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Ms. Marie Schafer
Director of Finance
Miami Dade Expressway Authority
3790 NW 21st Street
Miami, Florida 33142

May 6, 2019
DRAFT

Re: DRAFT Long-Range Traffic and Revenue Forecast Update

Dear Ms. Schafer:

In response to your recent request, and in our capacity as Traffic and Revenue Consultant for the Miami Dade Expressway Authority (MDX), CDM Smith is pleased to submit this report presenting updated long-term traffic and revenue forecasts for the MDX Expressway System. As discussed below, in addition to developing updated long-range revenue forecasts, the study also tested the potential impacts on revenue of two alternative proposed monthly toll rebate programs, which could provide rebates of up to 25 percent on tolls accrued by SunPass®-equipped passenger cars registered in Miami-Dade County.

The study was performed over a period of approximately 45 days, in part to estimate the potential impact of pending Florida legislation. Given this timeframe, it was not possible to include all study elements typically undertaken in a comprehensive "investment grade" traffic and revenue study. However, the evaluation was performed at a considerable level of detail, commensurate with the timeframe available, and CDM Smith believes the traffic and revenue forecasts included herein constitute a realistic update of the long-term traffic and revenue potential of the MDX System.

As described in more detail below, the study built upon a recent 36-month traffic and revenue forecast update for the system developed by CDM Smith in March 2019. Using this recent short-term forecast as a starting point, this study developed updated "Base Case" traffic and revenue forecasts for the system over a 25-year period extending from FY 2019 to FY 2044. This Base Case forecast assumed no increase in toll rates over the entire 25-year period. It also recognized the recently re-implemented Frequent Driver Rewards Program, a form of SunPass® user rebate program already in effect. In addition, alternative 25-year forecasts were prepared for each of two alternatives, representing hypothetical 25 percent SunPass® passenger car rebate programs.

MDX System Description

MDX currently operates five expressways in Miami-Dade County. As shown in **Figure 1**, these expressways include:

- SR 112, the Airport Expressway, extending approximately 5 miles between I-95 and Miami International Airport;
- SR 836, the Dolphin Expressway, extending approximately 14 miles from I-95 west to a termination point at NW 137th Avenue;

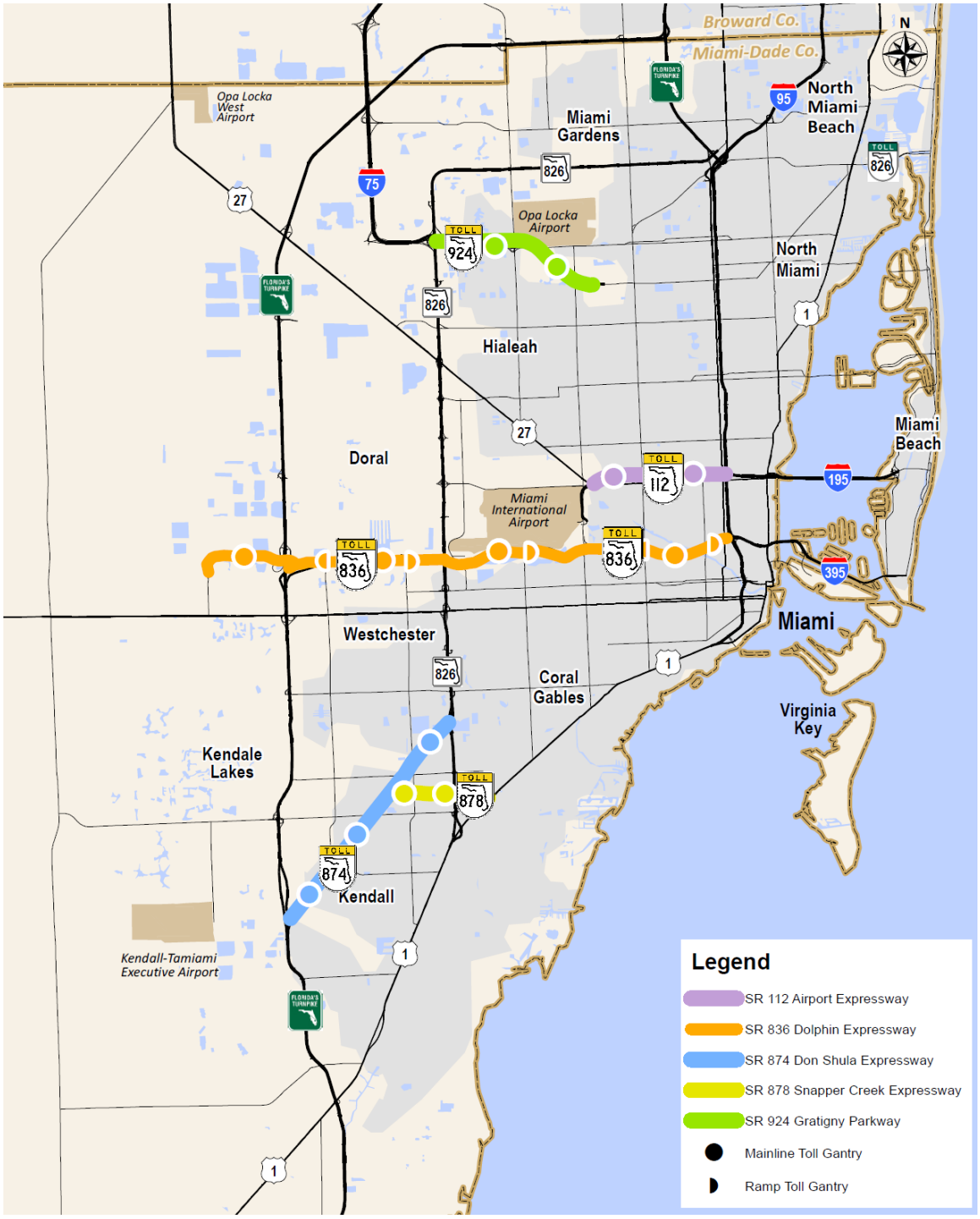

Figure 1
MDX System Map

- SR 874, the Shula Expressway, extending about 7 miles in a southwest-northeast orientation from the Florida Turnpike to SR 826, the Palmetto Expressway;
- SR 878, the Snapper Creek Expressway, providing a connection between SR 874 and US Route 1; and,
- SR 924, Gratigny Parkway, extending about 5 miles east from SR 826 to NW 119th Street.

Each of the MDX Expressways provide vital limited-access links within the more developed portions of Miami-Dade County. Traffic volumes on the expressways are relatively high, particularly on SR 836, which provides the only through east-west expressway routing within the southern two-thirds of the County. SR 836 averages daily traffic volumes in excess of 200,000 vehicles per day east of SR 826. As a result, SR 836 has been widened extensively over the last several years and is currently nearing completion on a major widening that will provide a minimum of four through travel lanes in each direction plus a 12-foot "hard shoulder" designed for possible usage by express bus and future autonomous vehicles. At the far east end of SR 836, the interchange with I-95 and I-395 (maintained by Florida Department of Transportation (FDOT)) is being fully reconstructed, including a multi-level configuration which will significantly reduce congestion on that facility. Major widening has also been performed on SR 874, and that facility is being extended slightly to the west to provide local connections to neighborhoods west of Florida's Turnpike.

While other improvements are planned in the future, including a proposed 13-mile extension of SR 836 to the south and west, no improvements falling outside the current adopted MDX 5-Year Work Program were assumed in the updated long-range forecasts.

MDX Toll Collection Methods

Over the last several years, toll collection on the MDX Expressway System has been converted to cashless All-Electronic Tolling (AET). This was done in phases, with SR 874, SR 878 and SR 924 being deployed first, followed a few years later by deployment on SR 112 and SR 836. Under this program, no cash payment is made at the time of usage of the expressways and there is no need for vehicles to stop to pay tolls. Tolls are collected at a series of all-electronic toll gantries without the need for a vehicle to stop or use cash. For the most part, these are located on mainline sections, as indicated previously in **Figure 1**, although there are some ramp toll gantry locations on SR 836 as well. The AET system ensures that all traffic using the MDX system pays an equitable toll related to Expressway usage.

There are two primary methods for toll payment: SunPass® and Toll-by-Plate. The majority of vehicles use traditional electronic toll collection through the State's SunPass® transponder program, which is a pre-paid electronic toll program; toll charges for each passage through an electronic toll point are simply deducted from pre-paid account balances. Between 80 and 85 percent of all transactions on the MDX System are made using SunPass® transponders. This was an important factor in developing updated traffic and revenue forecasts, particularly since the proposed rebate programs would apply only to passenger vehicles using SunPass®.

Vehicles not equipped with SunPass® are permitted to use all MDX Expressways; tolling of these vehicles is by means of video imaging of license plates, referred to as "Toll-By-Plate". This process is becoming more common throughout the State of Florida, and in recent years the Florida's Turnpike, Sawgrass Expressway, Miami Causeways and other nearby tolled facilities have also converted from cash to fully electronic-based systems. Bills for toll payment are mailed to Toll-by-Plate customers. To cover additional processing costs for Toll-by-Plate transactions, and, as experienced throughout the toll industry, a higher level of uncollected revenue, toll rates for Toll-by-Plate transactions are double the rates charged to SunPass® vehicles.

Prior Study Efforts

The updated forecast included in this report took into consideration a series of previous studies and forecasts developed by CDM Smith. The most recent full systemwide "investment grade" traffic and revenue study was conducted in 2014. That study included estimates of traffic and revenue under the final completion of the AET program on SR 112 and SR 836. It also included extensive market research, a detailed independent economic forecast review, extensive travel demand modeling and estimates of traffic impacts as tolls were added to previously un-tolled portions of SR 836 and SR 112. Several additional follow-up forecast efforts were conducted, which are described in this section.

2016 Traffic and Revenue Update Study

In 2016, as part of a refunding effort, CDM Smith was requested by the MDX to perform a review of the traffic and toll revenue forecasts contained in the prior 2014 Investment Grade Traffic and Revenue Study (2014 IG Study) and to update the forecasts contained therein through FY 2033. To accomplish this, CDM Smith 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 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 revenue leakage, in light of the actual experiences on the MDX System through March 2016.

As a follow up, CDM Smith was asked in May 2018 to estimate the impact of a 5 percent toll decrease to these long-range forecasts. CDM Smith used the toll sensitivity analysis performed under the 2014 IG Study to estimate the impacts of the proposed toll change, which were then applied to the prior 2016 Traffic and Revenue Study forecasts through FY 2033. The underlying growth rate, highway improvements, SunPass® distribution, and leakage rate assumptions were not altered. The proposed 5 percent toll decrease was ultimately implemented by MDX on July 1, 2018. Thus, the May 2018 forecasts represent to most recent long-range forecasts of MDX traffic and revenue developed by CDM Smith.

