



Board of Directors Operations Committee Meeting

North Carolina Turnpike Authority

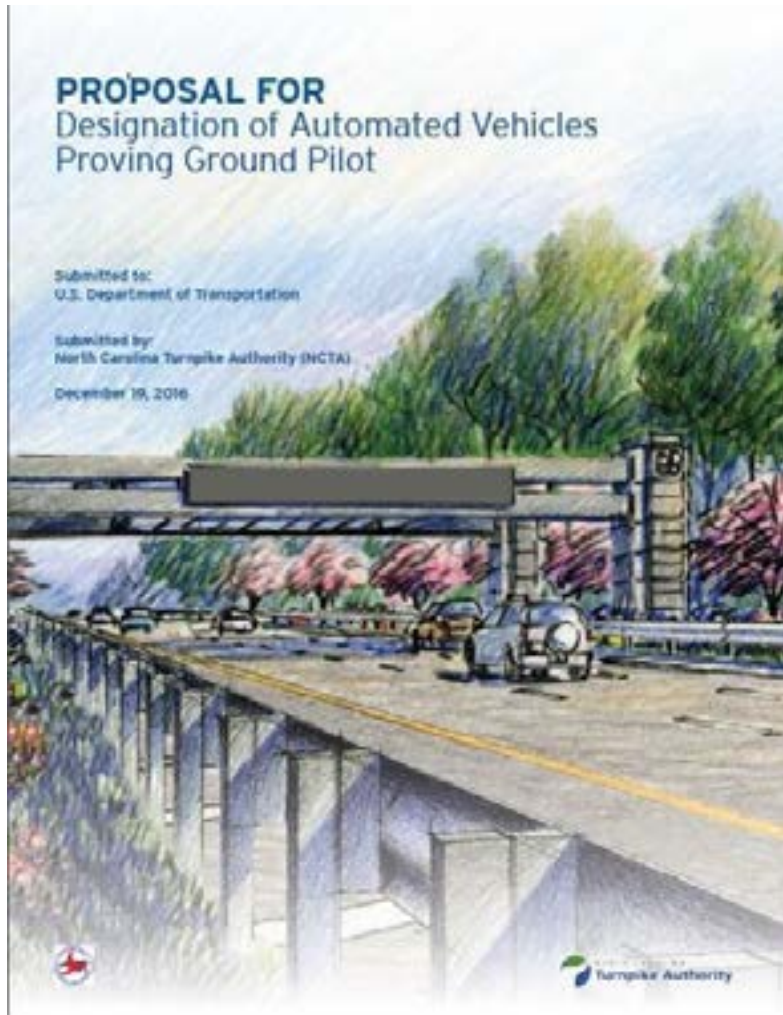
July 19, 2018

Volvo Trucks/FedEx Platooning Demonstration

Dennis Jernigan, P.E.

Director of Highway Operations

AVPG Designation



- Triangle Expressway designated as a USDOT Autonomous Vehicle Proving Ground in January 2017
- First meeting with Volvo Trucks team in March 2017
- Collaborated with Volvo team, NCDOT and NCDMV on platooning legislation that was passed in July 2017
- Volvo submitted a plan for demonstration in March 2018
- Ordinances issued by NCDOT March 29, 2018
- Demonstration began in early April 2018

Details of Demonstration

- Veridea Parkway served as the proving ground and southern terminus of route
- Davis/Hopson interchange was used as northern terminus of route
- Salt barn location at Green Level was used to store tractors/trailers overnight
- Demonstration occurred outside a.m. and p.m. peak periods
- Trucks were spaced 75 to 100 feet apart as they traveled at 62 miles per hour
- All tractors had licensed drivers, each with 15+ years driving experience

Safety Was Paramount In All Demonstrations



Drivers: Ulysses, Justin, Cindy



Technical Team: Franklin, Bob, George



Media Outlets

Ever heard of truck platooning? It's happening on the Triangle Expressway.

