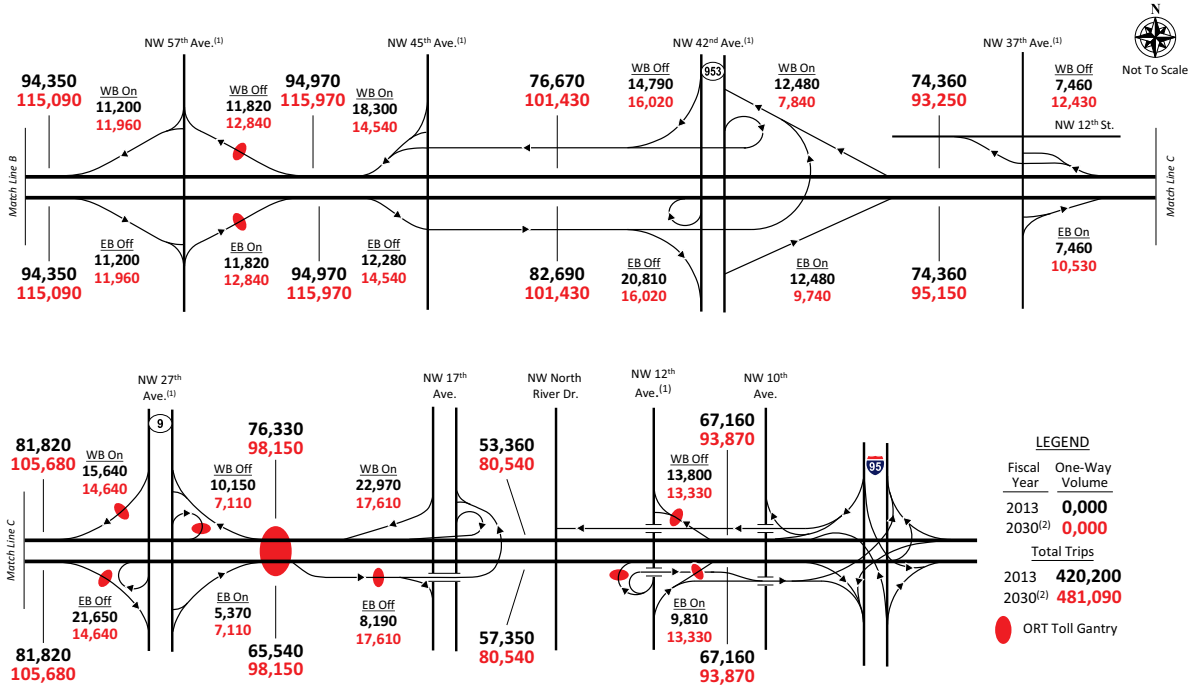





(1) Interchanges are shown with 2030 configuration.
(2) Tolled under full ORT, assumed to begin FY 2016.
(3) FY 2030 under fixed toll rate scenario.

## ESTIMATED AVERAGE DAILY TRAFFIC VOLUMES
## SR 836 - DOLPHIN EXPRESSWAY

FIGURE D.3-3







(1) Interchanges are shown with 2030 configuration.
(2) FY 2030 under fixed toll rate scenario.

## ESTIMATED AVERAGE DAILY TRAFFIC VOLUMES
## SR 836 - DOLPHIN EXPRESSWAY

FIGURE D.3-4

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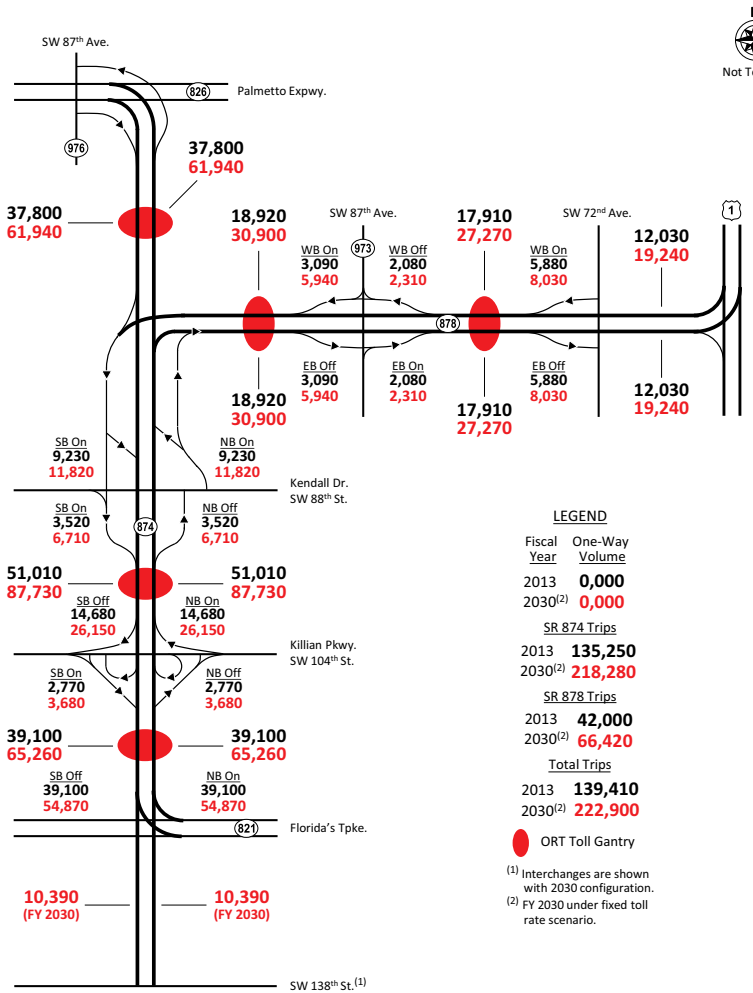


**ESTIMATED AVERAGE DAILY TRAFFIC VOLUMES, SR 874 - DON SHULA EXPRESSWAY AND SR 878 - SNAPPER CREEK EXPRESSWAY**

FIGURE D.3-5

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# APPENDIX D

## EXCERPTS OF THE COMPREHENSIVE ANNUAL FINANCIAL REPORT OF THE AUTHORITY FISCAL YEARS ENDED JUNE 30, 2015 AND 2014

Set forth in this Appendix D are excerpts of the Comprehensive Annual Financial Report of the Authority for the Fiscal Years ended June 30, 2015 and 2014, including the audited financial statements of the Authority for such periods. These financial statements are included in this Official Statement as a public document.

**THE CONSENT OF THE AUDITOR WAS NOT REQUESTED. THE AUDITOR WAS NOT REQUESTED TO PERFORM AND HAS NOT PERFORMED ANY SERVICE IN CONNECTION WITH THE OFFERING OF THE SERIES 2016A BONDS, AND IS THEREFORE NOT ASSOCIATED WITH THE OFFERING OF THE SERIES 2016A BONDS.**

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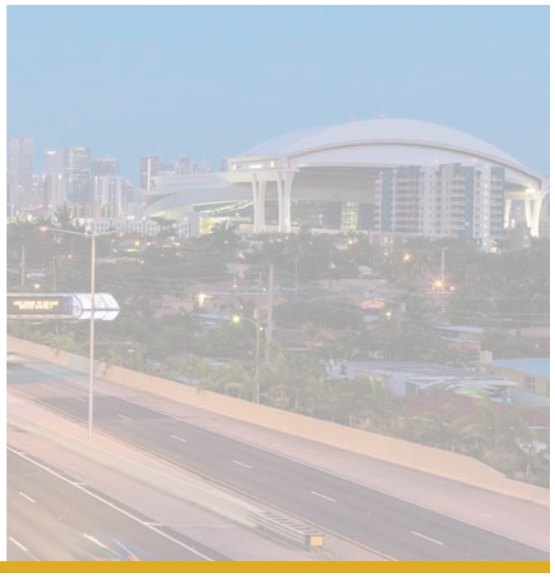
# 2015

# Comprehensive Annual Financial Report

Fiscal Year Ended June 30, 2015



**MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY**
d/b/a Miami-Dade Expressway Authority and MDX
3790 NW 21st Street | Miami, Florida 33142
www.mdxway.com

MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY

**D/B/A MIAMI-DADE EXPRESSWAY AUTHORITY AND MDX**

# COMPREHENSIVE ANNUAL FINANCIAL REPORT

Fiscal Year Ended June 30, 2015


Prepared by:

Finance Department

Marie T. Schafer, CPA

Deputy Executive Director / Chief Financial Officer

Dawn Barnwell

Jacqueline Garcia

Jason D. Greene

Cristina Parrish

Alexis Rivas

Joseph Zownorega


Miami, Florida

MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY
**D/B/A MIAMI-DADE EXPRESSWAY AUTHORITY AND MDX**

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MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY
**D/B/A MIAMI-DADE EXPRESSWAY AUTHORITY AND MDX**

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# Introduction

MIAMI-DADE EXPRESSWAY AUTHORITY
3790 N.W. 21 St. Miami, FL 33142 T 305.637.3277 F 305.637.3283
www.mdxway.com

**November 13, 2015**

LOUIS V. MARTINEZ, ESQ.
*Chair*
SHELLY SMITH FANO
*Vice-Chair*
RICK J. RODRIGUEZ PIÑA
*Treasurer*
GUS PEGO, P.E.
*FDOT District Six Secretary*

JOSE "PEPE" CANCIO
MAURICE A. FERRÉ
ALFREDO L. GONZALEZ, ESQ.
MARITZA GUTIERREZ
ROBERT W. HOLLAND, ESQ.
ARTHUR J. MEYER
JAVIER L.VAZQUEZ, ESQ.
CLIFF WALTERS
LUZ WEINBERG

JAVIER RODRÍGUEZ, P.E.
*Executive Director*
MARIA LUISA NAVIA LOBO
*Board Secretary*

**Board of Directors,**
**Bond Holders and**
**Customers of the Expressway Authority**

On behalf of the Miami-Dade Expressway Authority (the "Authority"), we are pleased to present the Comprehensive Annual Financial Report ("CAFR") for the Fiscal Year Ended June 30, 2015. This report was prepared in accordance with generally accepted accounting principles ("GAAP") as promulgated by the Governmental Accounting Standards Board ("GASB") and other accounting and rule making bodies.

To the best of our knowledge and belief, the enclosed data are accurate in all material respects and are reported in a manner designed to present fairly the financial position and results of the Authority. Responsibility for both the accuracy of the data and the completeness and fairness of the presentation, including all disclosures, rests with the Authority's management.

Management is responsible for the establishment and maintenance of internal controls that have been designed to ensure assets are safeguarded and financial transactions are properly recorded and adequately documented. Such internal controls require estimates and judgments from management so that, in attaining reasonable assurance as to the adequacy of such controls, the cost does not outweigh the achieved benefit; the objective is to provide reasonable, rather than absolute assurance that the financial statements are free of any material misstatement.

The Authority's financial statements have been audited by Moore Stephens Lovelace, P.A., and Certified Public Accountants. The goal of an independent audit is to provide reasonable assurance that the financial statements of the Authority for fiscal year end June 30, 2015, are free of material misstatement. The independent audit involved examining, on a test basis, evidence supporting the amounts and disclosures; assessing the accounting principles used and significant estimates made by management; and evaluating the overall financial statement presentations. The independent auditors issued an "unmodified opinion" that the Authority's financial statements for fiscal year June 30, 2015, are fairly presented in accordance with GAAP. The independent auditor's report is included as part of the financial section of this report.

The Authority also undergoes a Single Audit in accordance with the provisions of the Single Audit Act and U.S. Office of Management and Budget Circular A-133, as well as the Florida Single Audit Act, when applicable. For the fiscal year ended June 30, 2015, a Single Audit was not required as the Authority did not meet the threshold requirements.

MIAMI-DADE EXPRESSWAY AUTHORITY
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Management's discussion and analysis ("MD&A") immediately follows the independent auditor's report and provides a narrative introduction, overview and analysis of the basic financial statements. The MD&A complements the transmittal letter and the two should be read in conjunction with each other.

## REPORTING ENTITY

The Authority was created in 1994 by the Miami-Dade County Commission to establish local control over toll revenues and to ease traffic congestion on five major expressways in Miami-Dade County. The Authority's system is comprised of five of the busiest roadways in Miami-Dade County. They are the Airport Expressway (SR 112), Dolphin Expressway (SR 836), Don Shula Expressway (SR 874), Snapper Creek Expressway (SR 878), and the Gratigny Parkway (SR 924), which currently encompasses more than 33.6 main line center-lane miles or 226.4 main line system lane miles.

Effective December 10, 1996, and pursuant to a Transfer Agreement ("Transfer Agreement") entered into between the Authority and the Florida Department of Transportation ("FDOT"), the Authority assumed the rights and responsibilities for operating the expressway system in perpetuity and obtained certain identifiable fixed assets and cash reserves from FDOT. In exchange, the Authority made a payment to FDOT, which was sufficient to defease certain, bonded indebtedness of the State of Florida. In order to defease FDOT's indebtedness, the Authority issued Toll System Revenue Bonds, Series 1996 (Taxable) for $80,000,000. In addition, the Authority assumed a liability from the State of Florida in the amount of $11,843,000, which has been paid in full.

The Authority's primary source of revenue is tolls and fees of the expressway system. Under the Authority's trust indenture, all net revenues are pledged to repay principal and interest of outstanding bonds issued by the Authority.

## BOARD OF DIRECTORS

The governing body of the Authority consists of thirteen appointed members, volunteers who do not receive any salary or other compensation for their service. The Miami-Dade County Board of County Commissioners appoints seven members. The Governor of the State of Florida appoints five members. One member, the District Secretary of the FDOT - District VI, serves *ex officio*. Except for the District Secretary, all members must be residents of Miami-Dade County. Board members serve for a period of four years. Board elections occur every June for the fiscal year starting July 1st. The transmittal letter reflects the current board composition as of the issuance of this report.

## REPORTING REQUIREMENTS

On an annual basis the Authority undergoes an external financial audit, as well as a Single Audit and Florida Single Audit, when applicable. The purpose is for the external auditors to render an opinion of the Authority's financial statements and compliance with the Single Audit Act, U.S. Office of Management and Budget Circular A-133, and Florida Single Audit Act requirements. The opinion also includes the schedule of calculation of net revenue and financial ratio, as defined and required by the trust indenture.

In accordance with Governmental Auditing Standards, the external auditors also consider the Authority's internal controls over financial reporting on a test basis. The report purpose is to determine compliance

with provision of laws, regulations, contracts, grant agreements, and to provide the results of the testing. This report can be accessed and viewed at **www.mdxway.com**.

In addition to the above-referenced reports, the Authority files an annual financial information disclosure pursuant to Rule 15c-2 of the Securities and Exchange Commission. The Authority also provides additional financial information and operating data to the State of Florida.

Since fiscal year 2008, pursuant to Section 20.23(2) 8, Florida Statutes, all toll authorities are subject to the oversight of the Florida Transportation Commission ("FTC"). The Authority's performance is monitored and tracked by the FTC for compliance with performance measures believed to be best practices within the toll industry. This report can be accessed and viewed at **www.mdxway.com**

## ECONOMIC TRENDS

Based on reports from the Miami-Dade County Office of Economic Development & International Trade Office:

As of August 2015, Miami-Dade County's unemployment rate was 5.9%, a 1.0% decrease from August 2014.

Based on the first quarter March 2015 report, existing single family home sales ended 2014 on a positive trend; single family home sales increased 10.0% from the first quarter of 2014 sales, and median sales price increasing 8.0%. The pace of condo sales appeared to slow as sales of condos and townhouse declined 2.0% compared to the first quarter of 2015 to the fourth quarter of 2014. Miami-Dade cash buyers represent more than twice the national average. In addition, Miami-Dade foreclosure filings were down 39.0% over the fourth quarter of 2014.

The tourism sector remains strong as the number of visitors in the first quarter of 2015 surpassed 4 million which was led by domestic visitors up 5.0% from 2014. Total passenger arrivals from Miami International Airport up 5.4% over the first quarter of 2014.

## LONG – TERM FINANCIAL PLANNING

The Five Year Work Program (capital plan) identifies and prioritizes the transportation needs. The work program is an important tool used by the Authority to effectively manage its program of System expansions, improvements, renewals and replacements. The work program is reviewed and updated on an annual basis as projects are completed; re-prioritized; and/or new projects are evaluated. In conjunction with the work program, the financing plan is updated to ensure the financial feasibility and objectives of the Authority are met. The current work program has been funded by the Series 2014A Bonds proceeds, as well as anticipated future net revenues,

The Five-Year Work Program consists of three aspects of infrastructure construction:

a. Transportation Improvement Program – Improvements and expansions to the MDX highway system, including planning projects, new expressways and implementation of Intelligent Transportation Systems ("ITS") and toll collection systems.
b. Capital Improvement Program – Capital improvements to other Authority assets other than highway facilities and system-wide roadway improvement projects.

c. Renewal and Replacement ("R&R") Program – Paying the cost of unusual or extraordinary maintenance or repairs, maintenance or repairs not recurring annually and renewals and replacements; repairs or replacements resulting from an emergency caused by some extraordinary occurrence; and all or any part of any system improvements.

The current work program includes forty (40) projects, including safety improvements, system preservation and mobility, and capacity enhancement projects. The combined total estimated cost for the five year period from fiscal year 2016 through 2020 is approximately $706.8 million and $1.43 billion of total project cost.

## Five-Year Work Program Priorities

### Safety

The Authority's first priority is to provide safe roadways. To that end the Authority has a systematic safety program to identify locations in the system that may be deficient and including in its Five-Year Work Program safety projects aimed to reduce the number of traffic crashes and injuries on its system. Safety components are included on every Authority project.

### System Preservation

The second priority is to preserve the roadways and bridges in good condition. For this purpose the Authority annually funds a series of renewal and replacement projects that include resurfacing of the roadway and other non-routine repairs.

### Mobility Improvements

Once safety and system preservation projects have been funded, the Authority funds mobility improvement projects. These reduce congestion by adding capacity to the existing roadways through the construction of new lanes; or increasing capacity by expanding its current expressway network.

## POLICIES

The Authority financial policies are reviewed annually. Some of the financial policies include:

a. Debt Management Policy –
    1. Establishes parameters for and limitations on debt issuance
    2. Secures the long-term fiscal health of the Authority
    3. Communicates the Authority's commitment to sound financial management
    4. Fosters and maintains the Authority's ability to incur debt at favorable interest rates
b. Budget Policy – Serves as the primary tool in allocating financial resources
c. Investment Policy – Establishes the objectives and parameters for the Authority investments

d. Toll Rate Policy –
    1. Establishes toll rates by vehicle class (axle) for the System
    2. Identifies the methods of collection, SunPass®, Toll-By-Plate, and cash (eliminated in fiscal year 2015)
    3. Sets parameters of the Consumer Price Index ("CPI") adjustments
    4. A volume and frequency discount pilot program which was replaced by the Cash Back Toll Dividend Program

**Cash Back Toll Dividend Program (CBTD)**

During fiscal year 2015 the governing board implemented the CBTD Program which replaced the former frequency discount program. The CBTD Program provides for a cash back payment to eligible SunPass® customers only who register with the Authority. In order for the Authority to declare cash back, the current year financial and operational performance measures must be met. At no time will cash back occur should the Authority's senior debt coverage fall below 1.5x coverage. During fiscal year 2015, the governing board declared $2.2 million cash back.

**COMPLIANCE**

The Authority's Trust Indenture requires the establishment and maintenance of specific funds to be reserved and restricted for the Authority's financial obligations related to construction projects, maintenance, operations, sinking fund and debt service reserve ("DSR"). The DSR is fully funded and based on 125% of the average annual debt service requirements for the Bonds. As of the date of this report, the DSR balance is approximately $115.8 million.

**A. SENIOR COVERAGE & CREDIT RATING**

The Authority continues to meet its responsibility for sound financial management and compliance with the Indenture. The Authority's Trust Indenture requires a 1.2 times senior debt coverage and the Board policy is a minimum requirement of 1.5 times coverage. Senior debt coverage for fiscal year 2015 was 2.22. The importance of maintaining strong coverage is that it lowers the cost of capital and reflects responsible management of the Authority. As of the date of this letter, the latest credit ratings from Moody's, Fitch and Standard & Poor's are A3, A and A-, respectively.

**B. CONTINUING DISCLOSURE INFORMATION**

The CAFR includes Other Information, Schedule of Calculation of Net Revenues and Financial Ratio and the Schedule of Toll Revenues and Expenses Summary, as required by the Trust Indenture. These schedules reflect the computation of net revenues and senior lien debt coverage. In addition, the CAFR includes a Statistical Section with information such as toll rates in effect and transactions of the System for all vehicle classes. Information on capital projects can be found under the MD&A section. All of the above schedules and information are required under the Trust Indenture as continuing disclosure information.

**AWARDS**

The Government Finance Officers Association of the United States and Canada ("GFOA") awarded a Certificate of Achievement for Excellence in Financial Reporting to the Authority for the fiscal year ended June 30, 2014. This was the eight (8th) consecutive year that the Authority has been granted this prestigious award. In order to be awarded a Certificate of Achievement, a governmental entity must publish an easily readable and efficiently organized CAFR. This report must satisfy both GAAP and applicable legal requirements. A Certificate of Achievement is valid for a period of one year only. We believe that our current CAFR continues to meet the Certificate of Achievement Program's requirements and we are submitting it to the GFOA to determine its eligibility for another certificate.

In addition to the CAFR, the Authority produces the Popular Annual Financial Report ("PAFR"), which extracts information from the CAFR specifically designed to be readily accessible and easily understandable to the general public and other interested parties without a background in public finance. This report can be accessed and viewed at **www.mdxway.com.** GFOA granted an Award for Outstanding Achievement in Popular Annual Financial Reporting to the Authority for the fiscal year ended June 30, 2014. This was the third (3rd) consecutive year that the Authority has been granted this prestigious award. GFOA's review was based on an evaluation of creativity, presentation, understandability, and reader appeal of the report.

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MIAMI-DADE EXPRESSWAY AUTHORITY
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www.mdxway.com

**ACKNOWLEDGEMENTS**

The preparation and publication of this CAFR on a timely basis was made possible by the outstanding efforts, dedication and teamwork throughout the year of the Authority's Finance Department. We also recognize the efforts of other departments who provided information that helped to make the report more meaningful. All of the Authority's staff is dedicated to continuous improvements to our operations while remaining fiscally responsible and accountable to its stakeholders, bondholders and customers.

We would also like to thank the members of the Board of Directors and Staff for their support and commitment to the fiscal integrity of the Authority.

Respectfully submitted,

Javier Rodriguez, P.E.
Executive Director

Marie T. Schafer, CPA
Deputy Executive Director/
Chief Financial Officer

Stephan P. Andriuk
Deputy Executive Director/
Director of Toll Operations

Juan Toledo, P.E.
Deputy Executive Director/
Director of Engineering

Carlos Zaldivar, Esq.
General Counsel

Ivan del Campo
Chief Information Officer

Carol Lang
Human Resources & Administration
Manager

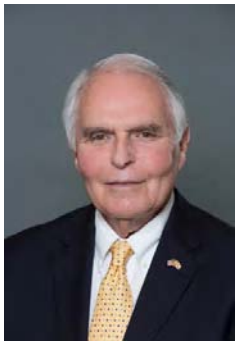
# MIAMI-DADE EXPRESSWAY AUTHORITY
# APPOINTED BOARD OF DIRECTORS
# Fiscal Year Ended June 30, 2015

Louis V. Martinez, Esq.
(CHAIR)
Term Expires: Feb. 7, 2016

Shelly Smith Fano
(VICE-CHAIR)
Term Expires: Apr. 6, 2016

Rick Rodriguez Piña
(TREASURER)
Term Expires: Feb. 7, 2017

Gus Pego, P.E.
(FDOT DISTR. SIX SECR.)
Ex-Officio Member



Jose "Pepe" Cancio
Term Expires:
Apr. 6, 2018

Maurice A. Ferré
Term Expires:
Feb. 7, 2017

Alfredo L. Gonzalez, Esq.
Term Expires:
Feb. 7, 2017

Maritza Gutierrez
Term Expires:
Feb. 7, 2017

Robert W. Holland, Esq.
Term Expires:
Feb. 7, 2017

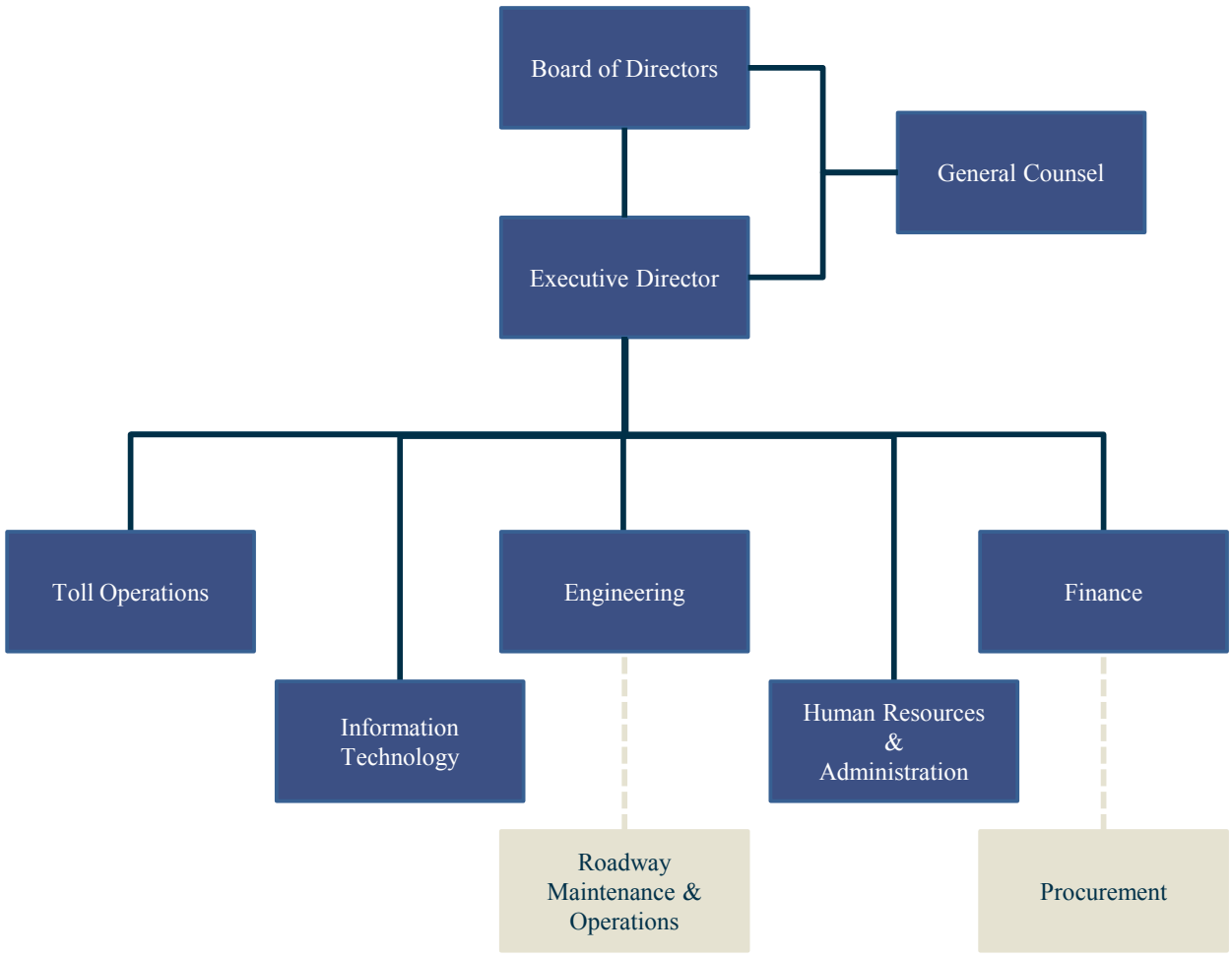
Arthur J. Meyer
Term Expires:
Feb. 7, 2016

Javier L. Vasquez, Esq.
Term Expires:
Apr. 6, 2017

Cliff Walters
Term Expires:
Apr. 6, 2018

Luz Weinberg
Term Expires:
Apr. 6, 2017

# MIAMI-DADE EXPRESSWAY AUTHORITY
## Organization Chart
## Fiscal Year Ended June 30, 2015



Government Finance Officers Association

# Certificate of Achievement for Excellence in Financial Reporting

Presented to

**Miami-Dade County**

**Expressway Authority, Florida**

For its Comprehensive Annual
Financial Report
for the Fiscal Year Ended

**June 30, 2014**

Executive Director/CEO

# Financial

MOORE STEPHENS LOVELACE, P.A.
CERTIFIED PUBLIC ACCOUNTANTS

# INDEPENDENT AUDITOR'S REPORT

Members of the
Miami-Dade County Expressway Authority
Miami, Florida

We have audited the accompanying financial statements of Miami-Dade County Expressway Authority (the "Authority") as of and for the years ended June 30, 2015 and 2014, which collectively comprise the Authority's basic financial statements, as listed in the table of contents.

## Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

## Auditor's Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

## Opinion

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the Authority as of June 30, 2015 and 2014, and the respective changes in financial position, and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

**Emphasis-of-Matter**

*Change in Accounting Principle*

As discussed in Note 1 to the financial statements, in the fiscal year ended June 30, 2015, the Authority adopted the provisions of Government Accounting Standards Board Statement Number 68 ("GASBS 68"), *Accounting and Financial Reporting for Pensions – an Amendment of GASB Statement Number 27*. As a result of the implementation of GASBS 68, the Authority reported a restatement for the change in accounting principle. Our opinion is not modified with respect to this matter.

**Other Matters**

*Required Supplementary Information*

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and pension schedules, as listed in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

*Other Information*

Our audit was conducted for the purpose of forming an opinion on the financial statements that collectively comprise the Authority's basic financial statements as a whole. The Schedule of Calculation of Net Revenue and Financial Ratios, as Defined and Required by the Trust Indenture and Schedule of Toll Revenues and Expense Summary, as listed in the table of contents, are presented for purposes of additional analysis and are not a required part of the financial statements. This information is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the financial statements. The information has been subjected to the auditing procedures applied in the audit of the financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the financial statements or to the financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the information is fairly stated, in all material respects, in relation to the financial statements as a whole.

The introductory section and statistical section, as listed in the table of contents, are presented for purposes of additional analysis and are also not a required part of the financial statements. The introductory and statistical sections have not been subjected to the auditing procedures applied in the audit of the basic financial statements and, accordingly, we do not express an opinion or provide any assurance on them.

Members of the
Miami-Dade County Expressway Authority

**Other Reporting Required by *Governmental Auditing Standards***

In accordance with *Government Auditing Standards,* we have also issued our report dated November 13, 2015, on our consideration of the Authority's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts and grant agreements, and other matters. The purpose of that report is to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* and should be considered in assessing the results of our audit.

Moore Stephens Lovelace, P.A.

**MOORE STEPHENS LOVELACE, P.A.**
Certified Public Accountants

Orlando, Florida
November 13, 2015

Management's Discussion and Analysis ("MD&A") is presented to provide the readers of these annual financial reports a narrative overview and discussion of the financial activities of the Authority for the fiscal years ended June 30, 2015, 2014 and 2013. The MD&A should be read in conjunction with the financial statements and notes as a whole.

## OVERVIEW OF FINANCIAL STATEMENTS

This discussion and analysis is intended to serve as an introduction to the Authority's financial statements, notes to the financial statements, other information and statistical information. The financial statements of the Authority report information using accounting methods similar to those used by private sector companies.

***Statements of Net Position*** – This statement presents information on all of the Authority's assets, liabilities, and deferrals, with the difference between them reported as net position. Over time, increases or decreases in net position are useful indicators of whether the Authority's financial position is improving or deteriorating.

***Statements of Revenues, Expenses and Changes in Net Position*** – This statement presents information showing how the Authority's net position changed during the fiscal year.

***Statements of Cash Flows*** – This statement presents information about the Authority's cash receipts and cash payments, or, in other words, the sources and uses of the Authority's cash and the change in balance during the fiscal year.

***Notes to the Financial Statements*** – The notes to the financial statements provide additional information that is essential to a full understanding of the data provided in the financial statements.

***Required Supplementary Information*** – Certain required supplementary information is presented to provide additional context to the financial statements and notes to the financial statements.

***Other Information*** – Certain supplementary information is presented to report compliance with trust indenture requirements such as senior lien and subordinated debt service, as well as, the ratio computation.

***Statistical Information*** – Certain information is presented to report historical and trend analysis of net position, revenues, expenses and changes in net position, toll revenues, traffic, toll rate structure, electronic tolling participation, debt capacity, demographic data and operating information.

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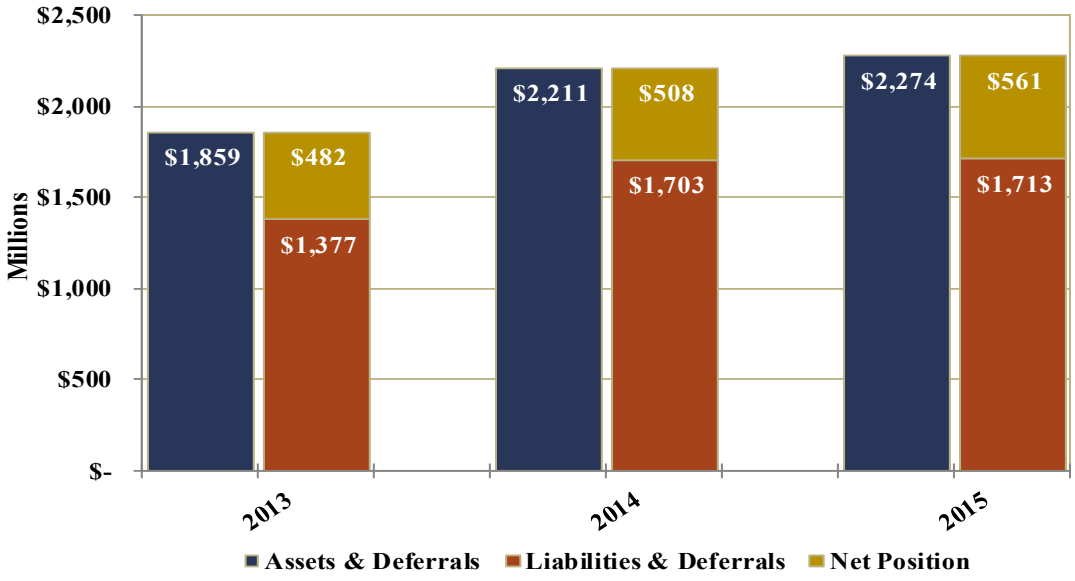
## Financial Highlights – Statements of Net Position

- The Authority's total assets of $2.2 billion increased $68.1 million or 3.2% in fiscal year 2015, compared to an increase of $353.3 million or 19.8% in fiscal year 2014.
- The Authority's deferred outflows of resources of $64.7 million decreased $5.2 million or 7.5% in fiscal year 2015, compared to a decrease of $1.8 million or 2.5% in fiscal year 2014.
- The Authority's total capital assets, net, of $1.6 billion increased $102.4 million or 6.9% in fiscal year 2015, compared to an increase of $80.8 million or 5.8% in fiscal year 2014.
- The Authority's total liabilities of $1.7 billion increased $9.2 million or 0.5% (less than 1%) in fiscal year 2015, compared to an increase of $323.5 million or 23.5% in fiscal year 2014.
- The Authority's deferred inflows of resources of $3.6 million increased $1.3 million or 54.7% in fiscal year 2015, compared to an increase of $2.3 million or 100% in fiscal year 2014.



### Summary of Statements of Net Position

| | 2015 | 2014 | 2013 |
|---|---|---|---|
| ***Assets and Deferrals:*** | | | |
| Current assets | $ 330,563,829 | $ 213,110,644 | $ 141,039,472 |
| Non-current assets | 295,365,003 | 446,780,717 | 246,019,434 |
| Capital assets, net | 1,578,347,314 | 1,475,940,583 | 1,395,190,120 |
| Other assets | 4,888,095 | 5,218,625 | 5,544,187 |
| **Total Assets** | **2,209,164,242** | **2,141,050,569** | **1,787,793,213** |
| Deferred outflows of resources | 64,723,764 | 69,940,995 | 71,701,279 |
| **Total Assets and Deferrals** | **2,273,888,006** | **2,210,991,564** | **1,859,494,492** |
| ***Liabilities and Deferrals:*** | | | |
| Current liabilities | 93,199,997 | 57,060,493 | 64,020,721 |
| Revenue bonds payable, net of current portion, bond discount and deferred cost | 1,595,529,222 | 1,576,144,324 | 1,241,162,150 |
| Derivative instruments fair market value | 18,975,816 | 51,634,806 | 50,806,346 |
| Other long-term liabilities | 2,079,031 | 15,725,053 | 21,030,581 |
| **Total Liabilities** | **1,709,784,067** | **1,700,564,676** | **1,377,019,798** |
| Deferred inflows of resources | 3,596,497 | 2,317,888 | - |
| **Total Liabilities and Deferrals** | **1,713,380,563** | **1,702,882,564** | **1,377,019,798** |
| Net investment in capital assets | 211,948,218 | 200,641,223 | 225,634,404 |
| Restricted | 167,428,142 | 165,930,442 | 134,850,204 |
| Unrestricted | 181,131,083 | 141,537,335 | 121,990,086 |
| **Total Net Position** | **$ 560,507,442** | **$ 508,109,000** | **$ 482,474,694** |

#### Total Assets and Deferrals

As of June 30, 2015 and 2014, total assets and deferrals were approximately $2.3 billion and $2.2 billion, respectively, an increase of $62.9 million or 2.8% from fiscal year 2014.

#### Current, Non-Current, & Other Assets

As of June 30, 2015 and 2014, current, non-current and other assets (excluding capital assets) were $630.8 million and $665.1 million, respectively, a decrease of $34.3 million or 5.2% from fiscal year 2014. The decrease was due primarily to the use of restricted cash, cash equivalents and investments held by the trustee for capital expenditures related to the on-going capital projects. This decrease was partially offset by increase in accounts receivable of $4.9 million. The increase in accounts receivable was primarily due to an increase in toll and fee gross receivable of $11.8 million, partially offset by an increase in allowance for doubtful accounts of $7.0 million.

As of June 30, 2014 and 2013, current, non-current and other assets (excluding capital assets) were $665.1 million and $392.6 million, respectively, an increase of $272.5 million or 69.4% from fiscal year 2013. The increase was due primarily to the proceeds from the Toll System Revenue Bonds, Series

2014A ("Series 2014A Bonds") issuance classified as restricted cash and cash equivalents and restricted investments held by the trustee for capital expenditures.

### Capital Assets

As of June 30, 2015 and 2014, capital assets, net, were $1.6 billion and $1.5 billion, an increase of $102.4 million or 6.9% from fiscal year 2014.

As of June 30, 2014 and 2013, capital assets, net, were $1.5 billion and $1.4 billion, an increase of $80.8 million or 5.8% from fiscal year 2013.

For fiscal years 2015 and 2014, the additions to construction in progress included capital expenditures for capital projects of $104.5 million and $90.3 million, respectively; capitalized interest of $22.0 million and $13.6 million, respectively; and indirect cost allocations of $4.0 million and $4.2 million, respectively.

Major capital projects completed, contributed, and/or placed into service during **Fiscal Year 2015** included the following:

- Project 87409 – *SR 874 Mainline Reconstruction* – This project included the widening from 4 to 6 lanes and resurfacing of SR 874 mainline from Kendall Drive to SR 826 which will increase the capacity of the entire SR 874 corridor. This project ties into the previously completed Florida Department of Transportation ("FDOT") SR 826/Bird Road interchange improvement project to the north. This project was the last phase of the reconstruction of the entire SR 874 corridor. The total project expenditures were $65.8 million, with $57,000 expended in fiscal year 2015.

- Project 83603 – *SR 836/SR 112 Interconnector* – This project included a funding agreement between the Authority and FDOT for acquisition of right-of-way for a project to connect SR 836 to Miami International Airport ("MIA"). It also included the design and construction of collector/distributor roads to access the Miami Intermodal Center ("MIC") and MIA from SR 836, with provisions for connections to SR 836 Managed Lanes. The total project expenditures were $86.6 million. The transfer of assets from FDOT produced a capital contribution to the Authority in the amount of $38.0 million which is reflected in the Statements of Revenues, Expenses and Changes in Net Position. The Authority's expenditures, mostly payments to FDOT, plus the capital contribution from FDOT, yielded a capital asset placed in service of $124.6 million which consisted of land and various roadways.

- Project 11211 – *Central Boulevard Reconstruction* – Central Boulevard is the primary vehicular access roadway connecting the MIA to SR 836 and SR 112, which are the most heavily traveled roadways on the MDX expressway system and are part of the Florida Strategic Intermodal System. The Authority partnered with the MIA and FDOT to reconstruct the Central Boulevard. The Authority is the local funding partner with FDOT on the grant with a 50/50 match. . The Authority procured and managed the project on behalf of MIA. Although the scope of the project is substantially complete, some punch-list items will be completed in fiscal year 2016. The Authority has transferred the project's capital assets to MIA and has recorded a capital contribution to MIA in fiscal year 2015 in the amount of

$67.9 million. The total project cost is $60.9 million, with $890,000 expended in fiscal year 2015.

Major on-going capital projects during **Fiscal Year 2015** included the following:

**System-Wide Project**

- Project 10019 – *System-wide Implementation of Dynamic Message Signs ("DMS")* –The Intelligent Transportation System ("ITS") network, is linked to the SunGuide Transportation Management Center to help manage traffic operations on the System. Through this project, by fiscal year 2016, the Authority will install DMS system-wide that will display live traffic condition information collected by the Authority's ITS surveillance system, thus further improving operations and safety throughout the System. The total project cost is $12.5 million, with $3.3 million expended in fiscal year 2015.

**Airport Expressway (SR 112)**

- Project 11209 – *SR 112 Infrastructure Modifications for Open Road Tolling* – This project, which is 90% complete, provides for the removal of the existing toll plaza, installation of gantries, shelters and signage, and reconstruction of the SR 112 roadway to accommodate highway-speed vehicle traffic for the implementation of Open Road Tolling ("ORT"). The Authority began revenue collection in November 2014 with the overall completion of the infrastructure aspects of this project anticipated for early fiscal year 2016. The total project cost is $15.7 million, with $5.6 million expended in fiscal year 2015.

**Dolphin Expressway (SR 836)**

- Project 83608 – *SR 826/SR 836 Interchange Improvement* – The Authority partnered with the FDOT for the right-of-way acquisition, design and construction of the mutually needed SR 826/SR 836 Interchange Improvement project. The Authority has committed to contributing $207.5 million, with $136.0 million already paid, towards the final design and construction of the project via an inter-local agreement with FDOT. This project, which is currently 90% complete, is significant because this interchange is the most congested in Miami-Dade County. The Authority anticipates completion of this project in mid-fiscal year 2016. The total project cost is $214.1 million, with $25.6 million expended in fiscal year 2015.

- Project 83611 – *SR 836/I-95 Interchange Improvements* – This project, which is in the final stages of planning, will provide additional capacity and improvements to SR 836 from the 17th Avenue interchange to the SR 836/I-95/I-395 interchange just north of downtown Miami, for a distance of 1.5 miles. This project will provide the option to directly access I-95 from the SR 836 interchange at NW 12th Avenue without having to enter SR 836 eastbound, as well as the option to exit from I-95 southbound to NW 14th Street, NW 12th Avenue and a new exit at North River Drive, without having to enter SR 836 westbound. The improvements address the safety, mobility and community needs in the project area. The Authority is partnering with FDOT for the construction of this project which is expected to have five year duration. The total project cost is $257.2 million, with $3.2 million expended in fiscal year 2015.

- Project 83618 – *SR 836 Southwest Extension* – The Authority is evaluating the possibility of a new 15 mile expressway extension of SR 836 from NW 137th Avenue to the southwest Kendall area. The extension of SR 836 is envisioned as a multimodal facility to also include express transit buses that would address the existing transportation needs of a vast community of residents living in the south western areas of Miami-Dade County west of the Homestead Extension of the Florida Turnpike ("HEFT"). The Project Development & Environment ("PD&E") study is ongoing to select a preferred alternative. Final design and construction for this project are not yet funded. The total cost for the Project Development phase is $12.4 million, with $1.2 million expended in fiscal year 2015.

- Project 83624 – *SR 836 Infrastructure Modifications for Open Road Tolling (East Section)* – The purpose of the project is to complete the infrastructure modifications necessary to convert SR 836 to an ORT facility from NW 62nd Avenue to I-95/I-395, including existing toll plaza modifications, installation of gantries, equipment shelters, and off-system and on-system signage. The toll plaza modifications and gantry installations were completed in mid-fiscal year 2015, with revenue collection beginning within that period. The overall project including the infrastructure aspects are expected to be completed by early fiscal year 2016. The total project cost is $29.1 million, with $10.4 million expended in fiscal year 2015.

- Project 83628 – *SR 836 Operational, Capacity and Interchange Improvements* – This project will alleviate congestion along SR 836 by providing additional travel lanes from NW 57th Avenue to NW 17th Avenue, improve safety by providing right-hand exits and other improvements at interchanges at NW 57th Avenue, NW 42nd Avenue, and NW 27th Avenue. The design-build phase of this project began in April 2015 and completion is anticipated in fiscal year 2018. The total project cost is $191.2 million, with $13.0 million expended in fiscal year 2015.

- Project 83629 – *SR 836 Interchange Modifications at 87th Avenue* – This project provides for the reconstruction of the SR 836 and NW 87th Avenue interchange west of the SR 826/SR 836 interchange improvement's project limits. These improvements tie into the Authority's completed improvements to SR 836 on the west and FDOT's SR 826/SR 836 interchange improvements on the east, and enhance operations on the SR 836 corridor. The final design is complete and the Authority anticipates completion of construction in fiscal year 2020. The total project cost is $89.8 million, with $425,000 expended in fiscal year 2015.

- Project 83631 – *SR 836 Infrastructure Modifications for Open Road Tolling (West Section)* – The project, which is 70% complete, consists of the design and construction activities for infrastructure modifications required to support the ORT conversion of SR 836 between NW 137th Avenue and SR 826. The Authority began revenue collection on the mainline in November 2014 and on the ramps in March 2015 with overall completion of the infrastructure aspects of this project anticipated for mid-fiscal year 2016. The total project cost is $12.7 million, with $7.3 million expended in fiscal year 2015.

**Don Shula Expressway (SR 874)**

- Project 87410 – *New SR 874 ramp connector to and from SW 128th Street* – This project will provide alternative expressway access in the area, reducing congestion and providing additional connectivity and mobility to the rapidly growing area of southwest Miami-Dade County. The project will provide greater accessibility to major employment and activity centers located east of this area. A portion of this project is currently being constructed by the Florida's Turnpike Enterprise ("FTE") under an inter-local agreement with the Authority as part of a larger project to widen the HEFT and reconstruct the HEFT/SR 874 interchange. The Authority will be starting the design-build phase for the remaining project in fiscal year 2016 and anticipates completion of this project in fiscal year 2018. The total project cost is $103.9 million, with $6.6 million expended in fiscal year 2015.

**Gratigny Parkway (SR 924)**

- Project 92404 – *SR 924 Extension West to the Homestead Extension of the Florida's Turnpike* – The Authority has substantially completed the PD&E study for a new 2.3 mile expressway extension of the Gratigny Parkway to the HEFT in the vicinity of Okeechobee Road. Right-of-way activities are ongoing. Final design is scheduled to start in fiscal year 2016. Construction is not yet funded, except for a 1.6 mile section of NW 138th Street, which has been reconstructed to a predominantly 6 lane section. This section of roadway was transferred by Miami-Dade County in a prior fiscal year and is now under the jurisdiction of the Authority. The total project cost is $37.5 million, with $700,000 expended in fiscal year 2015.

(See Note 4, "Capital Assets", in the Notes to the Financial Statements for more information.)

**Deferred Outflows of Resources**

As of June 30, 2015 and 2014, the Authority's deferred outflows of resources totaled $64.7 million and $69.9 million, respectively.

The Authority implemented in fiscal year 2013 GASB Statement No. 65 Items Previously Reported as Assets and Liabilities ("GASB 65"), which reclassifies certain items previously reported as assets and liabilities into one of four categories: outflows or deferred outflows of resources and inflows or deferred inflows of resources.

In accordance with GASB 65, as of June 30, 2015 and 2014, deferred outflows of resources is comprised of the negative fair value of derivative instruments of $19.0 million and $51.6 million; deferred amounts from refundings of $44.7 million and $18.3 million; and pension amounts due to changes in assumptions and proportion of net pension liability and contributions subsequent to the measurement date of $1.1 million and $0, respectively. The negative fair value of the derivatives are also reflected as a liability as the transactions are considered effective hedges in accordance with GASB Statement No. 53 *Accounting and Financial Reporting for Derivative Instruments* ("GASB 53"), resulting in no effect to the net position of the Authority. The deferred amounts from refundings were previously reported in prior years as a component of revenue and refunding bonds payable. Under GASB 65, deferred amounts from the refundings do not meet the definition of liabilities; therefore, these amounts are now reported under deferred outflows of resources or deferred inflows of resources. Under GASB Statement No. 71, *Pension*

*Transition for Contributions Made Subsequent to the Measurement Date–an amendment of GASB 68* ("GASB 71"), deferred outflows of resources for pension contributions do not meet the definition of liabilities; therefore, these amounts are reported under deferred outflows of resources.

Fiscal year 2015 deferred outflows of resources decreased $5.2 million or 7.5% from fiscal year 2014; primarily due to Authority partially refunding Revenue Bond Series 2005 and terminating two of the associated swaps, with UBS and Citibank, for $32.7 million and a decrease of amortization of $4.5 million on previously deferred amounts, partially offset by additional deferred amount related to the Series 2014B Bonds of $30.9 million and deferred outflows of resources related to pensions of $1.1 million due to the implementation of GASB 71.

Fiscal year 2014 deferred outflows of resources decreased $1.8 million or 2.5% from fiscal year 2013; primarily due to amortization of $2.6 million, partially offset by an increase in the negative fair value of the derivatives of $830,000.

## Total Liabilities and Deferrals

As of June 30, 2015 and 2014, total liabilities and deferrals were approximately $1.7 billion in both years; an increase of $10.5 million or 0.6% (less than 1%).

### Current Liabilities

As of June 30, 2015 and 2014, the Authority's current liabilities totaled $93.2 million and $57.1 million, respectively. Fiscal year 2015 current liabilities increased $36.1 million or 63.3% from fiscal year 2014 primarily due to an increase in accrued interest payable of $10.8 million, current portion of loans payable to other governments of $10.7 million, accounts payable of $8.6 million, current portion of revenue and refunding bonds payable of $3.4 million and accrued expenses of $2.7 million.

Fiscal year 2014 current liabilities decreased $7.0 million or 10.9% from fiscal year 2013 primarily due to a decrease in current portion of revenue and refunding bonds payable of $9.1 million, current portion of loans payable to other governments of $1.6 million, arbitrage rebates payable of $1.3 million and accounts payable of $315,000; partially offset by an increase in accrued interest payable of $3.9 million and accrued expenses of $1.4 million.

### Revenue and Refunding Bonds Payable

| | 2015 | 2014 | 2013 |
|---|---|---|---|
| Bonds outstanding | $ 1,501,165,000 | $ 1,510,286,662 | $ 1,210,028,330 |
| Net bond premiums and discounts | 102,404,222 | 70,544,324 | 44,920,487 |
| **Total revenue bonds, net** | **1,603,569,222** | **1,580,830,986** | **1,254,948,817** |
| Current portion of revenue bonds payable | (8,040,000) | (4,686,662) | (13,786,667) |
| **Total long-term revenue bonds** | **$ 1,595,529,222** | **$ 1,576,144,324** | **$ 1,241,162,150** |

As of June 30, 2015 and 2014, the Authority's outstanding long-term bonds payable totaled $1.6 billion for both years (net of current portion, bond premium/discount); the current portion of the bonds payable is included in current liabilities and totaled $8.0 million and $4.7 million, respectively. As of June 30, 2015

and 2014, the Authority's long-term bonds consist of 94.6% and 84.0% fixed rate, respectively, and 5.4% and 16.0% variable rate, respectively. The decrease of variable debt percentage in fiscal year 2015 is due to the partial refunding of Series 2005 Bonds.

In fiscal year 2015, the Authority issued the Toll System Refunding Revenue Bonds, Series 2014B ("Series 2014B Bonds") in the amount of $266,425,000 to (a) refund a portion of the Toll System Revenue Bonds, Series 2005 (Non-Taxable) (the "Series 2005 Bonds") in the amount of $160,935,000; and Toll System Revenue Bonds, Series 2006 (Non-taxable) (the "Series 2006 Bonds") in the amount of $109,925,000; (b) pay termination costs associated with two interest rate swap agreements, UBS A.G. and Citibank, N.A.; (c) fund an increase in the debt service reserve fund requirement resulting from the issuance of the Series 2014B Bonds; and (d) pay certain costs associated with the issuance of the Series 2014B Bonds. Series 2014B Bonds resulted in a present value savings of $11.4 million.

As of June 30, 2014 and 2013, the Authority's outstanding long-term bonds payable totaled $1.6 billion and $1.2 billion (net of current portion, bond premium/discount), respectively; the current portion of the bonds payable is included in current liabilities and totaled $4.7 million and $13.8 million, respectively. As of June 30, 2014 and 2013, the Authority's long-term bonds consist of 84.0% and 80.1% fixed rate, respectively, and 16.0% and 19.9% variable rate, respectively.

In fiscal year 2014, the Authority issued the Series 2014A Bonds, totaling $314,045,000 to (a) pay a portion of the cost of certain improvements to the system included in the five-year work program of the Authority in effect from time to time, including capitalized interest of $16,091,574 on the Series 2014A Bonds; (b) fund the increase in the debt service reserve fund requirement resulting from the issuance of the Series 2014A Bonds; and (c) pay costs associated with the issuance of the Series 2014A Bonds.

In fiscal year 2014, the Authority also issued $74,750,000 Toll System Refunding Revenue Bonds, Series 2013B ("Series 2013B Bonds"). The Authority executed a call modification with Citibank which owned $74,750,000 par amount of the Toll System Revenue Bonds, Series 2006 ("Series 2006 Bonds") maturing between July 1, 2034 and 2037. In exchange for agreeing to postpone the initial call date from July 1, 2016 to July 1, 2023, Citibank agreed to pay the Authority $3,737,500 for the modification on the call option, which will be used for the July 1, 2014 and January 1, 2015 interest payments. The transaction was executed as a refunding and all bond issuance costs were paid by Citibank.

In fiscal year 2013, the Authority issued Revenue and Refunding Revenue Bond Series 2013A ("Series 2013A Bonds"), totaling $270.2 million for the purpose of, together with any other available moneys, to (a) current refund all of the Authority's outstanding Toll System Refunding Revenue Bonds, Series 2001A ("Series 2001A Bonds") in the outstanding principal amount of $88,925,000, Toll System Refunding Revenue Bonds, Series 2002 ("Series 2002 Bonds") in the outstanding principal amount of $32,010,000, and advance refund Toll System Revenue Bonds, Series 2004B ("Series 2004B Bonds") in the outstanding principal amount of $175,000,000; and (b) pay costs and expenses relating to the issuance of the Series 2013A Bonds. Series 2013A Bonds resulted in a present value savings of $28.8 million.

The Series 2013A Bonds advance refunded the Series 2004B Bonds and the Authority entered into an escrow agreement with its Trustee, The Bank of New York Mellon Trust Company, N.A. as escrow agent. The Authority deposited a portion of the Series 2013A Bonds proceeds and other money available in an escrow deposit trust fund held by the escrow agent. Such proceeds were invested in direct obligations of the United States of America (escrow securities). The escrow securities, interest thereon and cash on deposit in the 2004B Escrow Fund were be sufficient to pay all principal and interest on the

Series 2004B Bonds to their maturity date. Series 2004B Bonds maturing on July 1, 2014 were paid on their maturity date and maturities after July 1, 2014 will be redeemed on July 1, 2014 at the redemption price of 100% of the principal amount plus accrued interest thereon. Accordingly, the escrow account's assets and liabilities for the defeased bonds were not included in the accompanying financial statements. As required, the escrow agent defeased the bonds on July 1, 2014.

In April 2013, the Authority cash defeased $2,320,000 of its Toll System Revenue and Refunding Revenue Bonds, Series 2010A ("Series 2010A Bonds") and $2,925,000 of its Toll System Refunding Revenue Bonds, Series 2010B ("Series 2010B Bonds") scheduled to mature on July 1, 2013 and July 1, 2014, respectively, by depositing cash from the Authority's General Fund in escrow with The Bank of New York Mellon Trust Company, N.A. The cash deposited was invested in State and Local Government Securities ("SLGS") and provided for the debt service payments on the defeased bonds. Accordingly, the escrow account's assets and liabilities for the defeased bonds are not included in the accompanying financial statements. As required, the escrow agent defeased the bonds on July 1, 2014.

See Note 6, "Long-Term Liabilities", in the Notes to the Financial Statements for a more detailed discussion.)

### Net Pension Liability

As of June 30, 2015 and 2014, net pension liability totaled $2.1 million and $0, respectively. This increase was due to the implementation of GASB Statement No. 68 *Accounting and Financial Reporting for Pensions* ("GASB 68") in fiscal year 2015.

(See Note 7, "Retirement Plans", in the Notes to the Financial Statements for a more detailed discussion.)

### Derivative Instrument Fair Market Value (FMV)

As of June 30, 2015 and 2014, derivative instrument fair market value (FMV) totaled $19.0 million and $51.6 million, respectively. The negative FMV decrease was primarily due to the Authority terminating two of the three outstanding swaps in September 2014, with UBS and Citibank, as part of Series 2014B Bonds. The remaining outstanding swap with JP Morgan meets the criteria of an effective hedge under GASB 53 which is evaluated by the Authority's financial advisors on an annual basis.

As of June 30, 2014 and 2013, derivative instruments FMV totaled $51.6 million and $50.8 million, respectively. The negative FMV increase was due to market fluctuation on the three outstanding swaps related to derivative instruments of Series 2005 Bonds of $241.4 million. The transactions under GASB 53 met the criteria of an effective hedge which is evaluated by the Authority's financial advisors on an annual basis.

(See Note 6, "Long-Term Liabilities", under Interest Rate Swap Agreements in the Notes to the Financial Statements for a more detailed discussion.)

### Long Term Loans Due to Other Governments

As of June 30, 2015 and 2014, long term loans due to other governments totaled $0 and $15.7 million, respectively. The $15.7 million decrease was due to a reclassification to current portion of loans due to other governments. As of June 30, 2015 and 2014, loans due to other governments were comprised of

State Infrastructure Bank ("SIB") loans of $12.0 million and $16.3 million, respectively and Toll Facility Revolving Trust Fund ("TRFT") loans of $3.8 million and $4.5 million, respectively.

(See Note 11, "Subsequent Events", in the Notes to the Financial Statements for a more detailed discussion.)

As of June 30, 2014 and 2013, long term loans due to other governments totaled $15.7 million and $21.0 million, respectively. The $5.3 million decrease was primarily due to a reclassification to current portion of loans due to other governments. As of June 30, 2014 and 2013, long term loans due to other governments were comprised of SIB loans of $12.0 million and $16.3 million, respectively and TRFT loans of $3.8 million and $4.8 million, respectively.

## Deferred Inflows of Resources

As of June 30, 2015 and 2014, deferred inflows of resources totaled $3.6 million and $2.3 million, respectively. The increase of $1.4 million is due to pension amounts due to changes in investments and experience of $1.3 million related to GASB 68 implementation while partially offset by amortization of a refunding related to the Series 2013B Bonds of $110,000.

As of June 30, 2014 and 2013, deferred inflows of resources totaled $2.3 million and $0, respectively. This increase consisted of a deferred amount, net of amortization from the call modification refunding related to the Series 2013B Bonds.

## Net Position

As of June 30, 2015 and 2014, the net position totaled $560.5 million and $508.1 million, respectively, an increase of $52.4 million or 10.4%. Net position is comprised of net investment in capital assets of $211.9 million and $200.6 million, respectively; restricted of $167.4 million and $165.9 million, respectively; and unrestricted of $181.1 million and $141.5 million, respectively. Fiscal year 2015 net position beginning balance as required by GASB Statement No. 68, *Accounting for Pensions by State and Local Government Employer* ("GASB 68") was adjusted by $2.5 million.

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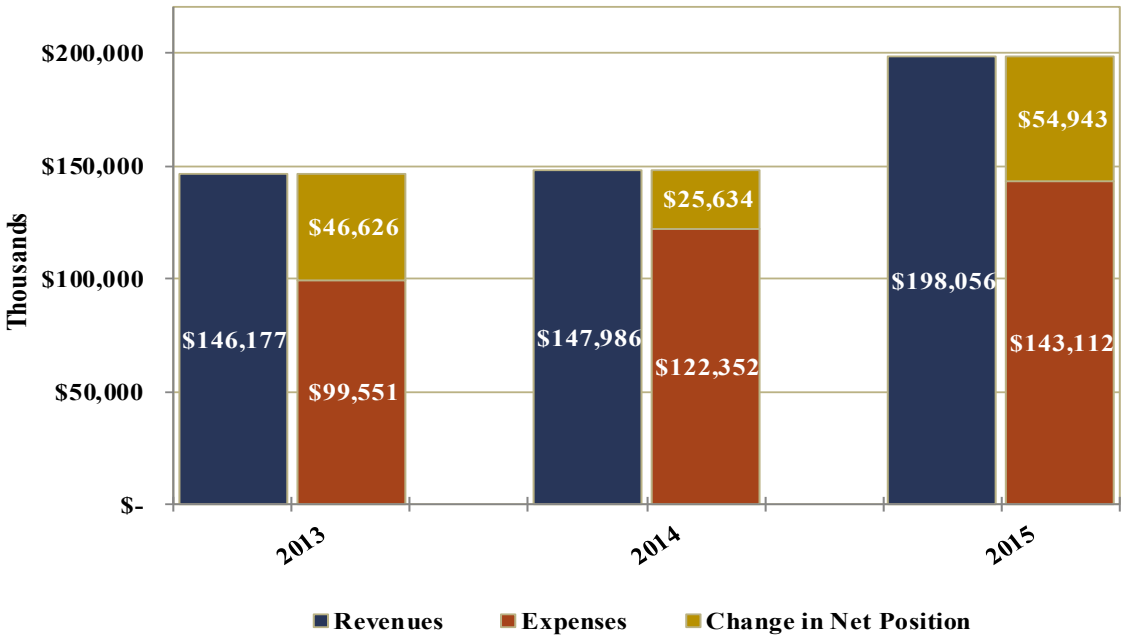
**Financial Highlights - Statements of Revenues, Expenses and Changes in Net Position**

- The Authority's operating revenues of $183.5 million, increased $53.5 million or 41.2% in fiscal year 2015, compared to a decrease of $5.4 million or 4.0% in fiscal year 2014.
- The Authority's toll and fee revenues, net of $182.8 million, increased $53.6 million or 41.5% in fiscal year 2015, compared to a decrease of $5.2 million or 3.9% in fiscal year 2014.
- The Authority's operating expenses of $74.6 million, increased $8.5 million or 12.9% in fiscal year 2015, compared to an increase of $9.7 million or 17.3% in fiscal year 2014.
- The Authority's operations expenses of $32.6 million, increased by $9.1 million or 38.6% in fiscal year 2015. The increase was primarily due to a full year of expenses for the TBP billings processor and additional SunPass® transactional costs due to the opening of new tolling gantries on SR 112 and SR 836.
- The Authority's operating income of $108.9 million, increased $45.0 million or 70.5% in fiscal year 2015, compared to a decrease of $15.1 million or 19.2% in fiscal year 2014.



### Statements of Revenues, Expenses and Changes in Net Position

| | 2015 | 2014 | 2013 |
|---|---|---|---|
| ***Operating revenues:*** | | | |
| Toll and fee revenues, net | $ 182,824,359 | $ 129,216,643 | $ 134,412,451 |
| Other revenues | 717,292 | 803,272 | 1,004,538 |
| **Total operating revenues** | **183,541,651** | **130,019,915** | **135,416,989** |
| ***Operating expenses:*** | | | |
| Operations | 32,627,952 | 23,537,256 | 16,718,880 |
| Maintenance | 6,843,241 | 6,396,521 | 5,887,349 |
| Professional contracted services | 2,180,928 | 2,977,881 | 1,561,248 |
| Administration | 3,804,555 | 3,763,919 | 3,580,437 |
| Depreciation and amortization | 29,180,708 | 29,461,363 | 28,642,743 |
| **Total operating expenses** | **74,637,385** | **66,136,940** | **56,390,657** |
| **Total operating income** | **108,904,266** | **63,882,975** | **79,026,332** |
| ***Non-operating revenues (expenses):*** | | | |
| Investment income | 2,064,490 | 2,754,191 | 3,198,329 |
| Miscellaneous income | - | 3,737,500 | 647,083 |
| Interest expense | (56,100,014) | (46,324,759) | (40,743,241) |
| Bond issuance expense | (1,390,687) | (2,222,551) | (2,416,419) |
| Disposal of assets | (10,984,218) | (7,667,356) | (852) |
| **Total non-operating revenues (expenses)** | **(66,410,429)** | **(49,722,975)** | **(39,315,100)** |
| **Income before contributions for capital projects** | 42,493,838 | 14,160,000 | 39,711,232 |
| Contributions for capital projects | 12,449,561 | 11,474,306 | 6,914,507 |
| **Change in net position** | **54,943,398** | **25,634,306** | **46,625,739** |
| **Net position, beginning of year** | **508,109,000** | **482,474,694** | **435,848,955** |
| GASB 68 restatement for beginning NPL | (2,544,956) | - | - |
| **Net position, end of year** | **$560,507,442** | **$508,109,000** | **$482,474,694** |

### Operating Revenues

Total operating revenues were $183.5 million and $130.0 million for fiscal years 2015 and 2014, respectively. Total operating revenues for fiscal year 2015 increased $53.5 million or 41.2% over fiscal year 2014, compared to a decrease of $5.4 million or 4.0% over fiscal year 2013. Fiscal year 2015 and 2014, total operating revenues consist of toll and fee revenues, net, of $182.8 million and $129.2 million, respectively, and other revenues of $717,000 and $803,000, respectively.

### Toll and Fee Revenues, net

Cash collections at the SR 836 97th Avenue and SR 112 Mainline toll plazas ceased on November 14, 2014. Cash collections at the SR 836 East Mainline and 17th Avenue toll plazas ceased on July 22, 2013. These cash collection locations were the final locations closed as part of the Authority's conversion to All Electronic Tolling ("AET") via ORT. All tolls on the System are now collected through electronic tolling.

Customers with an active SunPass® prepaid account maintain highway speeds while passing through tolling points and the toll amount is deducted from their account balance. Customers who do not have an active SunPass® prepaid account will receive a Toll-By-Plate ("TBP") invoice with an image of their license plate and a listing of all their toll transactions at the TBP rate.

Cash and SunPass® revenues are recognized at lane exit, TBP revenue is recognized when a customer is invoiced, and TBP revenues are offset by an allowance for doubtful accounts.

The Cash Back Toll Dividend ("CBTD") Program was implemented during fiscal year 2015 and is offered to SunPass® customers who register with the Authority in order to be eligible to receive a cash back payment. Cash back payment only occurs if the Authority achieves all of its financial and operational performance measures for the fiscal year.

For fiscal year 2015, toll and fee revenues, net, were comprised of SunPass® of $148.0 million or 81.0%, cash collections of $1.8 million or 1.0%, TBP, net of $30.8 million or 16.8%, and recovery and fee revenues of $4.3 million or 2.4%, partially offset by Cash Back Toll Dividend payable of $2.2 million or -1.2%. During fiscal year 2015, 83,000 customers registered for the program while 37,000 qualified for cash back payment totaling $2.2 million. TBP gross revenue was $41.8 million, less an allowance for doubtful accounts of $11.0 million, which yielded net TBP revenue of $30.8 million. The total net toll and fee revenues increase of $53.6 million was primarily due to converting the last two expressways, Dolphin (SR836) and Airport (SR 112), to ORT.

For fiscal year 2014, toll and fee revenues, net, were comprised of SunPass® of $107.9 million or 83.5%, cash collections of $5.8 million or 4.5%, TBP, net of $12.7 million or 9.8%, and recovery and fee revenues of $2.8 million or 2.2%. TBP gross revenue of $12.1 million, with an allowance release for doubtful accounts of $540,000, yielded net TBP revenue of $12.7 million. The total net toll and fee revenues decrease of $5.2 million was primarily due to decreases in toll cash collections of $4.7 million and fee revenues of $4.0 million, partially offset by increases in SunPass® collections of $2.9 million and TBP revenues of $700,000. Cash collections decreased due to the closure of the SR 836 East Mainline and 17th Avenue toll plazas, though some customers shifted to SunPass® and TBP. While cash and SunPass® revenues are recognized at lane exit, TBP revenue is recognized when a customer is invoiced. TBP revenues were lower than expected due to a delay in invoice generation and mailing during the transition to a new billing service provider.

### Other Revenues

Other revenues were $717,000 and $803,000 for fiscal years 2015 and 2014, respectfully. Other revenues consist of leasing excess parcels, permits and other miscellaneous revenue.

## Operating Expenses

Total operating expenses were $74.6 million and $66.1 million for fiscal years 2015 and 2014, respectively. Operating expenses increased $8.5 million or 12.9% over fiscal year 2014, compared to an increase of $9.7 million or 17.3% over fiscal year 2013. In fiscal year 2015 and 2014, operating expenses (excluding depreciation expenses) were $45.4 million and $36.7 million, an increase of $8.8 million or 23.9% over fiscal year 2014, compared to an increase of $8.9 million or 32.2% over fiscal year 2013.

### Operations

Operations expenses were $32.6 million and $23.5 million for fiscal years 2015 and 2014, respectively. In fiscal year 2015, operations increased $9.1 million or 38.6% primarily due to for billing service provider expenses for a full year of operations and additional transactions related to the new tolling points of $3.0 million, FDOT pass-through charges for SunPass® processing cost of $3.5 million due to additional transactions related to new tolling gantries, ORT in-lane software/hardware maintenance of $2.1 million, full year of image review staffing expenses of $715,000, TBP related postage $590,000, SunPass® transponder subsidy paid to FTE of $250,000, service patrols expenses of $175,000; partially offset by a decrease in toll plaza collections staffing of $925,000, property insurance of $125,000 and bank fees of $125,000.

Operations expenses were $23.5 million and $16.7 million for fiscal years 2014 and 2013, respectively. In fiscal year 2014, operations increased $6.8 million or 40.8% primarily due to an increase in Account Management and Toll Enforcement Center ("AMTEC") back office services of $4.1 million for costs related to the prior toll operations vendor, new billing service provider expenses of $1.3 million, new image review staffing expenses of $1.3 million, SunPass® transponder subsidy paid to FTE of $725,000, staffing expenses at the Customer Service Center of $445,000, toll transition expenses related to payments to our prior toll operations vendor for a revised software interface and severance payments to cash toll collectors of $225,000, service patrols expenses of $85,000, general engineering consultant support of $45,000 and operations related information technology expenses of $100,000; partially offset by a decrease in toll plaza collections staffing of $885,000, TBP related postage $250,000, bank fees of $200,000 and FDOT pass-through charges for SunPass® processing of $195,000.

(See Note 9, "Litigation and Un-asserted Claims" in the Notes to the Financial Statements for a more detailed discussion.)

