NORTH CAROLINA
Turnpike Authority

Mandatory RTCS Pre-Proposal Scope of Services Meeting

October 24, 2017 2:00 pm – 4:00 pm

Welcome & Introductions

Beau Memory

NCTA Executive Director

Staff Introductions

NCTA Staff and Roles

- Marvin Butler – Deputy Executive Director
- Andy Lelewski, P.E. – Director of Toll Operations
- John Stansberry – Roadside Toll Collection System Manager
- Rodger Rochelle, P.E. – Chief Engineer
- Kristen Pearce – Back Office System Manager
- Paul Marak, P.E. – ITS Development & Design

Staff Introductions

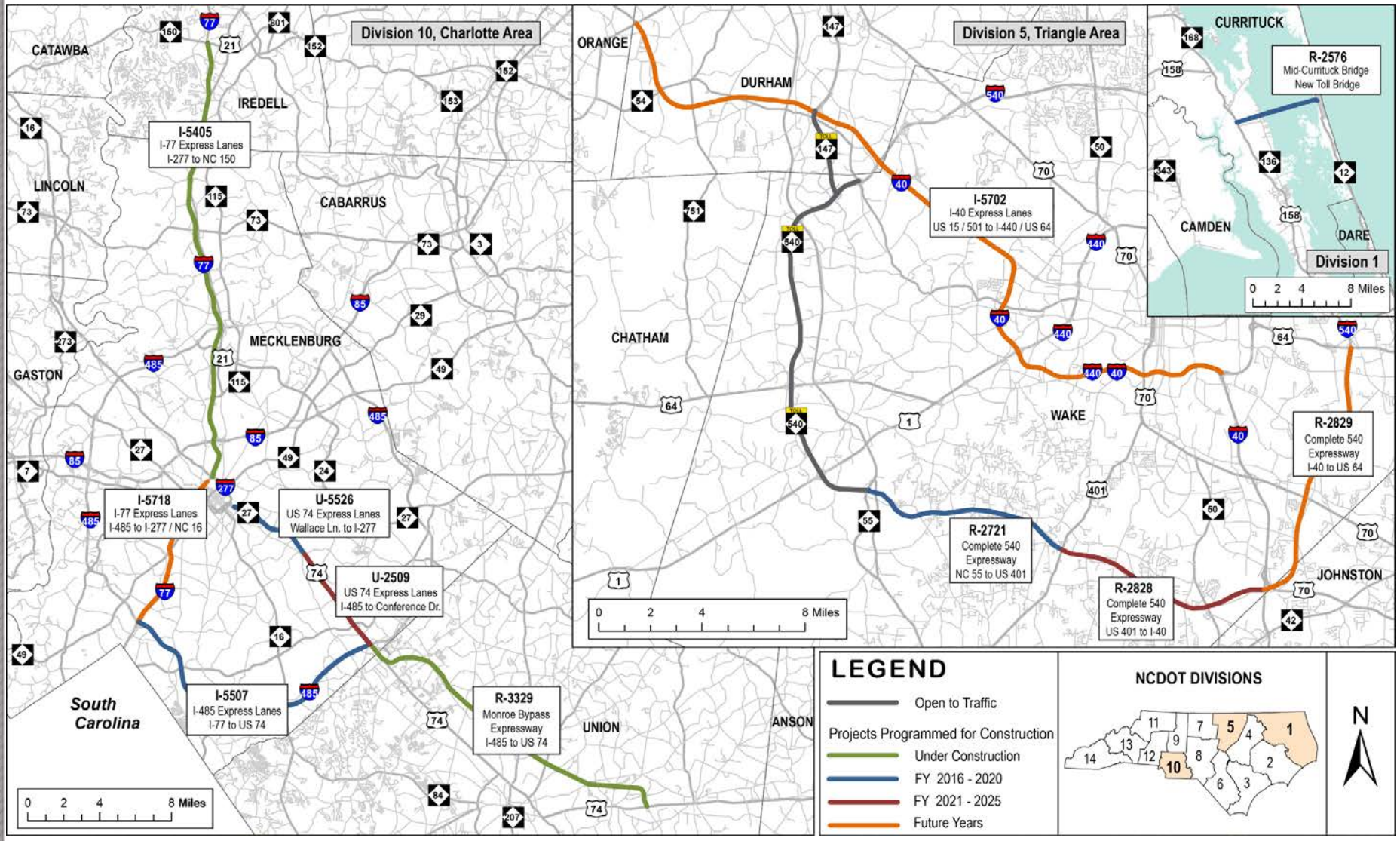
Consultant Support

- Dave Jones, P.E.
- Jerry Eakes
- Greg Vari
- Seth Fisher, P.E.
- Daniel Robicheaux
- Kevin Palmer, P.E.
- Helen Wong

NCTA Overview

- Agency History
- Staffing Approach
  - Consultant staff augmentation
- Outsourcing Approach
  - BOS and RTCS Systems
  - CSC Operations and Staffing
- NCTA Toll Program Expansion Projects

North Carolina Turnpike Authority



Agenda

- Project Introduction / Goals of Procurement
- Purpose of Meeting
- Construction Project Update
- Procurement and Contract Overview
- Scope of Work and Requirements Overview
- Mandatory Triangle Expressway Site Visit Information
- Questions and Answers
- Closing Remarks

Project Introduction & Goals of Procurement

Andy Lelewski, P.E.
Director of Toll Operations

Purpose of Pre-Proposal Meeting

- Provide an overview of the solicitation
  - Solicitation goals
  - Structure and organization of the RFP
  - Highlight key elements of the RFP and Scope of Work & Requirements
  - Highlight key Proposal requirements
  - Review Schedule of Procurement Events
- Respond to Proposers' questions

Pre-Proposal Meeting Requirements

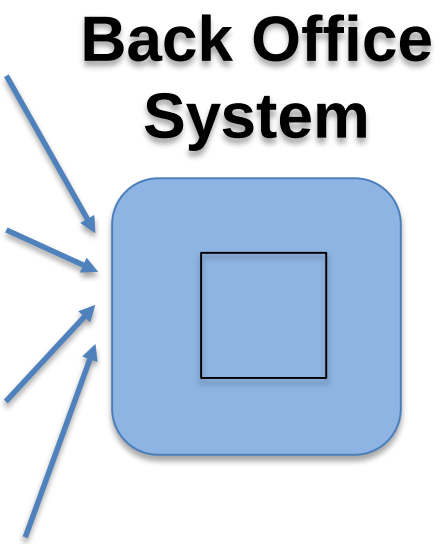
- All attendees must sign in
- Proposers may submit questions to be answered during the Q&A period (Use notecards & box provided)
- All verbal comments, questions and responses are non-binding
- Official responses will be made in writing and posted to the website
- Copies of this presentation and sign-in sheets will be posted on the website

Project Goals
RTCS Procurement

- Triangle Expressway Toll System Replacement
- Triangle Expressway ITS Overhaul
- Morrisville Parkway Toll System Installation
- Complete 540 - Phase 1 Toll System Installation
- Complete 540 - Phase 1 ITS Installation
- Highway Building / CSC / STOC Enhanced ITS