BY RICHARD STRADLING
rstradling@newsobserver.com

June 27, 2018 05:00 PM
Updated June 27, 2018 09:39 PM



Volvo Trucks and FedEx Successfully Demonstrate Truck Platooning on N.C. 540 (Triangle Expressway)



Volvo Trucks/FedEx Platooning Demonstration

Platooning technology tested for first time in US, on Wake County soil



Volvo, FedEx test truck platoons in North Carolina



Volvo, FedEx Team on Live Platooning in North Carolina



Volvo deploys truck platooning demo on designated autonomy testing highway in N.C.

Volvo, FedEx test autonomous truck 'platooning' on public U.S. road

We've got a little convoy in N.C., and expect testing in other states

FedEx, Volvo Test U.S. Truck 'Platoons' to Catch Up to Europe

By Thomas Black
June 27, 2018 1:00 PM Updated on June 27, 2018 5:4

► Courier joins with Volvo to do highway test in North Carolina
► Technique is designed to provide fuel-efficiency, safety gains



Volvo Trucks, FedEx Demonstrate Truck Platooning in North Carolina

I-485 & U.S. 74 Project Update

Rodger Rochelle, P.E.
Chief Engineer

Discussion Items

- Project Overview
- T&R Analysis Update
- Recent Activities
- Upcoming Public Open Houses
- Next Steps



