NORTH CAROLINA
Turnpike Authority

Board of Directors
Finance Committee Meeting

North Carolina Turnpike Authority

March 21, 2018

Proposed Monroe Expressway Toll Rate Schedule

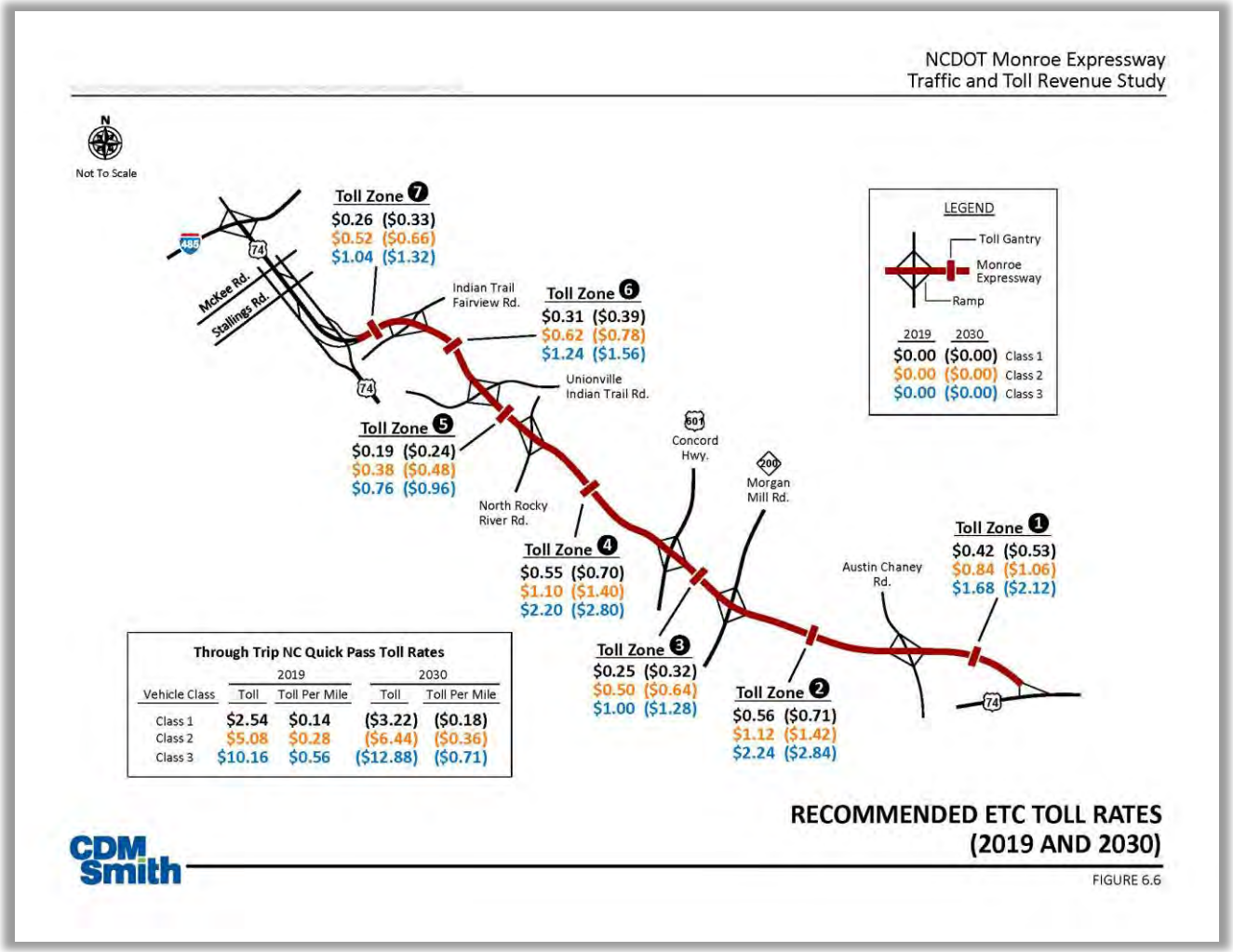
David Roy

Director of Finance

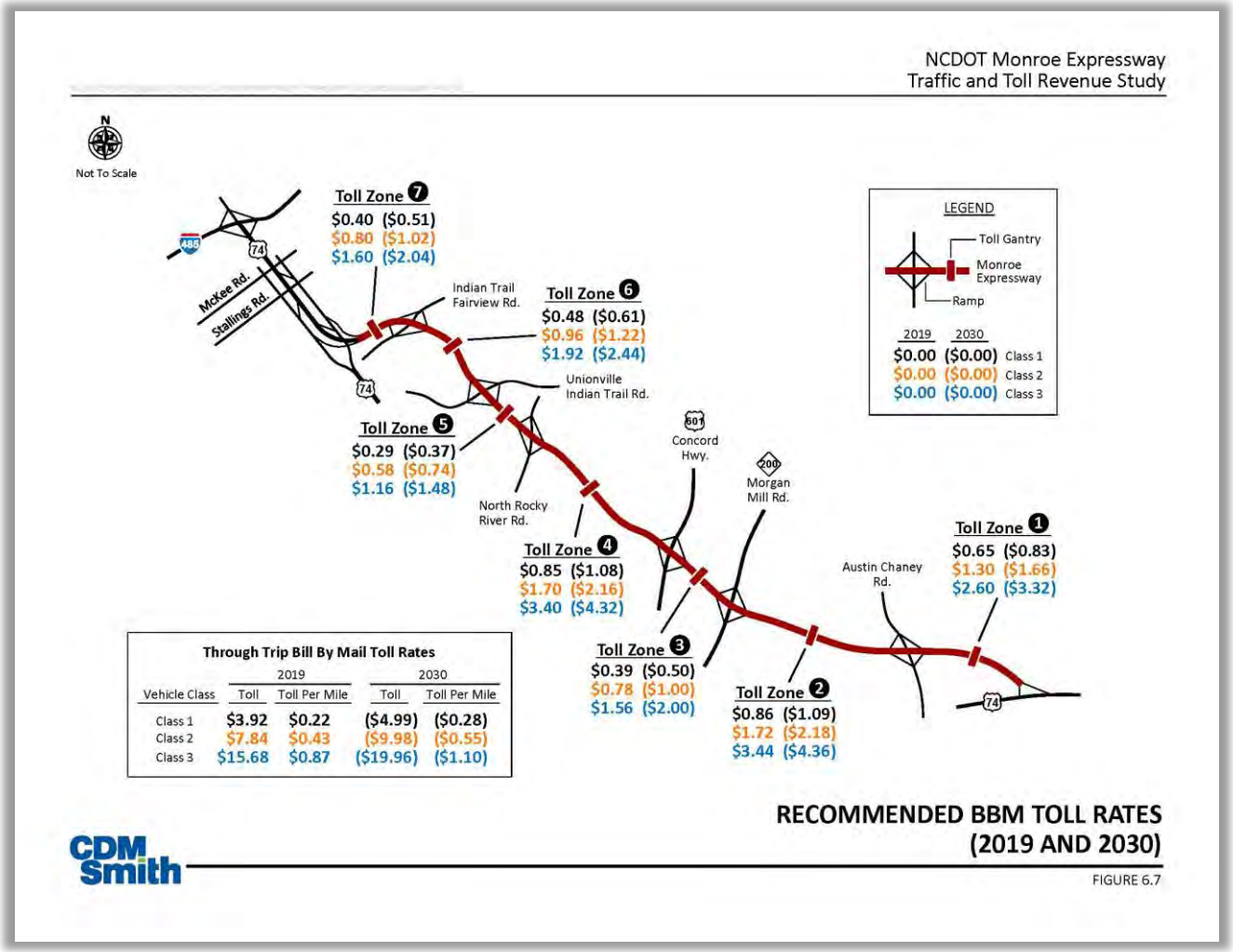
Proposed Monroe Expressway Toll Rate Schedule

- Class 1 (2 axle vehicles) paying via NC Quick Pass
  - $0.14 per mile
  - $2.54 to travel the length of the Monroe Expressway
- ETC toll rates are 35% lower than BBM rates
  - Class 2 (3 axle vehicles) are two times Class 1 toll rates
  - Class 3 (4+ axle vehicles) are four times Class 1 toll rates
- Toll rates increase annually on January 1
  - 2019 to 2025, annual increase averages 2.3%
  - 2025 to 2040, annual increase averages 2.1%

ETC Toll Rates



BBM Toll Rates



2018 Advance Refunding of Remaining 2009B Triangle Expressway System BABs Appropriation Revenue Bonds

David Roy

Director of Finance

David Miller

PFM

NCTA Refunding Opportunity Overview

Triangle Expressway System State Annual Appropriation Revenue Bonds (BABs), Series 2009B

March 21, 2018

PFM Financial Advisors LLC

300 South Orange Avenue
Suite 1170
Orlando, FL 32801

407-406-5752
pfm.com

Triangle Expressway State Annual Appropriation Revenue Bonds, Series 2009B

- The Series 2009B Bond were issued as Federally Taxable, Issuer Subsidy Build America Bonds
  - NCTA was to receive a subsidy of 35% of the interest due on the bonds semi-annually
  - Due to sequestration, NCTA has not received the full subsidy since FY 2013
  - Sequestration rates have ranged from 6.6% to 8.7% and is currently 6.6%
- In August of 2017, NCTA entered into a Forward Delivery Bond Purchase Agreement for a refunding of $161,515,000 Series 2009B Bonds (maturing 1/1/2022 through 1/1/2032)
  - A forward refunding eliminates concerns of the BABs subsidy being eliminated prior to the call date on the refunded bonds
  - The refunding achieved net present value savings of $18.85 million or 11.67% of refunded par and annual cash flow savings average $1.7 million

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Refunding Overview

- Though the Tax Cuts and Jobs Act eliminated tax-exempt advance refundings in the traditional sense, an advance refunding of taxable BABs is permissible as long as two federally subsidized issues aren't outstanding at the same time.
  - The BAB subsidy on the refunded bonds will be eliminated as soon as they are refunded effectively making the bonds taxable and therefore eligible for an advance refunding.

