



North Carolina Turnpike Authority

Board of Directors Meeting

November 13, 2019

Finance & Budget Update

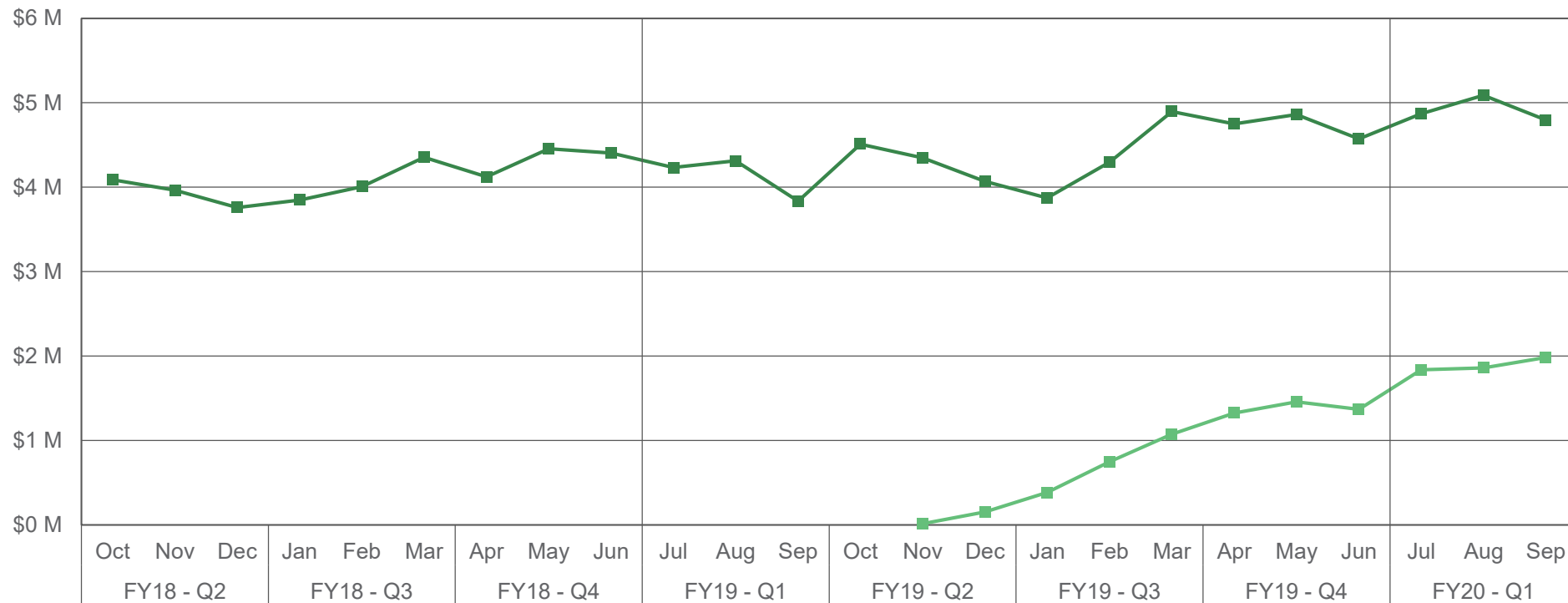


David Roy

Director of Finance & Budget

Revenue Statistics

— Triangle Expressway — Monroe Expressway



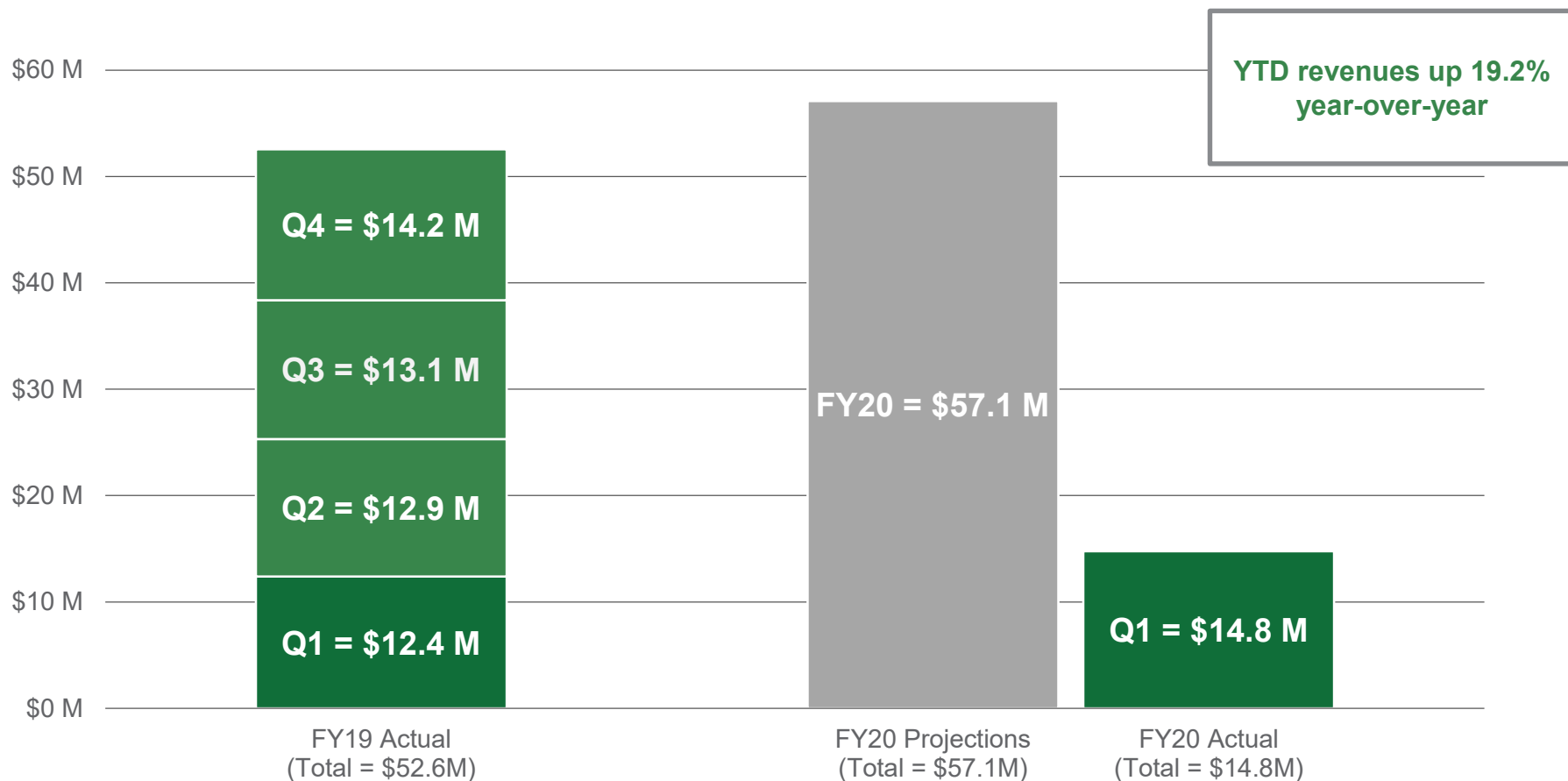
	FY18 - Q2	FY18 - Q3	FY18 - Q4	FY19 - Q1	FY19 - Q2	FY19 - Q3	FY19 - Q4	FY20 - Q1
Triangle Expressway Actual Revenue¹	\$ 11,810,005	\$ 12,206,584	\$ 12,982,210	\$ 12,378,736	\$ 12,925,510	\$ 13,064,297	\$ 14,182,712	\$ 14,754,750
YOY Percent Change	9.3%	7.3%	11.7%	3.7%	9.4%	7.0%	9.2%	19.2%

	FY18 - Q2	FY18 - Q3	FY18 - Q4	FY19 - Q1	FY19 - Q2	FY19 - Q3	FY19 - Q4	FY20 - Q1
Monroe Expressway Actual Revenue¹	\$ -	\$ -	\$ -	\$ -	\$ 165,086	\$ 2,203,674	\$ 4,147,407	\$ 5,677,716

¹Actual revenue is reported on a cash basis

Revenue Statistics

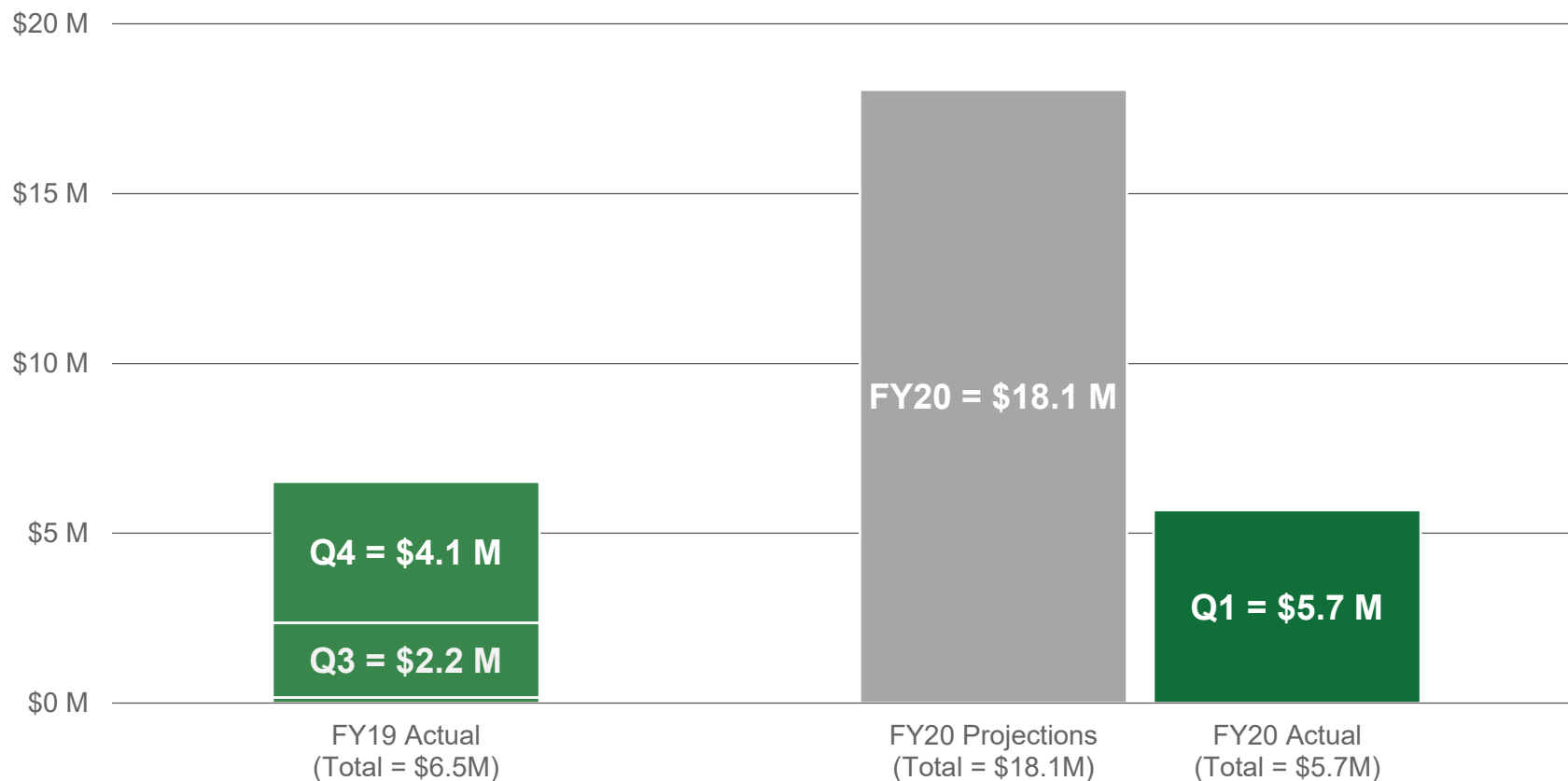
Triangle Expressway



- Revenue figures are inclusive of all toll revenue and fees
- Actual revenues reported on a cash basis