I-485 and U.S. 74 Express Lanes Network



I-485

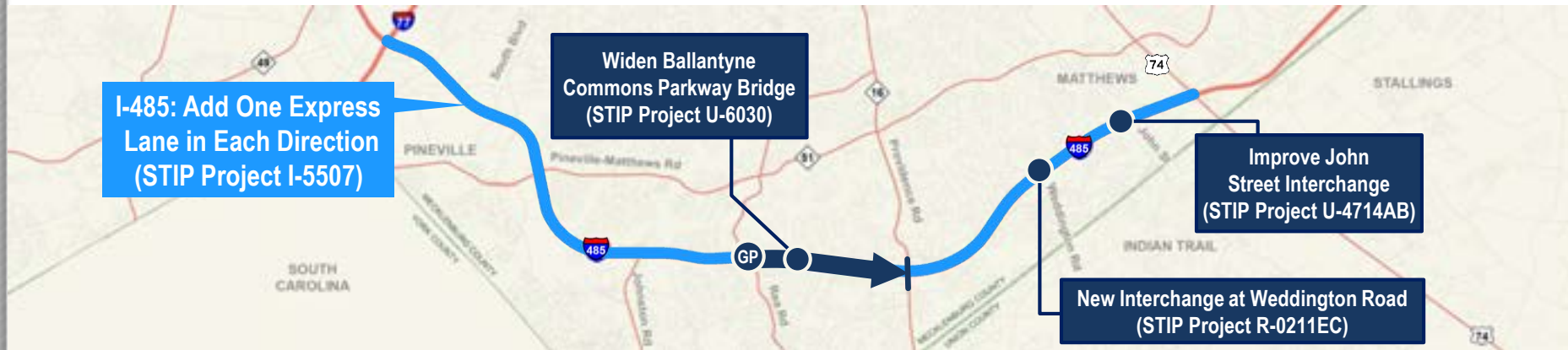
Express Lanes

STIP Project I-5507



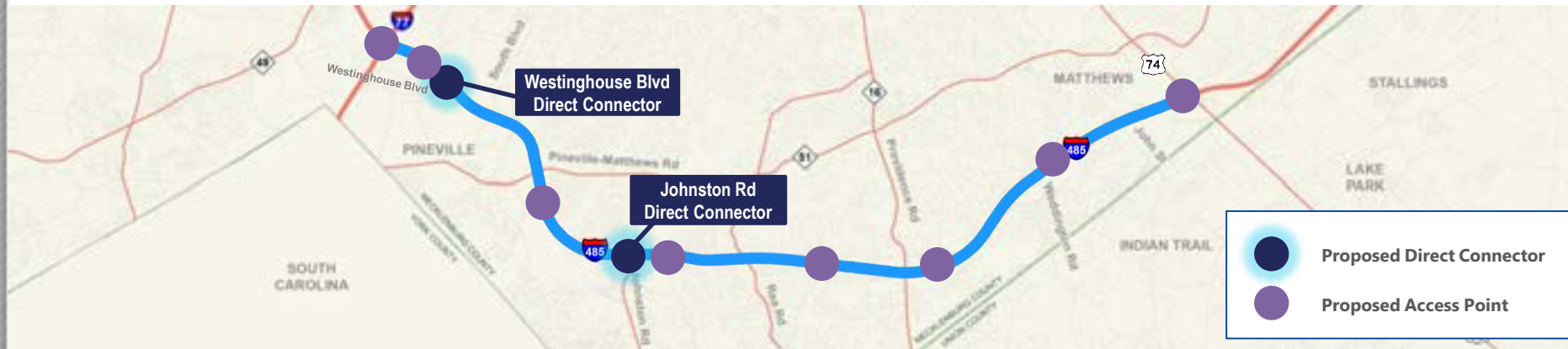
I-485 Express Lanes (I-5507)

- Add One Express Lane in Each Direction Between I-77 and U.S. 74
- Extend Third General Purpose Lane from Rea Road to Providence Road (Both Directions)
 - No tolls will be added to the existing and new general purpose lanes
- Combine Three Other Area Projects with I-485 Project



I-485 Express Lanes (I-5507)