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 35-month period encompassing FY 2019, 2020 and 2021. These used actual transaction and revenue data through January 2019. 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), the Florida Department of Transportation (FDOT) and Florida's Turnpike. The updated monthly forecasts were used as the baseline for the current High-Level Long-Range Traffic and Revenue Forecast Update.

Study Objective

The objective of this study was to develop updated annual traffic and revenue forecasts, by expressway, for the MDX System through FY 2044. Separate forecasts were to be developed for three alternative conditions:

- **Base Case**: which assumed no increases in nominal toll rates for either SunPass® or Toll-by-Plate traffic through FY 2044. This scenario did assume, however, continued use of the recently enacted Frequent Driver Rewards Program, which offers a 15 percent rebate to SunPass® customers who pre-register for the program and make $250 or more in toll charges during the fiscal year;
- **Rebate Alternative A**: which assumed that the current reward program would be eliminated and a 25 percent automatic rebate, without the need for program registration, would be provided to all SunPass® customers with passenger car vehicles registered in Miami-Dade County; and,
- **Rebate Alternative B**: which was similar to Alternative A except that the 25 percent rebate would be limited to SunPass® passenger vehicles (from Miami-Dade County) that accrued tolls of at least $12.50 per month.

The primary objective of this study was to estimate, over the next 25 years, the potential annual revenue impacts associated with either of the two hypothetical 25 percent rebate programs. These impacts were estimated by comparing annual revenue forecasts with the Base Case annual revenue forecasts, through FY 2044. The method used to develop the updated forecasts, and estimates of revenue impact from the rebate program, is defined in detail later in this letter report.

Recent Trends and Short-Term Traffic and Revenue Estimates

Table 1 presents a summary of recent transaction and revenue trends, and the recent CDM Smith updated 36-month transaction and revenue forecasts for the MDX system. The upper portion of the table provides information about toll transactions while the lower portion provides a summary of collected revenue.

In FY 2018, ending with June 2018, actual transactions on the MDX system reached more than 477.4 million. Of these, about 80.6 percent were recorded using SunPass® and 18.9 percent were billed through Toll-by-Plate. About 0.5 percent were recorded as non-revenue vehicles.

Table 1

MDX System Annual Transactions and Revenue by Method of Payment and Expressway Based on March 2019 Annual Forecast Update

	Actual FY 2018 Transactions				Estimated FY 2019 Transactions (000s)					Estimated FY 2020 Transactions (000s)					Estimated FY 2021 Transactions (000s)				
Expressway	SunPass®	Toll-by-Plate	Non-Rev.	**Total**	SunPass®	Toll-by-Plate	Non-Rev.	**Total**	Pct. Change vs. FY 2018	SunPass®	Toll-by-Plate	Non-Rev.	**Total**	Pct. Change vs. FY 2019	SunPass®	Toll-by-Plate	Non-Rev.	**Total**	Pct. Change vs. FY 2020
SR 112	58,575	15,579	190	**74,344**	64,712	14,950	211	**79,873**	7.4	66,277	14,404	212	**80,893**	1.3	67,222	14,613	215	**82,050**	1.4
SR 836	181,174	39,722	1,175	**222,071**	197,541	37,522	1,330	**236,393**	6.4	204,659	36,405	1,363	**242,427**	2.6	209,291	37,227	1,393	**247,911**	2.3
SR 874[1]	94,086	23,337	551	**117,974**	106,025	17,951	661	**124,637**	5.6	109,570	20,224	692	**130,486**	4.7	113,467	20,968	716	**135,151**	3.6
SR 878[1]	21,850	4,324	102	**26,276**	23,829	3,283	115	**27,227**	3.6	24,527	3,472	114	**28,113**	3.3	25,001	3,539	116	28,656	1.9
SR 924[1]	29,201	7,344	196	**36,741**	31,841	6,294	223	**38,358**	4.4	33,752	6,936	239	**40,927**	6.7	34,585	7,104	245	**41,934**	2.5
MDX Total System	**384,886**	**90,306**	**2,214**	**477,406**	**423,948**	**80,000**	**2,540**	**506,488**	**6.1**	**438,785**	**81,441**	**2,620**	**522,846**	**3.2**	**449,566**	**83,451**	**2,685**	**535,702**	**2.5**
Percent of Total	80.6	18.9	0.5	100.0	83.7	15.8	0.5	100.0		83.9	15.6	0.5	100.0		83.9	15.6	0.5	100.0	

	Actual FY 2018 Collected Revenue ($000s) [2]			Actual FY 2019 Collected Revenue ($000s) [2]					Actual FY 2020 Collected Revenue ($000s) [2]				Actual FY 2021 Collected Revenue ($000s) [2]				
	SunPass®	Toll-by-Plate	**Total**	SunPass®	Toll-by-Plate	Revenue Recovery[3]	**Total**	Pct. Change vs. FY 2018	SunPass®	Toll-by-Plate	**Total**	Pct. Change vs. FY 2019	SunPass®	Toll-by-Plate	**Total**	Pct. Change vs. FY 2020
MDX Total System	**$175,237**	**$51,138**	**$226,375**	**$180,153**	**$25,697**	**$22,177**	**$228,027**	**0.7**	**$193,094**	**$45,383**	**$238,477**	**4.6**	**$197,589**	**$46,426**	**$244,015**	**2.3**
Percent of Total	77.4	22.6	100.0	79.0	11.3	9.7	100.0		81.0	19.0	100.0		81.0	19.0	100.0	

Note: Fiscal Year represents twelve months ending June 30.

(1) Transactions and revenue in the first half of FY 2019 were negatively impacted by toll system replacement activities. This was a one time event.

(2) Represents annual revenues after allowance for violations, non-pursuable SunPass® and TBP transactions and uncollectible TBP billings.

(3) Includes negative balance SunPass® and unreceived Toll-by-Plate revenue to be recovered following delayed billing from CCSS.

The most heavily used expressway was SR 836, with almost 222.1 million transactions recorded in FY 2018. Heavy transactions also occurred on SR 874 and SR 112. It should be noted that actual transaction data in FY 2018 was significantly impacted by the suspension of tolling, statewide, in September 2017 due to the effects of Hurricane Irma. This resulted in a 3 to 4 percent reduction in annual transactions than would have otherwise been experienced during FY 2018.

In FY 2019, normal transaction and revenue activity was heavily impacted by two major factors:

- For the first 4-5 months of FY 2019, MDX replaced electronic toll collection equipment on SR 874, SR 878, and SR 924. The primary impact of this was the loss of video-recorded transactions during the period of equipment replacement, typically averaging 3 to 5 weeks on each of the expressways. Overall, it is estimated that this equipment replacement negatively impacted total transactions in FY 2019 by about 2-3 percent; and
- The transition of back office transaction processing and account posting to the Centralized Customer Service System (CCSS) significantly impacted and delayed revenue collections. In fact, Toll-by-Plate billings did not commence until early in calendar year 2019 for transactions dating back as far as June 2018.

The impact of these unusual occurrences can be seen in the estimated FY 2019 transaction and revenue forecasts, which CDM Smith developed in March 2019 based on actual data through January 2019. In FY 2019, which ends on June 30, 2019, it is estimated that almost 506.5 million total toll transactions will be recorded on the MDX System. This represents a 6.1 percent increase over FY 2018. However, it is important to recognize that FY 2018 had been negatively impacted by toll suspensions due to Hurricane Irma; removing this impact results in nominal real growth closer to 2.0 to 2.5 percent in FY 2019.

Furthermore, transaction growth was limited on SR 874, SR 878, SR 924 by periodic toll equipment replacement activities. Hence, the projected rate of growth on these three facilities is lower than on SR 112 and SR 836, neither of which experienced toll collection equipment replacement. In FY 2019, SunPass® transactions are projected to be almost 84 percent of total transactions, with nearly 16 percent recorded as Toll-by-Plate.

Actual revenue in FY 2018 reached almost $226.4 million on the system, although a small portion of this revenue from June 2018 is still in the recovery process due to the transition to CCSS. In FY 2019, total collected revenue is estimated to be $228.0 million, or about 0.7 percent above FY 2018. However, this includes an estimate of $22.2 million in recovered revenue. This value was determined based on information provided by CCSS to MDX as of January 31, 2019 and certain assumptions regarding the proportion of outstanding uncollected revenue that would indeed be collected in the current fiscal year.

The total outstanding uncollected amounts as of January 31, 2019 included a significant portion of both SunPass® and Toll-by-Plate revenue. The delay in the processing of the SunPass® revenue component was related to new policies under CCSS operation on how revenue from accounts with negative balances are handled. Because of a delay in the initial processing of SunPass® transactions for the first 3 to 4 months, several SunPass® accounts went into negative balances and are now gradually recovering.

However, the biggest impact came in terms of delayed billing of Toll-by-Plate transactions. For purposes of estimating revenue recovery in FY 2019, based on guidelines provided by MDX, CDM Smith assumed 70 percent of outstanding SunPass® revenue and 65 percent of uncollected toll-by-plate revenue would ultimately be collected by June 30, 2019. This revenue recovery estimate was not updated as part of the current study.

"Collected Revenue" is estimated revenue after allowances for violations, un-pursuable Toll-by-Plate revenue and billed but uncollected revenue from Toll-by-Plate transactions. Collected revenue in FY 2019 is just 0.7 percent above FY 2018, while transactions are projected to grow at 6.1 percent. The significant difference in the rates of growth relate directly to the transition issues associated with back office processing and conservative assumptions regarding ultimate revenue recovery from the delayed revenue transfers.

Forecast estimates for FY 2020 and FY 2021 assume a return to normalcy for CCSS operations and do not anticipate any delayed revenue recovery. The new forecasts do assume a 2 percent leakage of SunPass® transactions and a net total leakage of 42 percent on Toll-by-Plate revenue. This includes Toll-by-Plate losses associated both with unreadable license plates and incorrect mailing addresses as well as historical proportions of non-collection of actual billed Toll-by-Plate revenue. In total, transactions in FY 2020 are expected to grow by about 3.2 percent to over $522.8 million. Revenue is expected to reach $238.5 million, an increase of about 4.6 percent over the somewhat suppressed revenue level in FY 2019. About 84 percent of toll transactions are estimated to come by means of SunPass®; similarly, about 81 percent of ultimately collected revenue is estimated to be SunPass®, with the remaining 19 percent collected through the Toll-by-Plate process.