Revenue Statistics

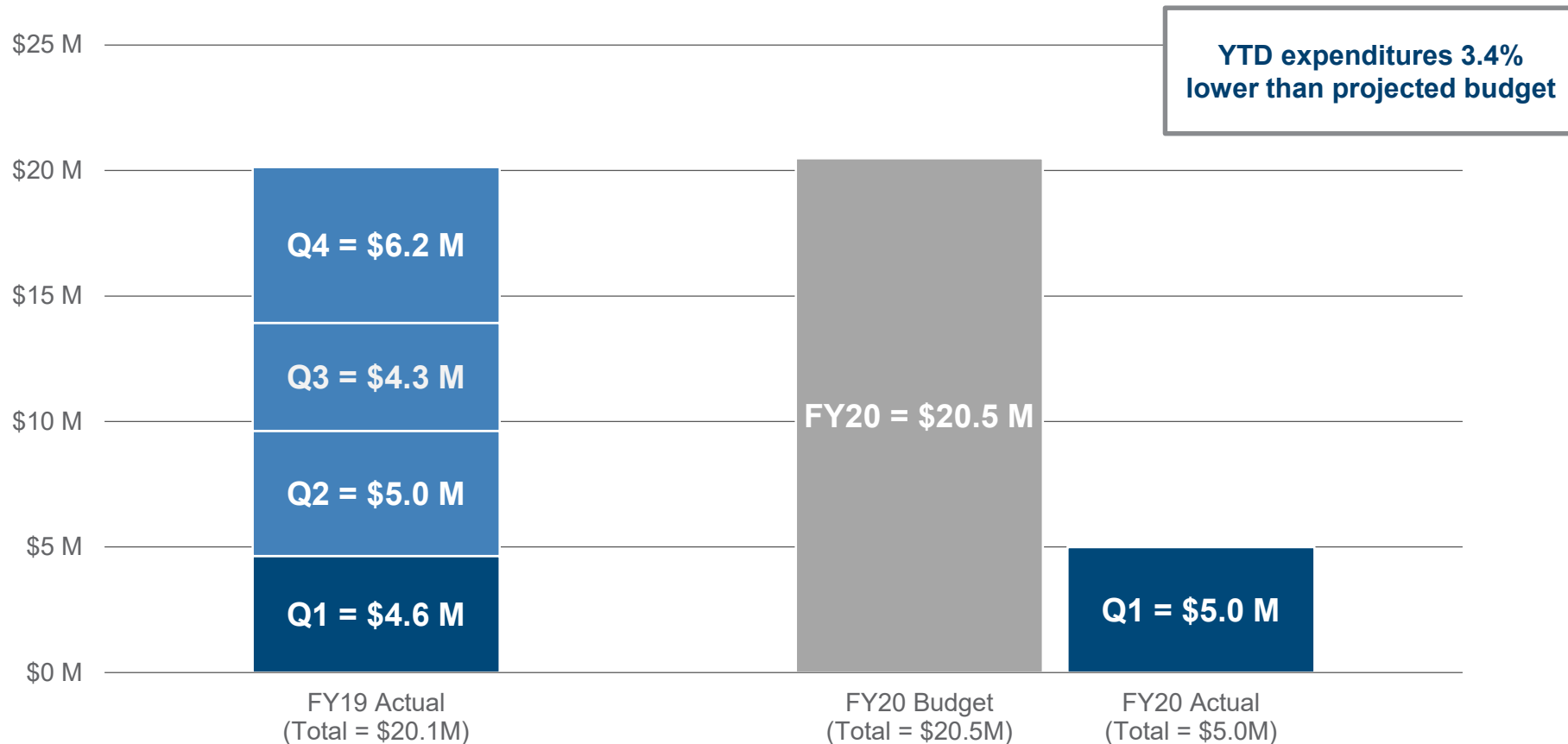
Monroe Expressway



- Revenue figures are inclusive of all toll revenue and fees
- Actual revenues reported on a cash basis
- Projections based on 2016 Traffic & Revenue Study; revenues are shown in the same fiscal year as the corresponding transaction

Operating Expenditures

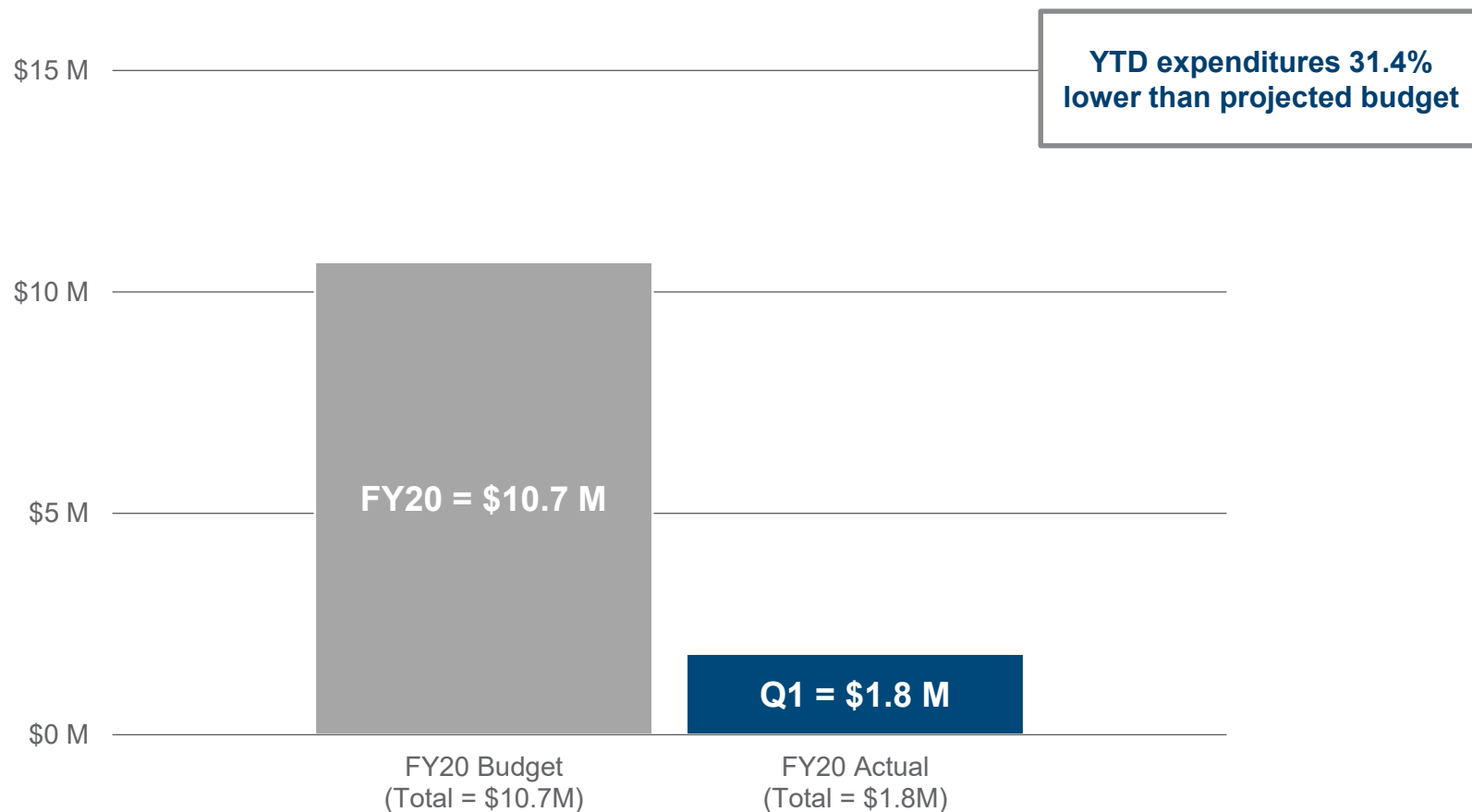
Triangle Expressway



- Actual operating expenditures reported on a cash basis

Operating Expenditures

Monroe Expressway



- Actual operating expenditures reported on a cash basis

Morrisville Parkway Interchange Toll Rate Schedule



David Roy

Director of Finance & Budget

Morrisville Parkway Interchange

Construction Start:

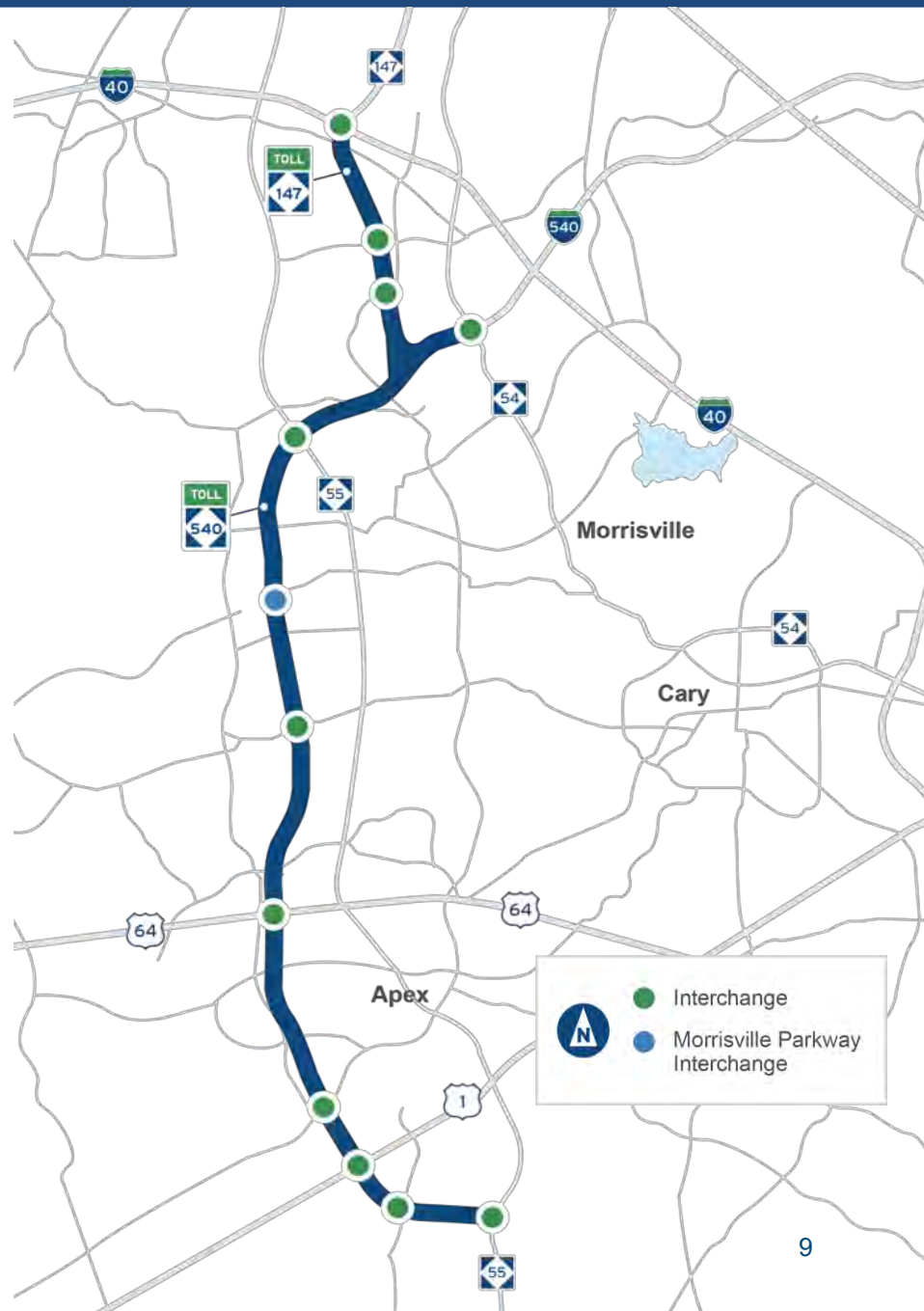
- January 2018

Project Construction Cost:

- ~\$15.2 million

Projected to Open to Traffic:

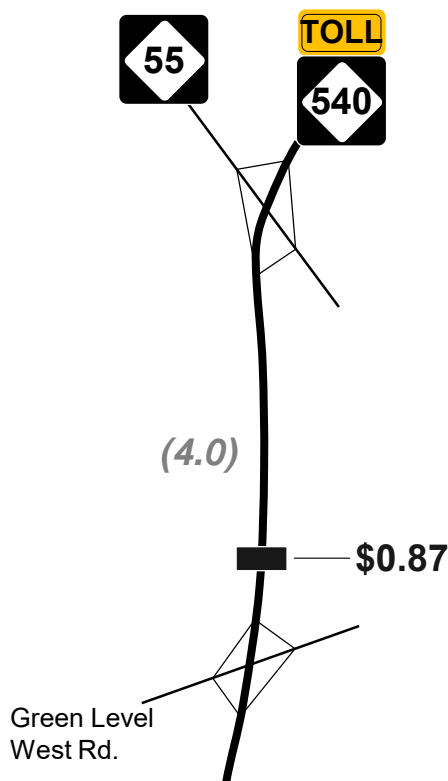
- Spring 2020



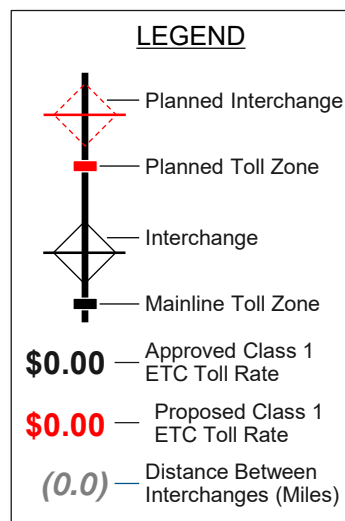
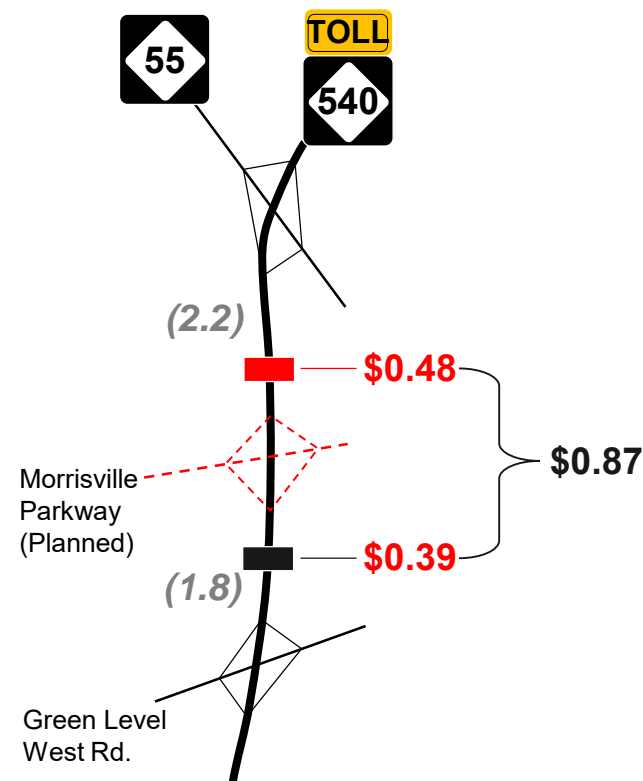
2020 Toll Rates for Mainline Toll Zones

Morrisville Parkway and Green Level West Road

Approved Toll Rate



Proposed Toll Rates



Morrisville Parkway Interchange

Toll Schedule Changes

- Proposed toll rates are consistent with current Triangle Expressway tolling conventions
- New interchange and new toll zones will not affect current rate schedule for existing toll zones
- The cost of travel will not change for motorists traveling between NC 55 and Green Level Road West.
- These toll rates are consistent with rates in the 2018 Triangle Expressway Traffic and Revenue Study used for bond refinancing
- Proposed rates will not negatively affect toll revenue on the Triangle Expressway

Calendar Year (1)	Mainline Section between NC 55 and Morrisville Parkway (2.2 miles)						Mainline Section between Morrisville Parkway and Green Level West Road (1.8 miles)					
	Class 1 (two axles)		Class 2 (three axles)		Class 3 (four or more axles)		Class 1 (two axles)		Class 2 (three axles)		Class 3 (four or more axles)	
	ETC	BBM	ETC	BBM	ETC	BBM	ETC	BBM	ETC	BBM	ETC	BBM
2020	\$0.48	\$0.73	\$0.96	\$1.46	\$1.92	\$2.92	\$0.39	\$0.60	\$0.78	\$1.20	\$1.56	\$2.40
2021	0.49	0.76	0.98	1.52	1.96	3.04	0.41	0.63	0.82	1.26	1.64	2.52
2022	0.51	0.78	1.02	1.56	2.04	3.12	0.42	0.65	0.84	1.30	1.68	2.60
2023	0.52	0.80	1.04	1.60	2.08	3.20	0.43	0.66	0.86	1.32	1.72	2.64
2024	0.54	0.83	1.08	1.66	2.16	3.32	0.45	0.69	0.90	1.38	1.80	2.76
2025	0.55	0.85	1.10	1.70	2.20	3.40	0.46	0.71	0.92	1.42	1.84	2.84
2026	0.57	0.88	1.14	1.76	2.28	3.52	0.47	0.72	0.94	1.44	1.88	2.88
2027	0.59	0.90	1.18	1.80	2.36	3.60	0.49	0.75	0.98	1.50	1.96	3.00
2028	0.61	0.93	1.22	1.86	2.44	3.72	0.50	0.77	1.00	1.54	2.00	3.08
2029	0.62	0.96	1.24	1.92	2.48	3.84	0.52	0.80	1.04	1.60	2.08	3.20
2030	0.64	0.99	1.28	1.98	2.56	3.96	0.53	0.82	1.06	1.64	2.12	3.28
2031	0.66	1.01	1.32	2.02	2.64	4.04	0.55	0.85	1.10	1.70	2.20	3.40
2032	0.68	1.05	1.36	2.10	2.72	4.20	0.57	0.88	1.14	1.76	2.28	3.52
2033	0.70	1.07	1.40	2.14	2.80	4.28	0.58	0.89	1.16	1.78	2.32	3.56
2034	0.72	1.11	1.44	2.22	2.88	4.44	0.60	0.92	1.20	1.84	2.40	3.68
2035	0.74	1.14	1.48	2.28	2.96	4.56	0.62	0.95	1.24	1.90	2.48	3.80
2036	0.76	1.17	1.52	2.34	3.04	4.68	0.63	0.97	1.26	1.94	2.52	3.88
2037	0.77	1.19	1.54	2.38	3.08	4.76	0.65	1.00	1.30	2.00	2.60	4.00
2038	0.79	1.22	1.58	2.44	3.16	4.88	0.66	1.02	1.32	2.04	2.64	4.08
2039	0.80	1.23	1.60	2.46	3.20	4.92	0.68	1.05	1.36	2.10	2.72	4.20
2040	0.82	1.26	1.64	2.52	3.28	5.04	0.69	1.06	1.38	2.12	2.76	4.24
2041	0.84	1.29	1.68	2.58	3.36	5.16	0.70	1.08	1.40	2.16	2.80	4.32
2042	0.86	1.32	1.72	2.64	3.44	5.28	0.71	1.09	1.42	2.18	2.84	4.36
2043	0.87	1.34	1.74	2.68	3.48	5.36	0.74	1.14	1.48	2.28	2.96	4.56
2044	0.89	1.37	1.78	2.74	3.56	5.48	0.75	1.16	1.50	2.32	3.00	4.64
2045	0.91	1.40	1.82	2.80	3.64	5.60	0.76	1.17	1.52	2.34	3.04	4.68
2046	0.93	1.43	1.86	2.86	3.72	5.72	0.77	1.19	1.54	2.38	3.08	4.76
2047	0.95	1.46	1.90	2.92	3.80	5.84	0.79	1.22	1.58	2.44	3.16	4.88
2048	0.97	1.49	1.94	2.98	3.88	5.96	0.80	1.23	1.60	2.46	3.20	4.92
2049	0.99	1.52	1.98	3.04	3.96	6.08	0.82	1.26	1.64	2.52	3.28	5.04
2050	1.00	1.54	2.00	3.08	4.00	6.16	0.84	1.29	1.68	2.58	3.36	5.16
2051	1.02	1.57	2.04	3.14	4.08	6.28	0.86	1.32	1.72	2.64	3.44	5.28
2052	1.04	1.60	2.08	3.20	4.16	6.40	0.87	1.34	1.74	2.68	3.48	5.36
2053	1.06	1.63	2.12	3.26	4.24	6.52	0.89	1.37	1.78	2.74	3.56	5.48
2054	1.08	1.66	2.16	3.32	4.32	6.64	0.91	1.40	1.82	2.80	3.64	5.60
2055	1.10	1.69	2.20	3.38	4.40	6.76	0.93	1.43	1.86	2.86	3.72	5.72
2056	1.13	1.74	2.26	3.48	4.52	6.96	0.94	1.45	1.88	2.90	3.76	5.80
2057	1.15	1.77	2.30	3.54	4.60	7.08	0.96	1.48	1.92	2.96	3.84	5.92
2058	1.17	1.80	2.34	3.60	4.68	7.20	0.99	1.52	1.98	3.04	3.96	6.08