- Proposed Express Lanes Direct Connectors and Access Points

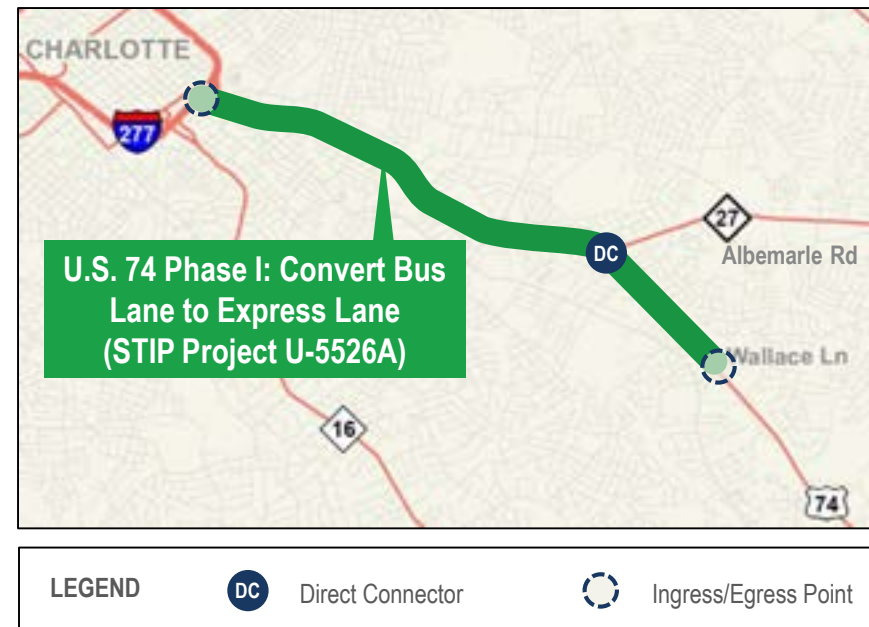


U.S. 74 Express Lanes Phase I STIP Project U-5526A



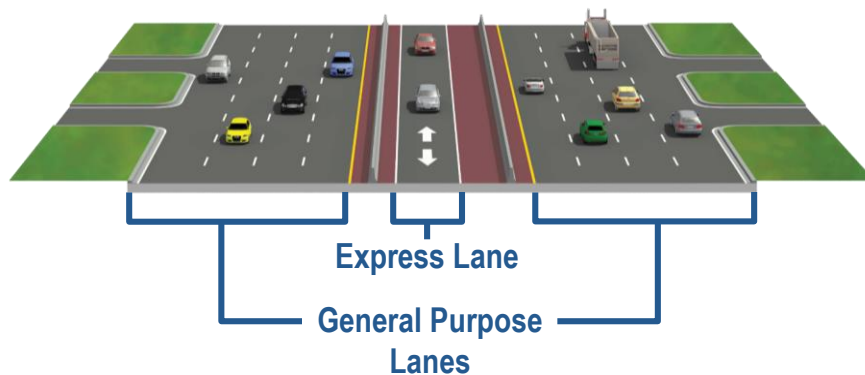
U.S. 74 Express Lanes Phase I (U-5526A)

- Convert the Bus Lane Along U.S. 74 to Express Lane
 - Approximately 6 miles
 - Reversible express lane between I-277 and Albemarle Road