### Maintenance

Maintenance expenses were $6.8 million and $6.4 million for fiscal years 2015 and 2014, respectively. In fiscal year 2015, maintenance costs increased $445,000 or 7.0% primarily due to an increase in Intelligent Transportation System ("ITS") maintenance expenses of $250,000 related to the completion of repairs, general engineering consultant maintenance support of $125,000, periodic maintenance of $110,000, roadway and other maintenance services of $70,000; partially offset by a decrease in structural inspections of $110,000 based on variations in the bi-annual cycle of inspections.

In fiscal year 2014, maintenance costs increased $510,000 or 8.6% due to an increase in roadway, plaza and other maintenance services of $305,000 related to the additional expenses for the planned expansion of SR 924 along NW 138th Street, additional structural inspections of $190,000 based on variations in the bi-annual cycle of inspections, Intelligent Transportation System ("ITS") maintenance expenses of

$55,000 due to the completion of a backlog of repairs, and general engineering consultant maintenance support of $40,000; partially offset by a decrease in periodic maintenance expenses of $75,000.

### Professional Contracted Services

Contracted services were $2.2 million and $3.0 million for fiscal years 2015 and 2014, respectively. In fiscal year 2015, contracted services decreased $800,000 or 26.8% due to an decrease in legal fees of $1.8 million primarily related to litigation, and general engineering consultant expenses of $250,000 and an decrease of $425,000 in expenses capitalized as part of the indirect cost allocation; partially offset by an increase in public communication expenses of $750,000 and traffic & revenue consultant expenses of $80,000.

In fiscal year 2014, contracted services increased $1.4 million or 90.7% due to an increase in legal fees of $1.9 million primarily related to litigation, and general engineering consultant expenses of $615,000; partially offset by a decrease in public communication expenses of $200,000, financial advisor expenses of $50,000, traffic & revenue consultant expenses of $20,000, and an increase of $770,000 in expenses capitalized as part of the indirect cost allocation. The decrease of the financial advisor and traffic & revenue consultants were due to expenses paid from bond proceeds as part of the refundings instead of operating expenses.

### Administration

Administration expenses were $3.8 million for fiscal years 2015 and 2014. In fiscal year 2015, administration expenses increased $40,000 or 1.1% primarily due to an increase in headquarter office expenses of $60,000, information technology maintenance and support expenses of $55,000, training expenses of $14,000, bond administration fees of $10,000 and other various administrative expenses of $23,000; partially offset by a decrease in document storage of $55,000, salaries, taxes and benefits of $20,000, temporary staffing of $30,000 and computer equipment expenses of $17,000.

In fiscal year 2014, administration expenses increased $185,000 or 5.1% primarily due to an increase in salaries, taxes and benefits of $125,000, document storage expenses of $40,000, computer equipment expenses of $25,000, information technology maintenance and support expenses of $20,000, education/training expenses of $20,000 and other various administrative expenses of $35,000; partially offset by a decrease in small business outreach of $80,000.

### Depreciation and Amortization

Total depreciation and amortization were $29.2 million and $29.5 million for fiscal years 2015 and 2014, respectively. In fiscal year 2014, depreciation and amortization expense decreased $280,000 or 1.0% over fiscal year 2014, compared to an increase $820,000 or 2.9% over fiscal year 2013. The decrease in fiscal year 2015 was due to the disposal of toll plaza related assets during the fiscal year. The increase in fiscal year 2014 was due to a full year's depreciation from assets placed in service during fiscal year 2013.

## Non-Operating Revenue

### Investment Income

Investment income was $2.1 million and $2.8 million for fiscal years 2015 and 2014, respectively. Investment income for fiscal year 2015, decreased $690,000 or 25.0% from fiscal year 2014, compared to a decrease of $445,000 or 13.9% from fiscal year 2013.

The decrease for fiscal year 2015 was primarily due to a one-time investment income payout on a joint participation agreement in fiscal year 2014 that did not occur in fiscal year 2015; partially offset by additional funds on hand for investment related to the Series 2014A Bonds issued at the end of fiscal year 2014. In fiscal year 2015 and 2014, the change in fair market value on investment income was $385,000 and $320,000, respectively.

The decrease for fiscal year 2014 was primarily due to lower reinvestment yields on investments and the termination of an investment agreement towards the end of fiscal year 2013; partially offset by the absence of an arbitrage expense in fiscal year 2014 and investment income on a joint participation agreement. In fiscal year 2014 and 2013, the change in fair market value on investment income was $320,000 and $240,000, respectively.

### Miscellaneous Income

Miscellaneous income was $0 and $3.7 million for fiscal years 2015 and 2014, respectively. Miscellaneous income for fiscal year 2015 decreased to $0 from fiscal year 2014, compared to an increase of $3.1 million or 477.6% from fiscal year 2013.

Miscellaneous income for fiscal year 2014 related to payment received for a call modification with Citibank. In exchange for agreeing to postpone the initial call date on the $74,750,000 par amount which Citibank owns of the Series 2006 Bonds, Citibank agreed to pay the Authority $3,737,500 for the modification on the call option.

## Non-Operating Expenses

### Interest Expense

Interest expense was $56.1 million and $46.3 million for fiscal years 2015 and 2014, respectively. Interest expense for fiscal year 2015 increased $9.8 million or 21.1% over fiscal year 2014, compared to an increase of $5.6 million or 13.7% over fiscal year 2013. For fiscal year 2015, the increase was primarily due to an increase in senior bond interest of $12.5 million and a swap termination payment of $8.1 million, partially offset by an increase in capitalized interest of $8.4 million and a decrease of amortization expense of $2.4 million and subordinate interest of $100,000.

Interest expense in fiscal years 2015 and 2014 was comprised of $72.9 million and $60.5 million in actual interest payments on debt, $(3.0 million) and $(615,000) million in amortization of bond issuance costs, less capitalized interest of $22.0 million and $13.6 million, respectively.

For fiscal year 2014, the increase was primarily due to a reduction in capitalized interest of $9.5 million, partially offset by decrease of amortization expense of $2.1 million, senior bond interest of $1.7 million, and subordinate interest of $100,000.

### Bond Issuance Expenses

Bond issuance expenses were $1.4 million and $2.2 million for fiscal years 2015 and 2014, respectively. Issuance expense in fiscal year 2015 and 2014 are due to Series 2014B refunding and Series 2014A, respectfully. Bond issuance expense consists of underwriting fees and other professional services cost associated with the issuance of the Authority's revenue bonds.

### Disposal of Assets

Disposal of assets were $11.0 million and $7.7 million for fiscal years 2015 and 2014, respectively. In fiscal year 2015 the disposals were primarily due to the demolition of toll plazas and other roadway assets on SR 112 and SR 836 as part of the expressway's conversion to full ORT and a project in the planning phase.

In fiscal year 2014 the disposals were primarily due to the disposal of the toll software system considered impaired in accordance with GASB Statement No. 34, *Basic Financial Statements—and Management's Discussion and Analysis—for State and Local Governments* ("GASB 34") and land disposals related to acquisition costs on parcels that ultimately did not occur.

### Contributions for Capital Projects

Contributions for capital projects represent netting amounts received from and donated to other entities for design and/or construction of capital projects and land acquisition.

Contributions for capital projects were $12.5 million and $11.5 million for fiscal years 2015 and 2014, respectively. Contributions for capital projects for fiscal year 2015 of $12.5 million consisted of $81.9 million contributed to the Authority and $69.4 million contributed from the Authority to another entity.

Contributions for capital projects recognized for fiscal years 2015 and 2014 were as follows:

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| | 2015 | 2014 | 2013 |
|---|---|---|---|
| Contribution to the Authority | | | |
| MIC-SR 836 roadway connections | $ 38,037,147 | $ - | $ - |
| Central Blvd. land easement from MIA | 43,339,000 | - | - |
| Central Blvd. construction grant | 443,392 | 3,430,106 | 6,914,507 |
| NW 138th Street land | - | 8,044,200 | - |
| Subtotal: | 81,819,539 | 11,474,306 | 6,914,507 |
| Contribution from the Authority | | | |
| MIA-Central Blvd. reconstruction | (67,907,014) | - | - |
| FDOT-LeJeune Road design improvement | (1,331,901) | - | - |
| Miami-Dade County-lighting improvements | (131,063) | - | - |
| Subtotal: | (69,369,978) | - | - |
| **Total** | **$ 12,449,561** | **$ 11,474,306** | **$6,914,507** |

## Debt Service Reserve Fund ("DSR")

As of June 30, 2015 and 2014, the DSR fund balance was fully funded in the amount of $115.8 million and $112.3 million, respectively. The DSR Fund is comprised of invested cash and investments, and any excess earnings not required for the debt service reserve requirement are transferred into the Sinking Fund. The DSR balance is based upon 125% of the average annual debt service requirement for the bonds.

## Debt Ratios

The Authority's senior lien debt service ratio for all bonds was 2.22 in fiscal year 2015, 1.58 in fiscal year 2014, and 1.56 in fiscal year 2013. The Authority's ratio of net revenues to total debt service and fund payments was 2.04 in fiscal year 2015, 1.42 in fiscal year 2014, and 1.40 in fiscal year 2013.

For fiscal year 2015, the Authority paid $63.4 million to senior debt bondholders and $5.4 million in subordinate debt and fund payments. The increase in senior coverage compared to prior year was due to an increase in net revenues of $43.1 million; partially offset by an increase of $425,000 in senior debt service. For fiscal year 2015, principal payments increased by $4.0 million primarily due to an increase in principal payments of $3.4 million for the Series 2014B Bonds and $2.4 million for Series 2010A Bonds, partially offset by a decrease in principal payments of $1.7 million for the Series 2013A Bonds. Interest payments for fiscal year 2015 decreased by $3.6 million, primarily due to capitalized interest on Series 2014A Bonds of $16.1 million, and Series 2014B Bonds refunding of several series of bonds that netted to $3.6 million.

(See Note 6, "Long-Term Liabilities", in the Notes to the Financial Statements for a more detailed discussion.)

For fiscal year 2014, the Authority paid $62.9 million to senior debt bondholders and $7.3 million in subordinate debt and fund payments. The slight increase in senior coverage compared to prior year was due to a decrease in senior debt service of $12.4 million; partially offset by a decrease in net revenue of $18.3 million. For fiscal year 2014, principal payments decreased by $9.1 million primarily due to a

reduction of principal payments of $9.6 million for the Series 2010A Bonds and Series 2010B Bonds, offset by a decrease in principal payments of $500,000 for the Series 2013A Bonds. Interest payments for fiscal year 2014 decreased by $3.3 million, primarily due to capitalized interest on Series 2013B Bonds of $1.9 million, and Series 2013A Bonds refunding of several series of bonds that netted to $1.1 million.

**Senior Lien Debt Service For All Bonds**

| | Principal | Interest | **Total** |
|---|---|---|---|
| Series 1999 | $ 666,662 | $ 16,467 | $ 683,129 |
| Series 2005 (variable debt) | - | 5,919,813 | 5,919,813 |
| Series 2006 | - | 5,679,213 | 5,679,213 |
| Series 2010A | 4,680,000 | 18,496,156 | 23,176,156 |
| Series 2013A | - | 13,261,875 | 13,261,875 |
| Series 2013B | - | 1,868,750 | 1,868,750 |
| Series 2014A | - | - | - |
| Series 2014B | 3,360,000 | 9,425,102 | 12,785,102 |
| Senior Debt Service | $ 8,706,662 | $ 54,667,376 | **$ 63,374,038** |

Note: Series 2013B is less capitalized interest of $1,868,750 and all of Series 2014A interest was paid from capitalized interest of $16,091,574.

**Subordinated Debt Service - Other Government Loans**

| | Principal | Interest | **Total** |
|---|---|---|---|
| Toll Facilities Revolving-2004 | $ 250,000 | $ - | $ 250,000 |
| Toll Facilities Revolving-2006 | 250,000 | - | 250,000 |
| Toll Facilities Revolving-2008 | 250,000 | - | 250,000 |
| State Infrastructure Bank- #4 | 2,302,400 | 192,755 | 2,495,155 |
| State Infrastructure Bank # 5 | 2,003,128 | 106,825 | 2,109,953 |
| Subordinated Debt Service | $ 5,055,528 | $ 299,580 | **$ 5,355,108** |

| | |
|---|---|
| All Debt Service And All Fund Payments | **$ 68,729,146** |

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| | Fiscal Years | | |
|---|---|---|---|
| | **2015** | **2014** | **2013** |
| Revenues* | $ 186,049,533 | $ 136,204,212 | $ 145,529,825 |
| Operating expenses | 45,456,677 | 36,675,577 | 27,747,914 |
| Net revenues | $ 140,592,857 | $ 99,528,635 | $ 117,781,911 |
| Senior lien debt service all bonds | $ 63,374,038 | $ 62,947,644 | $ 75,340,620 |
| Ratio of net revenues to senior lien debt service all bonds | **2.22** | **1.58** | **1.56** |
| Subordinated debt service | $ 5,355,108 | $ 7,335,479 | $ 9,030,280 |
| Senior and subordinated debt service | $ 68,729,146 | $ 70,283,123 | $ 84,370,900 |
| Ratio of net revenues to all debt service | **2.05** | **1.42** | **1.40** |

*Note: Senior debt service for FY 14 is less capitalized interest of $1,868,750 from bond proceeds.*

*Note: Senior debt service for FY 15 is less capitalized interest of $17,960,324 from bond proceeds.*

| | **Principal** | **Interest** | **Total** |
|---|---|---|---|
| FY 2015 Senior lien all bonds | $ 8,706,662 | $ 54,667,376 | $ 63,374,038 |
| FY 2014 Senior lien all bonds | 4,686,667 | 58,260,977 | 62,947,644 |
| Variance from prior year | $ 4,019,995 | $ (3,593,601) | $ 426,394 |
| FY 2013 Senior lien all bonds | 13,786,667 | 61,553,953 | 75,340,620 |
| Variance from prior year | $ (9,100,000) | $ (3,292,976) | $ (12,392,976) |

* Revenues as defined by the Trust Indenture.

## Requests for Information

This financial report is designed to provide a general overview of the Authority's finances. Questions concerning any of the information provided in this report or requests for additional financial information should be addressed to the Chief Financial Officer, Miami-Dade Expressway Authority, 3790 N.W. 21st Street, Miami, FL 33142.

MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY
**D/B/A MIAMI-DADE EXPRESSWAY AUTHORITY AND MDX**

Statements of Net Position

June 30, 2015 and 2014

| | 2015 | 2014 |
|---|---|---|
| **Assets** | | |
| Current Assets: | | |
| Cash and cash equivalents | $ 3,499,558 | $ 935,445 |
| Restricted cash and cash equivalents | 484,136 | 312,288 |
| Cash and cash equivalents held by trustee | 97,516,305 | 52,505,540 |
| Restricted cash and cash equivalents held by trustee | 170,778,265 | 102,075,584 |
| Investments held by trustee | 43,195,695 | 47,038,973 |
| Accounts receivable, net | 13,508,336 | 8,589,023 |
| Prepaid operating and maintenance | 1,581,534 | 1,653,791 |
| Total current assets | 330,563,829 | 213,110,644 |
| Restricted Non-Current Assets: | | |
| Restricted cash and cash equivalents held by trustee | 135,485,393 | 259,894,254 |
| Restricted investments held by trustee | 159,879,610 | 186,886,463 |
| Total restricted non-current assets | 295,365,003 | 446,780,717 |
| Capital Assets: | | |
| Non-depreciable capital assets: | | |
| Right to operate the system | 76,644,762 | 76,644,762 |
| Land | 484,223,266 | 324,145,357 |
| Construction in progress | 418,372,806 | 562,545,533 |
| Total non-depreciable capital assets | 979,240,835 | 963,335,652 |
| Depreciable capital assets, net | 599,106,480 | 512,604,931 |
| Total capital assets, net | 1,578,347,314 | 1,475,940,583 |
| Other Assets: | | |
| Unamortized bond insurance | 4,888,095 | 5,218,625 |
| Total non-current assets | 1,878,600,413 | 1,927,939,925 |
| Total Assets | $ 2,209,164,242 | $ 2,141,050,569 |
| **Deferred Outflows of Resources** | | |
| Deferred Outflows of Resources | 64,723,764 | 69,940,995 |
| Total Assets and Deferrals | $ 2,273,888,006 | $ 2,210,991,564 |

(Continued)

The accompaying notes are an integral part of the Authority's financial statements.

MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY
**D/B/A MIAMI-DADE EXPRESSWAY AUTHORITY AND MDX**

Statements of Net Position

June 30, 2015 and 2014

| | 2015 | 2014 |
|---|---|---|
| **Liabilities** | | |
| Current Liabilities: | | |
| Accounts and contracts payable | $ 23,959,301 | $ 15,335,032 |
| Accrued expenses and other liabilities | 9,903,701 | 7,212,045 |
| Accrued interest payable | 35,571,943 | 24,771,226 |
| Current portion of revenue and refunding revenue bonds payable | 8,040,000 | 4,686,662 |
| Current portion of loans due to other governments | 15,725,053 | 5,055,528 |
| Total current liabilities | 93,199,997 | 57,060,493 |
| Long-Term Liabilities: | | |
| Revenue and refunding revenue bonds payable, net of current portion and bond discount/premium | 1,595,529,222 | 1,576,144,324 |
| Net pension liability | 2,079,031 | — |
| Derivative instruments fair market value | 18,975,816 | 51,634,806 |
| Loans due to other governments, net of current portion | — | 15,725,053 |
| Total long-term liabilities | 1,616,584,069 | 1,643,504,183 |
| Total Liabilities | $ 1,709,784,067 | $ 1,700,564,676 |
| **Deferred Inflows of Resources** | | |
| Deferred Inflows of Resources | 3,596,497 | 2,317,888 |
| Total Liabilities and Deferrals | $ 1,713,380,563 | $ 1,702,882,564 |
| **Net Position** | | |
| Net investment in capital assets | 211,948,218 | 200,641,223 |
| Restricted for: | | |
| Debt service | 140,515,292 | 140,581,832 |
| Operations and maintenance | 4,786,136 | 3,268,801 |
| Renewal and replacement | 22,126,714 | 22,079,809 |
| Unrestricted | 181,131,083 | 141,537,335 |
| Total Net Position | $ 560,507,442 | $ 508,109,000 |

(Concluded)

The accompaying notes are an integral part of the Authority's financial statements.

MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY
**D/B/A MIAMI-DADE EXPRESSWAY AUTHORITY AND MDX**

Statements of Revenues, Expenses and Changes in Net Position

Years Ended June 30, 2015 and 2014

| | 2015 | 2014 |
|---|---|---|
| Operating Revenues: | | |
| Toll and fee revenues, net | $ 182,824,359 | $ 129,216,643 |
| Other revenues | 717,292 | 803,272 |
| Total Operating Revenues | 183,541,651 | 130,019,915 |
| Operating Expenses: | | |
| Operations | 32,627,952 | 23,537,256 |
| Maintenance | 6,843,241 | 6,396,521 |
| Professional contracted services | 2,180,928 | 2,977,881 |
| Administration | 3,804,555 | 3,763,919 |
| Depreciation and amortization | 29,180,708 | 29,461,363 |
| Total Operating Expenses | 74,637,385 | 66,136,940 |
| Operating Income | 108,904,266 | 63,882,975 |
| Non-Operating Revenues (Expenses): | | |
| Investment income | 2,064,490 | 2,754,191 |
| Miscellaneous income | — | 3,737,500 |
| Interest expense | (56,100,014) | (46,324,759) |
| Bond issuance expense | (1,390,687) | (2,222,551) |
| Disposal of assets | (10,984,218) | (7,667,356) |
| Total Non-Operating Revenues (Expenses), Net | (66,410,429) | (49,722,975) |
| Income Before Contributions for Capital Projects | 42,493,837 | 14,160,000 |
| Contributions for Capital Projects | 12,449,561 | 11,474,306 |
| Change in Net Position | 54,943,398 | 25,634,306 |
| Net Position, Beginning of Year | 508,109,000 | 482,474,694 |
| GASB 68 Implementation | (2,544,956) | — |
| Net Position, End of Year | $ 560,507,442 | $ 508,109,000 |

The accompanying notes are an integral part of the Authority's financial statements.

MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY

**D/B/A MIAMI-DADE EXPRESSWAY AUTHORITY AND MDX**

Statements of Cash Flows

Years Ended June 30, 2015 and 2014

| | 2015 | 2014 |
|---|---|---|
| **Operating Activities:** | | |
| Cash received from customers and users | $ 180,351,418 | $ 125,555,648 |
| Payments to consultants and vendors | (42,140,743) | (35,295,622) |
| Payments to employees | (6,508,620) | (6,384,799) |
| Cash received from other operating revenues | 411,156 | 1,361,694 |
| Net cash flows from operating activities | 132,113,211 | 85,236,921 |
| **Capital and Related Financing Activities:** | | |
| Acquisition and construction of capital assets | (94,499,493) | (88,619,222) |
| Acquisition of land | (1,721,277) | (908,721) |
| Interlocal agreements | (167,190) | (1,361,601) |
| Proceeds from capital contributions (Central Blvd.) | 630,508 | 5,582,588 |
| Proceeds from issuance of Series 2013B Bonds | — | 74,750,000 |
| Refunding payment on Series 2006 Bonds (Series 2013B) | — | (74,750,000) |
| Proceeds from call modification Series 2013B Bonds | — | 3,737,500 |
| Proceeds from issuance of Series 2014A Bonds | — | 345,145,341 |
| Proceeds from issuance of Series 2014B Bonds | 309,824,185 | — |
| Refunding payment on Series 2005 Bonds (Series 2014B) | (161,102,686) | — |
| Payment of swap termination related to Series 2005 (Series 2014B) | (32,872,000) | — |
| Refunding payment on Series 2006 Bonds (Series 2014B) | (120,068,447) | — |
| Payment of bond issuance expenses | (1,150,067) | (1,749,741) |
| Payments of principal for bonds | (4,686,662) | (13,786,667) |
| Payments of interest for bonds | (61,753,766) | (56,122,027) |
| Payments of principal for government loans | (5,055,528) | (6,929,067) |
| Payments of interest for government loans | (372,797) | (507,258) |
| Net cash flows from capital and related financing activities | (172,995,220) | 184,481,125 |
| **Cash Flows From Investing Activities:** | | |
| Purchase of investments | (319,790,390) | (272,406,456) |
| Proceeds from sales or maturities of investments | 351,025,000 | 228,000,000 |
| Interest and dividends received | 1,687,945 | 1,183,321 |
| Net cash flows from investing activities | 32,922,555 | (43,223,135) |
| **Net Increase (Decrease) in Cash and Cash Equivalents:** | (7,959,454) | 226,494,910 |
| Cash and cash equivalents at beginning of year | 415,723,111 | 189,228,201 |
| Cash and cash equivalents at end of year | $ 407,763,657 | $ 415,723,111 |
| **Cash and Cash Equivalents** | | |
| Unrestricted - current | $ 101,015,863 | $ 53,440,985 |
| Restricted - current | 171,262,401 | 278,749,701 |
| Restricted - non-current | 135,485,393 | 83,532,425 |
| | $ 407,763,657 | $ 415,723,111 |

(Continued)

The accompanying notes are an integral part of the Authority's financial statements.

MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY

**D/B/A MIAMI-DADE EXPRESSWAY AUTHORITY AND MDX**

Statements of Cash Flows

Years Ended June 30, 2015 and 2014

| | 2015 | 2014 |
|---|---|---|
| **Reconciliation of Operating Income to Net Cash Provided by Operating Activities:** | | |
| Operating income | $ 108,904,266 | $ 63,882,976 |
| Adjustments to reconcile operating income to net cash provided by operating activities: | | |
| Depreciation and amortization on capital assets | 29,180,708 | 29,461,363 |
| Bad debt revenue offset | 10,998,504 | (543,521) |
| Changes in assets and liabilities: | | |
| Accounts receivable, net | (16,110,264) | (2,655,840) |
| CBTD Program | 2,182,241 | — |
| Toll overpayments | 146,249 | 86,615 |
| Unearned other revenue | 1,786 | 8,109 |
| Prepaid operating and maintenance cost | 72,257 | (590,433) |
| Accounts/contracts payable and accrued expenses | (3,262,536) | (4,412,348) |
| **Net Cash Provided by Operating Activities** | $ 132,113,211 | $ 85,236,921 |
| **Supplemental Schedule of Noncash Investing, Capital, and Financing Activities:** | | |
| Amortization expense due to bonds | $ 2,998,086 | $ 616,880 |
| Deferred outflows of resources due to refundings | $ (31,012,358) | $ 2,425,390 |
| Disposal of assets | $ (10,984,218) | $ (7,667,356) |
| Contributions for capital projects | $ 69,369,978 | $ 8,044,200 |
| Fair market value of investments increase (decrease) | $ 384,479 | $ 320,667 |

(Concluded)

The accompanying notes are an integral part of the Authority's financial statements.

**Note 1 - Summary of Organization and Significant Accounting Policies**

***Organization and Purpose***

The Miami-Dade County Expressway Authority d/b/a Miami-Dade Expressway Authority and MDX (the "Authority") is an agency of the State of Florida, a body politic and corporate and a public instrumentality. It was created on December 13, 1994 by ordinance of the Miami-Dade County Commission, pursuant to Chapter 348, Part I, Florida Statutes, for the purposes and having the powers to, among others, (1) acquire, hold, construct, improve, maintain, operate, own and lease an expressway system located in Miami-Dade County, Florida (the "County"); and (2) fix, alter, charge, establish and collect tolls, rates, fees, rentals, and other charges for the services and facilities of such system. The governing body of the Authority consists of thirteen (13) voting members. All members of the Authority are voting members. Seven members are appointed by the governing body of the County. At the County's discretion, up to two of the members appointed by the governing body of the County may be elected officials residing in the County. Five members are appointed by the Governor of the State of Florida. The District Secretary of the State of Florida Department of Transportation – District VI is an ex officio voting member of the Authority. Except for the District Secretary of the State of Florida Department of Transportation – District VI, all members must be residents of the County. Members of the Authority are entitled to receive from the Authority their travel and other necessary expenses incurred in connection with the business of the Authority as provided by law, but they may not draw salaries or other compensation.

The Florida Transportation Commission (the "Commission"), pursuant to Section 20.23, Florida Statutes, requires the Commission to monitor the transportation authorities established in Chapters 343 and 348, Florida Statutes. The Commission, in concert with the designated authorities, adopted performance measures, objectives, operating indicators and governance criteria to assess the overall responsiveness of each authority in meeting their responsibilities to their customers.

***Right to Operate***

The five roadways that comprise the Authority's expressway system (State Roads 112, 836, 874, 878 and 924), located within the boundaries of the County (the "expressway system"), were operated by the State of Florida, Department of Transportation ("FDOT") through December 9, 1996. Effective December 10, 1996 and pursuant to a Transfer Agreement (the "Transfer Agreement") entered into between the Authority and FDOT, the Authority assumed the rights and the responsibilities for operating the expressway system and obtained certain identifiable capital assets (excluding the expressway system's infrastructure) and cash reserves from the FDOT. In exchange, the Authority made a payment to FDOT which was sufficient to defease certain bonded indebtedness of the State of Florida. This transaction was consummated through the Authority's issuance of $80,000,000 in aggregate principal amount of its Toll System Revenue Bonds, Series 1996 (Taxable) (the "Series 1996 Bonds"). In addition, the Authority assumed a liability from the State of Florida in the amount of $11,843,000 which has been paid in full. The difference between the bonds issued, plus liabilities assumed, less assets received, resulted in an intangible asset of $76,644,762.

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

expressway system. Title to lands underlying the expressway system transferred to the Authority in the 1996 agreement remains with FDOT.

***Reporting Entity***

As a special purpose government engaged solely in business-type activities, the Authority's financial statements are prepared as an Enterprise Fund, a type of Proprietary Fund. Proprietary Funds are used to account for operations of governmental entities that are financed and operated in a manner similar to private business enterprises; these funds use the accrual basis of accounting and the economic resources measurement focus. Enterprise Funds are used to account for operations where the intent of the governing body is that costs (expenses, including depreciation) of providing goods or services to the general public on a continuing basis are financed or recovered primarily through user charges.

***Basis of Accounting***

The Authority prepares its financial statements based on the accrual basis of accounting in accordance with accounting principles generally accepted in the United States of America for proprietary funds, which are similar to those used for private business enterprises. Accordingly, revenues are recorded when earned and expenses are recorded when incurred.

**Revenue**

The Authority defines operating revenue as revenues earned from the expressway system operations and charged to customers. The primary operating revenues of the Authority are toll collections made via the following methods: SunPass® tolls captured from transponders affixed to vehicles and deducted from customer prepaid accounts, Toll-By-Plate ("TBP") images subsequently invoiced to registered vehicle owners, and cash collections at the remaining toll plazas. Revenues from SunPass® and cash collections are recognized at lane exit, whereas TBP collections are recognized when a bill is generated. The Cash Back Toll Dividend Program ("CBTD", which returns a portion of SunPass® tolls to eligible registered program participants, is an offset to SunPass® revenue. Cash back to customer will only occur in a fiscal year if certain financial and operational measures are achieved.

Lease and miscellaneous revenues are also considered operating revenues. Non-operating revenue includes interest and dividend earnings, capital contributions, and all other income not meeting the previous definition. Under the Authority's Trust Indenture all net revenues are pledged to repay principal and interest of outstanding bonds.

**Expense**

The Authority defines operating expenses as expenses incurred for operations, maintenance and administration, as well as, depreciation and amortization. Non-operating expenses include interest expense and all other expenses not meeting the previous definition.

**Basic Financial Statements**

The basic financial statements of the Authority consist of Management's Discussion and Analysis ("MD&A"), Statements of Net Position, Statements of Revenues, Expenses and Changes in Net Position, Statements of Cash Flows, Notes to the Financial Statements and Other Information.

The net position section of the Statements of Net Position is classified within the following components:

Net investment in capital assets – capital assets, including unrestricted and restricted capital assets, net of accumulated depreciation and reduced by outstanding balances of any debt that is attributable to the acquisition, construction or improvement of those assets. Unspent bond proceeds less the related debt, of which the effect is zero, is included within this category. As of June 30, 2015 and 2014, unspent bond proceeds restricted for capital projects were $248,089,901 and $335,938,810, respectively.

Restricted net assets – net assets with constraints placed on the use either by (1) external groups such as creditors, grantors, contributors or laws or regulations of other governments; or (2) law through constitutional provisions or enabling legislation. This includes net assets restricted for debt service, reserve for operations, maintenance, administration, and renewal and replacement.

Unrestricted net assets – all other net assets that do not meet the definitions of "net investment in capital assets" and "restricted net assets".

***Cash and Cash Equivalents***

Cash and cash equivalents, restricted and unrestricted, include amounts in demand deposits, money market accounts, non-negotiable certificates of deposits, as well as short-term investments, with a maturity date of 90 days or less from date of purchase. The Authority considers any investment a cash and cash equivalent with maturity date within 90 days after fiscal year end.

***Investments***

The Authority's investments are governed by State Statute, the Authority's investment policy and the Trust Indenture which stipulates permissible investments.

The investments of the Authority consist of restricted and unrestricted investments. Long-term and short-term investments are stated at fair value. Fair value is either quoted at market price or the best available estimate. The change in the fair value of investments is recorded and included as an aggregate amount with all other elements of investment income, including interest and dividends, in accordance with Governmental Accounting Standards Board ("GASB") Statement No. 31, *Accounting and Financial Reporting for Certain Investments and for External Investments Pool* ("GASB 31").

***Restricted Assets***

Restricted assets of the Authority represent bond proceeds and revenue to be set aside per the Trust Indenture and other agreements which require the following funds and accounts: Revenue Fund,

Sinking Fund, General Fund (partially restricted), Rate Stabilization Fund, Debt Service Reserve Fund, Renewal and Replacement Fund, Cost of Issuance Fund, Construction Fund and Rebate Fund.

***Accounts Receivable***

Accounts receivable of the Authority consist primarily of toll revenues from the expressway system, net of an allowance for doubtful accounts based on available trend data. Other receivables of the Authority consist of grants, lease revenues and other miscellaneous receivables associated with third-party agreements with other agencies. For more detailed information on accounts receivable, see Note 3 "Receivables, Payables and Accrued Interest".

***Capital Assets***

Right to Operate – Infrastructure-related capital assets acquired through the Transfer Agreement are not reflected in these financial statements. The title to these capital assets continues to be held by the State of Florida. In fiscal years ended prior to June 30, 2009, the right to operate intangible asset was reflected net of accumulated amortization, which was amortized on a straight-line basis with a life of 40 years. In accordance with GASB Statement No. 51, *Accounting and Financial Reporting for Intangible Assets* ("GASB 51"), accumulated amortization to date was reversed and amortization expense subsequent to June 30, 2008 was no longer reported. Furthermore, the right to operate is not being amortized because it is in perpetuity.

Capital assets acquired or constructed since the Transfer Agreement are recorded at cost. Expenses incurred to acquire additional capital assets, which replace existing assets or otherwise prolong their useful lives, are capitalized. The Authority's capitalization threshold is $2,000.

Construction-in-progress represents costs incurred by the Authority for on-going activities related to the expansion of new assets or the replacement or extension of the lives of existing capital assets.

Right-of-way acquisition costs are considered land when incurred. All other costs related to land, such as road sub base, grading, land clearing, embankments, and other related costs, are considered non-depreciable assets and remain in construction-in-progress until the project is completed. Land is composed of acquired or donated titled land, land easements and other related costs.

Interest costs incurred during construction are capitalized on assets acquired with debt in accordance with GASB Statement No. 62*, Codification of Accounting and Financial Reporting Guidance Contained in Pre-November 30, 1989 FASB and AICPA Pronouncements* ("GASB 62"). Amounts capitalized represent interest expense incurred from the borrowing date to completion of the project, offset with interest earned on invested proceeds over the same period.

In accordance with GASB Statement No. 34, *Basic Financial Statements—and Management's Discussion and Analysis—for State and Local Governments* ("GASB 34"), the Authority allocates certain costs incurred in the acquisition, design and construction of capital assets, such as salaries, benefits, general expenses and contracted services, to the related capital asset.

The Authority reviews its capital assets and considers impairment whenever indicators of impairment are present, such as capital asset replacement, or an event or change in circumstance is outside the normal life cycle of the capital asset.

Depreciation and amortization of capital assets is computed using the straight-line method over the estimated useful lives of the assets, as follows:

| | |
|---|---|
| Furniture and equipment | 3-30 years |
| Buildings, toll facilities and improvements | 5-30 years |
| Other assets (software/vehicles) | 3-5 years |
| Infrastructure | 5-50 years |

***Retainage Payable***

Retainage payable represents amounts billed to the Authority by contractors for which payment is not due, pursuant to retained percentage provisions in contracts, until substantial completion of performance by the contractor and/or acceptance by the Authority.

***Bond Discounts, Bond Premiums and Bond Insurance Costs***

Discounts, premiums and insurance costs associated with the issuance of bonds are amortized by the interest method over the term of the bonds. Discounts and premiums are presented as an addition to or a reduction of, respectively, the face amount of revenue and refunding revenue bonds payable, whereas insurance costs are recorded as other assets. Amortization of discounts, premiums and insurance costs are included as a component of interest expense.

***Deferred Outflows/Inflows of Resources***

GASB Statement No. 65 *Items Previously Reported as Assets and Liabilities* ("GASB 65") establishes accounting and financial reporting standards that reclassify certain items previously reported as assets and liabilities to be reported as deferred outflows or deferred inflows of resources. The GASB's determinations outlined in GASB Concepts Statement No. 4, *Elements of Financial Statements* ("GASBCS 4") define a deferred outflow of resources as a consumption of net assets by the government that is applicable to a future period; and a deferred inflow of resources as an acquisition of net assets by the government that is applicable to a future reporting period.

As of June 30 2015, deferred outflows of resources of $64,723,764 were comprised of the negative fair value of derivative instruments of $18,975,816, deferred amounts from refundings, net of amortization of $44,693,861, and pension amounts due to changes in assumptions and proportion of net pension liability and contributions subsequent to the measurement date of $1,054,087. As of June 30 2015, deferred inflows of resources of $3,596,497 were comprised of deferred amount from refundings, net of amortization of $2,210,386, and pension amounts due to changes in investments and experience of $1,386,111.

The Authority's deferred outflows/inflows of resources are comprised of the following components:

*Derivative Instruments Fair Market Value ("FMV")* – The authority's interest rate swap is are derivative instruments determined to be effective hedges in accordance with GASB Statement No. 53 *Accounting and Financial Reporting for Derivative Instruments* ("GASB

53"). The outflow of the resources of the derivative instrument will be in a future reporting period therefore, in accordance with GASBCS 4, the fair market value is reported as a deferred outflow on the Statements of Net Position.

*Deferred Amounts on Refunding Revenue Bonds* – The Authority's calculation of deferred amount on refunding is done in accordance with GASB 65, paragraph 6. Prior to fiscal year 2014 the calculation was done in accordance with the prior pronouncement, GASB Statement No. 23 *Accounting and Financial Reporting for Refundings of Debt Reported by Proprietary Activities* ("GASB 23"), paragraph 4. The difference between the reacquisition price and the net carrying amount of the refunded debt is amortized using the interest method over the term of the old debt or new debt, whichever is shorter.

The deferred amounts reported in deferred outflows of resources on the Statements of Net Position are the resulting amount from the Authority's refundings where the reacquisition price exceeded the net carrying value of the refunded bonds. The deferred amounts reported in deferred inflows of resources are the resulting amount from the refundings where the reacquisition price is less than the net carrying value of the refunded bonds.

*Deferred Amounts Related to Pensions* – The Authority participates in a cost-sharing, multi-employer, defined benefit retirement plan, and deferred amounts for outflows of resources and inflows of resources are reported in accordance with GASB Statement No. 68 *Accounting and Financial Reporting for Pensions* ("GASB 68"). The changes in deferred outflows of resources and inflows of resources related to changes in the Authority's proportion of the collective pension liability, changes in actuarial assumptions, investments, experience, and contributions made subsequent to the current measurement date, will occur in future reporting periods; therefore, in accordance with GASB 68 these deferred amounts related to pension are reported as deferred outflows of resources or deferred inflows of resources on the Statements of Net Position.

For more detailed information on deferrals, see Note 6 "Long-Term Liabilities" and Note 7 "Retirement Plans" in the Notes to the Financial Statements.

***Pensions***

For purposes of measuring the net pension liability, deferred outflows of resources and deferred inflows of resources related to pensions, and pension expense, information about the fiduciary net position of the Florida Retirement System (FRS) Pension Plan and additions to/deductions from FRS Pension Plan's fiduciary net position have been determined on the same basis as they are reported by FRS. For this purpose, benefit payments (including refunds of employee contributions) are recognized when due and payable in accordance with the benefit terms. Investments are reported at fair value.

For a more detailed description on pension amounts, see Note 7 "Retirement Plans" in the Notes to the Financial Statements.

***Compensated Absences***

The Authority's vacation and sick leave accrual policies allow for a specific number of days of vacation and sick leave with pay. These policies provide for paying a regular employee their

accumulated unused vacation upon separation up to a maximum of 480 hours. These policies also provide for accumulated sick leave hours to be paid upon separation from the Authority after 10 years or more of continuous service. The accumulated sick leave hours are limited to a maximum of one quarter of the amounts accumulated, up to 480 hours. These hours are payable upon separation from the Authority at the employees' current rate. All available vacation leave hours and one quarter of available sick leave hours for eligible employees as of June 30, 2015 and 2014 are accrued and accounted for in payables due to employees. In both cases employees earn the right to be compensated for the available vacation and, after ten years, one quarter of available sick leave hours at termination based only on rendering past service. Employees are also eligible to receive an annual payout of up to 80 hours of accumulated unused vacation in the month of December, as long as they have a minimum of 80 hours remaining after payout. Any amount that could be considered non-current would be immaterial, and as such the entire liability for compensated absences is reported as current.

For a more detailed description on accrued amounts, see Note 3 "Receivables and Payables" in the Notes to the Financial Statements.

***Employee Benefits***

As an agency of the State of Florida, the Authority's employees are allowed to participate in the State's group health and dental insurance plans under the same program and group rates available to State employees. MDX has contracted separately to provide life insurance, short term and long term disability insurance for all regular, full-time employees. All regular, full-time employees are eligible for group health and dental insurance coverage on the first day of the month following commencement of active service. All regular, full-time employees are eligible for group life insurance, short-term and long-term disability insurance coverage on the first day of the month following or coincident to 90 days of continuous active service. Upon separation from the Authority, employees may opt to continue their coverage under the Consolidated Omnibus Reconciliation Act ("COBRA") at their own cost.

***Risk Management***

The Authority is exposed to various risks of loss related to torts, theft of, damage to, and destruction of assets, errors and omissions, and natural disasters, for which the Authority carries commercial insurance. The Authority had no claims in the last two years that exceeded its policy limits.

***Use of Estimates***

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities at the date of the financial statements, and reported amounts of revenue and expenses during the reporting period. Actual results could differ from those estimates.

***Reclassifications***

Certain prior year amounts may have been reclassified to conform to the current year's presentation.

***Table Rounding***

Due to rounding of whose numbers some tables may not add to total. .

***Single Audit***

The Authority is subject to a Florida Single Audit that is not included in this Comprehensive Annual Financial Report. The Florida Single Audit requires the independent auditor to report on the fair presentation of the financial statements and also on the internal controls and compliance with legal requirements, with emphasis on the administration of state assistance. The results of the Florida Single Audit are available as a separate annual financial report.

***New Pronouncements***

GASB Statement No. 66, *Technical Corrections–2012–an amendment of GASB Statements No. 10 and No. 62 ("GASB 66")*, became effective for fiscal year end June 30, 2014, and resolves conflicting guidance regarding fund-type classifications for risk financing activities and specific accounting guidance on operating leases and sales of receivables resulting from the issuance of two pronouncements, GASB 54 and GASB 62. GASB 66 has no impact on the Authority.

GASB Statement No. 67, *Financial Reporting for Pension Plans–an amendment of GASB Statement No. 25* ("GASB 67"), became effective for fiscal year end June 30, 2014, and affects financial reporting for state and local governmental pension plans. Specifically, for defined-benefit pension plans, this standard specifies the required approach to measuring the pension liability of employers and non-employer contributing entities for benefits provided through the pension plan. GASB 67 has no impact on the Authority.

GASB 68 supersedes GASB Statement No. 27, *Accounting for Pensions by State and Local Government Employers* ("GASB 27"), as well as GASB Statement No. 50, *Pension Disclosures* ("GASB 50"). This statement establishes the methodology to be used by governments to value and report the liability associated with their participation in a defined benefit pension plan. Once the total pension liability has been calculated, the net position of the plan (as defined in the first statement) is subtracted from the total pension liability to arrive at the net pension liability for the plan. The net pension liability is the amount that the government must report as a liability within its financial statements. GASB 68 will also require employers to present more extensive note disclosures and other supplemental information. GASB 68 requires that governments use a measurement date no earlier than the employer's prior fiscal year end. GASB 68 was implemented by the Authority in fiscal year 2015. The Authority utilized the Schedules of Employer Allocations and Pension Amount by Employer for the Florida Retirement System Pension Plan as of and for the Fiscal Year Ended June 30, 2014. The implementation resulted in an adjustment to the beginning net position for fiscal year 2015 of $2,544,956, corresponding to the Authority's portion of the collective net pension liability and contributions subsequent to the measurement date of June 30, 2013 for the Florida Retirement System ("FRS") Pension Plan and Health Insurance Subsidy ("HIS") Program of $1,282,118 and $1,262,838, respectively; net pension liability as of the measurement date of June 30, 2014 of $2,079,031 for the Authority's portion of FRS and HIS of $759,931 and $1,319,100, respectively. Deferred outflows of resources were recorded for the Authority's portion of FRS and HIS of $627,203 and $47,573, respectively; as well as deferred inflows of resources of $1,314,716 and $71,395, respectively. Financial information for the year

ended June 30, 2014 was not restated because a measurement of net pension liability and deferred outflows of resources related to pensions as of July 1, 2013 was not available.

GASB Statement No. 69, *Government Combinations and Disposals of Government Operations* ("GASB 69"), provides financial reporting guidance for determining whether a specific government combination is a government merger, a government acquisition, or a transfer of operations. This standard became effective for the fiscal year ending June 30, 2015. GASB 69 has no impact on the Authority.

GASB Statement No. 70, *Accounting and Financial Reporting for Nonexchange Financial Guarantees* ("GASB 70"), requires a state or local government guarantor that offers a nonexchange financial guarantee to another organization or government to recognize a liability on its financial statements when it is more likely than not that the guarantor will be required to make a payment to the obligation holders under the agreement. This standard became effective for fiscal year end June 30, 2014. GASB 70 has no impact on the Authority.

GASB Statement No. 71, *Pension Transition for Contributions Made Subsequent to the Measurement Date–an amendment of GASB 68* ("GASB 71"), addresses the application of transition provisions for implementing GASB 68 and specifically relates to accounting for contributions made by a state and local government employer after the measurement date of the government's beginning net pension liability. This standard will became effective, along with GASB 68, for the fiscal year ending June 30, 2015. This standard impacted the Authority's financial statements by allowing for the Authority to record deferred outflows of resources for pension contributions made to FRS after the Authority's measurement date for beginning net pension liability. GASB 68 requires that governments use a measurement date no earlier than the employer's prior fiscal year end. GASB 71 was implemented by the Authority in fiscal year 2015. The Authority utilized the Schedules of Employer Allocations and Pension Amount by Employer for the Florida Retirement System Pension Plan as of and for the Fiscal Year Ended June 30, 2014. The implementation resulted in deferred outflows of resources for contributions made subsequent to the measurement date of June 30, 2014 for the Authority's portion of FRS and HIS of $324,705 and $54,606, respectively.

(Remainder of page intentionally left blank)

**Note 2 – Cash, Cash Equivalents and Investments**

The Authority's deposits and investments are held by banks that qualify as public depositories under the Florida Security for Public Deposits Act, as required by Chapter 280, Florida Statutes. Exempt from Chapter 280 are public deposits deposited in a bank or savings association by a trust department or trust company which is fully secured through the trust business laws. The Authority is also allowed to participate in the Florida PRIME Local Government Investment Pool ("Florida PRIME LGIP"). As of June 30, 2015 and 2014, all of the Authority's bank deposits and investments were in qualified public depositories and trust companies.

As of June 30, 2015 and 2014, total unrestricted and restricted cash and cash equivalents were comprised of the following:

| **Cash and restricted cash:** | **2015** | **2014** |
|---|---|---|
| Cash on hand - operating | $ 3,499,558 | $ 935,445 |
| Cash on deposits | 484,136 | 312,288 |
| Cash held by trustee LGIP (SBA) | 314,686,828 | 406,755,466 |
| Cash held by trustee Money Market | 4,107,835 | 7,719,912 |
| Sub-total | $ 322,778,357 | $ 415,723,111 |
| **Cash equivalents and restricted cash equivalents:** | | |
| Investments held by trustee <90 days: | 84,985,300 | - |
| Total | $ 407,763,657 | $ 415,723,111 |
| **Presented within the Statements of Net Position:** | | |
| Unrestricted | $ 101,015,863 | $ 53,440,985 |
| Restricted | 306,747,794 | 362,282,126 |
| Total | $ 407,763,657 | $ 415,723,111 |

As of June 30, 2015 and 2014, the book value of the Authority's cash and cash equivalent balances was $407,763,657 and $415,723,111 and the bank balance for cash deposits was $408,906,604 and $418,752,433, respectively. The difference between these two balances is due to timing differences on disbursements and deposits which have not yet cleared the bank.

The State of Florida allows investments in Florida PRIME, direct investment in U.S. government, federal agency, and instrumentality obligations at a price not to exceed the market price at the time of purchase, Securities and Exchange Commission registered money market funds, repurchase agreements, commercial paper with the highest quality rating from a nationally recognized rating agency, and other investments by law or by resolution of the Authority. The Florida PRIME LGIP is rated AAAm by Standard and Poor's ("S&P").

As of June 30, 2015, the investment values and maturities were as follow:

**Investment Maturities**

| | < 1 year | 1- 5 years | Total Market Value | % of Total Investments |
|---|---|---|---|---|
| Commercial Paper | $ 84,791,870 | $ - | $ 84,791,870 | 41.8% |
| Municipal Bonds | 9,990,610 | - | 9,990,610 | 4.9% |
| US Agency Bonds | 35,015,000 | 73,277,825 | 108,292,825 | 53.3% |
| | **$ 129,797,480** | **$ 73,277,825** | **$ 203,075,305** | **100.0%** |

As of June 30, 2014, the investment values and maturities were as follow:

**Investment Maturities**

| | < 1 year | 1- 5 years | Total Market Value | % of Total Investments |
|---|---|---|---|---|
| Commercial Paper | $ 138,459,689 | $ - | $ 138,459,689 | 59.2% |
| Municipal Bonds | - | 3,356,719 | 3,356,719 | 1.4% |
| US Agency Bonds | 9,992,000 | 82,117,028 | 92,109,028 | 39.4% |
| | **$ 148,451,689** | **$ 85,473,747** | **$ 233,925,436** | **100.0%** |

***Interest Rate Risk***

In accordance with the Authority's investment policy, its portfolio is structured so that securities mature to meet the Authority's scheduled cash flow requirements, thereby avoiding the need to sell securities prior to their scheduled maturity dates. The cash flow requirement limits investment maturities as a means of managing the Authority's exposure to fair value losses arising from increasing interest rates.

For fiscal years 2015 and 2014, investment income was $2,064,490 and $2,754,191, and reflected a positive change in fair market value of $384,479 and $320,667, respectively.

***Credit Risk***

The Authority's investment policy limits investments of U.S. agencies to ratings of "A" or better by Moody's and S&P. Commercial paper investments are limited to no more than 270 days rated at the time of purchase "P-1" by Moody's and "A-1" or better by S&P. Investments, from direct obligation of any state of the United States of America or any subdivision or agency thereof, must be rated at the time of purchase as "A" or better by S&P and Moody's. Investments in repurchase agreements are limited to those collateralized by direct obligations, Government National Mortgage Association ("GNMAs"), Federal Home Loan Bank ("FHLBs"), Federal National Mortgage Association ("FNMAs") or Freddie Mac ("FHLMCs") with any registered broker/dealer subject to Securities Investors' Protection Corporation jurisdiction or any commercial bank insured by the Federal Deposit Insurance Corporation ("FDIC"), if such broker/dealer or bank has an uninsured,

unsecured and unguaranteed obligation rate "P-1" or "A3" or better by Moody's and "A-1" or "A-" or better by S&P. The Authority's investment policy allows investment in the Florida PRIME.

***Concentration of Credit Risk***

The Authority places no limit on the amount the Authority may invest in any one issuer. More than 5% of the Authority's investments are in Government Sponsored Agency securities and commercial paper securities. These investments are 53.3% and 41.8%, respectively, of the Authority's total investments as of June 30, 2015; and 39.4% and 59.2%, respectively, of the total investments as of June 30, 2014.

| S&P | Moody's | 2015 | 2014 |
|---|---|---|---|
| AAA | NR | 4.1% | 0.0% |
| AA+ | AAA | 4.9% | 39.4% |
| AA+ | NR | 7.4% | 0.0% |
| AA+ | Aaa | 37.0% | 0.0% |
| A1+ | A2 | 0.0% | 1.4% |
| A1+ | P1 | 14.7% | 59.2% |
| A1 | P1 | 31.9% | 0.0% |
| | | **100.0%** | **100.0%** |

***Custodial Credit Risk – Investments***

For an investment, this is the risk that, in the event of the failure of the counterparty, the Authority will not be able to recover the value of its investments or collateral securities that are in the possession of an outside party. Investments are exposed to custodial credit risk if they are uninsured, are not registered in the Authority's name, and are held by either the counterparty to the investment purchase or are held by the counterparty's trust department or agent but not held in the Authority's name. None of the Authority's investments, as of June 30, 2015 and 2014, were subject to custodial credit risk. All of the funds are held by the Trustee, Bank of New York, which falls under the umbrella of Bank of New York Mellon Corporation, which holds a rating of "A1" from Moody's, "A+" from S&P, and "AA-" from Fitch.

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**Note 3 – Receivables, Prepaids, Payables and Accrued Interest Payable**

***Receivables***

As of June 30, 2015 and 2014, accounts receivable, net totaled $13,508,336 and $8,589,023, respectively, in the following categories:

| | 2015 | 2014 |
|---|---|---|
| Toll and fee receivables, net | $ 11,718,102 | $ 6,916,671 |
| Other receivables | 51,620 | 224,688 |
| Grant receivable-FDOT | 1,022,142 | 1,209,259 |
| Accrued interest receivable | 230,472 | 238,405 |
| Due from vendors | 486,000 | - |
| | $ 13,508,336 | $ 8,589,023 |

As of June 30, 2015 and 2014, toll and fee receivables, net were $11,718,102 and $6,916,671, respectively. Toll and fee receivables, net were primarily comprised of (a) electronic toll revenues collected by SunPass® of $4,303,765 and $3,073,292, respectively; (b) TBP receivable of $7,414,337 and $3,843,304, respectively (equal to subsequent receipts after June 30, 2015 through August 31, 2015), or gross TBP billings of $21,941,532 and $11,327,699, respectively, less an allowance for doubtful accounts of $14,527,195 and $7,484,395, respectively, netting to $7,414,337 and $3,843,304, respectively; and (c) other toll revenues of $0 and $75, respectively.

As of June 30, 2015 and 2014, other receivables were $51,620 and $224,688, respectively. Other receivables were primarily comprised of (a) lease revenue receivables of $8,944 and $4,544, respectively; (b) FDOT operations and maintenance budget overpayment of $0 and $206,788, respectively; and (c) miscellaneous and other receivables of $42,676 and $13,356, respectively.

As of June 30, 2015 and 2014, FDOT grant receivable was $1,022,142 and $1,209,259, respectively. The FDOT grant receivable represented reimbursable expenses related to an Interlocal Agreement ("ILA") for the joint funding of the reconstruction of the capital project Central Boulevard, executed on December 23, 2009, as amended on June 29, 2010, May 13, 2011, May 3, 2013 and May 7, 2014. The agreement allows for a 50/50 match of most expenditures for the project with the Authority representing the local matching partner. Per the second amendment to the ILA, additional scope was added to the project that will be reimbursed at 100% by FDOT. All project-related expenditures are accounted for under construction-in-progress until such time as the project is completed. As part of the Authority's participation, a permanent easement was granted.

As of June 30, 2015 and 2014, accrued interest receivable related to various investments was $230,472 and $238,405, respectively.

As of June 30, 2015 and 2014, due from vendors was $486,000 and $0, respectively. Due from vendors was for lane rental fees related to the closure of tolling location during the SR 836 Infrastructure Modifications for ORT project.

***Prepaids***

As of June 30, 2015 and 2014, prepaid expenses were $1,581,534 and $1,653,791, respectively. The prepaid expenses are primarily related to an advanced payment to FDOT related to SunPass® transaction processing, SunPass® transponder subsidy and system insurance.

***Payables***

As of June 30, 2015 and 2014, accounts and contracts payable of $23,959,301 and $15,335,032, respectively, and accrued expenses payable of $9,903,701 and 7,212,045, respectively, totaled $33,863,002 and $22,547,077, respectively, in the following categories:

| | 2015 | 2014 |
|---|---|---|
| Due to vendors | $ 29,222,342 | $ 20,372,517 |
| Due to employees | 834,597 | 753,107 |
| THEA ILA | 196,159 | 196,159 |
| MDAD | 837,390 | 856,897 |
| CBTD Program | 2,182,241 | - |
| Other | 590,273 | 368,397 |
| | $ 33,863,002 | $ 22,547,077 |

As of June 30, 2015 and 2014, due to vendors was $29,222,342 and $20,372,517, respectively. Due to vendors was comprised of (a) capital construction costs, accrued expenses and retainage of $23,881,885 and $15,599,324, respectively; (b) operating costs, accrued expenses and retainage of $5,340,457 and $4,661,524, respectively; and (c) non-operating costs and accrued expenses of $0 and $111,669, respectively.

As of June 30, 2015 and 2014, due to employees was $834,597 and $753,107, respectively. Due to employees was comprised of (a) payroll salaries payable of $117,024 and $92,797, respectively; and (b) accrued leave of $717,573 and $660,310, respectively.

As of June 30, 2015 and 2014, the Authority has received funds from THEA related to their portion of an agreement which is due to a contractor in the amount of $196,159 for both fiscal years.

As of June 30, 2015 and 2014, the Authority retained funds advanced from the Miami-Dade Aviation Department ("MDAD") in the amount of $837,390 and $856,897, respectively. These funds are for way-finding and dynamic message signs ("DMS") provided as a pass-through cost by Authority contractors. These funds will be disbursed to the contractors as the work is completed and any remaining balance returned to MDAD.

As of June 30, 2015, the Authority's governing board declared its first ever Cash Back Toll Dividend ("CBTD") payable of $2,182,241, equal to thirty (30) percent of tolls paid by eligible registered program participants for the six (6) month period from January 1, 2015 through June 30, 2015. This program was not in effect for the fiscal year ending June 30, 2014.

As of June 30, 2015 and 2014, other payables were $590,273 and $368,397, respectively. Other payables were primarily comprised of (a) tenant rent and security deposits of $154,901 and $153,115, respectively; (b) taxes payable of $68,040 and $60,962, respectively; (c) miscellaneous payables of $134,468 and $67,706, respectively; and (d) unearned revenue of $232,864 and $86,614, respectively.

***Accrued Interest Payable***

As of June 30, 2015 and 2014, accrued interest payable related to outstanding debt was $35,571,943 and $24,771,226, respectively. See Note 6 "Long-Term Liabilities" in the Notes to the Financial Statements for more information.

**Note 4 - Capital Assets**

A summary of capital assets activity and changes in accumulated depreciation for the years ended June 30, 2015 and 2014 follows:

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| | As of June 30, 2014 | Additions | Deletions | Transfers | As of June 30, 2015 |
|---|---|---|---|---|---|
| Capital assets not being depreciated: | | | | | |
| Rights to operate the system | $ 76,644,762 | $ - | $ - | $ - | $ 76,644,762 |
| Land | 324,145,357 | 81,376,147 | - | 78,701,764 | 484,223,267 |
| Construction in progress | 562,545,533 | 130,356,756 | (71,159,447) | (203,370,037) | 418,372,806 |
| Total capital assets, not being depreciated | 963,335,652 | 211,732,903 | (71,159,447) | (124,668,273) | 979,240,836 |
| Capital assets being depreciated: | | | | | |
| Furniture and equipment | 85,446,868 | 192,233 | (7,489,249) | 277,530 | 78,427,382 |
| Buildings, toll facilities and improvements | 50,021,206 | - | (15,367,884) | 106,388 | 34,759,710 |
| Other assets | 3,827,224 | 16,500 | (58,286) | - | 3,785,438 |
| Infrastructure | 562,304,447 | - | (527,544) | 124,284,355 | 686,061,258 |
| Total capital assets being depreciated | 701,599,746 | 208,733 | (23,442,963) | 124,668,273 | 803,033,789 |
| Less accumulated depreciation for: | | | | | |
| Furniture and equipment | (69,205,581) | (5,900,108) | 7,488,247 | - | (67,617,442) |
| Buildings, toll facilities and improvements | (15,997,798) | (1,308,813) | 6,174,137 | - | (11,132,474) |
| Other assets | (3,788,999) | (22,073) | 58,286 | - | (3,752,785) |
| Infrastructure | (100,002,438) | (21,949,715) | 527,544 | - | (121,424,609) |
| Total accumulated depreciation | (188,994,816) | (29,180,708) | 14,248,214 | - | (203,927,310) |
| Net depreciable capital assets | 512,604,931 | (28,971,976) | (9,194,749) | 124,668,273 | 599,106,478 |
| Net capital assets | $ 1,475,940,583 | $ 182,760,927 | $ (80,354,196) | $ - | $ 1,578,347,314 |

(Continued)

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| | As of June 30, 2013 | Additions | Deletions | Transfers | As of June 30, 2014 |
|---|---|---|---|---|---|
| Capital assets not being depreciated: | | | | | |
| Rights to operate the system | $ 76,644,762 | $ - | $ - | $ - | $ 76,644,762 |
| Land | 316,865,423 | 8,952,921 | (1,672,988) | - | 324,145,357 |
| Construction in progress | 454,012,704 | 108,739,931 | - | (207,102) | 562,545,533 |
| Total capital assets, not being depreciated | 847,522,889 | 117,692,852 | (1,672,988) | (207,102) | 963,335,652 |
| Capital assets being depreciated: | | | | | |
| Furniture and equipment | 93,516,696 | 168,589 | (8,416,548) | 178,132 | 85,446,868 |
| Buildings, toll facilities and improvements | 50,010,314 | 10,892 | - | - | 50,021,206 |
| Other assets | 3,808,213 | 6,848 | (16,807) | 28,970 | 3,827,224 |
| Infrastructure | 562,304,447 | - | - | - | 562,304,447 |
| Total capital assets being depreciated | 709,639,670 | 186,329 | (8,433,355) | 207,102 | 701,599,746 |
| Less accumulated depreciation for: | | | | | |
| Furniture and equipment | (62,593,705) | (9,034,056) | 2,422,179 | - | (69,205,581) |
| Buildings, toll facilities and improvements | (14,301,470) | (1,696,328) | - | - | (15,997,798) |
| Other assets | (3,753,804) | (52,001) | 16,807 | - | (3,788,999) |
| Infrastructure | (81,323,460) | (18,678,978) | - | - | (100,002,438) |
| Total accumulated depreciation | (161,972,439) | (29,461,363) | 2,438,986 | - | (188,994,816) |
| Net depreciable capital assets | 547,667,231 | (29,275,033) | (5,994,369) | 207,102 | 512,604,931 |
| Net capital assets | $1,395,190,119 | $ 88,417,819 | $ (7,667,356) | $ - | $1,475,940,583 |

(Concluded)

As of June 30, 2015 and 2014, capital assets depreciation and amortization expense for the year was $29,180,708 and $29,461,363, respectively.

As of June 30, 2015 and 2014, interest capitalized was $21,954,180 and $13,594,499, respectively.

For the fiscal years ended June 30, 2015 and 2014, the Authority capitalized to capital projects $1,307,586 and $1,734,253, respectively, from contracted service expenses, and $2,655,313 and $2,496,790, respectively, from salaries, benefits and general expenses.

As of June 30, 2015 and 2014, asset disposals were $10,984,218 and $7,667,356, respectively. In fiscal year 2015, asset disposals were comprised of $9,194,749 due to infrastructure assets, primarily toll plaza related assets, removed as part of various capital work program projects of $9,193,748, and the disposal of miscellaneous obsolete office equipment of $1,001; as well as a work in progress disposal related to a project that was not completed of $1,789,469. In fiscal year 2014, the asset disposals were due to a toll software system no longer in use of $5,971,827, land disposals related to acquisition costs on parcels that ultimately did not occur of $1,672,988, and the disposal of miscellaneous obsolete information technology equipment of $22,541.

**Note 5 – Other Assets**

***Unamortized Bond Insurance***

Bond and surety insurance costs are classified as other assets and amortized over the life of the outstanding revenue and refunding bonds by an annual allocation of the unamortized costs at the beginning of the year. The allocation is based on the interest expense for the year to the total interest expense over the term of the bonds (interest allocation method).

Bond and surety insurance less accumulated amortization are as follows:

| | 2015 | 2014 |
|---|---|---|
| Original bond insurance cost | $ 7,568,303 | $ 7,681,331 |
| Less accumulated amortization | (2,680,207) | (2,462,707) |
| Unamortized bond insurance | $ 4,888,095 | $ 5,218,625 |

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## Note 6 – Long-Term Liabilities

A summary of changes in long-term liabilities is as follows:

| | As of June 30, 2014 | Additions | Reductions | As of June 30, 2015 | Current Portion |
|---|---|---|---|---|---|
| **Revenue bonds** | | | | | |
| Series 1999 | $ 666,662 | $ - | $ (666,662) | $ - | $ - |
| Series 2005A-E | 241,400,000 | - | (160,935,000) | 80,465,000 | - |
| Series 2006 | 229,585,000 | - | (109,925,000) | 119,660,000 | - |
| Series 2010A | 380,820,000 | - | (2,320,000) | 378,500,000 | 4,680,000 |
| Series 2013A | 269,020,000 | - | (1,700,000) | 267,320,000 | - |
| Series 2013B | 74,750,000 | - | | 74,750,000 | - |
| Series 2014A | 314,045,000 | - | | 314,045,000 | - |
| Series 2014B | - | 266,425,000 | | 266,425,000 | 3,360,000 |
| | 1,510,286,662 | 266,425,000 | (275,546,662) | 1,501,165,000 | 8,040,000 |
| Add bond premium, net | 71,461,823 | 43,751,474 | (11,933,304) | 103,279,993 | - |
| Less bond discount, net | (917,499) | | 41,728 | (875,771) | - |
| Total revenue bonds, net | 1,580,830,986 | 310,176,474 | (287,438,238) | 1,603,569,222 | 8,040,000 |
| **Loans due to other governments** | | | | | |
| Toll Facilities Revolving Trust Fund (2004) | 750,000 | - | (250,000) | 500,000 | 500,000 |
| Toll Facilities Revolving Trust Fund (2006) | 1,000,000 | - | (250,000) | 750,000 | 750,000 |
| Toll Facilities Revolving Trust Fund (2008) | 1,250,000 | - | (250,000) | 1,000,000 | 1,000,000 |
| Toll Facilities Revolving Trust Fund (2010) | 1,500,000 | - | - | 1,500,000 | 1,500,000 |
| State Infrastructure Bank Loan #4 | 9,437,000 | - | (2,302,400) | 7,134,600 | 7,134,600 |
| State Infrastructure Bank Loan #5 | 6,843,581 | - | (2,003,128) | 4,840,453 | 4,840,453 |
| Total loans due to other governments | 20,780,581 | - | (5,055,528) | 15,725,053 | 15,725,053 |
| Derivative instruments fair market value | 51,634,806 | - | (32,658,990) | 18,975,816 | - |
| Net pension liability | - | 2,079,031 | - | 2,079,031 | - |
| Total long-term liabilities and current portion of bonds and loans | $ 1,653,246,374 | $ 312,255,505 | $ (325,152,757) | $ 1,640,349,122 | $ 23,765,053 |

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| | As of June 30, 2013 | Additions | Reductions | As of June 30, 2014 | Current Portion |
|---|---|---|---|---|---|
| **Revenue bonds** | | | | | |
| Series 1999 | $ 1,333,330 | $ - | $ (666,668) | $ 666,662 | $ 666,662 |
| Series 2005A-E | 241,400,000 | - | - | 241,400,000 | - |
| Series 2006 | 304,335,000 | - | (74,750,000) | 229,585,000 | - |
| Series 2010A | 387,945,000 | - | (7,125,000) | 380,820,000 | 2,320,000 |
| Series 2010B | 4,795,000 | - | (4,795,000) | - | - |
| Series 2013A | 270,220,000 | - | (1,200,000) | 269,020,000 | 1,700,000 |
| Series 2013B | - | 74,750,000 | - | 74,750,000 | - |
| Series 2014A | - | 314,045,000 | - | 314,045,000 | - |
| | 1,210,028,330 | 388,795,000 | (88,536,668) | 1,510,286,662 | 4,686,662 |
| Add bond premium, net | 45,880,029 | 31,472,911 | (5,891,117) | 71,461,823 | - |
| Less bond discount, net | (959,541) | - | 42,042 | (917,499) | - |
| Total revenue bonds, net | 1,254,948,817 | 420,267,911 | (94,385,743) | 1,580,830,986 | 4,686,662 |
| **Loans due to other governments** | | | | | |
| Toll Facilities Revolving Trust Fund (2004) | 1,000,000 | - | (250,000) | 750,000 | 250,000 |
| Toll Facilities Revolving Trust Fund (2006) | 1,250,000 | - | (250,000) | 1,000,000 | 250,000 |
| Toll Facilities Revolving Trust Fund (2008) | 1,500,000 | - | (250,000) | 1,250,000 | 250,000 |
| Toll Facilities Revolving Trust Fund (2010) | 1,500,000 | - | - | 1,500,000 | - |
| State Infrastructure Bank Loan #4 | 11,613,000 | - | (2,176,000) | 9,437,000 | 2,302,400 |
| State Infrastructure Bank Loan #5 | 10,846,648 | - | (4,003,067) | 6,843,581 | 2,003,128 |
| Total loans due to other governments | 27,709,648 | - | (6,929,067) | 20,780,581 | 5,055,528 |
| Derivative instruments fair market value | 50,806,346 | - | 828,460 | 51,634,806 | - |
| Total long-term liabilities and current portion of bonds and loans | $ 1,333,464,812 | $ 420,267,911 | $ (100,486,350) | $ 1,653,246,373 | $ 9,742,190 |

(Concluded)

For fiscal years 2015 and 2014, interest expense was $56,100,014 and $46,324,759, respectively. The interest expense for both fiscal years is comprised of actual interest payments on debt of (a) $72,927,279 and $60,536,138, respectively, which was composed of $72,627,699 and $60,129,726 in senior debt interest, respectively, and $299,580 and $406,412 in subordinate debt interest, respectively; (b) Bond Series 2005 swap termination payment of $8,125,000 and $0, respectively; (c) amortization for bond insurance, deferred amounts from refunding, and bond discount of $4,889,442 and $2,848,847, respectively; less (d) capitalized interest of $21,954,180 and $13,594,499, respectively; and (e) amortization of bond premiums of $7,887,528 and $3,465,727, respectively.

### A. Revenue and Refunding Revenue Bonds Payable

The principal and interest on all outstanding bonds are payable from the revenues which are pledged to the payment thereof and moneys on deposit from time to time in the funds, accounts and sub accounts, in a manner and to the extent specified in the Trust Indenture.

***(1) $10,000,000 Toll System Revenue Bonds, Series 1999***

On November 1, 1999, the Authority issued $10,000,000 Toll System Revenue Bonds, Series 1999 (Non-Taxable) (the "Series 1999 Bonds"). The Series 1999 Bonds were issued for the purpose of providing funds to (a) pay a portion of the cost of certain improvements to the system included within the current five-year work program of the Authority in effect from time to time; (b) fund a portion of the debt service fund requirement with respect to the Series 1999 Bonds; and (c) pay certain costs associated with the issuance of the Series 1999 Bonds. The bonds matured on January 1, 2015 with annual principal installments of $666,667 beginning January 1, 2001 through January 1, 2015, and semiannual interest payments at 4.94% per annum, due each January 1 and July 1. The Series 1999 Bonds are secured by the revenue generated by the Authority's existing expressway system subject to the terms and limitations set forth in the Trust Indenture, excluding amounts deposited in the Rebate Fund, if any.

The final principal and interest payments were made on January 1, 2015.

***(2) $241,400,000 Toll System Revenue Bonds, Series 2005A-E***

On March 1, 2005, the Authority issued Toll System Revenue Bonds, Series 2005 (Non-Taxable) (the "Series 2005 Bonds") in five sub-series for a total of $241,400,000, including Series 2005A-C in the amount of $54,800,000 (each series) and Series 2005D-E in the amount of $38,500,000 (each series). Each series of the Series 2005 Bonds was initially issued in the form of Dutch Auction Rate Bonds bearing interest at a Dutch Auction Rate. Each series of the Series 2005 Bonds were dated their date of delivery and after the initial Auction Period for such Series, were in an Auction Period of seven days, subject to conversion in whole only to another auction period or to another interest mode, as determined by the Authority. The Series 2005 Bonds were connected to an interest rate swap agreement under which the Authority owed a fixed rate of 4.313% to the counterparty of the swap, amended on May 9, 2008, changing the fixed rate to 4.372%, see note to interest rate swap agreements. The final maturity for the Series 2005 A-C bonds is dated between July 1, 2026 and July 1, 2032; the final maturity for Series 2005 D-E bonds is dated between July 1, 2033 and July 1, 2034. The Series 2005 Bonds were issued to (a) pay a portion of the cost of certain improvements to the system included in the five-year work program of the Authority in effect from time to time, including capitalized interest of $13,304,881 on the Series 2005 Bonds through July 1, 2007; and (b) pay costs and expenses relating to the issuance of the Series 2005 Bonds. The Series 2005 Bonds are secured under the Trust Indenture on parity with all bonds outstanding and any other bonds hereafter issued under the Trust Indenture.