- The Series 2009B Bonds are currently outstanding in a par amount of $180,375,000
  - $150,850,000 is eligible for a refunding on January 1, 2019 at par
  - Refunding does not include the non-callable Serial Bond portion of debt

- Refunding Alternatives include:
  - Option 1: Advance Refunding with an assumed closing of 5/10/2018
  - Option 2A/B: Current Refunding – Closing on 10/3/2018 or 1/1/2019

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Refunding Alternatives

- The execution of an advance refunding would subject the Authority to negative arbitrage and loss of BAB subsidy payments between closing and the call date.
- A current refunding can be executed up to 90 days prior to the call date. Analysis assumes current market rates prevail at the time of closing though the transaction is subject to market movement
- Assumes market rates as of March 13, 2018 plus applicable credit spreads and a 5.0% Coupon scale.

	Option 1 Advance Refunding at Current Market Rates	Option 2-A Current Refunding in October 2018	Option 2-B Current Refunding on the Call Date
Dated / Delivery Date	5/10/2018	10/3/2018	1/1/2019
Est. Pricing Date	4/26/2018	9/19/2018	12/18/2018
Par Amount	137,320,000	135,270,000	133,280,000
Par Amount of Refunded Bonds	150,850,000	150,850,000	150,850,000
All-In TIC	3.90%	3.92%	3.93%
Arbitrage Yield	3.20%	3.20%	3.20%
Net PV Savings	6,810,327	9,457,162	11,995,502
% Savings of Refunded Bonds	4.51%	6.27%	7.95%
Negative Arbitrage	1,233,702	577,443	0

*Refunding analysis assumes a 6.60% Sequestration rate (32.69% subsidy) on the refunded bonds.

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Breakeven Analysis – Interest Rate Sensitivity

- A Current Refunding on or near 1/1/2019 based on today's interest rates and the assumptions herein, is $12 million or 7.95% of refunded par but …
- NCTA would carry interest rate risk until the current refunding bonds could be priced.
- Advance Refunding Breakeven
  - PFM estimates rates could increase 38 bps* and NCTA would achieve the same savings to execute a current refunding *on the call date* as it would to execute an advance today.
  - PFM estimates rates could increase 19 bps* and NCTA would achieve the same savings to execute a current refunding *in October 2018* as it would to execute an advance today.

*Assuming a 4.0% coupon scales, the breakeven to the call date is 41 bps and the breakeven to October 2018 is 20 bps.

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How lower coupons impact savings

- When comparing 4.0% coupons to 5.0% coupons, the par amount of bonds issued increases because premium is reduced
- The All-in TIC (which is based on assuming bonds are held until maturity) decreases
  - If you think you'll hold the bonds to maturity, you want to achieve the lowest TIC
- The Arbitrage Yield (which is based on assuming bonds are called on the call date) increases
  - If you think you'll call the bonds prior to maturity, you want to achieve the lowest arb. yield
- A competitive bid is based on the lowest TIC so it is likely the winning bid will include sub 5% coupons. This will increase savings (a calculation based on holding bonds through their maturity) and decrease the option value of the bonds – ie. the likelihood the bonds will be refunded for additional savings in the future. Note all refunding bonds will be issued beyond the call date.

	5.00% Coupons	4.00% Coupons	
Dated / Delivery Date	5/10/2018	5/10/2018	
Par Amount	137,320,000	151,510,000	Par Amount Increases
All-In TIC	3.90%	3.74%	All-in TIC Decreases
Arbitrage Yield	3.20%	3.49%	Arbitrage Yield Increases
Net PV Savings	6,810,327	9,400,336	NPV Savings Increase
% Savings of Refunded Bonds	4.51%	6.23%	

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Coupons impact when savings are realized

4.00% Coupon Structure

Date	Prior Net Cash Flow	Refunding Debt Service	Savings	PV @ 3.49%
7/1/2018	963,757	858,557	105,200	92,767
7/1/2019	6,802,988	6,060,400	742,588	720,057
7/1/2020	6,802,988	6,060,400	742,588	695,571
7/1/2021	6,802,988	6,060,400	742,588	671,918
7/1/2022	6,802,988	6,060,400	742,588	649,070
7/1/2023	6,802,988	6,060,400	742,588	626,998
7/1/2024	6,802,988	6,060,400	742,588	605,677
7/1/2025	6,802,988	6,060,400	742,588	585,081
7/1/2026	6,802,988	6,060,400	742,588	565,185
7/1/2027	6,802,988	6,060,400	742,588	545,966
7/1/2028	6,802,988	6,060,400	742,588	527,400
7/1/2029	6,802,988	6,060,400	742,588	509,466
7/1/2030	6,802,988	6,060,400	742,588	492,141
7/1/2031	6,802,988	6,060,400	742,588	475,406
7/1/2032	6,802,988	6,060,400	742,588	459,240
7/1/2033	25,218,168	24,812,700	405,468	240,920
7/1/2034	25,184,699	24,811,700	372,999	214,281
7/1/2035	25,157,559	24,813,800	343,759	191,025
7/1/2036	25,124,943	24,812,700	312,243	167,901
7/1/2037	25,090,161	24,812,100	278,061	144,765
7/1/2038	25,051,409	24,815,500	235,909	119,005
7/1/2039	25,016,658	24,811,500	205,158	100,448
Total	272,049,186	259,394,157	12,655,029	9,400,287

5.00% Coupon Structure

Date	Prior Net Cash Flow	Refunding Debt Service	Savings	PV @ 3.20%
7/1/2018	963,757	972,683	(8,927)	(19,826)
7/1/2019	6,802,988	6,866,000	(63,012)	(61,255)
7/1/2020	6,802,988	6,866,000	(63,012)	(59,341)
7/1/2021	6,802,988	6,866,000	(63,012)	(57,486)
7/1/2022	6,802,988	6,866,000	(63,012)	(55,690)
7/1/2023	6,802,988	6,866,000	(63,012)	(53,950)
7/1/2024	6,802,988	6,866,000	(63,012)	(52,264)
7/1/2025	6,802,988	6,866,000	(63,012)	(50,630)
7/1/2026	6,802,988	6,866,000	(63,012)	(49,048)
7/1/2027	6,802,988	6,866,000	(63,012)	(47,515)
7/1/2028	6,802,988	6,866,000	(63,012)	(46,031)
7/1/2029	6,802,988	6,866,000	(63,012)	(44,592)
7/1/2030	6,802,988	6,866,000	(63,012)	(43,199)
7/1/2031	6,802,988	6,866,000	(63,012)	(41,849)
7/1/2032	6,802,988	6,866,000	(63,012)	(40,541)
7/1/2033	25,218,168	23,246,000	1,972,168	1,239,323
7/1/2034	25,184,699	23,244,500	1,940,199	1,181,159
7/1/2035	25,157,559	23,243,875	1,913,684	1,128,609
7/1/2036	25,124,943	23,246,750	1,878,193	1,073,034
7/1/2037	25,090,161	23,245,750	1,844,411	1,020,746
7/1/2038	25,051,409	23,248,375	1,803,034	966,574
7/1/2039	25,016,658	23,247,000	1,769,658	918,912
Total	272,049,186	259,818,933	12,230,252	6,805,140

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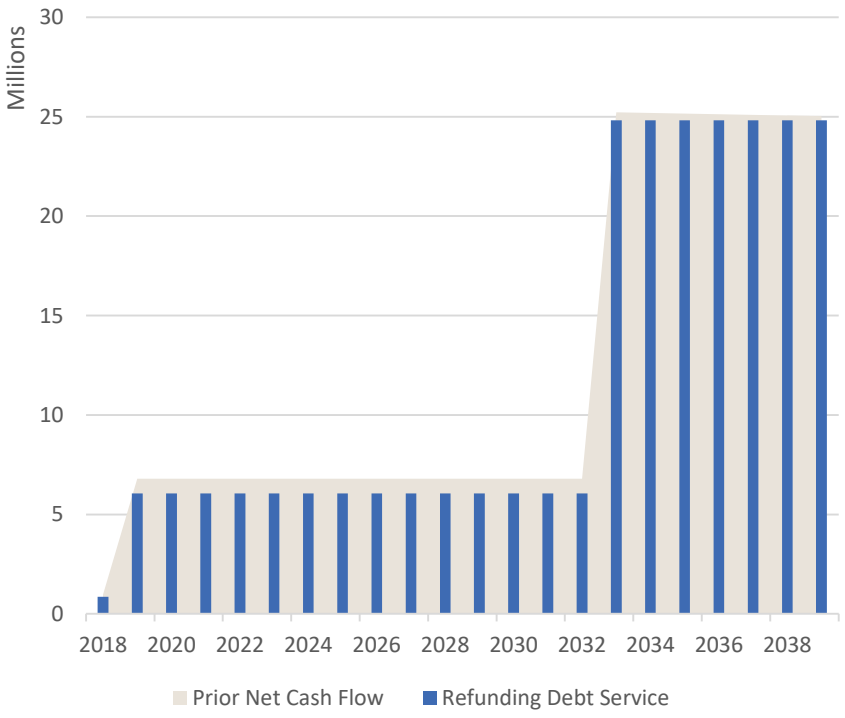
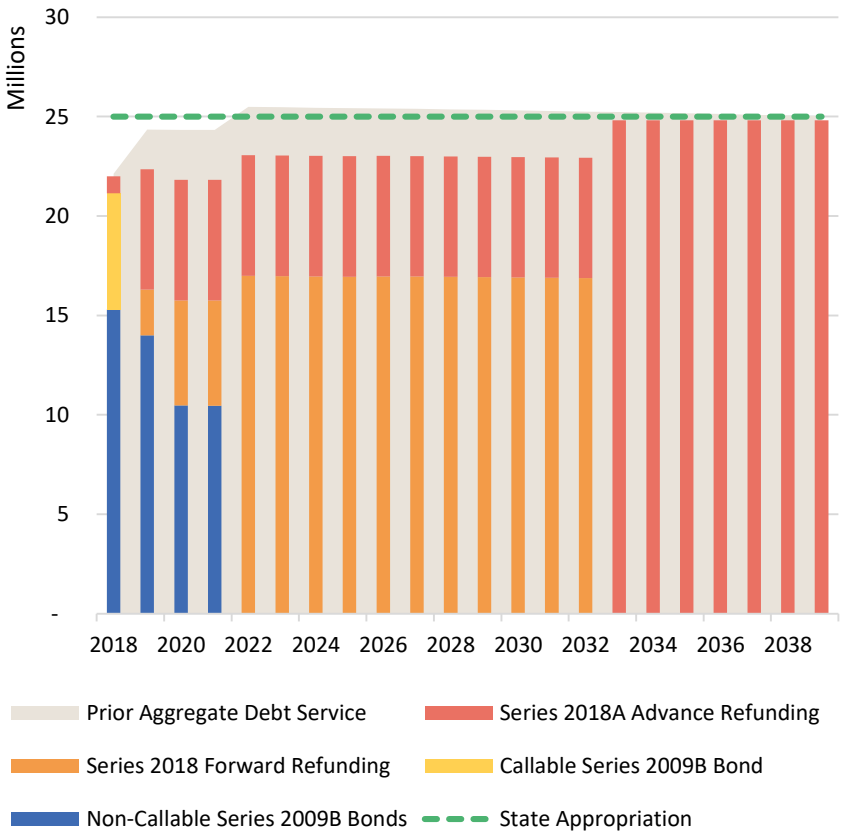
Debt Service Savings (4.0% Coupons)

