Operations & Customer Service

Andy Lelewski, P.E.
Director of Toll Operations
Transaction Statistics

Triangle Expressway

<table>
<thead>
<tr>
<th></th>
<th>FY17 - Q4</th>
<th>FY18 - Q1</th>
<th>FY18 - Q2</th>
<th>FY18 - Q3</th>
<th>FY18 - Q4</th>
<th>FY19 - Q1</th>
<th>FY19 - Q2</th>
<th>FY19 - Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual Transactions</td>
<td>12,675,376</td>
<td>12,566,202</td>
<td>12,657,190</td>
<td>12,232,513</td>
<td>13,780,931</td>
<td>13,394,771</td>
<td>13,712,458</td>
<td>13,787,834</td>
</tr>
<tr>
<td>2009 Certified Traffic and Revenue¹</td>
<td>10,748,373</td>
<td>11,300,881</td>
<td>10,762,744</td>
<td>11,486,687</td>
<td>11,486,688</td>
<td>12,025,101</td>
<td>11,834,226</td>
<td>12,204,910</td>
</tr>
<tr>
<td>Delta</td>
<td>1,927,003</td>
<td>1,265,321</td>
<td>1,894,446</td>
<td>745,826</td>
<td>2,294,243</td>
<td>1,369,670</td>
<td>1,878,232</td>
<td>1,582,924</td>
</tr>
<tr>
<td>Percent of Actual vs. 2009 Base Case</td>
<td>118%</td>
<td>111%</td>
<td>118%</td>
<td>106%</td>
<td>120%</td>
<td>111%</td>
<td>116%</td>
<td>113%</td>
</tr>
</tbody>
</table>

¹Target monthly transaction data based on annualized numbers contained in the 2009 Certified Traffic and Revenue Report developed by CDM Smith
Transaction Statistics

*Monroe Expressway*

December (Total = 1,511,782)  

January (Total = 1,807,958)  

February (Total = 1,974,000)  

March (Total = 2,497,819)  

- ETC Transactions  
- BBM Transactions
Monthly Transponders Sold

NC Quick Pass Program

Total Transponders Sold: 532,358

FY 2017
Apr-17 May-17 Jun-17 Jul-17 Aug-17 Sep-17 Oct-17 Nov-17 Dec-17

FY 2018

FY 2019
Jan-19 Feb-19 Mar-19

Legend:
- Sticker
- Motorcycle
- First Responder
- Hard Case
- Flex
- Exterior
New NC Quick Pass Accounts

March 2018
New NC Quick Pass Accounts

March 2019
Bill by Mail Invoices Sent

March 2017
Bill by Mail Invoices Sent

*March 2018*
Bill by Mail Invoices Sent

March 2019
"Take the Triangle Expressway with a free N-C Quick Pass and catch tonight’s first pitch at 5:40 p.m. Play ball!"
The I-77 Express Lanes are tolled dedicated travel lanes along I-77 between I-277 (Exit 11) in Charlotte and N.C. 150 (Exit 36), in Mooresville. The northern section of the I-77 Express Lanes from Hambright Road near I-485 to N.C. 150 will be opening spring 2019. The southern section from I-277 to Hambright Road is planned to open in late 2019.

The I-77 Express Lanes run adjacent to the free general-purpose lanes. Drivers can choose to pay a toll for a reliable travel time and can utilize the express lanes for free if there are more than three people in the car.

How to Pay for Tolls

NC Quick Pass is the easiest and most cost-effective way to pay for tolls on the I-77 Express Lanes. Drivers with an NC Quick Pass transponder save up to 35 percent on tolls. Sign up for an NC Quick Pass transponder online or learn more about NC Quick Pass.
Finance & Budget