Fuel Cap Overview



George Hu

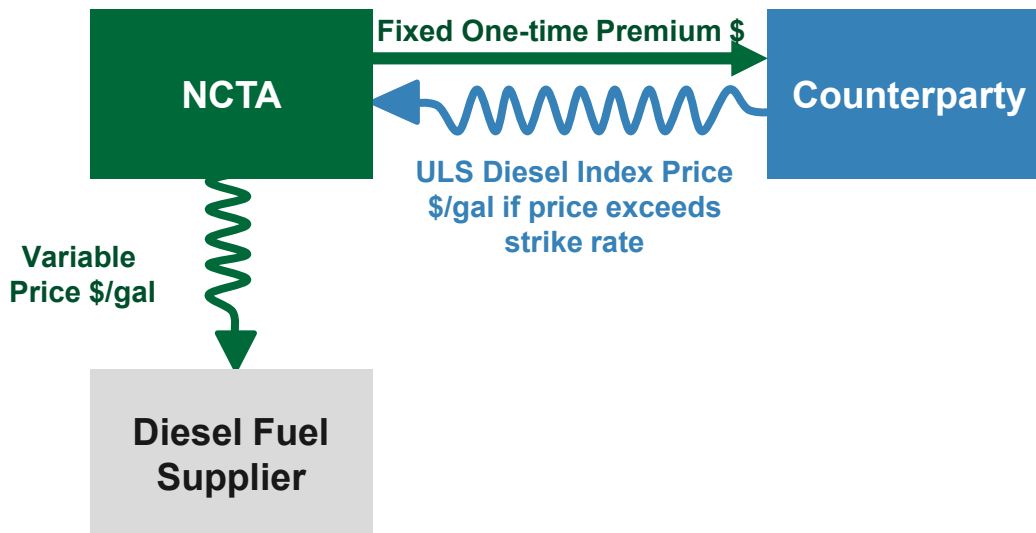
PFM Swap Advisors LLP

Why Consider a Fuel Hedge?

- Protects against unforeseen fuel price increases, for which NCDOT/NCTA are at risk under the design-build construction contract
- Allows better cost estimating certainty
- Allows for the release of fuel reserve budgetary contingency to be used on other elements of the project
- Allows NCDOT/NCTA to benefit from lower fuel prices but reduces exposure to higher prices

Mechanics of Fuel Price Cap

- NCDOT/NCTA pays premium up-front for the price protection via cap
- Floating index typically used in energy hedging is published price from an industry trade publication, e.g. Platt's Oilgram, or the “near” (closest to expiration) futures contract
- Hedge Provider pays difference if index exceeds cap strike (rate)



2016 NCDOT/NCTA Example:

NCDOT/NCTA buys a fuel price cap at **\$2.00/gallon** on the NY Harbor Ultra Low Sulfur Diesel fuel index

- If price is **\$1.80/gallon** in a month, no payments made by either party
- If price is **\$3.00/gallon** in a month, NCDOT/NCTA receives \$1.00/gallon payment from Counterparty, which offsets higher fuel price paid under the DB construction contract

Pros and Cons of a Hedging Program



Benefits

- Budget Stability
- Ability to more accurately budget (less need to reserve against increases)
- Transparency of income vs. expense



Considerations

- Cost of implementing a hedge or hedging program
- Cost of forward contracts vs. spot
- “News management”
- Speculation or hedging
- Price movement (lower) during the hedge period

Diesel Fuel Prices

- Diesel fuel prices have been volatile since NCTA's original hedge in May 2016 causing the Cap to be "in the money" (fuel price > \$2.00/gal) during some periods



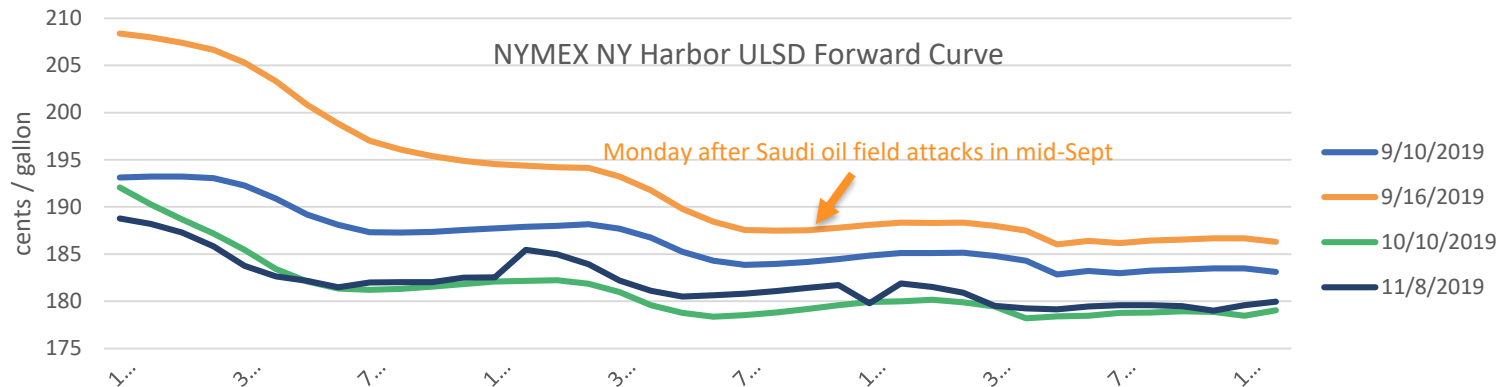
Fuel Cap Procurement Process

NCTA/PFM Swap Advisors

- Prepare bid specifications and distribute to interested fuel Cap Providers
- The bid specifications will establish the parameters for the fuel Cap including:
 - NCTA's monthly fuel usage projection taking into account seasonal fluctuations
 - Cap strike price, e.g. \$2.30/gal, and the Cap maturity (A higher strike price and/or a shorter hedging period will lower the cost of hedging)
- Negotiate ISDA Agreements with the interested bidders
- Adhere to Dodd-Frank Protocols (CFTC regulations) with each potential bidder
- Obtain draft legal opinion from NCTA's counsel for bidders' review
- Furnish NCTA Authorizing Resolution for fuel Cap purchase to bidders for review
- Take live bids on pricing date from the qualified providers

Diesel Fuel Cap Update

- Aside from Cargill who participated in the 2016 bid and has executed ISDA documents with NCTA, both JP Morgan and BofA have also provided draft documents in preparation for the potential bid
- The NYMEX NY Harbor ULSD forward curve, used to price diesel fuel caps, has increased slightly for the most part since October but still well below pre-Saudi oil field attack levels



- Monthly fuel usage for the three separate projects has been revised and is now covering a longer period of time compared to previous projections
- Below are indicative cap prices based on the revised fuel usage as of November 7:

Strike (per gallon)	Premium (per gal)
\$2.10	\$0.143
\$2.40	\$0.081
\$2.66	\$0.053

Next Steps

- Provide authorizing resolution to bidders
- Decide on the strike price
- Finalize draft cap documents with JPMorgan and BofA and any other required documentation (documentation already in place with Cargill)
- Monitor the market and prepare for the bid
- Be ready to make the cap premium within two business days after the bid

Program Development Update



Andy Lelewski, P.E.
Director of Program Development

Morrisville Parkway Interchange



Morrisville Parkway Interchange



Morrisville Parkway Interchange

Recent Accomplishments

- Morrisville Parkway Bridge over Triangle Expressway is open
- Began mainline toll site work – gantry columns, building

Upcoming Work

- Continue interchange construction work
- Continue mainline toll site work
- Coordination with roadside toll system integrator

Schedule

- January 2020 – site turnover to roadside toll system integrator
- Spring 2020 – opening of interchange ramps to/from Triangle Expressway
- Spring 2020 – commencement of tolling

I-485 Express Lanes



I-485 Express Lanes

Recent Accomplishments

- Review of numerous Toll Zone Infrastructure, Intelligent Transportation System, Toll Collection Signing submittals

Upcoming Work

- Continue review of submittals
- Monitoring of Early Work along the corridor
- Development of Roadside Toll Collection System (RTCS) Request for Information / Request for Proposals

Schedule

- November 2019 – Release of RTCS Request for Information
- Spring 2020 – Release of RTCS Request for Proposals
- Fall 2022 – Commencement of tolling

I-77 Express Lanes



I-77 Express Lanes

Recent Accomplishments

- Monitored I-77 Mobility Partners Intelligent Transportation System and Roadside Toll Collection System commissioning

Upcoming Work

- Finish observation of commissioning
- End-to-end testing of transactions to NCTA
- Customer Service Center readiness