FY 2021 transactions are expected to grow by about 2.5 percent and FY 2021 revenue is estimated to grow by about 2.3 percent, reaching just over $244.0 million. It is noted that the revenue estimates previously shown in **Table 1** do not reflect adjustments for the recently reenacted Frequent Driver Reward Program. The impact of this program, nominally estimated by MDX at about $3.1 million in FY 2020, is applied later in the annual forecast tables.

Forecast Methodology

As noted above, the development of updated long-range traffic and revenue estimates on the MDX system began with the use of the latest short-term, 36-month forecasts submitted to MDX in March 2019, as previously presented in **Table 1**. Previous forecasts, including the 2014 Systemwide Investment Grade Study, the 2016 Traffic and Revenue Forecast Update and a 2018 update reflecting a nominal across the board 5 percent toll rate reduction, were all reviewed. In addition, the latest regional travel demand model, referred to as SERPM 7.071, was used to estimate the future rates of growth at each MDX Expressway tolling point. These growth estimates were then applied to the previously developed estimates of FY 2021 traffic by location, and payment mode, to develop updated long-range transaction and revenue forecasts for the "Base Case" condition.

Following development of the new Base Case, an analysis was undertaken to estimate the potential impacts of each of the two alternative "SunPass® Rebate" programs; Rebate Alternatives A and B. This included possible marginal increases in transactions due to perceived lower toll costs for some users, and possible shifts in methods of payment due to each of the hypothetical rebate initiatives. For each alternative, revised baseline traffic and revenue projections were prepared, and estimates were made of the proportion of SunPass® revenue that would be eligible for the 25 percent rebate under each alternative. The ultimate forecasts of annual revenue for each alternative after the estimated rebate were then compared to the Base Case estimates to determine the approximate revenue impacts. **Figure 2** illustrates the forecast development process

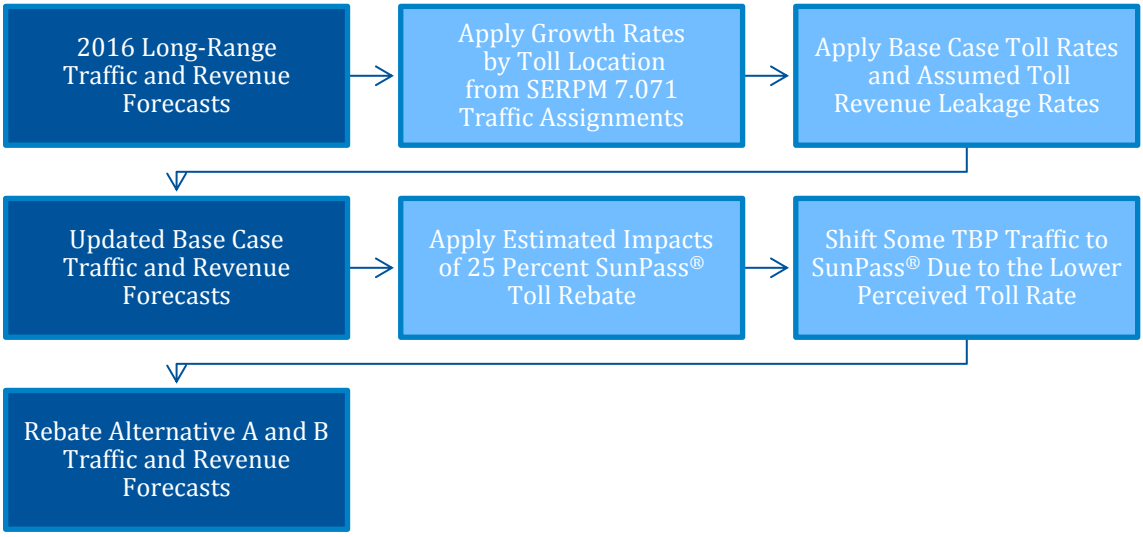

Figure 2
Long-Range Traffic and Revenue Forecast Development Process

Highway Improvement Assumptions

For purposes of the updated Base Case and Alternatives A and B, only those planned improvements to the MDX system already included in the adopted MDX Five-Year Work Program were assumed to be implemented. As shown in **Table 2**, this included assumed completion of major interchange improvements at SW 87th Avenue and other widening and operational improvements on SR 836 by FY 2020. The major modifications at the I-95 / SR 836 interchange have just begun; this is assumed to be fully completed by FY 2024. Finally, a short western extension of SR 874 now underway is expected to be complete by FY 2021.

No other improvements to the MDX System were assumed through the 25-year forecast period. This includes the potential west and east extensions of SR 924, as well as the planned Southwest Extension of SR 836, also referred to as the Kendall Parkway. These projects were also excluded from the future revenue forecasts.

Table 2
Assumed MDX and Other Regional Highway Improvements

Project	Assumed Completion Date
SR 836 Interchange Modification at NW 87th Avenue	FY 2020
SR 836 Operational, Capacity and Interchange Improvements	FY 2020
SR 836 / I-95 Interchange Improvements	FY 2024
SR 874 Extension	FY 2021
I-75 Express Lanes	FY 2019
SR 826 Express Lanes (Flagler to I-75)	FY 2020
HEFT Express Lanes and Widening, Eureka Drive to Kendall Drive	FY 2020
HEFT Express Lanes and Widening, Kendall Drive to Bird Road	FY 2020
HEFT Express Lanes and Widening, Bird Road to SR 836	FY 2022
HEFT Express Lanes and Widening, SR 836 to I-75	FY 2025
HEFT Express Lanes and Widening, I-75 to Miramar	FY 2025

Table 2 also shows assumed capacity improvements on other facilities within Miami-Dade County. It primarily includes new express lane facilities being implemented by FDOT and the Florida Turnpike Enterprise. The completion of the new express lanes on the HEFT near both SR 836 and SR 874 would be particularly significant to future year MDX System traffic and revenue.

Modeling Process

The SERPM 7.071 model represents the most recent available regional travel demand model for South Florida. The current study effort took advantage the SERPM 7.071 base year (2010) and future year (2040) trip tables. These trip tables were developed using the Activity-Based Modeling process based on the socioeconomic forecasts of the Miami-Dade County, Broward County and Palm Beach County Metropolitan Planning Organizations (MPOs). It should be noted that the SMART Plan was not included in the original Cost-Feasible SERPM 7.071 model, meaning that their impacts were not factored into the growth of the trip tables.

As part of a prior study effort, CDM Smith worked with an independent economist, Washington Economics Group (WEG), to review the SERPM 7.071 forecasts of population and employment. After a review of the underlying SERPM 7.071 socioeconomics, WEG recommended that the population forecasts for Miami-Dade County (developed in 2016) be increased by 5.14 percent to approximate the most recent forecasts from the University of Florida Bureau of Economic and Business Research (BEBR). No changes were recommended for the SERPM 7.071 employment forecasts. In order to recognize the WEG recommendations, CDM Smith applied a 2.07 percent increase in population to the Miami-Dade

County Transportation Analysis Zones (TAZs) in the 2040 trip tables. Trip tables for the base year FY 2017, and intermediate years FY 2020, FY 2025, FY 2030, FY 2035 and FY 2040 were then developed by straight-lining trips between the 2010 and the adjusted 2040 trip tables.

The SERPM 7.071 model covers all of Miami-Dade, Broward and Palm Beach Counties. The full model was used in the update study, although a special analysis was undertaken segregate the model trip tables into five total components:

- **Passenger Cars**
  - Equipped with SunPass® with both ends of the trip within Miami-Dade County;
  - Equipped with SunPass® with one or both ends of the trip outside of Miami-Dade County;
  - Not equipped with SunPass® (Toll-by-Plate);
- **Commercial Vehicles**
  - Equipped with SunPass®; and
  - Not Equipped with SunPass® (Toll-by-Plate).

A review was made of the distribution of SunPass® and Toll by Plate transactions on each of the MDX Expressways and in each vehicle category. These observed data were used to segregate the total passenger car and commercial vehicle trip tables by method of payment. By breaking the trip matrices into the above categories, it was possible to assign traffic to the MDX Expressways with the appropriate toll rates. Based on the most recent transaction data through January 2019, approximately 84 percent of systemwide transactions are made by SunPass®. After some calibration, it was determined that the overall market share of vehicles equipped with SunPass® within the SERPM 7.071 model area was around 80 percent. This was because the assigned share of SunPass® trips on the MDX System were higher than the overall market share within the model due to the fact that Toll-by-Plate toll rates are double the SunPass® rates. The split between SunPass®-equipped passenger car trips entirely within Miami-Dade County and outside was used to estimate the share of SunPass® transactions at each toll location which would be eligible for the proposed SunPass® rebate under Rebate Alternatives A and B. Finally, the trip tables were broken into AM Peak, PM Peak and off-peak components.

Toll diversion traffic assignments were performed at five year increments between FY 2020 and FY 2040. The net growth in each of the five vehicle categories, at each toll location between each five year increment, was then applied to the most recent short-term projection to develop the updated Base Case forecasts. No changes in toll rates were assumed for the entire 25-year forecast period. In comparing results between assignment years, it was possible to estimate any minor changes in growth patterns. For example, the rate of truck growth slightly exceeded that of passenger car growth in most cases, resulting in a slight increase in average toll per transaction over the 25-year forecast period.

Assignment results were reviewed to determine if the estimated volumes exceeded the theoretical roadway capacity. Adjustments were made where needed, primarily along SR 836 and SR 874 in later years. As previously noted, a prior review of the SERPM 7.071 trip tables by WEG, as well as recent other CDM Smith studies in South Florida using the SERPM 7.071 model, suggested that the long-range socioeconomic growth assumptions in Miami Dade County may slightly understate growth based on the

most recent BEBR projections. Additional "post model" increases in traffic growth rates at MDX toll locations were introduced beginning in FY 2030 in order to further address these concerns. These adjustments averaged just 0.1 to 0.2 percent per year compared to the raw modeled growth. Cumulatively, these adjustments had the effect of increasing the most distant forecast year by roughly 3 percent; demonstrating the minor nature of the growth adjustments.