 - One express lane in each direction between Albemarle Road and Wallace Lane

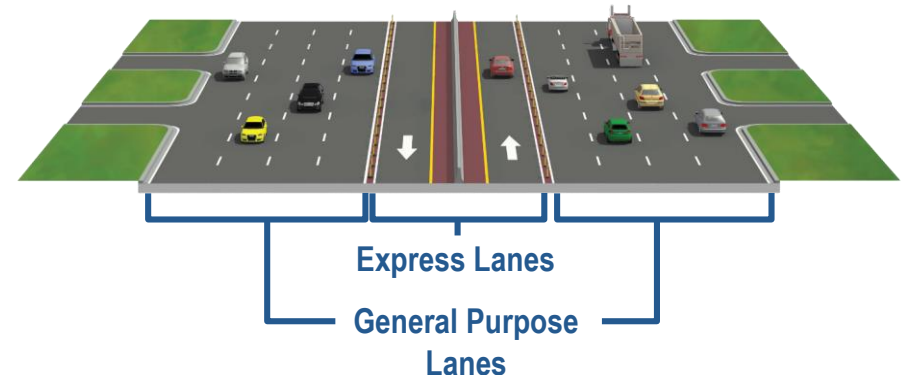


U.S. 74 Express Lanes Phase I (U-5526A)

I-277 to Albemarle Road



Albemarle Road to Wallace Lane



U.S. 74
Express Lanes
Phase II
STIP Project U-2509



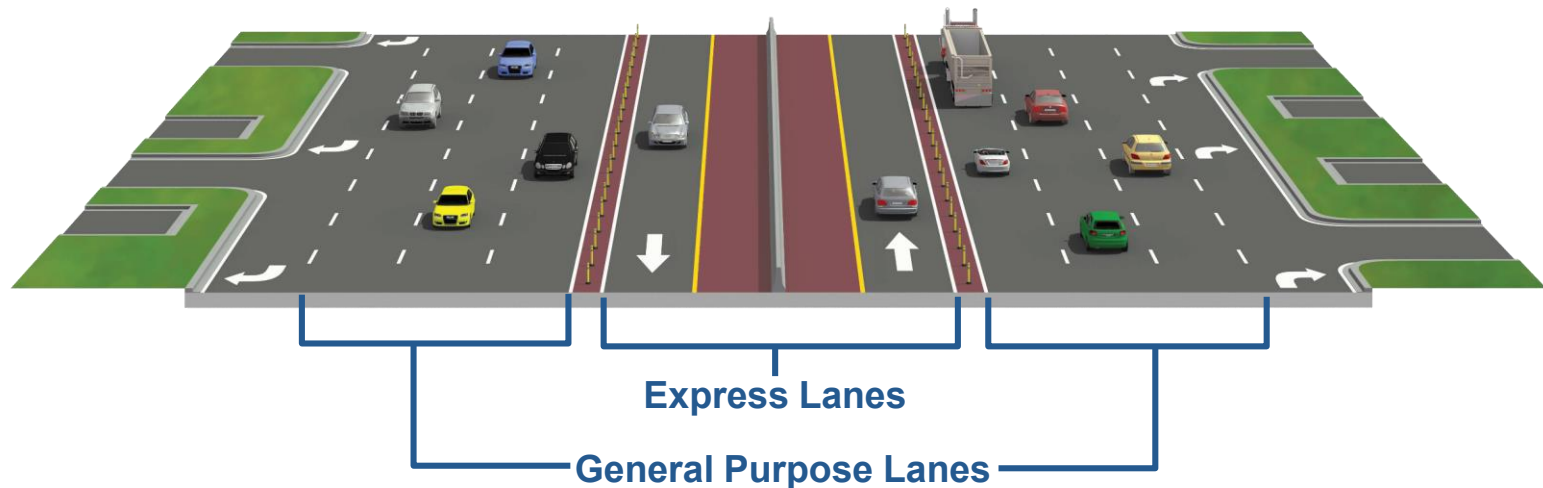
U.S. 74 Express Lanes Phase II (U-2509)