Debt Service Comparison of Proposed Advance Refunding Only



Aggregate Debt Service Comparison from Forward and Advance Refunding Transactions



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Schedule

March 21	Finance Committee Meeting
March 28	NCTA Special Board Meeting to approve Refunding
March 30	Substantially final documents submitted to LGC for Agenda deadline
April 10	LGC Meeting – Approval of Refunding
April 12	Preliminary Official Statement released
April 26	Competitive Bond Sale
May 9 / 10	Pre-Closing / Closing

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Refunding Documents

Wally McBride

Hunton & Williams

Refunding Documents

- Sale Documents
  - Notice of Sale
    - Announces competitive sale for Series 2018A Refunding Bonds, in form used by Local Government Commission, calls for electronic bids only on sale date
  - Preliminary Official Statement
    - Provides disclosure with respect to Authority, the State's annual appropriations, the Triangle Expressway System and other credit elements of interest to investors. When 2018A Refunding Bonds are sold, the purchasing underwriter will provide more information and this document will be used to produce the Final Official Statement

Refunding Documents

- Bond Documents
  - Bond Order
    - Short formula document required by Revenue Bond Act
  - First Supplemental Trust Agreement
    - Amends the 2009 Trust Agreement and states terms for Series 2018A Refunding Bonds
  - Series 2018A Refunding Bonds
    - In form attached to the First Supplemental Trust Agreement
  - Escrow Agreement
    - Provides for investment of proceeds until used to pay 2009B Bonds being refunded

North Carolina Turnpike Authority
Complete 540 (Phase I)

March 21, 2018

PFM Financial Advisors LLC

300 South Orange Avenue
Suite 1170
Orlando, FL 32801

407-406-5752
pfm.com

Complete 540 Project Data Assumptions

- Tentative Schedule
  - Plan of Finance Start - 7/1/2018
  - Open to Traffic - Section 1 opens January 2022, Section 2 opens March 2022 and Section 3 opens September 2022
  - Construction Cost - $1,248,926,293
- Traffic & Revenue
  - Triangle Expressway - Draft T&R Report prepared by CDM Smith - Scenario 3
  - Complete 540 (R-2721A, R-2721B, R-2828) - Draft T&R Report prepared by CDM Smith
    - Report assumes 2025 Open date; 2.5% annual adjustment back to 2023 Open; 1/4 of adjusted FY 2023 revenues assumed in FY 2022 for opening of first two sections
  - Existing TriEx toll revenues end after FY 2049
- O&M / R&R – Provided by HNTB August 2017

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Potential Sources of Funds

- Parity System Toll Revenue Bonds combined with existing Triangle Expressway
- Parity Subordinate System Toll Revenue TIFIA Loan
  - Pursue a refunding of the existing TIFIA Loan in tandem with the new loan
  - System expansion adds substantial incremental T&R once open
  - Extend the final maturity with system expansion
- Up to $243 million NCDOT GARVEE Bonds (per STIP)
- Up to $81 million NCDOT GARVEE State Match – 33% of GARVEE Bonds
- Up to $81 million NCDOT National Highway Performance Program (per STIP)

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Complete 540 Financing Assumptions

- Toll Revenue Bonds
  - Interest Rate: BBB Revenue MMD (3/13/2018) + 75 bps
  - Common Debt Service Reserve Fund (DSRF) sized to 5-year Maximum Annual Debt Service (MADS)
  - Gross pledge on parity with Series 2009 and Series 2017 Toll Revenue Bonds
- TIFIA
  - Interest Rate: 3.86% (TIFIA Rate as of 3/13/2018) + 75 bps
  - Common DSRF with existing loan
    - Initial DSRF deposit to bring aggregate total to $10 million.
    - Ongoing deposits equal to 10% of total excess revenues above new base case until balance equals 10% of outstanding balance
- General Reserve
  - General Reserve transfer in FY 2022 ($102 million)
  - Minimum Balance Target: $50 million

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Triangle Expressway System Toll Financing

Sources	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total
TIFIA Loan - New Complete 540	-	-	62,509,482	313,435,364	70,419,892	**446,364,739**
TIFIA Loan - Original Triangle Xway	430,405,953					**430,405,953**
Series 2018 TR Bonds						
TE CIBS Par Amount	143,402,622	279,827,378	-	-	-	**423,230,000**
TE CCABS Par Amount	25,294,716	49,358,609	-	-	-	**74,653,325**
TE CABS Par Amount	21,663,968	42,273,782	-	-	-	**63,937,750**
+Premium/-Discount	9,955,763	19,427,086	-	-	-	**29,382,848**
Bond Proceeds	200,317,069	390,886,854	-	-	-	**591,203,923**
NHP Program						-
NCDOT GARVEEs	-	11,796,272	231,203,728	-	-	**243,000,000**
NCDOT GARVEE State Match	-	3,932,091	77,067,909	-	-	**81,000,000**
Total Sources	**630,723,021**	**406,615,217**	**370,781,120**	**313,435,364**	**70,419,892**	**1,791,974,615**

Uses	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	Total
Construction Cost						
Funded by TIFIA Loan	-	-	56,654,188	313,435,364	70,419,892	**440,509,445**
Funded by TR Bonds	93,532,926	390,886,854	-	-	-	**484,419,780**
Funded by NCDOT GARVEEs Bonds	-	11,796,271.75	231,203,728	-	-	**243,000,000**
Funded by NCDOT GARVEE State Match	-	3,932,091	77,067,909	-	-	**81,000,000**
Total	93,532,926	406,612,285	364,925,826	313,435,364	70,419,892	**1,248,926,293**
Refinancing of TriEx TIFIA Loan	430,405,953					430,405,953
Issuance Costs						
Deposit to TR Bonds DSRF	15,914,933					**15,914,933**
Deposit to TIFIA DSRF			5,855,294			**5,855,294**
Deposit to Capitalized Interest Fund	86,374,641					**86,374,641**
Underwriters' Discount	3,090,016					**3,090,016**
Cost of Issuance	1,404,553					**1,404,553**
Total Uses	**630,723,021**	**406,615,217**	**370,781,120**	**313,435,364**	**70,419,892**	**1,791,974,615**

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Triangle Expressway System Toll Financing – Coverage Ratios