Schedule

- November 2019– Commencement of tolling for remainder of project sections

Toll Technology Update



Manish Chourey
Chief Technology Officer

Technology Timeline Projections

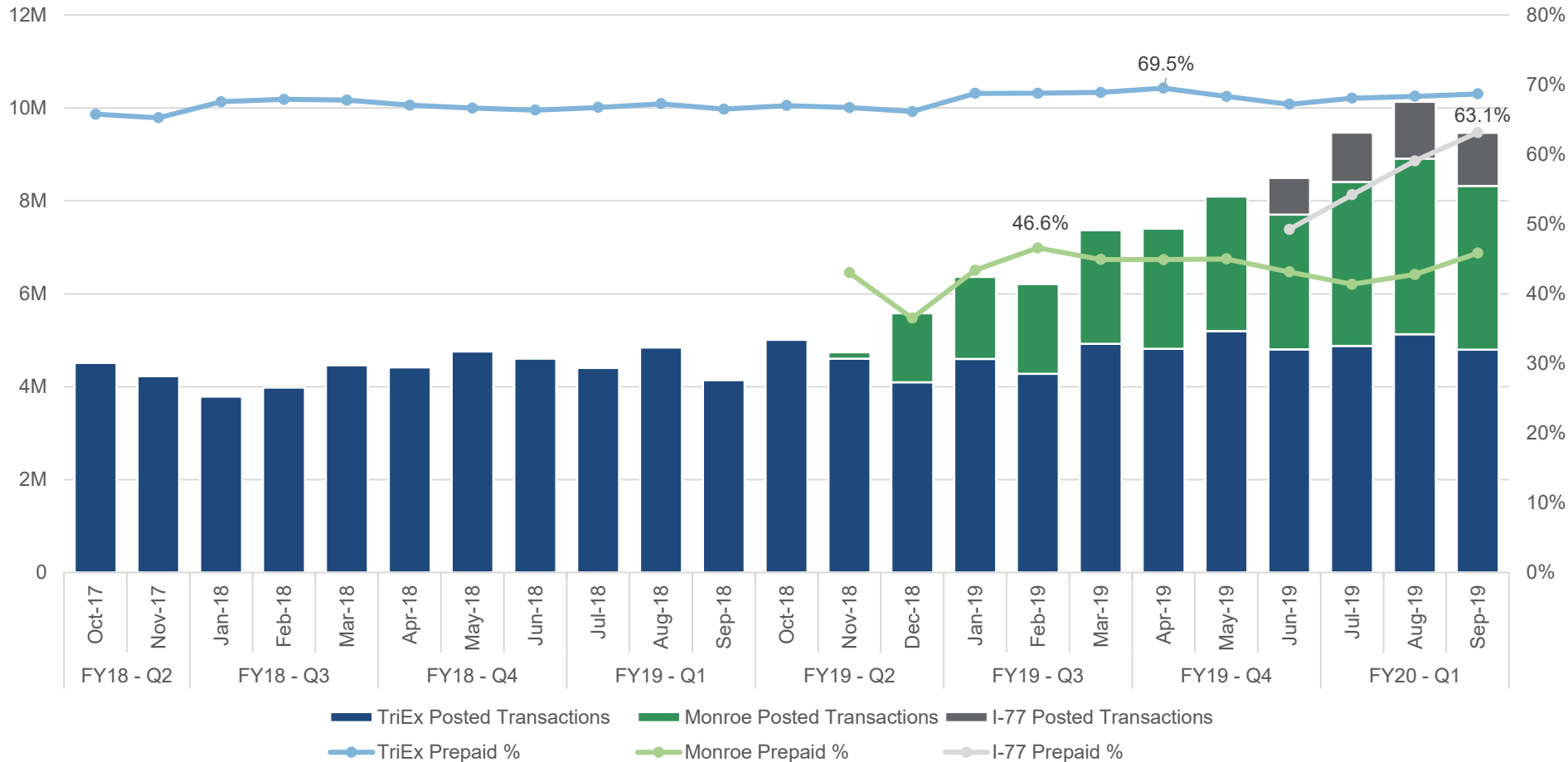
- Triangle Expressway Lane Technology Refresh
 - Design & Development in final phase – 12/19
 - Testing in progress – 11/19 to 3/20
 - Roadside System Installation – 4/20 to 9/20
 - Operational Acceptance – 10/20 to 12/20
- Back Office System Upgrade
 - Design & Development in final phase – 12/19
 - Data Migration has multiple iterations – 4/19 to 5/20
 - Tokenization, Mobile App, DMV lookup interfaces – 1/20
 - 3 different phases of Testing – Functional, Interfaces and Performance – 11/19 to 5/20
 - CSR Training – 4/20 to 5/20
 - System Transition – 3/20 to 6/20

Key Technology Initiatives

- Enterprise Reporting (SAS)
 - Development of subject-areas (data-marts)
 - Forecasting tool to develop staffing model
- Adoption of Finance system (SAP)
 - Leverage state-wide licenses
 - On-board Controller to develop Use Case
- Transponder Inventory Management as a service
 - Developing Use Case for efficient transponder fulfillment

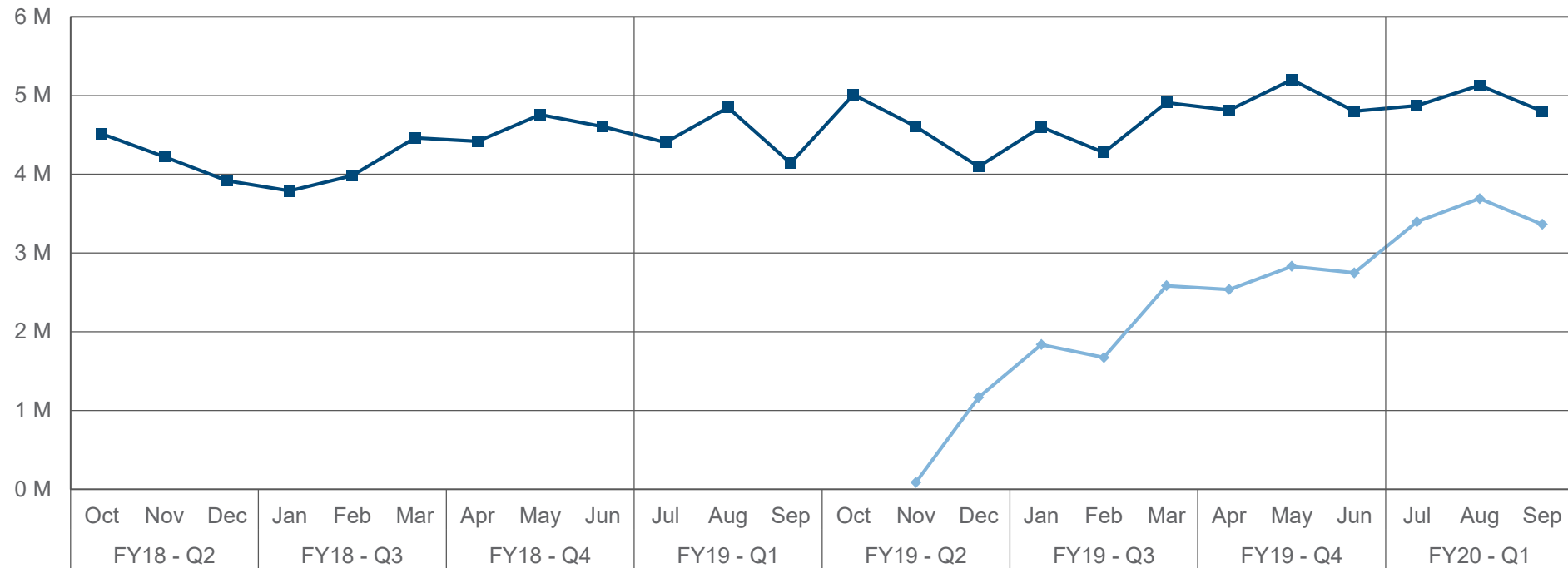
Total Posted Transactions

NC Quick Pass Program



Transaction Statistics

Triangle Expressway Monroe Expressway

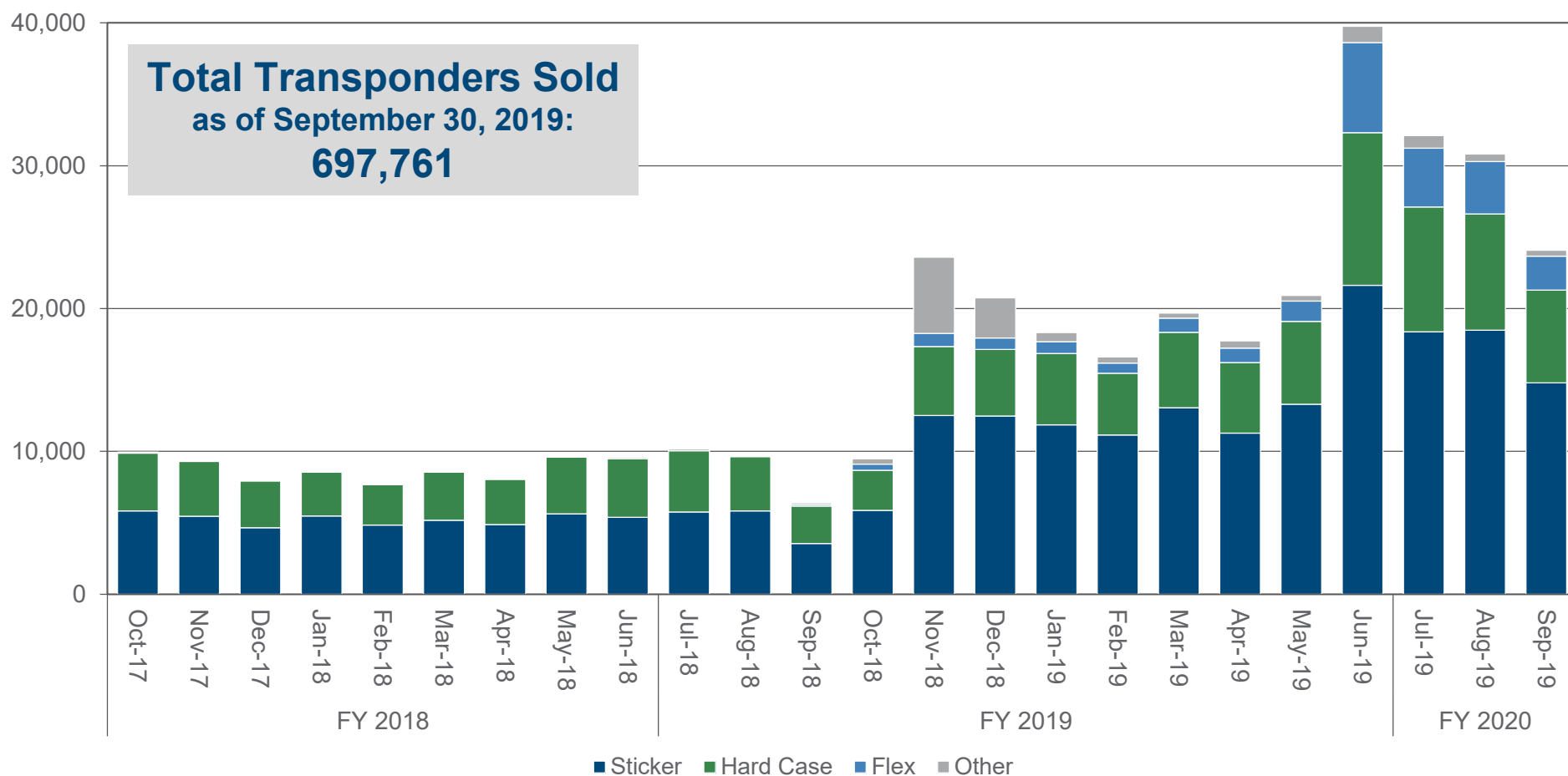


	FY18 - Q2	FY18 - Q3	FY18 - Q4	FY19 - Q1	FY19 - Q2	FY19 - Q3	FY19 - Q4	FY20 - Q1
Triangle Expressway Transactions	12,657,190	12,232,513	13,780,931	13,394,773	13,712,458	13,787,834	14,816,341	14,798,679
YOY Percent Change	8.1%	5.8%	8.7%	6.6%	8.3%	12.7%	7.5%	10.5%