NCTA Toll Operations Program Goals

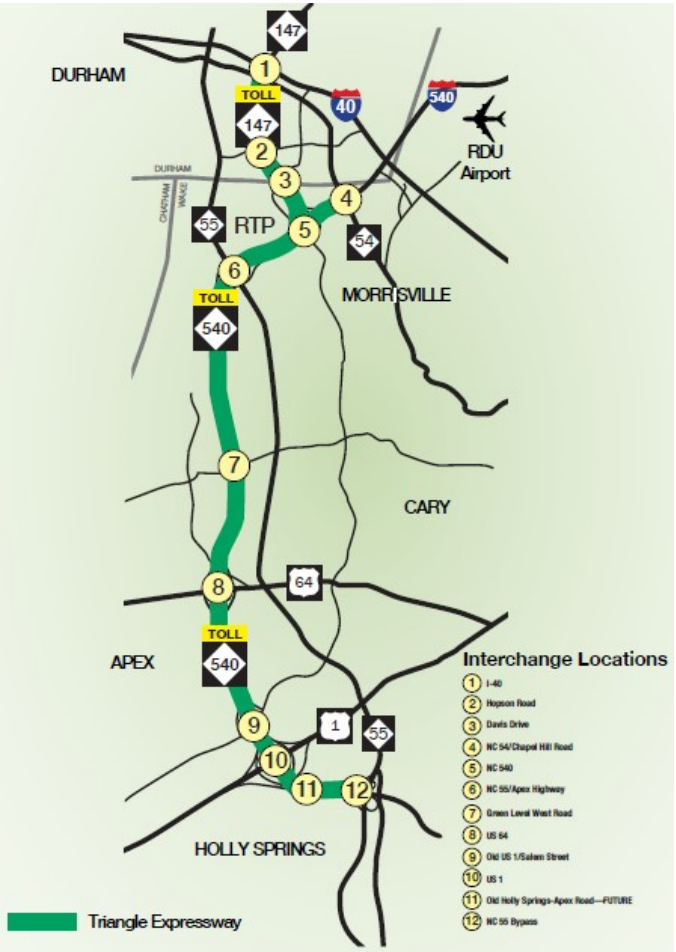
	Tri-Protocol AVI Equipment / Transponders	Completed Transactions from Roadside System	HOV Declaration APP
Triangle Expressway	✓		
Monroe Expressway	✓	✓	
US-74 Express Lanes	✓	✓	✓
I-77 Express Lanes	✓	✓	✓



Project Highlights - Triangle Expressway & Complete 540

Rodger Rochelle, P.E.
Chief Engineer

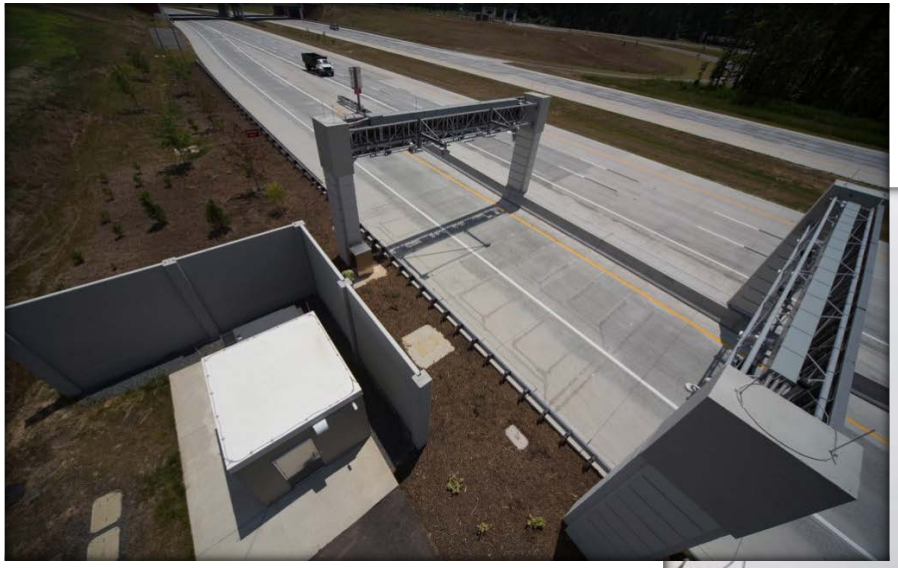
Triangle Expressway (TriEx)



- Project length: 18.8 miles
- All Electronic Tolling (AET) facility
- Roadside Toll Collection System
  - Four (4) mainline Tolling Locations (8 Toll Zones) with three (3) lanes and two (2) shoulders in each direction
  - Six (6) ramp Tolling Locations with twelve (12) ramp Toll Zones
- ITS Components (See Attachment 5)
- Toll Facilities
- NCTA will provide for spanning of gantry structures

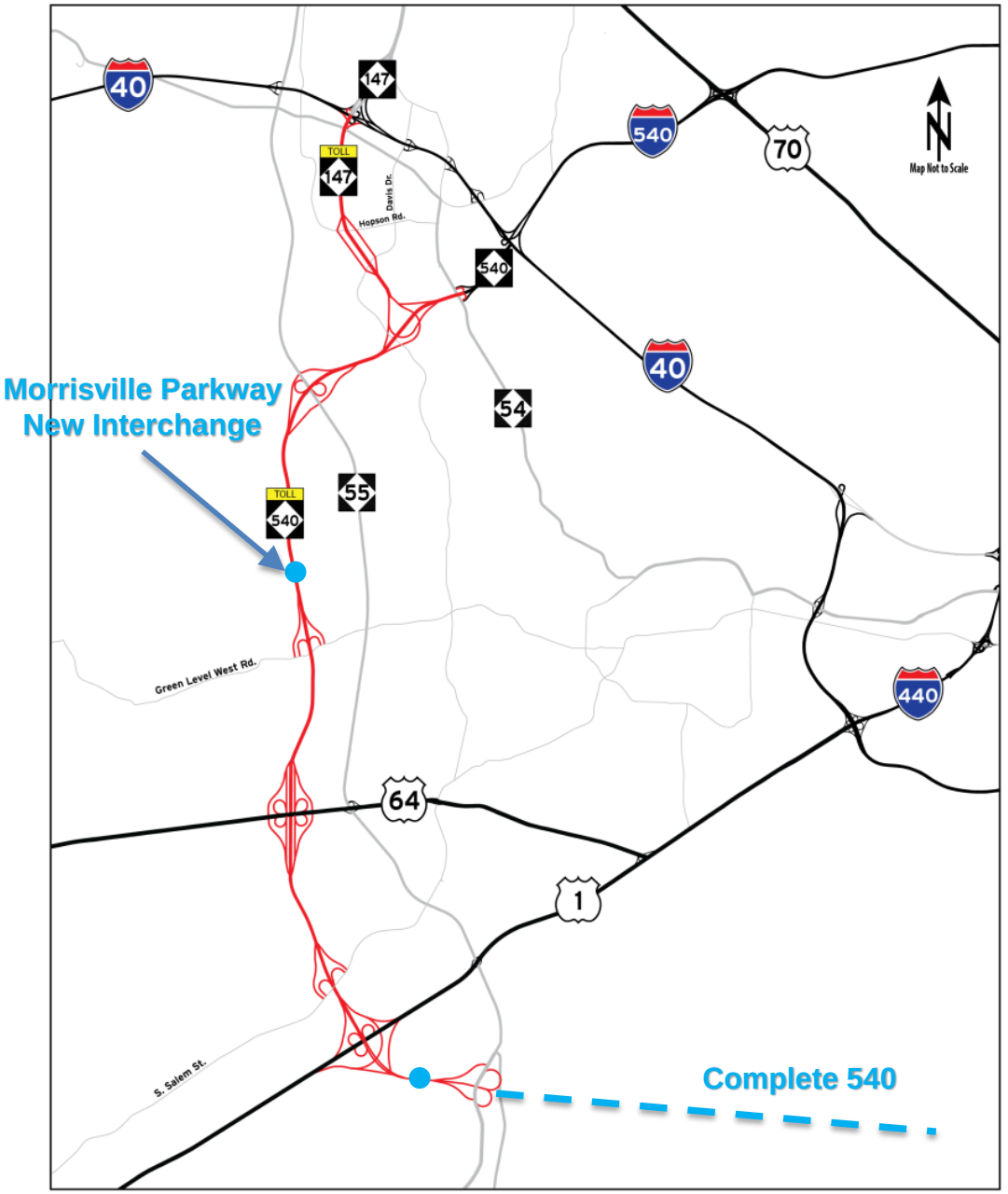
Triangle Expressway (TriEx)