Estimating Revenue Eligible for SunPass® Rebate

The traffic assignment results developed through the process described above were also used to estimate the proportion of SunPass® revenue produced by Miami-Dade County residents. As previously noted, the proposed monthly 25 percent toll rebate program assumed under Rebate Alternatives A and B would be available only to Miami-Dade County residents. As shown in **Table 3**, CDM Smith used the component from the SunPass® passenger car trip table with both trip ends within Miami Dade County to represent the proportion of trips on each expressway eligible for the rebate. While it is likely that some portion of the trips with one end in an external county may also be made by vehicles registered in Miami-Dade County, it is also probable that some trips with both ends within Miami-Dade County are made by vehicles registered outside the County. Hence, only the fully "internal" SunPass® trips were considered in estimating the "in County" share.

The upper portion of **Table 3** shows the estimated share of total SunPass® revenue which would be eligible for the rebate, under Alternative A, where there would be no monthly minimum threshold needed to qualify for a rebate. Overall, just under 90 percent of total SunPass® traffic would be eligible under this scenario. It excludes cars registered outside of Miami Dade County and all SunPass® trucks, which were not assumed to be eligible. The share on most MDX Expressways was comparable, except on SR 924, where a lower "in County" share was determined. SR 924 extends directly from the southern end of I-75, which carries a large amount of traffic from Broward County and beyond.

The Origin-Destination Survey conducted during the 2014 Investment Grade Study was used in this analysis to provide a check of reasonableness. As part of that survey, roughly 82 percent of survey respondents said they were residents of Miami Dade County; close to the modeled results shown in **Table 3**.

Under Alternate B, SunPass® rebates would be limited to passenger vehicles registered in Miami-Dade County, but also subject to a minimum MDX toll accrual of at least $12.50 per month. MDX System trip frequency distributions based on actual SunPass® transponder data were used to estimate the share of SunPass® vehicles likely to reach the $12.50 per month threshold. FY 2017 trip distribution data were used, as they represented the most recent full fiscal year for which the data were available, due to the transition to the new CCSS back office processing in late FY 2018.

As shown in the lower portion of **Table 3**, over 73 percent of all individual SunPass® transponders accrue less than $12.50 per month, on average. In fact, the overall average monthly toll per transponder in FY 2017 was found to be $11.06. However, more relevant to the current analysis, only 25.3 percent of the total SunPass® revenue was recorded on unique transponders with less than $12.50 in charges. The

Table 3
SunPass® Rebate Eligibility Assumptions

Estimated Share of SunPass® Transactions made by Miami-Dade Passenger Cars

	Percent SunPass® Revenue Share Eligible for Rebate w/o Monthly Minimum				
Expressway	2020	2025	2030	2035	2040
SR 112	85.5	85.8	85.3	85.5	85.4
SR 836	91.7	91.1	91.4	91.3	91.2
SR 874	95.1	94.8	94.0	93.8	93.5
SR 878	96.3	96.2	96.1	96.0	95.9
SR 924	67.8	69.1	71.4	72.5	73.6
System Average	**89.8**	**89.9**	**89.9**	**89.9**	**89.8**

	Percent SunPass® Revenue Share Eligible for Rebate With $12.50 Minimum				
Expressway	2020	2025	2030	2035	2040
SR 112	63.9	64.1	63.7	63.9	63.8
SR 836	68.5	68.1	68.3	68.2	68.1
SR 874	71.0	70.8	70.2	70.1	69.8
SR 878	71.9	71.9	71.8	71.7	71.6
SR 924	50.6	51.6	53.3	54.2	55.0
System Average	**67.1**	**67.1**	**67.2**	**67.1**	**67.1**

FY 2017 Approximate SunPass® Transponder Distribution by Monthly Frequency

Monthly Revenue Category	Number 2-Axle Transponders	Percent of Total	Monthly Toll / Transponder	Avg. Revenue Per Month	Percent of Total
Under $12.50	1,035,000	73.4	$3.81	$3,944,900	25.3
$12.50-$25.00	189,200	13.4	$17.72	3,353,100	21.5
$25.00-$50.00	134,700	9.6	$34.70	4,673,500	30.0
$50.00-$75.00	34,500	2.4	$60.09	2,073,000	13.3
$75.00-$100.00	11,500	0.8	$85.09	978,500	6.3
$100.00-$150.00	3,800	0.3	$115.61	439,300	2.8
Over $150.00	700	0.0	$172.71	120,900	0.8
Total	**1,409,400**	**100.0**	**$11.06**	**$15,583,200**	**100.0**

relationship between frequency by transponder and by toll revenue category makes sense because frequent SunPass® customers will produce the majority of daily revenue, while numerous infrequent customers will make up the remainder.

Based on these data, the proportion of SunPass® toll revenue eligible for rebate under Alternative B, with the $12.50 minimum monthly accrual, was estimated by applying the nominal local SunPass® share times the 74.7 percent estimated to be made by transponders with more than $12.50 in monthly charges. The results are provided in the lower portion of the upper box in **Table 3** (previously shown), where roughly 67 percent of total SunPass® revenue would be eligible for the proposed rebate. The appropriate shares previously shown in **Table 3** were then applied to total estimated SunPass® revenue in each forecast year under Rebate Alternatives A and B to estimate the proportion of revenue eligible for rebate.

Lastly, it was assumed that the additional publicity of the proposed rebate programs and the perceived reduction in SunPass® toll rates would encourage some Toll-by-Plate customers to obtain a SunPass® transponder. Therefore, CDM Smith assumed a shift of 5 percent of Toll-by-Plate customers to SunPass® under Rebate Alternative A. Given that the minimum toll requirement under Rebate Alternative B would lessen the perceived reduction in SunPass® toll rates, only a 2 percent shift from Toll-by-Plate to SunPass® was assumed under this scenario. These shifts were applied as post-processing adjustments, as the SERPM 7.071 model, as developed, would not be able to make such a shift within the assignment process.

Updated Base Case Traffic and Revenue Forecasts

As previously noted, the current average toll rates by expressway and by method of payment were assumed under the Base Case through the forecast period. The estimates of transactions and collected toll revenues under the Base Case condition are presented by Expressway in **Table 4** and by Method of Payment in **Table 5**. These represent updated forecasts for the MDX System, before applying any impacts associated with the potential 25 percent SunPass® rebate program for Miami-Dade County residents. The table presents collected toll revenues which, as previously stated, are the portion of expected SunPass® and Toll-by-Plate revenue which can actually be invoiced to customers and are assumed to be paid within a reasonable time frame, recognizing some portion of invoiced revenue may go uncollected. This category of toll revenue reflects negative SunPass® account balance transactions, 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. As previously stated, SunPass® and Toll-by-Plate leakage rate estimates of 2 percent and 42 percent, respectively, were then applied to the estimated revenues through the remainder of the forecast period. These leakage rates were consistent with the most recent data through January 2019 and reflect the anticipated leakage rates under the CCSS.

As shown in **Table 4**, the estimated long-term growth rates across the five MDX Expressways are relatively consistent, with some slight variations. SR 924, which is fed by development in the western portion of Broward County, is estimated to grow the fastest over the 25-year forecast period, at an average annual rate of 1.5 percent. However, growth between FY 2020 and FY 2030 is estimated to be

Table 4

Estimated MDX Expressway System Annual Transactions and Revenue, by Expressway Base Case (Without 25 Percent Rebate)[1], FY 2019 – FY 2044

Fiscal Year[3]	Estimated Annual Transactions (000s)						Estimated Annual Collected Revenue[2] ($000s)						
	SR 112	SR 836	SR 874	SR 878	SR 924	**Total System**	SR 112	SR 836	SR 874	SR 878	SR 924	Recovered Revenue (4)	**Total System**
2019[5]	79,873	236,393	124,637	27,227	38,358	**506,488**	$24,225	$121,959	$36,331	$5,952	$17,383	$22,177	**$228,027**
2020[6]	80,893	242,427	130,486	28,113	40,927	**522,846**	28,253	141,318	40,944	6,522	21,440		**238,477**
2021	82,050	247,911	135,151	28,656	41,934	**535,702**	28,658	144,649	42,091	6,648	21,968		**244,014**
2022	83,522	252,827	139,310	29,174	42,860	**547,693**	29,193	147,584	42,948	6,768	22,490		**248,983**
2023	85,325	257,014	137,419	29,371	43,699	**552,828**	29,834	149,903	42,345	6,813	22,959		**251,854**
2024[6]	87,410	264,919	138,659	29,651	44,679	**565,318**	30,576	154,912	42,738	6,877	23,503		**258,606**
2025	89,061	268,455	139,147	29,772	45,433	**571,868**	31,166	156,847	42,903	6,904	23,931		**261,751**
2026	90,321	270,979	141,917	29,989	45,830	**579,036**	31,608	158,500	43,739	6,952	24,157		**264,956**
2027	91,606	273,541	144,755	30,210	46,233	**586,345**	32,058	160,180	44,597	7,001	24,388		**268,224**
2028[6]	93,170	276,898	148,065	30,516	46,770	**595,419**	32,606	162,329	45,600	7,070	24,690		**272,295**
2029	94,251	278,781	150,638	30,659	47,057	**601,386**	32,986	163,619	46,376	7,101	24,861		**274,943**
2030	95,612	281,459	153,687	30,889	47,479	**609,126**	33,464	165,381	47,299	7,153	25,104		**278,401**
2031	96,797	285,386	155,382	31,212	48,252	**617,029**	33,882	167,702	47,834	7,227	25,534		**282,179**
2032[6]	98,267	290,163	157,530	31,626	49,172	**626,758**	34,401	170,526	48,509	7,322	26,043		**286,801**
2033	99,217	293,414	158,838	31,870	49,837	**633,176**	34,737	172,454	48,926	7,378	26,417		**289,912**
2034	100,453	297,517	160,598	32,205	50,649	**641,422**	35,174	174,886	49,485	7,455	26,871		**293,871**
2035	101,706	301,680	162,382	32,544	51,476	**649,788**	35,617	177,355	50,051	7,532	27,334		**297,889**
2036[6]	103,178	306,111	164,542	32,884	52,395	**659,110**	36,148	180,066	50,745	7,613	27,853		**302,425**
2037	104,099	308,914	165,822	33,048	53,039	**664,922**	36,486	181,824	51,168	7,652	28,228		**305,358**
2038	105,316	312,600	167,570	33,303	53,839	**672,628**	36,929	184,106	51,737	7,712	28,686		**309,170**
2039	106,548	316,331	169,336	33,560	54,651	**680,426**	37,377	186,419	52,312	7,773	29,152		**313,033**
2040[6]	108,090	320,987	171,590	33,911	55,627	**690,205**	37,934	189,281	53,040	7,856	29,708		**317,819**
2041	109,056	323,934	172,925	34,080	56,312	**696,307**	38,273	191,018	53,447	7,895	30,074		**320,707**
2042	110,331	327,804	174,748	34,343	57,161	**704,387**	38,720	193,299	54,005	7,956	30,527		**324,507**
2043	111,622	331,721	176,590	34,608	58,024	**712,565**	39,173	195,608	54,569	8,018	30,988		**328,356**
2044[6]	113,237	336,605	178,941	34,971	59,060	**722,814**	39,740	198,488	55,290	8,102	31,541		**333,161**
Average Annual Percent Change													
2020-2030	1.69	1.50	1.65	0.95	1.50	**1.54**	1.71	1.58	1.45	0.93	1.59		**1.56**
2030-2040	1.23	1.32	1.11	0.94	1.60	**1.26**	1.26	1.36	1.15	0.94	1.70		**1.33**
2020-2044	1.41	1.38	1.32	0.91	1.54	**1.36**	1.43	1.43	1.26	0.91	1.62		**1.40**

(1) Assumes continuation of the current Frequent Driver Rewards Program. The program provides a 15 percent rebate to registered SunPass® customers, with a maximum discount of $300. A minimum of $250 in annual tolls per customer is required to qualify.
(2) Represents annual revenues after allowance for violations, non-pursuable SunPass® and TBP transactions and uncollectible TBP billings.
(3) Fiscal Year represents twelve months ending June 30.
(4) Includes negative balance SunPass® and unreceived Toll-by-Plate revenue to be recovered following delayed billing from CCSS.
(5) Based on actual data through January 2019.
(6) Leap Year.