- One Express Lane in Each Direction Between Conference Dr and I-485
 - Approximately 6 miles
- Other Improvements
 - Upgrade U.S. 74 to expressway (remove at-grade intersections)
 - Convert multiple at-grade intersections into grade separations or interchanges
 - Several parallel road connections to improve connectivity



U.S. 74 Express Lanes Phase II (U-2509)

Conference Drive to I-485

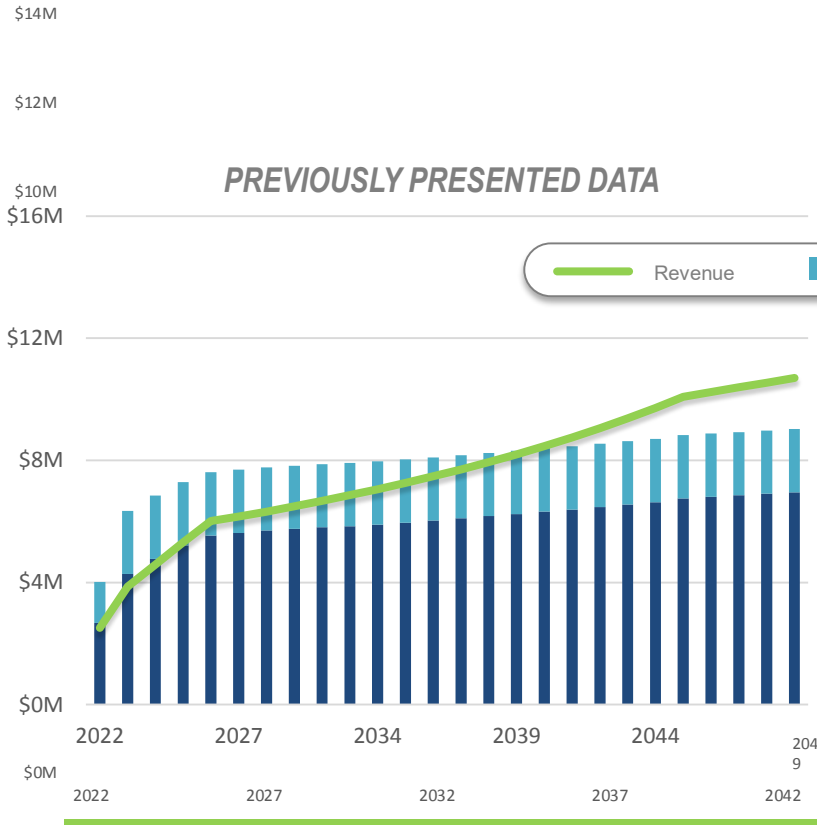


Recent Activities

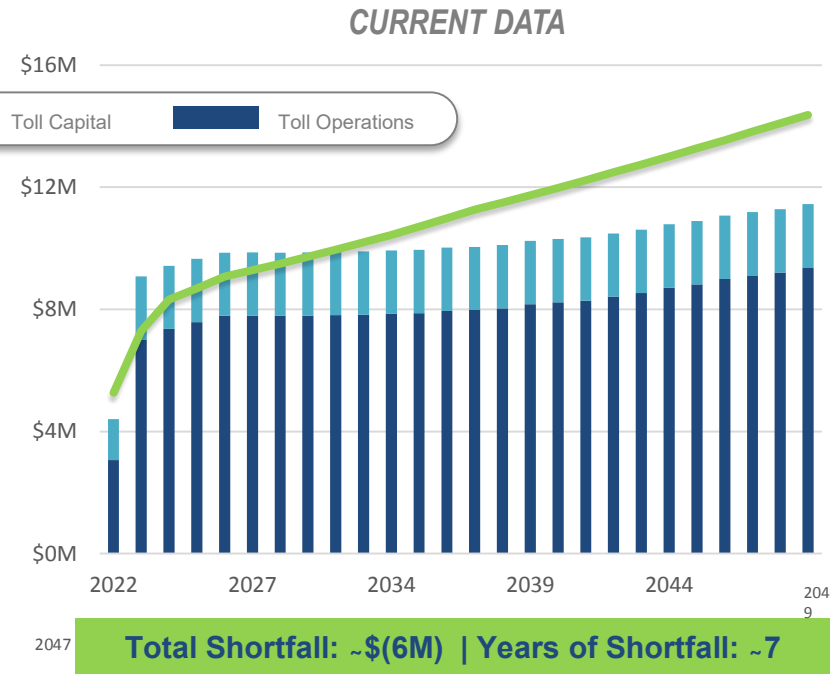
- Project Update to CRTPO Board on March 21, 2018
- Feedback from CRTPO
 - Continue T&R analysis and provide updates to CRTPO
 - Work with CRTPO staff to form a toll operations advisory group
 - Conduct additional outreach to local jurisdictions and the public

Registered Carpool Scenario

TOD Analysis



Sources:
I-485: Stantec February 2018 Draft Memo
U.S. 74: Stantec August 2015 Screening Level Memo