Triangle Expressway (TriEx)

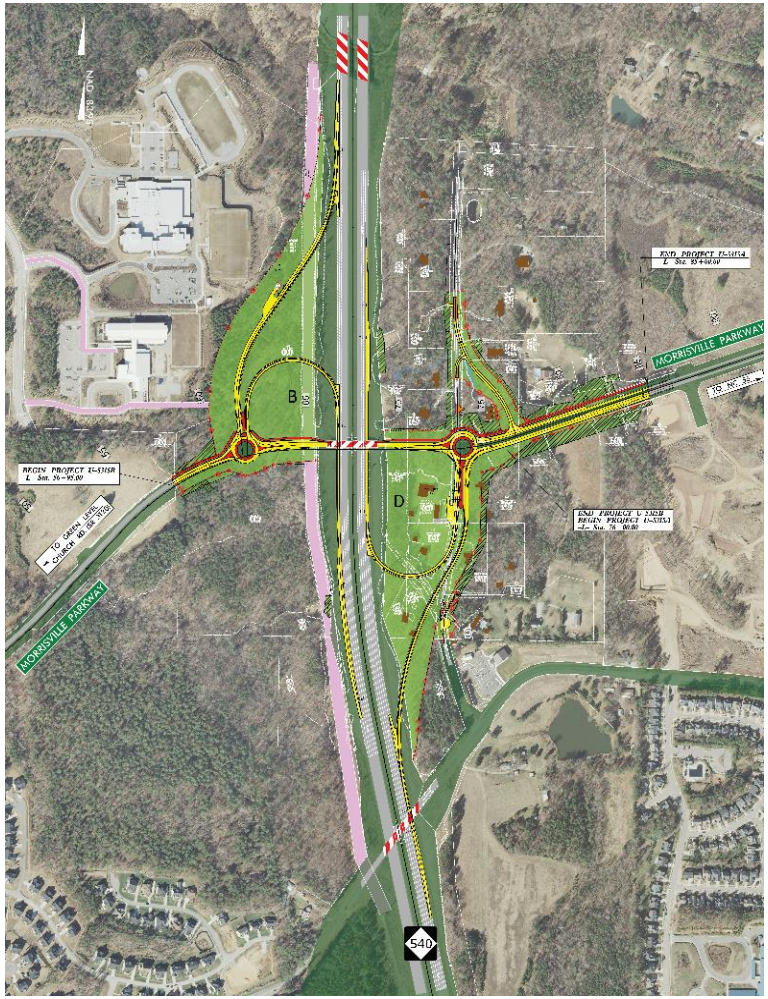


Morrisville Parkway Interchange

Complete 540

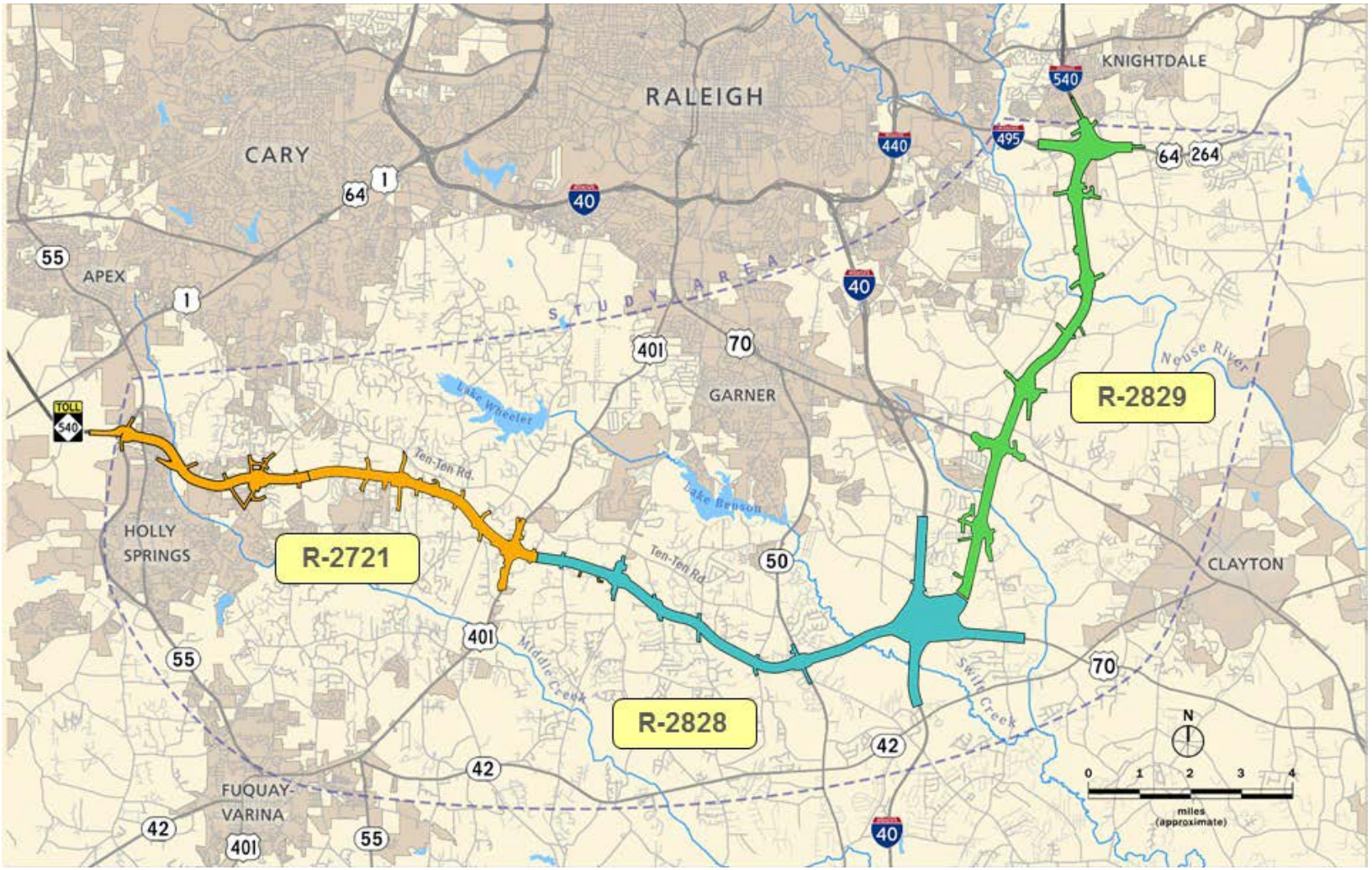


Morrisville Parkway Interchange

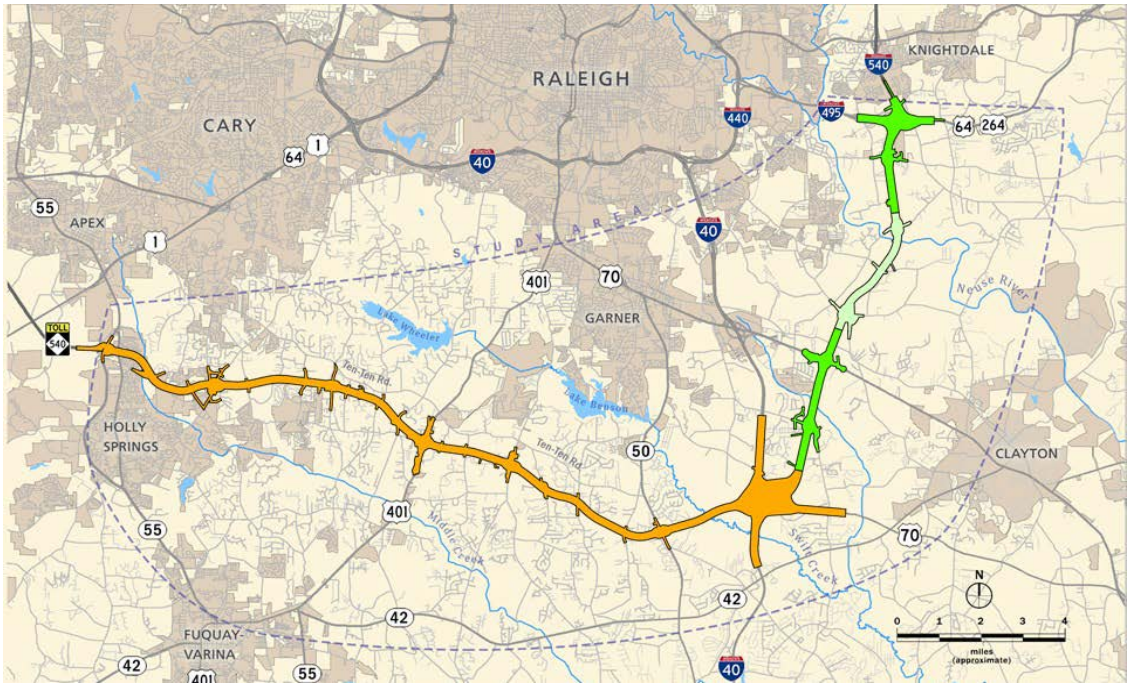


- New Interchange on the Triangle Expressway
- New All Electronic Tolling (AET) facility
- New Roadside Toll Collection System
  - Two (2) new ramp Toll Zones, each with one (1) travel lane and two (2) shoulders
- New ITS Components (See Attachment 5)
- New Toll Facilities

Complete 540 (C540)



Complete 540



- Project length: 28 miles
- New All Electronic Tolling (AET) facility
  - Phase 1 (Segments 1 & 2): Six (6) mainline Toll Zones with three (3) lanes and two (2) shoulders in each direction
  - *Optional Scope: Phase 2 (Segment 3): Six (6) mainline Toll Zones with three (3) lanes and two (2) shoulders in each direction*
- New ITS Components (See Attachment 5)
- New Toll Facilities

Procurement & Contract Overview

Dan Robicheaux
NCTA Consultant Support

Contract Term (Base and Optional Extensions)

- Implementation Phase – From Contract execution through System Acceptance on each roadway;
- Operations and Maintenance Phase – Up to five (5) years from initial System Acceptance of the first roadway
- Options to Extend – Two 3-year optional Maintenance extensions

Procurement Schedule

SCHEDULE (The NCTA reserves the right to modify the schedule at any time and for any reason.)	
RFP Issue Date	October 10, 2017
Mandatory Pre-Proposal Conference Mandatory On-Site TriEx Site Visit	October 24, 2017 (2:00 p.m. - 4:00 p.m. EDT) October 25, 2017 (8:00 a.m.-12:00 p.m. EDT)
RFP Questions and Proposer Industry Comment Due	November 13, 2017 (4:00 p.m. EST)
NCTA Responses to all Questions Due	November 28, 2017
Proposal (Technical and Price) Due	December 21, 2017 (4:00 p.m. EST)
Short-list Notification	January 19, 2018
Oral Presentations	Week of February 12, 2018