Table 5

Estimated MDX Expressway System Annual Transactions and Revenue, by Method of Payment Base Case (Without 25 Percent Rebate)[1], FY 2019 – FY 2044

	Estimated Annual Transactions (000s)				Estimated Annual Collected Revenue[2] ($000s)					
Fiscal Year[3]	SunPass®	Toll-by-Plate	Non-Revenue	**Total System**	SunPass®	Toll-by-Plate	Recovered Revenue (4)	**Total Revenue Before Rebate**	Freq. Driver Rewards Progam	**Total Revenue After Rebate**
2019[5]	423,948	80,000	2,540	**506,488**	$180,153	$25,697	$22,177	**$228,027**	($3,100)	**$224,927**
2020[6]	438,785	81,441	2,620	**522,846**	193,094	45,383		**238,477**	(3,100)	**235,377**
2021	449,566	83,451	2,685	**535,702**	197,589	46,426		**244,015**	(3,172)	**240,843**
2022	460,121	84,820	2,750	**547,691**	201,735	47,248		**248,983**	(3,239)	**245,744**
2023	465,471	84,576	2,781	**552,828**	204,473	47,381		**251,854**	(3,283)	**248,571**
2024[6]	477,056	85,407	2,854	**565,317**	210,402	48,204		**258,606**	(3,378)	**255,228**
2025	483,635	85,340	2,893	**571,868**	213,369	48,382		**261,751**	(3,426)	**258,325**
2026	491,069	85,031	2,937	**579,037**	216,540	48,416		**264,956**	(3,476)	**261,480**
2027	498,637	84,726	2,982	**586,345**	219,765	48,458		**268,223**	(3,528)	**264,695**
2028[6]	507,728	84,656	3,035	**595,419**	223,655	48,640		**272,295**	(3,591)	**268,704**
2029	514,185	84,128	3,074	**601,387**	226,380	48,564		**274,944**	(3,634)	**271,310**
2030	522,171	83,834	3,121	**609,126**	229,772	48,629		**278,401**	(3,689)	**274,712**
2031	529,673	84,190	3,166	**617,029**	233,134	49,045		**282,179**	(3,743)	**278,436**
2032[6]	538,756	84,781	3,220	**626,757**	237,194	49,606		**286,800**	(3,808)	**282,992**
2033	545,006	84,911	3,258	**633,175**	240,009	49,904		**289,913**	(3,853)	**286,060**
2034	552,842	85,275	3,305	**641,422**	243,524	50,346		**293,870**	(3,910)	**289,960**
2035	560,792	85,642	3,353	**649,787**	247,091	50,798		**297,889**	(3,967)	**293,922**
2036[6]	568,475	87,236	3,400	**659,111**	250,548	51,876		**302,424**	(4,022)	**298,402**
2037	573,119	88,375	3,428	**664,922**	252,668	52,690		**305,358**	(4,056)	**301,302**
2038	579,386	89,776	3,465	**672,627**	255,505	53,665		**309,170**	(4,102)	**305,068**
2039	585,723	91,200	3,504	**680,427**	258,374	54,659		**313,033**	(4,148)	**308,885**
2040[6]	593,753	92,900	3,552	**690,205**	261,993	55,826		**317,819**	(4,206)	**313,613**
2041	598,992	93,731	3,584	**696,307**	264,365	56,341		**320,706**	(4,244)	**316,462**
2042	605,935	94,827	3,625	**704,387**	267,491	57,018		**324,509**	(4,294)	**320,215**
2043	612,960	95,937	3,668	**712,565**	270,654	57,702		**328,356**	(4,345)	**324,011**
2044[6]	621,767	97,327	3,721	**722,815**	274,605	58,555		**333,160**	(4,409)	**328,751**
Average Annual Percent Change										
2020-2030	1.76	0.29	1.77	**1.54**	1.75	0.69		**1.56**	1.75	**1.56**
2030-2040	1.29	1.03	1.30	**1.26**	1.32	1.39		**1.33**	1.32	**1.33**
2020-2044	1.46	0.75	1.47	**1.36**	1.48	1.07		**1.40**	1.48	**1.40**

(1) Assumes continuation of the current Frequent Driver Rewards Program. The program provides a 15 percent rebate to registered SunPass® customers, with a maximum discount of $300. A minimum of $250 in annual tolls per customer is required to qualify.

(2) Represents annual revenues after allowance for violations, non-pursuable SunPass® and TBP transactions and uncollectible TBP billings.

(3) Fiscal Year represents twelve months ending June 30.

(4) Includes negative balance SunPass® and unreceived Toll-by-Plate revenue to be recovered following delayed billing from CCSS.

(5) Based on actual data through January 2019.

(6) Leap Year.

led by SR 112 and SR 874, with average annual growth rates of almost 1.7 percent between those years. This is likely due on SR 874 to additional development in the southern half of Miami-Dade County and on SR 112 to increased usage of Miami International Airport (MIA) and the continued usage of SR 112 as a bypass for traffic congestion on SR 836. Transaction growth on SR 836, which will be limited in the future by capacity constraints, is estimated to be 1.4 percent annual over the 25-year forecast period, comparable to the system average.

Table 5 presents the annual traffic and revenue forecast under the Base Case for the MDX System by method of payment. Growth over the forecast period is anticipated to be led by increases in SunPass® transactions. This is due to the assumed increase in SunPass® market participation rates as additional Express Lane facilities open across South Florida and residents become more accustomed to using AET facilities. Systemwide SunPass® transaction growth is estimated to be 1.5 percent annual over the 25-year forecast period. Despite the aforementioned increases in SunPass® market participation rates over the forecast period, Toll-by-Plate transactions are still estimated to continue increasing, though at a slightly lower average annual rate of 0.8 percent. The SunPass® participation rate under the Base Case is estimated to increase from almost 84 percent in FY 2020 to just over 86 percent by FY 2044.

Annual transactions are forecasted to reach 609.1 million by FY 2030, representing an annual average growth rate of 1.5 percent over FY 2020. Growth is estimated to continue at an average annual rate of 1.2 percent through FY 2044, with annual transactions reaching an estimated 722.8 million in that 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 collected revenues are expected to increase from $238.5 million in FY 2020 to nearly $278.4 million by FY 2030, a ten-year average growth rate of 1.6 percent. Due to assumed leakage rates remaining constant through the forecast period, average annual growth rates for collected toll revenues are estimated be comparable to transactions growth rate, or an average of 1.3 percent annually. By FY 2044, annual collected toll revenues are estimated to reach $333.2 million. The minor differences in growth rates between transactions and indicated revenue are due to differential growth rates by expressway and toll gantry location. On average, collected revenues are estimated to increase at an average annual rate of 1.4 percent over the 25-year forecast period.

Traffic and Revenue Forecasts Under Rebate Alternative A

The estimates of transactions and collected toll revenues under the Rebate Alternative A are presented in **Tables 6 and 7**. As described previously, Rebate Alternative A assumes that the current Frequent Driver Rewards Program would be eliminated and a 25 percent automatic rebate, without the need for program registration, would be provided to all SunPass® customers with passenger car vehicles registered in Miami-Dade County. No monthly minimum toll was assumed for the rebate qualification under this alternative.

Table 6

Estimated MDX Expressway System Annual Transactions and Revenue, by Expressway
Rebate Alternative A: 25 Percent Toll Rebate for All Miami-Dade SunPass® Passenger Cars (1)
FY 2019 – FY 2044