Fiscal Year	Pledged Revenues				Toll Revenue Bonds	TIFIA Loan Repayment (3)			Project Toll Revenue Bonds	TIFIA Coverage	All-in Coverage
	Complete 540	Triangle Expressway									
	Toll Revenues	Toll Revenues	Resiudal Approp Funds	Pledged Revenues (1)	Aggregate Net Debt Service (2)	New Aggregate TIFIA Loan	TIFIA Common Reserve Earnings	Aggregate Repayment (3)	Coverage (4)=(1)/(2)	(5)=(1)/[(2)+(3)]	
2022	2,738,608	67,790,000	1,371,972	71,900,580	17,535,640	31,024,238	(200,000)	30,824,238	4.10x	1.49x	0.91x
2023	10,954,432	71,856,000	1,386,651	84,197,083	30,926,715	17,840,354	(200,000)	17,640,354	2.72x	1.73x	0.97x
2024	26,953,480	76,269,000	1,400,271	104,622,751	44,535,790	17,287,897	(200,000)	17,087,897	2.35x	1.70x	1.02x
2025	36,353,599	80,964,000	1,413,141	118,730,740	43,743,214	24,676,570	(200,000)	24,476,570	2.71x	1.74x	1.04x
2026	43,822,487	85,838,000	1,397,967	131,058,454	43,687,369	36,178,011	(200,000)	35,978,011	3.00x	1.65x	1.02x
2027	49,199,286	91,107,000	1,411,059	141,717,345	43,623,378	41,781,863	(200,000)	41,581,863	3.25x	1.66x	1.01x
2028	53,887,924	96,565,000	1,426,304	151,879,228	43,582,169	43,178,110	(200,000)	42,978,110	3.48x	1.75x	1.06x
2029	57,951,220	102,328,000	1,441,984	161,721,204	46,676,125	44,410,550	(200,000)	44,210,550	3.46x	1.78x	1.04x
2030	61,324,450	108,601,000	1,457,424	171,382,874	49,773,568	45,948,505	(200,000)	45,748,505	3.44x	1.79x	1.11x
2031	64,991,791	114,720,000	1,474,933	181,186,724	49,741,918	47,305,372	(200,000)	47,105,372	3.64x	1.87x	1.15x
2032	68,808,566	120,558,000	1,490,850	190,857,416	49,711,093	48,558,255	(200,000)	48,358,255	3.84x	1.95x	1.20x
2033	72,802,380	126,587,000		199,389,380	61,867,268	49,740,832	(200,000)	49,540,832	3.22x	1.79x	1.15x
2034	76,953,242	132,900,000		209,853,242	63,427,118	51,706,260	(200,000)	51,506,260	3.31x	1.83x	1.19x
2035	81,129,804	139,596,000	13,322	220,739,126	65,067,118	53,053,009	(200,000)	52,853,009	3.39x	1.87x	1.22x
2036	85,573,825	146,426,000	47,416	232,047,241	66,536,379	54,399,405	(200,000)	54,199,405	3.49x	1.92x	1.19x
2037	90,311,957	152,780,000	83,741	243,175,699	67,923,454	55,574,340	(200,000)	55,374,340	3.58x	1.97x	1.28x
2038	95,428,911	158,755,000	124,106	254,308,017	51,611,833	64,876,078	(200,000)	64,676,078	4.93x	2.19x	1.36x
2039	99,345,628	165,028,000	71,512	264,445,140	52,059,509	65,749,028	(200,000)	65,549,028	5.08x	2.25x	1.40x
2040	102,021,178	171,693,000	25,000,000	298,714,178	78,908,051	91,187,593	(200,000)	90,987,593	3.79x	1.76x	1.23x
2041	104,698,632	177,562,000	25,000,000	307,260,632	80,597,658	92,981,269	(200,000)	92,781,269	3.81x	1.77x	1.24x
2042	107,291,374	182,132,000	25,000,000	314,423,374	82,012,002	94,484,388	(200,000)	94,284,388	3.83x	1.78x	1.25x
2043	110,181,083	186,401,000	25,000,000	321,582,083	83,421,379	59,574,277	(200,000)	59,374,277	3.85x	2.25x	1.47x
2044	113,033,670	190,747,000	25,000,000	328,780,670	84,842,492	61,017,134	(200,000)	60,817,134	3.88x	2.26x	1.48x
2045	115,788,221	195,185,000	25,000,000	335,973,221	86,246,587	62,474,607	(200,000)	62,274,607	3.90x	2.26x	1.48x
2046	118,710,291	199,591,000	25,000,000	343,301,291	87,696,764	63,939,915	(200,000)	63,739,915	3.91x	2.27x	1.50x
2047	121,617,133	203,979,000	25,000,000	350,596,133	89,169,889	65,369,054	(200,000)	65,169,054	3.93x	2.27x	1.50x
2048	124,586,794	208,454,000	25,000,000	358,040,794	90,665,489	66,835,324	(200,000)	66,635,324	3.95x	2.28x	1.51x
2049	127,494,587	217,581,000	25,000,000	370,075,587	93,085,364	69,203,511	(200,000)	69,003,511	3.98x	2.28x	1.60x
2050	130,348,126			130,348,126	25,536,481	26,322,730	(200,000)	26,122,730	5.10x	2.52x	1.93x
2051	133,293,040			133,293,040	26,791,772	11,088,839	(200,000)	10,888,839	4.98x	3.54x	1.10x
2052	136,181,797			136,181,797	27,372,472	11,805,752	(200,000)	11,605,752	4.98x	3.49x	1.10x
2053	139,228,554			139,228,554	27,984,947	12,601,008	(200,000)	12,401,008	4.98x	3.45x	1.10x
2054	142,013,126			142,013,126	28,547,322	13,173,174	(200,000)	12,973,174	4.97x	3.42x	1.10x
2055	144,853,388			144,853,388	29,116,847	28,371,156	(200,000)	28,171,156	4.97x	2.53x	1.23x

Minimum	2.35x	1.49x	0.91x
Avg. thru 2049	3.64x	1.93x	1.24x
Avg. thru 2059	3.88x	2.15x	1.28x

*Cash flow shortfalls in the early years (less than $15 million) to be covered with general reserve funds

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Triangle Expressway System Toll Financing – Flow of Funds

Fiscal Year	Available Revenues after Debt Service	O&M Expenses		O&M Reserve	R&R		Residual Revenues	General Reserve Fund	
		Complete 540	TriEx	Deposit	Complete 540	TriEx		Beginning Balance	Ending Balance
2022	23,540,703	(4,600,000)	(17,726,207)	(1,259,393)		(7,025,428)	(7,070,326)	102,841,915	95,771,588
2023	35,630,014	(11,539,000)	(18,234,660)	(1,818,642)		(7,023,732)	(2,986,019)	95,771,588	92,785,570
2024	42,999,064	(14,425,000)	(18,774,571)	(800,230)	(145,571)	(7,009,695)	1,843,997	92,785,570	94,629,566
2025	48,090,833	(16,508,000)	(19,343,616)	(588,015)	(145,571)	(7,036,283)	4,469,347	94,629,566	99,098,913
2026	48,203,700	(17,768,000)	(19,936,006)	(379,349)	(145,571)	(7,007,792)	2,966,983	99,098,913	102,065,896
2027	53,464,855	(18,682,000)	(20,541,242)	(289,343)	(6,144,167)	(6,975,160)	832,943	102,065,896	102,898,839
2028	63,795,325	(19,370,000)	(21,172,548)	(234,662)	(6,144,167)	(8,845,250)	8,028,698	102,898,839	110,927,537
2029	63,216,404	(19,815,000)	(21,817,248)	(173,415)	(6,144,167)	(8,818,043)	6,448,531	110,927,537	117,376,068
2030	74,285,801	(20,269,000)	(22,498,586)	(181,488)	(6,144,167)	(8,817,447)	16,375,113	117,376,068	133,751,181
2031	82,699,433	(20,737,000)	(23,146,744)	(173,935)	(6,144,167)	(8,776,660)	23,720,927	133,751,181	157,472,108
2032	91,208,069	(21,217,000)	(23,773,735)	(168,778)	(6,144,167)	(8,733,734)	31,170,655	157,472,108	188,642,763
2033	86,466,279	(21,709,000)	(24,427,385)	(175,623)	(4,983,083)	(8,710,822)	26,460,366	188,642,763	215,103,129
2034	94,919,864	(22,214,000)	(25,092,138)	(178,854)	(4,983,083)	(8,727,241)	33,724,549	215,103,129	248,827,678
2035	102,818,999	(22,732,000)	(25,779,738)	(184,923)	(4,983,083)	(8,708,514)	40,430,740	248,827,678	289,258,418
2036	100,237,519	(23,263,000)	(26,484,551)	(189,523)	(4,983,083)	(8,687,968)	36,629,394	289,258,418	325,887,811
2037	118,159,357	(23,809,000)	(27,192,384)	(190,985)	(4,983,083)	(8,780,371)	53,203,534	325,887,811	379,091,345
2038	136,576,587	(24,211,000)	(27,916,000)	(155,810)	(4,983,083)	(12,093,768)	67,216,925	379,091,345	446,308,270
2039	145,397,750	(24,468,000)	(28,652,032)	(119,499)	(4,983,083)	(12,056,859)	75,118,277	446,308,270	521,426,547
2040	127,367,734	(24,726,000)	(29,413,166)	(123,179)	(4,983,083)	(11,997,975)	56,124,331	521,426,547	577,550,879
2041	132,438,454	(24,988,000)	(30,147,704)	(115,018)	(4,983,083)	(11,942,591)	60,262,058	577,550,879	637,812,937
2042	136,652,609	(25,253,000)	(30,843,280)	(103,455)	(4,983,083)	(11,909,297)	63,560,494	637,812,937	701,373,431
2043	177,313,301	(25,512,000)	(31,547,223)	(101,530)	(4,983,083)	(12,053,558)	103,115,908	701,373,431	804,489,339
2044	181,625,444	(25,761,000)	(32,268,962)	(101,052)	(4,983,083)	(12,048,634)	106,462,714	804,489,339	910,952,052
2045	185,032,152	(26,014,000)	(33,009,360)	(104,285)	(5,544,000)	(11,990,920)	108,369,588	910,952,052	1,019,321,640
2046	191,864,613	(26,268,000)	(33,776,681)	(108,815)	(5,544,000)	(12,002,555)	114,164,562	1,019,321,640	1,133,486,202
2047	196,257,190	(26,528,000)	(34,560,820)	(112,011)	(5,544,000)	(11,974,071)	117,538,287	1,133,486,202	1,251,024,489
2048	200,739,981	(26,777,000)	(35,365,307)	(111,770)	(5,544,000)	(11,921,687)	121,020,217	1,251,024,489	1,372,044,706
2049	207,986,712	(27,019,000)	(36,189,451)	(112,298)	(5,544,000)	(440,000)	138,681,963	1,372,044,706	1,510,726,669
2050	144,738,103	(27,262,000)	(37,035,830)	(115,447)	(5,544,000)	(12,000,000)	62,780,826	1,510,726,669	1,573,507,495
2051	95,612,429	(27,509,000)	(38,078,942)	(162,938)	(5,544,000)	(12,000,000)	12,317,549	1,573,507,495	1,585,825,045
2052	97,203,572	(27,759,000)	(39,151,988)	(168,421)	(5,544,000)	(12,000,000)	12,580,163	1,585,825,045	1,598,405,208
2053	98,842,599	(28,012,000)	(40,255,839)	(173,619)	(5,544,000)	(12,000,000)	12,857,141	1,598,405,208	1,611,262,349
2054	100,492,629	(28,268,000)	(41,391,391)	(178,955)	(5,544,000)	(12,000,000)	13,110,284	1,611,262,349	1,624,372,633
2055	125,950,072	(28,526,000)	(42,559,567)	(184,185)	(5,544,000)	(12,000,000)	37,136,320	1,624,372,633	1,661,508,954