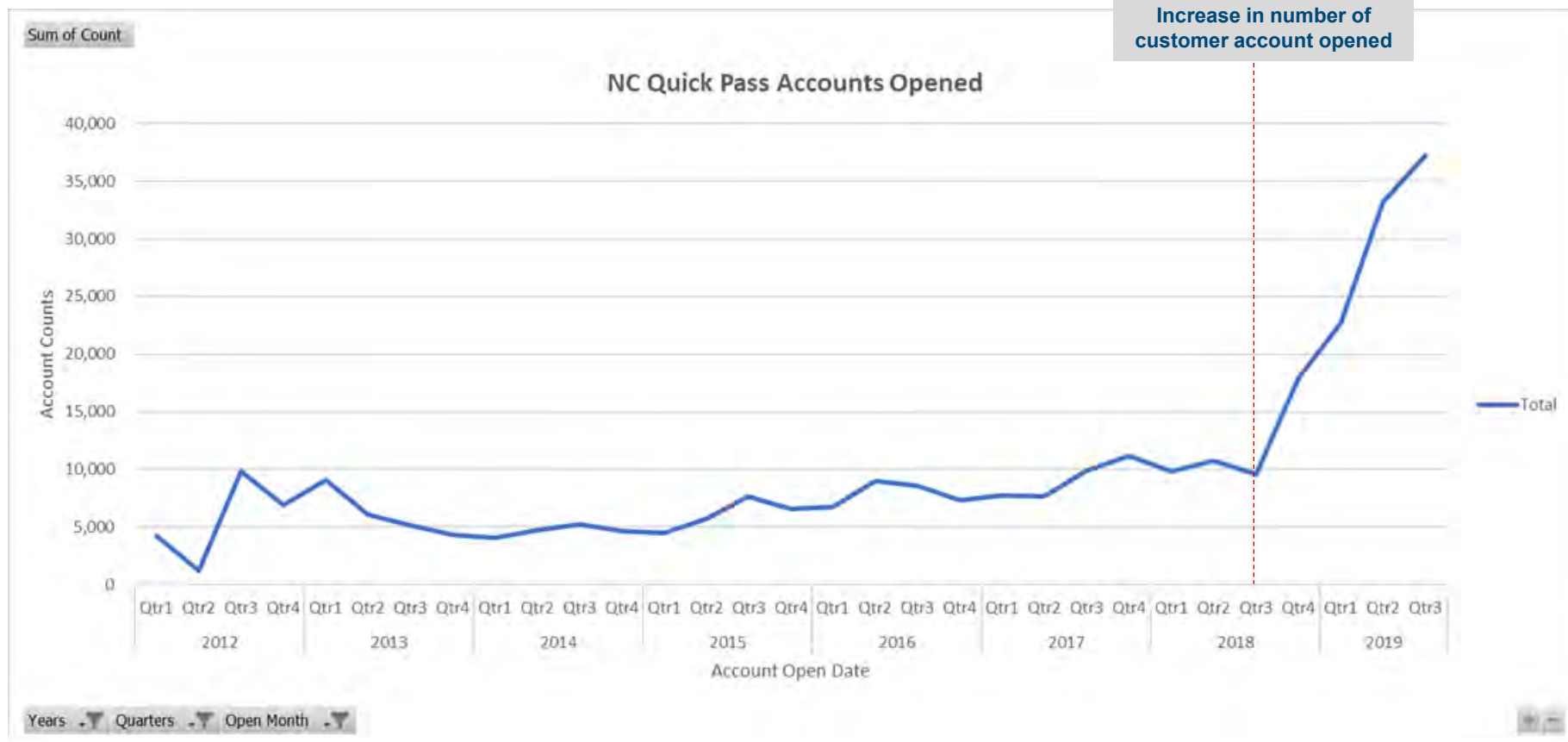
	FY18 - Q2	FY18 - Q3	FY18 - Q4	FY19 - Q1	FY19 - Q2	FY19 - Q3	FY19 - Q4	FY20 - Q1
Monroe Expressway Transactions	-	-	-	-	1,253,524	6,096,550	8,115,596	10,453,336