	Estimated Annual Transactions (000s)						Estimated Annual Collected Revenue[2] ($000s)						
Fiscal Year[3]	SR 112	SR 836	SR 874	SR 878	SR 924	**Total System**	SR 112	SR 836	SR 874	SR 878	SR 924	Recovered Revenue (4)	**Total System**
2019[5]	79,873	236,393	124,637	27,227	38,358	**506,488**	$24,225	$121,959	$36,331	$5,952	$17,383	$22,177	**$228,027**
2020[6]	82,090	247,650	131,954	28,603	41,407	**531,704**	28,599	144,153	41,318	6,625	21,633		**242,328**
2021	83,265	253,259	136,669	29,155	42,427	**544,775**	29,009	147,563	42,481	6,753	22,165		**247,971**
2022	84,762	258,294	140,874	29,682	43,367	**556,979**	29,551	150,564	43,344	6,876	22,696		**253,031**
2023	86,597	262,588	138,963	29,884	44,219	**562,251**	30,203	152,945	42,735	6,921	23,170		**255,974**
2024[6]	88,717	270,680	140,218	30,170	45,214	**574,999**	30,955	158,065	43,133	6,987	23,721		**262,861**
2025	90,397	274,310	140,713	30,294	45,980	**581,694**	31,555	160,054	43,300	7,014	24,155		**266,078**
2026	91,680	276,908	143,517	30,516	46,387	**589,008**	32,004	161,753	44,146	7,064	24,386		**269,353**
2027	92,988	279,545	146,389	30,741	46,800	**596,463**	32,462	163,479	45,013	7,114	24,622		**272,690**
2028[6]	94,579	282,995	149,740	31,054	47,349	**605,717**	33,019	165,685	46,027	7,185	24,930		**276,846**
2029	95,679	284,938	152,344	31,201	47,646	**611,808**	33,405	167,014	46,812	7,217	25,105		**279,553**
2030	97,064	287,694	155,431	31,436	48,079	**619,704**	33,891	168,824	47,746	7,269	25,354		**283,084**
2031	98,270	291,712	157,147	31,765	48,864	**627,758**	34,317	171,197	48,287	7,345	25,789		**286,935**
2032[6]	99,766	296,600	159,321	32,187	49,799	**637,673**	34,843	174,082	48,969	7,441	26,304		**291,639**
2033	100,735	299,926	160,646	32,436	50,475	**644,218**	35,186	176,053	49,392	7,499	26,684		**294,814**
2034	101,993	304,124	162,428	32,777	51,301	**652,623**	35,630	178,537	49,956	7,577	27,144		**298,844**
2035	103,269	308,384	164,233	33,123	52,141	**661,150**	36,081	181,061	50,529	7,656	27,612		**302,939**
2036[6]	104,762	312,906	166,417	33,469	53,073	**670,627**	36,617	183,821	51,228	7,738	28,137		**307,541**
2037	105,697	315,764	167,709	33,635	53,727	**676,532**	36,960	185,607	51,655	7,777	28,516		**310,515**
2038	106,932	319,523	169,475	33,894	54,539	**684,363**	37,407	187,928	52,228	7,839	28,979		**314,381**
2039	108,182	323,329	171,260	34,155	55,363	**692,289**	37,861	190,280	52,808	7,900	29,450		**318,299**
2040[6]	109,747	328,079	173,537	34,513	56,353	**702,229**	38,425	193,193	53,542	7,985	30,012		**323,157**
2041	110,727	331,092	174,888	34,684	57,047	**708,438**	38,768	194,966	53,953	8,024	30,381		**326,092**
2042	112,022	335,048	176,731	34,952	57,908	**716,661**	39,221	197,295	54,516	8,086	30,840		**329,958**
2043	113,333	339,052	178,595	35,222	58,781	**724,983**	39,680	199,652	55,085	8,149	31,305		**333,871**
2044[6]	114,973	344,045	180,972	35,591	59,831	**735,412**	40,254	202,591	55,813	8,234	31,864		**338,756**
Average Annual Percent Change													
2020-2030	1.69	1.51	1.65	0.95	1.51	**1.54**	1.71	1.59	1.46	0.93	1.60		**1.57**
2030-2040	1.24	1.32	1.11	0.94	1.60	**1.26**	1.26	1.36	1.15	0.94	1.70		**1.33**
2020-2044	1.41	1.38	1.32	0.91	1.55	**1.36**	1.43	1.43	1.26	0.91	1.63		**1.41**

(1) Assumes continuation of the current Frequent Driver Rewards Program. The program provides a 15 percent rebate to registered SunPass® customers, with a maximum discount of $300. A minimum of $250 in annual tolls per customer is required to qualify.
(2) Represents annual revenues after allowance for violations, non-pursuable SunPass® and TBP transactions and uncollectible TBP billings.
(3) Fiscal Year represents twelve months ending June 30.
(4) Includes negative balance SunPass® and unreceived Toll-by-Plate revenue to be recovered following delayed billing from CCSS.
(5) Based on actual data through January 2019.
(6) Leap Year.

Table 7

Estimated MDX Expressway System Annual Transactions and Revenue, by Method of Payment
Rebate Alternative A: 25 Percent Toll Rebate for All Miami-Dade SunPass® Passenger Cars (1)
FY 2019 – FY 2044

	Estimated Annual Transactions (000s)				Estimated Annual Collected Revenue[2] ($000s)						
Fiscal Year[3]	SunPass®	Toll-by-Plate	Non-Revenue	**Total System**	SunPass®	Toll-by-Plate	Recovered Revenue (4)	**Total Revenue Before Rebate**	Rev. Eligible for Rebate	Est. Rebate Amount	**Total Revenue After Rebate**
2019[5]	423,948	80,000	2,540	**506,488**	$180,153	$25,697	$22,177	**$228,027**	$158,544	($3,100)	**$224,927**
2020[6]	451,610	77,473	2,620	**531,703**	198,959	43,370		**242,329**	175,755	(43,939)	**198,390**
2021	462,706	79,385	2,685	**544,776**	203,597	44,374		**247,971**	179,963	(44,991)	**202,980**
2022	473,534	80,693	2,750	**556,977**	207,862	45,168		**253,030**	183,789	(45,947)	**207,083**
2023	479,004	80,466	2,781	**562,251**	210,666	45,308		**255,974**	186,252	(46,563)	**209,411**
2024[6]	490,882	81,262	2,854	**574,998**	216,754	46,108		**262,862**	191,669	(47,917)	**214,945**
2025	497,597	81,204	2,893	**581,694**	219,786	46,292		**266,078**	194,373	(48,593)	**217,485**
2026	505,157	80,915	2,937	**589,009**	223,018	46,335		**269,353**	197,269	(49,317)	**220,036**
2027	512,853	80,629	2,982	**596,464**	226,305	46,385		**272,690**	200,212	(50,053)	**222,637**
2028[6]	522,115	80,567	3,035	**605,717**	230,276	46,570		**276,846**	203,761	(50,940)	**225,906**
2029	528,666	80,069	3,074	**611,809**	233,046	46,508		**279,554**	206,246	(51,561)	**227,993**
2030	536,788	79,794	3,121	**619,703**	236,504	46,581		**283,085**	209,338	(52,334)	**230,751**
2031	544,455	80,138	3,166	**627,759**	239,945	46,989		**286,934**	212,322	(53,080)	**233,854**
2032[6]	553,747	80,705	3,220	**637,672**	244,104	47,536		**291,640**	215,940	(53,985)	**237,655**
2033	560,127	80,833	3,258	**644,218**	246,982	47,831		**294,813**	218,423	(54,606)	**240,207**
2034	568,134	81,184	3,305	**652,623**	250,579	48,265		**298,844**	221,540	(55,385)	**243,459**
2035	576,259	81,538	3,353	**661,150**	254,230	48,709		**302,939**	224,704	(56,176)	**246,763**
2036[6]	584,170	83,057	3,400	**670,627**	257,794	49,748		**307,542**	227,773	(56,943)	**250,599**
2037	588,960	84,145	3,428	**676,533**	259,982	50,533		**310,515**	229,626	(57,406)	**253,109**
2038	595,417	85,480	3,465	**684,362**	262,908	51,473		**314,381**	232,128	(58,032)	**256,349**
2039	601,947	86,838	3,504	**692,289**	265,868	52,432		**318,300**	234,659	(58,665)	**259,635**
2040[6]	610,218	88,460	3,552	**702,230**	269,599	53,557		**323,156**	237,869	(59,467)	**263,689**
2041	615,604	89,251	3,584	**708,439**	272,041	54,051		**326,092**	240,007	(60,002)	**266,090**
2042	622,740	90,295	3,625	**716,660**	275,258	54,700		**329,958**	242,829	(60,707)	**269,251**
2043	629,962	91,352	3,668	**724,982**	278,513	55,357		**333,870**	245,684	(61,421)	**272,449**
2044[6]	639,015	92,675	3,721	**735,411**	282,580	56,176		**338,756**	249,255	(62,314)	**276,442**
Average Annual Percent Change											
2020-2030	1.74	0.30	1.77	**1.54**	1.74	0.72		**1.57**	1.76	1.76	**1.52**
2030-2040	1.29	1.04	1.30	**1.26**	1.32	1.41		**1.33**	1.29	1.29	**1.34**
2020-2044	1.46	0.75	1.47	**1.36**	1.47	1.08		**1.41**	1.47	1.47	**1.39**

(1) Assumes discontinuation of the current Frequent Driver Rewards Program upon implementation of the new 25 percent automatic SunPass® toll rebate program on July 1, 2020.
(2) Represents annual revenues after allowance for violations, non-pursuable SunPass® and TBP transactions and uncollectible TBP billings.
(3) Fiscal Year represents twelve months ending June 30.
(4) Based on actual data through January 2019.
(5) Leap Year.

Compared to the Base Case transaction and revenue forecasts, the greatest impacts of the proposed toll rebate in FY 2020 are estimated on SR 836 and SR 874. Transactions on SR 836 and SR 874 are estimated to increase by 2.2 percent and 1.7 percent, respectively, due to the perceived decrease in effective toll rates. It is likely that these expressways will experience the greatest transaction impact due to the significant component of commuter traffic on each. On average, the MDX System is estimated to increase transactions by 1.7 percent in FY 2020 as a result of the proposed rebate program, an impact which continues through the end of the forecast period.

Since the rebate program assumed under Rebate Alternative A would represent a one-year impact if implemented in FY 2020, the long-term growth rates across the five MDX Expressways estimated under this alternative are comparable to those estimated under the Base Case, as indicated by expressway in **Table 6**. Thus, growth under this scenario continues to be greatest on SR 112 and SR 874 in the short-term (FY 2020 to FY 2030) and greatest on SR 924 over the course of the 25-year forecast period. Transaction growth on SR 836, which will be also be limited in the future by capacity constraints under Rebate Alternative A, is estimated to be 1.4 percent annually over the 25-year forecast period, comparable to the system average.

Annual traffic and revenue forecasts under Rebate Alternative A for the MDX System are provided in **Table 7** by method of payment. Due to the additional transactions generated by the perceived lower toll rates and the assumed 5 percent shift of Toll-by-Plate customers to SunPass® under Rebate Alternative A, SunPass® transactions are estimated to increase by 2.9 percent in FY 2020 compared to the Base Case. Similarly, Toll-by-Plate transactions are estimated to decrease by roughly 5 percent. As with the Base Case, growth under Rebate Alternative A is anticipated to be led by increases in SunPass® transactions, with an average annual growth rate of 1.5 percent over the forecast period. Additionally, the SunPass® participation rate under Rebate Alternative A is estimated to increase from almost 85 percent in FY 2020 to almost 87 percent by FY 2044.

Under Rebate Alternative A, annual transactions are forecasted to grow at an average annual rate of 1.5 percent through FY 2030, reaching 619.7 million in that year. Growth is estimated to continue through the end of the forecast period at an average annual rate of 1.2 percent, with annual transactions reaching an estimated 735.4 million in FY 2044. As previously noted, since the impacts of the proposed SunPass® toll rebate are relatively similar through the forecast period, annual growth rates after the rebate program implementation are comparable between the Base Case and Rebate Alternate A.