Ranking of Proposers for Negotiations	February 2018
Award of Contract	April 2018
Notice to Proceed	April 2018

Procurement Requirements

- Question and Answer Process
- Proposer Minimum Requirements
- RFP Format
- Forms to be Completed
- Required Technical Proposal Format
- Technical Proposal Submission Requirements
- Price Proposal
- Price Proposal Submission
- Best Value Evaluation Process

Non-Solicitation Provision

- Refer to Section I, Paragraph 2.4
- Proposers shall only contact NCTA in the manner identified in Section I, Administrative, Section 1.3 with respect to any facet of this procurement
- Violation of this provision may be grounds for rejection of the Proposer's Proposal

Question and Answer Process

- Proposers must submit all questions in writing to the RFP Contact person
- Use the form provided in Exhibit D-8 Forms for all questions
- All questions and responses will be provided by NCTA on website

Proposer Minimum Requirements

- The Proposer shall have successfully developed and delivered at least one (1) AET or ORT (or a combination thereof) multi-travel lane system implementation project. The project must include AVI and image-based transactions. The Proposer shall have maintained the system for at least one (1) year.

- See Section IV-1.2 Content of Technical Proposal for additional details.

RFP Format

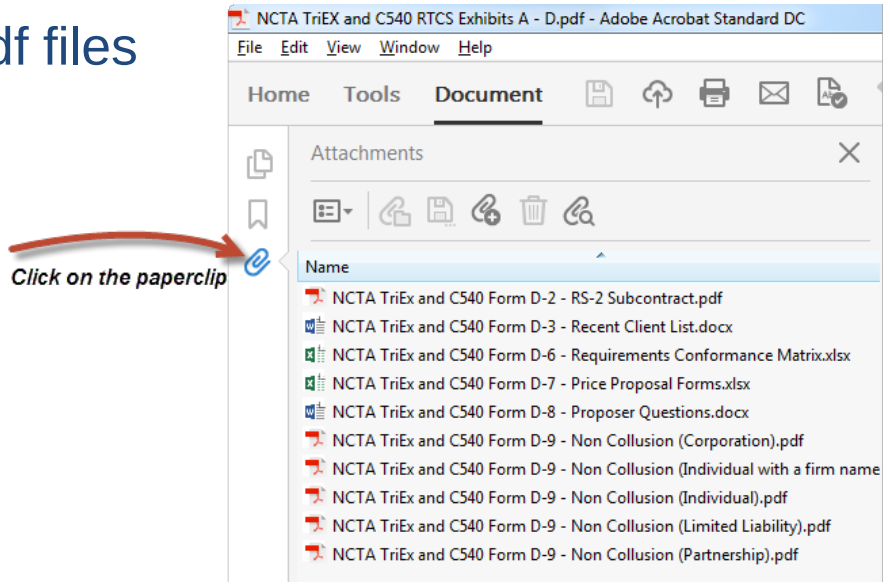
- RFP “Front-End” document including:
  - Section I Administrative
  - Section II Defined Terms and Acronyms
  - Section III Scope of Work and Requirements
  - Section IV Proposal Contents and Submission
  - Section V Terms and Conditions

RFP Format

- Additional RFP documents:
  - Four (4) RFP exhibits
  - Exhibit A Project Implementation Schedule
  - Exhibit B Payment Schedule
  - Exhibit C Price Proposal Instructions
  - Exhibit D Forms
    - Eleven (11) Forms
- Seventeen (17) Scope of Work attachments
- Four (4) informational appendices