Monthly Transponders Sold

NC Quick Pass Program

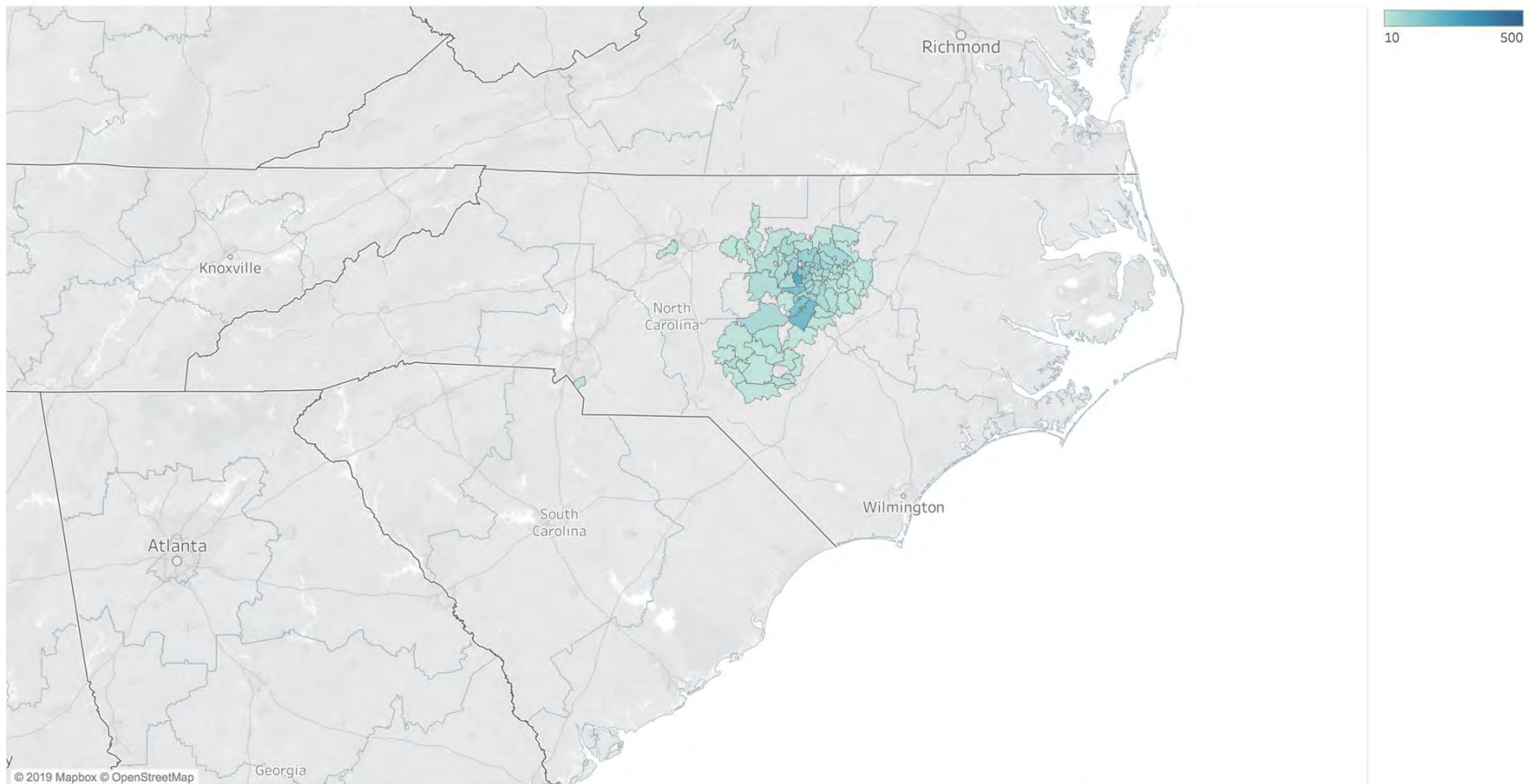


NC Quick Pass Account Trends



NC Quick Pass Accounts – Sep-2017

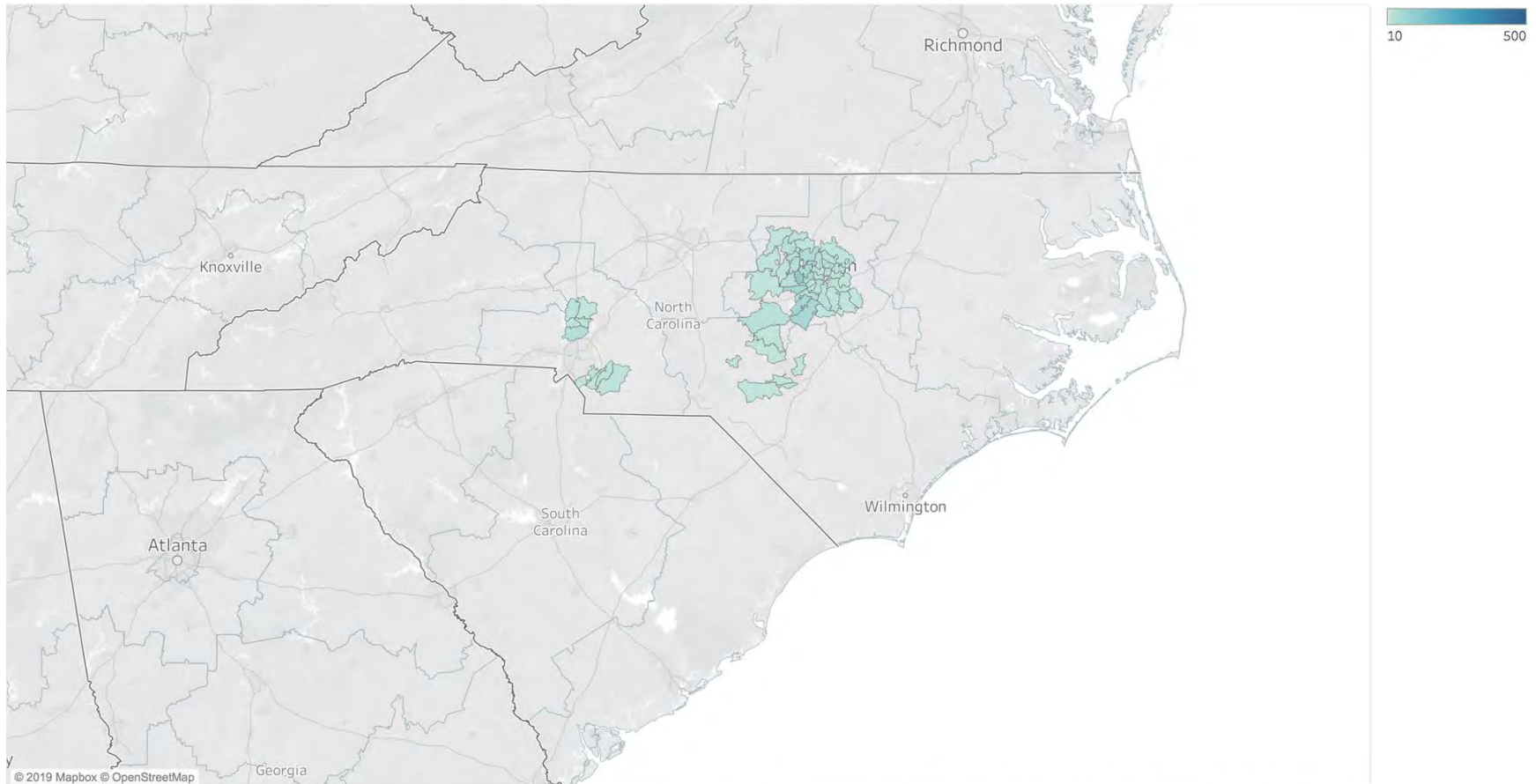
September 2017



Map based on Longitude (generated) and Latitude (generated). Color shows sum of Count. Details are shown for Zip Code. The data is filtered on Open Month, which keeps 9/1/2017. The view is filtered on sum of Count, which ranges from 10 to 500.

NC Quick Pass Accounts – Sep-2018

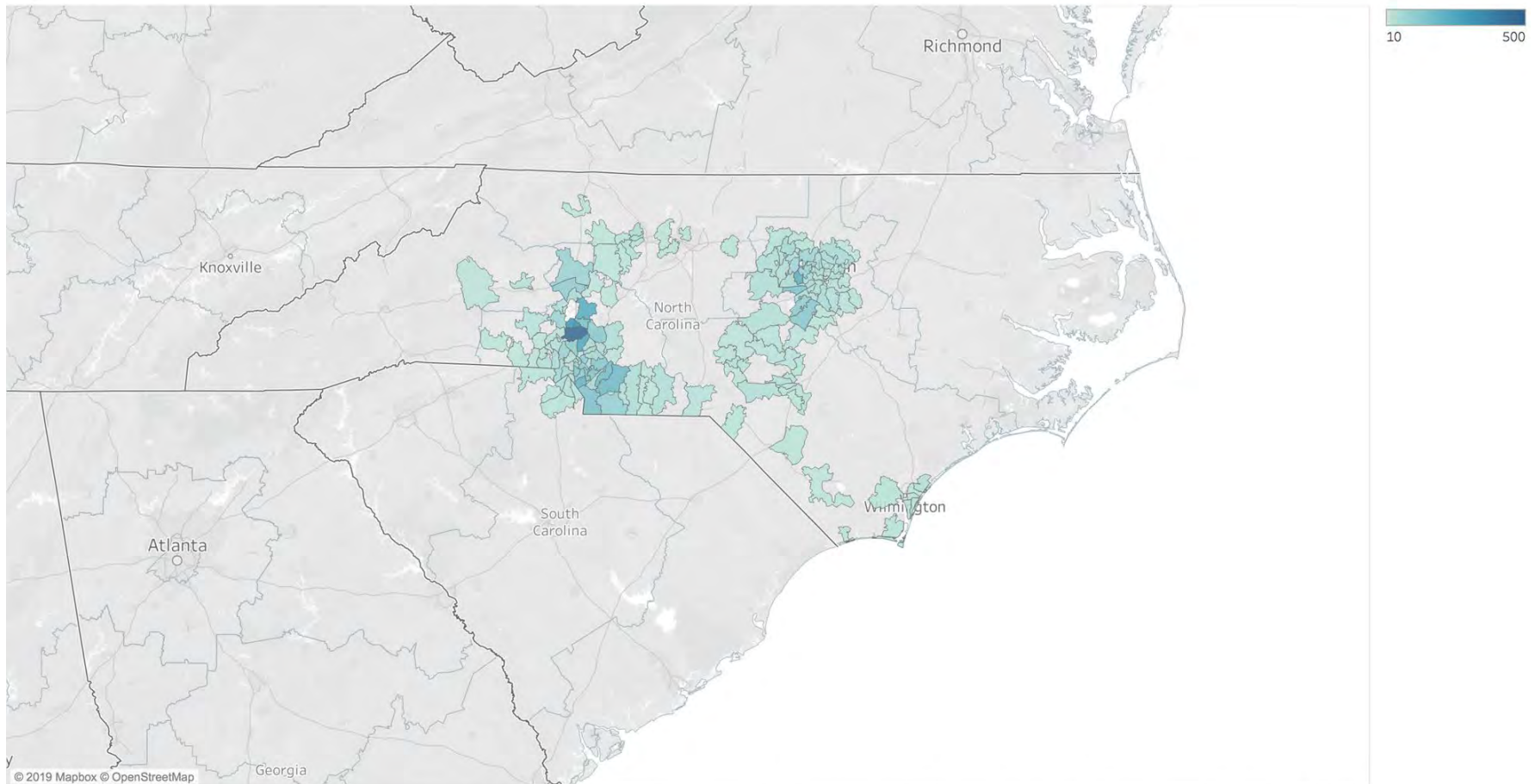
September 2018



Map based on Longitude (generated) and Latitude (generated). Color shows sum of Count. Details are shown for Zip Code. The data is filtered on Open Month, which keeps 9/1/2018. The view is filtered on sum of Count, which ranges from 10 to 500.

NC Quick Pass Accounts – Sep-2019

September 2019



Map based on Longitude (generated) and Latitude (generated). Color shows sum of Count. Details are shown for Zip Code. The data is filtered on Open Month, which keeps 9/1/2019. The view is filtered on sum of Count and Zip Code. The sum of Count filter ranges from 10 to 500. The Zip Code filter excludes 28070.