On May 9, 2008, in response to the auction rate market crisis, the Authority exercised its right under the multi modal bond documents to convert its auction rate bonds. The Authority entered into an agreement with Dexia to purchase, to maturity, its outstanding Series 2005 Bonds in the amount of $241,400,000. Under the terms of the agreement, the Authority agreed to pay one month LIBOR index plus 45 basis points for the first year, and LIBOR plus 105 basis points thereafter, through maturity. Dexia may, at its own discretion, allow the Authority to convert into SIFMA index. The Authority maintains the right to refund or convert the Series 2005 Bonds, upon notice to Dexia. As of June 30, 2015, the interest

payments to Dexia remain based on LIBOR index. The amortization of principal payments remains unchanged.

On October 15, 2014, the Authority issued Toll System Revenue and Refunding Bonds Series 2014B to defease $160,935,000 of the Series 2005 original outstanding aggregate principal amount of $241,400,000. In conjunction with the refunding the Authority terminated two of the three swaps with UBS A.G. and Citibank, N.A. The termination payments were paid with the use of proceeds and cash reserves. See "Interest Rate Swap Agreements (Derivative Instruments)" section of Note 6 for more information.

***(3) $304,335,000 Toll System Revenue Bonds, Series 2006***

On September 21, 2006, the Authority issued Toll System Revenue Bonds, Series 2006 (Non-taxable) (the "Series 2006 Bonds"). The Series 2006 Bonds were issued to (a) pay a portion of the cost of certain improvements to the system included in the five-year work program of the Authority in effect from time to time, including capitalized interest of $11,570,728 on the Series 2006 Bonds; (b) pay the swap termination payments of $3,105,000 for the cash settlement swap entered into on July 18, 2005 in anticipation of the issuance of the Series 2006 Bonds as a means of preserving the work program capacity; and (c) pay costs and expenses relating to the issuance of the bonds. The Series 2006 Bonds, net of unamortized net premium totaling $10,626,184, consist of (a) $91,865,000 serial bonds maturing between July 1, 2020 and July 1, 2029, bearing interest between 4.125% and 5.0%; (b) $174,125,000 fixed term bonds at 5.0% maturing on July 1, 2030, July 1, 2037, and July 1, 2039; and (c) $38,345,000 fixed term bonds at 4.50% maturing on July 1, 2033. Interest on the bonds is paid semi-annually each January 1 and July 1. The Series 2006 Bonds are secured under the Trust Indenture on parity with all bonds outstanding and any other bonds hereafter issued under the Trust Indenture.

On December 17, 2013, the Authority issued Toll System Refunding Revenue Bonds Series 2013B to defease the $74,750,000 principal amount of its $304,335,000 original aggregate principal amount.

On October 15, 2014, the Authority issued Toll System Revenue and Refunding Bonds Series 2014B to defease $109,925,000 of the Series 2006 outstanding aggregate principal amount of $229,585,000.

***(4) $395,590,000 Toll System Revenue and Refunding Revenue Bonds, Series 2010A***

On August 18, 2010, the Authority issued $395,590,000 Toll System Revenue and Refunding Revenue Bonds, Series 2010A (Non-taxable) (the "Series 2010A Bonds"). The Series 2010A Bonds were issued for the purpose of providing funds to (a) refund and defease all of the outstanding $49,600,000 principal amount of its $68,200,000 original aggregate principal amount of the Series 2004A Bonds; (b) reimburse the Authority for a termination payment in the amount of $9,785,000 made in connection with the termination of the swap relating to the Refunded 2004A Bonds; (c) pay a portion of the cost of certain improvements to the system included in the five-year work program of the Authority in effect from time to time, including capitalized interest of $7,302,515 on the Series 2010 Bonds; (d) fund a deposit to the Debt Service Reserve Fund in an amount equal to the increase in the debt service reserve fund

requirement resulting from the issuance; and (e) pay costs and expenses relating to the issuance, including a portion of the premium for the insurance policy.

The Series 2010A Bonds consist of (a) $57,105,000 serial bonds maturing between July 1, 2012 and July 1, 2019, bearing interest between 2.00% and 5.0%; and (b) $338,485,000 fixed term bonds at 4.9% to 5.0% maturing on July 1, 2035, and July 1, 2040. Interest on the bonds is paid semi-annually each January 1 and July 1. The Series 2010A Bonds are secured under the Trust Indenture on parity with all bonds outstanding and any other bonds hereafter issued under the Trust Indenture.

The transaction resulted in a $10,727,619 deferred charge to be amortized over the term of the new debt. The deferred amount, net of amortization, is reflected on the Statements of Net Position in Deferred Outflows of Resources. This refunding has resulted in an economic loss of $696,110.

In April 2013, the Authority cash defeased $2,320,000 of its Series 2010A Bonds which matured on July 1, 2014, by depositing cash from the Authority's General Fund in an escrow account with The Bank of New York Mellon Trust Company, N.A. The deposited amount was invested in State and Local Government Securities ("SLGS") and provided for the debt service payments on the defeased bonds. Accordingly, the escrow account's assets and the liability for the defeased bonds are not included in the accompanying financial statements. The escrow agent defeased the bonds as required on July 1, 2014.

See "Advance Refunding & Cash Defeased" section of Note 6 for more information.

***(5) $17,120,000 Toll System Refunding Revenue Bonds, Series 2010B***

On August 18, 2010, the Authority issued $17,120,000 Toll System Refunding Revenue Bonds, Series 2010B (Non-taxable) (the "Series 2010B Bonds"). The Series 2010B Bonds were issued for the purpose of providing funds to (a) refund and defease the outstanding $17,275,000 principal amount of its $150,000,000 original aggregate principal amount of Toll System Revenue Bonds, Series 2000; and (b) pay costs and expenses relating to the issuance, including a portion of the premium for the insurance policy. The Series 2010B Bonds consist of $17,120,000 serial bonds maturing between July 1, 2011 and July 1, 2014, bearing interest between .75% and 3.0%. Interest on the bonds is paid semi-annually each January 1 and July 1. The Series 2010B Bonds are secured under the Trust Indenture on parity with all bonds outstanding and any other bonds hereafter issued under the Trust Indenture.

The transaction resulted in a $150,282 deferred charge to be amortized over the term of the new debt. The deferred amount, net of amortization, is reflected on the Statements of Net Position under Deferred Outflows of Resources. This refunding has resulted in a present value savings economic gain of $1,255,586.

In April 2013, the Authority cash defeased $2,925,000 of its Series 2010B Bonds which matured on July 1, 2014, by depositing cash from the Authority's General Fund in escrow with The Bank of New York Mellon Trust Company, N.A. The cash deposited was invested in SLGS and provided for the debt service payments on the defeased bonds. Accordingly, the escrow account's assets and the liability for the defeased bonds are not included in the

accompanying financial statements. The escrow agent defeased the bonds as required on July 1, 2014.

See "Advance Refunding & Cash Defeased" section of Note 6 for more information.

**(6)** ***$270,220,000 Toll System Refunding Revenue Bonds, Series 2013A***

On April 23, 2013, the Authority issued $270,220,000 Toll System Refunding Revenue Bonds, Series 2013A (Non-taxable) (the "Series 2013A Bonds"). The Series 2013A were issued for the purpose of providing funds sufficient, together with any other available moneys, to (a) refund all of the Authority's outstanding (1) Series 2001A Bonds in the outstanding principal amount of $88,925,000, (2) Series 2002 Bonds in the outstanding principal amount of $32,010,000, and (3) Toll System Revenue Bonds, Series 2004B in the outstanding principal amount of $175,000,000 (collectively, the "Refunded Bonds"); and (b) pay costs and expenses relating to the issuance of the Series 2013A Bonds. The Series 2013A Bonds consist of $270,220,000 serial bonds maturing between July 1, 2013 and July 1, 2033, bearing interest between 2.00% and 5.00% with semi-annual interest payments each January 1 and July 1. The Series 2013A Bonds are secured under the Trust Indenture on parity with all bonds outstanding and any other bonds hereafter issued under the Trust Indenture.

The transaction resulted in a $14,804,185 deferred charge to be amortized over the term of the new debt. The deferred charge is reflected on the Statements of Net Position under Deferred Outflows of Resources. This refunding resulted in a present value savings economic gain of $28,836,237.

**(7)** ***$74,750,000 Toll System Refunding Revenue Bonds, Series 2013B***

On December 17, 2013, the Authority issued $74,750,000 Toll System Refunding Revenue Bonds, Series 2013B (Non-taxable) (the "Series 2013B Bonds"). The Authority executed a call modification with Citibank which owned $74,750,000 par amount Series 2006 Bonds, maturing between July 1, 2034 and July 1, 2037. In exchange for agreeing to postpone the initial call date from July 1, 2016 to July 1, 2023, Citibank agreed to pay the Authority $3,737,500 for the modification on the call option which is to be used for the semi-annual interest payments. This transaction was executed as a refunding with Citibank paying for all cost of issuance.

The Series 2013B Bonds consist of $74,750,000 term bonds maturing between July 1, 2034 and July 1, 2037, bearing interest of 5.00% with semi-annual interest payments each January 1 and July 1. The Series 2013B Bonds are secured under the Trust Indenture on parity with all bonds outstanding and any other bonds hereafter issued under the Trust Indenture.

The transaction resulted in a $2,425,390 deferred gain to be amortized over the term of the new debt. The deferred amount, net of amortization is reflected on the Statements of Net Position under Deferred Inflows of Resources.

**(8) *$314,045,000 Toll System Revenue Bonds, Series 2014A***

On June 4, 2014, the Authority issued Toll System Revenue Bonds, Series 2014A (Non-taxable) (the "Series 2014A Bonds"). The Series 2014A Bonds were issued to (a) pay a portion of the cost of certain improvements to the system included in the five-year work program of the Authority in effect from time to time, including capitalized interest of $16,091,574 on the Series 2014A Bonds; (b) fund the increase in the debt service reserve fund requirement resulting from the issuance of the Series 2014A Bonds; and (c) pay costs associated with the issuance of the Series 2014A Bonds.

The Series 2014A Bonds consist of (a) $142,310,000 serial bonds maturing between July 1, 2020 and July 1, 2034, bearing interest between 4.0% and 5.0%; (b) $3,195,000 fixed term bonds at 4.30% maturing on July 1, 2039; (c) $72,285,000 fixed term bonds at 5.00% maturing on July 1, 2039; and (d) $96,255,000 fixed term bonds at 5.00%, maturing on July 1, 2044. Interest on the bonds is paid semi-annually each January 1 and July 1. The Series 2014A Bonds are secured under the Trust Indenture on parity with all bonds outstanding and any other bonds hereafter issued under the Trust Indenture.

**(9) *$266,425,000 Toll System Refunding Revenue Bonds, Series 2014B***

On October 15, 2014, the Authority issued Toll System Revenue and Refunding Revenue Bonds, Series 2014B (the "Series 2014B Bonds"). The Series 2014B Bonds in the amount of $266,425,000 were issued to (a) refund a portion of the Authority's, Series 2005 Bonds in the amount of $160,935,000; and Toll System Revenue Bonds, Series 2006 Bonds in the amount of $109,925,000; (b) pay termination costs associated with two interest rate swap agreements, UBS A.G. and Citibank, N.A.; (c) fund an increase in the debt service reserve fund requirement resulting from the issuance of the Series 2014B Bonds; and (d) pay certain costs associated with the issuance of the Series 2014B Bonds.

The Series 2014B Bonds consist of $266,425,000 serial bonds maturing between July 1, 2015 and July 1, 2031, bearing interest between 3.0% and 5.0%. Interest on the bonds is paid semi-annually each January 1 and July 1. The Series 2014B Bonds are secured under the Trust Indenture on parity with all bonds outstanding and any other bonds hereafter issued under the Trust Indenture.

The transaction resulted in a $31,012,358 deferred charge to be amortized over the term of the new debt. The deferred charge is reflected on the Statements of Net Position under Deferred Outflows of Resources. This refunding resulted in a present value savings economic gain of $11,474,832.

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**Annual Revenue and Refunding Revenue Bonds Debt Service Requirements**

The annual revenue and refunding revenue bonds debt service requirements as of June 30, 2015 are summarized as follows:

| Year ending June 30, | Principal | Interest |
|---|---|---|
| 2015 | $ 8,706,662 | $ 54,667,376 |
| 2016 | 11,965,000 | 74,347,898 |
| 2017 | 22,725,000 | 73,857,328 |
| 2018 | 27,585,000 | 72,855,358 |
| 2019 | 30,810,000 | 71,553,745 |
| 2020 | 37,480,000 | 70,005,031 |
| 2021-2025 | 259,710,000 | 317,151,965 |
| 2026-2030 | 277,240,000 | 244,826,300 |
| 2031-2035 | 289,395,000 | 180,568,759 |
| 2036-2040 | 457,380,000 | 90,496,565 |
| 2041-2044 | 78,835,000 | 10,094,750 |
| | $ 1,501,831,662 | $ 1,260,425,075 |
| Less: | | |
| Series 1999 Bonds paid January 1, 2015 | $ (666,662) | |
| Total principal as of June 30, 2015 | $ 1,501,165,000 | |

The interest amount for fiscal year 2015 excludes $1,868,750 for Series 2013B capitalized interest and $16,091,574 for Series 2014A capitalized interest.

In accordance with the Trust Indenture principal payments are due on July 1 of each year, with the exception of the Series 1999 Bonds which are due January 1; interest payments due semi-annually on January 1 and on July 1. For purposes of senior debt coverage computation, the July 1 principal and interest payments are deemed due in the preceding fiscal year.

See Other Information - Schedule of Calculation of Net Revenues and Financial Ratios for ratio computation.

**Advance Refunding & Cash Defeased**

**Advance Refunding – Revenue Bond Series 2004B**

The Series 2013A Bonds advance refunded the Series 2004B Bonds and the Authority entered into an escrow agreement with its Trustee, The Bank of New York Mellon Trust Company, N.A. as escrow agent. The Authority deposited a portion of the Series 2013A proceeds and other money available in an escrow deposit trust fund held by the escrow agent. Such proceeds are invested in direct obligations of the United States of America (escrow securities). The escrow securities, interest thereon and cash on deposit in the 2004B Escrow Fund will be sufficient to pay all

principal and interest on the Series 2004B Bonds to their maturity date. The Series 2004B Bonds matured on July 1, 2014 and were paid on their maturity date at the redemption price of 100% of the principal amount plus accrued interest thereon. Accordingly, the escrow account's assets and liabilities for the defeased bonds are not included in the accompanying financial statements. The escrow agent defeased the bonds as required on July 1, 2014.

**Advance Refunding – Revenue Bond Series 2006 (Portion)**

The Series 2014B Bonds advance refunded $109,925,000 which is a portion of the Series 2006 Bonds and the Authority entered into an escrow agreement with its Trustee, The Bank of New York Mellon Trust Company, N.A. as escrow agent. The Authority deposited a portion of the Series 2014B Bonds proceeds and other money available in an escrow deposit trust fund held by the escrow agent. Such proceeds are invested in direct obligations of the United States of America (escrow securities). The escrow securities, interest thereon and cash on deposit in the 2006 Escrow Fund will be sufficient to pay all principal and interest on the Series 2006 Bonds to their maturity date. Series 2006 Bonds maturing on July 1, 2016 will be paid on their maturity date and maturities after July 1, 2016 will be redeemed on July 1, 2016 at the redemption price of 100% of the principal amount plus accrued interest thereon. Accordingly, the escrow account's assets and liabilities for the defeased bonds are not included in the accompanying financial statements.

**Cash Defeased- Revenue Bond Series 2010A and Series 2010B (Portion)**

In April 2013, the Authority cash defeased $2,320,000 of its Series 2010A Bonds and $2,925,000 of its Series 2010B Bonds which matured on July 1, 2013 and July 1, 2014, respectively, by depositing cash from the Authority's General Fund in escrow with The Bank of New York Mellon Trust Company, N.A. The cash deposited was invested in SLGS and provided for the debt service payments on the defeased bonds. Accordingly, the escrow account's assets and liabilities for the defeased bonds are not included in the accompanying financial statements. The escrow agent defeased the bonds as required on July 1, 2014.

**Interest Rate Swap Agreements (Derivative Instruments)**

The objective of the Authority's interest rate swap agreement is to hedge changes in cash flows due to changes in interest rates associated with outstanding variable rate debt obligations.

As of June 30, 2015, the Authority had one outstanding interest rate swap agreement with JP Morgan Chase Bank, N.A. ("JPMorgan") as the counterparty with a negative fair value of $18,975,816. On September 17, 2014, the Authority terminated two swaps with UBS and Citibank as part of the refunding for Bonds Series 2014B.

As of June 30, 2014, the Authority had three outstanding swap agreements with JPMorgan, UBS AG Stamford Branch ("UBS") and Citibank, N.A. ("Citibank") with an aggregate negative fair value of $51,634,806.

As of June 30, 2015 and 2014, the outstanding swap agreements meet the criteria set forth under GASB 53 as effective hedging derivative instruments, and the negative fair values are reflected on the Statements of Net Position.

**Series 2005 Bonds**

On October 28, 2004, the Authority entered into three interest rate swap agreements (the "2005 Swaps") to hedge changes in cash flows due to changes in interest rates associated with the Authority's $241,400,000 variable rate Series 2005 Bonds. The 2005 Swaps were executed with initial notional values of $80,463,333; $80,463,334; and $80,473,333 totaling $241,400,000 with Bear Stearns Capital Markets, Inc., UBS and Citibank (collectively, the "Counterparties"). Under the 2005 Swap Agreements, the Authority owed interest at a fixed rate of 4.313% to the Counterparties. In return, the Counterparties owed the Authority interest based upon the SIFMA Index. On May 9, 2008, the 2005 Swaps were amended (the "2008 Amendment of the 2005 Swaps") by changing the fixed rate payable by the Authority to 4.372%. In exchange, the Counterparties agreed to make payments to the Authority based on the one-month LIBOR index from May 9, 2008 to May 1, 2009, and thereafter the Counterparties will make payments to the Authority based on SIFMA from May 1, 2009 to termination, July 1, 2034. The swaps' notional values as of June 30, 2014 and 2013 were $241,400,000, which equals the outstanding principal amount of the bonds.

On March 14, 2008, due to the financial market crisis, Bear Stearns entered into an agreement with JPMorgan to purchase all of its assets and liabilities. On May 30, 2008, the acquisition of Bear Stearns was completed. All outstanding swap agreements were transferred to JPMorgan.

In order to mitigate basis risk associated with a portion of its interest rate swaps, on September 23, 2011, the Authority amended the swap agreement with JPMorgan to convert the floating rate index from the SIFMA index to the one-month LIBOR index for the entire $80,463,333 notional amount. Effective October 1, 2011, under the amended agreement, the Authority continues to pay the 4.372% fixed rate and will receive a floating rate that is 92.25% of one-month LIBOR.

Fair Value:

As of June 30, 2015 and 2014, the outstanding swap agreements met the criteria set forth under GASB 53 as effective hedging derivative instruments. As of June 30, 2015 and 2014, because interest rates have declined since execution of the 2005 Swaps, the swaps had a negative total fair market value of $18,975,816 and $51,634,806, respectively, in accordance with GASB 53. The fair market value is reflected on the Statements of Net Position under the Deferred Outflows of Resources and Long-Term Liabilities. Interest rate swaps are not normally valued through exchange-type markets with easily accessible quotation systems and procedures. The fair market value was calculated by the Authority's financials advisor, First Southwest Company, using information obtained from generally recognized sources with respect to quotations, reporting of specific transaction and market conditions, and based on accepted industry standards and methodologies.

Credit Risk:

As of June 30, 2015, the 2005 Swap had a negative fair market value which means that in the event of a termination the Authority will make a termination payment to the Counterparty.

Swap payments and termination amount are supported through a collateralization agreement.

Termination Risk:

The maximum exposure resulting from terminating all outstanding swaps on June 30, 2015 and 2014 is the aggregate fair market value of $18,975,816 and $51,634,806, respectively.

Basis Risk:

Under the original 2004 agreement, and subsequent amendments to the 2005 Swap agreement, the Authority will receive a variable payment from the swap which will be used to offset the payments of the bonds held by Dexia. The variable receipts under the 2005 Swap are based on 92.25% of current monthly LIBOR for JPMorgan's payment on the Series 2005 Bonds while the Series 2005 Bonds payments are based on 100% of current monthly LIBOR.

Projected debt service requirements of the variable rate debt and net swap payments, assuming a one-month LIBOR rate of 0.18650% as of June 30, 2015, are as follows:

**Series 2005 Bonds**

| Fiscal Year Ending | Variable Rate Bonds | | Interest Rate | |
|---|---|---|---|---|
| June 30, | Principal | Interest | Swaps, net | Total |
| 2016 | $ 1,000,000 | $ 983,323 | $ 3,379,040 | $ 5,362,363 |
| 2017 | 1,000,000 | 971,102 | 3,337,420 | 5,308,522 |
| 2018 | 1,170,000 | 958,882 | 3,295,421 | 5,424,303 |
| 2019 | 1,170,000 | 944,584 | 3,246,421 | 5,361,005 |
| 2020 | 1,670,000 | 930,286 | 3,197,063 | 5,797,349 |
| 2021-2025 | 11,220,000 | 4,223,466 | 14,517,513 | 29,960,979 |
| 2026-2030 | 29,310,000 | 3,297,274 | 11,334,565 | 43,941,839 |
| 2031-2034 | 33,925,000 | 1,063,000 | 3,653,677 | 38,641,677 |
| Total | $ 80,465,000 | $ 13,371,916 | $ 45,961,121 | $ 139,798,038 |

Collateral (JP Morgan):

On March 22, 2013, the Authority executed an amendment to the swap agreement with JPMorgan to amend the collateral posting requirements under the Credit Support Annex.

The following table gives the collateral threshold amounts for the interest rate swap with JPMorgan. Under the swap agreement the credit ratings determine the collateral posting requirements. Depending on the credit rating, collateral posting is required for amounts above the fair value threshold. Since the fair value changes daily, additional collateral posting amounts would be required for increment changes of more than $100,000.

| Ratings | Fair Value Threshold | |
|---|---|---|
| Moody's / S&P / Fitch | Counterparty | Authority |
| Aa3/AA-/AA- and above | $50,000,000 | $50,000,000 |
| A1/A+/A+ | $50,000,000 | $50,000,000 |
| A2/A/A | $25,000,000 | $50,000,000 |
| A3/A-/A- | $10,000,000 | $50,000,000 |
| Baa1/BBB+/BBB+ | $0 | $15,000,000 |
| Below Baa1/BBB+/BBB+ or not rated | $0 | $0 |

As of June 30, 2015, JPMorgan Chase Bank, N.A. was rated Aa3/A+/AA- by Moody's/S&P/Fitch; collateral posting thresholds are determined by the lowest rating. As of June 30, 2015, the Authority was rated A3/A-/A by Moody's/S&P/Fitch; collateral posting thresholds are determine by the highest rating. A negative fair value causes the Authority to be in a collateral posting position; conversely, a positive fair value causes the Counterparty to be in a collateral posting position.

As of June 30, 2015, the swap had a negative fair value of $18,975,816; therefore, the Authority was in a collateral posting position. However, since the swap fair value was below the threshold of $50,000,000 for the Authority's credit rating of A3/A-/A, no collateral posting was required.

Collateral (UBS):

As of June 30, 2015 and 2014, the swap had a negative fair value of $0 and $17,570,486, respectively. The Authority terminated the swap on September 17, 2014 for $15,847,000 as part of the Bond Series 2014B refunding. As the agreement is terminated, the Authority has no further obligations or collateral posting risk.

Collateral (Citibank):

As of June 30, 2015 and 2014, the swap had a negative fair value of $0 and $17,572,227, respectively. The Authority terminated the swap on September 17, 2014 for $17,025,000 as part of the Bond Series 2014B refunding. As the agreement is terminated, the Authority has no further obligation or collateral posting risk.

**B. Loans Due to Other Governments**

***(1) Toll Facilities Revolving Trust Fund Loan***

On February 25, 2004, amended on November 24, 2004, the Authority entered into an unsecured, non-interest bearing Toll Facilities Revolving Trust Fund loan ("TFRTF 2004") payable under an agreement authorizing the Authority to borrow $1,500,000. Principal

balance outstanding is due from future bond proceeds, if elected by the Authority, or on the basis of repayment schedules. Repayment of principal and investment interest earnings shall begin no later than 7 years after the date of the advance, provided repayment is completed no later than 12 years after the date of the advance. As of June 30, 2015 and 2014, the outstanding loan balance was $500,000 and $750,000, respectively.

On December 5, 2006, the Authority entered into an unsecured, non-interest bearing Toll Facilities Revolving Trust Fund loan ("TFRTF 2006") payable under an agreement authorizing the Authority to borrow $1,500,000. Principal balance outstanding is due from future bond proceeds, if elected by the Authority, or on the basis of repayment schedules. Repayment of principal and investment interest earnings shall begin no later than 7 years after the date of the advance, provided repayment is completed no later than 12 years after the date of the advance. As of June 30, 2015 and 2014, the outstanding loan balance was $750,000 and $1,000,000, respectively.

On May 1, 2008, the Authority entered into an unsecured, non-interest bearing Toll Facilities Revolving Trust Fund loan ("TFRTF 2008") payable under an agreement authorizing the Authority to borrow $1,500,000. Principal balance outstanding is due from future bond proceeds, if elected by the Authority, or on the basis of repayment schedules. Repayment of principal and investment interest earnings shall begin no later than 7 years after the date of the advance, provided repayment is completed no later than 12 years after the date of the advance. As of June 30, 2015 and 2014, the outstanding loan balance was $1,000,000 and $1,250,000, respectively.

On March 10, 2010, the Authority entered into an unsecured, non-interest bearing Toll Facilities Revolving Trust Fund loan ("TFRTF 2010") payable under an agreement authorizing the Authority to borrow $1,500,000. Principal balance outstanding is due from future bond proceeds, if elected by the Authority, or on the basis of repayment schedules. Repayment of principal and investment interest earnings shall begin no later than 7 years after the date of the advance, provided repayment is completed no later than 12 years after the date of the advance. As of June 30, 2015 and 2014, the outstanding loan balance was $1,500,000 for both years.

***(2) State Infrastructure Bank Loans***

On November 2, 2004, the Authority entered into an unsecured State Infrastructure Bank loan agreement with the FDOT ("SIB Loan No. 4") in the amount of $11,613,000 at an interest rate of 2.5%. The loan was made in installments based on the reimbursable construction expenditures made by the Authority on the project specific to the loan agreement. SIB Loan No. 4 requires annual principal payments beginning October 1, 2013. As of June 30, 2015 and 2014, the outstanding loan balance was $7,134,600 and $9,437,000, respectively.

On June 5, 2008, the Authority entered into an unsecured State Infrastructure Bank loan agreement with FDOT ("SIB Loan No. 5") in the amount of $15,000,000 at an interest rate of 2.0%. The loan was made in installments over a three (3) year period based on the reimbursable expenditures made by the Authority on the project specific to the loan agreement. SIB Loan No. 5 requires annual principal payments beginning October 1, 2010.

As of June 30, 2015 and 2014, the outstanding loan balance was $4,840,452 and $6,843,581, respectively.

**Annual Loans Due to Other Governments Debt Service Requirements**

The annual debt service requirements for outstanding loans due to other governments as of June 30, 2015, are summarized as follows:

| | Principal | Interest |
|---|---|---|
| 2016 | $ 15,725,053 | $ 68,794 |
| | $ 15,725,053 | $ 68,794 |

All loans due to other governments are reflected as current as of June 30, 2015 as the Authority informed the State of the Authority's intent to prepay all outstanding amounts during Fiscal Year 2016 as allowed under the loan agreements.

See Note 11 "Subsequent Events" in the Notes to the Financial Statements for more information.

**C. Arbitrage Rebates Payable**

The Authority has reported in the accompanying financial statements obligations to rebate arbitrage interest earnings on certain toll revenue and refunding bonds. The proceeds of the bonds were used to finance a portion of the cost of certain improvements to the expressway system included within the current capital work program.

The rebate to the federal government at June 30, 2015 and 2014 was $0 and $0, respectively.

**Note 7 – Retirement Plans**

**Florida Retirement System Plans**

The Authority participates in the State of Florida Retirement System (the "FRS"), a multiple-employer, cost-sharing, defined benefit retirement plan or defined contribution retirement plan, administered by the Florida Department of Administration, Division of Retirement. The FRS was established in 1970, and, as a general rule, membership in the FRS is compulsory for all employees working in a regular established position for a state agency, county government, district school board, state university, community college or a participating city or special district within the State of Florida.

Benefit provisions as established by Chapter 121, Florida Statutes, and any amendments thereto can be made only by an act of the Florida Legislature.

Employees of the FRS may participate in either the Public Employee Optional Retirement Program (the "Investment Plan"), a defined contribution retirement program, or in the defined benefit retirement plan ("Pension Plan").

Eligible members of the Investment Plan are vested after one year of service and are directed to choose their investment product with a third party administrator selected by the State Board of Administration.

Employees participating in the Pension Plan have their benefits computed on the basis of age, average final compensation and service credit. Benefits under the Plan vest after six years of service for those employees hired prior to July 1, 2011. For employees hired on or after July 1, 2011, benefits under the Plan vest after eight years of service. Employees hired prior to July 1, 2011 who retire at or after age 62, with six years of credited service, are entitled to an annual retirement benefit, payable monthly for life. Employees hired on or after July 1, 2011 who retire at or after age 62, with eight years of credited service, are entitled to an annual retirement benefit, payable monthly for life.

Employees may also participate in the Retiree Health Insurance Subsidy (the "HIS") Program which is a cost-sharing, multiple-employer defined benefit pension plan established and administered in accordance with section 112.363, Florida Statutes. The benefit is a monthly payment to assist retirees of the state-administered retirement systems in paying their health insurance costs. Eligible retirees and beneficiaries receive a monthly HIS payment equal to the number of years of service credited at retirement multiplied by $5. The minimum payment is $30 and the maximum payment is $150 per month, pursuant to section 112.363, Florida Statutes. To be eligible to receive a HIS benefit, a retiree under one of the state-administered retirement systems must provide proof of eligible health insurance coverage, which can include Medicare.

Contributions, required by all governmental employers, are based on statewide contribution rates. As of July 1, 2011 the state began to require all regular and senior management class employees to contribute 3% of the employee's salary into the FRS. For fiscal years 2015, 2014 and 2013, the employer contribution rate range – as defined by the State of Florida – was between 5.18% and 21.43% of gross salaries. For fiscal years ended June 30, 2015, 2014 and 2013, the Authority contributed 100% of the required employer contributions. The employer contribution was $445,558, $388,549, and $236,167, respectively. For fiscal year 2015, 2014 and 2013, the employee contribution was $130,015, $123,338, and $125,143.84, respectively. The Authority's net pension liability for fiscal year 2014 and 2013 was $2,079,031 and $2,866,099, respectively.

*Basis of Accounting.* Employers participating in the FRS Pension Plan and HIS Program are required to report pension information in their financial statements for fiscal periods beginning on or after June 15, 2014, in accordance with GASB 68. The Schedules of Employer Allocations and Schedules of Pension Amounts by Employer (pension allocation schedules) and notes to the schedules, along with the FRS CAFR, provide employers with the required information for reporting. The underlying information used to prepare the pension allocation schedules is based on the system's records which were audited for the fiscal years ended June 2013, and 2014, as well as the related notes, by the State of Florida Auditor General.

*Employer Contributions.* Contributions are recognized as revenue when due, pursuant to statutory and contractual requirements. Employee contributions required pursuant to section 121.71(3), Florida Statutes, are accounted for by the FRS as employer-paid employee contributions and are treated as employer contributions under 26 U.S.C. s. 414(h)(2) allowing these contributions to be

deducted on a pre-tax basis. Pension expense reported in the pension allocation schedules is reduced by these amounts.

Total employer contributions are determined on a uniform basis (blended rate) as required by Part III of Chapter 121, Florida Statutes. Employer contributions reflected in the financial statements and in the pension allocation schedules for the defined benefit plans represent contributions specific to each defined benefit plan and do not equal total blended contributions remitted by the employer.

*Use of Estimates.* The preparation of these schedules, and the associated financial statements, requires management to make estimates and assumptions that affect the reported amounts of assets, deferred outflows of resources, liabilities, deferred inflows of resources and changes therein, including appropriate disclosures at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

**Net Pension Liability of Employers**

A. Net Pension Liability

The components of the collective net pension liability of the Authority for each defined benefit plan for the measurement date of June 30, 2014, are shown below (in thousands):

| | FRS | HIS |
|---|---|---|
| Total Pension Liability (A) | $ 19,444 | $ 1,332 |
| Plan Fiduciary Net Position (B) | (18,684) | (13) |
| Net Pension Liability (A-B) | $ 760 | $ 1,319 |
| Plan Fiduciary Net Position as a Percentage of the Total Pension Liability (B/A) | 96.09% | 0.99% |

The total pension liability for each plan was determined by the plans' actuary and reported in the plans' valuations dated July 1, 2014. The fiduciary net position used by the actuary to determine the net pension liability (as shown above) was determined on the same basis used by the plan. Each plan's fiduciary net position is reported in the financial statements and the net pension liability is disclosed in the notes to the financial statements. Update procedures were not used.

B. Basis for Allocation

The employer's proportionate share reported in the pension allocation schedules was calculated using accrued retirement contributions for employers that were members of the FRS and HIS during fiscal years 2013 and 2014. Although GASB 68 encourages the use of the employers' projected long-term contribution effort to the retirement plan, allocating on the basis of historical employer contributions is acceptable. The aggregate employer contribution amounts for the fiscal year ended June 30, 2013, agree to the employer contribution amounts reported in the State of Florida CAFR. This report is available online (See Note 5 of the State of Florida CAFR). The aggregate employer contribution amounts for the fiscal year ended June 30, 2014, agree to the

employer contribution amounts reported in the FRS's 2014 CAFR. The fiscal year ended June 30, 2014, was the first year for which a separately-issued CAFR was published for the system.

The proportion calculated based on contributions for each of the fiscal years presented in the pension allocation schedules was applied to the net pension liability and other pension amounts applicable to that fiscal year to determine each employer's proportionate share of the liability, deferred outflows of resources, deferred inflows of resources and associated pension expense.
For the purposes of the pension allocation schedules, pension amounts are allocated to reporting employers. The pension amounts of participating employers whose payrolls are reported and contributions are remitted by another entity are included in the reporting employer's amounts and will be allocated to the participating employer by the reporting employer.

C. Actuarial Methods and Assumptions

Actuarial assumptions for both defined benefit plans are reviewed annually by the Florida Retirement System Actuarial Assumptions Conference. The FRS Pension Plan has a valuation performed annually. The HIS Program has a valuation performed biennially that is updated for GASB reporting in the year a valuation is not performed. The most recent experience study for the FRS Pension Plan was completed in 2014 for the period July 1, 2008, through June 30, 2013. Because the HIS Program is funded on a pay-as-you-go basis, no experience study has been completed for this program.

The total pension liability for each of the defined benefit plans was determined by an actuarial valuation as of July 1, 2014, using the entry age normal actuarial cost method. Inflation increases for both plans is assumed at 2.60%. Payroll growth for both plans is assumed at 3.25%. Both the discount rate and the long-term expected rate of return used for FRS Pension Plan investments is 7.65%. The table below shows the assumptions for each of the asset classes in which the plan was invested at that time based on the long-term target asset allocation.

| Asset Class | Target Allocation |
|---|---|
| Cash | 1.0% |
| Intermediate-Term Bonds | 18.0% |
| High Yield Bonds | 3.0% |
| Broad US Equities | 26.5% |
| Developed Foreign Equities | 21.2% |
| Emerging Market Equities | 5.3% |
| Private Equity | 6.0% |
| Hedge Funds / Absolute Return | 7.0% |
| Real Estate (Property) | 12.0% |

For more information regarding the plan's investments please refer to the FRS's CAFR.

The plan's fiduciary net position was projected to be available to make all projected future benefit payments of current active and inactive employees. Therefore, the discount rate for calculating the total pension liability is equal to the long-term expected rate of return. Because the HIS Program uses a pay-as-you-go funding structure, a municipal bond rate of 4.29% was used to determine the total pension liability for the program. Mortality assumptions for both plans were based on the Generational RP-2000 with Projection Scale BB tables (refer to the valuation reports for more information – see Additional Financial and Actuarial Information section).
The following changes in actuarial assumptions occurred in 2014:

- FRS: As of June 30, 2014, the inflation rate assumption was decreased from 3.00% to 2.60%, the real payroll growth assumption was decreased from 1.00% to 0.65%, and the overall payroll growth rate assumption was decreased from 4.00% to 3.25%. The long-term expected rate of return decreased from 7.75% to 7.65%.

- HIS: The municipal rate used to determine total pension liability decreased from 4.63% to 4.29%.

D. Sensitivity Analysis

The following tables demonstrate the sensitivity of the net pension liability to changes in the discount rate. The sensitivity analysis shows the impact to the collective net pension liability of the participating employers if the discount rate was 1.00% higher or 1.00% lower than the current discount rate at June 30, 2014.

**FRS Net Pension Liability**

| 1% Decrease | Current Discount Rate | 1% Increase |
|---|---|---|
| 6.65% | 7.65% | 8.65% |
| $ 3,250,324 | $ 759,931 | $ (1,311,602) |

**HIS Net Pension Liability**

| 1% Decrease | Current Discount Rate | 1% Increase |
|---|---|---|
| 3.29% | 4.29% | 5.29% |
| $ 1,500,369 | $ 1,319,100 | $ 1,167,792 |

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As of June 30, 2014 and June 30, 2013, the Authority's portion of the collective net pension liability for FRS was $759,931 and $1,544,933, respectively; the proportion of the collective net pension liability was 0.009032717% and 0.012454876%, respectively; and the change in proportion since the prior measurement date was $795,002 or 0.003422159%. The Authority's portion of the collective net pension liability for HIS was $1,319,100 and $1,311,166, respectively; the proportion of the collective net pension liability was 0.015059943% and 0.014107649%, respectively; and the change in proportion since the prior measurement date was $(7,934) or 0.000952294%.

**Pension Liabilities, Pension Expense, and Deferred Outflows of Resources and Deferred Inflows of Resources Related to Pensions**

In accordance with GASB 68, paragraph 71, changes in the net pension liability are recognized in pension expenses in the current measurement period, except as indicated below. For each of the following, a portion is recognized in pension expense in the current measurement periods, and the balance is amortized as deferred outflows or deferred inflows of resources using a systematic and rational method over a closed period, as defined below:

- Differences between expected and actual experience with regard to economic and demographic factors – amortized over the average expected remaining service life of all employees that are provided with pensions through the pension plan (active and inactive employees)
- Changes of assumptions or other inputs – amortized over the average expected remaining service life of all employees that are provided with pensions through the pension plan (active and inactive employees)
- Differences between expected and actual earnings on pension plan investments – amortized over five years

As of June 30, 2015, the Authority reported a net pension liability of $2,079,031, corresponding to its proportionate share of the collective net pension liability of FRS and HIS. The net pension liability was measured as of June 30, 2014, based on the total pension liability calculated on an actuarial valuation as of that date. As of the June 30, 2014 measurement date the Authority's proportion of the net collective pension liability for FRS and HIS was 0.012454876 and 0.014107649%, respectively. As of the prior measurement date the Authority's proportion was 0.009032717% and 0.015059943%, respectively.

The contributions to the pension plans from employers are not included in collective pension expense.

The average expected remaining service life of all employees provided with pensions through the pension plans at June 30, 2014, was 6.3 years for FRS and 7.2 years for HIS. The components of collective pension expense reported in the pension allocation schedules for the fiscal year ended June 30, 2014, are presented below for each plan.

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**Florida Retirement System**

| | Pension Expense | Deferred Outflows of Resources | Deferred Inflows of Resources | Net Pension Liability |
|---|---|---|---|---|
| Collective | $ 71,817 | $ - | $ - | $ - |
| Change in Proportion, NPL | 93,509 | 495,596 | - | - |
| Assumptions | - | 131,607 | - | - |
| Investments | - | - | 1,267,689 | - |
| Experience | - | - | 47,027 | - |
| Contributions Subsequent to Prior Measurement Date | - | 324,705 | - | - |
| Net Pension Liability | - | - | - | 759,931 |
| | $ 165,326 | $ 951,908 | $ 1,314,716 | $ 759,931 |

**Health Insurance Subsidy**

| | Pension Expense | Deferred Outflows of Resources | Deferred Inflows of Resources | Net Pension Liability |
|---|---|---|---|---|
| Collective | $ 91,599 | $ - | $ - | $ - |
| Change in Proportion, NPL | (11,515) | - | 71,395 | - |
| Assumptions | - | 46,939 | - | - |
| Investments | - | 634 | - | - |
| Experience | - | - | - | - |
| Contributions Subsequent to Prior Measurement Date | - | 54,606 | - | - |
| Net Pension Liability | - | - | - | 1,319,100 |
| | $ 80,084 | $ 102,179 | $ 71,395 | $ 1,319,100 |

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Deferred outflows of resources related to employer contributions paid subsequent to the measurement date and prior to the employer's fiscal year end will be recognized as a reduction of the net pension liability in the reporting period ending June 30, 2016. Other amounts reported as deferred outflows of resources and deferred inflows of resources related to pension expense will be recognized as follows:

| Reporting Period Ending June 30, | FRS Expense | HIS Expense |
|---|---|---|
| **2016** | $ (240,112) | $ 6,646 |
| **2017** | $ (240,112) | $ 6,646 |
| **2018** | $ (240,112) | $ 6,646 |
| **2019** | $ (240,112) | $ 6,646 |
| **2020** | $ (240,112) | $ 6,646 |
| **Thereafter** | $ 17,451 | $ 14,343 |
| **Totals** | $ (1,183,109) | $ 47,573 |

**Additional Financial and Actuarial Information**

Additional audited financial information supporting the Schedules of Employer Allocations and the Schedules of Pension Amounts by Employer is located in the State of Florida CAFR for the fiscal year ended June 30, 2013 and in the Florida Retirement System Pension Plan and Other State-Administered Systems CAFR for the fiscal year ended June 30, 2014. The State of Florida CAFR is available online at:

http://www.myfloridacfo.com/Division/AA/Reports/default.htm.

The FRS's CAFR and the actuarial valuation reports as of July 1, 2014, are available online at:

http://www.dms.myflorida.com/workforce_operations/retirement/publications

The FRS's CAFR and actuarial reports may also be obtained by contacting the Division of Retirement at:

Department of Management Services
Division of Retirement
Bureau of Research and Member Communications
P.O. Box 9000
Tallahassee, FL 32315-9000
850-488-5706 or toll free at 877-377-1737

**Note 8 – Deferred Outflows and Inflows of Resources**

As of June 30, 2015 and 2014, deferred outflows of resources totaled $64,723,764 and $69,940,996, respectively, comprised of the following:

| | 2015 | 2014 |
|---|---|---|
| Derivative instrument | $ 18,975,816 | $ 51,634,806 |
| Deferred charges due to refundings | 44,693,861 | 18,306,190 |
| Pension | 1,057,087 | - |
| | $ 64,726,764 | $ 69,940,996 |

As of June 30, 2015 and 2014, deferred inflows of resources totaled $3,596,497 and $2,317,888, respectively, comprised of the following:

| | 2015 | 2014 |
|---|---|---|
| Deferred charges due to refundings | $ 2,210,386 | $ 2,317,888 |
| Pension | 1,386,111 | - |
| | $ 3,596,497 | $ 2,317,888 |

For more detailed information on deferred outflows and inflows of resources, see Note 6 “Long-Term Liabilities” and Note 7 “Retirement Plans” in the Notes to the Financial Statements.

**Note 9 – Commitments and Contingencies**

At June 30, 2015 and 2014, the Authority had in process various uncompleted construction projects with remaining contract balances totaling $279,926,053 and $157,872,413, respectively.

In addition, the Authority is obligated under a lease agreement with the State of Florida, expiring in the year 2047, to make annual payments of $300 for its headquarters office building.

**Note 10 – Litigation and Unasserted Claims**

In April, 2010, the Authority entered into two multi-year, multi-million dollar contracts with Electronic Transaction Consultants Corporation ("ETCC”) for the Implementation and Maintenance of an Open Road Tolling all electronic toll collection system (the “In Lane Contract”) and for the development, operation, and maintenance of an Account Management and Toll Enforcement System back office operation (the “AMTES contract”). Numerous schedule delays and failures to provide deliverables have been experienced in both contracts. The Authority issued Notices to Cure Events of Default as to both contracts, assessed liquidated damages related to both contracts, and issued a letter of default to the contractor and its surety as to the AMTES contract. The Authority believes that express requirements of its contract that mandate ETCC meet certain completion, testing and performance milestones relieves MDX of any current and specific future obligations to make payments to ETCC. The Authority has engaged the services of outside counsel to assist with these matters. Despite the Authority and ETCC having participated in a series of meetings with both ETCC and its surety in an effort to reach an agreed upon resolution to the contract disputes between the parties, no resolution has been within reach resulting in the above-

referenced suit and counter-suit. The surety has declined to honor its obligation under the contract bonds.

The Authority and ETCC settled the claims with respect to the In Lane Contract in August 2014 and have entered into a three year supplemental agreement that allows ETCC to maintain the lane portion of the system in exchange for a fixed monthly amount.

In September 2013, the Authority prevailed against ETCC on the Authority's motion for partial summary judgment. ETCC had claimed that it was entitled to recovery more than $30 million for work it performed to operate and maintain. The Court agreed with the Authority, holding that ETCC is not entitled to any payment for operations and maintenance, which eliminated a substantial portion of ETCC's claimed damages.

As of October 2014, discovery was completed and all dispositive motions have been heard and decided. The suit is assigned to the Complex Civil Litigation Division in the Eleventh Judicial Circuit for Miami-Dade County before the Hon. John Thornton. The trial began in September 2015 and due to scheduling final testimony was not completed until October 29, 2015. The judge's ruling and outcome is expected by early January 2016. The Authority's outside counsel believe that ETC's damages claims are overstated and not supported by the terms of the AMTES contract.

**Note 11 – Related Party Transactions**

As of June 30, 2015 and 2014 there were no known related party transactions reported.

**Note 12 – Subsequent Events**

On September 29, 2015, the Authority's Board approved early prepayment of all subordinate debt. The subordinate debt consists of two (2) State Infrastructure Bank ("SIB") loans and four (4) Toll Facility Revolving Trust Fund ("TFRTF") loans amounting to $11,975,053 and $3,750,000, respectively. The subordinate debt is payable to the State of Florida. The SIB loans will be paid in full on October 1, 2015. The TFRTF loans will be paid in full on December 1, 2015.

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# APPENDIX E

# THE AMENDED AND RESTATED INDENTURE AND FORM OF ELEVENTH SUPPLEMENTAL INDENTURE

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**AMENDED AND RESTATED TRUST INDENTURE**[♦]

**From**

**Miami-Dade County Expressway Authority**

**(f/k/a Dade County Expressway Authority)**

**To**

**The Bank of New York, as Trustee**

Originally Dated as of November 15, 1996

and

Amended and Restated as of June 15, 2002

[♦] Subsequent amendments to the Amended and Restated Trust Indenture are shown in footnotes.



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## AMENDED AND RESTATED TRUST INDENTURE

This Amended and Restated Trust Indenture is dated as of June 15, 2002 (as the same may be amended or supplemented from time to time, this "Indenture"), and is from Miami-Dade County Expressway Authority, f/k/a Dade County Expressway Authority (together with its successors and assigns as permitted under this Indenture, the "Authority"), a body politic and corporate, a public instrumentality and an agency of the State of Florida (the "State") existing under the Florida Expressway Authority Act (Part I of Chapter 348, Florida Statutes, as amended) (together with any successor provisions of law, the "Act"), to The Bank of New York, a New York banking corporation, as trustee (together with any successor permitted under this Indenture, the "Trustee"). This Indenture amends and restates the Trust Indenture dated as of November 15, 1996 (the "Original Indenture") from Dade County Expressway Authority to the Trustee, which previously had been amended and supplemented by the First Supplemental Trust Indenture (the "First Supplemental Indenture"), the Second Supplemental Trust Indenture (the "Second Supplemental Indenture") and the Third Supplemental Trust Indenture (the "Third Supplemental Indenture") dated as of October 15, 1999, January 1, 2000 and June 1, 2001, respectively, and from the Authority to the Trustee (as so amended and supplemented, the "Prior Indenture").

## WITNESSETH:

**WHEREAS**, the Authority was established by Ordinance No. 94-215, adopted on December 13, 1994, by the Board of County Commissioners of Dade County, Florida, pursuant to the Act; and

**WHEREAS**, the Act sets forth the Authority's purposes and powers, which include, among others, the powers to: (1) acquire, hold, construct, improve, maintain, operate, own, and lease the expressways located in Dade County and identified more particularly in Exhibit A hereto (together with certain non-roadway assets identified more particularly on Exhibit B hereto and together with any Improvements, as hereinafter defined, the "System"); (2) fix, alter, change, establish, and collect tolls, rates, fees, rentals, and other charges for the services and facilities of the System; (3) utilize surplus revenues to finance or refinance the planning, design, acquisition, construction, maintenance or improvement of a public transportation facility or transportation facilities located in Dade County, Florida or any programs or projects that will improve the levels of service on the System; and (4) borrow money, make and issue negotiable notes, bonds, refunding bonds and other evidence of indebtedness to finance the System; and

**WHEREAS**, the State of Florida, Department of Transportation (together with any successor to its powers and functions, the "Department") transferred operational and financial control of the System in perpetuity from the Department to the Authority on December 10, 1996 upon the terms and conditions set forth in the Transfer Agreement dated December 10, 1996 (as amended and as the same may be further amended or supplemented from time to time the "Transfer Agreement") between the Department and the Authority; and

**WHEREAS**, simultaneously with the entry by the Department and the Authority into the Transfer Agreement, the Department and the Authority entered into the following additional agreements with respect to the System, each dated December 10, 1996: (a) Toll Operations and Maintenance Agreement (as the same may be amended or supplemented from time to time, the "Toll Operations and Maintenance Agreement"); (b) Roadway Operations and Maintenance Agreement (as the same may be amended or supplemented from time to time, the "Roadway Operations and Maintenance Agreement"); and (c) SunPass Agreement (as the same may be amended or supplemented from time to time, the "SunPass Agreement"); and

**WHEREAS**, prior to the entry by the Authority and the Trustee into the Original Indenture, the System was financed with bonds of the State of Florida denominated Full Faith and Credit Dade County Road Refunding Bonds, Series 1993 (the "State Bonds") then outstanding in the aggregate principal amount of $91,300,000 that were supported by revenues of the System and other security; and

**WHEREAS**, the Authority is issued on December 10, 1996 under the Original Indenture, $80,000,000 in aggregate principal amount of its Dade County Expressway Authority (Florida) Toll System Revenue Bonds, Series 1996 (Taxable) (the "Series 1996 Bonds") and applied a portion of the proceeds of the Bonds and took certain other actions on that date to acquire operational and financial control of the System in perpetuity by defeasing all of the outstanding State Bonds pursuant to the terms and provisions of the Escrow Deposit Agreement dated as of November 15, 1996 (as the same may be amended or supplemented from time to time, the "Escrow Agreement") between the Authority and the State Board of Administration of Florida (together with any successor to its powers and functions, the "SBA"); and

**WHEREAS**, it was a precondition to the transfer of the System pursuant to the terms of the Transfer Agreement that the 1989 Lease-Purchase Agreement Covering Dade County Road Project dated as of April 5, 1989 (the "Lease-Purchase Agreement") among the Department, the Division of Bond Finance of the SBA (formerly known as the Division of Bond Finance of the Department of General Services of the State of Florida) (the "Division") and Dade County, Florida (the "County") be terminated; and

**WHEREAS**, the Department, the Division and the County terminated the Lease-Purchase Agreement effective as of and on December 10, 1996; and

**WHEREAS**, pursuant to the Transfer Agreement, the Department transferred certain moneys to the Authority for application in the manner hereinafter provided; and

**WHEREAS**, the Authority has also previously issued under the Prior Indenture: (i) $10,000,000 in principal amount of its Miami-Dade County Expressway Authority Toll System Revenue Bond (the "Series 1999 Bond") as a series of Additional Bonds (as defined in the Prior Indenture), (ii) $150,000,000 in aggregate principal amount of its Miami-Dade County Expressway Authority Toll System Revenue Bonds, Series 2000 (the "Series 2000 Bonds"), as a series of Additional Bonds, and (iii) $89,345,000 in aggregate principal amount of its Miami-Dade County Expressway Authority (Florida) Toll System Refunding Revenue Bonds, Series 2001A (the "Series 2001A Bonds"); such Series 1999 Bond, Series 2000 Bonds and Series 2001A Bonds being secured by the Trust Estate (as hereinafter defined) on a parity with the lien thereon in favor of the Series 1996 Bonds and any other series of Additional Bonds that may be issued from time to time hereafter; and

**WHEREAS**, all things necessary to make the Series 1996 Bonds, the Series 1999 Bond, the Series 2000 Bonds and the Series 2001A Bonds previously authenticated by the Trustee and issued under the Prior Indenture and when authenticated by the Trustee and issued as in this Indenture provided, the valid, binding and legal obligations of the Authority according to the import thereof, and to constitute the Prior Indenture, as amended and restated by this Indenture, a valid pledge of and grant of a lien on the Trust Estate (as hereinafter defined), subject to the provisions of this Indenture, for the purpose of providing for the operation and maintenance of the System and to secure the payment of the principal of, premium, if any, and interest on the Bonds (as hereinafter defined) have been done and performed, in due form and time, as required by law; and

**WHEREAS**, the execution and delivery of this Indenture and the execution and issuance of the Series 1996 Bonds, the Series 1999 Bond, the Series 2000 Bonds and the Series 2001A Bonds, subject to the terms hereof, have in all respects been duly authorized by the Authority;

**GRANTING CLAUSES**

Now, Therefore, This Indenture Witnesseth:

That in order to provide for the acquisition, construction, installation, equipping, operation and maintenance of the System and to secure the payment of the principal of, premium, if any, and interest on all Bonds issued and to be issued under this Indenture, according to the import thereof, and to reimburse any Credit Provider and Liquidity Provider and any Reserve Facility Provider (each as hereinafter defined) for amounts owed to them under any Credit Facility, Liquidity Facility or Reserve Facility (each as hereinafter defined), respectively, but subject to the limitations set forth herein, and the performance and observance of each and every covenant and condition contained herein and in the Bonds, and for and in consideration of the premises and of the acceptance by the Trustee of the trusts hereby created, and of the purchase and acceptance of the Bonds by the respective Owners (as hereinafter defined) thereof, and for other good and valuable consideration, the sufficiency of which is hereby acknowledged, and for the purpose of fixing and declaring the terms and conditions upon which the Bonds shall be issued, authenticated, delivered, secured and accepted by all Persons who shall from time to time be or become Owners thereof, the Authority does hereby assign, pledge and grant a lien upon and a security interest (and does hereby confirm its prior assignment, pledge and grant of a lien upon and a security interest under the Prior Indenture) in all of its right, title and interest in and to the following described property, rights and interests (collectively, the "Trust Estate") to the Trustee and its successors in trust and assigns, to the extent provided in this Indenture:

the Revenues (as hereinafter defined);

the Transfer Agreement; provided, that the assignment made by this clause shall not impair or diminish any obligation of the Authority under the provisions of the Transfer Agreement;

all Funds, Accounts and Subaccounts (each as hereinafter defined) established pursuant to this Indenture other than the Rebate Fund (as hereinafter defined) and all moneys and securities and earnings in such funds, accounts and subaccounts; and



Any and all other contracts, instruments, moneys, revenues or sources of revenues (including, without limitation, pledged tax receipts of any type and from any source), securities and property furnished from time to time to the Trustee by the Authority or on behalf of the Authority or by any other Persons to be held by the Trustee as part of the Trust Estate under the terms of this Indenture;

But in trust nevertheless, for the equal and proportionate benefit and security of the Bonds issued and to be issued under the Prior Indenture and hereunder and secured by this Indenture, including any Bonds hereafter issued, without preference, priority or distinction as to participation in the lien, benefit and protection hereof of any one Bond over any other or from the others by reason of priority in the issue or negotiation thereof or by reason of the date or dates of maturity thereof, or for any other reason whatsoever (except as expressly provided in this Indenture), so that each and all of the Bonds shall have the same right, lien and privilege under this Indenture and shall be equally secured hereby, with the same effect as if the same had all been made, issued and negotiated upon the delivery hereof (all except as expressly provided in this Indenture);

Provided, however, that prior to the occurrence of an Event of Default (as hereinafter defined) the lien on and pledge of the Trust Estate conferred by this Indenture in favor of the Trustee shall be subject in all respects to the provisions of this Indenture that require the application of Revenues or other moneys to the funds created under this Indenture, including in each case any account or subaccount established therein, prior to the application of such Revenues or other moneys for the payment of the principal or redemption price of and the interest on the Bonds. No Owner of any Bond has the right to compel any exercise of the taxing power of any unit of government to pay the principal or Redemption Price of the Bonds or the interest thereon.

Notwithstanding the foregoing provisions of these Granting Clauses:

moneys in and investments of the Rebate Fund (as hereinafter defined) shall not be pledged to the payment of the Bonds and shall be applied solely to the payment of rebate amounts due to the United States of America with respect to Bonds or payments in lieu thereof or as otherwise provided in this Indenture; and

upon the occurrence of an Event of Default (as hereinafter defined) the Trustee shall have a first lien on amounts held pursuant to Section 9.04.

Provided Further, however, that these presents are upon the condition that, if the Authority, or its successors, shall well and truly pay or cause to be paid, or provide for the payment of all principal, premium, if any, and interest on the Bonds due or to become due thereon, at the times and in the manner stipulated therein and herein, then this Indenture and the rights hereby granted shall cease, terminate and be void, but shall otherwise be and remain in full force;

And it is hereby covenanted and agreed by and among the Authority, the Trustee and the Owners from time to time of the Bonds, that the terms and conditions upon which the Bonds are to be issued, authenticated, delivered, secured and accepted by all Persons who shall from time to

time be or become the Owners thereof, and the trusts and conditions upon which the moneys and securities hereby pledged are to be held and disposed of, which trusts and conditions the Trustee hereby accepts, are as follows:

## ARTICLE I

## DEFINITIONS

**SECTION 1.01 DEFINITIONS**. Unless the context otherwise requires, the terms defined in this Section 1.01 shall for all purposes hereof and of any amendment hereof or supplement hereto and of the Bonds and of any certificate, opinion, request or other document mentioned herein or therein have the meanings defined herein, the following definitions to be equally applicable to both the singular and plural forms of any of the terms defined herein:"Account" shall mean any account created and maintained pursuant to this Indenture.

"Accountant" shall mean the independent certified public accountants or firm of independent certified public accountants retained by the Authority under the provisions of Section 7.05 to perform and carry out the duties imposed on the Accountant by this Indenture.

"Accreted Value" shall mean, as of any date of computation with respect to any Capital Appreciation Bond, an amount equal to the principal amount of such Capital Appreciation Bond at its initial offering plus the interest accrued on such Capital Appreciation Bond from the date of delivery to the original purchasers thereof to the Compounding Date next preceding the date of computation or the date of computation if a Compounding Date plus, with respect to matters related to the payment upon redemption or acceleration of the Capital Appreciation Bond, if such date of computation shall not be a Compounding Date, a portion of the difference between the Accreted Value as of the immediately preceding Compounding Date (or the date of original issuance if the date of computation is prior to the first Compounding Date succeeding the date of original issuance) and the Accreted Value as of the immediately succeeding Compounding Date, calculated based on the assumption that Accreted Value accrues during any period in equal daily amounts on the basis of a year of 360 days consisting of twelve months of thirty days each. Interest shall accrue on any Capital Appreciation Bond and be compounded periodically at such rate and at such times as provided for in any Supplemental Indenture relating to said Capital Appreciation Bond.

"Act" shall have the meaning ascribed to it in the introductory paragraph of this Indenture.

"Additional Bonds" shall mean the Bonds issued pursuant to the provisions of Section 2.08 on a parity with Outstanding Bonds.

"Administrative Expenses" shall mean the reasonable and necessary general and administrative expenses of the Authority including salaries of Authority administrative personnel, any taxes which may be lawfully imposed on the System or its income or operations and reserves therefor, the amount necessary to compensate any Fiduciary in accordance with the provisions of this Indenture, including, but not limited to, Section 8.04, and any other administrative expenses required to be paid under the provisions of this Indenture or by law, as





such expenses are determined to have been incurred in accordance with the method of accounting used in the preparation of the annual financial statements of the Authority including, to the extent so determined, expenses not annually recurring, but excluding: (i) any allowance for depreciation, or amortization; and (ii) any deposits or transfers to the credit of the Funds, Accounts or Subaccounts; provided, however, that to the extent such Administrative Expenses relate, all or in part, to a future period of time they shall be prospectively determined by reference to the Annual Budget, to the extent applicable to the future period, and to any projections authorized to be used herein, to the extent applicable to the future period.

"Alternate Credit Facility" shall mean a Credit Facility provided pursuant to the terms of Section 13.03.

"Alternate Credit Facility Date" shall have the meaning ascribed to it in Section 13.03.

"Alternate Liquidity Facility" shall mean a Liquidity Facility provided pursuant to the terms of Section 13.06.

"Alternate Liquidity Facility Date" shall have the meaning ascribed to it in Section 13.06.

"Amortization Requirements" shall mean the money required to be deposited in the Sinking Fund for the purpose of the mandatory redemption or payment at maturity of any Term Bonds issued pursuant to this Indenture, the specific amounts and times of such deposits to be as provided in Section 3.01 with respect to the Series 1996 bonds and to be determined in the Supplemental Indenture authorizing the issuance of such Term Bonds.

"Annual Budget" shall mean the annual budget, as amended or supplemented, adopted or in effect for a particular Fiscal Year as provided in Section 5.04.

"Annual Repayment Requirements" shall mean, for any given Fiscal Year, the total of the following: (i) the Net Liabilities (as defined in the Transfer Agreement) payable by the Authority for such Fiscal Year as set forth in Exhibit F to the Transfer Agreement, if any; (ii) the SunPass Installation Costs (as defined in the SunPass Agreement) payable by the Authority for such Fiscal Year pursuant to the SunPass Agreement, if any; (iii) Environmental Liabilities (as defined in the Transfer Agreement) payable by the Authority for such Fiscal Year pursuant to the Transfer Agreement, if any; and (iv) Overruns (as defined in the Toll Operations and Maintenance Agreement and the Roadway Operations and Maintenance Agreement), if any. As used in this Indenture, clauses (i) and (ii) of the definition of Annual Repayment Requirements shall constitute the Non-contingent Portion of the Annual Repayment Requirements and clauses (iii) and (iv) shall constitute the Contingent Portion of Annual Repayment Requirements.

"Appreciated Value" shall mean, with respect to any Capital Appreciation and Income Bond: (a) as of any date of computation prior to the Interest Commencement Date, an amount equal to the principal amount thereof on the date of original issuance plus the interest accrued on such Bond from the date of original issuance of such Bond to the Compounding Date next preceding the date of computation or the date of computation if a Compounding Date, such interest to compound periodically at the times and at the rate provided in any Supplemental Indenture authorizing the issuance of said Bond, plus, if such date of computation shall not be a Compounding Date, a portion of the difference between the Appreciated Value as of the

immediately preceding Compounding Date (or the date of original issuance if the date of computation is prior to the first Compounding Date succeeding the date of original issuance) and the Appreciated Value as of the immediately succeeding Compounding Date calculated based upon an assumption that Appreciated Value accrues during any period in equal daily amounts on the basis of a year of 360 days consisting of twelve months of thirty days each; and (b) as of any date of computation on and after the Interest Commencement Date, the Appreciated Value on the Interest Commencement Date.

"Authority" shall have the meaning ascribed to it in the introductory paragraph to this Indenture.

"Authority Account" shall mean the Account by that name established in the General Fund.

"Authority Counsel" shall mean Greenberg Traurig, P.A., Edwards & Carstarphen and any other legal counsel appointed by the Authority to represent its legal interests.

"Authorized Denomination" means (a) in the case of the Series 1996 Bonds, (i) while the Series 1996 Bonds bear interest at a Daily, Weekly or Monthly Rates, $100,000 and integral multiples of $5,000 over $100,000, and (ii) while the Series 1996 Bonds bear interest at a Quarterly, Semiannual, Extended or Fixed Rate, $5,000, and integral multiples thereof, (b) in the case of the Series 1999 Bond, its unpaid principal balance from time to time, (c) in the case of the Series 2000 Bonds and the Series 2001A Bonds, $5,000, and integral multiples thereof, and (d) in the case of other Series of Bonds, such denominations as shall be authorized in the Supplemental Indenture authorizing the issuance of such Bonds.

"Authorized Officer" shall mean, when used with respect to the Authority, the Chairman, the Vice Chairman, the Executive Director, and any other officer or employee of the Authority designated from time to time by resolution of the Authority as an Authorized Officer under this Indenture.

"Average Annual Debt Service Requirement" shall mean, as of any date and with respect to a particular Series of Bonds, the arithmetic average of the Principal and Interest Requirements in the then current and each succeeding Fiscal Year.

"Average Rate" shall mean the rate determined by dividing the total amount of interest paid on all Variable Rate Bonds for a given period by the average principal amount of all Variable Rate Bonds Outstanding during that period.

"Bonds" shall mean, collectively, Outstanding Series 1996 Bonds, the Outstanding Series 1999 Bond, Outstanding Series 2000 Bonds, Outstanding Series 2001A Bonds, Completion Bonds, Additional Bonds and Refunding Bonds.

"Bond Counsel" shall mean any firm of nationally recognized municipal bond attorneys selected by the Authority, including co-counsel to such firm, each of which shall be and experienced in the issuance of municipal bonds and matters relating to the exclusion of the interest thereon from gross income for purposes of federal income taxation.





"Bond Registrar" shall mean a bank or trust company, either within or without the State of Florida, designated as such by resolution of the Authority, which shall perform such functions as Bond Registrar as are required by this Indenture with respect to one or more Series of Bonds. Notwithstanding the preceding sentence, the Trustee shall be the initial Bond Registrar.

"Bondholder" (or "Owner") shall mean the registered owners of the Bonds as shown on the registration books of the Bond Registrar maintained pursuant to Section 2.04.

"Business Day" means any date other than (i) Saturday or Sunday, (ii) a day on which the Trustee, any Credit Provider or any Liquidity Provider is lawfully closed, (iii) a day on which the federal reserve bank for the federal reserve district in which the Trustee or Tender Agent is located is closed; or (iv) a day on which the New York Stock Exchange is closed.

"Capital Appreciation Bonds" shall mean any Bonds as to which interest is compounded periodically on each Compounding Date and which are payable in an amount equal to the then current Accreted Value only at maturity, earlier redemption or other payment date therefor, all as designated by any Supplemental Indenture authorizing the issuance of such Bonds and which may be either Serial Bonds or Term Bonds.

"Capital Appreciation and Income Bonds" shall mean any Bonds as to which accruing interest is not paid prior to the Interest Commencement Date specified in any Supplemental Indenture authorizing the issuance of such Bonds and with respect to which, until said Interest Commencement Date, the Appreciated Value is compounded periodically on each Compounding Date.

"Capitalized Interest" shall mean proceeds of Bonds set aside to pay the interest costs on Bonds that will accrue during the construction of a Project or other specified period, the amount of which shall be set forth in the Supplemental Indenture authorizing the issuance of the Bonds, the proceeds of which shall be applied for such purpose.

"Chairman" shall mean the Person appointed to serve as the Chairman of the Authority or his designee or the Person succeeding to his principal function.

"Code" shall mean the applicable provisions of the Internal Revenue Code of 1986, as amended, and the regulations promulgated thereunder.

"Completion Bonds" shall mean the Bonds issued pursuant to the provisions of Section 2.07 on a parity with Outstanding Bonds.

"Compounding Date" shall mean, with respect to any Capital Appreciation Bond and Capital Appreciation and Income Bond, the dates on which interest shall compound, as specified in any Supplemental Indenture authorizing the issuance of such Bonds.

"Construction Fund" shall mean the Fund of that name created and maintained pursuant to Section 4.01.

"Consulting Engineer" shall mean the engineer, engineering firm, traffic consultant or traffic consulting firm at the time retained by the Authority pursuant to Section 7.05 to carry out

and perform the duties imposed on the Consulting Engineer by this Indenture. The Authority may retain the services of more than one Consulting Engineer to perform duties and services required of the Consulting Engineer under this Indenture.

"Continuing Disclosure Agreement" shall mean, with respect to one or more Series of Bonds, the Continuing Disclosure Agreement entered into between the Authority, the dissemination agent specified therein and such other Persons who are determined to be Obligated Persons (within the meaning of Rule 15c2-12 of the Securities and Exchange Commission) with respect to such Bonds, as same may be amended from time to time, in order to comply with Rule 15c2-12 of the Securities and Exchange Commission.

"Conversion Date" means:

(a) When used with respect to a Fixed Rate, the date on which a Fixed Rate becomes effective pursuant to Section 2.06(m); and

(b) When used with respect to any particular Variable Rate Period, the date on which such Rate Period first becomes effective pursuant to Section 2.06.

"Convertible Bonds" shall mean Bonds issued under this Indenture which are convertible, at the option of the Authority, into a form of Bonds which are permitted by this Indenture other than the form of such Bonds at the time they were issued.

"Corporation Rate" shall mean the rate of interest per annum borne by Provider Bonds, which shall equal the Prime Rate plus 1% or, if applicable the Default Rate; provided however that the Corporation Rate shall not exceed the lesser of 12% per annum or the maximum rate permitted by applicable law.

"Cost" shall mean, as applied to a Project, the aggregate cost of construction of the Project, and all obligations and expenses relating thereto, including all items of cost which are set forth in Section 4.03.

"Counterparty" shall mean a financial institution whose long-term debt obligations, or whose payment obligations under a Hedge Agreement are guaranteed by an entity, whose senior long-term debt obligations are rated (on the date the Hedge Agreement is entered into) at least "A-" by S&P or "A3" by Moody's.

"County" shall have the meaning ascribed to it in the recitals to this Indenture.

"Credit Facility" shall mean the Initial Credit Facility and each and every other irrevocable letter of credit, policy of municipal bond insurance, surety bond, guaranty, purchase agreement, credit agreement or similar facility in which the entity providing such facility irrevocably agrees to provide funds to make payment of the principal of and interest on Bonds when due. The term "Credit Facility" shall also include and "Alternate Credit Facility."

"Credit Provider" shall mean the Initial Credit Provider and each and every other provider of a Credit Facility, if any, with respect to any Series of Bonds.





"Daily Rate" shall mean the interest rate determined for the Bonds for a Daily Rate Period pursuant to Section 2.06(c).

"Daily Rate Period" shall mean, while the Series 1996 Bonds bear interest at the Daily Rate, the period commencing on each Business Day to but excluding the following Business Day.

"Debt Service Reserve Fund" shall mean the Fund of that name created and maintained pursuant to Section 5.06.