RFP Format

- More information on the forms:
  - Use Table 4-3 which is a checklist of all submittals and forms to be included in the Proposal
  - Some forms are embedded within: **NCTA TriEx and C540 RTCS Exhibits A - D.pdf**
  - Embedded files are fillable .pdf files or native Word / Excel file for proposer use



Forms to be Completed

Form #	Form/Submittal Name	Location in RFP	Location of Form/Submittal in Proposal
Forms to be Submitted			
D-1	Proposal Cover Sheet	Exhibit D-1	Technical Proposal Envelope with Original of Proposal
D-2	List of Subcontractors and R-2 Form	Exhibit D-2	Technical Proposal Section 7
D-3	Recent Client List	Exhibit D-3	Technical Proposal Section 7
D-4	Reference Forms Part 1	Exhibit D-4	Technical Proposal Section 7
D-5	Reference Forms Part 2	Exhibit D-5	Technical Proposal Section 7
D-6	Requirements Conformance Matrix	Exhibit D-6	Technical Proposal Section 6
D-7	Price Proposal	Exhibit D-7	Price Proposal Envelope
D-8	Proposer Questions Forms	Exhibit D-8	N/A: To be used for submission of Proposer questions to NCTA
D-9	Non-Collusion Forms	Exhibit D-9	Technical Proposal Section 7
D-10	Surety Commitment Letter	Exhibit D-10	Technical Proposal Section 7
D-11	Acknowledgment of Receipt of Addenda	Exhibit D-11	Technical Proposal Section 7

Required Technical Proposal Format

- Cover Letter
- Executive Summary
- Proposal Section 1: Firm Qualifications
- Proposal Section 2: Key Team Qualifications
- Proposal Section 3: Approach to Scope of Work and Requirements
- Proposal Section 4: Approach to Project Plan and Implementation
- Proposal Section 5: Approach to Operations and Maintenance
- Proposal Section 6: Adherence to the Scope of Work and Requirements, Terms and Conditions and Requirements Conformance Matrix
- Proposal Section 7: Other Required Materials
- Price Proposal
- Appendix 1: Hardware Cut Sheets
- Appendix 2: Audited Financial Statements
- Appendix 3: Preliminary Bill of Materials
- Appendix 4: Sample Reports

Technical Proposal Submission Requirements

- Page Limits: 80 pages for Proposal Sections 1-5
- Review Table 4-1, Proposal Page Limitations
- Adhere to Proposal format and numbering requirements
- Respond as thoroughly as possible
- Seven (7) copies and one (1) CD/DVD to be submitted

Price Proposal

- Follow Price Proposal Instructions (Exhibit C)
- Price Proposal Form (Exhibit D-7) contains the following elements:
  - Roadside
  - Roadway Support System
  - Roadside System Hardware Maintenance and Software Support Services
  - Roadway Support Systems Maintenance and Software Support Services
  - ITS Maintenance
  - Toll Facilities Maintenance
  - Transaction Processing - per transaction pricing for AVI and Image-based transactions
  - Future Roadside Pricing
  - Estimated Lost Revenue – during TriEx transition

Price Proposal Submission

- Separate sealed envelope from Technical Proposal
- Price Proposal quantities:
  - Submit one (1) original and one (1) hard copy of the Price Proposal
  - Submit one (1) electronic version in Excel 2010 or later
- Include Bid Bond in Price Proposal envelope

Best Value Evaluation Process

- Pass / Fail screening
- Preliminary Technical Proposal evaluation
- Short-listing of Proposers based on minimum Technical score
- Oral Interviews/Presentations for Short-Listed Proposers
- Updated Technical Proposal scoring

Best Value Evaluation Process

- Price Proposal evaluation
- Consolidated Technical and Price Proposal evaluation
- Best Value determination
- Negotiation and Best and Final Offers (BAFOs)
- Contract Award

Proposal Evaluation Scoring (70/30) points

Proposal Elements	Maximum Possible Points
Proposal Section 1: Firm Qualifications	10
Proposal Section 2: Key Team Qualifications	10
Proposal Section 3: Approach to Scope of Work and Requirements	30
Proposal Section 4: Approach to Project Plan and Implementation	10
Proposal Section 5: Approach to Operations and Maintenance	10
Maximum Possible Technical Points	**70**
Maximum Possible Price Proposal Points	**30**
Maximum Possible Total Consolidated Score	**100**

Scope of Work & Requirements Overview

John Stansberry
Roadside Toll Collection System Manager

Major Project Elements

- Roadside Toll Collection System (RTCS) for Triangle Expressway and Complete 540 - Phase 1
  - Completed Transactions (AVI and Image-based)
- Replacement of ITS elements for TriEx and Installation of ITS elements for C540, including: CCTV cameras, elements of the Wide Area Network, and Microwave Vehicle Detection systems
- Turnkey Maintenance and Operations
  - Toll System Maintenance (Roadside and Roadway Support System)
  - AVI and Image-based Transaction Processing Operations
  - ITS Maintenance and Toll Facility Maintenance
  - Wrong way vehicle detection and notification systems

Planned Implementation Schedule

Milestone	Date
Contract Execution	April 2018
Triangle Expressway Transition	December 2018 – June 2019
Morrisville Parkway Interchange Go-Live	October 2019
Complete 540 Go-Live	2022
Triangle Expressway System Acceptance	October 2019
Complete 540 System Acceptance	November 2022

Separate bonus opportunities for on-time completion of Triangle Expressway, Morrisville Parkway Interchange, and Complete 540

Dates are subject to change, including Go-Live dates

Scope of Work

- Roadside Toll Collection System (RTCS)
  - Roadside Systems
  - Roadway Support System (RSS)
- Project Management
- Testing Overview
- Maintenance and Operations
  - Toll System Maintenance and Image Processing Operations
  - ITS Maintenance
  - Toll Facilities Maintenance
- Performance Measurement
- Roadway Operations
- Network Interfaces
- Construction Details

Roadside Systems to be Provided

- Tolling Zone Controller
- Image Capture & Processing Systems (ICPS)
- Automatic Vehicle Detection and Classification (AVDC)
- Interfaces to roadside Wrong-Way Vehicle electronic signs and alert/warning notification processing
- Supporting electronics, devices, and communications Equipment
- Optional Facility Servers to support transaction and image processing, storage, and forwarding from the roadside Tolling Locations

Note: AVI System provided by NCTA for installation and integration by the Contractor

Triangle Expressway AVI Retrofit

- Completed September 10, 2017
- Kapsch Janus Multi-Protocol MPR II Readers and Antennas
- Three protocols supported:
  - PS111 (TDM / IAG E-ZPass Group)
  - ISOB_80K (SeGo)
  - ISOC (ISO 18000-63/6C)

Roadway Support System to be Provided

- Toll Host System (including transaction processing, reporting, image review screens for image processing, and automated image processing)
- Integrated Digital Video Audit System (DVAS)
- Integrated Maintenance Online Management System (MOMS)
- All required LAN, MAN, and WAN networks
- Critical Environmental Monitoring System (CEMS)
- Access Control and Security Monitoring System (ACSMS) for Tolling Locations and equipment vaults

Note: Reuse of equipment for TriEx is defined in Attachment 4

Integration to be Provided

- Integration to be provided by Contractor with:
  - NCTA CSC Back Office
  - ITS elements
  - Microwave Vehicle Detection systems
  - Wrong-Way Vehicle electronic signs
  - Back-up generators, heating ventilation and air conditioning (HVAC), and uninterruptible power supply (UPS) located in equipment vaults