The estimated annual collected revenue subject to the rebate, as well as the estimated annual amount are also provided in **Table 7**. As a share of total collected revenue, the annual revenue subject to the proposed rebate represents roughly 73 percent through the forecast period. The rebate amount is estimated to increase from $43.9 million in FY 2020 to $52.3 million in FY 2030, to $62.3 million in FY 2044. This represents roughly 18 percent of collected toll revenues prior to the rebate.

Under Rebate Alternative A, annual collected revenues after the rebate are expected to increase from $198.4 million in FY 2020 to nearly $230.8 million by FY 2030, a ten-year average growth rate of 1.5 percent. By FY 2044, annual collected toll revenues are estimated to reach $276.4 million. Due to

assumed leakage rates remaining constant through the forecast period, average annual growth rates for collected toll revenues are estimated be comparable to transactions growth rate, or an average of 1.4 percent annually. The minor differences in growth rates between transactions and indicated revenue are due to differential growth rates by expressway and toll gantry location.

Traffic and Revenue Forecasts Under Rebate Alternative B

Tables 8 and 9 present the estimates of transactions and collected toll revenues under the Rebate Alternative B. As described previously, Rebate Alternative B is similar to Alternative A except that the 25 percent rebate would be limited to SunPass® passenger vehicles (registered within Miami-Dade County) that accrue tolls of at least $12.50 per month.

Compared to the Base Case transaction and revenue forecasts, the greatest impacts under Rebate Alternative B in FY 2020 are estimated on SR 836 and SR 874. Transactions on SR 836 and SR 874 are estimated to increase by 1.6 percent and 1.3 percent, respectively. These impacts are less than under Rebate Alternative A, since the perceived decrease in effective toll rates will be lower as a result of the minimum monthly toll requirement. On average, the MDX System is estimated to increase transactions by 1.3 percent in FY 2020 under Rebate Alternative B, an impact which is estimated to continue through the end of the forecast period.

Since the rebate program assumed under Rebate Alternative B would represent a one-year impact if implemented in FY 2020, the long-term growth rates across the five MDX Expressways estimated under this alternative are comparable to those estimated under the Base Case, as indicated by expressway in **Table 8**. Thus, growth under this scenario continues to be greatest on SR 112 and SR 874 in the short-term (FY 2020 to FY 2030) and greatest on SR 924 over the course of the 25-year forecast period. Transaction growth on SR 836, which will be also be limited in the future by capacity constraints under Rebate Alternative B, is estimated to be 1.4 percent annually over the 25-year forecast period, comparable to the system average.

Table 9 provides **a**nnual traffic and revenue forecasts by method of payment for the MDX System under Rebate Alternative B. Due to the additional transactions generated by the perceived lower toll rates and the assumed 2 percent shift of Toll-by-Plate customers to SunPass® under Rebate Alternative B, SunPass® transactions are estimated to increase by 1.9 percent in FY 2020 compared to the Base Case. This is less than under Rebate Alternative A due to the lower assumed shift from Toll-by-Plate. Correspondingly, a decrease of roughly 2 percent is forecasted in Toll-by-Plate transactions in FY 2020 compared to the Base Case. As with the prior scenarios, SunPass® transactions are forecasted to lead MDX System growth under Rebate Alternative B, with an average annual growth rate of 1.5 percent over the forecast period. Additionally, the SunPass® participation rate under Rebate Alternative B is estimated to increase from more than 84 percent in FY 2020 to more than 86 percent by FY 2044. Again, this is slightly lower than under Rebate Alternative A due to the lower assumed shift from Toll-by-Plate.

Table 8

Estimated MDX Expressway System Annual Transactions and Revenue, by Expressway
Rebate Alternative B: Assumes a 25 Percent Toll Rebate for All Miami-Dade SunPass® Passenger Cars Making a Minimum Toll Amount of $12.50 per Month(1) ,FY 2019 – FY 2044

	Estimated Annual Transactions (000s)						Estimated Annual Collected Revenue(2) ($000s)						
Fiscal Year(3)	SR 112	SR 836	SR 874	SR 878	SR 924	**Total System**	SR 112	SR 836	SR 874	SR 878	SR 924	Recovered Revenue (4)	**Total System**
2019(5)	79,873	236,393	124,637	27,227	38,358	**506,488**	$24,225	$121,959	$36,331	$5,952	$17,383	$22,177	**$228,027**
2020(6)	81,787	246,328	131,582	28,479	41,285	**529,461**	28,526	143,498	41,242	6,602	21,593		**241,461**
2021	82,958	251,906	136,285	29,029	42,302	**542,480**	28,935	146,890	42,402	6,729	22,125		**247,081**
2022	84,448	256,910	140,478	29,553	43,238	**554,627**	29,475	149,875	43,263	6,851	22,653		**252,117**
2023	86,275	261,178	138,573	29,754	44,088	**559,868**	30,124	152,240	42,656	6,896	23,126		**255,042**
2024(6)	88,386	269,222	139,823	30,039	45,078	**572,548**	30,874	157,334	43,053	6,961	23,676		**261,898**
2025	90,059	272,829	140,317	30,162	45,841	**579,208**	31,472	159,309	43,219	6,989	24,108		**265,097**
2026	91,336	275,408	143,112	30,383	46,246	**586,485**	31,919	160,996	44,062	7,038	24,338		**268,353**
2027	92,638	278,026	145,976	30,607	46,657	**593,904**	32,374	162,710	44,927	7,088	24,572		**271,671**
2028(6)	94,222	281,452	149,316	30,918	47,203	**603,111**	32,929	164,902	45,938	7,158	24,879		**275,806**
2029	95,318	283,380	151,912	31,064	47,497	**609,171**	33,314	166,221	46,721	7,190	25,053		**278,499**
2030	96,696	286,116	154,989	31,297	47,927	**617,025**	33,798	168,018	47,652	7,242	25,300		**282,010**
2031	97,897	290,111	156,701	31,625	48,709	**625,043**	34,221	170,378	48,191	7,317	25,734		**285,841**
2032(6)	99,387	294,971	158,867	32,045	49,640	**634,910**	34,746	173,248	48,872	7,414	26,248		**290,528**
2033	100,351	298,279	160,188	32,293	50,313	**641,424**	35,087	175,208	49,293	7,470	26,626		**293,684**
2034	101,603	302,453	161,965	32,632	51,136	**649,789**	35,529	177,680	49,856	7,548	27,084		**297,697**
2035	102,874	306,688	163,765	32,976	51,973	**658,276**	35,978	180,190	50,427	7,627	27,551		**301,773**
2036(6)	104,361	311,187	165,943	33,321	52,901	**667,713**	36,513	182,939	51,125	7,708	28,075		**306,360**
2037	105,293	314,031	167,232	33,486	53,553	**673,595**	36,855	184,720	51,551	7,748	28,453		**309,327**
2038	106,523	317,771	168,993	33,744	54,362	**681,393**	37,301	187,031	52,123	7,809	28,915		**313,179**
2039	107,769	321,558	170,773	34,005	55,183	**689,288**	37,754	189,375	52,703	7,871	29,385		**317,088**
2040(6)	109,328	326,285	173,045	34,361	56,170	**699,189**	38,316	192,277	53,435	7,955	29,946		**321,929**
2041	110,304	329,281	174,391	34,531	56,861	**705,368**	38,658	194,041	53,845	7,994	30,314		**324,852**
2042	111,595	333,215	176,230	34,798	57,719	**713,557**	39,111	196,359	54,407	8,056	30,772		**328,705**
2043	112,900	337,197	178,088	35,066	58,590	**721,841**	39,568	198,705	54,975	8,118	31,236		**332,602**
2044(6)	114,533	342,162	180,458	35,434	59,636	**732,223**	40,141	201,630	55,701	8,203	31,794		**337,469**
Average Annual Percent Change													
2020-2030	1.69	1.51	1.65	0.95	1.50	**1.54**	1.71	1.59	1.46	0.93	1.60		**1.56**
2030-2040	1.24	1.32	1.11	0.94	1.60	**1.26**	1.26	1.36	1.15	0.94	1.70		**1.33**
2020-2044	1.41	1.38	1.32	0.91	1.54	**1.36**	1.43	1.43	1.26	0.91	1.63		**1.40**

(1) Assumes continuation of the current Frequent Driver Rewards Program. The program provides a 15 percent rebate to registered SunPass® customers, with a maximum discount of $300. A minimum of $250 in annual tolls per customer is required to qualify.
(2) Represents annual revenues after allowance for violations, non-pursuable SunPass® and TBP transactions and uncollectible TBP billings.
(3) Fiscal Year represents twelve months ending June 30.
(4) Includes negative balance SunPass® and unreceived Toll-by-Plate revenue to be recovered following delayed billing from CCSS.
(5) Based on actual data through January 2019.
(6) Leap Year.

Table 9

Estimated MDX Expressway System Annual Transactions and Revenue, by Method of Payment Rebate Alternative B: Assumes a 25 Percent Toll Rebate for All Miami-Dade SunPass® Passenger Cars Making a Minimum Toll Amount of $12.50 per Month(1) ,FY 2019 – FY 2044