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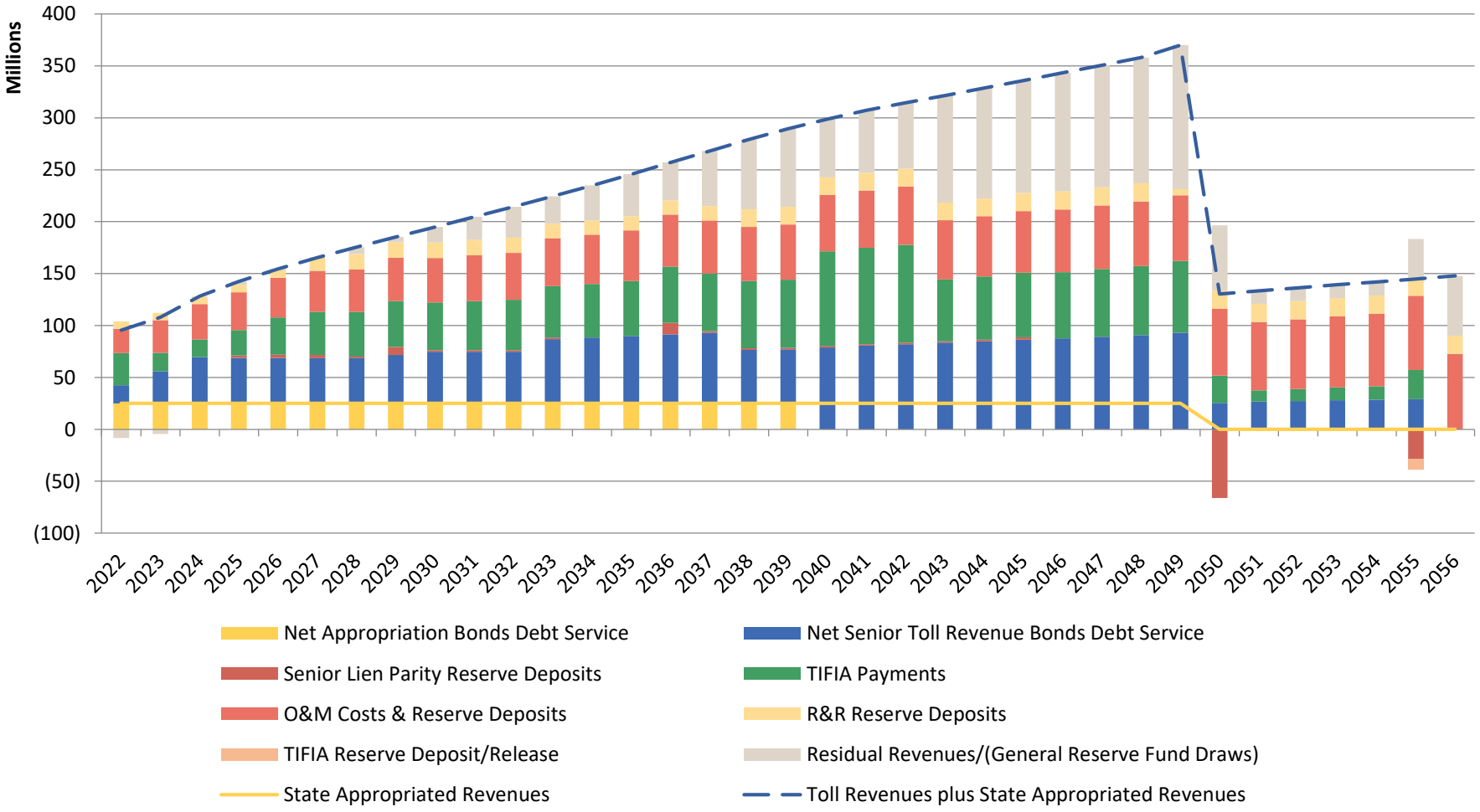
Triangle Expressway System Toll Financing – Cash Flows



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Thank You

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Inducement Resolution for Complete 540 Financing

David Roy

Director of Finance

Complete 540 Financing Resolution

- The Department of Transportation will be reimbursed for costs incurred with respect to the Complete 540 project from proceeds of the bonds issued by the Turnpike Authority for the financing of Complete 540
- The reimbursement may be in an aggregate amount up to $100,000,000
- Such funds, once reimbursed, will again be available to pay the NCDOT share of the project in the ordinary course

Resolution Requesting an NCDOT Support Guarantee for Certain STIP Projects

David Roy

Director of Finance

Support Guarantee Resolution

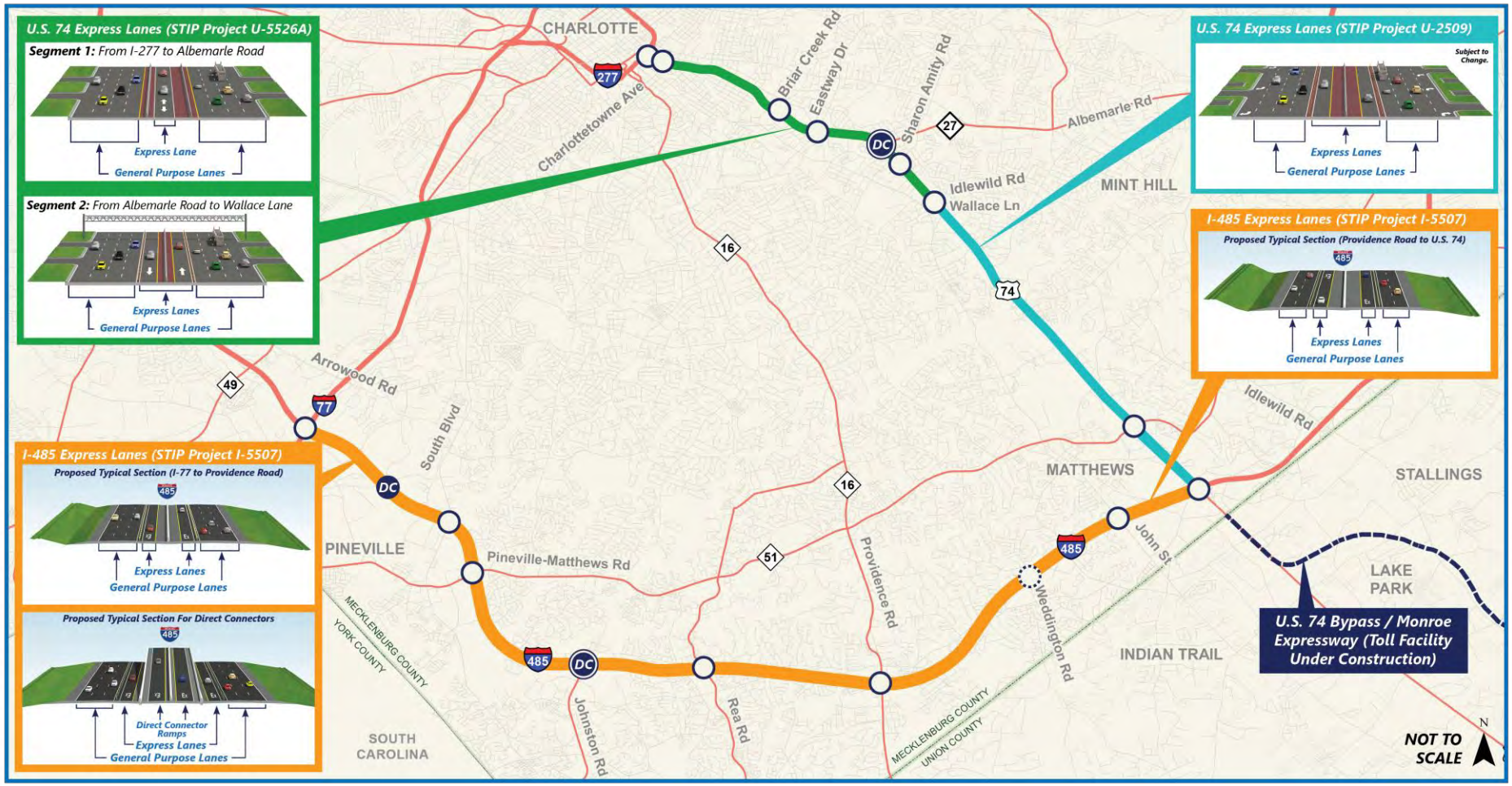
- NCDOT will pay for specified projects of the Authority:
  - Unanticipated construction costs
  - Amounts required to fund O&M expenses or R&R costs, or deficiencies in reserves therefore, if project revenues after debt service payments are not sufficient for the purpose
- Amounts transferred to be repaid with interest calculated at the rate determined by North Carolina General Statute 136-176(b)

I-485 & US 74 Express Lanes Project Update

David Roy

Director of Finance

Proposed US 74 and I-485 Express Lanes Projects



I-485 Express Lanes (I-5507)

- One Express Lane in each direction between I-77 and US 74 (approximately 17 miles)
- Access to/from Express Lanes
  - Two Direct Connectors: Westinghouse Blvd & Johnston Rd
  - 5-6 intermediate Ingress/Egress Points in each direction
- Other Improvements
  - Extension of General Purpose lane between Rea Rd and Providence Rd in both directions - approximately two miles
  - New interchange at I-485/Weddington Rd (R-0211EC)
  - Improve I-485/John St interchange (U-4714AB)