Source:
I-485 and U.S. 74: Stantec May 2018 Level II Draft Submittal

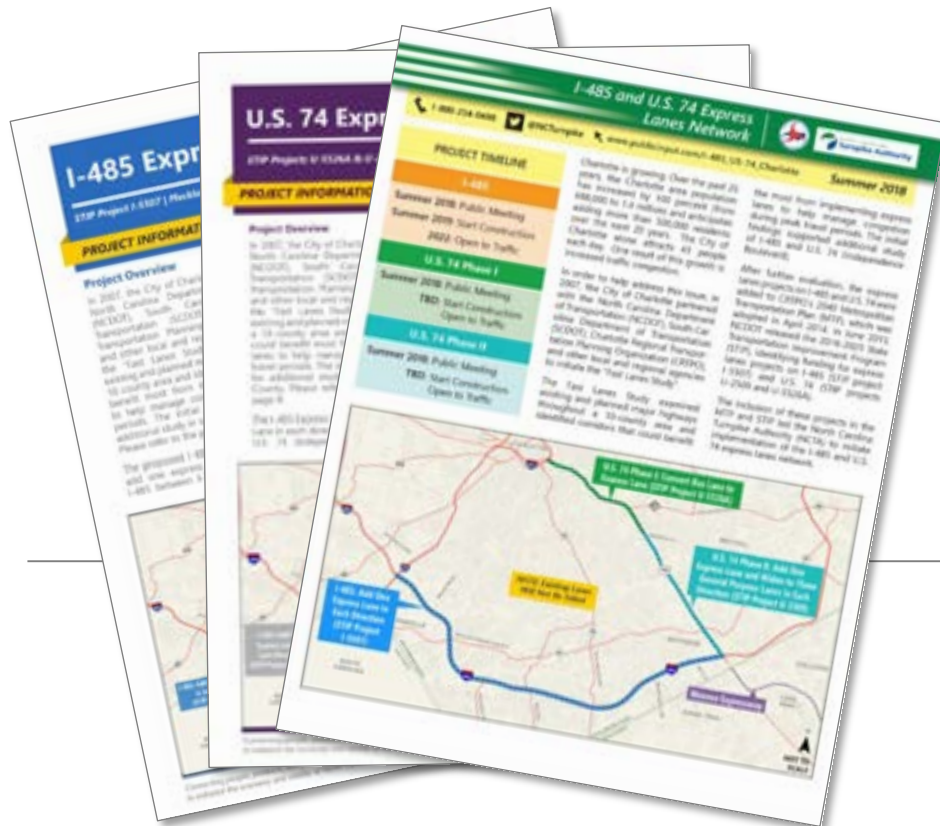
Key Differences in Assumptions

- Previously Presented Data
 - Screening Level Traffic & Revenue for U.S. 74
 - 50% Revenue downside
- Current Data
 - Level II Draft Traffic & Revenue for U.S. 74
 - 35% Revenue and 15% Transaction downside

CRTPO Toll Operations Advisory Group

- Membership
 - CRTPO representatives
 - NCTA representatives
 - Rodger Rochelle – NCTA Chief Engineer
 - Warren Cooksey – NCTA Director of Community Affairs
 - Greg Boulanger – Consultant to NCTA
 - Radha Krishna Swayampakala – Consultant to NCTA
- First Meeting: July 16, 2018