"Debt Service Reserve Fund Deposit Requirement" shall mean an amount in each of the twelve successive months beginning with the month following any month in which any amount shall have been withdrawn from the Debt Service Reserve Fund (or drawn under a Reserve Facility) or a deficiency is determined to exist upon valuation of the Debt Service Reserve Fund pursuant to Section 6.02, equal to one twelfth of the deficiency created by such withdrawal (or draw under a Reserve Facility) or resulting from such valuation until such deficiency is made up. In the case of a draw under the Initial Reserve Facility, such deficiency shall include all Policy Costs then due and owing under the Series 1996 Debt Service Reserve Fund Policy Agreement.

"Debt Service Reserve Fund Requirement" shall mean, as of any date of calculation, an amount equal to the least of: (i) the maximum Principal and Interest Requirements on the Bonds in the current or any future Fiscal Year for the Bonds; (ii) 125% of the Average Annual Debt Service Requirement for the Bonds; or (iii) 10% of the proceeds of the Bonds. The Debt Service Reserve Fund Requirement may be satisfied, in whole or in part, by the deposit of a Reserve Facility.

"Default Rate" shall mean, with respect to Provider Bonds, a rate of interest per annum equal to the Prime Rate plus 3%.

"Department" shall have the meaning ascribed to it in the recitals to this Indenture.

"Department Operation and Maintenance Expenses" shall mean, for a given period, Operation and Maintenance Expenses incurred by the Department pursuant to the Toll Operations and Maintenance Agreement, the Roadway Operations and Maintenance Agreement and the SunPass Agreement, as such amounts have been determined by the Authority with reference to the Annual Budget and in accordance with such agreements.

"Depositary" shall mean any bank, savings association or trust company duly authorized by law to engage in its business and to receive Authority funds and designated by an Authorized Officer as a depositary of moneys under the provisions of this Indenture.

"Deposit Day" shall mean the day on or before the twenty-fifth (25th) day of each month (or such other day that may be designated in a Supplemental Indenture as a "Deposit Day" in respect of a Series of Bonds) on which day a withdrawal from the Revenue Fund and a deposit to one or more other Funds, Accounts or Subaccounts is required to accomplish the payments and transfers required by such Supplemental Indenture.

"Direct Participant" shall mean a participant in the DTC Book-Entry Only System on whose DTC accounts ownership interests in securities are credited.

"DTC" means The Depository Trust Company, New York New York, and its successors and assigns.

"Eligible Funds" means:

Bonds proceeds deposited with the Trustee contemporaneously with the issuance and sale of Bonds (other than proceeds of sale of Bonds to the Authority) and which were continuously thereafter subject to the lien of this Indenture in a separate and segregated fund, account or subaccount established hereunder in which no moneys which were not Eligible Funds were at any time held while such Bond proceeds were held therein, together with the investment earnings thereon;

Moneys (i) held in any Fund, Account or Subaccount in which no other moneys which are not Eligible Funds are held, and (ii) which have been on deposit with the Trustee for at least three hundred sixty-six (366) consecutive days during which period no Event of Bankruptcy shall have occurred, together with the investment earnings thereon;

Proceeds of a drawing under the Credit Facility or the Liquidity Facility; and

Proceeds from the issuance and sale of Refunding Bonds and any other moneys deposited with the Trustee if there is delivered to the Trustee at the time of the issuance and sale of such Refunding Bonds or the deposit of such other moneys with the Trustee a written opinion of nationally recognized bankruptcy counsel to the effect that payments with such proceeds or other moneys, as the case may be, of principal of, premium, if any, or interest on the Bonds would not be avoidable transfers under the United States Bankruptcy Code should an Event of Bankruptcy hereafter occur.

"Escrow Agent" shall mean a bank or trust company, either within or without the State of Florida, having fiduciary powers and designated as Escrow Agent in an Escrow Deposit Agreement and performing such functions as are required by such Escrow Deposit Agreement.

"Escrow Agreement" shall have the meaning ascribed to it in the recitals to this Indenture. The Escrow Agreement shall not be considered to be an Escrow Deposit Agreement within the meaning of this Indenture.

"Escrow Deposit Agreement" shall mean an Escrow Deposit Agreement, by and between the Authority and an Escrow Agent, pursuant to which cash and Escrow Securities will be held by the Escrow Agent to provide for payment, in whole or in part, of one or more specified Series of Bonds.

"Escrow Securities" shall mean cash, direct non-callable obligations of the United States of America and securities fully and unconditionally guaranteed as to the timely payment of principal and interest by the United States of America, to which direct obligations or guarantee the full faith and credit of the United States of America has been pledged, Refcorp interest strips,





CATS, TIGRS, STRPS, or defeased municipal bonds rated "AAA" by S&P or "Aaa" by Moody's (or any combination thereof). Also, "Escrow Securities" shall include United States Agency for International Development securities fully and unconditionally guaranteed as to the payment of principal and interest by the United States of America, where such securities shall be scheduled to mature at least fifteen days prior to the date on which the maturing principal of and interest on such securities are required to pay when due the principal of and premium, if any, and interest due and to become due on Bonds deemed paid within the meaning of Section 12.01 of this Indenture on or prior to the redemption date or maturity date thereof, as the case may be.

"Event of Bankruptcy" means the filing of a petition in bankruptcy or the commencement of a proceeding under the United States Bankruptcy Code pursuant to Sections 301 or 303 thereof by or against the Authority.

"Event of Default" shall have the meaning ascribed to it in Section 9.02.

"Extended Rate" shall mean the interest rate determined for the Series 1996 Bonds for an Extended Rate Period pursuant to Section 2.06(h).

"Extended Rate Period" shall mean, while the Series 1996 Bonds bear interest at the Extended Rate, the period commencing on the Extended Rate Conversion Date and on the first Business Day of the calendar month following the last day of the prior Rate Period, extending for a period of one year or integral multiples of six months in excess of one year as established by the Remarketing Agent and ending on a day which is the last day preceding the first Business Day of a calendar month.

"Fiduciary" shall mean, collectively, the Trustee, Bond Registrar and Paying Agent, or, as the context may require, any one of them.

"First Supplemental Indenture" shall have the meaning ascribed to it in the introductory paragraph of this Indenture.

"Fiscal Year" shall mean the period established as the Authority's fiscal year, presently commencing July 1 of each year and concluding on June 30 of the following year, as the same may be changed from time to time by resolution of the Authority, a copy of which shall have been provided to the Trustee.

"Fitch" shall mean Fitch Investors Service, L.P. and its successors and assigns, and, if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a securities rating agency, "Fitch" shall be deemed to refer to any other nationally recognized securities rating agency designated by the Authority by written notice of an Authorized Officer to the Trustee.

"Fixed Rate" means an interest rate to be determined for the Series 1996 Bonds pursuant to Section 2.06(p).

"Fixed Rate Period" means the period of time during which the Series 1996 Bonds bear interest at a Fixed Rate.

"Fund" shall mean any fund created and maintained pursuant to this Indenture.

"General Account" shall mean the Account of that name established in the General Fund.

"General Fund" shall mean the Fund of that name created and maintained pursuant to Section 5.06.

"Government Obligations" shall mean direct obligations of, or obligations the full and timely payment of the principal of and interest on which are guaranteed by, the United States of America.

"Hedge Agreement" shall mean the Series 1996 Cap Agreement and shall also include an interest rate exchange agreement, an interest rate swap agreement, a forward purchase contract, a put option contract, a call option contract or any other financial product which is used by the Authority as a hedging device with respect to its obligation to pay debt service on any of the Bonds, entered into between the Authority and a Counterparty; provided that such arrangement shall be specifically designated in a certificate of the Executive Director as a "Hedge Agreement" for purposes of this Indenture; and provided further that, at the time of entering into such Hedge Agreement, the Authority shall have obtained written evidence that the Counterparty satisfies the requirements for a Counterparty set forth in the definition of such term in this Article I.

"Hedge Charges" shall mean charges payable by the Authority to a Counterparty upon the execution, renewal or termination of any Hedge Agreement and any periodic fee payable by the Authority to keep such Hedge Agreement in effect and other payments required thereby.

"Hedge Obligations" shall mean net payments required to be made by the Authority under a Hedge Agreement from time to time as a result of fluctuation in hedged interest rates, or fluctuation in the value of any index of payment.

"Hedge Receipts" shall mean net payments received by the Authority from a Counterparty under a Hedge Agreement.

"Improvements" shall mean any extension, enlargement, improvement, equipping, construction, renovation, repair, replacement, rehabilitation or acquisition of all or any portion of the System, but only to the extent that the same shall have been determined by resolution of the Authority to be or to become a part of the System.

"Indenture" shall have the meaning ascribed to it in the introductory paragraph hereof.

"Initial Credit Facility" shall mean the municipal bond new issue insurance policy issued by the Initial Credit Provider that guarantees payment of principal of and interest on the Series 1996 Bonds.

"Initial Credit Provider" shall mean Financial Guaranty Insurance Company, a New York stock insurance company, or any successor thereto.



"Initial Liquidity Facility" shall mean the Standby Bond Purchase Agreement dated as of December 1, 1996 between the Trustee and the Initial Liquidity Provider, as the same may be amended or supplemented from time to time in accordance with its terms.

"Initial Liquidity Provider" shall mean FGIC Securities Purchase, Inc., a Delaware corporation, or any successor thereto.

"Initial Reserve Facility" shall mean the municipal bond debt service reserve fund policy issued by the Initial Reserve Facility Provider that guarantees payment of an amount up to 50% of the Debt Service Reserve Fund Requirement as calculated with respect to the Series 1996 Bonds.

"Initial Reserve Facility Provider" shall mean Financial Guaranty Insurance Company, a New York stock insurance company, or any successor thereto.

"Interest Commencement Date" shall mean, with respect to any particular Capital Appreciation and Income Bonds, the date specified in any Supplemental Indenture authorizing the issuance of such Bonds (which date must be prior to the maturity date for such Bonds) after which interest accruing on such Bonds shall be payable on a periodic basis, with the first such payment date being the applicable Interest Payment Date immediately succeeding such Interest Commencement Date.

"Interest Payment Date" shall mean, with respect to the Series 1996 Bonds:

(a) When the Series 1996 Bonds bear interest at the Daily, Weekly or Monthly Rate, the first Business Day of each calendar month commencing with the first Business Day of the calendar month following the initial issuance and delivery of the Series 1996 Bonds;

(b) When the Series 1996 Bonds bear interest at the Quarterly Rate, the first Business Day of the third calendar month following the Quarterly Rate Conversion Date and subsequently the first Business day of each third calendar month thereafter;

(c) When the Series 1996 Bonds bear interest at the Semiannual or Extended Rate, the first Business Day of the sixth month following the Semiannual or Extended Rate Conversion Date and subsequently the first Business Day of each sixth calendar month thereafter; and

(d) When the Series 1996 Bonds bear interest at the Fixed Rate, each January 1 and July 1 after the Fixed Rate Conversion Date.

"Interest Payment Date" means, with respect to the Series 1999 Bond, the Series 2000 Bonds and the Series 2001A Bonds, each January 1 and July 1, commencing January 1, 2000 for the Series 1999 Bond, commencing on July 1, 2000 for the Series 2000 Bond, and commencing on January 1, 2002 for the Series 2001A Bond. "Interest Payment Date" means with respect to other Series of Bonds, the dates on which interest on such Bonds is payable as specified in the Supplemental Indenture authorizing the issuance of such Bonds.

"Investment Securities" shall mean any of the following to the extent the same are at the time legal for investment by the Authority pursuant to applicable law and any other investment securities approved by the Credit Provider:

Direct obligations of the United States of America and securities fully and unconditionally guaranteed as to the timely payment of principal and interest by the United States of America, provided, that the full faith and credit of the United States of America must be pledged to any such direct obligation or guarantee ("Direct Obligations");

Direct obligations and fully guaranteed certificates of beneficial interest of the Export-Import Bank of the United States; consolidated debt obligations and letter of credit-backed issues of the Federal Home Loan Banks; the Federal Home Loan Mortgage Corporation ("FHLMCs"); debentures of the Federal Housing Administration; mortgage-backed securities (except stripped mortgage securities which are valued greater than par on the portion of unpaid principal) and senior debt obligations of the Federal National Mortgage Association ("FNMAs"); participation certificates of the General Services Administration; guaranteed mortgage-backed securities and guaranteed participation certificates of the Government National Mortgage Association ("GNMAs"); guaranteed participation certificates and guaranteed pool certificates of the Small Business Administration; debt obligations and letter of credit-backed issues of the Student Loan Marketing Association; local authority bonds of the U.S. Department of Housing & Urban Development; guaranteed Title XI financings of the U.S. Maritime Administration; guaranteed transit bonds of the Washington Metropolitan Area Transit Authority; and Resolution Funding Corporation securities;

Direct obligations of any state of the United States of America or any subdivision or agency thereof whose unsecured, uninsured and unguaranteed general obligation debt is rated, at the time of purchase, "A" or better by Moody's and "A" or better by S&P, or any obligation fully and unconditionally guaranteed by any state, subdivision or agency whose unsecured, uninsured and unguaranteed general obligation debt is rated, at the time of purchase, "A" or better by Moody's and "A" or better by S&P;

Commercial paper (having original maturities of not more than 270 days) rated, at the time of purchase, "P-1" by Moody's and "A-1" or better by S&P;

Federal funds, unsecured certificates of deposit, time deposits or bankers acceptances (in each case having maturities of not more than 365 days) of any domestic bank including a branch office of a foreign bank which branch office is located in the United States, provided legal opinions are received to the effect that full and timely payment of such deposit or similar obligation is enforceable against the principal office or any branch of such bank, which, at the time of purchase, has a short-term "Bank Deposit" rating of "P-1" by Moody's and "Short-Term CD" rating of "A-1" or better by S&P;

Deposits of any bank or savings and loan association which has combined capital, surplus and undivided profits of not less than $3 million, provided such deposits are





continuously and fully insured by the Bank Insurance Fund or the Savings Association Insurance Fund of the Federal Deposit Insurance Corporation;

Investments in money market funds rated "AAAm" or "AAAm-G" by S&P;

Repurchase agreements collateralized by Direct Obligations, GNMAs, FNMAs or FHLMCs with any registered broker/dealer subject to Securities Investors' Protection Corporation jurisdiction or any commercial bank insured by the Federal Deposit Insurance Corporation, if such broker/dealer or bank has an uninsured, unsecured and unguaranteed obligation rated "P-1" or "A3" or better by Moody's and "A-1" or "A-" or better by S&P, provided:

(i) a master repurchase agreement or specific written repurchase agreement governs the transaction;

(ii) the securities are held free and clear of any lien by the Trustee or an independent third party acting solely as agent ("Agent") for the Trustee, and such third party is (A) a Federal Reserve Bank, (B) a bank which is a member of the Federal Deposit Insurance Corporation and which has combined capital, surplus and undivided profits of not less than $50 million, or (C) a bank approved in writing for such purpose by the Credit Provider, and the Trustee shall have received written confirmation from such third party that it holds such securities, free and clear of any lien, as agent for the Trustee;

(iii) a perfected first security interest under the Uniform Commercial Code, or book entry procedures prescribed at 31 C.F.R 306.1 et seq. or 31 C.F.R. 350.0 et seq. in such securities is created for the benefit of the Trustee;

(iv) the repurchase agreement has a term of 180 days or less, and the Trustee or the Agent will value the collateral securities no less frequently than weekly and will liquidate the collateral securities if any deficiency in the required collateral percentage is not restored within two business days of such valuation; and

(v) the fair market value of the securities in relation to the amount of the repurchase obligation, including principal and interest, is equal to at least 103%;

(vi) Investment agreements, the issuer, form and substance of which are specifically approved by the Credit Provider; and

(vii) The Local Government Surplus Funds Trust Fund administered by the State Board of Administration of Florida.

"Lease Purchase Agreement" shall have the meaning ascribed to it in the recitals to this Indenture.

"Liquidity Facility" shall mean a letter of credit, policy of insurance, surety bond, guaranty, purchase agreement, credit agreement or similar facility in which the entity providing such facility agrees to provide funds to pay the purchase price of, or agrees to purchase, Put

Bonds upon their tender by the Owners thereof. The term "Liquidity Facility" shall also include an Alternate Liquidity Facility.

"Liquidity Provider" shall mean the Initial Liquidity Provider and each other provider of a Liquidity Facility, if any, with respect to any Series of Bonds.

"Maximum Rate" shall mean, with respect to the Series 1996 Bonds prior to the conversion of the Series 1996 Bonds to the Fixed Rate, 15% so long as the Series 1996 Bonds are Taxable Bonds or 12% so long as the Series 1996 Bonds are not Taxable Bonds, and, thereafter, the highest rate of interest allowed by law. "Maximum Rate" shall mean, with respect to other Series of Bonds, the lower of the highest rate of interest allowed by law and such rate as shall be determined as the "Maximum Rate" for such Bonds in the Supplemental Indenture authorizing the issuance thereof.

"Monthly Rate" shall mean the interest rate determined for a Monthly Rate Period pursuant to Section 2.06(e).

"Monthly Rate Period" shall mean, while the Series 1996 Bonds bear interest at the Monthly Rate, the period commencing on the first Business Day of each month to but excluding the first Business Day of the following month.

"Moody's" shall mean Moody's Investors Service, Inc. and its successors and assigns, and, if such corporation shall be dissolved or liquidated or shall no longer perform the functions of a securities rating agency, "Moody's" shall be deemed to refer to any other nationally recognized securities rating agency designated by the Authority by written notice of an Authorized Officer to the Trustee.

"Net Proceeds" shall mean proceeds from any insurance, condemnation, performance bond, federal or state flood disaster assistance or any other financial guaranty (except a Credit Facility, Liquidity Facility or a Reserve Facility) paid with respect to the System remaining after payment therefrom of all reasonable expenses, including attorneys' fees, incurred in the collection thereof; and, with respect to insurance, to the extent the Authority elects to self-insure, any moneys payable from any appropriation made by the Authority with respect to such self-insurance.

"Net Revenues" shall mean, for any period, the amount of the excess of Revenues over the amounts paid from the Revenue Fund for Operation and Maintenance Expenses during such period.

"Non-contingent Portion of Annual Repayment Requirements" shall have the meaning ascribed to it in the definition of Annual Repayment Requirements.

"Obligated Person" shall have the meaning ascribed to it in Rule 15c2-12 of the Securities and Exchange Commission.

"Operation and Maintenance Expenses" shall mean the reasonable and necessary Administrative Expenses (but only to the extent the same otherwise constitute Operation and Maintenance Expenses within the meaning of this definition), Department Operation and





Maintenance Expenses (but only to the extent the same otherwise constitute Operation and Maintenance Expenses within the meaning of this definition) and the reasonable and necessary expenses of maintenance, repair and operation of the System and its toll facilities, including, without limitation, all ordinary and usual expenses of maintenance and repair, insurance premiums, engineering expenses, legal expenses, the costs of collecting and accounting for Tolls, employee bond premiums, payments in satisfaction of the obligations of the Authority under Section 7.15, amounts due in respect of fees and expenses under the Payment Agreement or any similar agreement with respect to a Credit or Liquidity Facility, and any other similar expenses required to be paid with respect to the System under the provisions of this Indenture or by law, as such expenses are determined to have been incurred in accordance with the method of accounting used in the annual financial statements of the Authority, including, to the extent so determined, expenses not annually recurring, but excluding: (i) any reserves for extraordinary maintenance or repair; (ii) any allowance for depreciation or amortization; (iii) any deposits or transfers to the credit of the Funds and Accounts.

"Opinion of Bond Counsel" means a written opinion of Bond Counsel, in form and substance satisfactory to the Trustee, and except as may be otherwise specifically set forth in this Indenture, to the effect that the action proposed to be taken is authorized or permitted by the laws of the State and this Indenture and will not adversely affect the validity of the Bonds under the laws of the State or, except to the extent that any of the Bonds shall be Taxable Bonds, the exclusion from gross income for federal income tax purposes of interest on any Bonds.

"Opinion of Counsel" means an opinion in writing signed by an attorney or firm of attorneys acceptable to the Trustee who may be Authority Counsel or other counsel.

"Outstanding" shall mean, when used with reference to the Bonds or any of them, all Bonds theretofore delivered except: (a) Bonds deemed to have been paid in accordance with Section 3.05 or Section 12.01; (b) Bonds in lieu of which other Bonds have been issued pursuant to the provisions hereof relating to Bonds destroyed, mutilated, stolen or lost; (c) Bonds paid, redeemed or delivered to or acquired by the Authority for cancellation; and (d) for purposes of any consent or other action to be taken hereunder by the Owners of a specified percentage of principal amount of Bonds, the Bonds held by or for the account of the Authority.

"Owner" (or "Bondholder") shall mean the registered owners of the Bonds as shown on the registration books of the Bond Registrar maintained pursuant to Section 2.04.

"Participant" means one of the entities which is a member of the Securities Depository and deposits securities, directly or indirectly in the Book-Entry System maintained pursuant to Section 2.12.

"Participating Underwriter" shall mean, with respect to a Series of Bonds, any original underwriter of such Bonds identified as a "Participating Underwriter" in a Continuing Disclosure Agreement relating to such Bonds.

"Paying Agent" shall mean a bank or trust company, either within or without the State of Florida, designated as such by resolution of the Authority, which shall perform such functions as Paying Agent as are required by this Indenture with respect to one or more Series of Bonds.

Notwithstanding the preceding sentence, the Trustee shall be the initial Paying Agent for the Series 1996 Bonds.

"Payment Agreement" shall mean the Payment Agreement dated as of December 1, 1996 among the Authority, the Trustee and the Initial Liquidity Provider, as the same may be amended or supplemented from time to time in accordance with its terms. The Authority hereby authorizes and directs the Trustee to enter into the Payment Agreement.

"Payment Obligations" mean amounts owed by the Authority to the Credit Provider pursuant to the reimbursement agreement in effect between them and the amounts owed by the Authority to the Liquidity Provider pursuant to the reimbursement agreement in effect between them.

"Person" shall mean any individual, corporation, partnership, joint venture, association, joint stock company, trust, unincorporated organization or government or any agency or political subdivision thereof, unless the context shall otherwise indicate.

"Policy Costs" shall have the meaning ascribed to it in the Series 1996 Debt Service Reserve Fund Policy Agreement.

"Prime Rate" shall mean, with respect to Provider Bonds, the rate of interest publicly announced by JPMorgan Chase Bank or its successor from time to time as its "Prime Rate".

"Principal and Interest Requirements" shall mean the respective amounts which are required in each Fiscal Year to provide:

(a) for paying the interest on all Bonds then Outstanding which is payable on each Interest Payment Date in such Fiscal Year (the "Interest Requirement");

(b) for paying the principal of all Serial Bonds then Outstanding which is payable upon the maturity of Serial Bonds in such Fiscal Year (together with clause (c) immediately below, the "Principal Requirement"); and

(c) for paying the Amortization Requirements, if any, for all Term Bonds then Outstanding for such Fiscal Year (together with clause (b) immediately above, the "Principal Requirement").

For purpose of computing (a), (b) and (c) above, any principal, interest or Amortization Requirements due on the first day of a Fiscal Year shall be deemed due in the preceding Fiscal Year.

The following rules shall apply in determining the amount of the Principal and Interest Requirements for any Fiscal Year:

(i) the interest rate on Variable Rate Bonds shall be assumed to be: (A) for all purposes other than determining whether the test for issuing Additional Bonds set forth in Section 2.08 is met or determining compliance with the Debt Service Reserve Fund Requirement, the Average Rate of interest on all Variable Rate Bonds during the twelve





months ending with the month preceding the date of calculation or such shorter period of time as such Variable Rate Bonds may have been Outstanding or, in the event there were no Variable Rate Bonds Outstanding during the twelve months preceding the date of calculation, then the initial rate of interest; or (B) for purposes of determining whether the test for issuing Additional Bonds set forth in Section 2.08 is met and for determining compliance with the Debt Service Reserve Fund Requirement, (1) with respect to Taxable Bonds, a rate equal to the bond equivalent yield on United States Treasury Obligations with maturities comparable to the average weighted maturities of the Taxable Bonds then outstanding, plus 50 basis points, which yield shall be calculated in accordance with standard practices in the banking industry, and (2) with respect to Bonds that are not Taxable Bonds, a rate equal to the most recently published Bond Buyer 25 Bond Revenue Index (or a comparable index, if such index is no longer published), plus 50 basis points;

(ii) in the case of Put Bonds, the date or dates on which the Owner of such Put Bonds may elect or be required to tender such Bonds for payment or purchase shall be ignored if the source for said payment or purchase is a Credit Facility or a Liquidity Facility and the stated dates for Amortization Requirements and principal payments thereof shall be used for purposes of this calculation; provided, however, that during any period of time after the Credit Provider has advanced funds under a Credit Facility or a Liquidity Provider has advanced funds under a Liquidity Facility and before such amount is repaid, Principal and Interest Requirements shall include the principal amount so advanced and interest thereon, in accordance with the principal repayment schedule and interest rate or rates specified in the reimbursement or other similar agreement relating to such Credit Facility or Liquidity Facility;

(iii) in the case of Capital Appreciation Bonds, the principal and interest portions of the Accreted Value becoming due at maturity or by virtue of an Amortization Requirement in that Fiscal Year's calculation shall be included;

(iv) in the case of Capital Appreciation and Income Bonds, the principal and interest portions of the Appreciated Value becoming due at maturity or by virtue of an Amortization Requirement in that Fiscal Year's calculation shall be included;

(v) in the case of Convertible Bonds, the calculations shall be based on the form of the Bonds as of the time of the calculation without regard to any unexercised conversion feature; and

(vi) if interest on a Series of Bonds is payable from Capitalized Interest or from other amounts set aside irrevocably for such purpose at the time such Bonds are issued, or if principal, interest or Amortization Requirements are payable from investment earnings retained or deposited in the Sinking Fund in accordance with Section 6.02, interest, principal and Amortization Requirements on such Series of Bonds shall be included in Principal and Interest Requirements only to the extent of the amount of interest, Principal and Amortization Requirements payable in a Fiscal Year from amounts other than amounts so funded to pay same.

(vii) To the extent that the Authority has entered into a Hedge Agreement with respect to any Bonds and notwithstanding the provisions of clauses (i) through (vi) above, while the Hedge Agreement is in effect and so long as the Counterparty has not defaulted thereunder and so long as the Counterparty or an entity guarantying its obligations under such Hedge Agreement maintains a rating on its senior long-term debt obligations of at least "BBB" from S&P or "Baa2" from Moody's, for the purpose of determining the Interest Requirements the interest rate with respect to the principal amount of such Bonds equal to the "notional" amount specified in the Hedge Agreement shall be assumed to be (A) if the Authority's Hedge Obligations under the Hedge Agreement are computed based upon a fixed rate of interest, the actual rate of interest upon which the Authority's Hedge Obligations are computed under such Hedge Agreement, and (B) if the Authority's Hedge Obligations under the Hedge Agreement are computed based upon a variable rate of interest, the average rate of interest for the Authority's Hedge Obligations under the Hedge Agreement for the prior Fiscal Year or portion thereof while the Hedge Agreement was in effect or if the Hedge Agreement was not in effect during such prior Fiscal Year, then the lesser of (X) the initial rate of interest for the Authority's Hedge Obligations under the Hedge Agreement and (Y) the average rate of interest for the prior Fiscal Year under a published variable interest rate index agreed upon by the Authority and the Counterparty which is generally consistent with the formula which shall be used to determine the Authority's Hedge Obligations; "average rate" with respect to the Authority's Hedge Obligations for the prior Fiscal Year shall mean the rate determined by dividing the total annualized amount paid by the Authority under the Hedge Agreement in such Fiscal Year or portion thereof (without taking into account Hedge Receipts during such prior Fiscal Year or portion thereof) by the "notional" amount specified in the Hedge Agreement for such Fiscal Year.

"Project" shall mean Improvements to the System described in a Supplemental Indenture, as the same may be modified or amended as provided in Section 4.04.

"Provider Bonds" shall have the meaning ascribed to it in Section 3.10(d)(ii).

"Purchase Date" means the date upon which the Tender Agent is obligated to purchase a Series 1996 Bond or Series 1996 Bonds pursuant to Article III.

"Purchase Price" of any Series 1996 Bond required to be purchased by the Tender Agent pursuant to Article III means an amount equal to the principal amount of such Series 1996 Bond plus, if the Purchase Date is other than an Interest Payment Date, accrued interest thereon, at the rate applicable to the Series 1996 Bond from the most recent Interest Payment Date and up to but excluding the Purchase Date.

"Put Bonds" shall mean all Bonds which, in accordance with this Indenture (including any Supplemental Indenture authorizing the issuance of a Series of Bonds), may be tendered for payment or purchase by or on behalf of the Authority prior to the stated maturities thereof.

"Quarterly Rate" shall mean the interest rate determined for the Series 1996 Bonds for any Quarterly Rate Period pursuant to Section 2.06(f).



"Quarterly Rate Period" shall mean, while the Series 1996 Bonds bear interest at the Quarterly Rate, the period commencing on the Quarterly Rate Conversion Date for the Series 1996 Bonds, and on the first Business Day of each third calendar month thereafter, to but excluding the first Business Day of the third calendar month thereafter.

"Rate Period" or "Period" shall mean, when used with respect to any particular rate of interest applicable to the Series 1996 Bonds (whether a Daily, Weekly, Monthly, Quarterly, Semiannual, Extended or Fixed Rate), the period during which such rate of interest will remain in effect pursuant to Section 2.06.

"Rate Stabilization Account" shall mean the Account of that name established in the General Fund.

"Rating Agency" shall mean Fitch, Moody's or S&P, or whichever of them shall maintain a rating on any of the Bonds at a given time.

"Rebate Fund" shall mean the Fund of that name created and maintained pursuant to Section 7.15.

"Record Date" shall mean, in the case of the Series 1996 Bonds (i) the Business Day immediately prior to the Interest Payment Date in question in the case of the Daily and Weekly Rate Periods, (ii) the last Business Day at least five (5) days prior to the Interest Payment Date in question in the case of the Monthly Rate Periods, and (iii) the 15th day (whether or not a Business Day) of the calendar month immediately preceding such Interest Payment Date in the case of a Quarterly, Semiannual, Extended Rate or Fixed Rate Period. "Record Date" shall mean, in the case of any other Bonds, the date fifteen days next preceding an Interest Payment Date, whether or not a Business Day, or the date otherwise designated as such in any Supplemental Indenture authorizing the issuance of such Bonds.

"Refunding Bonds" shall mean the Bonds issued pursuant to the provisions of Section 2.09 on a parity with any Outstanding Bonds.

"Remarketing Agent" means the remarketing agent appointed pursuant to Section 13.07.

"Remarketing Agreement" means the Remarketing Agreement dated as of even date herewith between the Authority and the Remarketing Agent.

"Renewal and Replacement Fund" shall mean the Fund of that name created and maintained pursuant to Section 5.06.

"Reserve Facility" shall mean the Initial Reserve Facility and any other insurance policy, surety bond, irrevocable letter of credit or other credit agreement or similar facility maintained by the Authority in lieu of or in partial substitution for cash or securities on deposit in the Debt Service Reserve Fund.

"Reserve Facility Provider" shall mean the Initial Reserve Facility Provider and any other provider of a Reserve Facility.

"Revenue Fund" shall mean the Fund of that name created and maintained pursuant to Section 5.05.

"Revenues" shall mean all Tolls, revenues, rates, fees, charges and rentals received by or accrued to the Authority in connection with or as a result of its ownership or operation of the System, including any Hedge Receipts, any revenues (including revenues that may be derived from taxes) pledged as part of the Trust Estate at any time after the date of this Indenture, any investment income from moneys held on deposit in any of the Funds or Accounts (other than the Rebate Fund) created hereunder, and, except for purposes of Section 2.08(c) of this Indenture, any amounts transferred or to be transferred from the Rate Stabilization Account to the Revenue Fund, all as calculated in accordance with the method of accounting used in the annual financial statements of the Authority.

"Roadway Operations and Maintenance Agreement" shall have the meaning ascribed to it in the recitals to this Indenture.

"S&P" shall mean Standard & Poor's Rating Group, a division of The McGraw-Hill Companies, Inc., and its successors and assigns, and, if such entity shall be dissolved or liquidated or shall no longer perform the functions of a securities rating agency, "S&P" shall be deemed to refer to any other nationally recognized securities rating agency designated by the Authority by written notice of an Authorized Officer to the Trustee.

"Second Supplemental Indenture" shall have the meaning ascribed to it in the introductory paragraph of this Indenture.

"Securities Depository" shall mean DTC or its nominee, and its successors appointed by the Authority in accordance with the provisions of Section 2.12.

"Semiannual Rate" shall mean the interest rate determined for a Semiannual Rate Period pursuant to Section 2.06(g).

"Semiannual Rate Period" shall mean, while the Series 1996 Bonds bear interest at the Semiannual Rate, the period commencing on the Semiannual Rate Conversion Date and from and including the first Business Day of each sixth calendar month thereafter to but excluding the first Business Day of the sixth calendar month thereafter.

"Serial Bonds" shall mean the Bonds of a Series which are stated to mature in annual installments.

"Series" shall mean the Bonds delivered at any one time under the provisions of Article II.

"Series 1996 Bonds" shall mean the Dade County Expressway Authority (Florida) Toll System Revenue Bonds, Series 1996 (Taxable) authorized to be issued pursuant to Section 2.06.

"Series 1996 Cap Agreement" shall mean the Cap Agreement dated as of December 10, 1996 between Canadian Imperial Bank of Commerce and the Authority, as the same may be amended or supplemented from time to time in accordance with its terms.



"Series 1996 Debt Service Reserve Fund Policy Agreement" shall mean the Debt Service Reserve Fund Policy Agreement dated as of December 10, 1996 between the Authority and the Initial Reserve Facility Provider, as the same may be amended or supplemented from time to time in accordance with its terms.

"Series 1999 Bond" shall have the meaning ascribed to it in the recitals to this Indenture.

"Series 2000 Bonds" shall have the meaning ascribed to it in the recitals to this Indenture.

"Series 2001A Bonds" shall have the meaning ascribed to it in the recitals to this Indenture.

"Sinking Fund" shall mean the Fund of that name created and maintained pursuant to Section 5.06.

"Special Record Date" shall mean, with respect to any Bond the date established by the Authority in connection with the payment of overdue interest on the Bonds pursuant to Section 2.02.

"State" shall have the meaning ascribed to it in the introductory paragraph to this Indenture.

"State Bonds" shall have the meaning ascribed to it in the recitals hereto.

"Subaccount" shall mean any subaccount created and maintained pursuant to this Indenture.

"SunPass Agreement" shall have the meaning ascribed to it in the recitals to this Indenture.

"Supplemental Indenture" shall mean an indenture supplemental hereto or amendatory hereof entered into by the Authority and the Trustee pursuant to the terms hereof. Notwithstanding the foregoing, the First Supplemental Indenture, the Second Supplemental Indenture (except for Section 4.01 of the Second Supplemental Indenture, the provisions of which have been incorporated in this Indenture) and the Third Supplemental Indenture (except for Section 4.06 of the Third Supplemental Indenture, the provisions of which have been incorporated in this Indenture) shall be considered to be Supplemental Indentures for all purposes of this Indenture.

"System" shall have the meaning ascribed to it in the recitals to this Indenture.

"Taxable Bond" shall mean any Series 1996 Bond and any other Bond issued under this Indenture, if in connection with such issuance there was not delivered to the Authority an opinion of Bond Counsel to the effect that the interest on such Bond is not included in the gross income of the Owners thereof for purposes of federal income taxation.

"Tender Agent" shall mean The Bank of New York, or any successor or successors appointed in accordance with Section 13.09 of this Indenture.

"Tender Agent Agreement" shall mean the Tender Agent Agreement dated as of even date herewith between the Authority and the Tender Agent.

"Term Bonds" shall mean Bonds which shall be stated to mature on one date and for the amortization of which payment of Amortization Requirements are required to be made into the Sinking Fund.

"Test Period Revenues" shall have the meaning ascribed to it in Section 2.08(c)(v).

"Third Supplemental Indenture" shall have the meaning ascribed to it in the introductory paragraph of this Indenture.

"Time Deposits" shall mean time deposits, certificates of deposit or similar arrangements with any bank or trust company which is a member of the Federal Deposit Insurance Corporation and any federal or State of Florida savings and loan association whose deposits are insured by the Savings Association Insurance Fund and which are secured in the manner provided in Section 6.01.

"Toll Operations and Maintenance Agreement" shall have the meaning ascribed to it in the recitals to this Indenture.

"Tolls" shall mean all tolls, fares, incomes, receipts, rents, franchises, charges and all returns or moneys of an income nature derived by or for the benefit of the Authority from users of the System.

"Transfer Agreement" shall have the meaning ascribed to it in the recitals to this Indenture.

"Trustee" shall mean The Bank of New York or any other bank or trust company, either within or without the State of Florida, having fiduciary powers and designated as Trustee in the manner provided in Section 8.08.

"Trust Estate" shall have the meaning ascribed to it in the recitals to this Indenture.

"Variable Rate" means, as the context requires, the Daily, Weekly, Monthly, Quarterly, Semiannual or Extended Rate applicable to the Series 1996 Bonds.

"Variable Rate Bonds" shall mean Bonds issued with a variable, adjustable, convertible or other similar interest rate which is not fixed in percentage for the entire term thereof at the date of issue, and which may be convertible to a fixed interest rate.

"Vice Chairman" shall mean the Person appointed to serve as the Vice Chairman of the Authority or his designee or the Person succeeding to his principal function.

"Weekly Rate" shall mean the interest rate determined for a Weekly Rate Period pursuant to Section 2.06(d) hereof.



"Weekly Rate Period" shall mean, while the Series 1996 Bonds bear interest at the Weekly Rate, the period commencing on Thursday of each week (or in the case of the first Weekly Rate Period, on the date of original issuance and delivery of the Series 1996 Bonds) to but excluding Thursday of the following week (or in the case of the first Weekly Rate Period, the Thursday immediately following the date of original issuance and delivery of the Series 1996 Bonds), except that (a) in the case of a conversion to a Weekly Rate Period from a different Variable Rate Period, the initial Weekly Rate Period shall be from and including and including the Weekly Rate Conversion Date to but excluding Thursday of the following week, and (b) in the case of a conversion of the Series 1996 Bonds from a Weekly Rate Period to a different Rate Period, the last Weekly Rate Period shall end on and exclude the Conversion Date.

**SECTION 1.02 INTERPRETATION**. (a) In this Indenture, unless the context otherwise requires:

(i) The terms "hereby," "hereof," "hereto," "herein," "hereunder" and any similar terms, as used in this Indenture, refer to this Indenture, and the term "hereafter" shall mean after, and the term "heretofore" shall mean before, the date of this Indenture;

(ii) Words of the masculine gender shall mean and include correlative words of the feminine and neuter genders and words importing the singular number shall mean and include the plural number and vice versa;

(iii) References to Articles and Sections refer to Articles and Sections of this Indenture unless the context specifically requires otherwise;

(iv) Any headings preceding the text of the several Articles and Sections of this Indenture, and any table of contents or marginal notes appended to copies hereof, shall be solely for convenience of reference and shall not constitute a part of this Indenture, nor shall they affect its meaning, construction or effect; and

(v) References to Funds shall include any and all Accounts or Subaccounts therein, unless the context otherwise requires.

(b) Whenever in this Indenture the Authority or the Trustee is named or referred to, it shall include, and shall be deemed to include, its respective successors and assigns whether so expressed or not. All of the covenants, stipulations, obligations and agreements by or on behalf of, and other provisions for the benefit of, the Authority or the Trustee contained in this Indenture shall bind and inure to the benefit of such respective successors and assigns and shall bind and inure to the benefit of any officer, board, commission, authority, agency or instrumentality to whom or to which there shall be transferred by or in accordance with law any right, power or duty of the Authority or of its successors or assigns, the possession of which is necessary or appropriate in order to comply with any such covenants, stipulations, obligations, agreements or other provisions of this Indenture.

(c) Nothing in this Indenture expressed or implied is intended or shall be construed to confer upon, or to give to, any Person other than the Authority, the Trustee, any Credit Provider, any Liquidity Provider, any Reserve Facility Provider, including their respective agents, and the Owners, any right, remedy or claim under or by reason of this Indenture or any covenant,

condition or stipulation hereof. All the covenants, stipulations, promises and agreements in this Indenture contained by or on behalf of the Authority shall be for the sole benefit of the Authority, the Trustee, any Credit Provider, any Liquidity Provider, any Reserve Facility Provider, including their respective agents and the Owners.

## ARTICLE II

## AUTHORIZATION, DETAILS, EXECUTION, DELIVERY AND REGISTRATION OF BONDS

**SECTION 2.01 AUTHORIZATION OF BONDS**. The Authority shall not issue any Bonds while this Indenture is in effect except in accordance with the provisions of this Article II. Bonds may be issued in one or more Series only for purposes permitted under this Article II. The total principal amount of Bonds that may be issued and Outstanding under this Indenture is unlimited. Any two or more Series may be consolidated for purposes of sale in such manner as may be provided herein or in the Supplemental Indenture authorizing the issuance of the Bonds of such Series. The principal of, redemption premium, if any, and interest on all Bonds shall be payable solely from the Trust Estate.Upon the issuance of a Series of Bonds under the terms, limitations and conditions herein provided, the Authority shall provide for the funding of the Debt Service Reserve Fund in an amount equal to the Debt Service Reserve Fund Requirement, all as set forth herein with respect to the Series 1996 Bonds and in the Supplemental Indenture authorizing the issuance of any other Series of Bonds. The Authority may establish a separate Account in the Debt Service Reserve Fund for each Series of Bonds, including those secured by a Reserve Facility, and the Owners of Bonds secured by such separate account shall not be secured by any other Account or Reserve Facilities in the Debt Service Reserve Fund.

**SECTION 2.02 DETAILS OF BONDS**. The Bonds of each Series issued under the provisions of this Indenture shall be designated "Dade County Expressway Authority (Florida) Toll System Revenue Bonds", and may be further designated as "Refunding", or "Taxable", as the Authority may determine to be appropriate, in each case inserting the year of issuance and any identifying series letter after the word "Series", subject to such variations or changes as may be determined necessary or appropriate by the Authority and specified as hereinafter provided with respect to the Series 1996 Bonds or in a Supplemental Indenture authorizing the issuance of the Bonds of any other Series. The Bonds shall be in such amounts, if any, of Serial Bonds and/or Term Bonds and in the form of Capital Appreciation Bonds, Capital Appreciation and Income Bonds, Convertible Bonds, Put Bonds, Variable Rate Bonds or such other form of Bonds which may be marketable from time to time, or any combination thereof, as the Authority may determine. Except as otherwise provided in a Supplemental Indenture authorizing the issuance of a Series of Bonds, the Bonds of such Series shall be in fully registered form as to principal and interest, without coupons. Except as otherwise provided in a Supplemental Indenture authorizing the issuance of a Series of Bonds, both the principal of and the interest on the Bonds of such Series shall be payable in any coin or currency of the United States of America, or by check or wire payment in such currency, as, at the respective times of payment, is legal tender for the payment of public and private debts.Payment of interest on any Interest Payment Date with respect to the Bonds, other than Capital Appreciation Bonds and interest on Capital Appreciation and Income Bonds that accrues prior to the Interest Commencement Date, shall be made to the Person appearing on the registration books of the Authority maintained pursuant to Section 2.04,





as of the close of business on the Record Date. Such interest shall be payable by check or draft drawn on a Paying Agent and shall be mailed on the Interest Payment Date to each Owner as of the Record Date, at his address as it appears on said registration books, or in the case of an Owner of $1,000,000 or more of Bonds, by wire transfer to a domestic bank account specified in writing by such Owner to the Trustee and Paying Agent at least fifteen (15) days prior to an Interest Payment Date.

If and to the extent that the Authority shall fail to make a required payment or provision for payment of interest on any Bond on any Interest Payment Date, that interest shall cease to be payable to the Person who was the Owner of that Bond as of the applicable Record Date. When moneys become available for payment of interest on such Bond, the Trustee shall establish a Special Record Date for the payment of that interest which shall not be more than twenty, nor fewer than ten, days prior to the date of the proposed payment. Not fewer than ten days prior to the Special Record Date, notice of the proposed payment and of the Special Record Date therefor shall be mailed to each Owner of record on the fifth day prior to such mailing at his address as it appears on the registration books of the Authority maintained pursuant to Section 2.04. Thereafter, such interest shall be payable to the Owners of such Bonds at the close of business on the Special Record Date.

The principal of, and redemption premium, if any, on the Bonds, the Accreted Value of Capital Appreciation Bonds and the Appreciated Value of Capital Appreciation and Income Bonds shall be payable to or upon the order of the Owner or his duly authorized attorney or legal representative, as the same falls due, upon the presentation and surrender of such Bonds at the designated corporate trust office of the Paying Agent.

Each Series of Bonds (other than the Series 1996 Bonds) shall be authorized by a Supplemental Indenture which shall establish or provide a means of establishing the following:

the purpose for which such Bonds are to be issued, which shall be a purpose permitted under this Article II;

the manner in which the proceeds of the sale of such Bonds are to be applied, including any required deposits to the Funds, Accounts and Subaccounts;

whether such Bonds shall be issued as Serial Bonds, Term Bonds, or a combination of the foregoing and whether such Bonds shall be in the form of Capital Appreciation Bonds, Capital Appreciation and Income Bonds, Convertible Bonds, Put Bonds, Variable Rate Bonds or any other form of Bond which may become marketable from time to time, or any combination of such forms as determined by the Authority;

the Authorized Denominations in which such Bonds are issuable;

the amount or amounts, date or dates, maturity date or dates (not exceeding the maximum number of years after the date of original issuance as is permitted by law), and interest rate or rates(not exceeding the maximum rate permitted by law) with respect to such Bonds;

the Interest Payment Dates for such Bonds;

the redemption and tender provisions, if any, for such Bonds;

the appointment of the Paying Agent and Bond Registrar for such Bonds and any remarketing agent, Credit Provider, Liquidity Provider or Reserve Facility Provider to be appointed in connection with the issuance of such Bonds and the authority to execute agreements relating to the functions to be performed by any such Person, to the extent applicable to any of such Bonds;

the creation of any additional Funds, Accounts and Subaccounts applicable to such Bonds and the designation of any such additional Funds, Accounts and Subaccounts as being established with respect to such Bonds;

the manner in which the Authority shall ensure that the Debt Service Reserve Fund Requirement shall be satisfied at the time of issuance of such Bonds;

the designated corporate trust office of the Bond Registrar and Paying Agent for such Bonds; and

such other matters as required by this Indenture to be established in a Supplemental Indenture or otherwise deemed appropriate by the Authority to be included therein and not inconsistent with the provisions of this Indenture.

**SECTION 2.03 EXECUTION, AUTHENTICATION; BOND FORM**. Except as otherwise permitted or required by the Act or applicable law, the Bonds shall be signed by, or bear the facsimile signature of, the Chairman or Vice Chairman of the Authority. The official seal of the Authority or a facsimile thereof shall be imprinted or impressed on the Bonds. Such official seal shall be attested by the signature or facsimile signature of the Secretary of the Authority or an Authorized Officer. In case any officer whose signature or a facsimile of whose signature shall appear on any Bonds shall cease to be such officer before such Bonds have been authenticated and transferred by the Bond Registrar or delivered by the Authority, such signature or such facsimile shall nevertheless be valid and sufficient for all purposes the same as if he or she had remained in office until such authentication and transfer or delivery occurred. In addition, any Bond may bear the facsimile signature of, or may be signed by, such Persons as at the actual time of the execution of the Bond shall be the proper officers to execute such Bond although at the date of the Bond such Persons may not have been such officers.Only such Bonds as have endorsed thereon a certificate of authentication as set forth in the form of Bond authorized by this Indenture, in the case of the Series 1996 Bonds, or a Supplemental Indenture authorizing the issuance of any other Series of Bonds, duly executed by the Bond Registrar, shall be entitled to any benefit or security under this Indenture. No Bonds shall be valid or obligatory for any purpose unless and until such certificate of authentication on the Bond has been duly executed by the Bond Registrar, and such certificate of the Bond Registrar upon any such Bond shall be conclusive evidence that such Bond has been duly authenticated and delivered under this Indenture. The Bond Registrar's certificate of authentication on any Bond shall be deemed to have been duly executed if signed by an authorized officer of the Bond Registrar, but it shall not be necessary that the same officer sign the certificate of authentication on all of the Bonds that may be issued hereunder at any one time. The Series 1996 Bonds shall be substantially in the





form attached as Exhibit C hereto. Each other Series of Bonds shall be substantially in the form set forth in the Supplemental Indenture authorizing the issuance of such Bonds.

**SECTION 2.04 BOND REGISTRAR; REGISTRATION, TRANSFER AND EXCHANGE**. The Authority shall cause books for the registration and transfer of Bonds to be kept by the Bond Registrar. Unless otherwise provided with respect to a Series of Bonds in the Supplemental Indenture authorizing the issuance of the Bonds of such Series, all Bonds shall be registered in such books upon issuance thereof, who shall make notation of such registration thereon and shall not be registered to bearer. Bonds shall thereafter be transferred only by the Owner of such Bonds, in person or by his duly authorized attorney or legal representative, upon the surrender thereof together with a written assignment duly executed by the Owner or his duly authorized attorney or legal representative in such form as shall be satisfactory to the Bond Registrar. The registration of such transfer shall be made on such registration books and endorsed on the Bond by the Bond Registrar. Upon the transfer of any Bond, the Bond Registrar shall cause to be issued in the name of the transferee a new Bond or Bonds.

Upon surrender at the designated corporate trust office of the Bond Registrar with a written instrument of transfer duly executed by the Owner or his duly authorized attorney or legal representative, in such form as shall be satisfactory to the Bond Registrar, Bonds may be exchanged for a like aggregate principal amount of Bonds of other Authorized Denominations of the same Series, interest rate and maturity. The Authority shall execute, and the Bond Registrar shall authenticate and deliver such Bonds as the Owner making the exchange is entitled to receive.

In all cases in which the privilege of exchanging or transferring Bonds is exercised, the Authority shall execute and the Bond Registrar shall authenticate and deliver Bonds in accordance with the provisions of this Indenture. All Bonds surrendered in any such exchanges or transfers shall forthwith be delivered to the Bond Registrar and canceled by the Bond Registrar in the manner provided in Section 2.05.

No charge shall be made to any Bondholder for the privilege of registration, transfer or exchange hereinabove granted, but any Bondholder requesting any such registration, transfer or exchange shall pay any tax or other governmental charge required to be paid with respect thereto. The Authority and Bond Registrar shall not be required to execute, transfer or exchange any Bond during the period beginning at the close of business on a Record Date (or Special Record Date) and ending at the close of business on the next Interest Payment Date (or date set for payment of interest for which the Special Record Date was set). The Authority and Bond Registrar shall not be required to transfer or exchange any Bond: (a) during the fifteen days immediately preceding the date of mailing of notice of the redemption of such Bond; or (b) after such Bond has been selected for redemption or has matured.

Each Bond delivered pursuant to any provision of this Indenture in exchange or substitution for, or upon the transfer of the whole or any part of, one or more other Bonds, shall carry all of the right to interest which is accrued and unpaid, and which is to accrue, on the whole or part of the Bonds previously carried, and notwithstanding anything contained in this Indenture, such newly delivered Bond shall be dated or bear such notation so that neither gain

nor loss in interest the payment of which is not in default shall result from any exchange, substitution or transfer.

The Authority, the Trustee, the Paying Agent and the Bond Registrar may deem and treat the Person in whose name any Bond is registered on the books maintained pursuant to this Section 2.04 as the absolute Owner of such Bond, whether such Bond shall be overdue or not, for the purpose of receiving payment thereof and for all other purposes whatsoever, and none of the Authority, the Paying Agent or the Bond Registrar shall be affected by any notice to the contrary. All such payments shall be valid and effective to satisfy and discharge the liability upon such Bond to the extent of the sum or sums so paid. Notwithstanding anything to the contrary in this Indenture, the Authority may authorize the use of a book entry only system of beneficial ownership with respect to any Series of Bonds.

**SECTION 2.05 CANCELLATION OF BONDS**. All Bonds paid or redeemed, either at or before maturity, shall be delivered to the Paying Agent when such payment or redemption is made, and such Bonds, together with all Bonds purchased by the Authority and delivered to the Paying Agent for cancellation, shall thereupon be promptly canceled. Bonds so canceled may at any time be destroyed by the Paying Agent, who shall execute a certificate of destruction in duplicate by the signature of one of its authorized officers, describing the Bonds so destroyed, and one executed certificate shall be filed with the Bond Registrar and the other executed certificate shall be kept by the Paying Agent.

**SECTION 2.06 AUTHORIZATION OF SERIES 1996 BONDS**.

(a) General Terms and Provisions.

(i) Terms of Series 1996 Bonds. The Series 1996 Bonds: (A) shall be issued in the initial aggregate principal amount of $80,000,000; (B) shall be dated the date of the issuance thereof; (C) shall mature on July 1, 2019; (D) shall be substantially in the form attached as Exhibit C hereto; (E) shall be payable as to interest on each Interest Payment Date established therefor at the rate per annum determined as provided in the form thereof and in this Section 2.06; (F) shall be subject to redemption, to optional and mandatory tender for purchase, and to remarketing, all as provided in the form thereof and in Article III; and (G) shall be considered Bonds for all purposes of this Indenture. Interest on Series 1996 Bonds bearing interest at the Daily Rate, Weekly Rate, Monthly Rate and Quarterly Rate will be calculated based on the actual days elapsed and a year of 365 or 366 days, as applicable, and interest on the Series 1996 Bonds bearing interest at the Semiannual Rate, Extended Rate or Fixed Rate will be calculated based on a year of 360 days consisting of twelve 30-day months.

(ii) Purposes of Series 1996 Bonds. The Series 1996 Bonds shall be issued for the purposes of providing funds to pay all or a portion of the cost of (A) the acquisition by the Authority of operational and financial control of the System, as it exists on the date hereof, in perpetuity by, among other things, defeasing all of the outstanding State Bonds pursuant to the terms and provisions of the Escrow Agreement, (B) funding a portion of the Debt Service Reserve Fund Requirement in respect of the Series 1996 Bonds, and (C) paying certain costs associated with the issuance of the 1996 Bonds.





(iii) Application of Proceeds and Other Available Moneys.

(A) The proceeds of the Series 1996 Bonds shall be applied by an Authorized Officer as follows:

(1) $76,000,000 shall be immediately transferred to the SBA for application pursuant to the Escrow Agreement; and

(2) $4,000,000, an amount equal to the Debt Service Reserve Fund Requirement in respect of the Series 1996 Bonds shall be delivered to the Trustee for deposit to the credit of the Debt Service Reserve Fund.

(B) Simultaneous with the issuance of the Series 1996 Bonds, the Authority shall cause to be delivered to the Trustee the amounts described below for application as follows:

(1) All of the cash and securities credited to the Renewal and Replacement Reserve Fund established in respect of the State Bonds shall be delivered to the Trustee and credited to the Renewal and Replacement Fund;

(2) $6,966,037.96, consisting of $6,905,165.45 credited to the Reserve Account established for the State Bonds and $60,872.51 credited to the Debt Retirement Account established for the State Bonds shall be immediately transferred to the SBA for application pursuant to the Escrow Agreement;

(3) $2,000,000 credited to the Debt Retirement Account for the State Bonds shall be immediately transferred to Canadian Imperial Bank of Commerce as required under the Cap Agreement; and

(4) $1,201,533.88 credited to the Debt Retirement Account for the State Bonds shall be delivered to the Trustee for deposit to the credit of a special account (which the Authority hereby directs the Trustee to establish and maintain) and applied at the written direction of an Authorized Officer to the payment of certain costs of issuance of the Series 1996 Bonds, including, but not limited to, financial advisory, accounting and legal fees, rating agency fees, printing costs, initial Bond Registrar fees, initial Paying Agent fees, initial Trustee fees, Credit Facility and Liquidity Facility fees and expenses, if any, and any other miscellaneous expenses relating to the issuance of the Series 1996 Bonds (At the written direction of an Authorized Officer the Trustee shall close such special account and shall transfer any amounts remaining therein at the time of closure to the Revenue Fund).

(iv) Conditions Precedent to Issuance of Series 1996 Bonds. The Series 1996 Bonds shall be authenticated by the Bond Registrar and delivered by the Trustee in such manner as shall be specified in writing by an Authorized Officer, but only after the Series

1996 Bonds shall have been executed as provided in this Indenture and there shall have been delivered to the Trustee, the following:

(A) fully executed copies of this Indenture, the Escrow Agreement, the Transfer Agreement, the Toll Operations and Maintenance Agreement, the Roadway Operations and Maintenance Agreement, the SunPass Agreement, the Initial Credit Facility, the Initial Liquidity Facility, the Remarketing Agreement, the Tender Agent Agreement, the Continuing Disclosure Agreement and the Escrow Agreement;

(B) separate written opinions of each Bond Counsel stating that each is of the opinion that the issuance of the Series 1996 Bonds has been duly authorized, that all conditions precedent to the delivery of the Series 1996 Bonds have been satisfied, and that this Indenture creates a valid and enforceable pledge of the Trust Estate; and

(C) $80,000,000, in immediately available funds, constituting the purchase price for the Series 1996 Bonds upon their initial issuance and delivery.

(b) Variable Rate; Determination by Remarketing Agent; Notice of Rates Determined. The Series 1996 Bonds shall initially bear interest at the Weekly Rate until converted to another Rate Period as provided herein. Subject to the further provisions of this Article II with respect to particular Variable Rates or conversions between Rate Periods, and subject to the provisions of the Series 1996 Bonds, the Variable Rate to be applicable to Series 1996 Bonds during any Variable Rate Period shall be determined by the Remarketing Agent as provided in this Section 2.06 and notice thereof shall be given as follows:

(i) Notice of each preliminary Variable Rate and Variable Rate shall be given as follows:

(A) By the Remarketing Agent to the Trustee, the Bond Registrar and the Tender Agent by telephone (followed by notice in writing by an authorized officer of the Remarketing Agent) not later than 5:00 p.m., Eastern time, (10:00 a.m., Eastern time, with respect to Daily Rates) on the date of determination; and

(B) On the last Business Day of each month or more frequently upon the Credit Provider's or Liquidity Provider's written request, the Tender Agent shall provide written notice thereof to the Credit Provider and the Liquidity Provider.

Notice of each preliminary Monthly, Quarterly, Semiannual and Extended Rate, and of each Monthly, Quarterly, Semiannual and Extended Rate, shall be given by the Bond Registrar by sending notice in writing to the Owners of the Series 1996 Bonds and the Trustee not later than 5:00 p.m., Eastern time, on the third Business Day following the date of determination. The Tender Agent shall inform the Owners of the Series 1996 Bonds and the Trustee of the Daily and Weekly Rates upon request.



(ii) The preliminary Variable Rate or the Variable Rate so to be determined shall be the lowest rate of interest which, in the judgment of the Remarketing Agent, would cause the Series 1996 Bonds to have a market value equal to the principal amount thereof, plus accrued interest, under prevailing market conditions as of the date of determination of such preliminary Variable Rate or Variable Rate. The preliminary Variable Rate is intended to serve only as an indication of the lowest interest rate that would cause the Series 1996 Bonds to have a market value equal to par under market conditions on the date on which such preliminary Variable Rate is determined. The Variable Rate determined after the preliminary Variable Rate is determined may be higher, lower or the same as such preliminary Variable Rate. Notwithstanding the foregoing, in no event shall the preliminary Variable Rate or the Variable Rate for any Variable Rate Period exceed the Maximum Rate.

(iii) All determinations of Variable Rates pursuant to this Section shall be conclusive and binding upon the Authority, the Trustee, the Bond Registrar, the Tender Agent, the Credit Provider, the Liquidity Provider, and the Owners of the Series 1996 Bonds. The Authority, the Trustee, the Bond Registrar, the Tender Agent and the Remarketing Agent shall not be liable to the Owner of any Series 1996 Bond for failure to give any notice required above or for failure of the Owner of any Series 1996 Bond to receive any such notice.

(c) Daily Rates.

(i) Daily Rate Periods shall be from each Business Day to but excluding the following Business Day.

(ii) The Daily Rate for each Daily Rate Period shall be determined by the Remarketing Agent between 8:30 a.m., Eastern time, and 10:00 a.m., Eastern time, on the commencement date of the Daily Rate Period to which it relates.

(d) Weekly Rates.

(i) The first Weekly Rate Period shall commence on the date of original issuance and delivery of the Series 1996 Bonds and shall run to but excluding the next succeeding Thursday. Weekly Rate Periods thereafter shall be from Thursday of each week to but excluding Thursday of the following week; except that (A) in the case of a conversion to a Weekly Rate Period from a different Variable Rate Period, the initial Weekly Rate Period for the Series 1996 Bonds shall be from and including the Weekly Rate Conversion Date to but excluding Thursday of the following week; and (B) in the case of a conversion of the Series 1996 Bonds from a Weekly Rate Period to a different Rate Period, the last Weekly Rate Period shall end on and exclude the Conversion Date.

(ii) The Weekly Rate for each Weekly Rate Period shall be determined not later than 4:00 p.m., Eastern time, on Wednesday or, if such Wednesday is not a Business Day, the last Business Day which is immediately prior to the commencement date of the Weekly Rate Period to which it relates.

(e) Monthly Rates.

(i) Monthly Rate Periods shall be from and including the first Business Day of each calendar month to but excluding the first Business Day of the following month.

(ii) The Monthly Rate for each Monthly Rate Period shall be determined as follows:

(A) A preliminary Monthly Rate for each Monthly Rate Period shall be determined not later than 4:00 p.m., Eastern time, on the last Business Day which is at least eight (8) days immediately preceding the commencement date of such period; and

(B) The actual Monthly Rate for each Monthly Rate Period shall be determined not later than 4:00 p.m., Eastern time, on the Business Day immediately preceding the commencement date of such period.

(f) Quarterly Rates.

(i) Quarterly Rate Periods shall be (A) from and including the Quarterly Rate Conversion Date for the Series 1996 Bonds and from and including the first Business Day of each third (3rd) calendar month thereafter; (B) to but excluding the first Business Day of the third (3rd) calendar month thereafter.

(ii) The Quarterly Rate for each Quarterly Rate Period shall be determined as follows:

(A) A preliminary Quarterly Rate for each Quarterly Rate Period shall be determined not later than 4:00 p.m., Eastern time, on the last Business Day which is at least fifteen (15) days preceding the commencement date of such period; and

(B) The actual Quarterly Rate for each Quarterly Rate Period shall be determined not later than 4:00 p.m., Eastern time, on the Business Day immediately preceding the commencement date of such period.

(g) Semiannual Rates.

(i) Semiannual Rate Periods shall be (A) from and including the Semiannual Rate Conversion Date for the Series 1996 Bonds and from and including the first Business Day of each sixth calendar month thereafter; (B) to but excluding the first Business Day of the sixth month thereafter.

(ii) The Semiannual Rate for each Semiannual Rate Period shall be determined as follows:

(A) A preliminary Semiannual Rate for each Semiannual Rate Period shall be determined not later than 4:00 p.m., Eastern time, on the last Business Day which is at least thirty (30) days immediately preceding the commencement date of such period;

(B) The actual Semiannual Rate for each Semiannual Rate Period shall be determined not later than 4:00 p.m., Eastern time, on the Business Day immediately preceding the commencement date of such period.

(h) Extended Rates.

(i) Extended Rate Periods shall commence initially on the Extended Rate Conversion Date for the Series 1996 Bonds, and subsequently on the first Business Day of the calendar month following the last day of the prior Rate Period and extend for a period of one year or integral multiples of six months in excess of one year set by the Remarketing Agent, and end on a day which is the last day preceding the first Business Day of a calendar month.

(ii) The Extended Rate for each Extended Rate Period shall be determined as follows:

(A) A preliminary Extended Rate for each Extended Rate Period shall be determined not later than 4:00 p.m., Eastern time, on the last Business Day which is at least thirty (30) days immediately preceding the commencement date of such period;

(B) The actual Extended Rate for each Extended Rate Period shall be determined not later than 4:00 p.m., Eastern time, on the Business Day immediately preceding the commencement date of such period.

(i) Limitation on Rate Periods. None of the Variable Rate Periods may extend beyond the termination date of the Credit Facility or the Liquidity Facility.

(j) Conversion between Variable Rate Periods. (i) At the option of the Authority and upon delivery of an Opinion of Bond Counsel to the Trustee and the Authority, the Series 1996 Bonds may be converted from one Variable Rate Period to another as provided in this clause (j). In the case of conversion from one Variable Rate Period to a different Variable Rate Period, the Conversion Date shall be an Interest Payment Date for the Variable Rate Period from which the conversion is to be made; provided, however, that in the case of a conversion from an Extended Rate Period, the Conversion Date shall be limited to an Interest Payment Date on which a new Extended Rate Period for the Series 1996 Bonds would otherwise have commenced pursuant to Section 2.06(h). At the direction of the Authority, the Remarketing Agent shall give written notice of any conversion pursuant to this Section to the Trustee, the Bond Registrar, the Tender Agent, the Authority, the Credit Provider and the Liquidity Provider not less than five Business Days prior to the date on which the Tender Agent is required to notify the Owners of the conversion in the manner provided in this clause (j). Such notice shall specify the Conversion Date and the Rate Period to which the conversion will be made. Not less than thirty (30) days prior to any Conversion Date, the Tender Agent shall mail or cause the Bond Registrar to mail a written notice of the conversion to the Authority, the Trustee, the Credit Provider, the Liquidity Provider and all of the Owners of the Series 1996 Bonds. Such notice shall set forth (A) the

information contained in the notice from the Remarketing Agent pursuant to this clause (j) above, (B) the Interest Payment Dates for the new Rate Period, (C) in the case of conversion to a Variable Rate Period, the dates on which the Remarketing Agent will determine and the Tender Agent will notify the Owners of the preliminary Variable Rate (if applicable) and the Variable Rate for the Variable Rate Period commencing on the Conversion Date, and (D) the matters required to be stated pursuant to Section 3.08(b) with respect to purchases of Series 1996 Bonds which are governed by such Section.

(k) Determination of Variable Rate Effective on Conversion Date. The preliminary Variable Rate (if applicable) and the Variable Rate for the Variable Rate Period commencing on the Conversion Date shall be determined by the Remarketing Agent in the manner and on the dates provided in this Section 2.06. In addition to determining the Variable Rate for the Rate Period to which conversion is to be made, the Remarketing Agent shall determine a Weekly Rate at the time specified in Section 2.06(d), and give notice thereof to the Tender Agent, the Bond Registrar and the Trustee, which Weekly Rate shall take effect, if needed, pursuant to clause (l) below.

(l) Conditions on which Conversion Ineffective. Notwithstanding the delivery of notice of conversion pursuant to clause (j) above, conversion to a new Variable Rate Period shall not take effect as to the Series 1996 Bonds if:

(i) The Remarketing Agent fails to determine a Variable Rate for the Rate Period to which the conversion is to be made;

(ii) Any notice required by Section 2.06(j) is not given when required;

(iii) There is not delivered to the Authority and the Trustee an Opinion of Bond Counsel, dated as of the Conversion Date;

(iv) Such notice of conversion is rescinded by the Authority by written notice of such rescission to the Trustee and the Remarketing Agent which written notice is delivered prior to the applicable Conversion Date. If the Trustee receives notice of such rescission prior to the time the Trustee has given notice to the Owners of the Series 1996 Bonds, then such notice of conversion shall be of no force and effect. If the Trustee receives notice of such rescission after the Trustee has given notice to the Owners of the Series 1996 Bonds, then the Series 1996 Bonds shall automatically adjust to a Weekly Rate Period. Any purchases of Series 1996 Bonds scheduled or required to take place on the proposed effective date of any Rate Period (being also the effective date of the automatic adjustment to a Weekly Rate Period as in this Section 2.06(l) provided) shall take place on such date. No Opinion of Bond Counsel shall be required in connection with any automatic adjustment to a Weekly Rate Period as in this Section 2.06(l) provided; or

(v) There is not delivered to the Trustee written evidence from the Rating Agency that any such conversion to a Quarterly Rate, Semiannual Rate or Extended Rate will not, of itself, cause a reduction or withdrawal of any rating then assigned to the Bonds.





Except as specifically provided in (iv) above, in any such event, the Series 1996 Bonds which were to be converted shall automatically be converted to a Weekly Rate Period on the date such conversion was to be made, provided that any mandatory or optional tender for purchase on the Conversion Date shall nevertheless be carried out. No cancellation of a conversion pursuant to this subsection shall constitute an Event of Default hereunder. Upon the occurrence of an event described in (i) above, the Weekly Rate for the Series 1996 Bonds shall be the per annum rate of interest determined on each Thursday (or if such day is not a Business Day, the immediately preceding Business Day) by the Trustee which is equal to the lesser of the Maximum Rate and (1) so long as the Series 1996 Bonds shall remain Taxable Bonds, a rate equal to the bond equivalent yield on ninety-one day United States Treasury Bills, plus 50 basis points, which yield shall be calculated in accordance with standard practices in the banking industry on the basis of the discount rates at which such bills were sold, or (2) should the Series 1996 Bonds cease to be Taxable Bonds, a rate equal to the most recently published Bond Buyer 25 Bond Revenue Index (or a comparable index, if such index is no longer published), plus 50 basis points.

(m) Conversion to Fixed Rate. The Series 1996 Bonds shall be converted to bear interest at a Fixed Rate upon request of the Authority as provided in this clause (m). The Fixed Rate Conversion Date shall be:

(i) In the case of a conversion from a Variable Rate Period other than an Extended Rate Period, an Interest Payment Date for the Series 1996 Bonds on which interest is payable for the Variable Rate Period from which the conversion is to be made; and

(ii) In the case of a conversion from an Extended Rate Period, an Interest Payment Date for the Series 1996 Bonds on which a new Extended Rate Period would otherwise have commenced pursuant to Section 2.06(h).

Not less than forty-five (45) days (or such shorter period approved by the parties to receive the same) prior to the Fixed Rate Conversion Date, the Authority shall give written notice to the Trustee, the Bond Registrar, the Tender Agent, the Remarketing Agent, the Credit Provider and the Liquidity Provider, setting forth (A) the election to convert the Series 1996 Bonds to a Fixed Rate, and (B) the proposed Fixed Rate Conversion Date. As a condition of any such conversion, the Trustee, the Credit Provider, the Liquidity Provider and the Remarketing Agent shall receive, concurrently with the notice, an Opinion of Bond Counsel.

(n) Preliminary Determination of Terms of Series 1996 Bonds while Bearing Interest at the Fixed Rate. The Remarketing Agent shall make a preliminary determination of the Fixed Rate or Fixed Rates for the Series 1996 Bonds and the maturities of the Series 1996 Bonds in the same manner as is provided for the final determination of rates pursuant to Section 2.06(p). Such preliminary determination shall be made on a Business Day which is at least thirty-five (35) days prior to the Fixed Rate Conversion Date. On the date of the preliminary determination, the Remarketing Agent shall notify the Tender Agent and the Tender Agent shall notify the Authority, the Trustee, the Bond Registrar, the Credit Provider and the Liquidity Provider, by telephone (promptly confirmed in writing), telegram, telecopy, telex or other similar means of communication of the preliminary Fixed Rate or Rate or Rates so determined.

(o) Notice of Conversion to Fixed Rate. The Tender Agent shall mail or cause the Bond Registrar to mail a notice of the proposed conversion to the Authority, the Bond Registrar, the Trustee, the Credit Provider, the Liquidity Provider and the Owners of all Series 1996 Bonds to be converted. Such notice shall be mailed not less than thirty (30) days prior to the proposed Fixed Rate Conversion Date. Such notice shall set forth the proposed Fixed Rate Conversion Date and state:

(i) that the Series 1996 Bonds are subject to mandatory tender for purchase (without the right to retain) on the Fixed Rate Conversion Date at a Purchase Price of par plus accrued interest; and

(ii) that the Series 1996 Bonds shall be deemed purchased on the Fixed Rate Conversion Date, and thereafter the Owner shall have no further rights hereunder except to receive such Purchase Price.