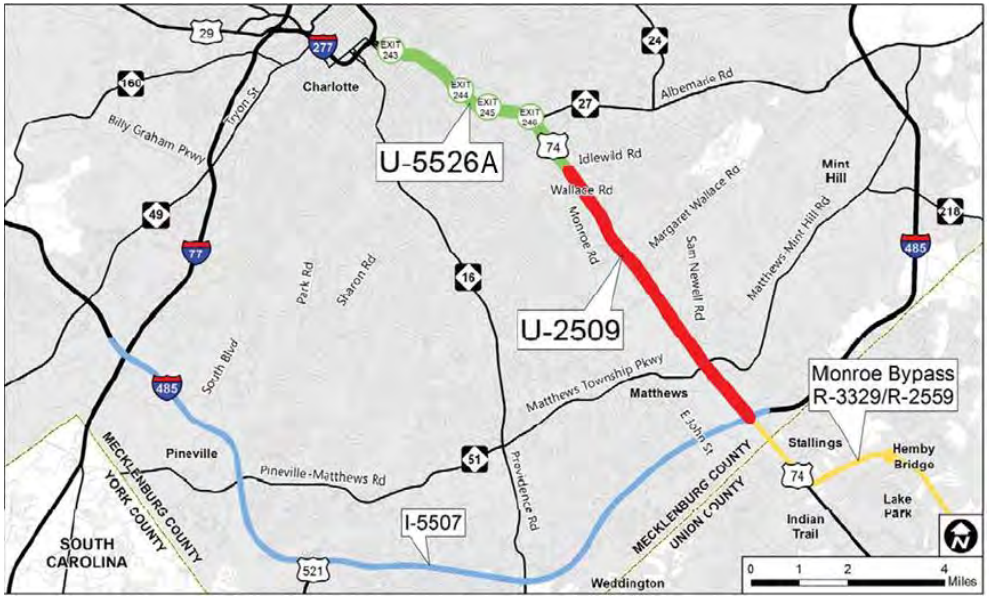
US 74 Express Lanes Phase I (U-5526A)

- Converting the bus lane along US 74 to Express Lane
  - Total length is approximately six miles
  - Reversible express lane between I-277 and Albemarle Rd
  - One express lane in each direction between Albemarle Rd and Wallace Ln

- Access to/from Express Lanes
  - One Direct Connector: Albemarle Rd
  - Ingress/Egress Point at each end of the project

US 74 Express Lanes Phase II (U-2509)

- One Express Lane in each direction between Conference Dr and I-485 – approx. six miles
- Access to/from Express Lanes
  - Three Direct Connectors: Conference Dr, Sardis Rd North, and I-485
  - Four intermediate Ingress/Egress Points in each direction
- Other improvements
  - Upgrade US 74 to expressway (no at-grade intersections)
  - Convert multiple at-grade intersections into grade separations or interchanges
  - Several parallel road connections to improve connectivity



Financial Overview

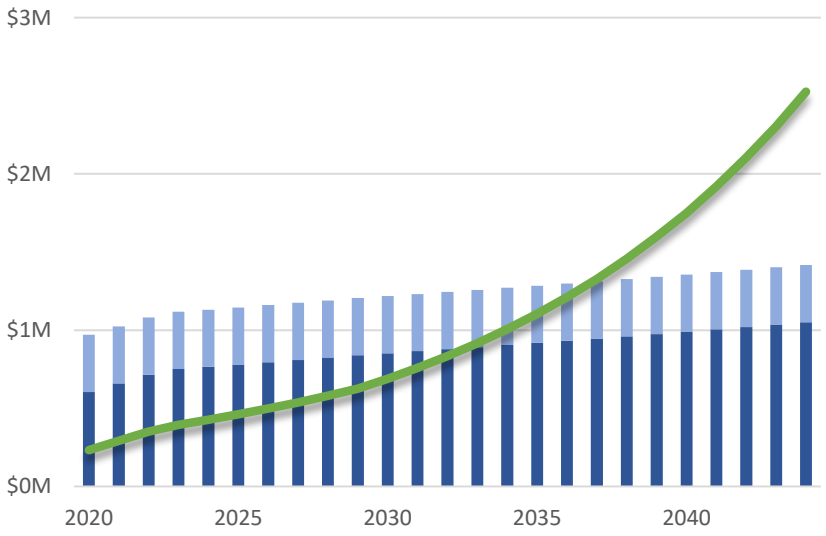
- NCDOT funding capital costs, including construction overruns
- NCTA responsible for toll operations
- Currently no support guarantee in place with NCDOT
- No operations reserve funds
- NCTA cannot cross collateralize projects
- No GA appropriations to support operations

General Assumptions

- Does not include capital costs or related debt service
- Toll Operations Costs based on FY17 Triangle Expressway data
- No roadway maintenance costs included
- Toll equipment renewal and replacement, annualizing costs
- Annual enforcement costs
- Level II Traffic and Revenue for I-485
- Level I Traffic and Revenue for US 74 Phase I
- Screening level Traffic and Revenue for US 74 Phase II
- Base case revenue scenario (50% downside)

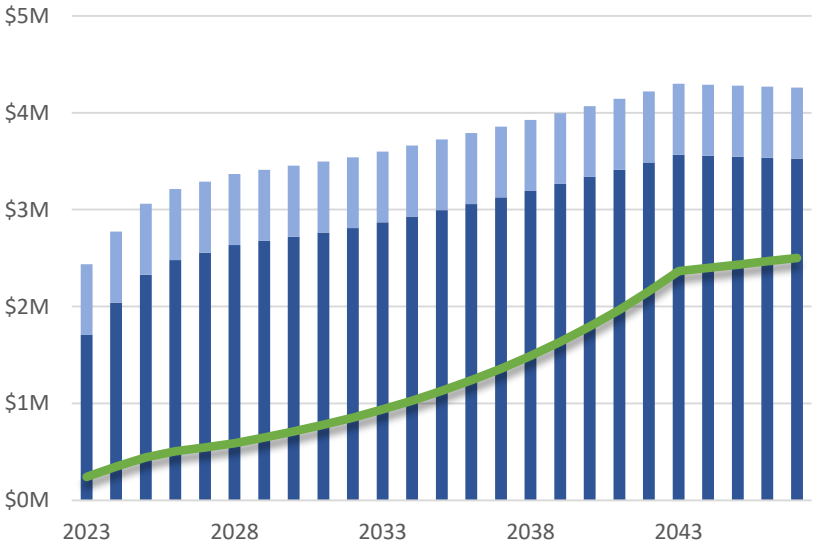
US 74
HOT3+ with Transponder

Phase I



Total Shortfall: $(9,084,800)
Years of Shortfall: 17

Phases I and II



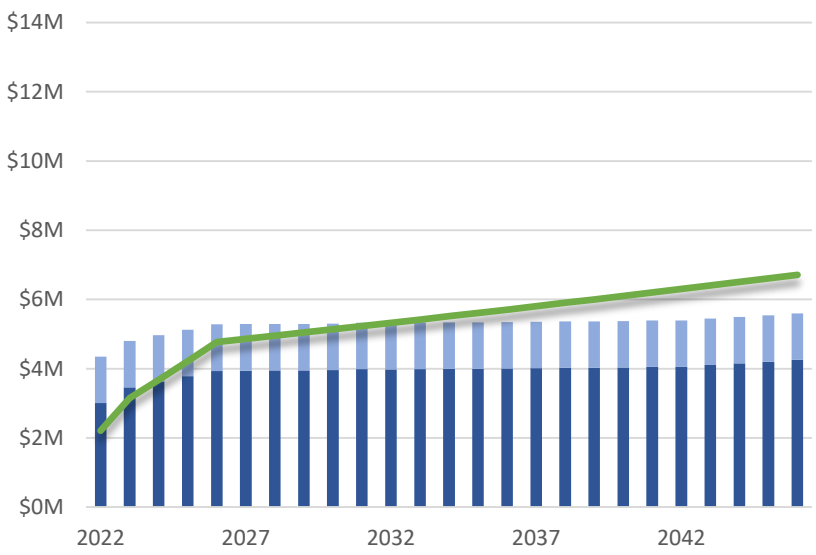
Total Shortfall: $(59,845,300)
Years of Shortfall: 25