	Estimated Annual Transactions (000s)				Estimated Annual Collected Revenue(2) ($000s)						
Fiscal Year(3)	SunPass®	Toll-by-Plate	Non-Revenue	**Total System**	SunPass®	Toll-by-Plate	Recovered Revenue (4)	**Total Revenue Before Rebate**	Rev. Eligible for Rebate	Est. Rebate Amount	**Total Revenue After Rebate**
2019(5)	423,948	80,000	2,540	**506,488**	$180,153	$25,697	$22,177	**$228,027**	$118,433	($3,100)	**$224,927**
2020(6)	446,989	79,854	2,620	**529,463**	196,885	44,575		**241,460**	129,739	(32,435)	**209,025**
2021	457,971	81,825	2,685	**542,481**	201,474	45,607		**247,081**	132,846	(33,212)	**213,869**
2022	468,708	83,169	2,750	**554,627**	205,702	46,416		**252,118**	135,677	(33,919)	**218,199**
2023	474,154	82,932	2,781	**559,867**	208,492	46,552		**255,044**	137,506	(34,376)	**220,668**
2024(6)	485,946	83,749	2,854	**572,549**	214,532	47,365		**261,897**	141,517	(35,379)	**226,518**
2025	492,629	83,686	2,893	**579,208**	217,550	47,546		**265,096**	143,526	(35,882)	**229,214**
2026	500,164	83,385	2,937	**586,486**	220,769	47,584		**268,353**	145,679	(36,420)	**231,933**
2027	507,834	83,087	2,982	**593,903**	224,042	47,629		**271,671**	147,868	(36,967)	**234,704**
2028(6)	517,056	83,021	3,035	**603,112**	227,994	47,812		**275,806**	150,505	(37,626)	**238,180**
2029	523,594	82,504	3,074	**609,172**	230,757	47,741		**278,498**	152,355	(38,089)	**240,409**
2030	531,688	82,218	3,121	**617,027**	234,200	47,809		**282,009**	154,654	(38,664)	**243,345**
2031	539,309	82,569	3,166	**625,044**	237,619	48,223		**285,842**	156,867	(39,217)	**246,625**
2032(6)	548,540	83,151	3,220	**634,911**	241,749	48,778		**290,527**	159,548	(39,887)	**250,640**
2033	554,886	83,280	3,258	**641,424**	244,610	49,075		**293,685**	161,390	(40,347)	**253,338**
2034	562,846	83,639	3,305	**649,790**	248,184	49,514		**297,698**	163,702	(40,925)	**256,773**
2035	570,922	84,000	3,353	**658,275**	251,811	49,962		**301,773**	166,047	(41,512)	**260,261**
2036(6)	578,749	85,564	3,400	**667,713**	255,337	51,025		**306,362**	168,311	(42,078)	**264,284**
2037	583,484	86,683	3,428	**673,595**	257,499	51,827		**309,326**	169,676	(42,419)	**266,907**
2038	589,871	88,058	3,465	**681,394**	260,392	52,788		**313,180**	171,521	(42,880)	**270,300**
2039	596,329	89,455	3,504	**689,288**	263,319	53,768		**317,087**	173,386	(43,347)	**273,740**
2040(6)	604,511	91,124	3,552	**699,187**	267,010	54,918		**321,928**	175,754	(43,938)	**277,990**
2041	609,846	91,939	3,584	**705,369**	269,428	55,425		**324,853**	177,333	(44,333)	**280,520**
2042	616,916	93,015	3,625	**713,556**	272,613	56,091		**328,704**	179,418	(44,854)	**283,850**
2043	624,069	94,103	3,668	**721,840**	275,838	56,764		**332,602**	181,527	(45,382)	**287,220**
2044(6)	633,037	95,466	3,721	**732,224**	279,865	57,603		**337,468**	184,165	(46,041)	**291,427**
Average Annual Percent Change											
2020-2030	1.75	0.29	1.77	**1.54**	1.75	0.70		**1.56**	1.77	1.77	**1.53**
2030-2040	1.29	1.03	1.30	**1.26**	1.32	1.40		**1.33**	1.29	1.29	**1.34**
2020-2044	1.46	0.75	1.47	**1.36**	1.48	1.07		**1.40**	1.47	1.47	**1.39**

(1) Assumes discontinuation of the current Frequent Driver Rewards Program upon implementation of the new 25 percent automatic SunPass® toll rebate program on July 1, 2020.
(2) Represents annual revenues after allowance for violations, non-pursuable SunPass® and TBP transactions and uncollectible TBP billings.
(3) Fiscal Year represents twelve months ending June 30.
(4) Based on actual data through January 2019.
(5) Leap Year.

Annual transactions under Rebate Alternative B are forecasted to reach 617.0 million by FY 2030, representing an annual average growth rate of 1.5 percent over FY 2020. Growth is estimated to continue at an average annual rate of 1.3 percent through FY 2044, with annual transactions reaching an estimated 732.2 million in that year. As previously noted, since the impacts of the proposed SunPass® toll rebate are relatively similar through the forecast period, annual growth rates after the rebate program implementation are comparable between the Base Case and Rebate Alternate B.

The estimated annual collected revenue subject to the rebate, as well as the estimated annual amount are also provided in **Table 9**. The annual revenue subject to the proposed rebate represents roughly 54 percent, as a share of total collected revenue, reflecting the fact that less residents will qualify for the rebate due to the minimum monthly toll requirement. The rebate amount is estimated to increase from $32.4 million in FY 2020 to $38.7 million in FY 2030, to $46.0 million in FY 2044. This represents almost 14 percent of collected toll revenues prior to the rebate.

Under Rebate Alternative B, annual collected revenues after the rebate are expected to increase from $209.0 million in FY 2020 to nearly $243.3 million by FY 2030, a ten-year average growth rate of 1.5 percent. By FY 2044, annual collected toll revenues are estimated to reach $291.4 million. Due to assumed leakage rates remaining constant through the forecast period, average annual growth rates for collected toll revenues are estimated be comparable to transactions growth rate, or an average of 1.4 percent annually. The minor differences in growth rates between transactions and indicated revenue are due to differential growth rates by expressway and toll gantry location.

Forecast Comparison

Table 10 presents a comparison of the Updated Base Case and the two alternate forecasts. Under Rebate Alternative A, which has no monthly minimum toll requirement, collected toll revenues after the rebate are estimated to decrease by $37.0 million in FY 2020, the first year of the assumed toll rebate. This revenue reduction is estimated to increase to $52.3 million by FY 2044. On average, the impact of the 25 percent SunPass® toll rebate for Miami-Dade County Residents represents a reduction of almost 16 percent to systemwide collected toll revenue. This is because the 25 percent toll rebate applies only to Miami-Dade County SunPass® customers and is also slightly offset by the additional traffic attracted to the MDX Expressways.

Under Rebate Alternative B, which has a monthly minimum toll requirement of $12.50, collected toll revenues in the first year of the assumed toll rebate (FY 2020) are estimated to decrease by $26.4 million, compared to the Base Case. This revenue reduction is estimated to increase to $37.3 million by FY 2044. On average, the impact of the 25 percent SunPass® toll rebate for Miami-Dade County Residents, in combination with a minimum monthly toll requirement of $12.50, represents a reduction of just over 11 percent to systemwide collected toll revenue. This is less than the impact estimated under Rebate Alternative A due to the fact that less customers will qualify for the discount as a result of the minimum monthly toll requirement and to the lower assumed shift of Toll-by-Plate customers to SunPass®.

Table 10
Comparison of Annual Systemwide Revenue Estimates
Base Case vs. Alternative Rebate Programs

Fiscal Year[1]	Base Case Annual Coll. Rev. [2] ($000s)	Alternative A: Forecast After Rebate [3][4] Annual Coll. Rev. [2] ($000s)	Net Difference from Base	Percent Difference from Base	Alternative B: Forecast After Rebate [3][5] Annual Coll. Rev. [2] ($000s)	Net Difference from Base	Percent Difference from Base
2019[6]	$224,927	$224,927	$0	0.0	$224,927	$0	0.0
2020[7]	235,377	198,390	(36,987)	-15.7	209,025	(26,352)	-11.2
2021	240,843	202,980	(37,863)	-15.7	213,869	(26,974)	-11.2
2022	245,744	207,083	(38,661)	-15.7	218,199	(27,545)	-11.2
2023	248,571	209,411	(39,160)	-15.8	220,668	(27,903)	-11.2
2024[7]	255,228	214,945	(40,283)	-15.8	226,518	(28,710)	-11.2
2025	258,325	217,485	(40,840)	-15.8	229,214	(29,111)	-11.3
2026	261,480	220,036	(41,444)	-15.8	231,933	(29,547)	-11.3
2027	264,695	222,637	(42,058)	-15.9	234,704	(29,991)	-11.3
2028[7]	268,704	225,906	(42,798)	-15.9	238,180	(30,524)	-11.4
2029	271,310	227,993	(43,317)	-16.0	240,409	(30,901)	-11.4
2030	274,712	230,751	(43,961)	-16.0	243,345	(31,367)	-11.4
2031	278,436	233,854	(44,582)	-16.0	246,625	(31,811)	-11.4
2032[7]	282,992	237,655	(45,337)	-16.0	250,640	(32,352)	-11.4
2033	286,060	240,207	(45,853)	-16.0	253,338	(32,722)	-11.4
2034	289,960	243,459	(46,501)	-16.0	256,773	(33,187)	-11.4
2035	293,922	246,763	(47,159)	-16.0	260,261	(33,661)	-11.5
2036[7]	298,402	250,599	(47,803)	-16.0	264,284	(34,118)	-11.4
2037	301,302	253,109	(48,193)	-16.0	266,907	(34,395)	-11.4
2038	305,068	256,349	(48,719)	-16.0	270,300	(34,768)	-11.4
2039	308,885	259,635	(49,250)	-15.9	273,740	(35,145)	-11.4
2040[7]	313,613	263,689	(49,924)	-15.9	277,990	(35,623)	-11.4
2041	316,462	266,090	(50,372)	-15.9	280,520	(35,942)	-11.4
2042	320,215	269,251	(50,964)	-15.9	283,850	(36,365)	-11.4
2043	324,011	272,449	(51,562)	-15.9	287,220	(36,791)	-11.4
2044[7]	328,751	276,442	(52,309)	-15.9	291,427	(37,324)	-11.4

(1) Fiscal Year represents twelve months ending June 30.
(2) Represents annual revenues after allowance for violations, non-pursuable SunPass® and TBP transactions and uncollectible TBP billings.
(3) Assumes discontinuation of the current Frequent Driver Rewards Program upon implementation of the new 25 percent automatic SunPass® toll rebate program on July 1, 2020.
(4) Alternative A assumes a 25 Percent Toll Rebate for All Miami-Dade SunPass® Passenger Cars.
(5) Alternative B assumes a 25 Percent Toll Rebate for All Miami-Dade SunPass® Passenger Cars Making a Minimum of $12.50 per Month in Tolls.
(6) Based on actual data through January 2019.
(7) Leap Year.

Disclaimer

Current accepted professional practices and procedures were used in the development of these traffic and revenue estimates. 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 the forecasters. In formulating its estimates, CDM Smith has reasonably relied upon the accuracy and completeness of information provided (both written and oral) by the Miami Dade Expressway Authority (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 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 underling methodologies used to obtain the results. CDM Smith gives no opinion as to the value or merit to partial information extracted from this report.

All forecasts and projections reported herein are based on CDM Smith's experience and judgment and on a review of information obtained from multiple state and local agencies, including MDX, the Miami-Dade County Metropolitan Planning Organization, and by independent third parties. 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 some of the projections or other forward-looking statements contained within the report are based on reasonable assumptions as of the date in 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 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 for purposes of financing 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.

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Please do not hesitate to contact us if you have any questions or if further clarification is required.

Respectfully Submitted,

Edward J. Regan
Senior Vice President

Respectfully submitted,

David P. Aron, PTP
Project Manager