Project Management Requirements

- Project Management Office in Raleigh area
- Staffing and Key Personnel to be identified in Proposal
- Close coordination with NCTA, Civil Designers, and Constructors (Morrisville Parkway Interchange and Complete 540)

Testing Overview

- Contractor provided Master Test Plan
- Tests include:
  - Factory Acceptance Test (FAT)
  - Onsite Installation Test (OIT)
  - Installation and Commissioning Test
  - Operational and Acceptance Test

RTCS Operations and Maintenance

- Turnkey Maintenance provided by Contractor
  - RTCS Hardware, Equipment, and infrastructure
  - Network Maintenance Services for the RTCS, including LAN, MAN, and WAN
  - RTCS System, Server and Database Administration Services
  - Software Support Services for the RTCS System

RTCS Operations and Maintenance (continued)

- Image and AVI processing operations for provision of Completed Transactions
- Maintenance of ITS elements on both projects as applicable, including: CCTV cameras, DMS assemblies, Electronic Wrong-Way signs, Microwave Vehicle Detectors, Network components, NCTA TMC workstations, video wall, and Activu display servers
- Facility Maintenance of all tolling and ITS equipment cabinets and vaults including fifteen (15) on Triangle Expressway (including Morrisville Parkway Interchange) and six (6) on Phase 1 of Complete 540, including back-up generators, heating ventilation and air conditioning (HVAC), and UPS.

Performance Requirements

- Complete, timely, and accurate transactions
- Intent of NCTA to provide Performance Requirements that are not overly prescriptive
- Reflect the minimum tolerable expected performance
- Contractor required to provide performance compliance reporting for a systematic approach to verification
- Performance Requirements:
  - Testing – SOW Section 6.6
  - Maintenance and Operations – SOW Section 8
    - Performance Scorecard
    - Non-compliance Adjustments

Roadway Operations

- Operating facilities from Raleigh
- Facility Maintenance
- Maintenance of Traffic
- Coordination with the Statewide Transportations Operations Center (STOC) Transportation Management Center (TMC)

Scope of Work & Requirements Overview

David Jones, P.E.
NCTA Consultant Support

Network Interfaces

- Networking
  - All toll data WAN links are responsibility of Contractor
  - All communication links shall be in accordance with DOT IT Policies
  - See Attachment 12 – Communications Schematic for WAN/Network
  - Includes redundant communication links in case of failure
  - All switching on the “hard” tolls network is responsibility of Contractor

Construction Coordination

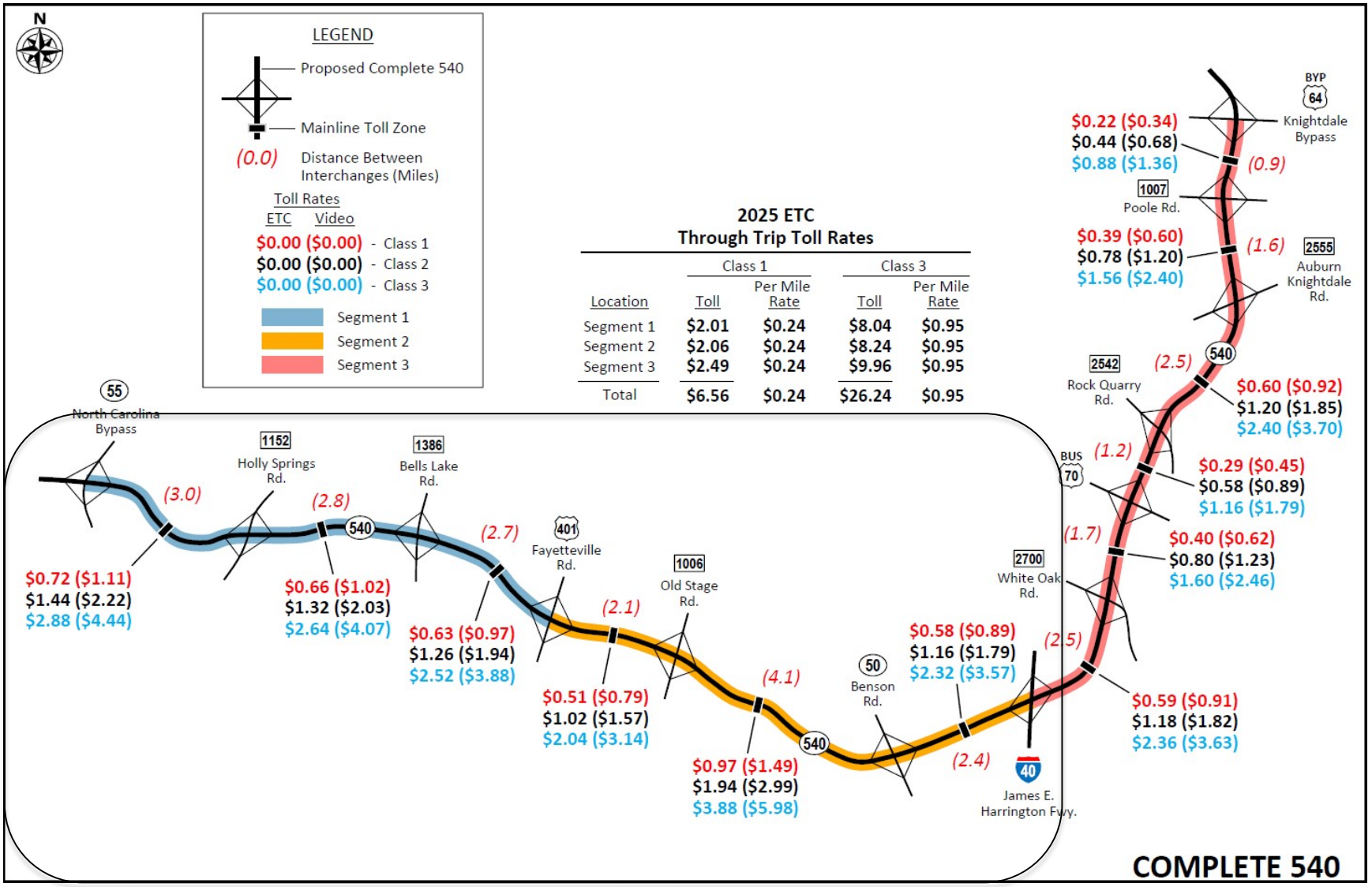
- Coordination and cooperation among the Contractor, NCTA, third-party Civil Designer, and the civil contractor (“Constructor”) is critical in order to meet the Go-Live Dates for Triangle Expressway, Morrisville Parkway Interchange, & Complete 540
- Contractor shall schedule, manage and attend weekly installation meetings
- Contractor shall coordinate all installation activities with NCTA, NCDOT, and the Constructor
- Contractor shall perform all MOT activities associated with completing Contractor Work during the Implementation Phase
- All lane closures shall be coordinated with the Constructor and lane closure schedules shall be submitted to NCTA in advance for Approval