Toll Operations
Toll Capital
Revenue

I-485 and Aggregate

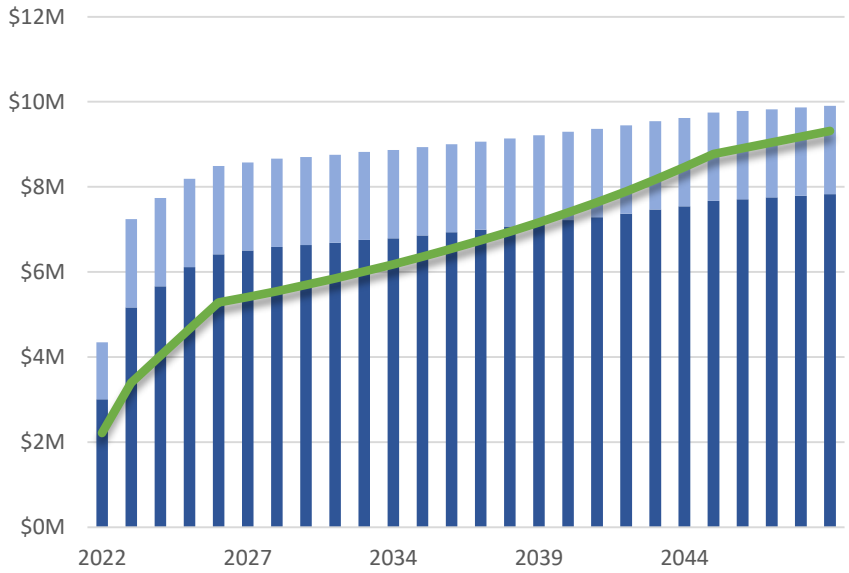
HOT3+ with Transponder

I-485



Total Shortfall: $(7,773,700)
Years of Shortfall: 11

Aggregate



Total Shortfall: $(56,756,600)
Years of Shortfall: 25

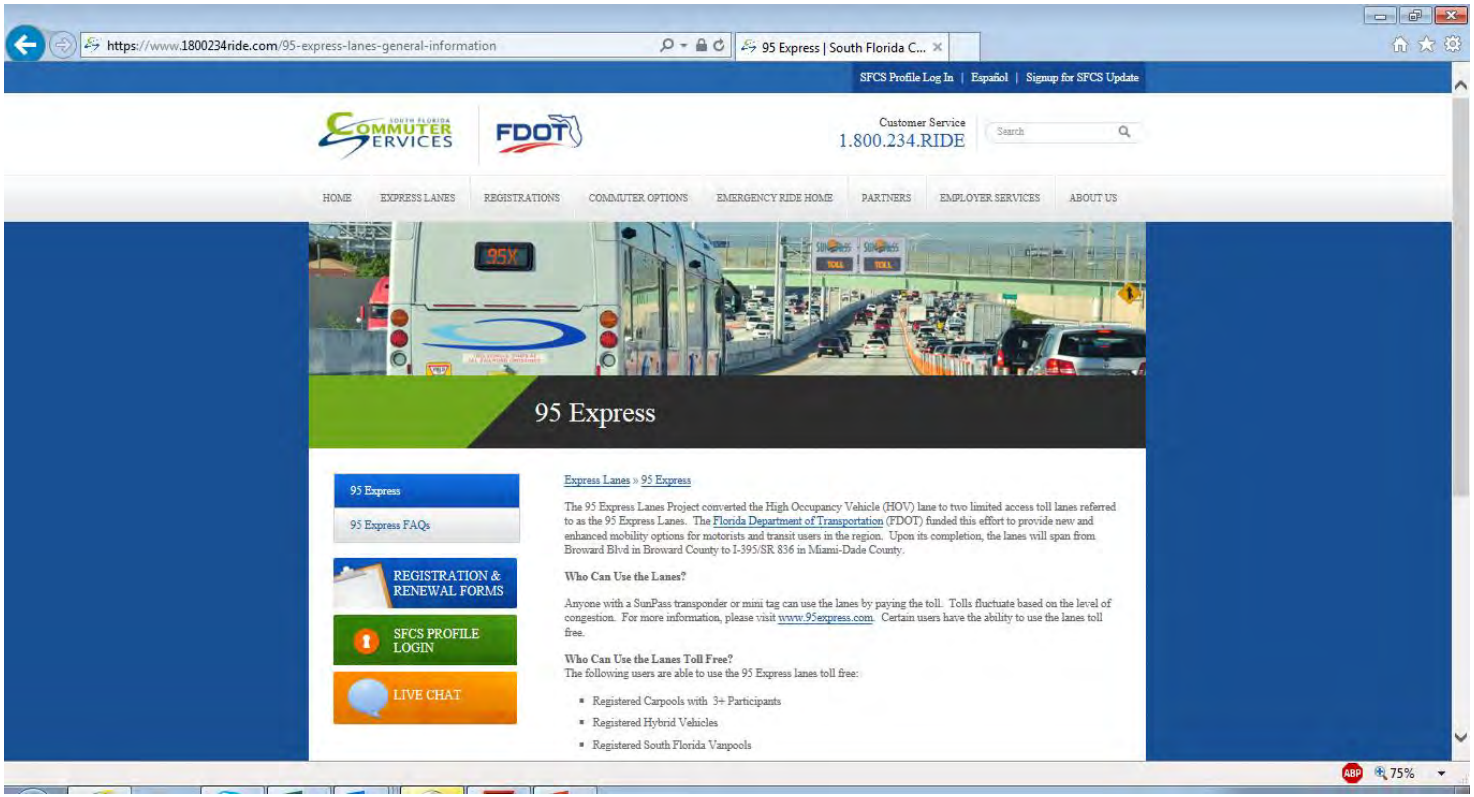
Toll Operations
Toll Capital
Revenue

Express Lanes Operating Scenarios

- Transit rides for free as well as those vehicles with three or more passengers with a switchable transponder. All other vehicles are charged.
- Transit rides for free as well as those vehicles (with three or more passengers) registered in a ride-share program. All other vehicles are charged.
- Transit rides for free and all other vehicles are charged.

South Florida Commuter Services and FDOT

www.1800234ride.com/95-express-lanes-general-information

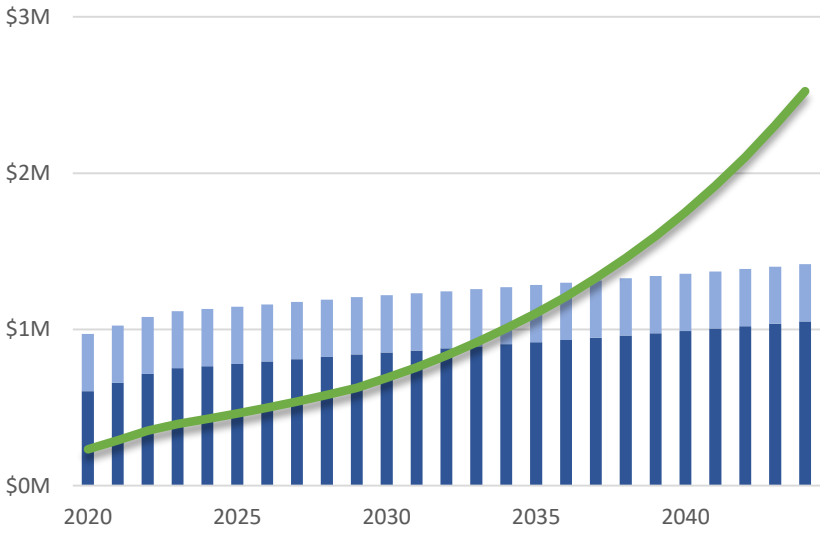


South Florida Commuter Services and FDOT

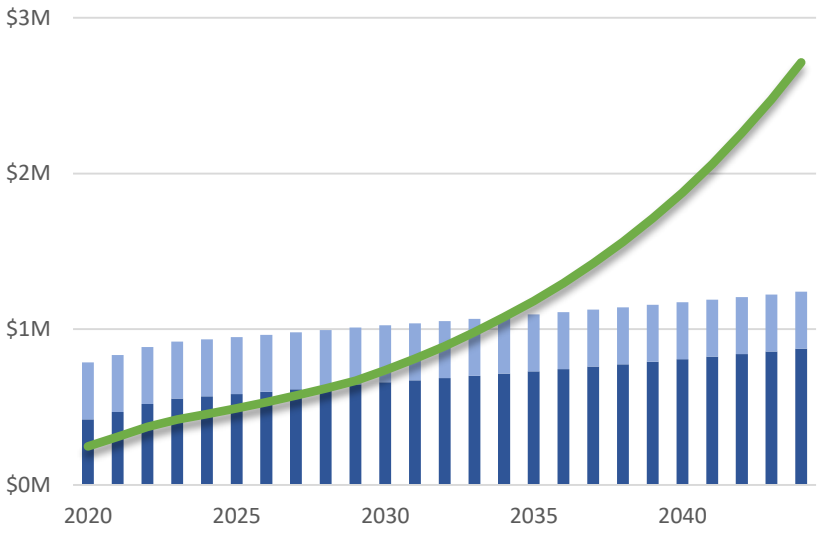
- Applies to I-95 Express Lanes in South Florida
- Applies to registered van pools and carpools with 3+ participants
- South Florida Commuter Services (SFCS) has the right to verify any information (including employment) provided on registration forms for one or all members of the 3+ carpool.
- All 3+ Carpool participants are responsible for maintaining and renewing their carpool and vehicle registration with South Florida Commuter Services in order to avoid toll charges.
- All vehicles not exempt from tolls would pay a dynamic toll at either a video bill by mail rate or a discounted transponder rate.