(p) Determination of Fixed Rate. The Remarketing Agent shall determine the Fixed Rate or Fixed Rates for the Series 1996 Bonds by not later than 3:30 p.m., Eastern time, on the last Business Day that is at least five (5) days prior to the Fixed Rate Conversion Date for the Series 1996 Bonds. The Fixed Rate or Fixed Rates shall be the lowest rate or rates of interest per annum(not in excess of the maximum rate of interest allowed by law) which, in the judgment of the Remarketing Agent as of the date of determination and under prevailing market conditions, would cause the Fixed Rate Series 1996 Bonds to have a market value equal to the principal amount thereof, plus accrued interest. If necessary or desirable to achieve the lowest Fixed Rate or Fixed Rates on the Series 1996 Bonds, the Remarketing Agent may determine that some or all of the Series 1996 Bonds shall be converted to Serial Bonds maturing in years for which Amortization Requirements have been established for the Series 1996 Bonds and maturing in aggregate principal amounts that correspond to such Amortization Requirements. Not later than 4:00 p.m., Eastern time, on the date of determination of the Fixed Rate, the Remarketing Agent shall notify the Tender Agent of the Fixed Rate or Fixed Rates and of any serialization of the maturities of the Series 1996 Bonds by telephone (promptly confirmed in writing). Such determination shall be conclusive and binding upon the Authority, the Trustee, the Tender Agent, the Credit Provider, the Liquidity Provider and the Owners of the Series 1996 Bonds. The Tender Agent shall make such Fixed Rate and serialization of the maturities of the Series 1996 Bonds available upon request by telephone (promptly confirmed in writing), telegram, telecopy, telex or other similar communication to the Authority, the Trustee, the Credit Provider and the Liquidity Provider. In addition to determining a Fixed Rate, the Remarketing Agent shall determine a Weekly Rate pursuant to Section 2.06(d) and give notice thereof to the Tender Agent, the Bond Registrar, the Trustee, the Credit Provider and the Liquidity Provider, which Weekly Rate shall take effect if needed pursuant to Section 2.06(q).

(q) Conditions on which Conversion to Fixed Rate Ineffective. Notwithstanding the delivery of notice of a Fixed Rate conversion pursuant to Section 2.06(o) above, conversion of Series 1996 Bonds to a Fixed Rate Period shall not take effect:

(i) if the Authority withdraws such notice of conversion not later than the Business Day preceding the date on which the Fixed Rate is to be determined;



(ii) if the Remarketing Agent fails to determine a Fixed Rate;

(iii) if any notice required by Section 2.06(o) is not given when required; or

(iv) if upon the conversion, any Fixed Rate Series 1996 Bonds would be Provider Bonds unless the Liquidity Provider consents.

In any of such events, the Series 1996 Bonds shall automatically be converted to a Weekly Rate for a Weekly Rate Period which shall commence on the date the Fixed Rate conversion was to be made, provided that the mandatory tender for purchase pursuant to Sections 3.08 and 3.09 shall nevertheless be carried out if notice of the Fixed Rate conversion had been given to the Owners of the Series 1996 Bonds. Withdrawal of a conversion notice shall be given by the Authority to the Trustee, the Tender Agent, the Bond Registrar, the Remarketing Agent, the Credit Provider and the Liquidity Provider, by telephone, promptly confirmed in writing. No cancellation of a Fixed Rate conversion pursuant to this subsection shall constitute an Event of Default hereunder. If the Series 1996 Bonds are converted to a Weekly Rate, and the Remarketing Agent fails to set a Weekly Rate, the Weekly Rate shall be the per annum rate of interest determined on each Thursday (or if such day is not a Business Day, the immediately preceding Business Day) by the Trustee which is equal to the lesser of the Maximum Rate and (1) so long as the Series 1996 Bonds shall remain Taxable Bonds, a rate equal to the bond equivalent yield on ninety-one day United States Treasury Bills, plus 50 basis points, which yield shall be calculated in accordance with standard practices in the banking industry on the basis of the discount rates at which such bills were sold, or (2) should the Series 1996 Bonds cease to be Taxable Bonds, a rate equal to the most recently published Bond Buyer 25 Bond Revenue Index (or a comparable index, if such index is no longer published), plus 50 basis points.

(r) Effect of Conversion to Fixed Rate. Once the Authority has effectively exercised its option to convert the Series 1996 Bonds to a Fixed Rate pursuant to this Section 2.06, the Authority shall have no further options to convert the Series 1996 Bonds to any other Rate Period, and the Series 1996 Bonds shall no longer be payable from or secured by the Liquidity Facility or subject to tender for purchase.

**SECTION 2.07 COMPLETION BONDS**.

(a) General. In addition to the Bonds authorized to be issued under the provisions of Section 2.06, Completion Bonds may be issued pursuant to this Section 2.07 and secured by this Indenture from time to time, on a parity with any other Outstanding Bonds, in an aggregate amount not to exceed 10% of the original estimated Cost of any Project financed from the proceeds of Bonds at the time of the issuance of such Bonds. Completion Bonds shall be issued for the purpose of providing funds to pay all or a part of the Cost of completing the Project financed from the proceeds of such Bonds, in the manner hereinafter provided and, as shall be specified in the Supplemental Indenture authorizing the issuance of such Completion Bonds, to make deposits to the Funds and Accounts and pay other costs of issuance and expenses relating thereto.

(b) Application of Proceeds. The proceeds (including Capitalized Interest and accrued interest, if any) of the Completion Bonds shall be applied by an Authorized Officer as

follows (or shall otherwise be set forth in the Supplemental Indenture authorizing the issuance of such Completion Bonds):

(i) the amount, if any, received as Capitalized Interest on the Completion Bonds shall be delivered to the Trustee for deposit to the credit of the applicable Account or Subaccount of the Construction Fund, pursuant to Section 4.01 and the amount, if any received as accrued interest on the Completion Bonds shall be delivered to the Trustee for deposit to the credit of the Sinking Fund;

(ii) the amount estimated by an Authorized Officer to be sufficient for that purpose shall be delivered to the Trustee for deposit to the credit of a special account and applied to the payment of the expenses of issuing the Completion Bonds, including, but not limited to, financial advisory, accounting and legal fees, rating agency fees, printing costs, initial Bond Registrar fees, initial Paying Agent fees, initial Trustee fees, Credit Facility and Liquidity Facility fees and expenses, if any, and any other miscellaneous expenses relating to the issuance of the Completion Bonds;

(iii) the amount necessary to make the amount on deposit therein equal to the applicable Debt Service Reserve Fund Requirement, as may be limited by Section 2.01 or by any Supplemental Indenture authorizing the issuance of the Completion Bonds, shall be delivered to the Trustee for deposit to the credit of the Account of the Debt Service Reserve Fund created for such Completion Bonds; and

(iv) the balance of the proceeds of the Completion Bonds remaining after the deposits made pursuant to clauses (i) through (iii) above have been made shall be delivered to the Trustee for deposit to the credit of the appropriate Account or Subaccount in the Construction Fund for application to the payment of the Cost of the Project to be completed from the proceeds of such Completion Bonds.

(c) Conditions Precedent to issuance of Completion Bonds. Completion Bonds shall be authenticated by the Bond Registrar and delivered by the Trustee in such manner as shall be specified in writing by an Authorized Officer, but only after the Completion Bonds shall have been executed as provided in this Indenture and there shall have been obtained and delivered to the Trustee, the following:

(i) a copy of this Indenture, including all Supplemental Indenture entered into prior to this issuance of such Completion Bonds and particularly the Supplemental Indenture authorizing the issuance of such Completion Bonds;

(ii) a certificate of the Consulting Engineer stating the original estimated Cost of the Project to be completed at the time of issuance of the Bonds originally issued to finance such Project, that such estimated Cost will be exceeded, the Cost of completing such Project, and that other funds available or reasonably expected to become available for such Cost of completion, together with the proceeds of the Completion Bonds, will be sufficient to pay such Cost of completion;

(iii) a written opinion or opinions of Bond Counsel stating that it is of the opinion that the issuance of the Completion Bonds has been duly authorized, that all





conditions precedent to the delivery of such Completion Bonds have been provided for or fulfilled or otherwise satisfied, that this Indenture creates a valid and enforceable pledge of the Trust Estate, and that the issuance of the Completion Bonds will not adversely affect the exclusion of interest on any Bonds from gross income for federal income tax purposes;

(iv) a certificate of an Authorized Officer to the effect that no Event of Default has occurred and is continuing as of the date of issuance of such Completion Bonds (except any Event of Default that may be cured by application of the proceeds of such Completion Bonds); and

(v) an amount equal to that amount which the Authority shall have determined to be the purchase price for such Completion Bonds.

The Authority covenants that it will not issue Completion Bonds without the prior written consent of the Initial Reserve Facility Provider so long as there shall be due and owing at the time of such issuance any Policy Costs.

**SECTION 2.08 ADDITIONAL BONDS**.

(a) General. In addition to the Bonds authorized under the provisions of Sections 2.06 and 2.07, Additional Bonds may be issued pursuant to this Section 2.08 and secured by this Indenture from time to time, on a parity with any other Outstanding Bonds, subject to the conditions hereinafter provided in this Section 2.08, for the purpose of providing funds, together with other legally available funds, to pay all or any part of the Cost of a Project, and, as shall be specified in the Supplemental Indenture authorizing the issuance of such Additional Bonds, to make deposits to the Funds and Accounts and pay other costs of issuance and expenses relating thereto. The Additional Bonds shall be issued in an aggregate principal amount set forth in a Supplemental Indenture authorizing their issuance.[1]

(b) Application of Proceeds. The proceeds (including Capitalized Interest and accrued interest) of the Additional Bonds shall be applied by an Authorized Officer as follows (or as shall otherwise be set forth in the Supplemental Indenture authorizing the issuance of such Additional Bonds):

[1] The Third Supplemental Trust Indenture to Amended and Restated Indenture amended this paragraph to read as follows:

"In addition to the Bonds authorized under Sections 2.06 and 2.07, Additional Bonds may be issued pursuant to this Section 2.08 and secured by this Indenture from time to time, on a parity with any other Outstanding Bonds, subject to the conditions hereinafter provided in this Section 2.08, (i) for the purpose of providing funds, together with other legally available funds, to pay all or any part of the Cost of a Project, and, as shall be specified in the Supplemental Indenture authorizing the issuance of such Additional Bonds, to make deposits to the Funds and Accounts and pay other costs of issuance and expenses relating thereto, or (ii) to finance Hedge Charges including, without limitation, termination payments relating to Hedge Agreements. The Additional Bonds shall be issued in an aggregate principal amount set forth in a Supplemental Indenture authorizing their issuance."

(i) the amount, if any, received as Capitalized Interest on the Additional Bonds shall be delivered to the Trustee for deposit to the credit of the applicable Account or Subaccount in the Construction Fund pursuant to Section 4.01 and the amount, if any, received as accrued interest on the Additional Bonds shall be delivered to the Trustee for deposit to the credit of Sinking Fund;

(ii) the amount estimated by an Authorized Officer to be sufficient for that purpose shall be delivered to the Trustee for deposit to the credit of a special account and applied to the payment of the expenses of issuing the Additional Bonds, including, but not limited to, financial advisory, accounting and legal fees, rating agency fees, printing costs, initial Bond Registrar fees, initial Paying Agent fees, initial Trustee fees, Credit Facility and Liquidity Facility fees and expenses, if any, and any other miscellaneous expenses relating to the issuance of such Bonds;

(iii) the amount necessary to make the amount on deposit therein equal to the applicable Debt Service Reserve Fund Requirement, as may be limited by Section 2.01 or by the Supplemental Indenture authorizing the issuance of such Additional Bonds, shall be delivered to the Trustee for deposit to the credit of the appropriate Account of the Debt Service Reserve Fund; and

(iv) the balance of the proceeds of the Additional Bonds remaining after the deposits made pursuant to clauses (i) through (iii) above have been made shall be delivered to the Trustee for deposit to the credit of the applicable Account or Subaccount of the Construction Fund for application to the payment of the Cost of the Project financed by such Bonds.[2]

(c) Conditions Precedent to Issuance of Additional Bonds. Additional Bonds shall be authenticated by the Bond Registrar and delivered by the Trustee in such manner as shall be specified in writing by an Authorized Officer, but only after such Bonds shall have been executed as provided in this Indenture and there shall have been obtained and delivered to the Trustee (and in the case of clauses (v) and (vi) below, to the Department), the following:

(i) a copy of this Indenture, including all Supplemental Indentures entered into prior to this issuance of such Additional Bonds and particularly the Supplemental Indenture authorizing the issuance of such Additional Bonds;

[2] The Third Supplemental Trust Indenture to Amended and Restated Trust Indenture amended this paragraph to read as follows:

"the balance of the proceeds of the Additional Bonds remaining after the deposits made pursuant to clauses (i) through (iii) above have been made shall be delivered to the Trustee for deposit (A) in connection with Additional Bonds authorized by clause (i) of subsection (a) of this Section 2.08, to the credit of the applicable Account or Subaccount of the Construction Fund for application to the payment of the Cost of the Project financed by such Additional Bonds, and (B) in connection with Additional Bonds authorized by clause (ii) of subsection (a) of this Section 2.08, in such manner as shall be specified in the Supplemental Indenture authorizing the issuance of such Additional Bonds for application to the payment of those Hedge Charges financed thereby as provided in the Supplemental Indenture authorizing the issuance thereof."



(ii) a written opinion or opinions of Bond Counsel stating that it is of the opinion that the issuance of such Additional Bonds has been duly authorized, that all conditions precedent to the delivery of such Bonds have been provided for or fulfilled or otherwise satisfied, that this Indenture creates a valid and enforceable pledge of the Trust Estate, and that the issuance of the Additional Bonds will not adversely affect the exclusion of interest on any Bonds from gross income for federal income tax purposes;

(iii) a certificate of an Authorized Officer to the effect that no Event of Default has occurred and is continuing as of the date of issuance of such Additional Bonds (except any Event of Default that may be cured by application of the proceeds of such Bonds);

(iv) an amount equal to that amount which the Authority shall have determined to be the purchase price for such Bonds;

(v) A copy of a certificate signed by an Authorized Officer stating the amount of Test Period Revenues projected to be received by the Authority during the current Fiscal Year and each full Fiscal Year to and including the fifth full Fiscal Year following the projected date when the Project to be financed from the proceeds of such Additional Bonds will be placed in service (the "Test Period"). "Test Period Revenues" shall mean, for the purposes hereof, the Net Revenues during the Test Period, as determined by the Authorized Officer, further adjusted by the Authorized Officer to reflect 100% of the additional Revenues which, in the opinion of the Consulting Engineer, would be received from increases in Tolls, rates, fees, rentals and other charges relating to the System scheduled to take effect during the Test Period (provided that such increases must be adopted as of the date the certification is made and such increases must be effective on, or scheduled to become effective no later than eighteen months from, the date on which such certificate is made and must remain in effect for the entirety of the Test Period);[3]

(vi) A written opinion of the Consulting Engineer stating that (A) the projections of Test Period Revenues set forth in the certificate of the Authorized Officer delivered pursuant to clause (v) immediately above are reasonable, and (B) the Test Period Revenues are sufficient to enable the Authority to comply with all of the

[3] The Sixth Supplemental Trust Indenture to Amended and Restated Indenture amended this paragraph to read as follows:

"(v) A copy of a certificate signed by an Authorized Officer stating the amount of Test Period Revenues projected to be received by the Authority during the current Fiscal Year and each full Fiscal Year to and including the fifth full Fiscal Year following the projected date when the Project to be financed from the proceeds of such Additional Bonds will be placed in service (the "Test Period"). "Test Period Revenues" shall mean, for the purposes hereof, the Net Revenues during the Test Period, as determined by the Authorized Officer, further adjusted by the Authorized Officer to reflect 100% of the additional Revenues which, in the opinion of the Consulting Engineer, would be received from increases in Tolls, rates, fees, rentals and other charges relating to the System scheduled to take effect during the Test Period (provided that such increases must be adopted as of the date the certification is made and such increases must be effective on, or scheduled to become effective no later than ~~eighteen~~ thirty-six months from, the date on which such certificate is made and must remain in effect for the entirety of the Test Period);"

requirements of Section 5.01(b) over the entirety of the Test Period, taking into account the additional Principal and Interest Requirements of the Additional Bonds proposed to be issued;[4]

(vii) Either (A) A certificate of the Department stating that, at the time the Additional Bonds are to be issued, (1) the Authority is current in the payment to the Department of any unpaid Non-contingent Portion of Annual Repayment Requirements, (2) there is not any unpaid Contingent Portion of Annual Repayment Requirements, and (3) the Department acknowledges that Revenues, based on the opinion of the Consulting Engineer, are projected to be sufficient to pay when due the Annual Repayment Requirements after taking into account the debt service requirements of the Additional Bonds, or (B) if, at the time the Additional Bonds are to be issued (1) the Authority is not current in the payment to the Department of any unpaid Non-contingent Portion of Annual Repayment Requirements, (2) there shall be any unpaid Contingent Portion of Annual Repayment Requirements, or (3) Revenues, based on the opinion of the Consulting Engineer, are projected to be insufficient to pay when due the Annual Repayment Requirements after taking into account the debt service requirements of the Additional Bonds, a written consent from the Department to the issuance of such Bonds; and

(viii) A certificate of the Department to the effect that the Authority has delivered to the Department a certificate prepared in accordance Section 2.08(c)(vi) of this Indenture and prepared as though the scheduled debt service payments required to be made by the Authority to the Department under such State Infrastructure Bank Loan Agreements then in effect between the Authority and the Department constitute a component of Annual Repayment Requirements.

The Authority covenants that it will not issue Additional Bonds without the prior written consent of the Initial Reserve Facility Provider so long as there shall be due and owing at the time of such issuance any Policy Costs.

**SECTION 2.09 REFUNDING BONDS**.

(a) General. In addition to the Bonds authorized under the provisions of Sections 2.06, 2.07 and 2.08, Refunding Bonds may be issued pursuant to this Section 2.09 and secured by this Indenture from time to time on a parity with any other Outstanding Bonds, subject to the conditions hereinafter provided in this Section 2.09, for the purpose of providing funds, together

[4] The Sixth Supplemental Trust Indenture to Amended and Restated Indenture amended this paragraph to read as follows:

"(vi) A written opinion of the Consulting Engineer stating that (A) the projections of Test Period Revenues set forth in the certificate of the Authorized Officer delivered pursuant to clause (v) immediately above, including, without limitation, that portion of Test Period Revenues anticipated by the Authorized Officer to be derived from increases in Tolls, rates, fees, rentals and other charges relating to the System scheduled to take effect during the Test Period, are reasonable, and (B) the Test Period Revenues are sufficient to enable the Authority to comply with all of the requirements of Section 5.01(b) over the entirety of the Test Period, taking into account the additional Principal and Interest Requirements of the Additional Bonds proposed to be issued;"



with other legally available funds, for refunding all or any portion of the Outstanding Bonds of any one or more Series issued under the provisions of this Indenture, including the payment of all amounts necessary to defease the Outstanding Bonds to be refunded in accordance with the provisions thereof, and, as shall be specified in the Supplemental Indenture authorizing the issuance of a Series of Refunding Bonds, to make deposits to the Funds and Accounts and pay other costs of issuance and expenses relating thereto.

(b) Application of Proceeds. The proceeds (including Capitalized Interest and accrued interest) of the Refunding Bonds, as applicable, shall be applied by an Authorized Officer as follows (or in such other manner as shall be set forth in the Supplemental Indenture authorizing the issuance of such Series of Refunding Bonds):

(i) the amount, if any, received as Capitalized Interest on the Refunding Bonds shall be delivered to the Trustee for deposit to the credit of the applicable Account or Subaccount in the Construction Fund pursuant to Section 4.01 and the amount, if any, received as accrued interest on the Refunding Bonds shall be delivered to the Trustee for deposit to the credit of Sinking Fund;

(ii) the amount estimated by an Authorized Officer to be sufficient for that purpose shall be delivered to the Trustee for deposit to the credit of a special account and applied to the payment of the expenses of issuing the Refunding Bonds, including, but not limited to, financial advisory, accounting and legal fees, rating agency fees, printing costs, initial Bond Registrar fees, initial Paying Agent fees, initial Trustee fees, Credit Facility and Liquidity Facility fees and expenses, if any, and any other miscellaneous expenses relating to the issuance of such Bonds;

(iii) the amount necessary to make the amount on deposit therein equal to the applicable Debt Service Reserve Fund Requirement, as may be limited by Section 2.01 or by the Supplemental Indenture authorizing the issuance of such Bonds, shall be delivered to the Trustee for deposit to the credit of the appropriate Account of the Debt Service Reserve Fund; and

(iv) the balance of the proceeds of the Refunding Bonds remaining after the deposits made pursuant to clauses (i) through (iii) above have been made shall be applied to pay or provide for the payment of the Bonds to be refunded thereby in such manner as shall satisfy the conditions of Article XII to the release of the lien of the Trust Estate and this Indenture in favor of such Bonds.

(c) Conditions Precedent to Issuance of Refunding Bonds. Refunding Bonds shall be authenticated by the Bond Registrar and delivered by the Trustee in such manner as shall be specified in writing by an Authorized Officer, but only after such Bonds shall have been executed as provided in this Indenture and there shall have been obtained and delivered to the Trustee, the following:

(i) a copy of this Indenture, including all Supplemental Indenture entered into prior to this issuance of such Refunding Bonds and particularly the Supplemental Indenture authorizing the issuance of such Refunding Bonds;

(ii) a written opinion or opinions of Bond Counsel stating that it is of the opinion that the issuance of such Refunding Bonds has been duly authorized, that all conditions precedent to the delivery of such Bonds have been provided for or fulfilled or otherwise satisfied, that this Indenture creates a valid and enforceable pledge of the Trust Estate, and that the issuance of the Refunding Bonds will not adversely affect the exclusion of interest on any Bonds from gross income for federal income tax purposes;

(iii) a certificate of an Authorized Officer to the effect that no Event of Default has occurred and is continuing as of the date of issuance of such Refunding Bonds (except any Event of Default that may be cured by application of the proceeds of such Bonds);

(iv) an amount equal to that amount which the Authority shall have determined to be the purchase price for such Bonds;

(v) either (A) a certificate signed by an Authorized Officer, confirming that the annual Principal and Interest Requirements for each Fiscal Year in which the Bonds to be refunded would be Outstanding but for such refunding for all Outstanding Bonds following issuance of the Refunding Bonds with respect to which the certificate is made (excluding any Bonds being defeased by proceeds of the Refunding Bonds) is not greater than the annual Principal and Interest Requirements for each Fiscal Year for all Outstanding Bonds prior to issuance of such Refunding Bonds, or (B) in lieu thereof, the certificate required by Section 2.08(c)(v) and the opinion required by Section 2.08(c)(vi), each prepared as though the Refunding Bonds constitute a Series of Additional Bonds and as though the Test Period shall commence on the date of issuance of such Refunding Bonds, and under the circumstances set forth in Section 2.08(c)(vii), the written consent of the Department described therein; and

(vi) Where the Authority shall have satisfied the requirements of Section 2.08(c)(v)(B) above with respect to such Refunding Bonds, a certificate of the Department to the effect that the Authority has delivered to the Department a certificate prepared in accordance Section 2.08(c)(vi) of this Indenture and prepared as though the scheduled debt service payments required to be made by the Authority to the Department under such State Infrastructure Bank Loan Agreements then in effect between the Authority and the Department constitute a component of Annual Repayment Requirements.

The Authority covenants that it will not issue Refunding Bonds without the prior written consent of the Initial Reserve Facility Provider so long as there shall be due and owing at the time of such issuance any Policy Costs.

**SECTION 2.10 PREPARATION OF DEFINITIVE BONDS; TEMPORARY BONDS**. The definitive Bonds of each Series shall be lithographed or printed with or without steel engraved borders. Until the definitive Bonds of any Series are ready for delivery, there may be executed, and an Authorized Officer may deliver, or cause the Bond Registrar to deliver, in lieu of definitive Bonds and subject to the same limitations and conditions, except as to identifying numbers, temporary printed, engraved, lithographed or typewritten Bonds in





Authorized Denominations substantially of the tenor hereinabove set forth, and with appropriate omissions, insertions and variations as may be required. The Authority shall cause the definitive Bonds to be prepared and to be executed, endorsed and delivered to the Bond Registrar, on behalf of the Authorized Officer, and the Bond Registrar, upon presentation to it of any temporary Bond, shall cancel the same and authenticate and deliver, in exchange therefor, at the place designated by the Owner, without expense to the Owner, a definitive Bond or Bonds of the same Series and in the same aggregate principal amount, maturing on the same date and bearing interest at the same rate as the temporary Bond surrendered. Until so exchanged, the temporary Bonds shall in all respects, including the privilege of registration if so provided, be entitled to the same benefit of this Indenture as the definitive Bonds to be issued and authenticated hereunder. The Bond Registrar shall promptly destroy all temporary Bonds that have been canceled and shall submit a certificate to the Chairman certifying that such temporary Bonds have been canceled and destroyed. Notwithstanding the foregoing, the definitive Series 1996 Bonds may be issued in typewritten form and a Supplemental Indenture authorizing the issuance of a Series of Bonds may provide for the definitive Bonds of a Series to be in typewritten form or in such other form as provided therein.

**SECTION 2.11 MUTILATED, DESTROYED, STOLEN OR LOST BONDS**. In case any Bonds secured hereby shall become mutilated or be destroyed, stolen or lost, the Authority may cause to be executed, and the Bond Registrar shall authenticate and deliver, a new Bond of like series, date, maturity, denomination and interest rate in exchange and substitution for and upon the cancellation of, such mutilated Bond or in lieu of and in substitution for such Bond destroyed, stolen, or lost, upon the Owner's paying the reasonable expenses and charges of the Authority in connection therewith and, in the case of a Bond destroyed, stolen or lost, his filing with the Authority and Bond Registrar evidence satisfactory to them that such Bond was destroyed, stolen or lost, and of his ownership thereof, and furnishing the Authority and Bond Registrar with indemnity satisfactory to them. In the event any such Bond shall be about to mature or has matured or been called for redemption, instead of issuing a duplicate Bond, the Authority may direct the Paying Agent to pay the same without surrender thereof. Any Bond surrendered for replacement shall be canceled in the same manner as provided in Section 2.05.

Any such duplicate Bonds issued pursuant to this Section 2.11 shall constitute additional contractual obligations on the part of the Authority and the Trustee, whether or not the lost, stolen or destroyed Bonds are at any time found, and such duplicate Bonds shall be entitled to equal and proportionate benefits and rights as to lien on and source and security for payment from the Revenues and moneys on deposit in the Funds and Accounts with all other Bonds issued hereunder.

**SECTION 2.12 BOOK-ENTRY SYSTEM FOR SERIES 1996 BONDS**. The Series 1996 Bonds shall be initially issued in the name of Cede & Co., as nominee for DTC as the initial Securities Depository and Owner of the Series 1996 Bonds, and may be held in the custody of or by the Trustee for the account of the Securities Depository. A single certificate will be issued and delivered to the Securities Depository for each maturity of the Series 1996 Bonds (except as otherwise required by DTC). The ultimate purchasers of ownership interests in the Series 1996 Bonds (the "Beneficial Owners") will not receive physical delivery of Series 1996 Bond certificates except as provided herein. For so long as the Securities Depository shall continue to serve as securities depository for the Series 1996 Bonds as provided herein, all

transfers of beneficial ownership interests will be made by book entry only, and no investor or other party purchasing, selling or otherwise transferring beneficial ownership of Series 1996 Bonds is to receive, hold or deliver any Bond certificate.The Authority and the Trustee shall treat the Securities Depository (or its nominee) as the sole and exclusive Owner of the Series 1996 Bonds registered in its name for the purposes of payment of the principal of and interest on or Redemption Price, if any, of the Series 1996 Bonds or portion thereof to be redeemed, and of giving any notice permitted or required to be given to Series 1996 Bondholders under this Indenture and neither the Authority nor the Trustee shall be affected by any notice to the contrary. Neither the Authority nor the Trustee shall have any responsibility or obligations to the Securities Depository, any Participant, any Beneficial Owner or any other Person which is not shown on the bond registration books maintained by the Bond Registrar, with respect to the accuracy of any records maintained by the Securities Depository or any Participant; the payment by the Securities Depository or any Participant of any amount in respect of the principal of and interest on the Series 1996 Bonds; any notice which is permitted or required to be given to Series 1996 Bondholders under this Indenture; the selection by the Securities Depository or any Participant of any Person to receive payment in the event of a partial redemption of the Series 1996 Bonds; or any consent given or other action taken by the Securities Depository as a Series 1996 Bondholder. The Trustee shall pay all principal of and interest on or Redemption Price, if any, of the Series 1996 Bonds registered in the name of Cede & Co. only to or "upon the order of" the Securities Depository (as that term is used in the Uniform Commercial Code as adopted in Florida), and all such payments shall be valid and effective to fully satisfy and discharge the Authority's obligations with respect to the principal of and interest on or Redemption Price, if any, of such Series 1996 Bonds to the extent of the sum or sums so paid.



The Authority and the Trustee covenant and agree, so long as DTC shall continue to serve as Securities Depository for the Series 1996 Bonds, to meet the requirements of DTC with respect to required notices and other provisions of the Letter of Representations executed with respect to the Series 1996 Bonds.

The Authority may rely conclusively upon (i) a certificate of the Securities Depository as to the identity of the Participants in the Book Entry System with respect to the Series 1996 Bonds and (ii) a certificate of any such Participant as to the identity of, and the respective principal amount of Series 1996 Bonds beneficially owned by, the Beneficial Owners.

Whenever, during the term of the Series 1996 Bonds, the beneficial ownership thereof is determined by a book entry at the Securities Depository, the requirements in this Indenture of holding, delivering or transferring Series 1996 Bonds shall be deemed modified to require the appropriate Person to meet the requirements of the Securities Depository as to registering or transferring the book entry to produce the same effect. Any provision hereof permitting or requiring delivery of Series 1996 Bonds shall, while the Series 1996 Bonds are in a Book Entry System, be satisfied by the notation on the books of the Securities Depository in accordance with the law of the State.

The Trustee and the Authority, at the direction and expense of the Authority, may from time to time appoint a successor Securities Depository and enter into an agreement with the Securities Depository, to establish procedures with respect to the Series 1996 Bonds not inconsistent with the provisions of this Indenture. Any successor Securities Depository shall be



approved by the Trustee and shall be a "clearing agency" registered under Section 17A of the Securities Exchange Act of 1934, as amended.

The Trustee and the Authority, at the direction and expense of the Authority, will cause the delivery of bond certificates to each Beneficial Owner, registered in the name of such Beneficial Owner, under the following circumstances:

(a) The Securities Depository determines to discontinue providing its service with respect to the Series 1996 Bonds and no successor Securities Depository is appointed as described above. Such a determination may be made at any time by giving 30 days' written notice to the Authority and the Trustee and discharging its responsibilities with respect thereto under applicable law; or

(b) The Authority determines not to continue the Book Entry System through a Securities Depository.

The Trustee is hereby authorized to make such changes to the form of Bonds attached hereto as Exhibit C which are not inconsistent with this Indenture and which are necessary or appropriate upon the appointment of a successor Securities Depository or while the Book Entry System is not in effect.

If at any time, the Securities Depository ceases to hold the Series 1996 Bonds, thereafter all references herein to the Securities Depository shall be of no further force or effect.

## ARTICLE III

## REDEMPTION AND TENDER FOR PURCHASE OF BONDS

**SECTION 3.01 REDEMPTION DATES AND PRICES**. Bonds other than the Series 1996 Bonds shall be subject to redemption in the manner set forth, if any, in the Supplemental Indenture authorizing the issuance of such Bonds. The Series 1996 Bonds may not be called for redemption by the Authority except as provided below:

(a) (i) The Series 1996 Bonds bearing interest at Daily, Weekly, Monthly, Quarterly, Semiannual or Extended Rates (but only if the Extended Rate Period is one year in duration) are subject to optional redemption from Eligible Funds prior to their stated maturity upon request of the Authority in whole or in part at any time at a price equal to the principal amount thereof, without premium, plus accrued interest thereon to the redemption date.

(ii) The Series 1996 Bonds bearing interest at Extended Rates (but only if the Extended Rate Period is more than one year in duration) or the Fixed Rate are subject to optional redemption from Eligible Funds (or from moneys that are not Eligible Funds if there shall not be a Credit Facility in place at the time of such redemption or if the Credit Facility in place at the time of such redemption is a policy of municipal bond insurance) prior to their stated maturity upon request of the Authority in whole or in part at the times and at the prices set forth below, and in such amounts and of such maturities as the Authority shall direct, plus accrued interest thereon to the redemption date:

| Years Remaining from Conversion Date until end of Extended Rate Period or Final Maturity of Bonds in the Fixed Rate Period | First Day of Redemption Period | Redemption Price |
|---|---|---|
| More than fifteen | Tenth anniversary of Conversion Date | 102% declining by 1% on each succeeding anniversary of the tenth anniversary of the Conversion Date until reaching 100% and thereafter at 100% |
| More than seven but not more than fifteen | Seventh anniversary of Conversion Date | 102% declining by 1% on each succeeding anniversary of the seventh anniversary of the Conversion Date until reaching 100% and thereafter at 100% |
| More than five but not more than seven | Fourth anniversary of Conversion Date | 101% declining by 1% on the next anniversary after the fourth anniversary of the Conversion Date and thereafter at 100% |
| Five or fewer | Not callable | |

Notwithstanding any provision in this Indenture or the Series 1996 Bonds to the contrary, this Indenture and the Bonds may be amended as of the Conversion Date upon the request of the Authority, without the consent of any of the Bondholders, to change the redemption provisions applicable during an Extended Rate Period or the Fixed Rate Period to such redemption provisions as are acceptable to the Authority provided the Authority provides an Opinion of Bond Counsel to the Trustee to the effect that such amendment will not adversely affect the exclusion from gross income of interest on the Bonds for purposes of federal income taxation.

(iii) Prior to notice being given to the Owners of affected Series 1996 Bonds of any optional redemption of Series 1996 Bonds under this Section 3.01(a), either (A) there shall be deposited with the Trustee an amount sufficient to pay the principal amount of the Series 1996 Bonds subject to redemption, plus accrued interest to the redemption date, plus any premium applicable to such redemption, or (B) such notice shall state that the redemption is conditioned on the receipt of moneys for such redemption by the Trustee on or prior to the redemption date. In the event that a conditional notice of redemption is given and such moneys are not timely received, the redemption for which such notice was given shall not be undertaken. Amounts deposited pursuant to this paragraph shall be kept by the Trustee in a trust account separate and segregated from all





other moneys deposited under this Indenture and shall be held uninvested unless invested at the direction of an Authorized Officer only in Government Obligations that mature on or before the redemption date. If the redemption price is required to be paid with Eligible Funds as specified in Section 3.01(a)(i) or (ii), the Trustee shall cancel the redemption of the Series 1996 Bonds if it determines that sufficient Eligible Funds will not be available on the redemption date. It is understood that the Initial Credit Facility and the Initial Liquidity Facility are not available to provide Eligible Funds for the payment of any redemption under this Section.

(b) The Series 1996 Bonds shall be redeemed in whole or in part in such amounts and of such maturities as the Authority shall direct at any time at a redemption price equal to 100% of the principal amount thereof plus accrued interest, if any, to the redemption date upon receipt by the Trustee of a written notice from the Authority stating that either of the following events has occurred:

(1) all or substantially all of the System shall be damaged or destroyed and the Authority shall determine that it is not practicable or desirable to rebuild, repair and restore the same; or

(2) all or substantially all of the System shall be condemned or such use or control thereof shall be taken by eminent domain as to render the same unsatisfactory to the Authority for continued operation.

Any such redemption pursuant to this Section 3.01(b) prior to the Fixed Rate Conversion Date shall be made only from Eligible Funds.

(c) Provider Bonds are subject to redemption prior to maturity at the option of the Authority as a whole or in part in such amounts and of such maturities as the Authority may direct on any date at the principal amount thereof, without premium, plus interest accrued thereon to the redemption date.

(d) The Series 1996 Bonds are also subject to redemption prior to maturity at a redemption price equal to the principal amount thereof, plus accrued interest, by application by the Trustee of funds on deposit to the credit of the Sinking Fund on July 1 in the years and in the principal amounts as follows:

| YEAR | AMOUNT |
|---|---|
| 1999 | $ 1,000,000 |
| 2000 | 1,800,000 |
| 2001 | 2,000,000 |
| 2002 | 2,200,000 |
| 2003 | 2,300,000 |
| 2004 | 2,500,000 |
| 2005 | 2,600,000 |
| 2006 | 2,800,000 |
| 2007 | 3,000,000 |

| YEAR | AMOUNT |
|---|---|
| 2008 | 3,200,000 |
| 2009 | 3,400,000 |
| 2010 | 3,600,000 |
| 2011 | 3,900,000 |
| 2012 | 4,100,000 |
| 2013 | 4,400,000 |
| 2014 | 4,700,000 |
| 2015 | 4,900,000 |
| 2016 | 5,400,000 |
| 2017 | 5,600,000 |
| 2018 | 6,100,000 |
| 2019* | 10,500,000 |

*By operation of maturity.

(e) If less than all of the Bonds of a Series or of any one maturity of a Series shall be called for redemption, the particular Bonds to be redeemed shall be selected by the Trustee in such manner as the Trustee in his discretion deems fair and appropriate except to the extent otherwise provided in the Supplemental Indenture authorizing the Bonds of such Series.

**SECTION 3.02 NOTICE OF REDEMPTION**. Except as otherwise provided with respect to a Series of Bonds in the Supplemental Indenture authorizing the issuance of the Bonds of such Series, at least thirty (30) days, but not more than forty five (45) days, before the redemption date of any Bonds, the Trustee shall cause a notice of such redemption to be: (a) filed with any Paying Agent; (b) sent by telefacsimile followed by first class mail to registered securities depositories and to national information services that disseminate redemption notices; and (c) mailed, postage prepaid, to all Owners of Bonds to be redeemed in whole or in part at their addresses as they appear on the registration books herein provided for. Failure to file any such notice with any Paying Agent or to mail any such notice to any Bondholder or to any securities depository or national information service or any defect therein shall not affect the validity of the proceedings for redemption, except to the extent a Bondholder is prejudiced thereby, and then, only with respect to such Bondholder. Except as otherwise provided with respect to a Series of Bonds in the Supplemental Indenture authorizing the issuance of the Bonds of such Series, each such notice shall set forth: (t) the date fixed for redemption; (u) the redemption price to be paid; (v) the CUSIP numbers and the certificate numbers of the Bonds to be redeemed; (w) the name and address of the Paying Agent for the Bonds; (x) the dated date, interest rate and maturity date of the Bonds; and (y) if less than all of the Bonds of a Series then Outstanding shall be called for redemption, the amounts of each of the Bonds to be redeemed; and (z) the name, address and telephone number of a contact for such redemption.

**SECTION 3.03 [RESERVED]**

**SECTION 3.04 REDEMPTION OF PORTIONS OF BONDS**. Except as provided in Section 2.12, any Bond which is to be redeemed only in part shall be surrendered at any place of



payment specified in the notice of redemption (with due endorsement by, or written instrument of transfer in form satisfactory to the Bond Registrar duly executed by the Owner thereof or his duly authorized attorney or legal representative in writing) and the Authority shall execute and the Bond Registrar shall authenticate and deliver to the Owner of such Bond, without charge, other than any applicable tax or other governmental charge, a new Bond or Bonds, of any Authorized Denomination, as requested by such Owner in an aggregate principal amount equal to and in exchange for the unredeemed portion of the principal of the Bonds so surrendered.

**SECTION 3.05 EFFECT OF CALL FOR REDEMPTION**. On the date fixed for redemption, notice having been given in the manner and under the conditions hereinabove provided, the Bonds or portions thereof called for redemption shall be due and payable at the Redemption Price provided therefor. If money or Escrow Securities, or a combination of both, sufficient to pay the Redemption Price of the Bonds to be redeemed are held by the Trustee in trust for the Owners of Bonds to be redeemed on the date fixed for redemption, then interest on the Bonds called for redemption shall cease to accrue; such Bonds shall cease to be entitled to any benefits or security under this Indenture or to be deemed Outstanding, and the Owners of such Bonds shall have no rights in respect thereof except to receive payment of the Redemption Price thereof. Bonds and portions of Bonds for which irrevocable instructions to pay on one or more specified dates or to call for redemption at the redemption date have been given to the Trustee in form satisfactory to it shall not thereafter be deemed to be Outstanding under this Indenture and shall cease to be entitled to the security of or any rights under this Indenture, other than rights to receive payment of the Redemption Price thereof, to be given notice of redemption in the manner provided in Section 3.02, and, to the extent hereinafter provided, to receive Bonds for any unredeemed portions of Bonds, if money or Escrow Securities, or a combination of both, sufficient to pay the Redemption Price of such Bonds or portions thereof, are held in separate accounts by the Trustee in trust for the Owners of such Bonds. All money held by the Trustee under this Section 3.05 for the redemption of Bonds after the Redemption Date shall be held uninvested or invested at the written direction of the Authority in Government Obligations that mature on or before the redemption date.

For purposes of this Article III, Escrow Securities shall be deemed to be sufficient to redeem Bonds on a specified date if the principal of and the interest on such Escrow Securities, when due, will be sufficient to pay on such date the Redemption Price of such Bonds to such date.

If a portion of an Outstanding Bond shall be selected for redemption, the Owner thereof or his attorney or legal representative shall present and surrender such Bond to the Bond Registrar for payment of the Redemption Price of the portion thereof called for redemption, and the Authority shall execute and the Bond Registrar shall authenticate and deliver to or upon the order of such Owner or his legal representative, without charge therefor, for the unredeemed portion of the principal amount of the Bond so surrendered, a Bond of the same stated maturity and bearing interest at the same rate.

**SECTION 3.06 EXPENSES OF REDEMPTION**. The expenses of any redemption of Bonds pursuant to this Article shall be paid from the Revenue Fund.

**SECTION 3.07 OPTIONAL TENDERS BY OWNERS DURING VARIABLE RATE PERIODS**. (a) Purchase Dates. During any Variable Rate Period a beneficial owner of the Series 1996 Bonds (other than Provider Bonds) may elect to have its Series 1996 Bonds (or portions thereof in Authorized Denominations) purchased at the Purchase Price, on the following Purchase Dates by causing the Direct Participant through whom such beneficial owner owns such Series 1996 Bond to give the following irrevocable telephonic or written notices meeting the further requirements of subsection (b) of this Section 3.07 and upon transfer on the registration books of DTC on the same day such notice is given of the beneficial ownership interest in such Series 1996 Bonds to the account of the Trustee, "free delivery" for settlement on the Purchase Date:

(i) Series 1996 Bonds bearing interest at Daily Rates may be tendered for purchase on any Business Day upon telephonic notice of tender given to the Trustee not later than 10:30 a.m., Eastern time, on the Purchase Date;

(ii) Series 1996 Bonds bearing interest at Weekly Rates may be tendered for purchase on any Business Day upon delivery of a written notice of tender to the Trustee not later than 5:00 p.m., Eastern time, on a Business Day not less than seven (7) days prior to the Purchase Date;

(iii) Series 1996 Bonds bearing interest at Monthly, Quarterly or Semiannual Rates may be tendered for purchase on any Interest Payment Date upon delivery of a written notice of tender to the Trustee not later than 5:00 p.m., Eastern time, on a Business Day which is not less than seven (7) days prior to the Interest Payment Date in the case of Series 1996 Bonds bearing interest at Monthly and Quarterly Rates, or fifteen (15) days prior to the Interest Payment Date in the case of Series 1996 Bonds bearing interest at Semiannual Rates; and

(iv) Series 1996 Bonds bearing interest at Extended Rates may be tendered for purchase on the commencement date of any Extended Rate Period (other than the Extended Rate Conversion Date) upon delivery of a written notice of tender to the Trustee not later than 5:00 p.m., Eastern time, on a Business Day which is not less than fifteen (15) days prior to the Purchase Date.

(b) Notice of Tender. Each notice of tender:

(i) shall, in the case of a written notice, be delivered to the Trustee at its principal office and be in form satisfactory to the Trustee;

(ii) shall state, whether delivered in writing or by telephone (A) the principal amount of the Series 1996 Bond or portion of the Series 1996 Bond to be purchased, (B) that the Owner irrevocably demands purchase of such Series 1996 Bond or portion thereof, (C) the date on which such Series 1996 Bond or portion is to be purchased, (D) payment instructions, and (E) the DTC number of such Direct Participant; and

(iii) shall automatically constitute, whether delivered in writing or by telephone (A) an irrevocable offer to sell the Series 1996 Bond or portion to which the notice relates on the Purchase Date to any purchaser selected by the Remarketing Agent, at the Purchase Price, (B) an irrevocable authorization and instruction to the Series 1996 Bond Registrar to effect transfer of such Series 1996 Bond or portion upon payment of such price to the Trustee on the Purchase Date, (C) an irrevocable authorization and instruction to the Tender Agent to effect the exchange of the Series 1996 Bond to be purchased in whole or in part for other Series 1996 Bonds of the same maturity in an equal aggregate principal amount so as to facilitate the sale of such Series 1996 Bond or portion, and (D) an acknowledgment that such Owner will have no further rights with respect to such Series 1996 Bond or portion thereof upon payment of the Purchase Price by the Trustee on the Purchase Date to the Direct Participant from whom the notice of tender is received, except for the right of such Owner to receive such Purchase Price upon surrender of such Series 1996 Bond to the Tender Agent.

The determination of the Trustee as to whether a notice of tender has been properly delivered pursuant to the foregoing shall be conclusive and binding upon the Owner. The Trustee, if other than the Tender Agent, shall promptly notify the Tender Agent of its receipt of each notice given pursuant to this Section. The Trustee shall hold beneficial ownership interests of Series 1996 Bonds delivered to it pursuant to this Section pending settlement in trust for the benefit of the direct participant from whom the beneficial interests in the Series 1996 Bonds are received and shall remit any interest payments received with respect to such Series 1996 Bonds for the period prior to the Purchase Date to such Direct Participant.

(c) Series 1996 Bonds to be Remarketed. Not later than 4:30 p.m., Eastern time, on the Business Day immediately following the date of receipt of any notice of tender (or immediately upon such receipt, in the case of Series 1996 Bonds bearing interest at Daily Rates), the Tender Agent shall notify the Remarketing Agent and the Trustee of the principal amount of Series 1996 Bonds or portions thereof to be tendered and remarketed and the date they are to be tendered and remarketed. Such notices shall be given by telephone, telegram, telecopy, telex or other similar communication and shall be promptly confirmed in writing.

(d) Remarketing of Tendered Series 1996 Bonds. The Remarketing Agent shall offer for sale and use its best efforts to find purchasers for all Series 1996 Bonds or portions thereof properly tendered. All Series 1996 Bonds shall be at all times remarketed at the Purchase Price. Notwithstanding the foregoing, the Remarketing Agent shall not offer for sale any Series 1996 Bond if notice of (i) any optional or mandatory redemption, (ii) any conversion from one Variable Rate Period to another or to a Fixed Rate Period has been given to the Owners of the Series 1996 Bonds pursuant to the provisions of this Indenture, or (iii) any defeasance in accordance with the provisions of Article XII has occurred, unless the Remarketing Agent has advised the Person in writing to whom the offer is made of such occurrence and the effect of the same on the rights of such Owners including, but not limited to, the rights of such Owners to tender their Series 1996 Bonds, as described in the conversion notice from the Tender Agent to the Owners of the Series 1996 Bonds.

**SECTION 3.08 MANDATORY TENDERS UPON VARIABLE RATE CONVERSION**. (a) Purchase Dates. In the case of any conversion from one Variable Rate Period to another Variable Rate Period (except a conversion between a Daily Rate Period and a Weekly Rate Period), the Series 1996 Bonds to be converted are subject to mandatory tender for purchase on the Conversion Date at the Purchase Price.

(b) Notice to Owners. Any notice of a conversion given to Bondholders pursuant to Section 2.06(j) shall, in addition to the requirements of such Section, specify (i) that the Series 1996 Bonds to be converted will be subject to mandatory tender for purchase on the Conversion Date and the time at which Series 1996 Bonds are to be tendered for purchase, and (ii) if appropriate, any requirements imposed by Section 2.06(n).

(c) Remarketing. At or before 4:00 p.m., Eastern time, on the Business Day immediately following the last day on which notices of election to tender Series 1996 Bonds may be delivered to the Tender Agent pursuant to Section 3.07 (or immediately upon receipt of such notice in the case of optional tenders of Series 1996 Bonds bearing the Daily Rate), the Tender Agent shall notify the Trustee, the Credit Provider, the Liquidity Provider and the Remarketing Agent, by telephone, telegram, telecopy, telex or other similar communication, of the aggregate principal amount of Series 1996 Bonds to be tendered for purchase on the Conversion Date or the Purchase Date. At or before 4:00 p.m., Eastern time, on the fifth Business Day immediately preceding the conversion to a Daily, Weekly or Monthly Rate Period or on the seventh calendar day (or, if such day is not a Business Day, on the next succeeding Business Day) preceding the conversion to a Quarterly Rate Period or on the fifteenth calendar day (or, if such day is not a Business Day, on the next succeeding Business Day) preceding the conversion to a Semiannual or Extended Rate Period, the Tender Agent shall notify the Trustee, the Credit Provider, the Liquidity Provider and the Remarketing Agent, by telephone, telegram, telecopy, telex or other similar communication, of the aggregate principal amount of Series 1996 Bonds to be tendered for purchase on the Conversion Date or the Purchase Date. The Remarketing Agent shall offer for sale and use its best efforts to find purchasers for the Series 1996 Bonds to be tendered. All Series 1996 Bonds shall be at all times remarketed at the Purchase Price.

**SECTION 3.09 MANDATORY TENDERS UPON EXPIRATION, SUBSTITUTION OR TERMINATION OF CREDIT FACILITY OR LIQUIDITY FACILITY**. (a) Purchase Dates. Prior to the Fixed Rate Conversion Date of the Series 1996 Bonds, the Series 1996 Bonds shall be subject to mandatory tender for purchase at the Purchase Price:

(i) on a Business Day which is at least five days prior to the date on which the Credit Facility or Liquidity Facility is to be canceled in connection with replacement by an Alternate Credit Facility pursuant to Section 13.03 or an Alternate Liquidity Facility pursuant to Section 13.06, as the case may be; or

(ii) on a Business Day which is at least five days prior to a termination or expiration of the Credit Facility or the Liquidity Facility, including a Termination Event (as defined in the Initial Liquidity Facility) described in a Termination Notice delivered pursuant to Section 2.03 of the Initial Liquidity Facility.

(b) [RESERVED]

(c) Notice to Owners. Notice of mandatory tender of Series 1996 Bonds shall be given by mail by the Bond Registrar at the direction of the Trustee to the Owners of said Series 1996 Bonds by first class mail not less than thirty (30) days prior to the mandatory tender date. A copy of such notice shall be sent to the Authority and the Trustee. Notice having been so





given, such mandatory tender shall occur on the date provided in such notice whether or not an Alternate Credit Facility or Liquidity Facility, as the case may be, is provided after such initial notice has been given.

(d) Remarketing. On the Business Day on which the first notice is mailed pursuant to 3.09(c), the Trustee shall notify the Tender Agent and the Remarketing Agent by telephone, telegram, telecopy, telex or other similar communication of the aggregate principal amount of Series 1996 Bonds to be tendered for purchase on the mandatory tender date.

The Remarketing Agent shall offer for sale at par and use its best efforts to find purchasers for the Series 1996 Bonds to be tendered pursuant to Section 3.09(a) and advise them whether the Credit Facility or the Liquidity Facility will be replaced. In the case of replacement of the Credit Facility or Liquidity Facility, the Remarketing Agent shall inform prospective purchasers of the identity of the new Credit Provider or Liquidity Provider and the ratings to be in effect on the Series 1996 Bonds following such replacement. All Series 1996 Bonds shall be at all times remarketed at the Purchase Price.

**SECTION 3.10 PURCHASE OF TENDERED SERIES 1996 BONDS**. (a) Notices. At or before 3:30 p.m., Eastern time, on the Business Day immediately preceding the Purchase Date (or 11:00 a.m., Eastern time, on the Purchase Date in the case of Series 1996 Bonds bearing interest at Daily Rates), the Remarketing Agent shall give notice by telephone, telegram, telecopy, telex or other similar communication to the Trustee of the principal amount of tendered Series 1996 Bonds which have been remarketed and of the names, addresses and taxpayer identification numbers of the purchasers and the denominations of remarketed Series 1996 Bonds to be delivered to each purchaser. On the Purchase Date, the Trustee shall draw on the Liquidity Facility to the extent necessary to timely pay the Purchase Price with regard to the Series 1996 Bonds for which remarketing proceeds (other than proceeds of sale to the Authority) have not been paid to the Trustee. In the case of the Initial Liquidity Facility, such draw shall be made not later than 11:30 a.m., New York City time, on the Purchase Date. In the event that the Trustee does not receive from the Remarketing Agent the notice described in this Section, on the Purchase Date the Trustee shall draw on the Liquidity Facility to the extent necessary to timely pay the Purchase Price of all Series 1996 Bonds subject to tender for purchase on such Purchase Date. In the case of the Initial Liquidity Facility, such draw shall be made not later than 11:30a.m., New York City time, on the Purchase Date.

(b) Sources of Payment. The Remarketing Agent shall pay to the Trustee, on the Purchase Date, all amounts representing proceeds of the remarketing of tendered Series 1996 Bonds, such payments to be made in the manner and at the time specified in Sections 3.07(d), 3.08(c), 3.09(d), 3.10(d) and 3.12(c), as applicable. All such proceeds, the proceeds of a draw upon the Liquidity Facility and all other Eligible Funds shall be held by the Trustee in trust in a separate segregated account. The Liquidity Provider has agreed under the Liquidity Facility to pay, on or before 3:30 p.m., Eastern time, on the Purchase Date, the Purchase Price to the Trustee of such Series 1996 Bonds that have not been remarketed.

(c) Payments by the Trustee. Before 4:00 p.m., Eastern time, on the Purchase Date and upon receipt by the Trustee of 100% of the aggregate Purchase Price of the tendered Series 1996 Bonds, the Trustee shall pay the Purchase Price of such Series 1996 Bonds to the Owners

thereof (or as otherwise provided in Section 3.07) at its principal office or by bank wire transfer. Such payments shall be made in immediately available funds. Payments of such Purchase Price are to be made from the following sources in the order of priority indicated:

(i) The proceeds of the sale of the Series 1996 Bonds which have been remarketed by the Remarketing Agent (other than proceeds of a sale of the Series 1996 Bonds to the Authority); and

(ii) The proceeds of the sale of the Series 1996 Bonds which have been purchased by the Liquidity Provider pursuant to the Liquidity Facility or other proceeds received under or pursuant to a Liquidity Facility;

(iii) Moneys paid by the Authority for such purpose that are Eligible Funds; and

(iv) Other moneys paid by the Authority for such purpose.

(d) Registration and Delivery of Tendered or Purchased Series 1996 Bonds. (i) Subject to the requirements of clauses (ii) and (iii) immediately below, on the Purchase Date, the Bond Registrar shall register and deliver (or hold) all Series 1996 Bonds purchased on any Purchase Date as follows:

(1) Series 1996 Bonds purchased or remarketed by the Remarketing Agent shall be registered in accordance with the instructions of the Remarketing Agent and made available for delivery to the Remarketing Agent; and

(2) Series 1996 Bonds purchased with funds made available under or pursuant to the Liquidity Facility shall be registered in the name of the Liquidity Provider or its nominee and shall be delivered to or to the order of the Liquidity Provider in accordance with the provisions of the Liquidity Facility. While so registered, such Series 1996 Bonds shall constitute Provider Bonds.

(ii) While the DTC Book-Entry Only System is in effect for the Series 1996 Bonds, the Trustee shall deliver Series 1996 Bonds purchased or remarketed by the Remarketing Agent by transfer of beneficial ownership of such Series 1996 Bonds on the registration books of DTC to or upon the order of the Remarketing Agent

(iii) While the DTC Book-Entry Only System is in effect for the Series 1996 Bonds, the Trustee shall identify Series 1996 Bonds purchased with funds made available under or pursuant to the Liquidity Facility on its registration books as Provider Bonds. The Trustee shall withdraw Provider Bonds from the DTC Book-Entry Only System and shall prepare and authenticate physical Series 1996 Bonds representing such Provider Bonds. While the DTC Book-Entry Only System is in effect for the Series 1996 Bonds, in the event that Provider Bonds are subsequently remarketed pursuant to the terms of this Article III and the Liquidity Facility, the Trustee shall take such action as shall be necessary to reinstate the DTC Book-Entry Only System for such Series 1996 Bonds and





shall transfer beneficial ownership thereof on the books of DTC to or upon the order of the Remarketing Agent.

(e) Delivery of Series 1996 Bonds; Effect of Failure to Surrender Series 1996 Bonds.

(i) All Series 1996 Bonds to be purchased on any date shall be required to be delivered to the designated corporate trust office of the Tender Agent at or before 11:30 a.m., Eastern time, on the Purchase Date, except that Series 1996 Bonds bearing interest at Semiannual or Extended Rates being tendered for purchase at the election of the Owner pursuant to Section 3.07 shall be delivered to the designated corporate trust office of the Tender Agent along with the notice of tender.

(ii) If the Owner of any Series 1996 Bond (or portion thereof) that is subject to purchase pursuant to this Article III fails to surrender such Series 1996 Bond to the Tender Agent for purchase on the Purchase Date, and if the Trustee is in receipt of the Purchase Price therefor, such Series 1996 Bond (or portion thereof) shall nevertheless be deemed purchased on the Purchase Date and ownership of such Series 1996 Bond (or portion thereof) shall be transferred to the purchaser thereof as provided in subsection (d) of this Section 3.10. Any Owner who fails to deliver a Series 1996 Bond for purchase as required above shall have no further rights thereunder except the right to receive the Purchase Price thereof upon presentation and surrender of said Series 1996 Bond to the Tender Agent. The Tender Agent shall promptly notify the Trustee of any such failure to deliver a Series 1996 Bond to the Tender Agent, and the Trustee shall be entitled to conclusively rely on such notification.

(f) Investment of Funds. All money held by the Trustee for the payment of the Purchase Price of Series 1996 Bonds from whatever source derived, including remarketing proceeds and draws upon the Liquidity Facility, shall be held in a separate segregated account and shall be held uninvested or invested at the written direction of the Authority in Government Obligations with overnight maturities.

(g) Exception for Bonds Owned by Authority. Notwithstanding anything in this Agreement to the contrary, the Initial Liquidity Provider shall not be required to purchase Series 1996 Bonds subject to optional or mandatory tender for purchase under this Indenture that are beneficially held (or held in certificated form) by or on behalf of the Authority or any affiliate of the Authority.

**SECTION 3.11 SERIES 1996 BONDS PURCHASED UNDER LIQUIDITY FACILITY**. In the event that any Series 1996 Bonds are Provider Bonds, the Remarketing Agent shall continue to offer for sale and use its best efforts to sell such Series 1996 Bonds at the Purchase Price. The Tender Agent shall deliver such Series 1996 Bonds to the Liquidity Provider or its designee which shall hold the same pending such remarketing. While the Liquidity Facility is effective, Series 1996 Bonds purchased with funds made available under the Liquidity Facility shall not be delivered upon remarketing unless the Liquidity Facility is reinstated for the principal amount of the outstanding Series 1996 Bonds and interest thereon in accordance with its terms and the Remarketing Agent, the Bond Registrar, the Tender Agent, any designee of the Liquidity Provider then holding Provider Bonds and the Trustee have been

advised in writing by the Liquidity Provider that it has elected to reinstate the Liquidity Facility in full.

**SECTION 3.12 MANDATORY TENDERS UPON CONVERSION TO FIXED RATE**. (a) Purchase Date. In the case of any conversion from a Variable Rate Period to the Fixed Rate Period, the Series 1996 Bonds to be converted are subject to mandatory tender for purchase on the Conversion Date at the Purchase Price.

(b) Notice to Owners. Any notice of a conversion given to Bondholders pursuant to Section 2.06(o) shall, in addition to the requirements of such Section, specify that the Series 1996 Bonds to be converted will be subject to mandatory tender for purchase on the Conversion Date and the time at which Series 1996 Bonds are to be tendered for purchase.

(c) Remarketing. At or before 4:00 p.m., Eastern time, on the fifteenth calendar day (or, if such day is not a Business Day, on the next succeeding Business Day) preceding the conversion to a Fixed Rate Period, the Tender Agent shall notify the Trustee, the Credit Provider, the Liquidity Provider and the Remarketing Agent, by telephone, telegram, telecopy, telex or other similar communication, of the aggregate principal amount of Series 1996 Bonds to be tendered for purchase on the Conversion Date or the Purchase Date. The Remarketing Agent shall offer for sale and use its best efforts to find purchasers for the Series 1996 Bonds to be tendered.



**SECTION 3.13 INSUFFICIENT FUNDS FOR PURCHASES**. If the moneys available for purchase of Series 1996 Bonds pursuant to this Article are inadequate for the purchase of all Series 1996 Bonds which are tendered on any Purchase Date, all Series 1996 Bonds subject to such purchase shall continue to bear interest at the same rate as in effect on the day prior to the Purchase Date to the date on which the earliest of the following occurs:

(i) The Fixed Rate Conversion Date for the Series 1996 Bonds;

(ii) The date on which any default by the Liquidity Provider under the terms of the Liquidity Facility has been cured; or

(iii) The fifth day after the date on which an Alternate Liquidity Facility meeting the requirements of Section 13.06 becomes effective.

If the preceding paragraph becomes applicable, (i) the Tender Agent shall immediately (but no later than the end of the next succeeding Business Day) return all tendered Series 1996 Bonds to the Owners thereof and notify all Owners of Series 1996 Bonds in writing of the interest rate to be effective pursuant to the preceding paragraph and (ii) the Trustee shall return all moneys received for the purchase of such Series 1996 Bonds to the Persons who provided such moneys.

**SECTION 3.14 BOOK-ENTRY TENDERS**. Notwithstanding any other provision of this Article III to the contrary, all tenders for purchase during any period in which the Series 1996 Bonds are registered in the name of Cede & Co. (or the nominee of any successor securities depository) shall be subject to the terms and conditions set forth in the Representation Letter and any notes and regulations promulgated by DTC.



**SECTION 3.15 DUTIES OF TRUSTEE WITH RESPECT TO PURCHASE OF SERIES 1996 BONDS**. The Trustee agrees, with respect to any optional or mandatory tender of the Series 1996 Bonds:

(a) to hold all moneys, other than moneys delivered to it by or on behalf of the Authority for the purchase of Series 1996 Bonds, delivered to it hereunder for the purchase of Series 1996 Bonds as agent and bailee of and in escrow for the benefit of, the Person or entity which shall have so delivered such moneys until the Series 1996 Bonds purchased with such moneys shall have been delivered to or for the account of such Person or entity; and

(b) to hold all moneys delivered to it hereunder by or on behalf of the Authority for the purchase of Series 1996 Bonds as agent and bailee of, and in escrow for the benefit of, the Owners who shall deliver Series 1996 Bonds to it for purchase until the Series 1996 Bonds purchased with such moneys shall have delivered to or for the account the Authority.

**SECTION 3.16 SPECIAL PROVISIONS REGARDING PROVIDER BONDS**. (a) Notwithstanding anything in this Indenture to the contrary, at any time that there shall be Provider Bonds Outstanding, (1) all such Provider Bonds shall be remarketed before any other Series 1996 Bonds are remarketed; (2) the Series 1996 Bonds shall not be converted to the Fixed Rate unless the Provider Bonds are converted simultaneously to the Fixed Rate; and (3) all such Provider Bonds shall be redeemed before any other Series 1996 Bonds are redeemed.

(b) It is understood that the Initial Liquidity Provider shall not release any Provider Bonds to the Remarketing Agent unless it is concurrently paid the principal amount of such Provider Bonds plus all interest accrued thereon at the Corporation Rate, plus any unpaid fees and expenses.

(c) Notwithstanding anything in Section 2.06 or elsewhere in this Indenture to the contrary, Provider Bonds shall bear interest at the Corporation Rate, unless the Initial Liquidity Provider shall have provided the Authority and the Trustee with written notice that an Event of Default under the Initial Liquidity Facility shall have occurred and shall then be continuing, in which event, Provider Bonds shall bear interest at the Default Rate for so long as such Event of Default shall continue. The Trustee shall be entitled to rely fully upon a certificate from the Initial Liquidity Provider as to the continuance of such Event of Default. All interest on Provider Bonds shall be computed on the basis of a year of 365 or 366 day year, as appropriate, and shall be payable on the same Interest Payment Dates as shall apply to Series 1996 Bonds that bear interest at the Weekly Rate.

## ARTICLE IV
## CONSTRUCTION FUND

**SECTION 4.01 CONSTRUCTION FUND**. A special fund is hereby created and designated "Dade County Expressway Authority Construction Fund" (herein sometimes called the "Construction Fund") which shall be held by the Trustee and to the credit of which there shall be deposited the amounts described in Sections 2.07 and 2.08. At the option of the Authority, there may also be deposited with the Trustee for the credit of the Construction Fund, for such purposes as described in a resolution of the Authority authorizing such deposit, any

moneys received by the Authority from any source, unless such moneys are required by this Indenture to be otherwise applied.

The moneys in the Construction Fund derived from the proceeds of Bonds shall be held in trust in the custody of the Trustee and applied to the payment of the Cost of a Project in accordance with this Article IV, Sections 2.07 and 2.08 and any Supplemental Indenture or to payment of such other Improvements or for such other purpose as specified in the resolution authorizing the deposit. Pending such application, such moneys shall be subject to a lien and charge in favor of the Owners of the Outstanding Bonds in the manner provided herein until paid out as herein provided. To the extent that no other funds under this Indenture shall be available to pay the principal of or interest then due on any Bonds, the Trustee shall apply amounts credited to the Construction Fund for such purpose, but only after it shall have been provided with an Opinion of Bond Counsel.

If the Authority shall issue Additional Bonds pursuant to Section 2.08, the Authority shall create and designate a special Account within the Construction Fund to which shall be deposited an amount of proceeds of such Additional Bonds as is specified in the Supplemental Indenture authorizing the issuance of such Additional Bonds.[5] Additional special Accounts may be created by the Authority for deposit of funds, if any, from other sources, as provided in the resolution directing such deposit. Upon the issuance of any Series of Bonds, the proceeds of which will be used to pay Capitalized Interest, the Authority shall create a Subaccount in the Account in the Construction Fund for such Series to which the Capitalized Interest for such Series shall be deposited. The Trustee, upon written direction from the Authority, shall transfer amounts on deposit in said Subaccount to the appropriate Subaccount of the Interest Subaccount at the times and in the amounts directed by the Authority.

**SECTION 4.02 PAYMENTS FROM CONSTRUCTION FUND**. Payment of the Cost of a Project shall be made from the Construction Fund as herein provided. All such payments shall be subject to the provisions and restrictions set forth in this Article and the Authority covenants that it will not cause or permit to be paid from the Construction Fund any sums except in accordance with such provisions and restrictions. Moneys in the Construction Fund shall be disbursed by the Trustee, upon the filing with the Trustee by the Authority of a requisition for such disbursement in the form of Exhibit D hereto, signed by an Authorized Officer and by the Consulting Engineer. Upon receipt of each requisition prepared in accordance herewith, the Trustee shall promptly issue its check or make other arrangements to fund the disbursements as directed in the requisition from amounts on deposit in the Construction Fund in an amount equal to the amount to be paid as set forth in such requisition and to promptly pay the same to the party specified in such requisition.

[5] The Third Supplemental Indenture to Amended and Restated Trust Indenture amended this sentence to read as follows:

> "If the Authority shall issue Additional Bonds pursuant to Section 2.08(a)(i), the Authority shall create and designate a special Account within the Construction Fund to which shall be deposited an amount of proceeds of such Additional Bonds as is specified in the Supplemental Indenture authorizing the issuance of such Additional Bonds."



**SECTION 4.03 COST OF A PROJECT**. For the purposes of this Article IV, the Cost of a Project shall include, without limitation, the following:

(a) obligations incurred for labor, materials, machinery and equipment in connection with the construction of enlargements, improvements, modifications and extensions, and for the restoration or relocation of property damaged or destroyed in connection with same and for the demolition and disposal of structures and all other obligations incurred to contractors, suppliers, materialmen, and laborers that are necessary or desirable in connection with a Project;

(b) interest accruing upon the Bonds prior to the commencement of and during construction or for any additional period if so provided, subject to any limitation, in any Series relating to such Bonds;

(c) the cost of acquiring by purchase, if such purchase shall be deemed expedient, and the amount of any award or final judgment in, or any settlement or compromise of, any proceeding to acquire by condemnation, such property, lands, rights of way, franchises, easements and other interests in lands constituting a part of, or as may be deemed necessary or convenient for the acquisition or construction of, a Project; the cost of options and partial payments thereon, the cost of filling, draining, or improving any lands so acquired, and the amount of any damages incident to or consequent upon the acquisition or construction of a Project;

(d) expenses of administration properly chargeable to a Project including legal expenses of consultants, financing charges, Trustee fees, bond counsel fees and expenses, the cost of preparing and issuing Bonds, the cost and charges of Credit Facilities and Liquidity Facilities, taxes or other municipal or governmental charges lawfully levied or assessed during construction upon a Project or any property acquired therefor, and premiums on insurance (if any) in connection with a Project during construction;

(e) fees and expenses of architects, engineers, surveyors, construction supervisors and similar professionals for making studies (including analyses of transportation alternatives, planning and environmental impact), surveys and estimates of cost and of revenue and for preparing plans and supervising construction, as well as for the performance of all other duties set forth herein in relation to the construction of a Project or the issuance of Bonds therefor;

(f) all items of cost for which the Authority is permitted to expend proceeds of indebtedness under the Act, including other items of expense not elsewhere in this Section specified, incident to the acquisition or construction and equipment of a Project and the placing of any improvements in operation and to the acquisition of real estate, franchises and rights of way therefor, including abstracts of title and title insurance;

(g) any amounts advanced by any agency of the State or federal government for any of the foregoing purposes and any obligation or expenses heretofore or hereafter incurred by the Authority for any of the foregoing purposes, including the cost of materials, supplies or equipment furnished by the Authority in connection with the construction of a Project and paid for by the Authority out of funds other than moneys in the Construction Fund, and further

including any bond anticipation notes issued by the Authority in the future to pay all or any part of the cost of a Project together with interest on any such bond anticipation notes; and

(h) the cost of any other Improvements to a Project as may be approved by a Supplemental Indenture.

For purposes of this Article IV, the Cost of a Project shall also include reimbursement to the Authority for any expenditures of the Authority that otherwise would constitute a Cost of a Project.

**SECTION 4.04 MODIFICATIONS AND AMENDMENTS TO PROJECT**. The Authority may, in its sole discretion, modify or amend any Project to include such Improvements as it deems appropriate.

**SECTION 4.05 DISPOSITION OF SUMS IN THE CONSTRUCTION FUND**. When the construction of any Project shall have been completed, which fact shall be evidenced by a certificate stating the date of such completion, signed and approved by the Consulting Engineer, the balance in the Construction Fund relating to that Project not reserved for the payment of any remaining part of the Cost of such Project, or not otherwise required to be applied in any specified manner by any Supplemental Indenture relating to Bonds issued to finance that Project, shall be transferred by the Trustee, upon the written direction of the Authority, in the following order of priority: first, to the credit of the Sinking Fund to the extent of any deficiency therein, second, to the redemption of Bonds, to the extent provided for in a Supplemental Indenture authorizing the issuance of such Bonds and third, to the General Account to be applied as provided in Section 5.12, provided that prior to such transfer the Authority first obtains an Opinion of Bond Counsel.