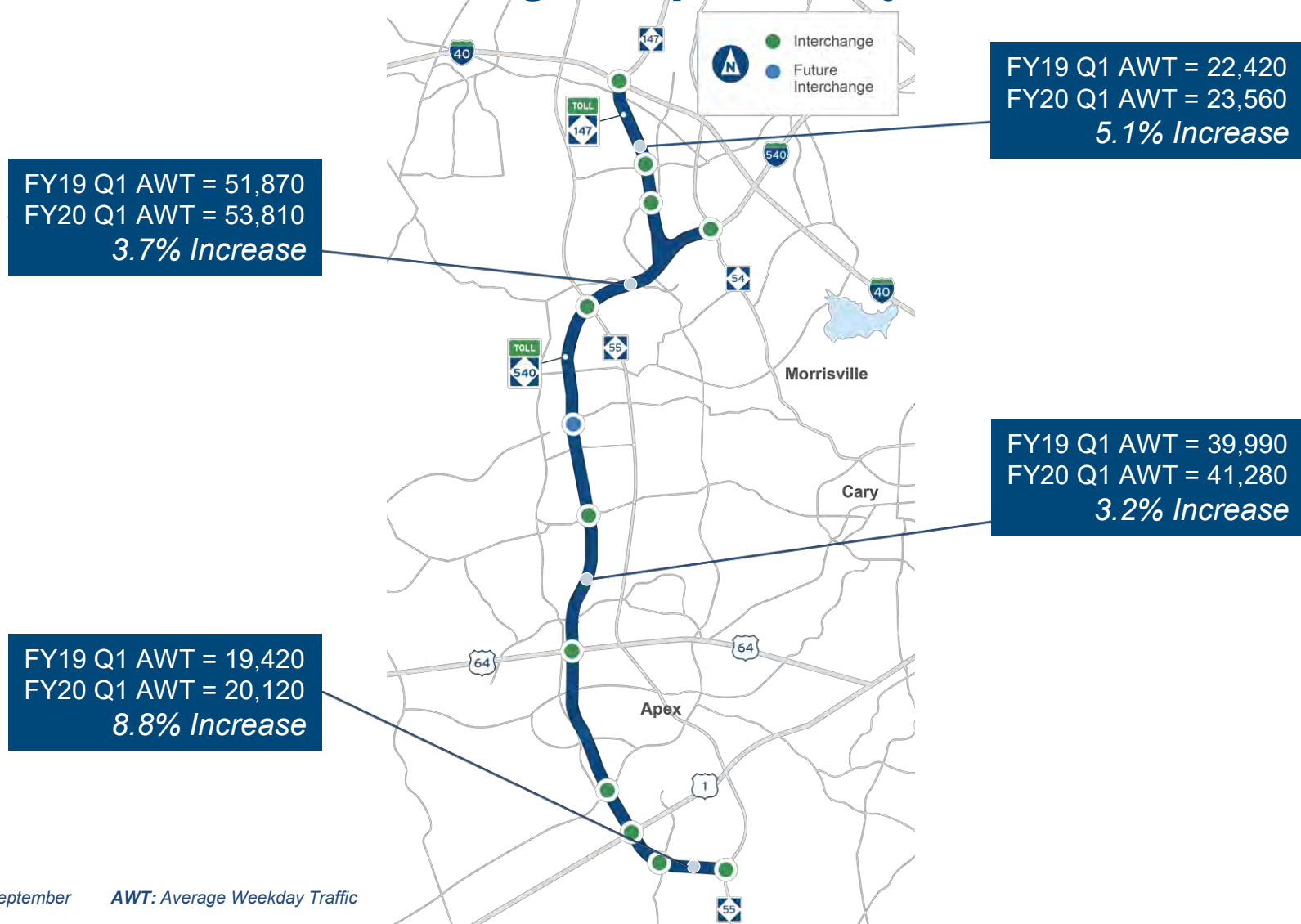
Roadway Operations Update



Dennis Jernigan, P.E.
Director of Highway Operations

Mainline Traffic Statistics

Triangle Expressway



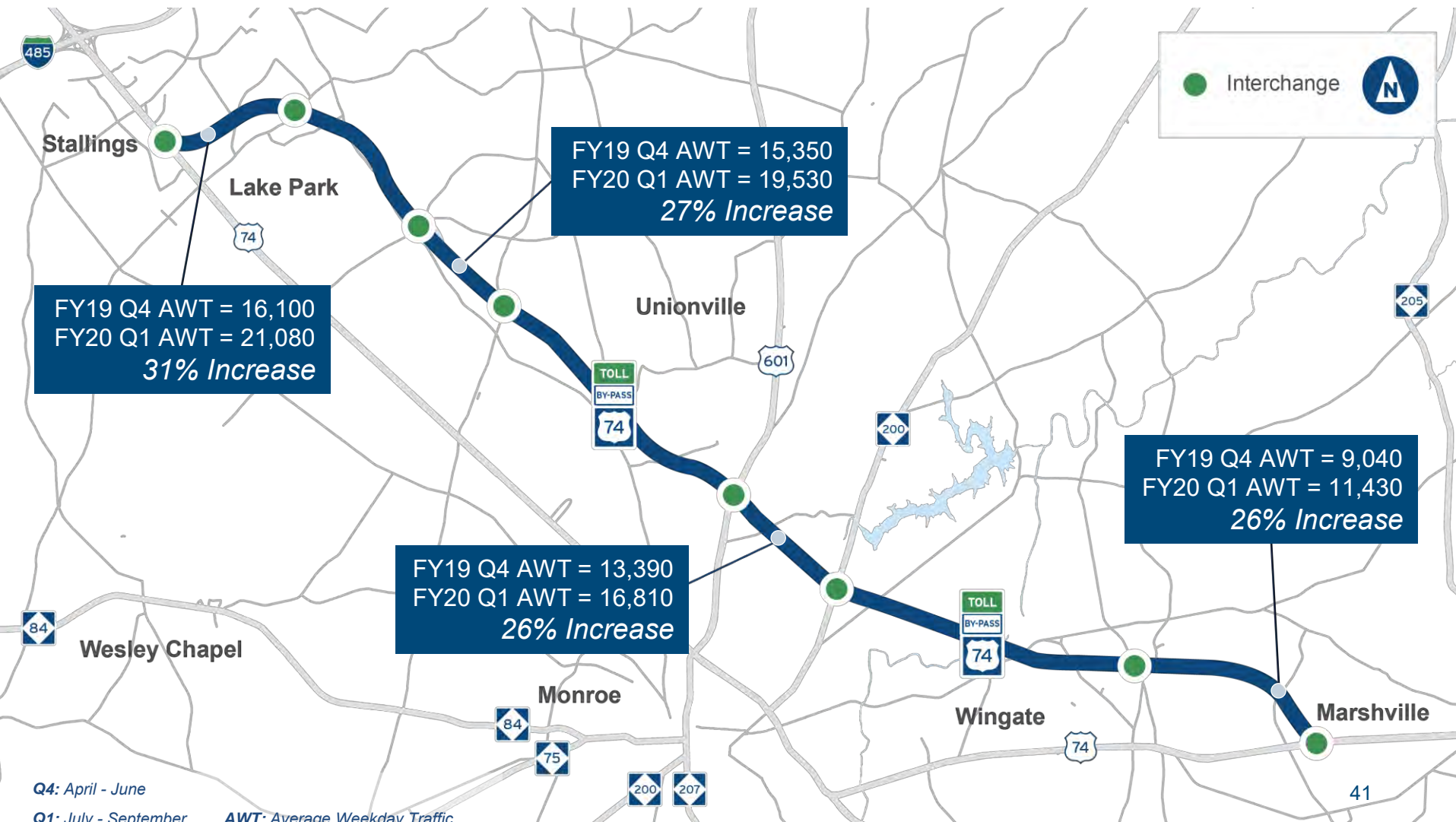
Roadway Maintenance Statistics

Triangle Expressway

	FY 2019 Q2	FY 2019 Q3	FY 2019 Q4	FY 2020 Q1	Rolling Rating
Road Surface	99.2	96.0	92.6	96.9	96.4
Unpaved Shoulders and Ditches	99.0	97.4	97.8	94.7	97.4
Drainage Structures	92.8	91.3	94.0	92.3	92.6
Roadside	97.1	92.8	92.8	94.7	94.5
Traffic Control Devices	95.1	92.1	87.9	86.6	90.8
Overall	96.6	93.7	92.1	92.5	94.0

Mainline Traffic Statistics

Monroe Expressway



USDOT Notice of Funding Opportunity (NOFO)

- Advertisement 12/21/2018
- Proposal submitted 03/20/2019
- \$60M available, \$10M max/site
- 73 proposals received
- Partners
 - Volvo
 - Road Infrastructure
 - Florida DOT
 - Penn State University
 - Oak Ridge National Laboratories
 - HNTB



Striping/Marker Evaluation

- Inlaid Paint
- Inlaid Thermoplastic
- Surface-Mounted Cold Applied Plastic
- Inlaid Cold Applied Plastic
- Inlaid Raised Pavement Marker
- Inlaid Cradle-Mounted Pavement Marker



Chief Engineer's Update

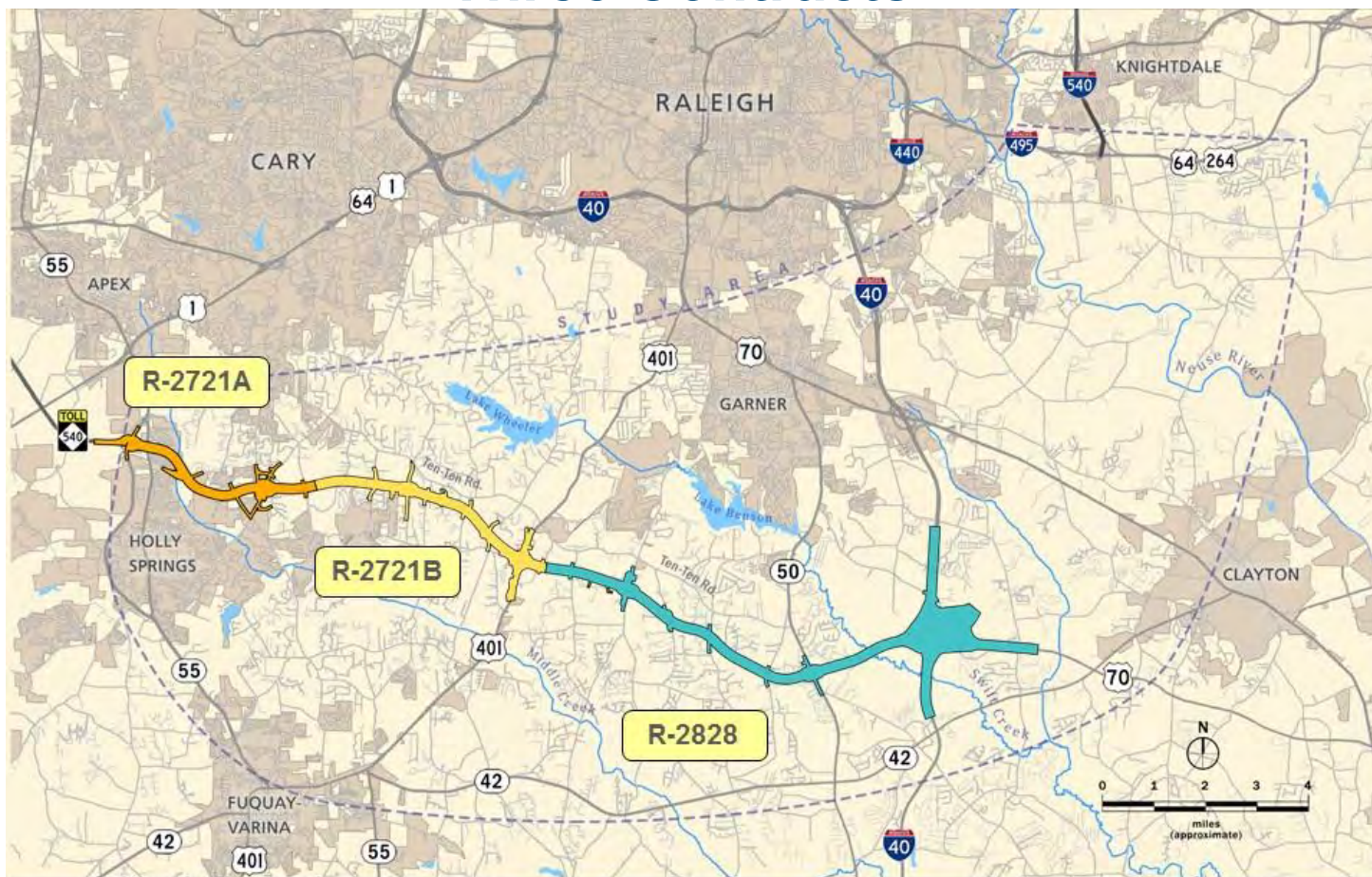


Rodger Rochelle, P.E.

Chief Engineer

Complete 540

Three Contracts



STIP Segments

R-2721 (A&B) and R-2828

Design-Build Contracts

R-2828

- The Lane Construction Corporation / Blythe Construction, Inc. JV
- Lead design firm – WSP USA Inc.
- \$403.2M

R-2721B

- Flatiron Constructors, Inc. / Branch Civil, Inc. JV
- Lead design firm - HDR Engineering, Inc. of the Carolinas
- \$160.0M

R-2721A

- Flatiron Constructors, Inc. / Branch Civil, Inc. JV
- Lead design firm - Gannett Fleming, Inc.
- \$183.5M

Complete 540 Design

R-2828

- 8.6 miles
- 171 design submittals, including right-of-way plans, hydraulics design, MOT plans, structure design
- Construction plans roughly 50% complete

R-2721B

- 4.9 miles
- 51 design submittals, including preliminary roadway plans, hydraulics design, structure design
- Construction plans roughly 35% complete

R-2721A

- 4.3 miles
- 47 design submittals, including preliminary roadway plans, culvert survey reports
- Construction plans roughly 25% complete

Complete 540 Right of Way

R-2721A

- 212 parcels
- 94 parcels settled
- 118 parcels remaining

R-2721B

- 216 parcels
- 125 parcels settled
- 91 parcels remaining

R-2828

- 182 parcels
- 15 parcels settled
- 167 parcels remaining



Complete 540 Permitting

401 Water Quality Certification

- NC Department of Environmental Quality-Division of Water Resources
- Issued February 15, 2019

404 Permit

- US Army Corps of Engineers
- Issued October 24, 2019

Permit Modifications

- Frequent agency coordination meetings
- Permit modification will reflect final design details and result in reduced environmental impacts
- Submittal of permit modification package for R-2828 and R-2721B anticipated late November 2019

2020 NCTA Board Meeting Dates



Secretary Trogon
Chair

2020 Meeting Dates*

Finance Committee	Operations Committee
January 15	January 16
March 18	March 19
April 15	April 16
June 17	June 18
July 15	July 16
September 16	September 17
October 21	October 22
December 16	December 17

** All meetings are held in the NCTA Board Room and begin at 10:30am*

2020 Meeting Dates*

Board of Directors

February 6**

May 7

August 6

November 19

**All meetings are held in the NCTA Board Room and begin at 10:30am*

***Meeting held in Charlotte*

Thank You!