US 74 Express Lanes – Phase I

HOT3+ with Transponder



HOT3+ Registered Carpool

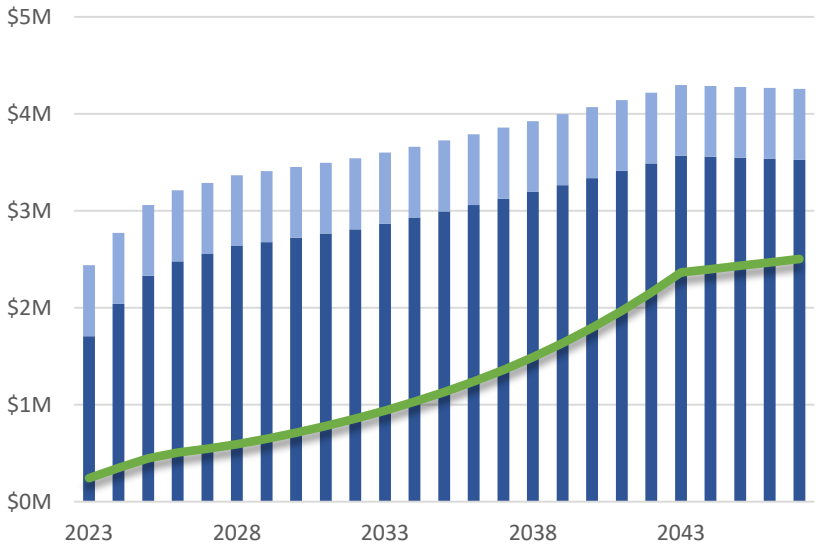


Total Shortfall: $(5,335,000)
Years of Shortfall: 15

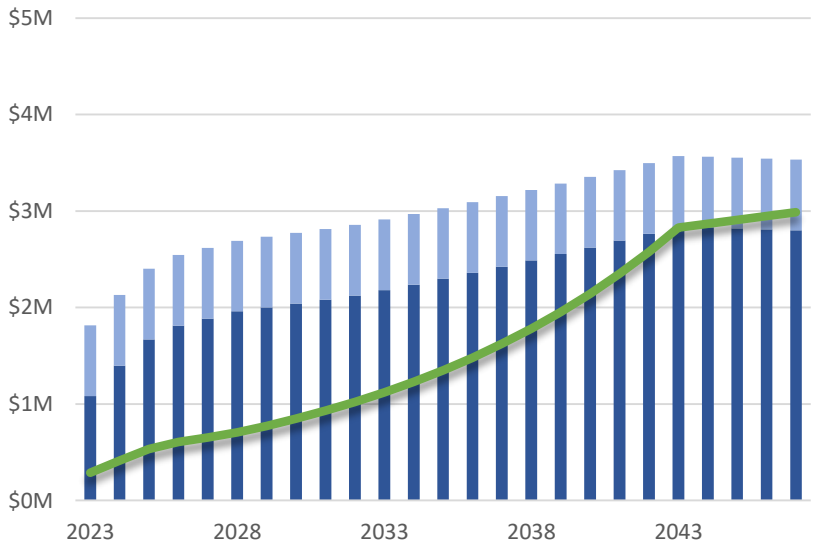
Toll Operations
Toll Capital
Revenue

US 74 Express Lanes – Phases I & II

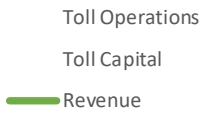
HOT3+ with Transponder



HOT3+ Registered Carpool

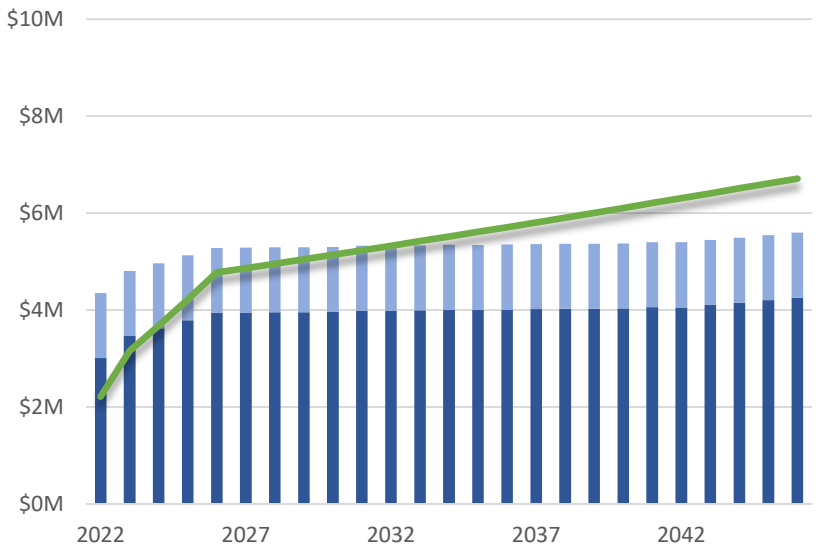


Total Shortfall: $(36,149,400)
Years of Shortfall: 25

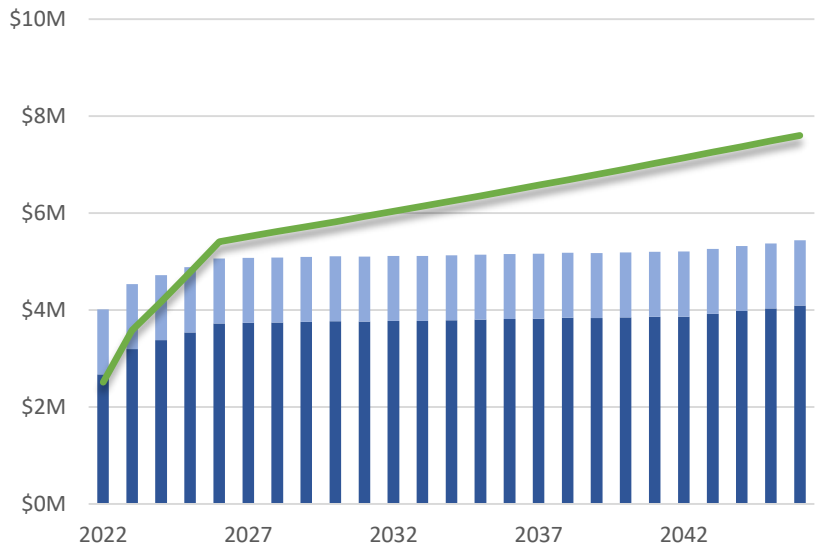


I-485 Express Lanes

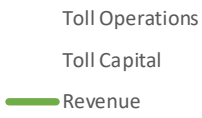
HOT3+ with Transponder



HOT3+ Registered Carpool



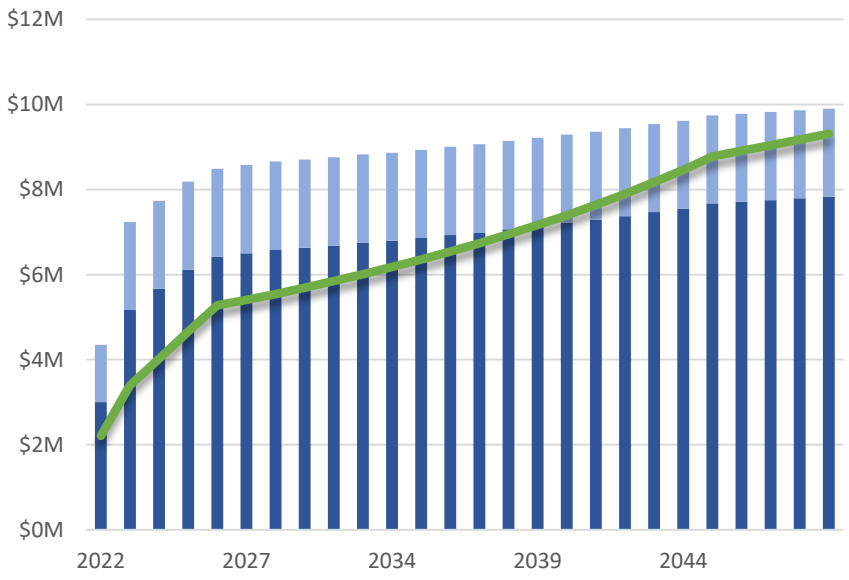
Total Shortfall: $(3,106,700)
Years of Shortfall: 4



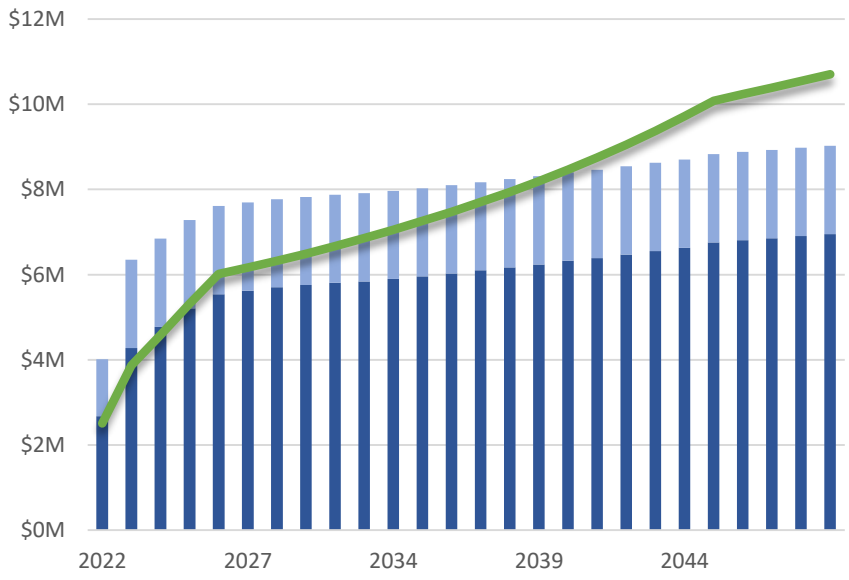
Charlotte Express Lanes Network

I-485 & US 74 (Aggregate)

HOT3+ with Transponder



HOT3+ Registered Carpool



Total Shortfall: $(19,584,300)
Years of Shortfall: 16

Toll Operations
Toll Capital
Revenue

Financial Overview Summary

	US 74 - Phase I		US 74 - Phases I & II		I-485		I-485 & US 74 - Phases I & II	
	Base Case	*T&R Case*	*Base Case*	*T&R Case*	*Base Case*	*T&R Case*	*Base Case*	*T&R Case*
Total Shortfall	($5,335,000)	($748,600)	($36,149,400)	($13,466,600)	($3,106,700)	$0	($19,584,300)	$0
Years of Shortfall	15	5	25+	14	4	0	16	0
Years to Repay	25+	11	25+	25+	11	N/A	25+	N/A

- Amounts transferred to be repaid with interest calculated at the rate determined by GS 136-176(b)

Proposed Approach

- Operating Policy for Use of Express Lanes
  - Vehicles registered in the ride-share program (vehicles with 3 or more passengers) and transit rides for free
- Details of Ride-Share program registration to be developed in concert with Transit
- Commit to installation of equipment that supports switchable transponders in future years
- Schedules contingent on MPO feedback and addressing base case financial model shortfalls

Next Steps & Proposed Schedule

- Next Steps
  - Continue MPO engagement
  - Complete level II Traffic and Revenue Study for US 74
  - Support Guarantee Resolution

- Proposed Schedule

– Public Meetings	Spring 2018
– Update to environmental document (US 74)	Spring 2018
– Open bids for Design-Bid-Build contract (US 74 Ph. I)	May 2018
– Completion of environmental document (I-485)	June 2018
– Open bids for Design-Build contract (I-485)	July 2018