Triangle Expressway Toll Locations

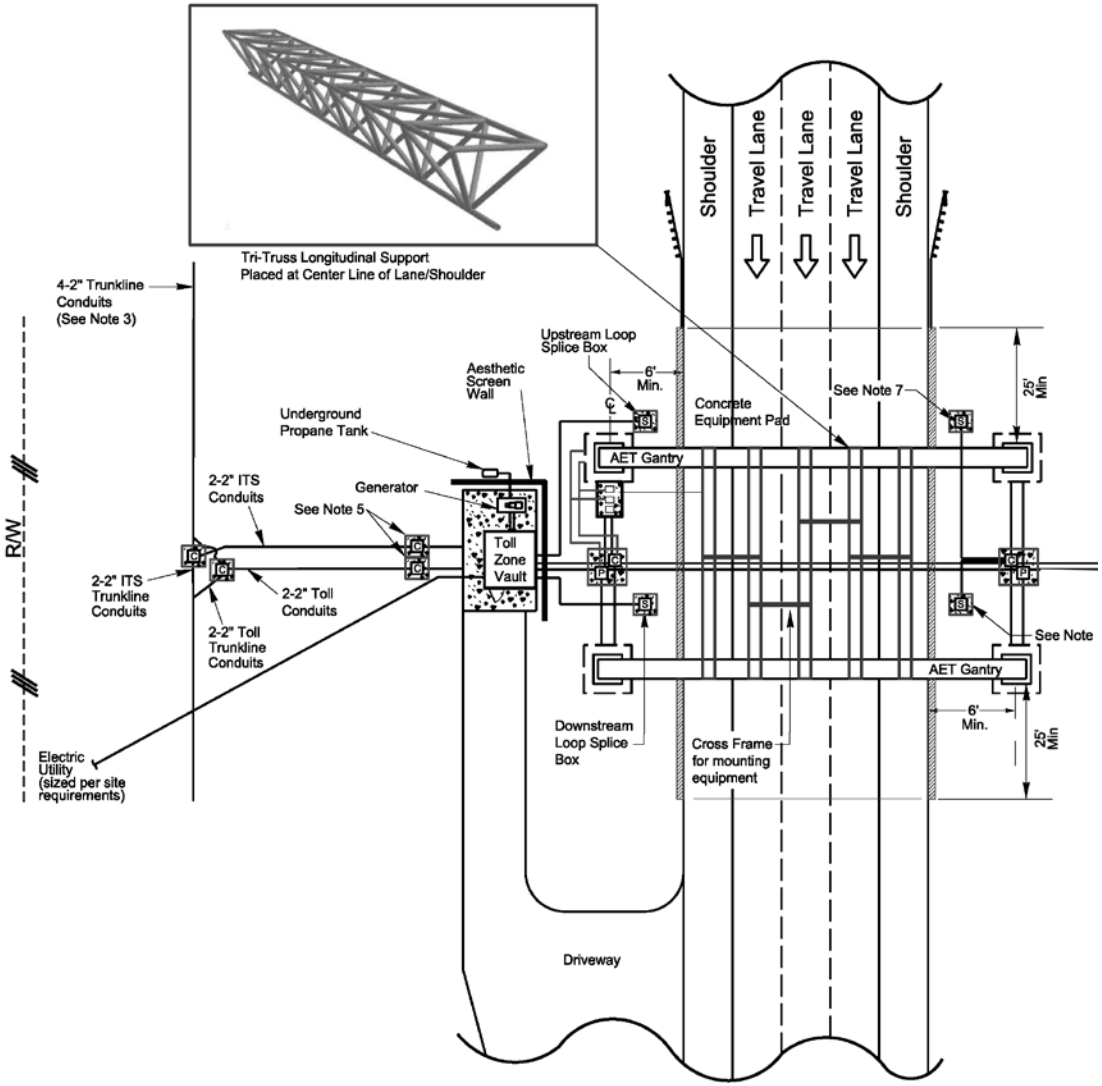
TOLL LOCATIONS LISTED BY PLAZA ID

PLAZA ID	LOCATION/DESCRIPTION
T01	Ramp - NC 147 Northbound On from Hopson Rd/Davis Dr
T02	Ramp - NC 147 Southbound Off to Hopson Rd/Davis Dr
T05	Ramp - NC 540 Northbound to NC 147 Northbound
T06	Ramp - NC 147 Southbound to NC 540 Southbound
T09	Ramp - NC 540 Southbound to NC 147 Northbound
T10	Ramp - NC 147 Southbound to NC 540 Northbound
T13	Mainline - NC 540 Southbound at NC 147
T14	Mainline - NC 540 Northbound at NC 147
T17	Mainline - NC 540 Northbound, North of Green Level West Rd
T18	Mainline - NC 540 Southbound, North of Green Level West Rd
T21	Ramp - NC 540 Northbound On from US 64
T22	Ramp - NC 540 Southbound Off to US 64
T25	Mainline - NC 540 Northbound, North of Old US 1 (S. Salem St)
T26	Mainline - NC 540 Southbound, North of Old US 1 (S. Salem St)
T29	Ramp - NC 540 Northbound Off to Old US 1 (S. Salem St)
T30	Ramp - NC 540 Southbound On from Old US 1 (S. Salem St)
T31	Ramp - NC 540 Northbound On from Veridea Pkwy
T32	Ramp - NC 540 Southbound Off to Veridea Pkwy
T33	Mainline - NC 540 Northbound, North of NC 55
T34	Mainline - NC 540 Southbound, North of NC 55