## ARTICLE V

## REVENUE AND FUNDS

**SECTION 5.01 COVENANTS AS TO TOLLS, ETC**. The Authority covenants:

(a) that it will continue in effect the present schedule of Tolls for traffic using the System until such schedule shall be increased, decreased, or otherwise changed, revised or reconfigured as hereinafter provided,

(b) that it will maintain (x) any recurring revenue stream pledged pursuant to clause (d) of the Granting Clauses of this Indenture and any Supplemental Indenture as part of the Trust Estate with respect to all Bonds or a particular Series of Bonds and (y) the Tolls for traffic using the System, in each case, at such lawful levels, as shall, in the opinion of the Consulting Engineer from time to time, result in producing Revenues sufficient in each Fiscal Year to provide an amount of Net Revenues in each Fiscal Year equal to not less than the greater of (i) one hundred twenty per centum (120%) of the Principal and Interest Requirements for such Fiscal Year on account of all Bonds then Outstanding and (ii) one hundred percent (100%) of the sum in such Fiscal Year of (A) any deficiency in the Debt Service Reserve Fund Requirement applicable to all Bonds then Outstanding and any amount scheduled to become due and payable to a Reserve Facility Provider in such Fiscal Year as a result of a draw or claim upon a Reserve



Facility issued by such Reserve Facility Provider, (B) the Principal and Interest Requirements for such Fiscal Year on account of all Bonds Outstanding, (C) the deposits to the Renewal and Replacement Account for such Fiscal Year required by the provisions of Section 5.06(e), and (D) the amount required to pay any current or past due Annual Repayment Requirements due the Department under Section 5.12. Notwithstanding the foregoing, Net Revenues in each such Fiscal Year, without regard to any amounts transferred or to be transferred from the Rate Stabilization Account to the Revenue Fund, shall be equal to not less than one hundred per centum (100%) of the Principal and Interest Requirements for such Fiscal Year on account of all Bonds then Outstanding.

(c) that on or before January 1 and July 1 of each Fiscal Year, commencing with the Fiscal Year ending June 30, 1998, it will review its financial condition and estimate and determine whether Net Revenues for such year are reasonably expected to be sufficient to enable the Authority to comply with subsection (b) above and file with the Trustee a copy of its resolution making such determination ("Determination "). If the Determination evidences the Authority's determination that Net Revenues are or are anticipated to be inadequate to comply with subsection (b) above, the Authority will forthwith request the Consulting Engineer to make its recommendations to the Authority, in writing, with a copy to the Trustee, as to a revision of the schedule of Tolls, rates, fees, rentals and other charges and any changes in methods of operation to provide sufficient Net Revenues to enable the Authority to comply with subsection (b) above.

Anything in this Indenture to the contrary notwithstanding, if the Authority shall comply with all recommendations of the Consulting Engineer on or before the expiration of eight months from the date of filing the Determination with the Trustee, the failure to meet the requirements of said subsection (b) in any Fiscal Year shall not, in and of itself, constitute an Event of Default.

(d) Notwithstanding anything in this Indenture to the contrary, (i) the Authority may remove Tolls when necessary for public safety or otherwise in an emergency situation and (ii) the Authority may relocate Toll collection facilities and may replace two-way Tolls with one-way Tolls so long as it remains in compliance with the provisions of this Indenture, including particularly this Section 5.01.

Notwithstanding any of the foregoing provisions of this Section 5.01, agreements and contracts for the operation and maintenance of the System in effect on the date of this Indenture shall not be subject to revisions except in accordance with their terms, and the Authority may enter into new agreements or contracts for the operation and maintenance of the System on such terms and for such periods of time as it shall determine to be proper.

The covenant set forth in subsection (b) above shall not be applicable to any principal and interest requirement attributable to any notes issued in anticipation of Bonds to be issued under this Indenture unless such notes are issued as Bonds hereunder.

The Authority further covenants that upon its making any request to the Consulting Engineer for its recommendations as to a revision of the schedules of Tolls or upon the receipt of any such recommendations from the Consulting Engineer or upon the adoption by the Authority of any revised schedule of Tolls, certified copies of any such request, recommendations or

revised schedule of Tolls so adopted will forthwith be filed with the Trustee and mailed by the Authority to all Bondholders who shall have filed their names and addresses with the Secretary of the Authority for such purpose.

**SECTION 5.02 UNIFORMITY OF TOLLS**. The Authority covenants that Tolls will be classified in a reasonable way to cover all traffic, so that the Tolls may be uniform in application to all traffic falling within any reasonable class regardless of the status or character of any Person, firm or corporation participating in the traffic, and that no reduced rate of Toll will be allowed within any such class except that provision may be made for the use of commutation or other tickets or privileges based upon frequency or volume. The Authority further covenants that no free vehicular passage will be permitted over the tolled sections of the System except to vehicles of members, employees and contractors of the Authority, the Department, any fire or police department or other governmental entity whose duties affect public safety, but in each case only on official acts of business, and except as may otherwise be required Section 338.155, Florida Statutes, as amended, any successor provision thereto and any by any other applicable law.

**SECTION 5.03 ANNUAL INSPECTION OF SYSTEM**. The Authority ovenants that, commencing with the Fiscal Year ending June 30, 1998, it will cause the Consulting Engineer employed by it under the provisions of Section 7.05, among such other duties as may be imposed upon them by the Authority or by this Indenture, to make an inspection of the System at least once in each year and, on or before the 1st day of January in each Fiscal Year, to submit to the Authority a report setting forth with respect to the System (a) their findings whether the System has been maintained in good repair, working order and condition and (b) their recommendations as to the proper maintenance, repair and operation of the System during the ensuing Fiscal Year. In lieu of performing such inspection with respect to the entire System and in the preparation of such report, with the prior written approval of an Authorized Officer, the Consulting Engineer may rely on inspections with respect to portions of the System conducted by or for the Department and on reports prepared by or for the Department.

Promptly after the receipt of such reports by the Authority, copies thereof shall be filed with the Trustee and mailed by the Authority to all Bondholders who shall have filed their names and addresses with the Secretary of the Authority for such purposes.

The Authority further covenants that, if any such report of the Consulting Engineer shall set forth that the System has not been maintained in good repair, working order and condition, it will, promptly restore the System to good repair, working order and condition with all expedition practicable in accordance with the recommendations of the Consulting Engineer.

**SECTION 5.04 ANNUAL BUDGET**. The Authority covenants, that commencing in the Fiscal Year ending on June 30, 1998, on or before the 20th day of April in each Fiscal Year it will prepare a preliminary budget for the ensuing Fiscal Year of (i) Operation and Maintenance Expenses and (ii) the amount to be deposited to the credit of the Renewal and Replacement Fund with respect to the System for the ensuing Fiscal Year. On or before the 20th day of April in such Fiscal Year copies of each such preliminary budget shall be filed with the Trustee and mailed by the Authority to the Consulting Engineer. The Authority further covenants that it will comply with any reasonable request of the Trustee or the Consulting Engineer as to the





classifications in which such budget shall be prepared, particularly with respect to the divisions into which such budget shall be divided.The Authority further covenants that on or before the 15th day of June in such Fiscal Year it will finally adopt the budget for the ensuing Fiscal Year of (i) Operation and Maintenance Expenses and (ii) the amount to be deposited to the credit of the Renewal and Replacement Fund with respect to the System for the ensuing Fiscal Year and (iii) the general purposes for which moneys held for the credit of the Renewal and Replacement Fund shall be appropriated. On or before the 20th day of June in such Fiscal Year copies of the Annual Budget shall be filed with the Trustee and mailed by the Authority to the Consulting Engineer.

If for any reason the Authority shall not have adopted the Annual Budget before the first day of any Fiscal Year, the preliminary budget for such Fiscal Year, or if there is none so approved, the Annual Budget for the preceding Fiscal Year shall, until the adoption of the Annual Budget, be deemed to be in force and shall be treated as the Annual Budget under the provisions of this Article.

The Authority may at any time adopt an amended or supplemental Annual Budget for the remainder of the then current Fiscal Year, and when so approved the Annual Budget so amended or supplemented shall be treated as the Annual Budget under the provisions of this Article. At least thirty (30) days prior to the adoption of any amended or supplemental Annual Budget, the Authority shall cause a notice of the proposed adoption of such amended or supplemental Annual Budget to be filed with the Trustee and to be mailed to the Consulting Engineer and all Bondholders who shall have filed their names and addresses with the Secretary of the Authority for such purpose. Such notice shall briefly set forth the nature of the proposed amended or supplemental Annual Budget and shall state that copies thereof are on file at the office of the Authority for inspection by all Bondholders. Copies of any such amended or supplemental Annual Budget shall be filed with the Trustee and mailed by the Authority to the Consulting Engineer and all Bondholders who shall have filed their names and addresses with the Secretary of the Authority for such purpose.

The Authority further covenants that the Operation and Maintenance Expenses incurred in any Fiscal Year will not exceed the reasonable and necessary amount thereof, and that it will not expend any amount or incur any obligations for maintenance, repair and operation of the System in excess of the amounts provided for Operation and Maintenance Expenses in the Annual Budget, except amounts which may be paid from the Renewal and Replacement Fund or the General Fund. Nothing contained in this Section shall limit the amount the Authority may expend for Operation and Maintenance Expenses in any Fiscal Year provided any amounts expended therefor in excess of the amounts provided for Operation and Maintenance Expenses in the Annual Budget shall be received by the Authority from some source other than the Revenues, and the Authority shall not make any reimbursement therefor from Revenues.

In the event that the Authority changes its Fiscal Year, the time periods and dates specified in this Section shall be deemed to be adjusted to accommodate such change in Fiscal Year.

**SECTION 5.05 REVENUE FUND**. A special fund is hereby created and designated "Dade County Expressway Authority Revenue Fund" (herein sometimes called the "Revenue

Fund"). The Authority covenants that it shall, to the extent practicable, deposit the portion of the Revenues comprised of cash Toll receipts daily into one or more special trust funds to be designated the "Dade County Expressway System Toll Collection Account" (the "Collection Account"). The Collection Account shall be established pursuant to a deposit trust agreement and maintained in one or more banks or trust companies designated by the Authority and eligible under the laws of the State to receive deposits of public funds. Expenses of administration incurred by the banks or trust companies maintaining the Collection Account shall be offset in part from time to time from investment earnings on amounts credited to the Collection Account. The Authority shall transfer or cause to be transferred all amounts credited to the Collection Account weekly, to the extent practicable, but not less often than once every two weeks, to the Trustee for deposit to the credit of the Revenue Fund. The Authority covenants further that, except as herein provided with respect to investment earnings on the Sinking Fund and as otherwise herein provided, all Revenues collected by the Authority other than cash Toll receipts will be deposited daily, to the extent practicable, but not less often than once every two weeks, with the Trustee for deposit to the credit of the Revenue Fund. The lien of this Indenture upon moneys and revenues that constitute part of the Trust Estate shall attach as soon as such moneys and revenues are collected by or on behalf of the Authority.

The moneys in the Revenue Fund shall be held by the Trustee in trust and applied upon the direction or order of an Authorized Officer to the payment of Operation and Maintenance Expenses, except the withdrawals which the Trustee is authorized to make as provided in this Article V, and, pending such application, such moneys shall be subject to a lien and charge in favor of the Owners of the Bonds issued and Outstanding hereunder and for the further security of such Owners until paid out or withdrawn as herein provided.



**SECTION 5.06 SINKING FUND; ADDITIONAL FUNDS AND ACCOUNTS**. A special fund is hereby created and designated "Dade County Expressway Authority Sinking Fund", herein sometimes called the "Sinking Fund"). Three other special funds are hereby created and designated, respectively, "Dade County Expressway Authority Debt Service Reserve Fund" (herein sometimes called the "Debt Service Reserve Fund"), "Dade County Expressway Authority Renewal and Replacement Fund" (herein sometimes called the "Renewal and Replacement Fund") and "Dade County Expressway Authority General Fund" (herein sometimes called the "General Fund"). The General Fund shall consist of the General Account, the Rate Stabilization Account and the Authority Account.The moneys in the Sinking Fund, the Debt Service Reserve Fund, the Renewal and Replacement Fund and the General Fund shall be held by the Trustee in trust in each case and applied as hereinafter provided with respect to each such Fund, Account and Subaccount therein and, pending such application, shall be subject to a lien and charge in favor of the Owners of the Bonds issued and Outstanding under this Indenture and for the further security of such Owners until paid out or transferred as herein provided.

It shall be the duty of the Trustee, on or before the 25th day of each month and/or on such other Deposit Day as may be required pursuant to a Supplemental Indenture, to withdraw from the Revenue Fund and transfer an amount equal to the amount of all moneys held for the credit of the Revenue Fund on the last day of the preceding month less an amount (to be held as a reserve for Operation and Maintenance Expenses) not in excess of eight and thirty-three hundredths per centum (8.33%) of the amount shown by the Annual Budget to be necessary for Operation and Maintenance Expenses for the current Fiscal Year (or any percentage less than



eight and thirty-three hundredths per centum (8.33%) as may be determined by the Authority by resolution from time to time filed with the Trustee) to the credit of the following Funds or Accounts in the following order:

(a) first, deposit to the credit of the Sinking Fund, such amount (or the entire sum so withdrawn if less than the required amount) as shall equal the sum of

(i) an amount that, together with an equal amount assumed to be deposited on one Deposit Day of each succeeding calendar month prior to the next Interest Payment Date, shall equal (as shall be estimated to equal during a Daily Rate Period or Weekly rate Period) the Interest Requirements of the Bonds payable on the next Interest Payment Date, and

(ii) an amount that, together with an equal amount assumed to be deposited on one Deposit Day of each succeeding calendar month prior to the next principal payment date (including any date established for the payment of Amortization Requirements) for the Bonds occurring within one year of the date of such deposit, shall equal the Principal Requirements of the Bonds payable on such next principal payment date (or date established for the payment of Amortization Requirements);

provided that in making such transfer to the Trustee, the Trustee shall take into account any accrued interest deposited from the proceeds of a Series of Bonds and any amounts specified in a certificate of an Authorized Officer delivered to the Trustee prior to such Deposit Day as credited to the Sinking Fund or a special Account in the Construction Fund, dedicated to pay Capitalized Interest on Bonds and anticipated to be available to pay interest on Bonds on the next Interest Payment Date; provided further, that, in making such transfer, the Trustee shall take into account any investment income realized by the Authority from the investment of moneys to the credit of the Sinking Fund and the Debt Service Reserve Fund (or any other excess in the Debt Service Reserve Fund transferred or then transferable to the Sinking Fund pursuant to Section 5.08(b)) since the Deposit Day next preceding the Interest Payment Date last occurring prior to such Deposit Day; and provided further that, in the event the Authority has entered into any Hedge Agreement pursuant to the provisions of this Indenture, amounts shall be deposited in the Sinking Fund at such other times and/or in such other amounts or transferred to such other parties as necessary to pay the Hedge Obligations due under the Hedge Agreement on a parity with interest due on the Bonds, all in the manner described in the Supplemental Indenture authorizing the issuance of any Series of Bonds where Hedge Obligations may become payable under a Hedge Agreement. Notwithstanding the foregoing, the Authority shall remain obligated to cure any deficiency in the amount so deposited for the payment of interest on Variable Rate Bonds on or prior to the applicable Interest Payment Date, and the Trustee shall transfer from the Revenue Fund, to the extent that moneys are available therein the amount necessary to cure any such deficiency on or prior to such Interest Payment Date.

(b) second, to the credit of the Debt Service Reserve Fund, such amount, if any, remaining after the deposits under clause (a) above (or the entire balance if less than the required amount) as shall equal the Debt Service Reserve Fund Deposit Requirement;

(c) third, deposit to the credit of the Renewal and Replacement Fund an amount equal to such amount, if any, as may be necessary to make the total amount to the credit of such Fund equal to the total amount budgeted for expenditure in the then current Fiscal Year by the Authority in its Annual Budget; and

(d) finally, deposit to the credit of the General Account, the balance, if any, remaining after making the deposits under clauses (a), (b) and (c) above.

The payments and deposits required pursuant to this Section shall be cumulative and the amount of any deficiency in any month shall be added to the amount otherwise required to be paid or deposited in each month thereafter until such time as such deficiency shall have been made up.

Notwithstanding the foregoing provisions of clause (a), if there shall be to the credit of the Sinking Fund on a Deposit Day the amount required to be on deposit to the credit of such Fund on the next Interest Payment Date and the next principal payment date, no further deposit into such Fund on account of the requirements of said clause shall then be required.

As provided in this Indenture with respect to the Series 1996 Bonds and as provided in a Supplemental Indenture authorizing any other Series of Bonds, if the interest on such Bonds is payable otherwise than semiannually on January 1 and July 1 of each year or if the principal or Amortization Requirements are payable otherwise than on January 1 or July 1, then the Authority shall provide in such Supplemental Indenture for such deposits to the Funds mentioned in clauses (a) and (b) above as shall be necessary to accrue evenly and to ensure the sufficiency of the required deposits to make timely payment of the debt service on such Bonds.



**SECTION 5.07 APPLICATION OF MONEYS IN SINKING FUND**. (a) The Trustee shall, on or before the Business Day immediately preceding each Interest Payment Date, withdraw from the Sinking Fund and transfer to the Paying Agent, and the Paying Agent shall (1) remit by mail to each Owner of Bonds the amounts required for paying the interest on such Bonds as such interest becomes due and payable and (2) set aside or deposit in trust with the Paying Agent, the amounts required for paying the principal of such Bonds as such principal becomes due and payable.

(b) Except in the case of any Bonds that constitute Variable Rate Bonds or Put Bonds, the Authority may direct the Trustee to purchase Bonds identified by the Authority prior to maturity at the most advantageous price obtainable with reasonable diligence by the Authority, such price not to exceed the principal of such Bonds. The Trustee shall pay the purchase price and the interest accrued on such Bonds to the date of settlement therefor from the Sinking Fund; provided, however, that money in the Sinking Fund may be used by the Trustee to purchase Bonds for cancellation only to the extent said moneys are in excess of the amount required for payment of the Bonds theretofore matured and the total amount of interest and principal on the Bonds scheduled to become due on the next succeeding Interest Payment Date or Principal Payment Date, respectively.

(c) In the case of Bonds secured by a Credit Facility or Liquidity Facility, amounts on deposit in the Sinking Fund may be applied as provided in the applicable Supplemental Indenture



to reimburse the Credit Provider or Liquidity Provider for amounts drawn under such Credit Facility or Liquidity Facility to pay the principal or Purchase Price of and premium, if any, and interest on such Bonds, as appropriate.

**SECTION 5.08 USE OF MONEYS IN DEBT SERVICE RESERVE FUND**. (a) Moneys held for the credit of the Debt Service Reserve Fund shall be transferred to the credit of the Sinking Fund and used for the purpose of paying the principal and interest of all Bonds whenever and to the extent that the moneys held for the credit of the Sinking Fund and available moneys held for the credit of the General Fund and the Renewal and Replacement Fund shall be insufficient for such purpose.If the amount transferred from the Debt Service Reserve Fund to the Sinking Fund pursuant to the preceding paragraph shall be less than the amount required to be transferred thereunder, any amount thereafter deposited to the credit of the Debt Service Reserve Fund shall be immediately transferred to the Sinking Fund as and to the extent required to make up such deficiency.

(b) If on the Deposit Day immediately preceding each Interest Payment Date and/or principal payment date in each Fiscal Year the moneys held for the credit of the Debt Service Reserve Fund shall exceed an amount equal to the Debt Service Reserve Fund Requirement, the Trustee shall transfer such excess to the credit of the Sinking Fund.

(c) Whenever the amount on deposit in the Debt Service Reserve Fund is less than the Debt Service Reserve Fund Requirement, the Trustee shall notify the Authority of the amount of the deficiency. Upon such notification, the Trustee shall transfer from moneys held to the credit of the Revenue Fund on the Deposit Day in each month thereafter, to the credit of the Debt Service Reserve Fund an amount not less than Debt Service Reserve Fund Deposit Requirement until such deficiency is remedied.

(d) The Authority may satisfy the Debt Service Reserve Fund Requirement by the deposit of a Reserve Facility as set forth below, provided that the following provisions have been fulfilled.

(i) A surety bond or insurance policy issued to the Trustee by a company licensed to issue an insurance policy guaranteeing the timely payment of debt service on the Bonds (a "municipal bond insurer") may be deposited in the Debt Service Reserve Fund to meet the Debt Service Reserve Fund Requirement if the claims paying ability of the issuer thereof shall be rated "AAA" or "Aaa" by S&P or Moody's, respectively.

(ii) A surety bond or insurance policy issued to the Trustee by an entity other than a municipal bond insurer may be deposited in the Debt Service Reserve Fund to meet the Debt Service Reserve Fund Requirement if the form and substance of such instrument and the issuer thereof shall be approved by the Credit Provider.

(iii) An unconditional irrevocable letter of credit issued to the Trustee by a bank may be deposited in the Debt Service Reserve Fund to meet the Debt Service Reserve Fund Requirement if the issuer thereof is rated at least "AA" by S&P. The letter of credit shall be payable in one or more draws upon presentation by the beneficiary of a sight draft accompanied by its certificate that it then holds insufficient funds to make a

required payment of principal of or interest on the Bonds. The draws shall be payable within two days of presentation of the sight draft. The letter of credit shall be for a term of not less than three years. The issuer of the letter of credit shall be required to notify the Authority and the Trustee, not later than 30 months prior to the stated expiration date of the letter of credit, as to whether such expiration date shall be extended, and if so, shall indicate the new expiration date.

If such notice indicates that the expiration date shall not be extended, the Authority shall deposit in the Debt Service Reserve Fund an amount sufficient to cause the cash or Investment Securities on deposit in the Debt Service Reserve Fund together with any other qualifying credit instruments, to equal the Debt Service Reserve Fund Requirement on all Outstanding Bonds, such deposit to be paid in equal installments on at least a semi annual basis over the remaining term of the letter of credit, unless the Reserve Facility is replaced by a Reserve Facility meeting the requirements in any of subparagraphs (i) or (ii) above or in this subparagraph (iii). The letter of credit shall permit a draw in full not less than two weeks prior to the expiration or termination of such letter of credit if the letter of credit has not been replaced or renewed. The Trustee is directed to draw upon the letter of credit prior to its expiration or termination unless an acceptable replacement is in place or the Debt Service Reserve Fund is fully funded in its required amount.

(iv) The use of a Reserve Facility pursuant to this Section shall be subject to receipt of an opinion of counsel acceptable to the Credit Provider and in form and substance satisfactory to each as to the due authorization, execution, delivery and enforceability of such Reserve Facility in accordance with its terms, subject to applicable laws affecting creditors' rights, generally, and, in the event the issuer of such credit instrument is not a domestic entity, an opinion of foreign counsel in form and substance satisfactory to the Credit Provider. In addition, the use of an irrevocable letter of credit shall be subject to receipt of an opinion of counsel acceptable to the Credit Provider and in form and substance satisfactory to the Credit Provider to the effect that payments under such letter of credit would not constitute avoidable preferences under Section 547 of the U.S. Bankruptcy Code or similar state laws with avoidable preference provisions in the event of the filing of a petition for relief under the U.S. Bankruptcy Code or similar state laws by or against the Authority (or any other account party under such letter of credit).

(v) The obligation to reimburse a Reserve Facility Provider for any fees, expenses, claims or draws upon such Reserve Facility shall be subordinate to the payment of the principal and interest on the Bonds. Subject to the second succeeding sentence, the right of a Reserve Facility Provider to payment for or reimbursement of claims or draws on a Reserve Facility and its fees and expenses (including all Policy Costs in the case of the Initial Reserve Facility) shall be prior to cash replenishment of the Debt Service Reserve Fund. The Reserve Facility shall provide for a revolving feature under which the amount available thereunder will be reinstated to the extent of any reimbursement of draws or claims paid. If the revolving feature is suspended or terminated for any reason, the right of the Reserve Facility Provider to reimbursement will be further subordinated to cash replenishment of the Debt Service Reserve Fund to an amount equal to the difference between the full original amount available under the Reserve Facility and the amount then available for further draws or claims. If (A) the Reserve Facility Provider





becomes insolvent, (B) the issuer of the Reserve Facility defaults in its payment obligations thereunder, (C) the claims-paying ability of the Reserve Facility Provider of an insurance policy or surety bond falls below a S&P "AAA" or a Moody's "Aaa", or (D) the rating of the Reserve Facility Provider of a letter of credit falls below a S&P "AA", the obligation to reimburse such Reserve Facility Provider shall be subordinate to the cash replenishment of the Debt Service Reserve Fund.

(vi) If (A) the revolving reinstatement feature described in the preceding subparagraph is suspended or terminated, (B) the rating of the claims paying ability of the Reserve Facility Provider of the surety bond or insurance policy falls below a S&P "AAA" or a Moody's "Aaa", or (C) the rating of the rating of the Reserve Facility Provider of the letter of credit falls below a S&P "AA", the Authority shall either (D) deposit into the Debt Service Reserve Fund an amount sufficient to cause the cash or Investment Securities on deposit in the Debt Service Reserve Fund to equal the Debt Service Reserve Fund Requirement on all Outstanding Bonds, such amount to be paid over the ensuing five years in equal installments deposited at least semi annually or (E) replace such instrument with a surety bond, insurance policy or letter of credit meeting the requirements in any of subparagraphs (i), (ii) or (iii) above within six months of such occurrence. In the event (F) the rating of the claims paying ability of the Reserve Facility Provider of the surety bond or insurance policy falls below a S&P or Moody's "A", (G) the rating of the Reserve Facility Provider of the letter of credit falls below a S&P or Moody's "A", (H) the Reserve Facility Provider defaults in its payment obligations or (I) the Reserve Facility Provider becomes insolvent, the Authority shall either deposit into the Debt Service Reserve Fund an amount sufficient to cause the cash or Investment Securities on deposit in the Debt Service Reserve Fund to equal the Debt Service Reserve Fund Requirement on all Outstanding Bonds, such amount to be paid over the ensuing year in equal installments on at least a monthly basis or replace such instrument with a surety bond, insurance policy or letter of credit meeting the requirements in any of subparagraphs (i), (ii) or (iii) above within six months of such occurrence.

(vii) Where applicable, the amount available for draws or claims under the Reserve Facility may be reduced by the amount of cash or Investment Securities deposited in the Debt Service Reserve Fund pursuant to the last sentence of the preceding subparagraph (vi).

(viii) The Trustee shall ascertain the necessity for a claim or draw upon the Reserve Facility and shall provide notice to the Reserve Facility Provider in accordance with its terms not later than three days (or such longer period as may be necessary depending on the permitted time period for honoring a draw under the Reserve Facility) prior to each Interest Payment Date. In the case of the Initial Reserve Facility, such notice shall be provided at least two Business Days prior to each Interest Payment Date.

(ix) Cash on deposit in the Debt Service Reserve Fund shall be used (or Investment Securities purchased with such cash shall be liquidated and the proceeds applied as required) prior to any drawing on any Reserve Facility. If and to the extent that more than one Reserve Facility is deposited in the Debt Service Reserve Fund, drawings

thereunder and repayments of costs associated therewith shall be made on a pro rata basis, calculated by reference to the maximum amounts available thereunder.

(x) The Trustee shall have no responsibility to monitor the rating of any Reserve Facility Provider.

(xi) As security for the obligations of the Authority under the Series 1996 Debt Service Reserve Fund Policy Agreement, the Authority hereby grants to the Initial Reserve Facility Provider a lien on and security interest in the Net Revenues subordinate only to the funding requirements with respect to the Principal and Interest Requirements on Bonds established under this Indenture pursuant to Section 5.06(a). In the event that the Authority shall fail to repay any Policy Costs when due under the Series 1996 Debt Service Reserve Fund Policy Agreement, the Initial Reserve Facility Provider shall be entitled to exercise any and all remedies available at law, including but not limited to the right to bring an action against the Trustee or the Authority for specific performance, other than (i) acceleration of the maturity of the Bonds, or (ii) remedies which would adversely affect Bondholders.[6]

**SECTION 5.09 USE OF MONEYS IN RENEWAL AND REPLACEMENT FUND**. Except as hereinafter provided in this Section, moneys held for the credit of the Renewal and Replacement Fund shall be disbursed only for the purpose of paying the cost of

[6] The Sixth Supplemental Indenture to Amended and Restated Indenture added the following new clause (xii) at the conclusion thereof as follows:

(xii) Notwithstanding anything in this Indenture to the contrary:

(A) the Authority may satisfy any incremental increase in the Debt Service Reserve Fund Requirement resulting from the issuance of Bonds after June 30, 2010 with a Reserve Facility if the Reserve Facility Provider of such Reserve Facility has a long-term credit rating of not less than "Al/A+" from Moody's and S&P respectively at the time of deposit of such Reserve Facility into the Debt Service Reserve Fund.

(B) if (1) such a Reserve Facility Provider becomes insolvent or defaults in its payment obligations on its Reserve Facility, or (2) the long-term credit rating of such Reserve Facility Provider falls below a Moody's "A2" or an S&P "A", the obligation to reimburse such Reserve Facility Provider shall be subordinate to the cash replenishment of the Debt Service Reserve Fund.

(C) if (1) the revolving reinstatement feature of such a Reserve Facility described in clause (d)(v) of this Section is suspended or terminated, (2) the long-term credit rating of the Reserve Facility Provider of such Reserve Facility falls below a Moody's "A-2" or an S&P "A" or is withdrawn or suspended, or (3) such Reserve Facility Provider becomes insolvent or defaults in its payment obligations on its Reserve Facility, the Authority shall either deposit into the Debt Service Reserve Fund an amount sufficient to cause the cash or Investment Securities on deposit in the Debt Service Reserve Fund to equal the Debt Service Reserve Fund Requirement on all Outstanding Bonds, such amount to be paid over the ensuing three years in equal installments deposited at least semi-annually or replace such instrument with a surety bond, insurance policy or letter of credit meeting the requirements of this clause (xii) above within six months of such occurrence.

(D) To the extent not inconsistent with this clause (xii), the requirements of this Indenture, including particularly Section 5.08(d), applicable to the Reserve Facilities shall apply to Reserve Facilities acquired to satisfy any incremental increase in the Debt Service Reserve Fund Requirement resulting from the issuance of Bonds after June 30, 2010.



unusual or extraordinary maintenance or repairs, maintenance or repairs not recurring annually, and renewals and replacements, including major items of equipment,

repairs or replacements resulting from an emergency caused by some extraordinary occurrence, so characterized by a certificate signed by an Authorized Officer, approved by the Consulting Engineer and filed with the Trustee stating that the moneys in the Revenue Fund and insurance proceeds, if any, available therefor are insufficient to meet such emergency, and

paying all or any part of the cost of any System Improvements.

Notwithstanding the foregoing, so long as the Authority shall remain obligated to pay the Annual Repayment Requirements to the Department and whenever the Authority shall otherwise be legally or contractually obligated to pay any other moneys from the General Fund to the Department, the Authority may expend moneys credited to the Renewal and Replacement Fund pursuant to clause (c) of the preceding sentence only with the prior written approval of the Department.

Disbursements by the Trustee from the Renewal and Replacement Fund shall be made in accordance with the provisions of Section 4.02 for payments from the Construction Fund to the extent that such provisions may be applicable.

If at any time the moneys held for the credit of the General Fund and Sinking Fund shall be insufficient for the purpose of paying the principal of and interest on all the Bonds as such principal and interest become due and payable, then the Trustee shall transfer from any unencumbered moneys held for the credit of the Renewal and Replacement Fund to the credit of the Sinking Fund an amount sufficient to make up any such deficiency.

The Trustee shall from time to time transfer any moneys from the Renewal and Replacement Fund to the credit of the Revenue Fund upon the receipt of a written statement of an Authorized Officer directing such transfer and certifying that the amount so to be transferred is no longer required for the purposes of the Renewal and Replacement Fund.

**SECTION 5.10 [RESERVED]**

**SECTION 5.11 [RESERVED]**

**SECTION 5.12 USE OF MONEYS IN GENERAL FUND**. At the written direction of the Authority, the Trustee shall apply, transfer or pay moneys held to the credit of the General Account as follows: (i) first, (a) to the payment of the scheduled debt service payments required to be made by the Authority to the Department under such State Infrastructure Bank Loan Agreements as may then be in effect between the Authority and the Department, and then, (b) if any portion of the then current Non-contingent Portion of Annual Repayment Requirements or any portion of the Non-contingent Portion of Annual Repayment Requirements from prior Fiscal Years remain unpaid, to pay to the Department to the extent moneys are available in the General Account $2,000,000 per Fiscal Year (or the remaining balance if less than $2,000,000) toward the unpaid portion of the Non-contingent Portion of Annual Repayment Requirements and the Non-contingent Portion of Annual Repayment Requirements from prior Fiscal Years that

remains unpaid until the same has been paid in full; (ii) second, through the end of the Fiscal Year ending on June 30, 2001 to transfer to the Authority Account the next $1,000,000 available in the General Account per Fiscal Year; (iii) third, if any portion of the Contingent Portion of Annual Repayment Requirements remains unpaid, to pay to the Department the unpaid portion of the Contingent Portion of Annual Repayment Requirements; (iv) fourth, to transfer to the Rate Stabilization Account such amount as may be set forth in a certificate delivered by an Authorized Officer to the Trustee from time to time, and (v) fifth, to transfer to the Authority Account the balance.

The Authority may apply or cause to be applied moneys held for the credit of the Rate Stabilization Account, upon the written direction of an Authorized Officer at such times and in such amounts as shall be set forth in such written direction, for transfer to the Revenue Fund. The Trustee shall also transfer moneys held for the credit of the Rate Stabilization Account to the Revenue Fund to the extent necessary to avoid a deficiency in the required deposits thereto and the required payments therefrom.

The Authority may apply or cause to be applied moneys credited to the Authority Account for any lawful purpose of the Authority, including, but not limited to, the payment of rebate, payments due to Credit Providers, Liquidity Providers and Reserve Facility Providers and Hedge Charges.

Notwithstanding the foregoing, if moneys held for the credit of the Sinking Fund shall be insufficient to pay the principal of and interest on all Bonds at the time such interest and principal income become due and payable, the Trustee shall transfer from any moneys held to the credit of the General Fund for deposit to the credit of the Sinking Fund an amount equal to such deficiency.

The Authority covenants that it shall direct the Trustee to make the transfers described above in such a manner so that the Authority shall remain at all times in full compliance with the terms of the Transfer Agreement.

**SECTION 5.13 MONEYS SET ASIDE TO BE HELD IN TRUST**. All moneys that the Trustee shall have withdrawn from the Sinking Fund or shall have received from any other source and set aside, or deposited with the Bond Registrar or Paying Agents, for the purpose of paying any of the Bonds hereby secured at the maturity thereof shall be held in trust for the respective Owners of such Bonds. But any moneys that shall be so set aside or deposited and that shall remain unclaimed by the Owners of such Bonds for the period of two (2) years after the date on which such Bonds shall have become due and payable shall upon request in writing be paid to the Authority or to such officer, board or body as may then be entitled by law to receive the same, and thereafter the Owners of such Bonds shall look only to the Authority or to such officer, board or body, as the case may be, for payment and then only to the extent of the amounts so received without any interest thereon, and the Trustee, the Bond Registrar, the Trustee and the Paying Agent shall have no responsibility with respect to such moneys.

**SECTION 5.14 CANCELLATION OF BONDS**. Except as otherwise provided herein or in a Supplemental Indenture, all Bonds paid or purchased, either at or before maturity, shall be canceled upon the payment or purchase of such Bonds and shall be delivered to the Bond Registrar when such payment or purchase is made. All Bonds canceled under any of the provisions of this Indenture shall be destroyed by the Bond Registrar, and the Bond Registrar shall execute a certificate of destruction in triplicate describing the Bonds so destroyed. One executed certificate of destruction shall be filed with the Secretary of the Authority and one with the Paying Agent and the other executed certificate shall be retained by the Bond Registrar.

**SECTION 5.15 SEPARATE ACCOUNTS**. The moneys required to be accounted for in each of the Funds, Accounts and Subaccounts established herein may be deposited in a single bank account, and funds allocated to the various Funds, Accounts and Subaccounts established herein may be invested in a common investment pool, provided that adequate accounting records are maintained to reflect and control the restricted allocation of the moneys on deposit therein and such investments for the various purposes of such Funds, Accounts and Subaccounts as herein provided.

The designation and establishment of the various Funds and Accounts in and by this Indenture shall not be construed to require the establishment of any completely independent, self balancing funds as such term is commonly defined and used in governmental accounting, but rather is intended solely to constitute an earmarking of certain revenue for certain purposes and to establish certain priorities for application of such revenue as herein provided.

## ARTICLE VI

## DEPOSITARIES OF MONEYS, SECURITY FOR DEPOSITS AND INVESTMENTS OF FUNDS

**SECTION 6.01 SECURITY FOR DEPOSITS**. All moneys received by or on behalf of the Authority, subject to the provisions of this Indenture, including all such moneys delivered to the Trustee, shall be held in accordance herewith by the Trustee, or at the written direction of an Authorized Officer, shall be deposited with a Depositary or Depositaries. All such moneys shall be held in trust, shall be applied only in accordance with the provisions of this Indenture and shall not be subject to lien or attachment by any creditor of the Authority or Trustee except as otherwise provided in this Indenture.

All moneys held by the Trustee or a Depositary hereunder in excess of the amount guaranteed by the Federal Deposit Insurance Corporation or other federal agency shall be continuously secured for the benefit of the Authority and the Owners of the Bonds in such manner as may then be provided by applicable State or federal laws or regulations regarding the security for, or granting a preference in the case of, the deposit of public funds; provided, however, that it shall not be necessary for the Paying Agent to give security for the deposits of any moneys with them for the payment of the principal of or the redemption premium or the interest on any Bonds issued hereunder or for the Authority to give security for any moneys which shall be represented by obligations purchased under the provisions of this Article as an investment of such money.

**SECTION 6.02 INVESTMENT OF MONEYS**. Moneys held for the credit of the Construction Fund, the Revenue Fund, the Sinking Fund, the Debt Service Reserve Fund, the Renewal and Replacement Fund, the General Fund and the Rebate Fund shall, as nearly as may

be practicable, be continuously invested and reinvested by the Trustee, only upon written direction or telephonic direction promptly followed by written direction of an Authorized Officer to the Trustee, in Investment Securities which shall mature, or which shall be subject to redemption by the holder thereof at the option of such holder, not later than the respective dates when moneys held for the credit of said Funds and the Accounts and Subaccounts will be estimated by an Authorized Officer to be required for the purposes intended (which Investment Securities, in the case of the Debt Service Reserve Fund, shall not mature later than five years after the date of purchase). As to funds invested in Time Deposits, each such Time Deposit shall permit the moneys so placed to be available for use at the time provided above. Any and all such investments shall comply with any requirements set forth in any certificate or other instrument of the Authority with respect to preventing any Series of Bonds from being characterized as "arbitrage bonds" within the meaning of Section 148 of the Code or any successor provision thereto. The Trustee shall assume that any Investment Security in which the Authority has directed it to invest is a lawful investment for the Authority.

Investment Securities so purchased as an investment of moneys in any such Fund, Account or Subaccount shall be deemed at all times to be part of such Fund, Account or Subaccount. The interest accruing thereon and any gain realized from such investment shall be credited to, and any loss resulting from such investment shall be charged to, the respective Fund, Account or Subaccount. An Authorized Officer may direct the Trustee to sell or present for payment or redemption any Investment Securities so acquired whenever it shall be necessary to do so in order to provide moneys to meet any payment from such Fund, Account or Subaccount. Neither the Authority, the Trustee nor any agent thereof shall be liable, or responsible, for any loss resulting from any such investment. The Trustee shall value Investment Securities credited to the Funds, Accounts and Subaccounts upon request of the Authority or the Credit Provider, but, in any event, not less often than annually, at the market value thereof, exclusive of accrued interest.

Any and all income received from the investment of moneys in the Revenue Fund and the General Fund shall be deposited upon receipt thereof in the Revenue Fund.

Any and all income received from the investment of moneys in the Accounts and Subaccounts in the Sinking Fund shall be retained in the Accounts and Subaccounts in which they are earned.

Any and all income earned on investments in the Debt Service Reserve Fund shall be transferred to the Sinking Fund; provided, however, such income in the Debt Service Reserve Fund shall be retained in Debt Service Reserve Fund in the event that amounts on deposit therein are less than the related Debt Service Reserve Fund Requirement.

Any and all income received from the investment of moneys in the Construction Fund shall remain therein until completion of the Project for which such moneys were deposited in the Construction Fund and, to the extent any excess income remains at the end of the Project, same shall be applied in the manner set forth in Section 4.05.

Any income received from the investment of moneys in the Rebate Fund shall remain therein.





## ARTICLE VII

## PARTICULAR COVENANTS

**SECTION 7.01 PAYMENT OF PRINCIPAL, INTEREST AND PREMIUM; LIMITED OBLIGATIONS**. The Authority covenants that it will promptly pay the principal of and the interest on the Bonds, and any premium required for the retirement of said Bonds by purchase or redemption, at the places, on the dates and in the manner specified herein and in said Bonds.Except as otherwise provided in this Indenture, the principal, interest and premium on the Bonds are payable solely from the Revenues which are hereby pledged to the payment thereof and the moneys on deposit from time to time in the Funds, Accounts and Subaccounts, in the manner and to the extent hereinabove particularly specified, and nothing in the Bonds or in this Indenture shall be construed as obligating the Authority to pay the principal, the interest and premium, if any, thereon except from the Revenues and the moneys on deposit from time to time in the Funds, Accounts and Subaccounts. The Authority has no taxing power.

**SECTION 7.02 CONSTRUCTION OF A PROJECT**. The Authority covenants that it will construct or otherwise carry out each Project for which Bonds shall be issued in accordance with this Indenture and in conformity with law and the requirements of governmental authorities having jurisdiction thereover, and that it will complete, or cause the completion of, such Projects with all expedience practicable.

The Authority further covenants that it will require each Person, firm or corporation with whom it may contract for labor or materials in connection with a Project to furnish a performance bond, in such amount, if any, as may be required under State law or as may otherwise be required by the Authorized Officer charged with responsibility for establishing the amount of such performance bond, to insure completion and performance of such contract or, in lieu thereof, to deposit with an Authorized Officer marketable securities having a market value equal to the amount of such payment and performance bond and eligible as security for the deposit of trust funds under regulations of the Board of Governors of the Federal Reserve System, and to carry such workers' compensation or employers' liability insurance and such builders' risk insurance, if any, as may be required by law. The Authority further covenants and agrees that in the event of any default under any such contract and the failure of the surety to complete the contract, it will proceed to collect under any such performance bond or securities and the proceeds of any such performance bond or securities shall forthwith, upon receipt of such proceeds, be applied toward the completion of the contract in connection with which such performance bond or securities shall have been furnished. The Authority further covenants and agrees that each such contract will also provide that payments thereunder shall not be made by the Authority in excess of such retainages as required by State law or as are established by the Authority upon the recommendation of the Consulting Engineer.

**SECTION 7.03 OPERATION OF THE SYSTEM**. The Authority covenants: (a) to establish from time to time and to enforce reasonable rules and regulations governing the use and operation of the System to the extent determined by the Authority to be necessary to provide for the safe and efficient operation of the System, (b) that all compensation, salaries, fees, wages and other amounts paid by it in connection with the maintenance, repair and operation of the System will be reasonable, (c) that no more Persons will be employed by it than are necessary, (d) that it

will maintain and operate the System, or cause the System to be maintained and operated, in a safe, efficient and economical manner, (e) that it will at all times maintain the System, or cause the System to be maintained, in good repair and in sound operating condition and (f) that it will make all necessary repairs, renewals and replacements from moneys available for that purpose, or will cause the same to be made.

**SECTION 7.04 COVENANT AGAINST ENCUMBRANCES**. The Authority covenants that it will pay all taxes and assessments or other governmental charges lawfully levied or assessed upon or in respect of the System or upon any part thereof or upon any Revenues when the same shall become due and payable by the Authority. Except to the extent permitted in this Indenture, the Authority will not create or suffer to be created any lien or charge upon the System or any part thereof or upon the Revenues ranking equally with or prior to the Bonds except, to the extent provided herein with respect to the Series 1996 Bonds or in the Supplemental Indenture authorizing the issuance of any other Series of Bonds, the lien for the benefit of any Credit Provider or Liquidity Provider securing payment of the Bonds, and that, it will pay or cause to be discharged, or will make adequate provision to satisfy and discharge, within sixty days after the same shall accrue, all lawful claims and demands against the Authority for labor, materials, supplies or other objects which, if unpaid, might by law become a lien upon the System or any part thereof or upon the Revenues; provided, however, that nothing contained in this Section 7.04 shall require the Authority to pay or cause to be discharged, or make provision for, any such lien or charge so long as the validity thereof shall be contested in good faith and by appropriate legal proceedings.



**SECTION 7.05 RETENTION OF CONSULTING ENGINEER AND ACCOUNTANTS; APPOINTMENT OF OFFICERS**. The Authority covenants that it will, for the purpose of performing and carrying out the duties imposed on the Consulting Engineer by this Indenture, engage, as needed, an independent engineer or traffic consultants or firm or corporation of engineers or rate consultants, in each case with recognized ability and standing, and that it will, for the purpose of performing and carrying out the duties imposed on the Accountants by this Indenture, engage as needed, an independent certified public accountant or firm of certified public accountants of recognized ability and standing. The Authority covenants that it will appoint and maintain a Chairman, Vice Chairman, Secretary and such other Authorized Officers as it deems appropriate, and delegate to such Persons the duties imposed or permitted to be imposed upon them by this Indenture.

**SECTION 7.06 INSURANCE**. To the extent available at reasonable rates, the Authority covenants that it will maintain insurance, or the Department on its behalf, will at all times maintain insurance with respect to the System, in the form of multiple peril, all risks insurance, provided by a responsible insurance company or companies licensed to and doing business in the State, in a reasonable and customary amount recommended by the Consulting Engineer. To the extent available at reasonable rates, the Authority, or the Department on its behalf, further covenants that it will at all times carry policies of insurance from a responsible insurance company or companies against loss, total or partial, of the use and occupancy of the System, or any part thereof, which will provide income to the Authority during the period of suspension of use.



Notwithstanding the foregoing provisions of this Section, the Authority may institute and maintain self insurance programs with regard to such risks as shall be consistent with the recommendations of the Consulting Engineer.

The Net Proceeds of any casualty, whether from insurance or self-insurance, shall be applied pursuant to Section 7.07. The Net Proceeds of all insurance covering loss of Revenues shall be deposited to the credit of the Revenue Fund.

**SECTION 7.07 DAMAGE, DESTRUCTION OR CONDEMNATION**. If the System or any portion thereof is destroyed or damaged by fire or other casualty, or title to, or the temporary use of the System or any portion thereof shall be taken under the exercise of the power of eminent domain, the Authority shall, within sixty days after such damage, destruction or condemnation elect, to the extent applicable, one of the two following options by written notice from an Authorized Officer of such election to the Trustee:

Option A - Repair, Restoration or Replacement. Except as provided in Option B, the Authority will cause the Net Proceeds of any insurance or the Net Proceeds of any payment made in connection with a self-insurance election, or the Net Proceeds of any claim or condemnation award to be remitted to the Trustee to be applied to the prompt repair, restoration or replacement of the System. Any such Net Proceeds received by the Trustee shall be deposited in the Construction Fund and applied by the Trustee toward the payment of the Cost of such repair, restoration or replacement, utilizing the same requisition process set forth in Article IV for the payment of the Cost of a Project. If the Net Proceeds are sufficient for such purpose, the balance remaining shall be transferred to the credit of the Revenue Fund. If the Net Proceeds are insufficient for such purpose, such deficiency may be supplied out of any available moneys in the General Fund, and if sums are unavailable therein, from the Revenue Fund.

Option B - Redemption.

(i) In the event that the Authority has determined that its operations have not been materially adversely affected and that it is not in the best interest of the Authority to repair, restore or replace that portion of the System so damaged, destroyed or condemned, then the Authority shall not be required to comply with the provisions of subparagraph (a) set forth above and: (A) if the Net Proceeds are less than the Principal and Interest Requirements during the succeeding twelve months on all Outstanding Bonds after taking into account funds on deposit in the Sinking Fund intended to pay such Principal and Interest Requirements, such Net Proceeds shall be deposited in the Revenue Fund; or (B) if the Net Proceeds are equal to or greater than the net amount specified in clause (A), then the net amount specified shall be deposited in the Revenue Fund and the amount in excess thereof shall be applied to effect the special mandatory redemption, in part, of Outstanding Bonds in accordance with Section 3.01(b), in the case of the Series 1996 Bonds, or in accordance with such similar provisions as may apply to the redemption of other Outstanding Bonds.

(ii) In the event that the Authority has determined that the System's operations have been materially adversely affected and that it is not in the best interest of the Authority to repair, restore or replace the System, and that the Net Proceeds, together

with all other sums in the Funds, Accounts and Subaccounts, are at least equal to the interest and principal remaining payable on all Outstanding Bonds as of the next Interest Payment Date that is at least 60 days after such determination, then the Authority shall not be required to comply with the provisions of subparagraph (a) set forth above and the Net Proceeds shall be applied to effect the special mandatory redemption, in whole, of Outstanding Bonds in accordance with Section 3.01(b), in the case of the Series 1996 Bonds, or in accordance with such similar provisions as may apply to the redemption of other Outstanding Bonds.

**SECTION 7.08 USE OF REVENUES**. The Authority covenants and agrees that none of the Revenues will be used for any purpose other than as provided in this Indenture. The Authority further covenants that it will adopt such resolutions and such rules and regulations as may be necessary or appropriate to carry out the obligations of the Authority under the provisions of this Indenture.

**SECTION 7.09 [RESERVED]**

**SECTION 7.10 ENFORCEMENT OF COLLECTIONS**. The Authority will diligently enforce and collect all Tolls, fees, rentals or other charges for the services and facilities of the System and take all steps, actions and proceedings for the enforcement and collection of such Tolls, fees, rentals and other charges which shall become delinquent to the full extent permitted or authorized by the laws of the State.



**SECTION 7.11 RECORDS, ACCOUNTS AND AUDITS**. (a) The Authority covenants that it will keep accurate records and accounts of all expenditures relating to the Authority, of the Revenues, the application of Revenues and the number and class of vehicles using the System. All expenditures must be accounted for by proper invoices or approved charge documents prior to any such expenditure.

(b) The Authority further covenants that at least quarterly it will cause to be filed with the Trustee a report signed by the Chairman or Vice Chairman and the Executive Director or his designee setting forth financial statements prepared in accordance with generally accepted accounting principles applicable to the operations of the Authority: (a) for all months of the current Fiscal Year including the month in which said report is given; and (b) for the same months of the preceding Fiscal Year.

(c) The Authority further covenants that it will, at the end of each Fiscal Year, prepare financial statements in accordance with generally accepted accounting principles applicable to operations of the Authority and that it will cause an audit of the financial statements to be made by the Accountant. Such audit will be conducted in accordance with generally accepted auditing standards applicable to operations of the Authority. The audit will be completed within one hundred eighty days after the end of the Fiscal Year. Within a reasonable time thereafter reports of such audit and copies of each report shall be filed with the Trustee and copies of such reports shall be mailed by the Authority to the Consulting Engineer. The scope of the Accountant's audit will be sufficient to enable it to report as to compliance by the Authority with the rate covenant of this Indenture and any material non compliance by the Authority of the conditions and covenants under this .



(d) The Authority further covenants that it will cause any additional reports relating to the Authority to be made as required by law.

(e) All of the reports described in clauses (a) through (d) of this Section shall be made available by the Authority to any Bondholder that requests same.

(f) Commencing with the Fiscal Year ending on June 30, 1998, the Authority shall provide or cause to be provided to the Credit Provider the following information:

(i) Not later than 10 days prior to the commencement of each Fiscal Year, the Annual Budget for such Fiscal Year;

(ii) Within 180 days after the end of each Fiscal Year, the audited financial statements described in clause (c) of this Section, together with a statement of the amount credited to the Debt Service Reserve Fund as its last valuation, and, if not presented in such audited financial statements, a statement of the Revenues pledged to payment of Bonds in each such Fiscal Year, a statement of the number of vehicles using the Toll facilities of the System during such Fiscal Year broken down by class of user and a schedule of Toll rates in effect for all classes of vehicles, and a description of any planned Improvements or Improvements then underway;

(iii) Within 30 days after the incurrence by the Authority of any indebtedness other than the Series 1996 Bonds, including, without limitation, Additional Bonds, Refunding Bonds and Completion Bonds, a copy of the official statement or other disclosure document, if any, prepared in connection therewith;

(iv) Notice of any draw upon or deficiency due to market fluctuation in the amount, if any, credited to the Debt Service Reserve Fund;

(v) notice of the redemption, other than mandatory sinking fund redemption, of any of the Bonds, or of any advance refunding of any of the Bonds, including the principal amount, maturities and CUSIP numbers of such Bonds;

(vi) such additional information as the Credit Provider may reasonably request from time to time.

**SECTION 7.12 SALE OR DISPOSAL OF SYSTEM**. The Authority covenants that, except as permitted by this Section 7.12 and as in this Indenture otherwise permitted, it will not sell or otherwise dispose of or encumber the System or any part thereof. The Authority may, from time to time sell any machinery, fixtures, apparatus, tools, instruments or other property acquired by the Authority in connection with the System and materials used in connection therewith, if an Authorized Officer shall determine that such property is no longer needed or is no longer useful in connection with the construction or operation or maintenance of the System. The proceeds of any such sale shall be applied to the replacement of the property so sold or disposed of and any property so acquired as such replacement shall become a part of the System subject to this Indenture or such proceeds shall be deposited to the credit of the Revenue Fund. Notwithstanding the foregoing, the Authority may from time to time, upon compliance with the terms and conditions of the Transfer Agreement, permanently abandon the use of, sell or trade

any property forming a part of the System, but only if there shall be filed with the Authority prior to such abandonment, sale or trade:

a certificate of the Authority stating that the Authority is not then in default in the performance of any of the material covenants, conditions, agreements or provisions contained in this Indenture; and

a certificate of the Consulting Engineer projecting that the Revenues for the next succeeding twelve months, after giving effect to such abandonment, sale or trade and any replacement, and after adjustment to reflect changes in the rate schedule in effect on the date of such certificate, are anticipated to be sufficient in all respects to comply with Section 5.01;

a certificate of the Authority that such abandonment, sale or trade considering the use the Authority has stated it intends to make with any proceeds derived therefrom, and after consideration of all other benefits and detriments anticipated to result therefrom, will not have a material adverse impact on future Revenues, and is consistent with the Authority's business and purpose; and

an Opinion of Bond Counsel.

The proceeds of any disposition authorized by the Consulting Engineer's certificate as aforedescribed shall be applied as stated therein or, if not so stated, the proceeds of the sale of any property shall either be deposited by the Authority with the Trustee for deposit to the credit of the Revenue Fund, or shall be applied to the replacement of the property so sold, and any property acquired as such replacement shall become a part of the System subject to the provisions of this Indenture.



Nothing in this Section 7.12 shall limit the power of the Authority to enter into any sale, lease or lease-purchase of the System with the Department, or any other entity provided such sale, lease or lease-purchase is subject to the terms of this Indenture and in no way adversely impairs the amount, or pledge, of the Revenues and sums in the Funds and Accounts available to Bondholders as set forth herein. Nothing in this Section 7.12 shall limit the power of the Authority to enter into operating agreements with governmental or private entities, providing that such agreements are consistent with and subject to this Indenture and the Authority obtains an Opinion of Bond Counsel.

**SECTION 7.13 OTHER INDEBTEDNESS**. Nothing in this Indenture shall be construed as in any way prohibiting or limiting the power of the Authority to enter into agreements, including interest rate swaps, incur obligations, undertake indebtedness or otherwise enter into any financing transactions to the extent such agreements, obligations, indebtedness or financing transactions do not impose any lien upon the Revenues and are payable from sources other than Revenues. The foregoing shall include bond or revenue anticipation notes, including notes anticipated to be paid from proceeds of Bonds issued hereunder, and any other obligations of the Authority that are payable from funds other than Revenues.



**SECTION 7.14 INVESTMENTS AND USE OF PROCEEDS TO COMPLY WITH CODE; TAXABLE BONDS**.

The Authority covenants with the Owners of each Series of Bonds (other than the Series 1996 Bonds and any other Series of Taxable Bonds), that it shall comply with the requirements of the Code necessary to maintain the exclusion of interest on the Bonds from gross income for purposes of federal income taxation, including the payment of any amount required to be rebated to the U.S. Treasury pursuant to the Code, and, in particular, that it shall not make or direct the making of any investment or other use of proceeds of such Series of Bonds (or amounts deemed to be proceeds under the Code) in any manner which would cause the interest on such Series of Bonds to be or become subject to federal income taxation, nor shall it fail to do any act which is necessary to prevent such interest from becoming subject to federal income taxation.

The Authority covenants with the Owners of each Series of Bonds (other than the Series 1996 Bonds and any other Series of Taxable Bonds) that neither the Authority nor any other Person under its control or direction will make any investment or other use of the proceeds of Bonds (or amounts deemed to be proceeds under the Code) in any manner which would cause such Series of Bonds to be "private activity bonds" as that term is defined in Section 141 of the Code (or any successor provision thereto), except as to any Series so categorized at the time of issuance, and that it will comply with the requirements of the Code throughout the term of the Bonds.

The Authority may, if it so elects, issue one or more Series of Taxable Bonds, the interest on which is (or may be) includable in the gross income of the Owners thereof for federal income taxation purposes, provided that the issuance thereof will not cause the interest on any other Bonds theretofore issued hereunder to be or become subject to federal income taxation.

Notwithstanding anything to the contrary contained in subparagraphs (a) through (c) hereof, the Authority may, if it so elects, issue one or more Series of Bonds as "private activity bonds," as that term is defined in Section 141 (or any successor provision thereto) of the Code and which are "qualified bonds," as that term is defined in Section 141 (or any successor provision thereto) of the Code and, in the event it does so, the Authority covenants that it will not make or direct the making of any investment nor will it use the proceeds of any such Series in a manner which would make such Bonds not "qualified bonds."

**SECTION 7.15 ARBITRAGE REBATE COVENANTS**. There is hereby created a Fund to be designated the "Dade County Expressway Authority Rebate Fund" which shall be held and maintained by the Trustee. Prior to the issuance of each Series of Bonds other than the Series 1996 Bonds or any other Series of Taxable Bonds, the Authority shall execute and deliver a certificate or agreement containing arbitrage rebate covenants (the "Rebate Covenants") as to said Series of Bonds. The Authority shall make or cause to be made payments from the Rebate Fund of amounts required to be deposited therein to the United States of America in the amounts and at the times required by the Rebate Covenants. The Authority covenants for the benefit of the Bondholders that it will comply with the requirements of the Rebate Covenants. There shall be excluded from the pledge and lien of this Indenture the Rebate Fund, together with all moneys and securities from time to time held therein and all investment earnings derived therefrom. The Authority shall not be required to comply with the requirements of this Section 7.15, or with the

Rebate Covenants, in the event that the Authority obtains an Opinion of Bond Counsel that: (a) such compliance is not required in order to maintain the federal income tax exemption of interest on the Bonds; and/or (b) compliance with some other requirement is necessary to maintain the federal income tax exemption of interest on the Bonds or is a permissible substitute for any deleted requirement. The Authority shall enter into a Supplemental Indenture, or amend the Rebate Covenants, as may be applicable, to reflect the deletion or substitution of any such requirement. In addition, the Authority shall not be required to comply with this Section 7.15 to the extent that any Bonds issued under this Indenture are Taxable Bonds.

**SECTION 7.16 NO COMPETING SYSTEMS**. The Authority will not acquire, construct, lease or operate, nor will it cause or authorize the acquisition, construction, lease or operation of a competing roadway, bridge or tunnel system that will traverse the same or nearly the same route as the System without first having obtained a report from the Consulting Engineer demonstrating the need for the additional roadway, bridge or tunnel and a Consulting Engineer's certificate demonstrating that the acquisition, construction, lease or operation of the additional roadway, bridge or tunnel will not have a material adverse effect on Revenues or the Authority's ability to pay debt service on Outstanding Bonds and that the additional roadway, bridge or tunnel is capable of being financed and operated in a fiscally sound and prudent manner.

**SECTION 7.17 [RESERVED]**

**SECTION 7.18 AGREEMENTS WITH DEPARTMENT**. The Authority covenants to diligently enforce all obligations of the Department under the Transfer Agreement, the Toll Operations and Maintenance Agreement, the Roadway Operations and Maintenance Agreement and the SunPass Agreement. The Authority covenants to perform all of its obligations under such agreements. Notwithstanding the foregoing, the Authority shall have no obligation to cause the Toll Operations and Maintenance Agreement, the Roadway Operations and Maintenance Agreement or the SunPass Agreement to remain in effect.

**SECTION 7.19 COVENANTS WITH CREDIT PROVIDERS AND LIQUIDITY PROVIDERS**. The Authority may make such covenants as it may, in its sole discretion, determine to be appropriate with any Credit Provider, Liquidity Provider or other financial institution that shall agree to provide for Bonds of any one or more Series a Credit Facility or Liquidity Facility that shall enhance the security or the value of such Bonds; provided, however, such covenants may not impair the rights of any existing Bondholders in any manner that, pursuant to Section 11.02, would require such Bondholder's consent, without first obtaining such consent.

**SECTION 7.20 CONTINUING DISCLOSURE**. The Authority agrees to enter into a Continuing Disclosure Agreement with respect to the Series 1996 Bonds and with respect to each other Series of Bonds to the extent required by law and to comply with and carry out all of the provisions of any such Continuing Disclosure Agreement. Notwithstanding any other provision hereof, failure of the Authority or the dissemination agent named therein to comply with any Continuing Disclosure Agreement shall not be considered an Event of Default; provided, however, the dissemination agent may (and, at the request of any Participating Underwriter or the Owners of at least twenty-five percent (25%) in aggregate principal amount of Outstanding Bonds, shall) or any Bondholder may take such actions as may be necessary and appropriate,





including seeking mandate or specific performance by court order to cause the Authority and the dissemination agent to comply with their respective obligations under this Section 7.20 and any applicable Continuing Disclosure Agreement.

To the extent there are Obligated Persons with respect to any Series of Bonds other than the Authority, the Authority shall, prior to the issuance of such Bonds, cause each Obligated Person to execute a written undertaking for the benefit of, and enforceable by, the Owners, from time to time, of such Bonds to provide with respect to each such Obligated Person an annual update of the financial information and operating data set forth in the Official Statement relating to the Bonds, annual financial statements, if any, and notices of occurrence of material events as required by Rule 15(c)2-12 of the Securities and Exchange Commission. Any Obligated Person with respect to a Series of Bonds, other than the Authority, shall be required, in the written undertaking described above, to specify, in reasonable detail, the type of financial information and operating data to be provided, the accounting principles pursuant to which financial statements will be prepared, and whether the financial statements will be audited, and the date on which the information for each preceding fiscal year will be provided, and to whom it will be provided.

## ARTICLE VIII

## CERTAIN MATTERS RELATING TO THE TRUSTEE, BOND REGISTRAR AND PAYING AGENT

**SECTION 8.01 CERTAIN MATTERS RELATING TO THE TRUSTEE, BOND REGISTRAR AND PAYING AGENT**. (a) The Trustee, Bond Registrar and Paying Agent (hereinafter sometimes referred to collectively as the "Fiduciaries") will signify the acceptance of the duties and obligations imposed upon them by this Indenture and any other agreements with the Authority by executing and delivering to the Authority a written acceptance thereof, and by executing such acceptance, each Fiduciary shall be deemed to have accepted such duties and obligations with respect to the Bonds, upon and subject to the provisions set forth in this Article VIII.

(b) Except during the continuance of an Event of Default, (i) the Trustee undertakes to perform such duties and only such duties as are specifically set forth in this Indenture and no implied covenants or obligations shall be read into this Indenture against the Trustee; (b) in the absence of bad faith on its part, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture. In case the Trustee has actual notice that an Event of Default has occurred and is continuing, the Trustee shall exercise such of the rights and powers vested in it by this Indenture, and use the same degree of care and skill in the exercise of such rights and powers, as a prudent man would exercise or use under the circumstances in the conduct of his own affairs. The Trustee may consult with counsel, including counsel who rendered the approving opinion on the Bonds, and the written advice or opinion of such counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder in good faith and in reliance thereon.

**SECTION 8.02 RESPONSIBILITIES OF FIDUCIARIES**. The statements contained herein and in the Bonds shall be taken as the statements of the Authority and the Fiduciaries assume no responsibility for the correctness of same. The Fiduciaries make no representation as to the validity or sufficiency of this Indenture or as to the security afforded by this Indenture and each Fiduciary shall incur no liability with respect thereof. The Bond Registrar shall, however, be responsible for its representation contained in its certificate of authentication on the Bonds. The Fiduciaries shall not be under any responsibility or duty with respect to the application of any moneys paid by such Fiduciaries in accordance with the provisions of this Indenture to or upon the order of the Authority or to any other Fiduciary. The Fiduciaries shall not be under any obligation or duty to perform any act which would involve them in expense or liability or to institute or defend any suit with respect thereof, or to advance any of their own moneys, unless indemnified to their satisfaction. Subject to the provisions of the following paragraph, the Fiduciaries shall not be liable in connection with the performance of their duties hereunder except for their own negligence or willful default.

**SECTION 8.03 EVIDENCE ON WHICH FIDUCIARIES MAY ACT**. The Fiduciaries, upon receipt of any notice, resolution, request, consent, order, certificate, report, opinion, bond or other paper or document furnished to them pursuant to any provision of this Indenture shall examine such instrument to determine whether it conforms to the requirements of this Indenture and shall be protected in acting upon any such instrument believed by them to be genuine and to have been signed or presented by the proper party or parties. Each Fiduciary may reasonably consult with counsel and certified public accounting firms, who may or may not be counsel to, or accountants for, the Authority, and the opinion of such counsel or accountants shall be full and complete authorization and protection in respect of any action taken or suffered by it under this Indenture in good faith and in accordance therewith.



Whenever a Fiduciary shall deem it necessary or desirable that a matter be proved or established prior to taking or suffering any action under this Indenture, such matters (unless other evidence in respect thereof be therein specifically prescribed) may be deemed to be conclusively proved and established by a certificate of an Authorized Officer, and such certificate shall be full warrant for any action taken or suffered in good faith based thereon; but in its discretion, a Fiduciary may in lieu thereof accept other evidence of such fact or matter or may require such further or additional evidence as may seem reasonable to it.

Except as otherwise expressly provided this Indenture, any request, order, notice or other direction required or permitted to be furnished pursuant to any provision thereof by the Authority to a Fiduciary shall be sufficiently executed in the name of the Authority by an Authorized Officer.

The Trustee shall not be presumed to have knowledge of any Event of Default other than those Events of Default described in Section 9.02(a), (b) and (c), unless the Trustee receives written notice specifying such Event of Default from the Authority or the Owners of ten percent (10%) or more in aggregate principal amount of Outstanding Bonds.

**SECTION 8.04 COMPENSATION**. Prior to its appointment, each Fiduciary shall file with the Authority a negotiated schedule of anticipated fees and charges for services to be performed pursuant to this Indenture. The Authority shall pay to such Fiduciary from time to



time pursuant to such schedule reasonable compensation for all services rendered, and all reasonable expenses, charges, counsel fees and expenses and other disbursements, including those of its attorneys, agents, and other Persons not regularly in its employ, incurred in and about the performance of its powers and duties under this Indenture. To the extent permitted by law, the Authority hereby agrees to indemnify each Fiduciary and hold it harmless from any and all claims, liabilities, losses, actions, suits or proceedings at law or in equity brought by third parties, or any other expenses, fees or charges of any character or nature which it may incur or with which it may be threatened by reason of such third party threats or proceedings, except in the case of such Fiduciary's own negligence or willful default, and in connection therewith to indemnify such Fiduciary against any and all expenses, including attorneys' fees and expenses and the costs of defending any action, suit or proceeding or resisting any claim, including appellate proceedings. Notwithstanding anything in this Indenture to the contrary, no Fiduciary shall be entitled to payment from or have any claim or lien on moneys paid under a Credit Facility or a Liquidity Facility or on moneys representing the proceeds of remarketing of Bonds under Article III of this Indenture.

**SECTION 8.05 CERTAIN PERMITTED ACTS**. A Fiduciary may become the Owner of any Bonds, with the same rights it would have if it were not a Fiduciary. To the extent permitted by law, a Fiduciary may act as Depositary for, and permit any of its officers or directors to act as a member of, or in any other capacity with respect to, any committee formed to protect the rights of Bondholders or to effect or aid in any reorganization growing out of the enforcement of the Bonds or this Indenture, whether or not any such committee shall represent the Owners of a majority in aggregate principal amount of the Bonds then Outstanding.

**SECTION 8.06 RESIGNATION OF TRUSTEE**. The Trustee may at any time resign and be discharged from the duties and obligations created by this Indenture by giving not less than ninety (90) days' written notice to the Authority and the Credit Provider, and sending notice thereof by first class, postage prepaid mail to the Bondholders. Such resignation shall take effect upon the date in such notice unless previously a successor Trustee shall have been appointed by the Authority or the Bondholders as provided in Sections 8.07 and 8.08, in which event such resignation shall take effect immediately on the appointment of such successor; provided that no resignation shall become effective until the appointment of a successor Trustee.

**SECTION 8.07 REMOVAL OF TRUSTEE**. The Trustee may be removed at any time with or without cause by any instrument or concurrent instruments in writing, filed with the Trustee and the Credit Provider, and signed by the Owners of a majority in principal amount of the Bonds then Outstanding or their duly authorized attorneys or legal representatives. So long as no Event of Default or an event which with notice or passage of time, or both, would become an Event of Default, shall have occurred and be continuing, the Trustee may be removed at any time with or without cause by resolution of the Authority filed with the Trustee and the Credit Provider. No removal shall become effective until the appointment of a successor Trustee. Notwithstanding anything to the contrary contained herein or in this Indenture, the Authority shall pay to the Trustee all fees, charges and expenses owing to the Trustee together with all fees and expenses (including reasonable attorneys' fees and expenses) reasonably incurred by the Trustee in connection with its removal by the Authority.

**SECTION 8.08 APPOINTMENT OF SUCCESSOR TRUSTEE**. In case at any time the Trustee shall resign or shall be removed or shall become incapable of acting, or shall be adjudged a bankrupt or insolvent, or if a receiver, liquidator or conservator of the Trustee, or of its property, shall be appointed, or if any public officer shall take charge or control of the Trustee, or of its property or affairs, a successor shall be appointed by the Authority by a duly executed written instrument signed by an Authorized Officer. The Authority shall give notice of any such appointment made by it by mailing written notice of such appointment by first class mail, postage prepaid, to the Credit Provider and to the Owners of the Bonds as their names and addresses appear in the books kept by the Bond Registrar, such notice to be given within thirty (30) days after such appointment.

If in a proper case no appointment of a successor Trustee shall be made pursuant to the foregoing provisions of this Section 8.08 within forty five (45) days after the Trustee shall have resigned or been removed or after a vacancy in the office of the Trustee shall have occurred, the Trustee or the Owner of any Bond may apply to any court of competent jurisdiction to appoint a successor Trustee. Said court may thereupon, after such notice, if any, as such court may deem proper, appoint a successor Trustee. The Authority shall pay the Trustee all fees and expenses, including reasonable attorneys' fees and expenses and the costs of bringing such proceedings (including appellate proceedings) incurred by the Trustee in connection with obtaining such court appointment of a successor Trustee.