Methods for Public Outreach



publicinput.com/I-485_US-74_Charlotte

Methods for Public Outreach



@NCTurnpike

@NCDOT_Charlotte



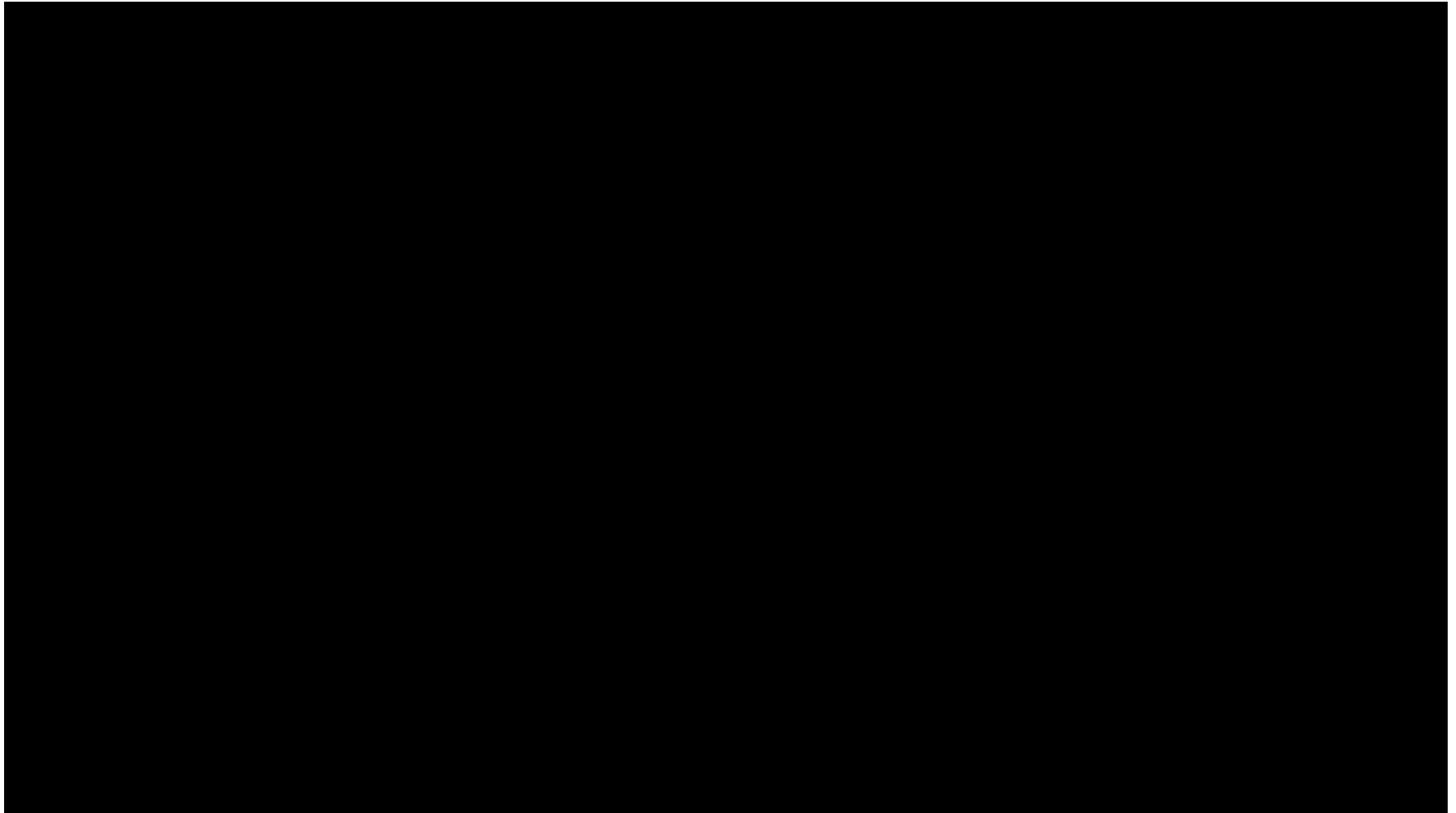
Public Open Houses: July 25 & 26, 2018

Next Steps

Task	I-485 (I-5507)	U.S. 74 Phase I (U-5526A)	U.S. 74 Phase II (U-2509)
Public Meetings	July 25 & 26, 2018	Summer 2018	Summer & Fall 2018
Completion of Environmental Studies	Summer 2018	Summer 2018	2019
Begin Final Designs	Summer 2018	Already in Progress	Late 2019
Start Construction	Summer 2019	TBD	TBD
Open to Traffic (Anticipated)	2022	TBD	TBD

I-485 Express Lanes (I-5507)





Questions?

Complete 540 Procurement Update

Rodger Rochelle, P.E.

Chief Engineer

Complete 540

- R-2721A
 - 4.6 mile new location
 - ~ 190 parcels
- R-2721B
 - 4.9 mile new location
 - ~ 210 parcels
- R-2828
 - 8.6 mile new location
 - ~ 250 parcels



Current Project Schedule

- Record of Decision: June 6, 2018
- Corridor Permit Application: Summer 2018
- Right of Way Plans for R-2721A & R-2721B: Fall 2018
- Anticipate Permits: Late 2018/Early 2019
(phased for R-2828 & construction for R-2721A and R-2721B)
- Design-Build Contract Letting
 - R-2828: November 2018
 - R-2721B: February 2019
 - R-2721A: April 2019
 - R-2829: Future (2027)
- Complete Project Finance: Early 2019

Status and Next Steps

	R-2828	R-2721B	R-2721A
Advertisement	✓ April 16	✓ July 2	September 4
SOQ Due Date	✓ May 11	July 31	October 2
Shortlist Date	✓ May 24	August 14	October 18
Issue 1 st Draft RFP	✓ May 24	August 14	October 18
Debrief Teams	✓ Week of June 4	Week of Aug. 27	Week of Oct. 29
1 st Meeting with Teams	✓ June 7	August 28	November 1
Issue 2 nd Draft RFP	✓ June 26	September 11	November 20
2 nd Meeting with Teams	✓ July 10	September 25	December 6
Issue 3 rd Draft RFP	July 24	October 9	December 20
3 rd Meeting with Teams	August 7	October 23	January 8

Thank you!