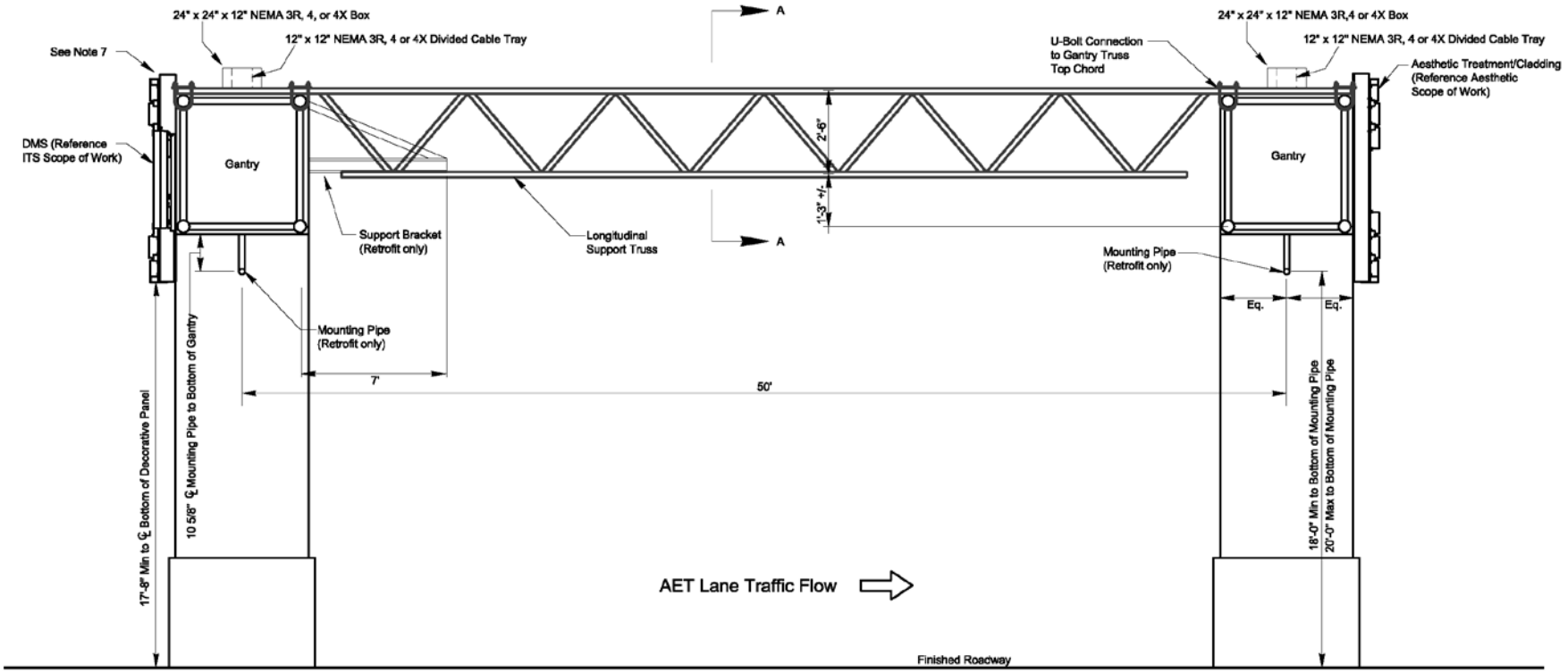
Complete 540 Toll Locations

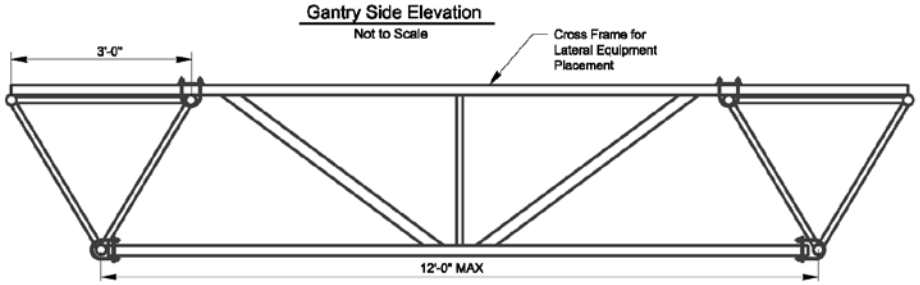


Gantry Plan View



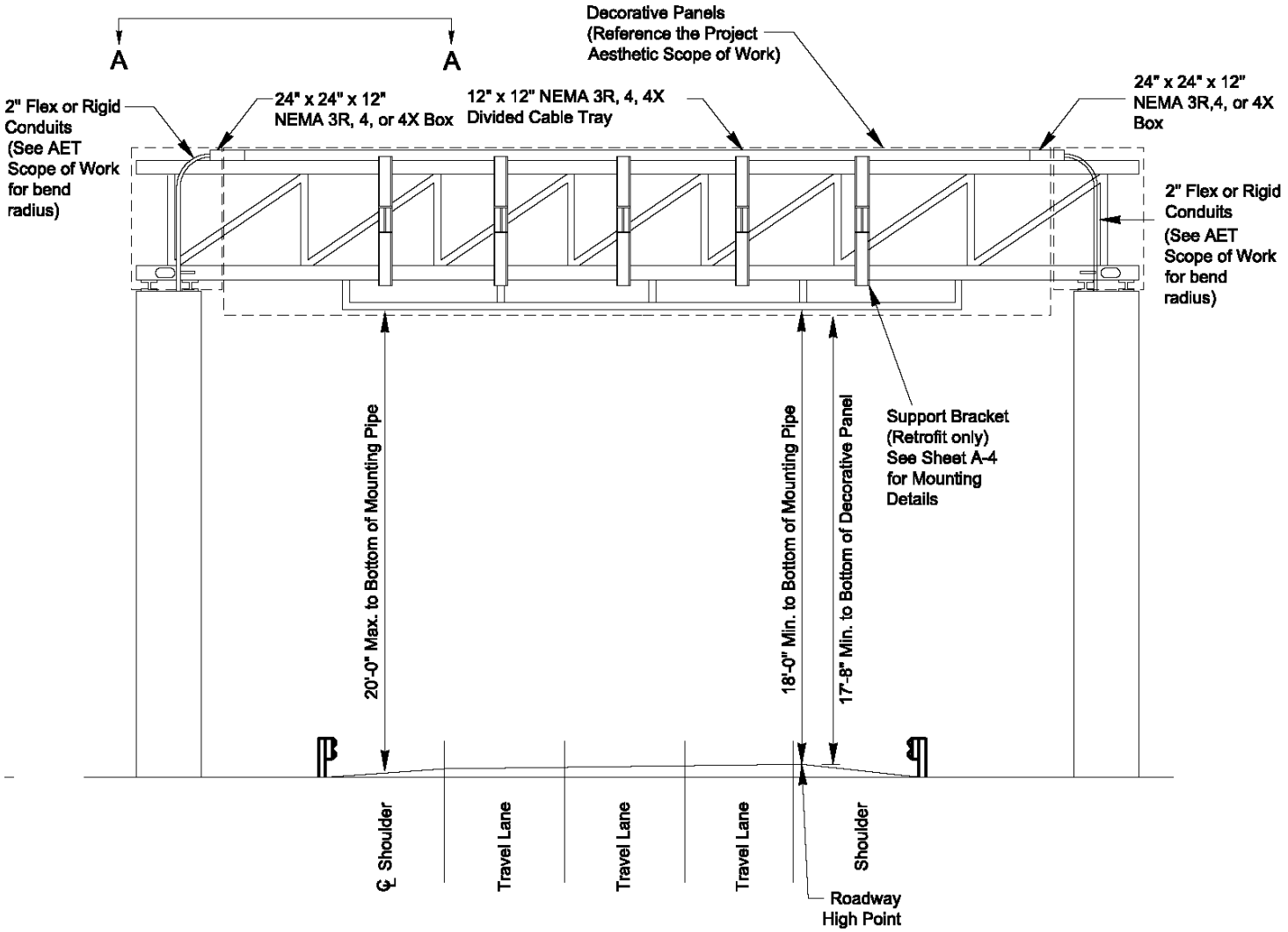
Gantry Side Elevation





Complete 540 & Triangle Expressway Retrofit

Gantry Rear Elevation



Upstream Mainline Gantry Rear Elevation

Not to Scale

C540 Constructor Responsibilities

- Constructor will build toll infrastructure according to their SOW
  - Vaults, screen walls
  - Generator, propane tank, power service
  - Dual gantries, connecting center-lane truss members, cable tray, and cladding
  - Conduit, duct bank, and junction boxes
  - Driveway, signing, lighting
- Constructor gains acceptance of the site from NCTA/CEI, turns over site to Contractor, who has a 120-day integration period
- Sites are currently planned for turnover to NCTA all at once but this is likely to change
- See Responsibility Matrix (Attachment 10) for details on Contractor responsibilities

Work Not in Scope to be Provided by Others

- AVI equipment (to be provided by NCTA for installation and integration by Contractor)
- For C540 and Morrisville Parkway Interchange: Construction of the gantries & pavement at the toll locations
- Toll equipment vaults, including equipment such as back-up generators and propane tank
- ITS elements including CCTV camera poles, MVD poles, ITS WAN, Electronic Wrong Way signs, & DMS
- Monroe Expressway & US-74 toll collection system maintenance (will continue to be provided by the current contractor)
- CSC Back Office System services

Mandatory Triangle Expressway Site Visit Information

John Stansberry
Roadside Toll Collection System Manager

Mandatory Triangle Expressway Site Visit Information

- October 25, 2017 - 8:00 a.m. to 12:00 p.m.
- Location Details:
  - Where:

    NC QUICKPASS® CSC
    200 Sorrell Grove Church Road, Suite A
    Morrisville, NC 27560
  - Directions to CSC: Map provided
  - Sign-in Required, Question Cards Provided
- Sites visited:
  - Typical Mainline Location (T13)
  - Drive the TriEx Corridor
  - Typical Ramp Location (T30)
- No photography allowed inside the vault buildings

Q&A and Closing Remarks

Andy Lelewski, P.E.
Director of Toll Operations