Any Trustee appointed under the provisions of this Section 8.08 shall be a subsidiary of, or under common control with, a bank with trust powers, a trust company or a national banking association with trust powers, having capital stock, surplus and undivided earnings aggregating at least $50,000,000, if there be such a bank or trust company or national banking association willing and able to accept the office on reasonable and customary terms and authorized by law to perform all the duties imposed upon it by this Indenture. Any such bank or trust company shall be organized and existing under the laws of a state of the United States.

**SECTION 8.09 TRANSFER OF RIGHTS AND PROPERTY TO SUCCESSOR TRUSTEE**. Any successor Trustee appointed under this Indenture shall execute, acknowledge and deliver to its predecessor Trustee, and also to the Authority, an instrument accepting such appointment, and thereupon such successor Trustee, without any further act, deed or conveyance, shall become fully vested with all moneys, estates, properties, rights, powers, duties and obligations of such predecessor Trustee, with like effect as if originally named as Trustee. The Trustee ceasing to act shall nevertheless, on the written request of the Authority, or of the successor Trustee, execute, acknowledge and deliver such instrument of conveyance and further assurance and do such other things as may reasonably be required for more fully and certainly vesting and confirming in such successor Trustee all the right, title and interest of the predecessor Trustee in and to any property held by it under this Indenture, and shall pay over and assign to the successor Trustee any money or other property subject to the trusts and conditions herein set forth. Should any deed, conveyance or instrument in writing from the Authority be reasonably required by such successor Trustee for more fully and certainly vesting in and confirming to such successor Trustee any such estates, rights, power and duties, any and all such deeds, conveyances and instruments in writing shall, on request, and so far as may be authorized by law, be executed, acknowledged and delivered by the Authority.





**SECTION 8.10 MERGER OR CONSOLIDATION OF FIDUCIARY**. Any company into which any Fiduciary may be merged or converted or with which it may be consolidated or any company resulting from any merger, conversion or consolidation to which it shall be a party or any company to which any Fiduciary may sell or transfer all or substantially all of its corporate trust business, provided such company shall be a bank with trust powers, a trust company or a national banking association with trust powers and shall be authorized by law to perform all duties imposed upon it by this Indenture, shall be the successor to such Fiduciary without the execution or filing of any paper or the performance of any further act. Any such bank or trust company shall be organized and existing under the laws of a state of the United States.

**SECTION 8.11 ADOPTION OF AUTHENTICATION**. In case any of the Bonds contemplated to be issued under this Indenture shall have been authenticated but not delivered, any successor Bond Registrar may adopt the certificate of authentication of any predecessor Bond Registrar so authenticating such Bonds and deliver such Bonds so authenticated; and in case any of the Bonds shall not have been authenticated, any successor Bond Registrar may authenticate such Bonds in the name of, but as successor to, the predecessor Bond Registrar, or in the name of the successor Bond Registrar; and, in all such cases, such certificate shall be given full force and effect.

**SECTION 8.12 RESIGNATION OR REMOVAL OF PAYING AGENT AND APPOINTMENT OF SUCCESSOR**. The Paying Agent may, at any time, resign and be discharged of the duties and obligations created by this Indenture by giving ninety (90) days' written notice to the Authority, the Credit Provider and the Trustee. So long as no Event of Default or an event which, with notice or passage of time, or both, would become an Event of Default, shall have occurred and be continuing, the Paying Agent may be removed at any time by an instrument filed with such Paying Agent, the Credit Provider and the Trustee and signed by an Authorized Officer. Any successor Paying Agent shall be appointed by the Authority and shall be a bank with trust powers, a trust company or a national banking association with trust powers willing and able to accept the office on reasonable and customary terms and authorized by law to perform all the duties imposed upon it by this Indenture. Any such bank or trust company shall be organized and existing under the laws of a state of the United States. The Authority shall give written notice of such appointment to the Credit Provider.

In the event of the resignation or removal of the Paying Agent, such Paying Agent shall pay over, assign and deliver any moneys held by it as Paying Agent to its successor, or if there be no successor, to the Trustee. In the event that for any reason there shall be a vacancy in the office of any Paying Agent, the Trustee shall act as such Paying Agent.

**SECTION 8.13 RESIGNATION AND REMOVAL OF BOND REGISTRAR AND APPOINTMENT OF SUCCESSOR**. The Bond Registrar may, at any time, resign and be discharged of the duties and obligations created by this Indenture by giving at least ninety (90) days' written notice to the Authority, the Credit Provider and the Trustee. So long as no Event of Default or an event which, with notice or passage of time, or both, would become an Event of Default, shall have occurred and be continuing, the Bond Registrar may be removed at any time by an instrument filed with such Bond Registrar, the Credit Provider and Trustee and signed by an Authorized Officer. Any successor Bond Registrar shall be appointed by the Authority and

shall be a bank with trust powers, a trust company or a national banking association with trust powers willing and able to accept the office on reasonable and customary terms and authorized by law to perform all the duties imposed by this Indenture. Any such bank or trust company shall be organized and existing under the laws of a state of the United States. The Authority shall give written notice of such appointment to the Credit Provider. In the event of the resignation or removal of the Bond Registrar, such Bond Registrar shall assign and deliver the books for registration and transfer of Bonds maintained by it to its successor, or if there be no successor, to the Trustee. In the event that for any reason there shall be a vacancy in the office of any Bond Registrar, the Trustee shall act as such Bond Registrar.

## ARTICLE IX

## EVENTS OF DEFAULT; REMEDIES

**SECTION 9.01 EXTENSION OF INTEREST PAYMENT**. In case the time for the payment of interest on any Bond shall be extended by operation of law, whether or not such extension be by or with the consent of the Authority, such interest so extended shall not be entitled in case of default hereunder to the benefit or security of this Indenture except subject to the prior payment in full of the principal of all Bonds then Outstanding and of all interest the time for the payment of which shall not have been extended.

**SECTION 9.02 EVENTS OF DEFAULT**. Each of the following events is hereby declared an "Event of Default":

payment of the principal or Purchase Price of and the redemption premium, if any, on any of the Bonds shall not be made when the same shall become due and payable, either at maturity or by proceedings for redemption or otherwise; or

payment of any installment of interest on any of the Bonds shall not be made when the same shall become due and payable; or

redemption of Term Bonds in accordance with an Amortization Requirement shall not be made as required; or

the Authority admits in writing its inability to pay its debts generally as they become due, or files a petition in bankruptcy or makes an assignment for the benefit of its creditors or consents to the appointment of a receiver or trustee for itself or for all or a substantial part of the System; or

the Authority is adjudged insolvent by a court of competent jurisdiction, or is adjudged a bankrupt or a petition in bankruptcy is filed against the Authority, or an order, judgment or decree is entered by a court of competent jurisdiction appointing, without the consent of the Authority, a receiver or trustee of the Authority or of the whole or any part of its property and any of the aforesaid adjudications, orders, judgments or decrees shall not be vacated or set aside or stayed within ninety days from the date of entry thereof; or





the Authority shall file a petition or answer seeking reorganization or any arrangement under the federal bankruptcy laws or any other applicable law or statute of the United States of America or any state thereof; or

under the provisions of any other law for the relief or aid of debtors, any court of competent jurisdiction shall assume custody or control of the Authority or of the whole or any substantial part of its property, and such custody or control shall not be terminated within ninety days from the date of assumption of such custody or control; or

the Authority shall default in its obligation to duly and punctually perform any other of the material covenants, conditions, agreements and provisions contained in the Bonds or in this Indenture (other than the covenants set forth at Section 7.20) and such default shall continue for thirty days after written notice specifying such default and requiring same to be remedied shall have been given to the Authority by the Trustee or the Owners of not less than ten percent in aggregate principal amount of the Bonds then Outstanding; or

written notice shall have been received by the Authority from a Credit Provider or Liquidity Provider that an event of default has occurred under the agreement underlying a Credit Facility or Liquidity Facility.

In determining whether an Event of Default has occurred or is continuing under Section 9.02 (a), (b) or (c), no effect shall be given to payments made under a Credit Facility.

The Trustee shall provide to the Authority, the Credit Provider, the Liquidity Provider, the Reserve Facility Provider and the Remarketing Agent immediate notice of any default under Section 9.02 (a), (b) or (c) and notice of any other Event of Default known to the Trustee (as provided in Section 8.03) within 10 days after the Trustee has acquired knowledge thereof. The Trustee shall provide to the Owners of the Bonds prompt written notice of the occurrence and continuance of any Event of Default after the Trustee has acquired knowledge thereof (as provided in Section 8.03).

**SECTION 9.03 ENFORCEMENT OF REMEDIES BY TRUSTEE**. Upon the happening and continuance of any Event of Default, the Trustee, on behalf of the Owners of the Bonds, may, but shall not be obligated to, and shall, if directed by the Owners of not less than a majority in aggregate principal amount of the Bonds then Outstanding and if the conditions precedent hereinafter described are satisfied, exercise all rights granted to Bondholders pursuant to this Article IX in the manner and to the extent specified in this Indenture. Neither the Bonds nor this Indenture confers any right to accelerate the maturity of any of the Bonds. The Owners of the Bonds shall have no right to enforce any remedies upon an Event of Default, except as herein provided. In the event that the Owners of a majority in aggregate principal amount of the Bonds then Outstanding shall have given to the Trustee written notice of an Event of Default on account of which a suit, action or proceeding is to be taken, have made written request of the Trustee to proceed with same, have afforded the Trustee a reasonable opportunity to institute such suit, action or proceeding in its or their name, and shall have offered to the Trustee reasonable security and indemnity against the costs, expenses and liabilities, including attorneys' fees and expenses, that may be incurred in connection therewith, the foregoing written

notifications, requests and offers of indemnity being conditions precedent to the obligation of the Trustee to pursue any remedy hereunder, and notwithstanding compliance with such conditions precedent the Trustee shall have refused or neglected to comply with such request within a reasonable time, then any Owner of the Bonds may institute any suit, action, mandamus or other proceeding in equity or at law for the enforcement of any right under this Indenture. In addition, upon providing the Trustee with reasonable security and indemnity against costs, expenses and liabilities as aforedescribed, the Owners of a majority in aggregate principal amount of the Bonds then Outstanding may, by written notice delivered to the Trustee, direct the method and place of conducting all remedial proceedings to be taken by the Trustee, provided such direction shall not be contrary to provisions of law and this Indenture and, provided further, the Trustee shall have the right to decline to follow any such direction which, in the opinion of the Trustee, would be unjustly prejudicial to Owners of the Bonds not parties to such direction. In the absence of such direction from Bondholders, the Trustee may proceed in the manner it deems appropriate in accordance with the terms and conditions hereof. The Trustee may, in its discretion, notwithstanding the failure of the Owners of the Bonds to provide the indemnity required by the conditions precedent heretofore described, nevertheless bring such suits, actions or proceedings or take such other action as, in its judgment, is proper to be done by it as Trustee, without indemnity, in which event the Authority shall reimburse the Trustee, from Revenues, for all costs and expenses, outlays and counsel fees and other reasonable disbursements properly incurred in connection therewith. Upon an Event of Default the Trustee may exercise all rights and powers granted to the Authority pursuant to Section 9.03 subject, however, to the Trustee's right to reimburse itself for the costs, expenses and liabilities for which it is indemnified pursuant to this Indenture, prior to application of any money in the Sinking Fund for the benefit of the Owners of the Bonds. Upon the occurrence of an Event of Default and the continuance of such Event of Default, the Trustee shall give by first class, postage prepaid mail to all Bondholders, as their names and addresses appear in the books kept by the Bond Registrar, notice of such Event of Default known to the Trustee, unless such Event of Default shall have been cured; provided, however, that except in the case of an Event of Default described in Sections 9.02(a), (b) or (c), the Trustee shall be protected in withholding such notice so long as the Trustee in good faith determines that such Event of Default is not materially adverse to the interest of Bondholders.

**SECTION 9.04 PRO RATA APPLICATION OF FUNDS**. (a) Anything in this Indenture to the contrary notwithstanding, if at any time during the continuance of an Event of Default the moneys in the Sinking Fund, the Debt Service Reserve Fund, the Renewal and Replacement Fund and the General Fund, when applied in accordance with Article V, shall not be sufficient to pay the principal of, the premium, if any, or the interest on the Bonds as the same are then due and payable, such moneys, together with any moneys then available or thereafter becoming available for such purpose, whether through the exercise of the remedies provided for in this Article or otherwise, shall be applied by the Trustee as follows:

First: to the payment to the Fiduciaries of the amount necessary to compensate the Fiduciaries in accordance with the provisions of this Indenture;

Second: to the payment of the Persons entitled thereto of all installments of interest then due and payable on the Bonds, in the order in which such installments become due and payable on the Bonds, and, if the amount available shall not be sufficient to pay in full any particular installment on the Bonds, then the payment ratably, according to the amounts due on such





installment, to the Persons entitled thereto, without any discrimination or preference except as to any difference in the respective rates of interest specified in the Bonds;

Third: to the payment of the Persons entitled thereto of the unpaid principal of any of the Bonds which shall have become due (other than Bonds called for redemption for the payment of which sufficient moneys are held pursuant to the provisions of this Indenture), in the order in which such principal became due, with interest thereon at the respective rates specified therein from the respective dates upon which they became due, and, if the amount available shall not be sufficient to pay in full the principal of Bonds due on any particular date, together with such interest, then to the payment first of such interest, ratably according to the amount of such interest due on such date, and then to the payment of such principal, ratably, according to the amount of such principal due on such date, to the Persons entitled thereto without any discrimination or preference except as to any difference in the respective rates of interest specified in the Bonds;

Fourth: to the payment of the interest on and principal of the Bonds, to the purchase and retirement of Bonds and to the redemption of Bonds, all in accordance with the provisions of Article V;

Fifth: to the Department for any amounts owed by the Authority to the Department under Section 5.12 or that are otherwise payable to the Department out of moneys credited to the General Fund; and

Sixth: to the Authority for any lawful purpose.

(b) The provisions of this Section are in all respects subject to the provisions of Section 9.01. Whenever moneys are to be applied by the Trustee pursuant to the provisions of this Section, such moneys shall be applied by the Trustee at such times, and from time to time, as the Trustee in its sole discretion shall determine, having due regard to the amount of such moneys available for application and the likelihood of additional moneys becoming available for such application in the future; the deposit of such moneys with the Paying Agent or otherwise setting aside such moneys in trust for the proper purpose, shall constitute proper application by the Trustee; and the Trustee shall incur no liability whatsoever to any Bondholder, Credit Provider, Liquidity Provider or to any other Person for any delay in applying any such funds, so long as the Trustee acts with reasonable diligence, having due regard to the circumstances, and ultimately applies the same in accordance with such provisions of this Indenture as may be applicable at the time of application. Whenever the Trustee shall exercise such discretion in applying such funds it shall fix the date upon which such application is to be made and upon such date interest on the amounts of principal to be paid on such date shall cease to accrue. The Trustee shall give such notice as it may deem appropriate of the fixing of any such date, and shall not be required to make payment to the Owner of any Bond until such Bond shall be surrendered to it for appropriate endorsement.

**SECTION 9.05 EFFECT OF DISCONTINUANCE OF PROCEEDINGS**. In case any proceeding taken by the Trustee or any Bondholder on account of any Event of Default shall have been discontinued or abandoned for any reason, then and in every such case, the Authority, the Trustee and the Bondholder shall be restored to their former positions and rights hereunder,

respectively, and all rights and remedies of the Authority, the Trustee and the Bondholders shall continue as though no such proceeding had been taken.

**SECTION 9.06 RESTRICTION ON INDIVIDUAL BONDHOLDER ACTIONS**. No Owner of any of the Bonds hereby secured shall have any right in any manner whatever by his or their action to affect, disturb or prejudice the security of this Indenture, or to enforce any right hereunder except in the manner herein provided, and all proceedings at law or in equity shall be instituted, had and maintained for the benefit of all Owners of such Bonds.

**SECTION 9.07 NO REMEDY EXCLUSIVE**. No remedy herein conferred upon the Bondholders is intended to be exclusive of any other remedy or remedies herein provided, and each and every such remedy shall be cumulative and shall be in addition to every other remedy given hereunder.

**SECTION 9.08 DELAY NOT A WAIVER**. No delay or omission of the Trustee or a Bondholder to exercise any right or power accruing upon any default shall impair any such right or power or shall be construed to be a waiver of any such default or an acquiescence therein; and every power and remedy given by this Indenture to the Trustee and the Bondholders may be exercised from time to time and as often as may be deemed expedient.

**SECTION 9.09 RIGHT TO ENFORCE PAYMENT OF BONDS**. Nothing in this Indenture shall affect or impair the right of any Bondholder to enforce the payment of the principal of, premium, if any, and interest on his Bond, or the obligation of the Authority to pay the principal of, premium, if any, and interest on each Bond to the Owners thereof at the time and place in said Bond expressed.



**SECTION 9.10 RIGHTS OF CREDIT PROVIDER**. In the event that, following an Event of Default, a Credit Provider honors its obligation under a Credit Facility to make payments on a Series of Bonds, said Credit Provider shall be entitled to exercise the rights of the Owners of the said Bonds for the purposes of this Article.

Anything in this Indenture to the contrary notwithstanding, while an Event of Default has occurred and is continuing hereunder, any Credit Provider, on behalf of the Owners of Bonds secured by such Credit Provider, or Owners of a majority in principal amount of the Bonds then Outstanding hereunder shall have the right, by an instrument in writing executed and delivered to the Authority and the Trustee, to direct the time and method of conducting all proceedings available under this Indenture or exercising any trust or power conferred by this Indenture in accordance with the provisions of this Indenture; provided, however, that the Credit Provider shall have no such rights if it has defaulted under its obligations under a Credit Facility. In the event of a conflict between the directions of any Credit Provider and those of the Owners of such Bonds, with respect to an Event of Default described in Section 9.02(i), the directions of such Credit Provider shall prevail, and with respect to any other Event of Default the directions of the Owners of the Bonds shall prevail.

The Trustee shall accept notice from the Credit Provider as to the occurrence or continuance of any Event of Default.



**SECTION 9.11 CLAIM UPON INITIAL CREDIT FACILITY**. (a) If on the third day (or the last Business Day at least three days) preceding any Interest payment Date for the Series 1996 Bonds there is not on deposit with the Trustee sufficient moneys available to pay all principal of and interest on the Series 1996 Bonds due on such Interest Payment Date, the Trustee shall immediately notify the Initial Credit Provider and State Street Bank and Trust Company, N.A., New York, New York or its successor as its Fiscal Agent (the "Fiscal Agent") of the amount of such deficiency. If, by said Interest Payment Date, the Authority has not provided the amount of such deficiency, the Bond Registrar shall simultaneously make available to the Initial Credit Provider and to the Fiscal Agent the registration books for the Series 1996 Bonds maintained by the Bond Registrar. In addition:

(i) The Trustee shall provide the Initial Credit Provider with a list of the Bondholders entitled to receive principal or interest payments from the Initial Credit Provider under the terms of the Initial Credit Facility and shall make arrangements for the Initial Credit Provider and its Fiscal Agent (A) to mail checks or drafts to Bondholders entitled to receive full or partial interest payments from the Initial Credit Provider, and (B) to pay principal of the Series 1996 Bonds surrendered to the Fiscal Agent by the Bondholders entitled to receive full or partial principal payments from the Initial Credit Provider; and

(ii) The Trustee shall, at the time the Bond Registrar makes the registration books available to the Initial Credit Provider pursuant to clause (i) above, notify Bondholders entitled to receive the payment of principal of or interest on the Series 1996 Bonds from the Initial Credit Provider (A) as to the fact of such entitlement, (B) that the Initial Credit Provider will remit to them all or part of the interest payments coming due subject to the terms of the Initial Credit Facility, (C) that, except as provided in paragraph (b) below, in the event that any Bondholder is entitled to receive full payment of principal from the Initial Credit Provider, such Bondholder must tender his Series 1996 Bond with the instrument of transfer in the form provided on the Series 1996 Bond executed in the name of the Initial Credit Provider, and (D) that, except as provided in paragraph (b) below, in the event that such Bondholder is entitled to receive partial payment of principal from the Initial Credit Provider, such Bondholder must tender his series 1996 Bond for payment first to the Trustee, which shall note on such Series 1996 Bond the portion of principal paid by the Trustee, and then, with an acceptable form of assignment executed in the name of the Initial Credit Provider, to the Fiscal Agent, which will then pay the unpaid portion of principal to the Bondholder subject to the terms of the Initial Credit Facility.

(b) In the event that the Trustee has notice that any payment of principal of or interest on a Series 1996 Bond has been recovered from a Bondholder by a trustee in bankruptcy in accordance with the final, nonappealable order of a court having competent jurisdiction, the Trustee shall, at the time it provides notice to the Initial Credit Provider, notify all Bondholders that in the event that any Bondholder's payment is so recovered, such Bondholder will be entitled to payment from the Initial Credit Provider to the extent of such recovery, and the Trustee shall furnish to the Initial Credit Provider its records evidencing the payments of principal of and interest on the Series 1996 Bonds which have been made by the Trustee and subsequently recovered from Bondholders, and the dates on which such payments were made.

(c) The Initial Credit Provider shall, to the extent it makes payment of principal of or interest on the Series 1996 Bonds, become subrogated to the rights of the recipients of such payments in accordance with the terms of the Initial Credit Facility and, to evidence such subrogation, (A) in the case of subrogation as to claims for past due interest, the Trustee shall note the Initial Credit Provider's rights as subrogee on the registration books maintained by the Bond Registrar upon receipt from the Initial Credit Provider of proof of the payment of interest thereon to the Bondholders of such Series 1996 Bonds, and (B) in the case of subrogation as to claims for past due principal, the Trustee shall note the Initial Credit Provider's rights s subrogee on the registration books for the Series 1996 Bonds maintained by the Trustee upon receipt of proof of the payment of principal thereof to the Bondholders of such Series 1996 Bonds. Notwithstanding anything in this Indenture to the contrary, the Trustee shall make payment of such past due interest and past due principal directly to the Initial Credit Provider to the extent that the Initial Credit Provider is a subrogee with respect thereto.

## ARTICLE X

## EXECUTION OF INSTRUMENTS BY BONDHOLDERS AND PROOF OF OWNERSHIP OF BONDS

**SECTION 10.01 EXECUTION OF INSTRUMENTS BY BONDHOLDERS AND PROOF OF OWNERSHIP OF BONDS**. Any request, direction, consent or other instrument in writing required or permitted by this Indenture to be signed or executed by Bondholders may be in any number of concurrent instruments of similar tenor and may be signed or executed by such Bondholders or their duly authorized attorneys or legal representatives. Proof of the execution of any such instrument and of the ownership of Bonds shall be sufficient for any purpose of this Indenture and shall be conclusive in favor of the Authority and the Trustee with regard to any action taken by it under such instrument if made in the following manner:

The fact and date of the execution by any Person of any such instrument may be proved by the verification of any officer in any jurisdiction who, by the laws thereof, has power to take affidavits within such jurisdiction, to the effect that such instrument was subscribed and sworn to before him, or by an affidavit of a witness to such execution. Where such execution is on behalf of a Person other than an individual such verification or affidavit shall also constitute sufficient proof of the authority of the signer thereof.

Ownership of Bonds should be proved by registration books of the Authority, or the Bond Registrar on behalf of the Authority, maintained as provided in this Indenture.

Nothing contained in this Indenture shall be construed as limiting the Authority or the Trustee to such proof, it being intended that the Authority and the Trustee may accept any other evidence of the matters herein stated which it may deem sufficient. Any request or consent of the Owner of any Bond shall bind every future Owner of the same Bond in respect of anything done by the Authority or the Trustee pursuant to such request or consent.



## ARTICLE XI

## SUPPLEMENTS AND AMENDMENTS

**SECTION 11.01 SUPPLEMENTAL INDENTURE WITHOUT BONDHOLDERS' CONSENT**. The Authority and the Trustee, from time to time and at any time, without obtaining consent from Bondholders, may enter into Supplemental Indentures that are not inconsistent with the terms and provisions hereof (which Supplemental Indentures shall thereafter form a part of the Indenture):

to cure any ambiguity or defect or omission or to correct any inconsistent provisions in this Indenture; or

to grant to or confer upon the Bondholders any additional rights, remedies, powers, authority or security that may lawfully be granted to or conferred upon the Bondholders; or

to add to the conditions, limitations and restrictions on the issuance of Bonds under the provisions of this Indenture other conditions, limitations and restrictions thereafter to be observed; or

to add to the covenants and agreements of the Authority in this Indenture other covenants and agreements thereafter to be observed by the Authority or to surrender any right or power herein reserved to or conferred upon the Authority; or

to permit the issuance of Bonds, the interest on which is intended to be exempt from federal income taxation, in coupon form, if as a condition precedent to the enactment of such supplemental resolution, there shall be delivered to the Authority an Opinion of Bond Counsel; or

to qualify the Bonds or any of the Bonds for registration under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended; or

to qualify this Indenture as an "indenture" under the Trust Indenture Act of 1939, as amended; or

to make such changes as may be necessary to adjust the terms hereof so as to facilitate the issuance of Variable Rate Bonds, Capital Appreciation Bonds, Capital Appreciation and Income Bonds, Convertible Bonds, Put Bonds and such other forms of Bonds as may be marketable from time to time; or

to make such changes as may be necessary to maintain the exclusion of interest on any Series of Bonds from gross income for federal income tax purposes as said exclusion was intended to exist, if at all, at the time of issuance of such Series; or

to make such changes as may evidence the right and interest herein of a Credit Provider, Liquidity Provider or Reserve Facility Provider; or

to make such changes as may be necessary in order to obtain or maintain a rating or ratings on any Series of Bonds from one or more nationally recognized rating agencies; or

to authorize and provide for the issuance of Completion Bonds, Additional Bonds and Refunding Bonds in accordance with the provisions of Sections 2.07, 2.08 and 2.09 and to specify and determine the matters and things referred to in Sections 2.07, 2.08 or 2.09, and any other matters and things relative to such Bonds which are not contrary to or inconsistent with this Indenture as theretofore in effect; or

to amend, modify or rescind any provision in this Indenture at any time prior to the first delivery of such Bonds; or

to make any other change, except those set forth in clauses (a) through (e) of Section 11.02, which is necessary to be made to permit the Authority to proceed with a transaction or activity that, in the written opinion of the Consulting Engineer as filed with the Authority, is in the best interests of the Authority to pursue, if there shall first be delivered and Opinion of Bond Counsel; provided that no Supplemental Indenture shall be entered into for this purpose unless the Credit Provider shall have provided its written consent thereto.

At least thirty days prior to the proposed entry by the Authority and the Trustee into a Supplemental Indenture for any of the purposes of this Section 11.01, the Authority shall cause a notice of such Supplemental Indenture to be mailed, postage prepaid, to the Credit Provider, the Trustee and all Owners of Bonds at their addresses as they appear on the registration books of the Authority maintained by the Bond Registrar and to the Rating Agency. Such notice shall briefly set forth the nature of the proposed Supplemental Indenture and shall state that copies thereof are on file at the offices of the Authority for inspection by all Bondholders. A failure on the part of the Authority to mail the notice required by this Section 11.01 shall not affect the validity of the Supplemental Indenture. The Authority shall provide the Credit Provider with an executed copy of such Supplemental Indenture, together with a transcript of all proceedings of the Authority relating thereto.

**SECTION 11.02 SUPPLEMENTAL INDENTURE WITH BONDHOLDERS' CONSENT**. Subject to the terms and provisions contained in this Section 11.02 and in Section 11.01, and not otherwise, the Credit Provider and the Owners of not less than a majority in aggregate principal amount of the Bonds then Outstanding shall have the right, from time to time, anything contained in this Indenture to the contrary notwithstanding, to consent to and approve any Supplemental Indenture as shall be deemed necessary or desirable by the Authority for the purpose of modifying, altering, amending, adding to or rescinding, in any particular, any of the terms or provisions contained in this Indenture; provided, however, that nothing herein contained shall permit, or be construed as permitting: (a) an extension of the maturity of the principal of or the interest on any Bond issued hereunder; or (b) a reduction in the principal amount of any Bond or the redemption premium or the rate of interest thereon; or (c) the creation of a lien upon or a pledge of Revenues other than the lien and pledge created by this Indenture or permitted to be created by this Indenture; or (d) a preference or priority of any Bond or Bonds over any other Bond or Bonds except as permitted by this Indenture; or (e) a reduction in the





aggregate principal amount of the Bonds required for consent to a Supplemental Indenture. Nothing herein contained, however, shall be construed as making necessary the approval by Bondholders of the adoption of any Supplemental Indenture as authorized in Section 11.01.

If at any time the Authority shall determine that it is necessary or desirable to enter into any Supplemental Indenture for any of the purposes of this Section, an Authorized Officer shall cause notice of the proposed Supplemental Indenture to be mailed not less than 15 days prior to the date on which it is proposed that such Supplemental Indenture take effect, postage prepaid, to the Trustee, the Credit Provider and all Owners of Bonds at their addresses as they appear on the registration books and to all Rating Agencies. Such notice shall briefly set forth the nature of the proposed Supplemental Indenture and shall state that copies thereof are on file at the registered office of the Authority for inspection by all Bondholders. The Authority shall not, however, be subject to any liability to any Bondholder by reason of its failure to cause the notice required by this Section 11.02 to be mailed and any such failure shall not affect the validity of such Supplemental Indenture when consented to and approved as provided in this Section 11.02. A subsequent resolution of the Authority may provide that the form and manner of providing notice to Bondholders be in some different form if so determined by the Authority.

Whenever the Authority shall deliver to the Chairman an instrument or instruments in writing purporting to be executed by the Owners of not less than a majority in aggregate principal amount of the Bonds then Outstanding, which instrument or instruments shall refer to the proposed Supplemental Indenture and shall specifically consent to and approve the enactment thereof in substantially the form thereof referred to in such instrument, thereupon, but not otherwise, the Authority may enter into such Supplemental Indenture in substantially such form, without liability or responsibility to any Owner of any Bond, whether or not such Owner shall have consented thereto. Notwithstanding the foregoing, the Authority may enter into the proposed Supplemental Indenture prior to receiving the requisite consents provided the effective date of said Supplemental Indenture, by its terms, is delayed until, and conditioned upon, receipt of the required consents.

If the Owners of not less than a majority in aggregate principal amount of the Bonds Outstanding at the time of the entry into (or effective date of) such Supplemental Indenture shall have consented to and approved such Supplemental Indenture as herein provided, no Owner of any Bond shall have any right to object to the enactment of such Supplemental Indenture, or to object to any of the terms and provisions contained therein or the operation thereof, or in any manner to question the propriety of the adoption thereof, or to enjoin or restrain the Authority from adopting the same or from taking any action pursuant to the provisions thereof.

Any consent given by a Bondholder shall be binding with respect to all Bonds owned by said Bondholder on the date consent is given, and shall bind all future Owners of said Bonds, so that said future Owners shall have been deemed to consent to the proposed Supplemental Indenture with the same force and effect as if they had executed a consent as of the effective date thereof.

The consent of the Owners of any Series of Bonds to be issued hereunder shall be deemed given if the underwriters or initial marketing group consent in writing to such Supplemental Indenture and the substance of such Supplemental Indenture is disclosed in the

official statement or other offering document pursuant to which such Series of Bonds are offered and sold to the public.

Notwithstanding anything in this Indenture to the contrary, whenever the consent, approval or direction of the Owners of any Bonds shall be required under this Indenture, each Credit Provider, if any, shall be deemed for all purposes under this Indenture to be the Owner of all Bonds with respect to which it shall have provided a Credit Facility, for so long as such Credit Facility remains in full force and effect and shall not have been dishonored or disavowed by such Credit Provider. The Authority shall provide the Credit Provider with an executed copy of such Supplemental Indenture, together with a transcript of all proceedings of the Authority relating thereto.

Upon the entry into any Supplemental Indenture pursuant to the provisions of this Section, this Indenture shall be and be deemed to be modified and amended in accordance therewith, and the respective rights, duties and obligations under this Indenture of the Authority and all Owners of Bonds then Outstanding shall thereafter be determined, exercised and enforced in all respects under the provisions of this Indenture as so modified and amended.

**SECTION 11.03 SUPPLEMENTAL INDENTURES PART OF INDENTURE**. Any Supplemental Indenture entered in accordance with the provisions of this Indenture shall thereafter form a part of this Indenture, and all of the terms and conditions contained in any such Supplemental Indenture as to any provisions authorized to be contained therein shall be and shall be deemed to be part of the terms and conditions of this Indenture for any and all purposes. In case of the entry into any Supplemental Indenture, express reference may be made thereof in the text of any Bonds issued thereafter, if deemed necessary or desirable by the Authority.

**SECTION 11.04 OPINION OF BOND COUNSEL REQUIRED**. Notwithstanding anything in this Indenture to the contrary, the Trustee shall have no obligation to enter into any Supplemental Indenture unless it shall have been first provided and Opinion of Bond Counsel with respect thereto.

## ARTICLE XII

## DEFEASANCE

**SECTION 12.01 DEFEASANCE**. If (a) all the Outstanding Bonds shall have been paid as provided below, (b) the Authority shall pay or cause to be paid to the Trustee, Paying Agent and Bond Registrar and any other agents and other parties designated by a Supplemental Indenture, all sums of money due or to become due according to the provisions hereof and such other instruments as may be entered into with such agents and parties and (c) the Authority shall pay or cause to be paid to the Initial Reserve Facility Provider all Policy Costs due or to become due under the provisions of the Series 1996 Debt Service Reserve Fund Policy Agreement, then and in only that case the right, title and interest of the Bondholders hereunder shall cease, terminate and become void, and such Bonds shall cease to be entitled to any lien, benefit or security under this Indenture. In such event, this Indenture shall be discharged and released and amounts held in the Funds, Accounts and Subaccounts created hereunder shall be released to the Authority for its own purposes.





Any Bond shall be deemed to have been paid within the meaning and with the effect expressed in this Section 12.01 when the whole amount of the principal of and interest on such Bond shall have been paid or when: (a) there shall have been deposited with the Paying Agent or other appropriate Escrow Agent solely for the Owner of such Bond and other Bonds being defeased and specifically designated for the purpose of defeasance either moneys, Escrow Securities, or any combination thereof, in an amount which shall be verified by an Accountant as sufficient, with interest earnings thereon, to pay when due the principal of and premium, if any, and interest due and to become due on such Bonds on or prior to the redemption date or maturity date thereof, as the case may be; and (b) in the event such Bond does not mature and is not to be redeemed within the next succeeding sixty days, the Authority shall have notified, as soon as practicable, the Owner of such Bond, in the manner set forth in Article III, stating that the deposit of moneys and/or Escrow Securities required by clause (a) of this paragraph has been made with the Paying Agent or other Escrow Agent solely for the Owner of such Bond and other Bonds being defeased, and that such Bond is deemed to have been paid in accordance with this Section and stating such maturity or redemption date upon which moneys are to be available for the payment of the principal of and premium, if any, and interest on such Bond.

Except as hereinafter provided, neither the moneys nor Escrow Securities deposited with the Paying Agent or other Escrow Agent pursuant to this Section 12.01 nor principal or interest payments on any such obligations shall be withdrawn or used for any purpose other than, and shall be held in trust for, the payment of the principal of and premium, if any, and interest on said Bonds. Moneys and Escrow Securities held by an Escrow Agent may be substituted for other moneys and Escrow Securities to the extent permitted by an Escrow Deposit Agreement.

As to Variable Rate Bonds, the amount required for the interest thereon shall be calculated at the maximum rate permitted by the terms of the provisions which authorized the issuance of such Variable Rate Bonds; provided, however, that if on any date, as a result of such Variable Rate Bonds having borne interest at less than such maximum rate for any period, the total amount of moneys and Escrow Securities on deposit for the payment of interest on such Variable Rate Bonds is in excess of the total amount which would have been required to be deposited on such date in respect of such Variable Rate Bonds in order fully to discharge and satisfy such Bonds pursuant to the provisions of this Section, the Authority may use the amount of such excess, free and clear of any trust, lien, security interest, pledge or assignment securing said Variable Rate Bonds or otherwise existing under this Indenture; subject however, to the Authority's obtaining an Opinion of Bond Counsel. Notwithstanding anything in this Section 12.01 or elsewhere in this Indenture to the contrary, so long as S&P shall rate any Variable Rate Bonds, provision for the payment of such Variable Rate Bonds in accordance with this Section 12.01 shall not be deemed to release the lien of this Indenture in favor of such Variable Rate Bonds unless the Authority shall first have provided the Trustee with written evidence from S&P that such provision for payment will not, of itself, cause S&P to reduce or withdraw its then rating on such Variable Rate Bonds.

Notwithstanding any of the provisions of this Indenture to the contrary, Put Bonds may only be fully discharged and satisfied either by paying the principal of and interest on said Bonds as they become due and payable or by depositing moneys or Escrow Securities which shall be sufficient at the time of such deposit to pay when due the maximum amount of principal of and redemption premium, if any, and interest on such Put Bonds which could become payable to the

Owners of such Bonds upon the exercise of any options provided to the Owners of such Bonds and the Authority; provided, however, that if, at the time a deposit is made pursuant to this paragraph, the options originally exercisable on the Put Bonds are no longer exercisable, such Bonds shall not be considered Put Bonds for these purposes.

If any portion of the moneys described for the payment of the principal of and redemption premium, if any, and interest on any portion of Bonds is not required for such purpose, the Authority may use the amount of such excess, free and clear of any trust, lien, security interest, pledge or assignment securing said Bonds or otherwise existing under this Indenture.

## ARTICLE XIII

## CREDIT FACILITIES, LIQUIDITY FACILITIES AND MISCELLANEOUS PROVISIONS RELATED TO VARIABLE RATE BONDS

**SECTION 13.01 CREDIT FACILITY**. The Trustee shall hold and maintain each Credit Facility for the benefit of the Bondholders benefitted thereby until such Credit Facility terminates or expires in accordance with its terms. If at any time during the term of a Credit Facility any successor Trustee shall be appointed and qualified under this Indenture, the resigning or removed Trustee shall request that the Credit Provider transfer the Credit Facility to the successor Trustee, to the extent such action is necessary, and shall comply with the applicable provisions of the Credit Facility. If the resigning or removed Trustee fails to make this request, the successor Trustee shall do so before accepting appointment. Upon the termination or expiration of a Credit Facility in accordance with its terms, the Trustee shall promptly surrender the Credit Facility then in effect to the Credit Provider.

**SECTION 13.02 ENFORCEMENT OF CREDIT FACILITY**. (a) The Authority and the Trustee, for the benefit of the Owners of the Bonds benefitted thereby, shall diligently enforce and take all reasonable steps, actions and proceedings necessary for the enforcement of all terms, covenants and provisions of each Credit Facility as contemplated herein and therein. The Trustee shall not consent to or permit any amendment or modification of a Credit Facility or any credit or reimbursement agreement pursuant to which a Credit Facility has been issued which would materially adversely affect the rights or interests of the Owners of any of the Bonds without the written consent of the Owners of 100% in aggregate principal amount of such Bonds.

(b) Any provisions in this Indenture requiring notice to or from a Credit Provider or the consent thereof prior to any action by the Trustee or the Authority shall have no force or effect with respect to such Credit Provider (i) following the later of (1) the termination or expiration of such Credit Facility, and (2) the repayment of all amounts owed to such Credit Provider pursuant to the credit or reimbursement agreement pursuant to which such Credit Facility was issued or (ii) following the failure or refusal of such Credit Provider to honor a properly presented and conforming draw under such Credit Facility, except with respect to all rights accruing to the Credit Provider with respect to unreimbursed draws on the Credit Facility.



**SECTION 13.03 ALTERNATE CREDIT FACILITIES**. (a) An Alternate Credit Facility, in substitution for any Credit Facility then in effect, may be provided if the Authority shall give written notice not more than 60 nor less than 30 calendar days prior to the date such Alternate Credit Facility is to take effect (and "Alternate Credit Facility Date") to the Trustee, the Tender Agent, the Remarketing Agent, the Rating Agency, the Liquidity Provider and the Credit Provider stating its election to provide an Alternate Credit Facility. Notwithstanding the foregoing, so long as the Initial Credit Provider shall not be in default of its obligations under the Initial Credit Facility, without the prior written consent of Financial Guaranty Insurance Company, the Authority may not provide an Alternate Credit Facility in place of the Initial Credit Facility unless such Alternate Credit Facility is issued by Financial Guaranty Insurance Company. Any such Alternate Credit Facility must satisfy the requirements of this Indenture for a Credit Facility. Each Alternate Credit Facility Date shall be determined by the Authority in the notice to be provided pursuant to the first sentence of this clause (a). Each Alternate Credit Facility Date shall be a Business Day that is at least five days prior to the termination or expiration of the Credit Facility to be replaced.

(b) Upon the exercise of such option by the Authority, the Trustee shall send to the Bondholders a Notice of Alternate Credit Facility in substantially the form of Exhibit E not later than 20 calendar days prior to the Alternate Credit Facility Date. The Trustee shall not accept such Alternate Credit Facility unless the Trustee shall have received, prior to sending the Notice of Alternate Credit Facility (i) an Opinion of Bond Counsel stating that the delivery of such Alternate Credit Facility to the Trustee is authorized under this Indenture and the Act, complies with the terms hereof and will not adversely affect the exclusion of interest on any of the Bonds from gross income for federal income tax purposes, (ii) a certificate from an Authorized Officer and a written acknowledgment by the Credit Provider stating that all amounts owing to the Credit Provider under the credit or reimbursement agreement pursuant to which the Credit Facility to be replaced has been issued have been paid and that there are no Provider Bonds Outstanding, and (iii) written confirmation from the Rating Agency that the rating assigned to the Bonds will not be reduced or withdrawn as a result of such replacement.

**SECTION 13.04 LIQUIDITY FACILITY**. The Trustee shall hold and maintain each Liquidity Facility for the benefit of the Bondholders benefitted thereby until such Liquidity Facility terminates or expires in accordance with its terms. If at any time during the term of a Liquidity Facility any successor Trustee shall be appointed and qualified under this Indenture, the resigning or removed Trustee shall request that the Liquidity Provider transfer the Liquidity Facility to the successor Trustee, to the extent such action is necessary, and shall comply with the applicable provisions of the Liquidity Facility. If the resigning or removed Trustee fails to make this request, the successor Trustee shall do so before accepting appointment. Upon the termination or expiration of a Liquidity Facility in accordance with its terms, the Trustee shall promptly surrender the Liquidity Facility then in effect to the Liquidity Provider. If a Liquidity Facility shall be about to expire or terminate in accordance with its terms, without being extended or replaced by an Alternate Liquidity Facility, then the Authority and the Remarketing Agent shall use their best efforts to convert the Series 1996 Bonds to the Fixed Rate not later than 90 days prior to such expiration or termination, and, in the event of such expiration or termination, as soon as possible thereafter.

**SECTION 13.05 ENFORCEMENT OF LIQUIDITY FACILITY**. (a) The Authority and the Trustee, for the benefit of the Owners of the Bonds benefitted thereby, shall diligently enforce and take all reasonable steps, actions and proceedings necessary for the enforcement of all terms, covenants and provisions of each Liquidity Facility as contemplated herein and therein. The Trustee shall not consent to or permit any amendment or modification of a Liquidity Facility or any credit or reimbursement agreement pursuant to which a Liquidity Facility has been issued which would materially adversely affect the rights or interests of the Owners of any of the Bonds without the written consent of the Owners of 100% in aggregate principal amount of such Bonds.

(b) Any provisions in this Indenture requiring notice to or from a Liquidity Provider or the consent thereof prior to any action by the Trustee or the Authority shall have no force or effect with respect to such Liquidity Provider (i) following the later of (1) the termination or expiration of such Liquidity Facility, and (2) the repayment of all amounts owed to such Liquidity Provider pursuant to the credit or reimbursement agreement pursuant to which such Liquidity Facility was issued or (ii) following the failure or refusal of such Liquidity Provider to honor a properly presented and conforming draw under such Liquidity Facility, except with respect to all rights accruing to the Liquidity Provider with respect to unreimbursed draws on the Liquidity Facility.

**SECTION 13.06 ALTERNATE LIQUIDITY FACILITIES**. (a) With the prior written consent of the Credit Provider, an Alternate Liquidity Facility, in substitution for any Liquidity Facility then in effect, may be provided if the Authority shall give written notice not more than 60 nor less than 30 calendar days prior to the date such Alternate Liquidity Facility is to take effect (and "Alternate Liquidity Facility Date") to the Trustee, the Tender Agent, the Remarketing Agent, the Rating Agency, the Credit Provider and the Liquidity Provider stating its election to provide an Alternate Liquidity Facility. Any such Alternate Liquidity Facility must satisfy the requirements of this Indenture for a Liquidity Facility. Each Alternate Liquidity Facility Date shall be determined by the Authority in the notice to be provided pursuant to the first sentence of this clause (a). Each Alternate Liquidity Facility Date shall be a Business Day that is at least five days prior to the termination or expiration of the Liquidity Facility to be replaced.

(b) Upon the exercise of such option by the Authority, the Trustee shall send to the Bondholders a Notice of Alternate Liquidity Facility in substantially the form of Exhibit E not later than 20 calendar days prior to the Alternate Liquidity Facility Date. The Trustee shall not accept such Alternate Liquidity Facility unless the Trustee shall have received, prior to sending the Notice of Alternate Liquidity Facility (i) an Opinion of Bond Counsel stating that the delivery of such Alternate Liquidity Facility to the Trustee is authorized under this Indenture and the Act, complies with the terms hereof and will not adversely affect the exclusion of interest on any of the Bonds from gross income for federal income tax purposes, (ii) a certificate from an Authorized Officer and a written acknowledgment by the Liquidity Provider stating that all amounts owing to the Liquidity Provider under the credit or reimbursement agreement pursuant to which the Liquidity Facility to be replaced has been issued have been paid and that there are no Provider Bonds Outstanding, and (iii) written confirmation from the Rating Agency that the rating assigned to the Bonds will not be reduced or withdrawn as a result of such replacement.





**SECTION 13.07 REMARKETING AGENT**. The initial Remarketing Agent for the Series 1996 Bonds shall be PaineWebber Incorporated. The Authority may appoint a successor Remarketing Agent for the Series 1996 Bonds and may appoint Remarketing Agents for other Series of Bonds and their successors in compliance with the conditions set forth in Section 13.08. The Remarketing Agent shall designate to the Trustee its principal office and signify its acceptance of the duties and obligations imposed upon it hereunder by entering into a Remarketing Agreement with the Authority under which the Remarketing Agent shall agree to keep such books and records as shall be consistent with prudent industry practice and to make such books and records available for inspection by the Authority, the Trustee and the Tender Agent at all reasonable times.

**SECTION 13.08 QUALIFICATIONS OF REMARKETING AGENT**. Each Remarketing Agent shall be a member of the National Association of Securities Dealers, Inc., a national banking association or a commercial banking corporation and shall meet such capitalization and/or credit requirements as the Authority may determine from time to time, shall be appointed by the Authority and shall be authorized by law to perform all the duties imposed upon it by this Indenture. The Remarketing Agent may at any time resign and be discharged of the duties and obligations created by this Indenture by giving at least 60 days' written notice to the Authority, the Tender Agent, the Trustee, the Credit Provider and the Liquidity Provider. The Remarketing Agent may be removed at any time, with or without cause by the Authority, upon at least 30 days' written notice to the Remarketing Agent, by an instrument signed by Authorized Officer, filed with the Trustee, the Credit Provider, the Liquidity Provider, the Tender Agent and the Remarketing Agent. Notwithstanding the foregoing, no removal or resignation shall take effect until the Authority has appointed a successor Remarketing Agent, with the prior written approval of the Credit Provider and the Liquidity Provider, and such successor Remarketing Agent has accepted such appointment.

**SECTION 13.09 TENDER AGENT**. (a) The Trustee shall be the initial Tender Agent with respect to the Series 1996 Bonds. The Trustee hereby agrees to carry out its responsibilities as Tender Agent set forth in this Indenture. Any other Tender Agent that is not also the Trustee shall signify its acceptance of the duties and obligations imposed upon it hereunder by a written instrument of acceptance delivered to the Authority and the Trustee, under which the Tender Agent shall agree to particularly:

(i) hold all Bonds delivered to it for purchase hereunder as agent and bailee of, and in escrow for the benefit of, the respective Owners which have so delivered such Bonds until moneys representing the Purchase Price of such Bonds shall have been delivered to or for the account of or to the order of such Owners; and

(ii) keep such books and records as shall be consistent with prudent industry practice, and make such books and records available for inspection by the other parties.

The parties hereto shall each cooperate to cause the necessary arrangements to be made and to be thereafter continued whereby funds from the sources specified herein will be made available for the purchase of Bonds presented at the designated office of the Tender Agent, and to otherwise enable the Tender Agent to carry out its duties under this Indenture.

The Tender Agent, the Trustee and the Remarketing Agent shall cooperate to the extent necessary to permit the preparation, execution, issuance, authentication and delivery by the Tender Agent of replacement Bonds in connection with the tender and remarketing of Bonds under this Indenture.

The Authority and the Trustee acknowledge that, in carrying out its responsibilities hereunder, the Tender Agent shall be acting solely for the benefit of and as agent for the Owners from time to time of the Bonds. No delivery of the Bonds to the Tender Agent or any agent of the Tender Agent or purchase of Bonds by the Tender Agent shall constitute a redemption of the Bonds or any extinguishment of the debt evidenced thereby.

(b) The Tender Agent shall be a member of the National Association of Securities Dealers, Inc., a bank with trust powers, a trust company or a national banking association with trust powers and shall meet such capitalization and/or credit requirements as the Authority may determine from time to time, shall be appointed by the Authority and shall be authorized by law to perform all the duties imposed upon it by this Indenture. Any such bank or trust company shall be organized and existing under the laws of a state of the United States. The Tender Agent may resign and be discharged of the duties and obligation created by this Indenture by giving at least sixty (60) days' notice by mail to the Trustee, the Authority, the Remarketing Agent, the Credit Provider and the Liquidity Provider, provided, however, that such resignation shall not take effect unless and until a successor Tender Agent shall be appointed by the Authority. The Authority shall use its best efforts to appoint a successor Tender Agent during such sixty (60) day period and in the event a successor Tender Agent has not taken office prior to the expiration of such sixty (60) day period, the Tender Agent may petition a court of applicable jurisdiction to appoint a successor Tender Agent. The Tender Agent may be removed at any time with or without cause by an instrument signed by an Authorized Officer and filed with the Credit Provider, the Liquidity Provider, the Tender Agent, the Remarketing Agent and the Trustee; provided, however, that such removal shall not take effect unless and until a successor Tender Agent shall be appointed by the Authority. In the event of the resignation or removal of the Tender Agent, the Tender Agent shall deliver any moneys and Bonds held by it to its successor, and if there be no successor, to the Trustee.

**SECTION 13.10 NOTICE TO RATING AGENCY**. The Trustee shall notify the Rating Agency, the Credit Provider and the Liquidity Provider as soon as practicable (a) after the Trustee becomes aware of (i) any expiration, termination or renewal of a Credit Facility or a Liquidity Facility, (ii) any change in a Credit Facility or Liquidity Facility or this Indenture, or (iii) the failure of a Credit Provider or Liquidity Provider to reinstate the interest portion of a Credit Facility or Liquidity Facility within the time allotted for such reinstatement to occur, or (b) if (i) the Trustee or the Tender Agent resigns or is removed or a new Trustee or Tender Agent is appointed, (ii) the Remarketing Agent resigns or is removed or a new Remarketing Agent is appointed, (iii) an Alternate Credit Facility or an Alternate Liquidity Facility is provided, (iv) there is a mandatory tender for purchase for a Series of Bonds in whole, (v) there is a call for the redemption of a Series of Bonds in whole, (vi) there is a change in the interest mode or otherwise in the method for determination of the interest payable on a Series of Bonds pursuant to Section 2.06 or otherwise, (vii) all of the Bonds of a Series are defeased pursuant to Article XII, or (viii) the Authority issues any Series of Bonds other than the Series 1996 Bonds.





## ARTICLE XIV

## MISCELLANEOUS PROVISIONS

**SECTION 14.01 EFFECT OF COVENANTS**. All covenants, stipulations, obligations and agreements of the Authority contained in this Indenture shall be deemed to be covenants, stipulations, obligations and agreements of the Authority to the full extent authorized or permitted by law, and all such covenants, stipulations, obligations and agreements shall bind or inure to the benefit of the successor or successors thereof from time to time and any officer, board, body or commission to whom or to which any power or duty affecting such covenants, stipulations, obligations and agreements shall be transferred by or in accordance with law.

Except as otherwise provided in this Indenture, all rights, powers and privileges conferred and duties and liabilities imposed upon the Authority by the provisions of this Indenture shall be exercised or performed by the Board of the Authority or by such other officers, board, body or commission as may be required by law to exercise such powers or to perform such duties.

No covenants, stipulation, obligation or agreement herein contained shall be deemed to be a covenant, stipulation, obligation or agreement of any member, agent or employee of the Authority in his individual capacity, and neither the Board of the Authority nor any official executing the Bonds shall be liable Personally on the Bonds or be subject to any Personal liability or accountability by reason of the issuance thereof.

**SECTION 14.02 MANNER OF GIVING NOTICE**. Except as otherwise provided in this Indenture, any notice, demand, direction, request or other instrument authorized or required by this Indenture to be given to or filed with the Authority shall be deemed to have been sufficiently given or filed for all purposes of this Indenture if and when sent by registered mail, return receipt requested to the Authority at Dade County Expressway Authority 111 N.W. First Street, Suite 2740, Miami, Florida 33128, Attention: Executive Director. Except as otherwise provided in this Indenture, any notice, demand, direction, request or other instrument authorized or required by this Indenture to be given to or filed with the Trustee shall be deemed to have been sufficiently given or filed for all purposes of this Indenture if and when sent by registered mail, return receipt requested to the Trustee at The Bank of New York, c/o The Bank of New York Trust Company of Florida, N.A., 10161 Centurion Parkway, Jacksonville, Florida 32256, Attention: Corporate Trust Department. Except as otherwise provided in this Indenture, any notice, demand, direction, request or other instrument authorized or required by this Indenture to be given to or filed with the Tender Agent shall be deemed to have been sufficiently given or filed for all purposes of this Indenture if and when sent by registered mail, return receipt requested to the Tender Agent at The Bank of New York, 101 Barclay Street, New York, New York 10286. Except as otherwise provided in this Indenture, any notice, demand, direction, request or other instrument authorized or required by this Indenture to be given to or filed with the Remarketing Agent for the Series 1996 Bonds shall be deemed to have been sufficiently given or filed for all purposes of this Indenture if and when sent by registered mail, return receipt requested to the Remarketing Agent for the Series 1996 Bonds at PaineWebber Incorporated, 1285 Avenue of the Americas, New York, New York 10019, Attention: Short-Term Desk. Except as otherwise provided in this Indenture, any notice, demand, direction, request or other instrument authorized or required by this Indenture to be given to or filed with the Initial Credit

Provider shall be deemed to have been sufficiently given or filed for all purposes of this Indenture if and when sent by registered mail, return receipt requested to the Initial Credit Provider at Financial Guaranty Insurance Company, 115 Broadway, New York, New York 10006, Attention: Senior Counsel - Public Finance. Except as otherwise provided in this Indenture, any notice, demand, direction, request or other instrument authorized or required by this Indenture to be given to or filed with the Fiscal Agent shall be deemed to have been sufficiently given or filed for all purposes of this Indenture if and when sent by registered mail, return receipt requested to the Fiscal Agent at State Street Bank and Trust Company, N.A., 61 Broadway, New York, New York 10006, Attention: Corporate Trust Department. Except as otherwise provided in this Indenture, any notice, demand, direction, request or other instrument authorized or required by this Indenture to be given to or filed with the Initial Liquidity Provider for the Series 1996 Bonds shall be deemed to have been sufficiently given or filed for all purposes of this Indenture if and when sent by registered mail, return receipt requested to the Initial Liquidity Provider for the Series 1996 Bonds at FGIC Securities Purchase, Inc., 115 Broadway, New York, New York 10006, Attention: President. Except as otherwise provided in this Indenture, any notice, demand, direction, request or other instrument authorized or required by this Indenture to be given to or filed with Fitch for the Series 1996 Bonds shall be deemed to have been sufficiently given or filed for all purposes of this Indenture if and when sent by registered mail, return receipt requested to Fitch Investors Service, L.P., One State Street Plaza, New York, New York 10004, Attention: Public Finance. Except as otherwise provided in this Indenture, any notice, demand, direction, request or other instrument authorized or required by this Indenture to be given to or filed with Moody's for the Series 1996 Bonds shall be deemed to have been sufficiently given or filed for all purposes of this Indenture if and when sent by registered mail, return receipt requested to Moody's Investors Service, Inc., 99 Church Street, New York, New York 10007-2796, Attention: Public Finance Department. Except as otherwise provided in this Indenture, any notice, demand, direction, request or other instrument authorized or required by this Indenture to be given to or filed with S&P for the Series 1996 Bonds shall be deemed to have been sufficiently given or filed for all purposes of this Indenture if and when sent by registered mail, return receipt requested to Standard & Poor's Ratings Group, 25 Broadway, New York, New York 10004, Attention: Public Finance Ratings.

All documents received by the Authority or the Trustee under the provisions of this Indenture shall be retained in its possession, subject at all reasonable times to the inspection of any Bondholder, and the agents and representatives thereof.

**SECTION 14.03 SUCCESSORSHIP OF AUTHORITY**. In the event that the offices of any officer of the Authority mentioned in this Indenture shall be abolished or any two or more of such offices shall be merged or consolidated, or in the event of a vacancy in any such office by reason of death, resignation, removal from office or otherwise, or in the event any such officer shall become incapable of performing the duties of his office by reason of sickness, absence from the Authority or otherwise, all powers conferred and all obligations and duties imposed upon such officer shall be performed by the officer succeeding to the principal functions thereof or by the officer upon whom such powers, obligations and duties shall be imposed by law. The Authority may be dissolved or terminated in accordance with the Act and other applicable law only pursuant to a plan of transfer in connection with which an appropriate successor unit of government agrees to accept and assume all obligations of the Authority hereunder, including, specifically, the obligation to collect and enforce the Revenues and to pay



the principal and interest on the Bonds from the Revenues and the moneys on deposit in the Funds, Accounts and Subaccounts.

**SECTION 14.04 FURTHER ACTS**. The officers and agents of the Authority are hereby authorized and directed to do all the acts and things required of them by the Bonds and this Indenture, for the full, punctual and complete performance of all of the terms, covenants, provisions and agreements contained in the Bonds and this Indenture.

**SECTION 14.05 HEADINGS NOT PART OF INDENTURE**. Any headings preceding the texts of the several Articles and Sections hereof and any table of contents, marginal notes or footnotes appended to copies hereof shall be solely for convenience of reference, and shall not constitute a part of this Indenture, nor shall they affect its meaning, construction or effect.

**SECTION 14.06 AUTHORITY, FIDUCIARY AND BONDHOLDERS ALONE HAVE RIGHTS UNDER INDENTURE**. Except as herein otherwise expressly provided, nothing in this Indenture, expressed or implied, is intended or shall be construed to confer upon any Person, firm or corporation, other than the Authority, the Fiduciary and the Owners of the Bonds, any right, remedy or claim, legal or equitable, under or by reason of this Indenture or any provision hereof, this Indenture and all its provisions being intended to be and being for the sole and exclusive benefit of the Authority, the Fiduciaries and the Owners from time to time of the Bonds.

**SECTION 14.07 EFFECT OF PARTIAL INVALIDITY**. In case any one or more of the provisions of this Indenture or of any Bonds shall for any reason be held to be illegal or invalid, such illegality or invalidity shall not affect any other provision of this Indenture or of the Bonds, but this Indenture and the Bonds shall be construed and enforced as if such illegal or invalid provision had not been contained therein. The Bonds are issued and this Indenture is entered into with the intent that the laws of the State shall govern their construction.

**SECTION 14.08 SALE OF BONDS**. The Bonds shall be issued and sold at one time or from time to times and at such price or prices consistent with law and the requirements of this Indenture as the Authority shall hereafter determine by one or more Supplemental Indentures.

**SECTION 14.09 AUTHORITY TO PURCHASE OR DEAL IN BONDS**. Any bank or trust company acting as Trustee, Bond Registrar or Paying Agent under this Indenture, and its directors, officers, employees or agents may in good faith buy, sell, own, hold and deal in any of the Bonds and may join in any action which any Bondholder may be entitled to take with like effect as if such bank or trust company were not the Trustee, Bond Registrar or Paying Agent under this Indenture.

**SECTION 14.10 CAPITAL APPRECIATION BONDS AND CAPITAL APPRECIATION AND INCOME BONDS**. For the purposes of: (a) receiving payment of the redemption price if a Capital Appreciation Bond is redeemed prior to maturity; or (b) receiving payment of a Capital Appreciation Bond if the principal of all Bonds becomes due and payable under the provisions of this Indenture; or (c) computing the amount of Bonds held by the Owner of a Capital Appreciation Bond in giving to the Authority or the Trustee or receiver appointed

to represent the Bondholders any notice, consent, request or demand pursuant to this Indenture for any purpose whatsoever, the principal amount of a Capital Appreciation Bond shall be deemed to be its Accreted Value. For all of the foregoing purposes as they relate to Capital Appreciation and Income Bonds, the principal amount of a Capital Appreciation and Income Bond, on or prior to its Interest Commencement Date, shall be its Appreciated Value.

**SECTION 14.11 PAYMENTS DUE ON DAYS THAT ARE NOT BUSINESS DAYS**. In any case where the date of maturity of interest on or principal of the Bonds or the date fixed for redemption of Bonds shall not be Business Day, then payment of such interest or principal and any redemption premium need not be mailed by the Paying Agent on such date but may be mailed on the next succeeding Business Day with the same force and effect as if mailed on the date of maturity or the date fixed for redemption, and no interest shall accrue for the period after such date of maturity.

**SECTION 14.12 SUSPENSION OF PUBLICATION OR MAIL**. If, because of the temporary or permanent suspension of publication of any newspaper or financial journal, the suspension of delivery of registered mail or, for any other reason, the Authority shall be unable to publish in a newspaper or financial journal or mail by registered mail any notice required to be published or mailed by the provisions of this Indenture, the Authority shall give such notice in such other manner as in the judgment of the Authority shall most effectively approximate such publication or mailing thereof, and the giving of such notice in such manner shall for all purposes of this Indenture be deemed to be in compliance with the requirement for the publication or mailing thereof.Except as otherwise provided herein, for all purposes of this Indenture, anything required to be mailed shall be deemed mailed upon the deposit of the item with the U.S. Postal Service, by registered mail, return receipt requested and addressed to the addressee as set forth in Section 13.02 or otherwise provided in this Indenture.

**SECTION 14.13 EFFECTIVE**. This Indenture shall take effect as of its date.





**IN WITNESS WHEREOF**, the Authority has caused this Indenture to be signed in its name and on its behalf by the Chairman or Vice Chairman, and its seal to be hereunto affixed and attested by its Secretary, thereunto duly authorized, and to evidence its acceptance of the trusts hereby created, the Trustee has caused this Indenture to be signed in its name and on its behalf by one of its duly authorized officers, and its official seal to be hereunto affixed.

Signatures:

MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY

By: _____
(Vice) Chairman

[Seal]

Attest:

_____
Secretary

THE BANK OF NEW YORK, as Trustee

By: The Bank of New York Trust Company of Florida, N.A., as agent

By: _____
Authorized Officer

[Seal]

**EXHIBIT D**

**REQUISITION FORM--CONSTRUCTION FUND**

$_____ Dade County Expressway Authority (Florida) Toll System Revenue Bonds, Series

To: _____, as Trustee

This Requisition is made pursuant to Section 4.02 of the Trust Indenture dated as of November 15, 1996 from Dade County Expressway Authority to you as Trustee to pay Costs of the Series ___ Project.

The Trustee is hereby directed to pay sums out of the [Series ___ Account of the] Construction Fund as follows:

| Name & Address of Payee | Amount | Purpose of Payment |
|---|---|---|

The undersigned Authorized Officer of the Authority hereby certifies that each obligation, item of cost or expense mentioned in this Requisition: (a) has been properly incurred; (b) is a proper charge against the [Series __ Account of the] Construction Fund; and (c) has not been the basis of any previous disbursement, payment or reimbursement to the Authority.

Dated: _____

_____
Authorized Officer

_____
Consulting Engineer





**EXHIBIT E**

**NOTICE OF ALTERNATE CREDIT OR LIQUIDITY FACILITY**

**NOTICE TO BONDHOLDERS**

This notice is being sent pursuant to the provisions of the Trust Indenture dated as of November 15, 1996 (the "Indenture") from Dade County Expressway Authority (the "Authority") to The Bank of New York, as Trustee. Capitalized terms used in this notice shall have the same meanings as in the Indenture.

You are hereby notified as follows:

1. An Alternate [Credit/Liquidity] Facility issued by _____ and relating to the Authority's Dade County Expressway Authority (Florida) Toll System Revenue Bonds, Series 1996 (the "Bonds"), will become effective on _____ (the "Alternate [Credit/Liquidity] Facility Date"). Your Bond will be subject to mandatory tender for purchase on _____ at a price of 100% of the principal amount thereof, plus interest accrued thereon to such date.

2. Payment of the purchase price for your Bond will be made on the Alternate [Credit/Liquidity] Facility Date upon presentation and surrender at the address of the Tender Agent set forth below prior to 11:30 a.m., Eastern Time on the Alternate [Credit/Liquidity] Facility Date, of such Bond, duly endorsed in blank for transfer (with all signatures guaranteed by an eligible guarantor institution as defined by SEC Rule 17Ad 15 (17 CFR 240.17Ad 15):

The Bank of New York
101 Barclay Street
New York, New York 10286

3. In addition, you are further notified that interest will no longer accrue to you on your Bond on and after the Alternate [Credit/Liquidity] Facility Date and, other than the right to receive payment of the purchase price for your Bond, you shall then cease to have further rights under the Indenture.

Dated: _____

By: _____

Title: _____

**ELEVENTH SUPPLEMENTAL TRUST INDENTURE**

Dated as of September 1, 2016

**TO AMENDED AND RESTATED TRUST INDENTURE**

**From**

**Miami-Dade County Expressway Authority**
(a/k/a Miami-Dade Expressway Authority or MDX)
**To**

**The Bank of New York Mellon Trust Company, N.A.**
**(as successor in trust to The Bank of New York), as Trustee**

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EXHIBIT A – Form of Series 2016A Bond




**ELEVENTH SUPPLEMENTAL TRUST INDENTURE**

This Eleventh Supplemental Trust Indenture is dated as of September 1, 2016 (this "Eleventh Supplemental Indenture") and further supplements the Amended and Restated Trust Indenture dated as of June 15, 2002, as previously amended and supplemented (the "Original Indenture" and, as further supplemented by this Eleventh Supplemental Indenture, and as the same may be further amended or supplemented from time to time, the "Indenture"). The Original Indenture and this Eleventh Supplemental Indenture are each from Miami-Dade County Expressway Authority (together with its successors and assigns as permitted under the Indenture, the "Authority"), a body politic and corporate, a public instrumentality and an agency of the State of Florida (the "State") existing under the Florida Expressway Authority Act (Part I of Chapter 348, Florida Statutes, as amended) (together with any successor provisions of law, the "Act"), to The Bank of New York Mellon Trust Company, N.A. (as successor in trust to The Bank of New York), a national banking association organized and existing under the laws of the United States of America, as trustee (together with any successor permitted under the Indenture, the "Trustee"). The Original Indenture amended and restated the Trust Indenture dated as of November 15, 1996 (the "Prior Indenture") from the Authority to the Trustee.

**WITNESSETH:**

**WHEREAS**, the Authority is a body politic and corporate, a public instrumentality and an agency of the State established under and pursuant to the Act and Ordinance No. 94-215 duly adopted on December 13, 1994 by the Board of County Commissioners of Miami-Dade County, as amended (the "Ordinance"); and

**WHEREAS**, the Act sets forth the Authority's purposes and powers, which include, among others, the powers to: (1) acquire, hold, construct, improve, maintain, operate, own, and lease the expressways located in Miami-Dade County and identified more particularly in Exhibit A to the Original Indenture (together with certain non-roadway assets identified more particularly on Exhibit B to the Original Indenture and together with any Improvements, as defined in the Original Indenture, including additional expressways undertaken by the Authority in accordance with the Act, the "System"); (2) fix, alter, change, establish, and collect tolls, rates, fees, rentals, and other charges for the services and facilities of the System; (3) utilize surplus revenues to finance or refinance the planning, design, acquisition, construction, maintenance or improvement of a public transportation facility or transportation facilities located in Miami-Dade County, Florida or any programs or projects that will improve the levels of service on the System; and (4) borrow money, make and issue negotiable notes, bonds, refunding bonds and other evidence of indebtedness to finance the System; and

**WHEREAS**, on December 10, 1996, the Authority issued and secured under the Prior Indenture its $80,000,000 aggregate principal amount of Dade County Expressway Authority (Florida) Toll System Revenue Bonds, Series 1996 (Taxable) (the "Series 1996 Bonds"), and applied the proceeds of the Series 1996 Bonds to acquire operational and financial control of the System, as then constituted, in perpetuity; and

**WHEREAS**, on November 1, 1999, the Authority issued and secured under the Prior Indenture its $10,000,000 aggregate principal amount of Miami-Dade County Expressway

Authority (Florida) Toll System Revenue Bond, Series 1999 (the "Series 1999 Bond"), and applied the proceeds of the Series 1999 Bond for the primary purpose of paying a portion of the Cost of the Authority's Five Year Work Program; and

**WHEREAS**, on February 9, 2000, the Authority issued and secured under the Prior Indenture its $150,000,000 aggregate principal amount of Miami-Dade County Expressway Authority (Florida) Toll System Revenue Bonds, Series 2000 (the "Series 2000 Bonds"), and applied the proceeds of the Series 2000 Bonds for the primary purpose of paying a portion of the Cost of the Authority's Five Year Work Program; and

**WHEREAS**, on July 11, 2001, the Authority issued and secured under the Prior Indenture its $89,345,000 aggregate principal amount of Miami-Dade County Expressway Authority (Florida) Toll System Refunding Revenue Bonds, Series 2001A (the "Series 2001A Bonds"), and applied the proceeds of the Series 2001A Bonds for the primary purpose of refunding a portion of the Outstanding Series 2000 Bonds; and

**WHEREAS**, on August 30, 2002, the Authority issued and secured under the Original Indenture its $34,650,000 aggregate principal amount of Miami-Dade County Expressway Authority (Florida) Toll System Refunding Revenue Bonds, Series 2002 (the "Series 2002 Bonds"), and applied the proceeds of the Series 2002 Bonds for the primary purpose of refunding a portion of the Outstanding Series 2000 Bonds; and

**WHEREAS**, on July 29, 2004, the Authority issued and secured under the Original Indenture its $68,200,000 aggregate principal amount of Miami-Dade County Expressway Authority Toll System Refunding Revenue Bonds, Series 2004A (Auction Rate Securities) (the "Series 2004A Bonds") and $175,000,000 aggregate principal amount of Miami-Dade County Expressway Authority Toll System Revenue Bonds, Series 2004B (the "Series 2004B Bonds" and, together with the Series 2004A Bonds, the "Series 2004 Bonds"), and applied the proceeds of the Series 2004 Bonds for the primary purposes of refunding all of the Outstanding Series 1996 Bonds and paying a portion of the Cost of the Authority's Five Year Work Program; and

**WHEREAS,** on March 1, 2005, the Authority issued and secured under the Original Indenture its $241,400,000 aggregate principal amount of Miami-Dade County Expressway Authority Toll System Revenue Bonds, Series 2005A through Series 2005E (the "Series 2005 Bonds"), in a Dutch Auction Mode (as defined in the Original Indenture), and applied the proceeds of the Series 2005 Bonds for the primary purpose of paying a portion of the Cost of the Authority's Five Year Work Program; and

**WHEREAS**, in May 2008, the Series 2005 Bonds were converted to an Index Floating Mode (as defined in the Original Indenture) and were purchased by Dexia Credit Local, acting through its New York Branch; and

**WHEREAS,** on September 21, 2006, the Authority issued and secured under the Original Indenture its $304,335,000 aggregate principal amount of Miami-Dade County Expressway Authority Toll System Revenue Bonds, Series 2006 (the "Series 2006 Bonds"), and applied the proceeds of the Series 2006 Bonds for the primary purposes of paying a portion of







the Cost of the Authority's Five Year Work Program and paying termination payments in connection with the termination of three Hedge Agreements; and

**WHEREAS,** on August 18, 2010, the Authority issued and secured under the Original Indenture its $395,590,000 aggregate principal amount of Miami-Dade County Expressway Authority Toll System Revenue and Refunding Revenue Bonds, Series 2010A (the "Series 2010A Bonds") and $17,120,000 aggregate principal amount of Miami-Dade County Expressway Authority Toll System Refunding Revenue Bonds, Series 2010B (the "Series 2010B Bonds" and, together with the Series 2010A Bonds, the "Series 2010 Bonds"), and applied the proceeds of the Series 2010 Bonds for the primary purposes of paying a portion of the Cost of the Authority's Five Year Work Program, refunding all of the Outstanding Series 2000 Bonds and Series 2004A Bonds and reimbursing the Authority for a termination payment made by the Authority in connection with the termination of a Hedge Agreement; and

**WHEREAS,** on April 23, 2013, the Authority issued and secured under the Original Indenture its $270,220,000 aggregate principal amount of Miami-Dade County Expressway Authority Toll System Refunding Revenue Bonds, Series 2013A (the "Series 2013A Bonds"), and applied the proceeds of the Series 2013A Bonds for the primary purpose of refunding all of the Outstanding Series 2001A Bonds, Series 2002 Bonds and Series 2004B Bonds; and

**WHEREAS,** on December 17, 2013, the Authority issued and secured under the Original Indenture its $74,750,000 aggregate principal amount of Miami-Dade County Expressway Authority Toll System Refunding Revenue Bonds, Series 2013B (the "Series 2013B Bonds"), and applied the proceeds of the Series 2013B Bonds for the primary purpose of refunding a portion of the Series 2006 Bonds; and

**WHEREAS,** on June 19, 2014, the Authority issued and secured under the Original Indenture its $314,045,000 aggregate principal amount of Miami-Dade County Expressway Authority Toll System Revenue Bonds, Series 2014A (the "Series 2014A Bonds"), and is applying the proceeds of the Series 2014A Bonds for the primary purpose of paying a portion of the Cost of the Authority's Five Year Work Program; and

**WHEREAS**, on October 15, 2014, the Authority issued and secured under the Original Indenture its $266,425,000 aggregate principal amount of Miami-Dade County Expressway Authority Toll System Revenue and Refunding Bonds, Series 2014B (the "Series 2014B Bonds"), and applied the proceeds of the Series 2014B Bonds for the primary purposes of refunding a portion of the Outstanding Series 2005 Bonds and a portion of the Outstanding Series 2006 Bonds and paying termination payments in connection with the termination of two Hedge Agreements; and

**WHEREAS**, the Authority has no loans outstanding from the State Infrastructure Bank; and

**WHEREAS**, by its Resolution No. 16-22, adopted by the Authority on June 28, 2016 (the "Bond Resolution"), the Authority authorized the issuance and delivery of not more than $130,000,000 in aggregate principal amount of its Miami-Dade County Expressway Authority Toll System Refunding Revenue Bonds, Series 2016A (the "Series 2016A Bonds"), as

Refunding Bonds under the Indenture, for the purposes of providing funds, together with any other available moneys, to (A) refund all or a portion of the remaining Outstanding Series 2006 Bonds, (B) fund any increase in the Debt Service Reserve Fund Requirement resulting from the issuance of the Series 2016A Bonds, and (C) pay certain costs associated with the issuance of the Series 2016A Bonds, including the premium for a municipal bond insurance policy relating to the Series 2016A Bonds, if deemed to be in the best interest of the Authority based on the recommendations of First Southwest, a Division of Hilltop Securities Inc., financial advisor to the Authority; and

**WHEREAS**, the Series 2016A Bonds are to be secured by the Trust Estate on a parity with the lien thereon in favor of any and all other series of Bonds (as defined in the Original Indenture) now Outstanding or that may be issued from time to time hereafter; and

**WHEREAS**, the Authority has determined to refund all of the $119,660,000 principal amount of remaining Outstanding Series 2006 Bonds (the "Refunded Series 2006 Bonds"); and

**WHEREAS**, all things necessary to make the Series 2016A Bonds, when authenticated by the Trustee and issued as in the Indenture provided, the valid, binding and legal obligations of the Authority according to the import thereof, and to constitute the Indenture a valid pledge of and grant of a lien on the Trust Estate, subject to the provisions of the Indenture, for the purpose of providing for the operation and maintenance of the System and to secure the payment of the principal of and interest on the Series 2016A Bonds have been done and performed, in due form and time, as required by law; and

**WHEREAS**, the execution and delivery of this Eleventh Supplemental Indenture and the execution and issuance of the Series 2016A Bonds, subject to the terms hereof, have in all respects been duly authorized by the Authority.

**NOW, THEREFORE, THE INDENTURE WITNESSETH:**

**GRANTING CLAUSES**

That in order to provide for the acquisition, construction, installation, equipping, operation and maintenance of the System and to secure the payment of the principal of, premium, if any, and interest on all Bonds issued and to be issued under the Indenture, according to the import thereof, and to reimburse any Credit Provider and Liquidity Provider and any Reserve Facility Provider for amounts owed to them under any Credit Facility, Liquidity Facility or Reserve Facility, respectively, but subject to the limitations set forth herein, and the performance and observance of each and every covenant and condition contained herein and in the Bonds, and for and in consideration of the premises and of the acceptance by the Trustee of the trusts hereby created, and of the purchase and acceptance of the Bonds by the respective Owners thereof, and for other good and valuable consideration, the sufficiency of which is hereby acknowledged, and for the purpose of fixing and declaring the terms and conditions upon which the Bonds shall be issued, authenticated, delivered, secured and accepted by all Persons who shall from time to time be or become Owners thereof, the Authority does hereby ratify and confirm its prior assignment, pledge and grant of a lien upon and a security interest in all of its right, title and interest in and to the Trust Estate to the Trustee and its successors in trust and







assigns, to the extent provided in the Original Indenture, as supplemented by this Eleventh Supplemental Indenture;

But in trust nevertheless, for the equal and proportionate benefit and security of the Bonds issued and to be issued under and secured by the Indenture, including any Bonds hereafter issued, without preference, priority or distinction as to participation in the lien, benefit and protection hereof of any one Bond over any other or from the others by reason of priority in the issue or negotiation thereof or by reason of the date or dates of maturity thereof, or for any other reason whatsoever (except as expressly provided in the Indenture), so that each and all of the Bonds shall have the same right, lien and privilege under the Indenture and shall be equally secured hereby, with the same effect as if the same had all been made, issued and negotiated upon the delivery hereof (all except as expressly provided in the Indenture);

Provided, however, that prior to the occurrence of an Event of Default the lien on and pledge of the Trust Estate conferred by the Indenture in favor of the Trustee shall be subject in all respects to the provisions of the Indenture that require the application of Revenues or other moneys to the funds created under the Indenture, including in each case any account or subaccount established therein, prior to the application of such Revenues or other moneys for the payment of the principal or redemption price of and the interest on the Bonds. No Owner of any Bond has the right to compel any exercise of the taxing power of any unit of government to pay the principal or redemption price of the Bonds or the interest thereon.

Notwithstanding the foregoing provisions of these Granting Clauses:

(i) moneys in and investments of the Rebate Fund shall not be pledged to the payment of the Bonds and shall be applied solely to the payment of rebate amounts due to the United States of America with respect to Bonds or payments in lieu thereof or as otherwise provided in the Indenture; and

(ii) upon the occurrence of an Event of Default, the Trustee shall have a first lien on amounts held pursuant to Section 9.04 of the Original Indenture.

Provided further, however, that these presents are upon the condition that, if the Authority, or its successors, shall well and truly pay or cause to be paid, or provide for the payment of all principal, premium, if any, and interest on the Bonds due or to become due thereon, at the times and in the manner stipulated therein and herein, then the Indenture and the rights hereby granted shall cease, terminate and be void, but shall otherwise be and remain in full force;

And it is hereby further covenanted and agreed by and among the Authority, the Trustee and the Owners from time to time of the Bonds, that the terms and conditions upon which the Bonds are to be issued, authenticated, delivered, secured and accepted by all Persons who shall from time to time be or become the Owners thereof, and the trusts and conditions upon which the moneys and securities hereby pledged are to be held and disposed of, which trusts and conditions the Trustee hereby accepts, are as follows:

## ARTICLE I

## DEFINITIONS

**SECTION 1.01. DEFINITIONS**. Unless the context otherwise requires, all capitalized terms used, but not defined, in this Eleventh Supplemental Indenture, including the recitals and granting clauses hereto, shall have the meanings ascribed to them in the Original Indenture. Unless the context otherwise requires, the terms defined in the recitals hereto and this Section 1.01 shall for all purposes hereof and of any amendment hereof or supplement hereto and of the Bonds and of any certificate, opinion, request or other document mentioned herein or therein have the meanings defined herein.

"Electronic Means" shall mean the following communications methods: Society for Worldwide Interbank Financial Telecommunication, e-mail, facsimile transmission, secure electronic transmission containing applicable authorization codes, passwords and/or authentication keys issued by the Trustee, or another method or system specified by the Trustee as available for use in connection with its services under the Indenture.







## ARTICLE II

## AUTHORIZATION, DETAILS, EXECUTION AND DELIVERY OF SERIES 2016A BONDS

**SECTION 2.01. AUTHORIZATION OF SERIES 2016A BONDS.**

(a) There is hereby authorized to be issued under and secured by the Indenture, a Series of Bonds in the aggregate principal amount of $95,820,000 and designated "Miami-Dade County Expressway Authority Toll System Refunding Revenue Bonds, Series 2016A". The Series 2016A Bonds shall be issuable as Serial Bonds as hereinafter set forth. Authorized Denominations for the Series 2016A Bonds shall be $5,000 or integral multiples thereof. The definitive Series 2016A Bonds shall be issuable in typewritten form. The Series 2016A Bonds shall be substantially in the form attached as **Exhibit A** hereto.

(b) The Series 2016A Bonds shall be dated and shall bear interest from the date of their original issuance and delivery. The Series 2016A Bonds shall: (i) mature on July 1 in the years and in the principal amounts set forth below; and (ii) bear interest payable at the rates per annum set forth below on January 1 and July 1 of each year, commencing on January 1, 2017 (each such date being hereby designated an "Interest Payment Date" for the Series 2016A Bonds), computed on the basis of a 360-day year consisting of twelve 30-day months:

| Maturity (July 1) | Principal Amount | Interest Rate | Initial CUSIP No. |
|---|---|---|---|
| 2028 | $ 11,595,000 | 5.00% | 593338AS5 |
| 2029 | 16,800,000 | 5.00 | 593338AT3 |
| 2030 | 10,590,000 | 5.00 | 593338AU0 |
| 2031 | 8,280,000 | 5.00 | 593338AV8 |
| 2032 | 23,580,000 | 5.00 | 593338AW6 |
| 2033 | 21,955,000 | 5.00 | 593338AX4 |
| 2034 | 3,020,000 | 5.00 | 593338AY2 |

(c) The Series 2016A Bonds shall be subject to redemption as provided in the forms thereof, in the Original Indenture and in Article III of this Eleventh Supplemental Indenture. The Series 2016A Bonds shall be considered Bonds for all purposes of the Indenture, on a parity as to the lien on the Trust Estate with the Series 2005 Bonds, the Series 2010A Bonds, the Series 2013A Bonds, the Series 2013B Bonds, the Series 2014A Bonds, the Series 2014B Bonds and any other Additional Bonds, Completion Bonds or Refunding Bonds that may be issued hereafter.

(d) Upon issuance of the Series 2016A Bonds, the proceeds of the Series 2016A Bonds (representing the principal amount of the Series 2016A Bonds of $95,820,000, plus original issue premium of $23,436,335.35, less underwriters' discount of $205,140.03), namely $119,051,195.32, shall be paid to the Trustee and deposited to the credit of the "MDX Bond Proceeds 2016A Account" hereby authorized to be established and maintained by the Trustee.

After application of the proceeds of the Series 2016A Bonds as described below, the MDX Bond Proceeds 2016A Account shall be closed by the Trustee. The proceeds of the Series 2016A Bonds deposited to the credit of the MDX Bond Proceeds 2016A Account shall be applied as follows:

(i) $118,463,313.12 shall be applied, together with $946,535.42 from the Sinking Fund and $1,433,320.73 from the Debt Service Reserve Fund, to optionally redeem the Refunded Series 2006 Bonds on the date of original issuance and delivery of the Series 2016A Bonds; and

(ii) $587,882.20 shall be deposited to the credit of the 2016A Costs of Issuance Account hereby authorized to be established and maintained by the Trustee and applied as directed by an Authorized Officer to pay costs associated with the issuance of the Series 2016A Bonds. Any moneys remaining in the 2016A Costs of Issuance Account on December 31, 2016, or such earlier date as directed by an Authorized Officer, shall be transferred by the Trustee to the Sinking Fund.

(e) The Series 2016A Bonds shall be authenticated by the Bond Registrar and delivered by the Trustee in such manner as shall be specified in writing by an Authorized Officer, but only after the Series 2016A Bonds shall have been executed as provided in the Indenture and there shall have been delivered to the Trustee the following:

(i) a fully executed copy of this Eleventh Supplemental Indenture;

(ii) separate written opinions of each Bond Counsel stating that each is of the opinion that the issuance of the Series 2016A Bonds has been duly authorized, that all conditions precedent to the delivery of the Series 2016A Bonds have been satisfied, that the Indenture creates a valid and enforceable pledge of the Trust Estate, and that the issuance of the Series 2016A Bonds will not adversely affect the exclusion of interest on any Bonds from gross income for federal income tax purposes;

(iii) $119,051,195.32 in immediately available funds, constituting the purchase price for the Series 2016A Bonds upon their original issuance and delivery;

(iv) a certificate of an Authorized Officer to the effect that no Event of Default has occurred and is continuing as of the date of issuance of the Series 2016A Bonds and that there are no Policy Costs due and owing as of the date of issuance of the Series 2016A Bonds;

(v) a copy of a certificate signed by an Authorized Officer stating the amount of Test Period Revenues projected to be received by the Authority during the current Fiscal Year and each full Fiscal Year to and including the fifth full Fiscal Year following the issuance of the Series 2016A Bonds;

(vi) A written opinion of the Consulting Engineer stating that (A) the projections of Test Period Revenues set forth in the certificate of the Authorized Officer delivered pursuant to clause (v) immediately above, including, without limitation, that portion of Test Period Revenues anticipated by the Authorized Officer to be derived from







increases in Tolls, rates, fees, rentals and other charges relating to the System scheduled to take effect during the Test Period, are reasonable, and (B) the Test Period Revenues are sufficient to enable the Authority to comply with all of the requirements of Section 5.01(b) of the Original Indenture over the entirety of the Test Period, taking into account the additional Principal and Interest Requirements of the Series 2016A Bonds and excluding the Principal and Interest Requirements on the Refunded Series 2006 Bonds; and

(vii) Either (A) a certificate of the Department stating that, at the time the Series 2016A Bonds are to be issued, (1) the Authority is current in the payment to the Department of any unpaid Non-contingent Portion of Annual Repayment Requirements, (2) there is not any unpaid Contingent Portion of Annual Repayment Requirements, and (3) the Department acknowledges that Revenues, based on the opinion of the Consulting Engineer, are projected to be sufficient to pay when due the Annual Repayment Requirements after taking into account the debt service requirements of the Series 2016A Bonds, or (B) if, at the time the Series 2016A Bonds are to be issued (1) the Authority is not current in the payment to the Department of any unpaid Non-contingent Portion of Annual Repayment Requirements, (2) there shall be any unpaid Contingent Portion of Annual Repayment Requirements, or (3) Revenues, based on the opinion of the Consulting Engineer, are projected to be insufficient to pay when due the Annual Repayment Requirements after taking into account the debt service requirements of the Series 2016A Bonds, a written consent from the Department to the issuance of the Series 2016A Bonds.

## ARTICLE III

## REDEMPTION OF SERIES 2016A BONDS

**SECTION 3.01. REDEMPTION DATES AND PRICES.**

(a) The Series 2016A Bonds are subject to optional redemption prior to their stated maturity, at the option of the Authority, in whole or in part, and if in part, in any order of maturity selected by the Authority and by lot within a maturity, on any date on or after July 1, 2026, at a redemption price equal to 100% of the principal amount thereof plus accrued interest thereon to the redemption date, without premium.

(b) The Series 2016A Bonds may be redeemed in whole or in part in such amounts and of such maturities as the Authority shall direct at any time at a redemption price equal to 100% of the principal amount thereof plus accrued interest, if any, to the redemption date upon receipt by the Trustee of a written notice from the Authority stating that either of the following events has occurred:

(i) all or substantially all of the System shall be damaged or destroyed and the Authority shall determine that it is not practicable or desirable to rebuild, repair and restore the same; or

(ii) all or substantially all of the System shall be condemned or such use or control thereof shall be taken by eminent domain as to render the same unsatisfactory to the Authority for continued operation.

**SECTION 3.02. NOTICE OF REDEMPTION**. Prior to notice being given to the Owners of the Series 2016A Bonds of any optional redemption under Section 3.01(a), either (A) there shall be deposited with the Trustee an amount sufficient to pay the principal amount of the Series 2016A Bonds subject to redemption, plus accrued interest to the redemption date, or (B) such notice shall state that the redemption is conditioned on the receipt of moneys for such redemption by the Trustee on or prior to the redemption date. In the event that a conditional notice of redemption is given and such moneys are not timely received, the redemption for which such notice was given shall not be undertaken. Amounts deposited pursuant to this paragraph shall be kept by the Trustee in a separate account in the Sinking Fund (which the Trustee is hereby authorized and directed to create), and segregated from all other moneys deposited under the Indenture and shall be held uninvested unless invested at the direction of an Authorized Officer only in Government Obligations that mature on or before the redemption date. Not less than forty (40) days prior to each redemption date (other than a redemption of Series 2016A Bonds in order to fulfill Amortization Requirements for which no prior notice from the Authority to the Trustee shall be required), the Authority shall provide the Trustee prior written notice of its intention to redeem the Series 2016A Bonds in whole or in part. Within five (5) Business Days of receipt of any such notice, if required, and, in any case, and at least thirty (30) days, but not more than forty-five (45) days, before a redemption date applicable to the Series 2016A Bonds, the Trustee shall cause a notice of such redemption to be: (a) filed with any Paying Agent; and (b) mailed, postage prepaid, to each Owner of the Series 2016A Bonds subject to such redemption at its address as it appears on the registration books herein provided for. Failure to file any such notice with any Paying Agent shall not affect the validity of the proceedings for redemption.

**SECTION 3.03. OTHER REDEMPTION PROVISIONS**. Except as otherwise set forth in this Article III, the provisions of Sections 3.02, 3.04, 3.05 and 3.06 of the Original Indenture shall apply to redemptions of the Series 2016A Bonds.









003-4430-5618/4/AMERICAS

## ARTICLE IV

## MISCELLANEOUS PROVISIONS

**SECTION 4.01. APPOINTMENT OF BOND REGISTRAR AND PAYING AGENT**. The Bank of New York Mellon Trust Company, N.A. shall act as Bond Registrar and Paying Agent for the Series 2016A Bonds. Its notice address, when acting in either of such capacities, shall be as set forth in Section 14.02 of the Original Indenture for the Trustee.

**SECTION 4.02. EFFECTIVE**. This Eleventh Supplemental Indenture shall take effect as of its date.

**SECTION 4.03. PROVISIONS OF ORIGINAL INDENTURE NOT OTHERWISE MODIFIED**. Except as supplemented by this Eleventh Supplemental Indenture, the Original Indenture is in all respects hereby ratified and confirmed.

**SECTION 4.04. NOTICES.** The Trustee shall have the right to accept and act upon instructions, including funds transfer instructions ("Instructions") given pursuant to this Eleventh Supplemental Indenture and delivered using Electronic Means; provided, however, that the Authority shall provide to the Trustee an incumbency certificate listing the Authorized Officer with the authority to provide such Instructions and containing specimen signatures of such Authorized Officer, which incumbency certificate shall be amended by the Authority whenever a person is to be added or deleted from the listing. The Authority understands and agrees that the Trustee cannot determine the identity of the actual sender of such Instructions and that the Trustee shall conclusively presume that directions that on their face purport to have been sent by an Authorized Officer listed on the incumbency certificate provided to the Trustee have been sent by such Authorized Officer. The Authority shall be responsible for ensuring that only the Authorized Officer transmit such Instructions to the Trustee. The Authority shall be responsible for instructing Authorized Officers regarding appropriate security for applicable user and authorization codes, passwords and/or authentication keys, including treatment of such items with extreme care. The Trustee shall not be liable for any losses, costs or expenses arising directly or indirectly from the Trustee's reliance upon and compliance with such Instructions, provided that the Trustee acts on such Instructions prior to receipt of any subsequent written instructions that conflict or are inconsistent with the original Instructions. The Authority agrees: (i) to assume all risks arising out of the use of Electronic Means to submit Instructions to the Trustee, including without limitation the risk of the Trustee acting on unauthorized Instructions, and the risk of interception and misuse by third parties; (ii) that it is fully informed of the protections and risks associated with the various methods of transmitting Instructions to the Trustee and that there may be more secure methods of transmitting Instructions than the method(s) selected by the Authority; (iii) that the security procedures (if any) to be followed in connection with its transmission of Instructions provide to it a commercially reasonable degree of protection in light of its particular needs and circumstances; and (iv) to notify the Trustee immediately upon learning of any compromise or unauthorized use of the security procedures. The Trustee agrees that its rights, duties and obligations under this Section 4.04 shall be subject to the provisions of Article VIII of the Original Indenture.







**SECTION 4.05. COUNTERPARTS**. This Eleventh Supplemental Indenture may be simultaneously executed in several counterparts, each of which shall be an original and all of such shall constitute but one and the same instrument.

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In witness whereof, the Authority has caused this Eleventh Supplemental Indenture to be signed in its name and on its behalf by its Executive Director, and its seal to be hereunto affixed and attested by its Secretary, thereunto duly authorized, and to evidence its acceptance of the trusts hereby created, the Trustee has caused this Eleventh Supplemental Indenture to be signed in its name and on its behalf by one of its duly authorized officers.

Signatures:

MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY

[Seal]

By: _____
Javier Rodriguez, P.E.
Executive Director

Attest:

By: _____
Maria Luisa Navia Lobo
Secretary

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., as Trustee

By: _____
Cynthia M. Moore
Vice President







**EXHIBIT A**

No. R-__ $_____

**UNITED STATES OF AMERICA**
**STATE OF FLORIDA**
**MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY**
**TOLL SYSTEM REFUNDING REVENUE BOND, SERIES 2016A**

| INTEREST RATE | MATURITY DATE | DATE OF ISSUANCE | CUSIP NO. |
|---|---|---|---|
| _____% | July 1, 20__ | September 16, 2016 | |

REGISTERED OWNER: Cede & Co.

PRINCIPAL AMOUNT: _____ Dollars

The MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY (the "Authority"), a body politic and corporate, a public instrumentality and an agency of the State of Florida (the "State") existing under the Florida Expressway Authority Act (Part I of Chapter 348, Florida Statutes, as amended)(together with any successor provisions of law, the "Act"), for value received, promises to pay, in lawful money of the United States of America to the Registered Owner of this Series 2016A Bond named above, or registered assigns (collectively, the "Registered Owner"), on the Maturity Date specified above, unless this Series 2016A Bond shall be redeemable and shall have been previously called for earlier redemption and payment of the redemption price made or provided for, but solely from the revenues of the Authority and the funds pledged for the payment of this Series 2016A Bond pursuant to the Amended and Restated Trust Indenture dated as of June 15, 2002, as previously supplemented and amended (the "Amended and Restated Indenture") between the Authority and The Bank of New York Mellon Trust Company, N.A., as successor in trust to The Bank of New York (said bank together with any successor appointed to act as such, is hereinafter referred to as the "Trustee," "Paying Agent" and the "Bond Registrar"), as most recently supplemented by the Eleventh Supplemental Trust Indenture to Amended and Restated Trust Indenture dated as of September 1, 2016 from the Authority to the Trustee (the "Eleventh Supplemental Indenture" and together with the Amended and Restated Indenture, the "Indenture"), and not otherwise, upon its surrender, at the designated corporate office of the Bond Registrar and Paying Agent, the Principal Amount shown above and to pay interest on such Principal Amount in like manner at the Interest Rate per annum set forth above, but solely from said revenues and funds pledged in accordance with the Indenture, from the date of issuance and delivery of this Series 2016A Bond set forth above, or from the Interest Payment Date (as defined in the Indenture) next preceding the date of authentication to which interest shall have been paid, unless such date of authentication is an Interest Payment Date to which interest shall have been paid, in which case from such date, at the rate per annum set forth above on each January 1 and July 1, commencing January 1, 2017,

until payment of such Principal Amount, or provision therefor, shall have been made upon redemption or at maturity.

Capitalized terms used in this Series 2016A Bond but not defined herein, shall have the meanings ascribed to them in the Indenture.

Payment of interest on any Interest Payment Date with respect to this Series 2016A Bond will be made to the Registered Owner in whose name this Series 2016A Bond is registered on the registration books of the Authority kept by the Bond Registrar at the close of business on the Record Date by check or draft mailed on the Interest Payment Date by the Paying Agent to such Registered Owner at his or her address as it appears on said bond registration books, or in the case of a Registered Owner of any Series 2016A Bond in a denomination of one million dollars ($1,000,000) or more, by wire transfer to a domestic bank account at the written request of such Registered Owner provided to the Paying Agent at least fifteen (15) days prior to an Interest Payment Date. If and to the extent that the Authority shall fail to make a required payment or provision for payment of interest on this Series 2016A Bond on any Interest Payment Date, that interest shall cease to be payable to the person who was the Registered Owner of this Series 2016A Bond as of the applicable Record Date. When moneys become available for payment of interest on this Series 2016A Bond, the Trustee shall establish a Special Record Date for the payment of that interest which shall not be more than twenty nor fewer than ten days prior to the date of the proposed payment. Not fewer than ten days prior to the Special Record Date, notice of the proposed payment and of the Special Record Date therefor shall be mailed to the Registered Owner of record on the fifth day prior to such mailing at his address as it appears on the registration books of the Authority maintained pursuant to the Indenture. Thereafter, such interest shall be payable to the Registered Owner of this Series 2016A Bond at the close of business on the Special Record Date. Except as otherwise provided in the Indenture, the principal of this Series 2016A Bond shall be payable to or upon the order of the Registered Owner thereof or his duly authorized attorney or legal representative, as the same falls due, upon the presentation and surrender of this Series 2016A Bond at the designated corporate trust office of the Paying Agent. The principal of and interest on this Series 2016A Bond shall be payable in any coin or currency of the United States of America, or by check and wire payment in such currency, which, at the time of payment, is legal tender for the payment of public and private debts.

THE PRINCIPAL OF AND INTEREST ON THIS SERIES 2016A BOND ARE PAYABLE SOLELY FROM THE REVENUES WHICH ARE PLEDGED TO THE PAYMENT THEREOF AND THE MONEYS ON DEPOSIT FROM TIME TO TIME IN THE FUNDS, ACCOUNTS AND SUBACCOUNTS CREATED AND MAINTAINED PURSUANT TO THE INDENTURE, IN THE MANNER AND TO THE EXTENT SPECIFIED IN THE INDENTURE, AND NOTHING IN THIS SERIES 2016A BOND OR IN THE INDENTURE SHALL BE CONSTRUED AS OBLIGATING THE AUTHORITY TO PAY THE PRINCIPAL AND THE INTEREST THEREON EXCEPT FROM THE REVENUES AND THE MONEYS ON DEPOSIT FROM TIME TO TIME IN THE FUNDS, ACCOUNTS AND SUBACCOUNTS CREATED AND MAINTAINED PURSUANT TO THE INDENTURE. THE AUTHORITY HAS NO TAXING POWER. THIS SERIES 2016A BOND DOES NOT CONSTITUTE AN INDEBTEDNESS OF MIAMI-DADE COUNTY, FLORIDA (THE "COUNTY"), THE STATE







OF FLORIDA (THE "STATE") OR ANY OTHER POLITICAL SUBDIVISION OR AGENCY OF THE COUNTY OR OF THE STATE WITHIN THE MEANING OF ANY CONSTITUTIONAL OR STATUTORY PROVISION OR LIMITATION. NO REGISTERED OWNER OF THIS SERIES 2016A BOND SHALL EVER HAVE THE RIGHT TO COMPEL THE EXERCISE OF THE TAXING POWER OF THE COUNTY, THE STATE OR ANY OTHER POLITICAL SUBDIVISION OR AGENCY OF THE COUNTY OR THE STATE OR THE APPLICATION OF ANY FUNDS OTHER THAN THE FUNDS PLEDGED UNDER THE INDENTURE TO THE PAYMENT OF THIS SERIES 2016A BOND.

The Series 2016A Bonds are issued and the Indenture is made and entered into, under and pursuant to the Constitution and laws of the State of Florida, including particularly the Act.

This Series 2016A Bond shall not be valid or become obligatory for any purpose or be entitled to any security or benefit under the Indenture until the certificate of authentication hereon shall have been duly executed by the Bond Registrar.

This Series 2016A Bond constitutes one of a duly authorized series of bonds designated Miami-Dade County Expressway Authority Toll System Refunding Revenue Bonds, Series 2016A (the "Series 2016A Bonds") in the aggregate principal amount of $95,820,000, which is issued pursuant to: (i) the Indenture; (ii) the Act; and (iii) Resolution No. 16-22, adopted by the Authority on June 28, 2016 (the "Resolution"). Executed counterparts of the Indenture are on file at the principal corporate office of the Trustee.

The Series 2016A Bonds are being issued to provide funds, together with other available moneys, to (1) refund the Refunded Series 2006 Bonds, and (2) pay costs and expenses relating to the issuance of the Series 2016A Bonds.

Reference is made to the Indenture for the provisions, among others, with respect to the nature and extent of the security, rights, duties and obligations of the Authority and the Trustee, the rights of the Registered Owners of the Series 2016A Bonds, the terms on which the Series 2016A Bonds are issued and secured and the terms on which obligations secured on a parity with the lien in favor of the Series 2016A Bonds upon the Revenues (as defined in the Indenture) have been and may be issued and secured, transfer of this bond and to all the provisions of which the Registered Owner hereof by the acceptance of this Series 2016A Bond assents.

The Series 2016A Bonds are issued as fully registered bonds in the denomination of $5,000 or any integral multiple of $5,000.

The Authority and Bond Registrar shall not be required to execute or transfer this Series 2016A Bond during the period beginning at the close of business on a Record Date (or Special Record Date) and ending on the close of business on the next Interest Payment Date or date set for payment of interest for which the Special Record Date was set. The Authority and Bond Registrar shall not be required to transfer this Series 2016A Bond: (a) during the fifteen days immediately preceding the date of mailing of notice of the redemption with respect to this Series 2016A Bond; or (b) after this Series 2016A Bond has been selected for redemption or has matured.

The Series 2016A Bonds are subject to optional redemption prior to their stated maturity, at the option of the Authority, in whole or in part, and if in part, in any order of maturity selected by the Authority and by lot within a maturity, on any date on or after July 1, 2026, at a redemption price equal to 100% of the principal amount thereof plus accrued interest thereon to the redemption date, without premium.

Prior to notice being given to the Registered Owners of the Series 2016A Bonds of any optional redemption of the Series 2016A Bonds, either (A) there shall be deposited with the Trustee an amount sufficient to pay the principal amount of the Series 2016A Bonds subject to redemption, plus accrued interest to the redemption date, or (B) such notice shall state that the redemption is conditioned on the receipt of moneys for such redemption by the Trustee on or prior to the redemption date. In the event that a conditional notice of redemption is given and such moneys are not timely received, the redemption for which such notice was given shall not be undertaken. Amounts deposited in accordance with this paragraph shall be kept by the Trustee in a separate account in the Sinking Fund created under the Indenture and segregated from all other moneys deposited under the Indenture and shall be held uninvested unless invested at the direction of an Authorized Officer only in Government Obligations that mature on or before the redemption date.

The Series 2016A Bonds may be redeemed in whole or in part in such amounts and of such maturities as the Authority shall direct at any time at a redemption price equal to 100% of the principal amount thereof plus accrued interest, if any, to the redemption date upon receipt by the Trustee of a written notice from the Authority stating that either of the following events has occurred:

(1) all or substantially all of the System shall be damaged or destroyed and the Authority shall determine that it is not practicable or desirable to rebuild, repair and restore the same; or

(2) all or substantially all of the System shall be condemned or such use or control has been taken by eminent domain as to render the same unsatisfactory to the Authority for continued operation.

The Trustee shall give notice, in the name of the Authority, of the redemption of such Series 2016A Bonds by mailing a copy of such notice, postage prepaid, at least thirty (30) days, but not more than forty-five (45) days, before the redemption date to the Registered Owners of any Series 2016A Bonds to be redeemed in whole or in part, at their addresses, as they appear on the registration books maintained by the Bond Registrar, but receipt of such notice shall not be a condition precedent to such redemption and failure to receive any such notice shall not affect the validity of the proceedings for the redemption of Series 2016A Bonds, except to the extent a bondholder is prejudiced thereby, and then, only with respect to such bondholder. No notice of redemption need be given if the Registered Owners of all Series 2016A Bonds to be called for redemption waive notice thereof in writing, and such waiver shall be filed with the Trustee not later than twenty-five (25) days prior to the redemption date. Any notice mailed shall be conclusively presumed to have been duly given, whether or not the Registered Owner actually receives the notice.







If money or Escrow Securities or a combination of both, sufficient to pay the redemption price of the Series 2016A Bonds to be redeemed are held by the Trustee in trust for the Registered Owners of Series 2016A Bonds to be redeemed on the date fixed for redemption, then interest on the Series 2016A Bonds called for redemption shall cease to accrue; such Series 2016A Bonds shall cease to be entitled to any benefits or security under the Indenture or to be deemed outstanding, and the Registered Owners of such Series 2016A Bonds shall have no rights in respect thereof except to receive payment of the redemption price thereof. Series 2016A Bonds and portions of Series 2016A Bonds for which irrevocable instructions to pay on one or more specified dates or to call for redemption at the redemption date have been given to the Trustee in form satisfactory to it shall not thereafter be deemed to be Outstanding under the Indenture and shall cease to be entitled to the security of or any rights under the Indenture, other than rights to receive payment of the redemption price thereof, to be given notice of redemption in the manner provided in the Indenture, and, to the extent provided in the Indenture, to receive Series 2016A Bonds for any unredeemed portions of Series 203A Bonds, if money or Escrow Securities, or a combination of both, sufficient to pay the redemption price of such Series 2016A Bonds or portions thereof, are held in separate accounts by the Trustee in trust for the Registered Owners of such Series 2016A Bonds.

Reference is made to the Indenture for certain other terms applicable to the redemption of the Series 2016A Bonds.

The Authority, pursuant to recommendations promulgated by the Committee on Uniform Security Identification Procedures ("CUSIP"), has caused a CUSIP number to be printed on this Series 2016A Bond and has directed the Bond Registrar to use such CUSIP number in notices of redemption as a convenience to Registered Owners of the Series 2016A Bonds.

No Registered Owner of any of the Series 2016A Bonds shall have any right in any manner whatever by his or their action to affect, disturb or prejudice the security of the Indenture, or to enforce any right thereunder except in the manner provided in the Indenture, and all proceedings at law or in equity shall be instituted, had and maintained for the benefit of all Registered Owners of such Series 2016A Bonds.

It is hereby certified that the Series 2016A Bonds are authorized by and is issued in conformity with the requirements of the Constitution and statutes of the State of Florida. Without limiting the generality of the foregoing certification, it is hereby further certified that all conditions, acts and things required to exist, happen and be performed under the Act and under the Indenture prior to the issuance of the Series 2016A Bonds, exist, have happened and have been performed, and that the issuance, authentication and delivery of the Series 2016A Bonds have been duly authorized by a duly adopted resolution of the Authority.

The Series 2016A Bonds are issued with the intent that the laws of the State of Florida shall govern their construction.

No recourse shall be had for the payment of the principal of or interest or redemption premium, if any, on this Series 2016A Bond, or for any claim based on this Series 2016A Bond or against any member, officer, or employee, past, present, or future, of the Authority or any

successor body, as such, either directly or through the Authority or any such successor body, under any constitutional provision, statute or rule of law, or by enforcement of any assessment or by any legal or equitable proceeding or otherwise, all such liability of such members, officers or employees being released as a condition of and as consideration for the issuance of this Series 2016A Bond.

IN WITNESS WHEREOF, as provided by the Act, the MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY has caused this Series 2016A Bond to be executed in its name and on its behalf by the manual signature of its Chair and its corporate seal to be hereunto affixed manually and attested by the manual signature of its Secretary.

MIAMI- DADE COUNTY EXPRESSWAY AUTHORITY

By: _____
Chair

[SEAL]

ATTEST:

By: _____
Secretary







CERTIFICATE OF AUTHENTICATION

This bond is one of the Series 2016A Bonds described in the within mentioned Indenture.

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., as Bond Registrar

By: _____
Authorized Signatory

Date of Authentication: _____

ASSIGNMENT

FOR VALUE RECEIVED the undersigned hereby sells, assigns and transfers unto_____ _____ (PLEASE INSERT SOCIAL SECURITY OR OTHER IDENTIFYING NUMBER(S) OF TRANSFEREE(S)) _____ the attached bond of MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY and does hereby constitute and appoint _____ as attorney to register the transfer of the said bond on the books kept for registration and registration of transfer thereof of the within bond, with full power of substitution in the premises.

Dated: _____

Signature Guarantee:

_____ _____

NOTICE: Signature(s) must be guaranteed by an eligible guarantor institution which is a member of a recognized signature guaranty program, i.e., Securities Transfer Agents Medallion Program (STAMP), Stock Exchanges Medallion Program (SEMP) or New York Stock Exchange Medallion Signature Program (MSP), a member firm of the New York Stock Exchange or a commercial bank or a trust company.

NOTICE: No transfer will be registered and no new Bond will be issued in the name or names of the Transferee(s), unless the signature(s) to this assignment correspond(s) with the name or names as it/they appear(s) upon the face of the within Bond in every particular, without alteration or enlargement or any change whatever and the Social Security or Federal Employer Identification Number(s) of the Transferee(s) is/are supplied.



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# APPENDIX F

# FORM OF DISCLOSURE DISSEMINATION AGENT AGREEMENT

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## DISCLOSURE DISSEMINATION AGENT AGREEMENT

This Disclosure Dissemination Agent Agreement (the "Disclosure Agreement"), dated as of September 16, 2016, is executed and delivered by the Miami-Dade County Expressway Authority (the "Issuer") and Digital Assurance Certification, L.L.C., as exclusive Disclosure Dissemination Agent (the "Disclosure Dissemination Agent" or "DAC") for the benefit of the Holders (hereinafter defined) of the Bonds (hereinafter defined) and in order to provide certain continuing disclosure with respect to the Bonds in accordance with Rule 15c2-12 of the United States Securities and Exchange Commission under the Securities Exchange Act of 1934, as the same may be amended from time to time (the "Rule").

The services provided under this Disclosure Agreement solely relate to the execution of instructions received from the Issuer through use of the DAC system and do not constitute "advice" within the meaning of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the "Act"). DAC will not provide any advice or recommendation to the Issuer or anyone on the Issuer's behalf regarding the "issuance of municipal securities" or any "municipal financial product" as defined in the Act and nothing in this Disclosure Agreement shall be interpreted to the contrary.

SECTION 1. Definitions. Capitalized terms not otherwise defined in this Disclosure Agreement shall have the meaning assigned in the Rule or, to the extent not in conflict with the Rule, in the Official Statement (hereinafter defined). The capitalized terms shall have the following meanings:

"Annual Filing Date" means the date, set in Sections 2(a) and 2(f), by which the Annual Report is to be filed with the MSRB.

"Annual Financial Information" means annual financial information as such term is used in paragraph (b)(5)(i) of the Rule and specified in Section 3(a) of this Disclosure Agreement.

"Annual Report" means an Annual Report described in and consistent with Section 3 of this Disclosure Agreement.

"Audited Financial Statements" means the financial statements (if any) of the Issuer for the prior Fiscal Year, certified by an independent auditor as prepared in accordance with generally accepted accounting principles or otherwise, as such term is used in paragraph (b)(5)(i) of the Rule and specified in Section 3(b) of this Disclosure Agreement.

"Bonds" means the bonds as listed on the attached Exhibit A, with the 9-digit CUSIP numbers relating thereto.

"Disclosure Dissemination Agent" means Digital Assurance Certification, L.L.C, acting in its capacity as Disclosure Dissemination Agent hereunder, or any successor Disclosure Dissemination Agent designated in writing by the Issuer pursuant to Section 9 hereof.

"Disclosure Representative" means the Executive Director of the Issuer or his or her designee, or such other person as the Issuer shall designate in writing to the Disclosure Dissemination Agent from time to time as the person responsible for providing Information to the Disclosure Dissemination Agent.

"Failure to File Event" means the Issuer's failure to file an Annual Report on or before the Annual Filing Date.

"Force Majeure Event" means: (i) acts of God, war, or terrorist action; (ii) failure or shut-down of the Electronic Municipal Market Access system maintained by the MSRB; or (iii) to the extent beyond the Disclosure Dissemination Agent's reasonable control, interruptions in telecommunications or utilities services, failure, malfunction or error of any telecommunications, computer or other electrical, mechanical or technological application, service or system, computer virus, interruptions in Internet service or telephone service (including due to a virus, electrical delivery problem or similar occurrence) that affect Internet users generally, or in the local area in which the Disclosure Dissemination Agent or the MSRB is located, or acts of any government, regulatory or any other competent authority the effect of which is to prohibit the Disclosure Dissemination Agent from performance of its obligations under this Disclosure Agreement.

"Holder" means any person (a) having the power, directly or indirectly, to vote or consent with respect to, or to dispose of ownership of, any Bonds (including persons holding Bonds through nominees, depositories or other intermediaries) or (b) treated as the owner of any Bonds for federal income tax purposes.

"Information" means the Annual Financial Information, the Audited Financial Statements (if any), the Notice Event notices, the Failure to File Event notices and the Voluntary Reports.

"MSRB" means the Municipal Securities Rulemaking Board established pursuant to Section 15B(b)(1) of the Securities Exchange Act of 1934.

"Notice Event" means any of the events enumerated in paragraph (b)(5)(i)(C) of the Rule and listed in Section 4(a) of this Disclosure Agreement.

"Obligated Person" means any person, including the Issuer, who is either generally or through an enterprise, fund, or account of such person committed by contract or other arrangement to support payment of all, or part of the obligations on the Bonds (other than providers of municipal bond insurance, letters of credit, or other liquidity facilities).

"Official Statement" means that Official Statement prepared by the Issuer in connection with the Bonds.

"Voluntary Report" means the information provided to the Disclosure Dissemination Agent by the Issuer pursuant to Section 7.

SECTION 2. Provision of Annual Reports.

(a) The Issuer shall provide, annually, an electronic copy of the Annual Report to the Disclosure Dissemination Agent, not later than the Annual Filing Date. Promptly upon receipt of an electronic copy of the Annual Report, the Disclosure Dissemination Agent shall provide an Annual Report to the MSRB not later than 210 days after the end of each Fiscal Year, commencing with the Fiscal Year ending June 30, 2016. Such date and each anniversary thereof is the Annual Filing Date. The Annual Report may be submitted as a single document or as separate documents

comprising a package, and may cross-reference other information as provided in Section 3 of this Disclosure Agreement.

(b) If on the fifteenth (15th) day prior to the Annual Filing Date, the Disclosure Dissemination Agent has not received a copy of the Annual Report, the Disclosure Dissemination Agent shall contact the Disclosure Representative by telephone and in writing (which may be by e-mail) to remind the Issuer of its undertaking to provide the Annual Report pursuant to Section 2(a). Upon such reminder, the Disclosure Representative shall either (i) provide the Disclosure Dissemination Agent with an electronic copy of the Annual Report no later than two (2) business days prior to the Annual Filing Date, or (ii) instruct the Disclosure Dissemination Agent in writing that the Issuer will not be able to file the Annual Report within the time required under this Disclosure Agreement, state the date by which the Annual Report for such year will be provided and instruct the Disclosure Dissemination Agent that a Failure to File Event has occurred and to immediately send a notice to the MSRB in substantially the form attached as Exhibit B.

(c) If the Disclosure Dissemination Agent has not received an Annual Report by 6:00 p.m. Eastern time on the Annual Filing Date (or, if such Annual Filing Date falls on a Saturday, Sunday or holiday, then the first business day thereafter) for the Annual Report, a Failure to File Event shall have occurred and the Issuer irrevocably directs the Disclosure Dissemination Agent to immediately send a notice to the MSRB in substantially the form attached as Exhibit B, without reference to the anticipated filing date for the Annual Report.

(d) If Audited Financial Statements of the Issuer are not available prior to the Annual Filing Date, the Issuer shall provide unaudited financial statements in a format similar to the Audited Financial Statements, for filing with the MSRB, and when the Audited Financial Statements are available, provide in a timely manner an electronic copy to the Disclosure Dissemination Agent, for filing with the MSRB.

(e) The Disclosure Dissemination Agent shall:

(i) verify the filing specifications of the MSRB each year prior to the Annual Filing Date;

(ii) upon receipt, promptly file each Annual Report received under Sections 2(a) and 2(b) with the MSRB;

(iii) upon receipt, promptly file each Audited Financial Statement received under Section 2(d) with the MSRB;

(iv) upon receipt, promptly file the text of each Notice Event received under Sections 4(a) and 4(b)(ii) with the MSRB, identifying the Notice Event as instructed by the Issuer pursuant to Section 4(a) or 4(b)(ii) (being any of the categories set forth below) when filing pursuant to the Section of this Disclosure Agreement indicated:

1. "Principal and interest payment delinquencies," pursuant to Sections 4(c) and 4(a)(1);

2. "Non-Payment related defaults, if material," pursuant to Sections 4(c) and 4(a)(2);

3. "Unscheduled draws on debt service reserves reflecting financial difficulties," pursuant to Sections 4(c) and 4(a)(3);

4. "Unscheduled draws on credit enhancements reflecting financial difficulties," pursuant to Sections 4(c) and 4(a)(4);

5. "Substitution of credit or liquidity providers, or their failure to perform," pursuant to Sections 4(c) and 4(a)(5);

6. "Adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the security, or other material events affecting the tax status of the security," pursuant to Sections 4(c) and 4(a)(6);

7. "Modifications to rights of securities holders, if material," pursuant to Sections 4(c) and 4(a)(7);

8. "Bond calls, if material, and tender offers" pursuant to Sections 4(c) and 4(a)(8);

9. "Defeasances," pursuant to Sections 4(c) and 4(a)(9);

10. "Release, substitution, or sale of property securing repayment of the securities, if material," pursuant to Sections 4(c) and 4(a)(10);

11. "Rating changes," pursuant to Sections 4(c) and 4(a)(11);

12. "Bankruptcy, insolvency, receivership or similar event of the obligated person," pursuant to Sections 4(c) and 4(a)(12);

13. "The consummation of a merger, consolidation, or acquisition involving an Obligated Person or the sale of all or substantially all of the assets of the Obligated Person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material," pursuant to Sections 4(c) and 4(a)(13); and

14. "Appointment of a successor or additional trustee or the change of name of a trustee, if material," pursuant to Sections 4(c) and 4(a)(14).

(v) upon receipt (or irrevocable direction pursuant to Section 2(c) of this Disclosure Agreement, as applicable), promptly file a completed copy of Exhibit B to this Disclosure Agreement with the MSRB, identifying the filing as "Failure to provide annual

information as required" when filing pursuant to Section 2(b)(ii) or Section 2(c) of this Disclosure Agreement;

(vi) upon receipt, promptly file the text of each Voluntary Report received under Section 7 with the MSRB.

(vii) provide the Issuer evidence of the filings of each of the above when made, which shall be by means of the DAC system, for so long as DAC is the Disclosure Dissemination Agent under this Disclosure Agreement.

(f) The Issuer may adjust the Annual Filing Date upon change of its Fiscal Year by providing written notice of such change and the new Annual Filing Date to the Disclosure Dissemination Agent and the MSRB, provided that the period between the existing Annual Filing Date and new Annual Filing Date shall not exceed one year.

(g) Any Information received by the Disclosure Dissemination Agent before 6:00 p.m. Eastern time on any business day that it is required to file with the MSRB pursuant to the terms of this Disclosure Agreement and all other information required by the terms of this Disclosure Agreement will be filed by the Disclosure Dissemination Agent with the MSRB no later than 11:59 p.m. Eastern time on the same business day; provided, however, the Disclosure Dissemination Agent shall have no liability for any delay in filing with the MSRB if such delay is caused by a Force Majeure Event, provided that the Disclosure Dissemination Agent uses reasonable efforts to make any such filing as soon as possible.

SECTION 3. Content of Annual Reports.

(a) Each Annual Report shall contain the following Annual Financial Information with respect to the Issuer:

(1) In tabular form, a description of historical toll rates by vehicle class and a five-year toll revenue and expense summary; and

(2) A description of any on-going or planned capital improvements with respect to the System.

(b) Audited Financial Statements prepared in accordance with generally accepted accounting principles ("GAAP") will be included in the Annual Report, but may be provided in accordance with Section 2(d).

Any or all of the items listed above may be included by specific reference to other documents, including official statements of debt issues with respect to which the Issuer is an Obligated Person, which have been previously filed with the Securities and Exchange Commission or available to the public on the MSRB Internet Website. If the document incorporated by reference is a final official statement, it must be available from the MSRB. The Issuer will clearly identify each such document so incorporated by reference.

Any Annual Financial Information containing modified operating data or financial information is required to explain, in narrative form, the reasons for the modification and the impact of the change in the type of operating data or financial information being provided.

SECTION 4. Reporting of Notice Events.

(a) The occurrence of any of the following events with respect to the Bonds constitutes a Notice Event:

1. Principal and interest payment delinquencies;

2. Non-payment related defaults, if material;

3. Unscheduled draws on debt service reserves reflecting financial difficulties;

4. Unscheduled draws on credit enhancements relating to the Bonds reflecting financial difficulties;

5. Substitution of credit or liquidity providers, or their failure to perform;

6. Adverse tax opinions, the issuance by the Internal Revenue Service of proposed or final determinations of taxability, Notices of Proposed Issue (IRS Form 5701-TEB) or other material notices or determinations with respect to the tax status of the Bonds, or other material events affecting the tax status of the Bonds;

7. Modifications to rights of Bond holders, if material;

8. Bond calls, if material, and tender offers;

9. Defeasances;

10. Release, substitution, or sale of property securing repayment of the Bonds, if material;

11. Rating changes on the Bonds;

12. Bankruptcy, insolvency, receivership or similar event of the Obligated Person;

*Note: for the purposes of the event identified in this subsection 4(a)(12), the event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for an Obligated Person in a proceeding under the U.S. Bankruptcy Code or in any other proceeding under state or federal law in which a court or governmental authority has assumed jurisdiction over substantially all of the assets or business of the Obligated Person, or if such jurisdiction has been assumed by leaving the existing governmental body and officials or officers in possession but subject to the supervision and orders of a court or governmental authority, or the entry of an order confirming a plan of reorganization, arrangement or liquidation by a court or governmental authority having supervision or jurisdiction over substantially all of the assets or business of the Obligated Person.*

13. The consummation of a merger, consolidation, or acquisition involving an Obligated Person or the sale of all or substantially all of the assets of the Obligated Person, other than in the ordinary course of business, the entry into a definitive agreement to undertake such an action or the termination of a definitive agreement relating to any such actions, other than pursuant to its terms, if material; and

14. Appointment of a successor or additional trustee or the change of name of a trustee, if material.

The Issuer shall, in a timely manner not in excess of ten (10) business days after its occurrence, notify the Disclosure Dissemination Agent in writing of the occurrence of a Notice Event. Such notice shall instruct the Disclosure Dissemination Agent to report the occurrence pursuant to subsection (c). Such notice shall identify the Notice Event that has occurred (which shall be any of the categories set forth in Section 2(e)(iv) of this Disclosure Agreement), include the text of the disclosure that the Issuer desires to make, contain the written authorization of the Issuer for the Disclosure Dissemination Agent to disseminate such information, and identify the date the Issuer desires for the Disclosure Dissemination Agent to disseminate the information (provided that such date is not later than the tenth (10th) business day after the occurrence of the Notice Event).

(b) The Disclosure Dissemination Agent is under no obligation to notify the Issuer or the Disclosure Representative of an event that may constitute a Notice Event.

(c) If the Disclosure Dissemination Agent has been instructed by the Issuer as prescribed in subsection (a) of this Section 4 to report the occurrence of a Notice Event, the Disclosure Dissemination Agent shall promptly file a notice of such occurrence with the MSRB in accordance with Section 2(e)(iv) hereof.

SECTION 5. CUSIP Numbers. Whenever providing information to the Disclosure Dissemination Agent, including but not limited to Annual Reports, documents incorporated by reference to the Annual Reports, Audited Financial Statements, notices of Notice Events, Failure to File Events and Voluntary Reports filed pursuant to Section 7(a), the Issuer shall indicate the full name of the Bonds and the 9-digit CUSIP numbers for the Bonds as to which the provided information relates.

SECTION 6. Additional Disclosure Obligations. The Issuer acknowledges and understands that other state and federal laws, including but not limited to the Securities Act of 1933 and Rule 10b-5 promulgated under the Securities Exchange Act of 1934, may apply to the Issuer, and that the failure of the Disclosure Dissemination Agent to so advise the Issuer shall not constitute a breach by the Disclosure Dissemination Agent of any of its duties and responsibilities under this Disclosure Agreement. The Issuer acknowledges and understands that the duties of the Disclosure Dissemination Agent relate exclusively to execution of the mechanical tasks of disseminating information as described in this Disclosure Agreement.

SECTION 7. Voluntary Reports.

(a) The Issuer may instruct the Disclosure Dissemination Agent to file information with the MSRB (a "Voluntary Report").

(b) Nothing in this Disclosure Agreement shall be deemed to prevent the Issuer from disseminating any other information through the Disclosure Dissemination Agent using the means of dissemination set forth in this Disclosure Agreement or including any other information in any Annual Report, Audited Financial Statements, Voluntary Report, Notice Event notice or Failure to File Event notice, in addition to that required by this Disclosure Agreement. If the Issuer chooses to include any information in any Annual Report, Audited Financial Statements, Voluntary Report, Notice Event notice, or Failure to File Event notice in addition to that which is specifically required by this Disclosure Agreement, the Issuer shall have no obligation under this Disclosure Agreement to update such information or include it in any future Annual Report, Audited Financial Statements, Voluntary Report, Notice Event notice or Failure to File Event notice.

SECTION 8. Termination of Reporting Obligation. The obligations of the Issuer and the Disclosure Dissemination Agent under this Disclosure Agreement shall terminate with respect to the Bonds upon the earliest of (a) the legal defeasance, prior redemption or payment in full of all of the Bonds, (b) when the Issuer is no longer an Obligated Person with respect to the Bonds, or (c) upon delivery by the Disclosure Representative to the Disclosure Dissemination Agent of an opinion of nationally recognized bond counsel to the effect that continuing disclosure is no longer required.

SECTION 9. Disclosure Dissemination Agent. The Issuer has appointed Digital Assurance Certification, L.L.C. as exclusive Disclosure Dissemination Agent under this Disclosure Agreement. The Issuer may, upon sixty days written notice to the Disclosure Dissemination Agent, replace or appoint a successor Disclosure Dissemination Agent. Upon termination of DAC's services as Disclosure Dissemination Agent, whether by notice of the Issuer or DAC, the Issuer agrees to appoint a successor Disclosure Dissemination Agent or, alternately, agrees to assume all responsibilities of Disclosure Dissemination Agent under this Disclosure Agreement for the benefit of the Holders of the Bonds. Notwithstanding any replacement or appointment of a successor, the Issuer shall remain liable until payment in full for any and all sums owed and payable to the Disclosure Dissemination Agent. The Disclosure Dissemination Agent may resign at any time by providing sixty days' prior written notice to the Issuer.

SECTION 10. Remedies in Event of Default. In the event of a failure of the Issuer or the Disclosure Dissemination Agent to comply with any provision of this Disclosure Agreement, any Holder's rights to enforce the provisions of this Disclosure Agreement shall be limited solely to a right, by action in mandamus or for specific performance, to compel performance of the parties' obligation under this Disclosure Agreement. Any failure by a party to perform in accordance with this Disclosure Agreement shall not constitute a default on the Bonds or under any other document relating to the Bonds, including the Indenture, and all rights and remedies shall be limited to those expressly stated herein.

SECTION 11. Duties, Immunities and Liabilities of Disclosure Dissemination Agent.

(a) The Disclosure Dissemination Agent shall have only such duties as are specifically set forth in this Disclosure Agreement. The Disclosure Dissemination Agent's obligation to deliver the information at the times and with the contents described herein shall be limited to the extent the Issuer has provided such information to the Disclosure Dissemination Agent as required

by this Disclosure Agreement. The Disclosure Dissemination Agent shall have no duty with respect to the content of any disclosures or notice made pursuant to the terms hereof. The Disclosure Dissemination Agent shall have no duty or obligation to review or verify any Information or any other information, disclosures or notices provided to it by the Issuer and shall not be deemed to be acting in any fiduciary capacity for the Issuer, the Holders of the Bonds or any other party. The Disclosure Dissemination Agent shall have no responsibility for the Issuer's failure to report to the Disclosure Dissemination Agent a Notice Event or a duty to determine the materiality thereof. The Disclosure Dissemination Agent shall have no duty to determine, or liability for failing to determine, whether the Issuer has complied with this Disclosure Agreement. The Disclosure Dissemination Agent may conclusively rely upon certifications of the Issuer at all times.

The obligations of the Issuer under this Section shall survive resignation or removal of the Disclosure Dissemination Agent and defeasance, redemption or payment of the Bonds.

(b) The Disclosure Dissemination Agent may, from time to time, consult with legal counsel (either in-house or external) of its own choosing in the event of any disagreement or controversy, or question or doubt as to the construction of any of the provisions hereof or its respective duties hereunder, and shall not incur any liability and shall be fully protected in acting in good faith upon the advice of such legal counsel.

(c) All documents, reports, notices, statements, information and other materials provided to the MSRB under this Disclosure Agreement shall be provided in an electronic format and accompanied by identifying information as prescribed by the MSRB.

SECTION 12. Amendment; Waiver. Notwithstanding any other provision of this Disclosure Agreement, the Issuer and the Disclosure Dissemination Agent may amend this Disclosure Agreement and any provision of this Disclosure Agreement may be waived, if such amendment or waiver is supported by an opinion of counsel expert in federal securities laws acceptable to both the Issuer and the Disclosure Dissemination Agent to the effect that such amendment or waiver does not materially impair the interests of Holders of the Bonds and would not, in and of itself, cause the undertakings herein to violate the Rule if such amendment or waiver had been effective on the date hereof but taking into account any subsequent change in or official interpretation of the Rule; provided neither the Issuer or the Disclosure Dissemination Agent shall be obligated to agree to any amendment modifying their respective duties or obligations without their consent thereto.

Notwithstanding the preceding paragraph, the Disclosure Dissemination Agent shall have the right to adopt amendments to this Disclosure Agreement necessary to comply with modifications to and interpretations of the provisions of the Rule as announced by the Securities and Exchange Commission from time to time by giving not less than 90 days written notice of the intent to do so together with a copy of the proposed amendment to the Issuer. No such amendment shall become effective without the consent of the Issuer.

SECTION 13. Sources of Payments; No Personal Liability. Notwithstanding anything to the contrary contained in this Disclosure Agreement, to the extent not paid from the proceeds of the Bonds, the Issuer shall be required to use only Revenues to pay any costs and expenses to be

incurred in the performance of this Disclosure Agreement by it, and the performance of its obligations hereunder shall be subject to the availability of Revenues for that purpose. This Disclosure Agreement does not and shall not constitute a general obligation of the Issuer. No covenant, stipulation, obligation or agreement of the Issuer contained in this Disclosure Agreement shall be deemed to be a covenant, stipulation, obligation or agreement of any present or future officer, agent or employee of the Issuer in other than that person's official capacity.

SECTION 14. Beneficiaries. This Disclosure Agreement shall inure solely to the benefit of the Issuer, the Disclosure Dissemination Agent, the Underwriter, and the Holders from time to time of the Bonds, and shall create no rights in any other person or entity.

SECTION 15. Governing Law. This Disclosure Agreement shall be governed by the laws of the State of Florida.

SECTION 16. Counterparts. This Disclosure Agreement may be executed in several counterparts, each of which shall be an original and all of which shall constitute but one and the same instrument.

*[Signature Page Follows]*

The Disclosure Dissemination Agent and the Issuer have caused this Disclosure Agreement to be executed, on the date first written above, by their respective officers duly authorized.

DIGITAL ASSURANCE CERTIFICATION,
L.L.C., as Disclosure Dissemination Agent

By: _____
Name: _____
Title: _____

MIAMI-DADE COUNTY EXPRESSWAY
AUTHORITY, as Issuer

[SEAL]

By: _____
Javier Rodriguez
Executive Director

Attest:

_____
Secretary

## EXHIBIT A

## NAME AND CUSIP NUMBERS OF BONDS

| | |
|---|---|
| Name of Issuer: | Miami-Dade County Expressway Authority |
| Obligated Person: | Miami-Dade County Expressway Authority |
| Name of Bond Issue: | Toll System Refunding Revenue Bonds, Series 2016A |
| Date of Issuance: | September 16, 2016 |
| Date of Official Statement: | August 30, 2016 |

CUSIP Numbers:

593338AS5
593338AT3
593338AU0
593338AV8
593338AW6
593338AX4
593338AY2

**EXHIBIT B**

**NOTICE TO MSRB OF FAILURE TO FILE ANNUAL REPORT**

| | |
|---|---|
| Name of Issuer: | Miami-Dade County Expressway Authority |
| Obligated Person: | Miami-Dade County Expressway Authority |
| Name of Bond Issue: | Toll System Refunding Revenue Bonds, Series 2016A |
| Date of Issuance: | September 16, 2016 |

NOTICE IS HEREBY GIVEN that the Issuer has not provided an Annual Report with respect to the above-named Bonds as required by the Disclosure Dissemination Agent Agreement, dated as of September 16, 2016, between the Issuer and Digital Assurance Certification, L.L.C., as Disclosure Dissemination Agent. The Issuer has notified the Disclosure Dissemination Agent that it anticipates that the Annual Report will be filed by _____.

Dated: _____

Digital Assurance Certification, L.L.C., as Disclosure Dissemination Agent, on behalf of the Issuer

_____

cc: Miami-Dade County Expressway Authority

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# APPENDIX G

# FORM OF OPINION OF CO-BOND COUNSEL

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_____,2016

To: Miami-Dade County Expressway Authority
Miami, Florida

We have served as bond counsel to our client the Miami-Dade County Expressway Authority (the "Authority") and not as counsel to any other person in connection with the issuance by the Authority of its $95,820,000 aggregate principal amount of Miami-Dade County Expressway Authority Toll System Refunding Revenue Bonds, Series 2016A (the "Series 2016A Bonds"), dated the date of this letter.

The Series 2016A Bonds are issued pursuant to the Constitution and laws of the State of Florida, including particularly Chapter 348, Part I, Florida Statutes, as amended, Resolution No. 16-22 duly adopted by the Authority on June 28, 2016 (the "Resolution") and the Amended and Restated Trust Indenture dated as of June 15, 2002, as previously amended, and as supplemented by an Eleventh Supplemental Trust Indenture to Amended and Restated Trust Indenture dated as of September 1, 2016, each from the Authority to The Bank of New York Mellon Trust Company, N.A., as trustee (collectively, the "Indenture"). Capitalized terms not otherwise defined in this letter are used as defined in the Indenture.

In our capacity as bond counsel, we have examined the transcript of proceedings relating to the issuance of the Series 2016A Bonds, a copy of the signed and authenticated Series 2016A Bond of the first maturity, the Resolution, the Indenture and such other documents, matters and law as we deem necessary to render the opinions set forth in this letter.

Based on that examination and subject to the limitations stated below, we are of the opinion that under existing law:

1. The Series 2016A Bonds and the Indenture are valid and binding obligations of the Authority, enforceable in accordance with their respective terms.

2. The Series 2016A Bonds constitute special obligations of the Authority, and the principal of and interest on (collectively, "debt service") the Series 2016A Bonds, together with debt service on any other obligations issued and outstanding on a parity with the Series 2016A Bonds as provided in the Indenture, are payable from and secured solely by the Trust Estate. The payment of debt service on the Series 2016A Bonds is not secured by an obligation or pledge of any money raised by taxation, and the Series 2016A Bonds do not represent or constitute a general obligation or a pledge of the faith and credit of the Authority, the State of Florida or any of its political subdivisions.

3. Interest on the Series 2016A Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986, as amended (the "Code"), and is not an item of tax preference for purposes of the

federal alternative minimum tax imposed on individuals and corporations; however, portions of the interest on the Series 2016A Bonds earned by certain corporations may be subject to a corporate alternative minimum tax. The Series 2016A Bonds and the income thereon are exempt from taxation imposed by Chapter 198, Florida Statutes, as amended, and net income and franchise taxes imposed by Chapter 220, Florida Statutes, as amended. We express no opinion as to any other tax consequences regarding the Series 2016A Bonds.

The opinions stated above are based on an analysis of existing laws, regulations, rulings and court decisions and cover certain matters not directly addressed by such authorities. In rendering all such opinions, we assume, without independent verification, and rely upon (i) the accuracy of the factual matters represented, warranted or certified in the proceedings and documents we have examined and (ii) the due and legal authorization, execution and delivery of those documents by, and the valid, binding and enforceable nature of those documents upon, any parties other than the Authority.

In rendering those opinions with respect to treatment of the interest on the Series 2016A Bonds under the federal tax laws, we further assume and rely upon compliance with the covenants in the proceedings and documents we have examined, including those of the Authority. Failure to comply with certain of those covenants subsequent to issuance of the Series 2016A Bonds may cause interest on the Series 2016A Bonds to be included in gross income for federal income tax purposes retroactively to their date of issuance.

The rights of the owners of the Series 2016A Bonds and the enforceability of the Series 2016A Bonds and the Indenture are subject to bankruptcy, insolvency, arrangement, fraudulent conveyance or transfer, reorganization, moratorium and other laws relating to or affecting creditors' rights, to the application of equitable principles, to the exercise of judicial discretion, and to limitations on legal remedies against public entities.

The opinions rendered in this letter are stated only as of this date, and no other opinion shall be implied or inferred as a result of anything contained in or omitted from this letter. Our engagement as bond counsel with respect to the Series 2016A Bonds has concluded on this date.

Respectfully submitted,

# APPENDIX H

# FORM OF OPINION OF CO-DISCLOSURE COUNSEL

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_____,2016

To: Miami-Dade County Expressway Authority
Miami, Florida

We have served as disclosure counsel to our client the Miami-Dade County Expressway Authority (the "Authority") and not as counsel to any other person in connection with the original issuance by the Authority of its $95,820,000 aggregate principal amount of Miami-Dade County Expressway Authority Toll System Refunding Revenue Bonds, Series 2016A (the "Series 2016A Bonds"), dated the date of this letter.

The Series 2016A Bonds are issued pursuant to the Constitution and laws of the State of Florida, including particularly Chapter 348, Part I, Florida Statutes, as amended, Resolution No. 16-22 duly adopted by the Authority on June 28, 2016 (the "Resolution") and the Amended and Restated Trust Indenture dated as of June 15, 2002, as previously amended, and as supplemented by an Eleventh Supplemental Trust Indenture to Amended and Restated Trust Indenture dated as of September 1, 2016, each from the Authority to The Bank of New York Mellon Trust Company, N.A., as trustee (collectively, the "Indenture").

In our capacity as disclosure counsel, we have reviewed: (a) the Official Statement dated August 30, 2016 relating to the Series 2016A Bonds (the "Official Statement"); (b) the Resolution; (c) the Indenture; and (d) such other proceedings, documents and matters as we deem necessary to provide this letter in accordance with the terms of our engagement.

In providing this letter we assume, without independent verification, and rely upon (i) the accuracy of the factual matters represented, warranted or certified in the proceedings and documents we have examined, (ii) the due and legal authorization, execution and delivery of those documents by, and the valid, binding and enforceable nature of those documents upon, the parties thereto and (iii) the correctness of the legal conclusions contained in all legal opinion letters of other counsel delivered in connection with this matter (excluding the letters of Greenberg Traurig, P.A. and Llorente & Heckler, P.A., counsel to the Underwriters identified in the Official Statement).

In accordance with the terms of our engagement, we have provided certain legal advice and assistance to the Authority in connection with the Authority's responsibilities with respect to the Official Statement. We have not been engaged to pass upon, and we do not assume any responsibility for and have not independently verified, the accuracy, completeness or fairness of any of the statements contained in the Official Statement. As part of our engagement, however, certain of our lawyers participated in telephone conferences with, and received electronic communications from, representatives of the Authority, including Carlos M. Zaldivar, General

Counsel to the Authority, FirstSouthwest, a Division of Hilltop Securities Inc., as the financial advisor to the Authority, CDM Smith Inc., as traffic and revenue consultant to the Authority, HNTB Corporation, as general engineering consultant for program management/production to the Authority, the Underwriters and Greenberg Traurig, P.A., counsel to the Underwriters, and others, during which telephone conferences and electronic communications the contents of the Official Statement and related matters were discussed. In reliance on those discussions and the proceedings, documents, matters and assumptions described above and subject to the qualifications set forth herein, we advise that, during the course of our engagement on this matter, no facts came to the attention of the lawyers in our firm responsible for this matter that cause us to believe that the Official Statement (except for any information listed in the following sentence, as to which we express no view), as of its date and as of this date, contained or contains any untrue statement of a material fact or omitted or omits to state any material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading. We express no view as to: (a) the financial statements included in Appendix D thereto; (b) any other financial, technical, statistical or demographic data or forecasts included or incorporated by reference in the Official Statement or the Appendices thereto; (c) any information about the book-entry system and The Depository Trust Company; and (d) the information in Appendices A, B and C.

Reference in this letter to "lawyers in our firm responsible for this matter" includes only those lawyers now with this firm who rendered legal services in connection with this matter. This letter is delivered to you for your benefit in connection with the original issuance of the Series 2016A Bonds and may not be relied upon for any other purpose or by any other person, including the holders, owners or beneficial owners of the Series 2016A Bonds. The advice in this letter is stated only as of this date, and no other advice or statements shall be implied or inferred as a result of anything contained in or omitted from this letter. Our engagement with respect to this matter has concluded on this date.

Respectfully submitted,

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MIAMI-DADE COUNTY EXPRESSWAY AUTHORITY • TOLL SYSTEM REFUNDING REVENUE BONDS, SERIES 2016A

Mixed Sources
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