David Roy
Director of Finance
Revenue Statistics

Triangle Expressway

2009 Certified Revenue Projection
Actual Revenue

<table>
<thead>
<tr>
<th></th>
<th>FY17 - Q4</th>
<th>FY18 - Q1</th>
<th>FY18 - Q2</th>
<th>FY18 - Q3</th>
<th>FY18 - Q4</th>
<th>FY19 - Q1</th>
<th>FY19 - Q2</th>
<th>FY19 - Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual Revenue¹</td>
<td>$11,625,254</td>
<td>$11,938,800</td>
<td>$11,810,005</td>
<td>$12,206,584</td>
<td>$12,982,210</td>
<td>$12,378,736</td>
<td>$12,925,510</td>
<td>$13,064,297</td>
</tr>
<tr>
<td>2009 Certified Traffic and Revenue²</td>
<td>$8,336,160</td>
<td>$8,735,177</td>
<td>$8,319,217</td>
<td>$9,332,303</td>
<td>$9,332,303</td>
<td>$9,711,294</td>
<td>$9,557,146</td>
<td>$10,136,534</td>
</tr>
<tr>
<td>Percent of Actual vs. 2009 Base Case</td>
<td>139%</td>
<td>137%</td>
<td>142%</td>
<td>131%</td>
<td>139%</td>
<td>127%</td>
<td>135%</td>
<td>129%</td>
</tr>
</tbody>
</table>

¹Actual revenue is reported on a cash basis
²Target monthly revenue data based on annualized numbers contained in the 2009 Certified Traffic and Revenue Report developed by CDM Smith
Revenue Statistics

Triangle Expressway

FY18 Actual (Total = $48.9M)

- Q1 = $11.9 M
- Q2 = $11.8 M
- Q3 = $12.2 M
- Q4 = $13.0 M

FY19 Projections (Total = $39.7M)

- Q1 = $9.7 M
- Q2 = $9.6 M
- Q3 = $10.1 M
- Q4 = $10.3 M

FY19 Actual (Total = $38.4M)

- Q1 = $12.4 M
- Q2 = $12.9 M
- Q3 = $13.1 M
- Q4 = $13.0 M

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

YTD revenues 30.5% higher than financing base case projections
YTD revenues up 6.7% year-over-year
Operating Expenditures

Triangle Expressway

- Actual operating expenditures 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
Roadway Operations

Dennis Jernigan, P.E.
Director of Highway Operations
Mainline Traffic Statistics

Triangle Expressway

FY18 Q3 AWT = 20,610
FY19 Q3 AWT = 26,380
28.0% Increase

FY18 Q3 AWT = 50,470
FY19 Q3 AWT = 52,840
4.7% Increase

FY18 Q3 AWT = 37,670
FY19 Q3 AWT = 41,540
10.3% Increase

FY18 Q3 AWT = 19,200
FY19 Q3 AWT = 20,310
5.8% Increase

Q3: January – March  AWT: Average Weekday Traffic
# Roadway Maintenance Statistics

**Triangle Expressway**

<table>
<thead>
<tr>
<th></th>
<th>FY 2018 Q4</th>
<th>FY 2019 Q1</th>
<th>FY 2019 Q2</th>
<th>FY 2019 Q3</th>
<th>Rolling Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Road Surface</td>
<td>99.2</td>
<td>99.2</td>
<td>99.2</td>
<td>96.0</td>
<td>98.3</td>
</tr>
<tr>
<td>Unpaved Shoulders and Ditches</td>
<td>96.8</td>
<td>97.1</td>
<td>99.0</td>
<td>97.4</td>
<td>98.1</td>
</tr>
<tr>
<td>Drainage Structures</td>
<td>97.3</td>
<td>96.1</td>
<td>92.8</td>
<td>91.3</td>
<td>94.4</td>
</tr>
<tr>
<td>Roadside</td>
<td>91.3</td>
<td>94.9</td>
<td>97.1</td>
<td>92.8</td>
<td>94.2</td>
</tr>
<tr>
<td>Traffic Control Devices</td>
<td>91.1*</td>
<td>94.6*</td>
<td>95.1</td>
<td>92.1</td>
<td>93.4</td>
</tr>
<tr>
<td>Overall</td>
<td><strong>94.8</strong>*</td>
<td><strong>96.4</strong>*</td>
<td><strong>96.6</strong></td>
<td><strong>93.7</strong></td>
<td><strong>95.5</strong></td>
</tr>
</tbody>
</table>

*Excludes Pavement Striping/Marking, Characters and Symbols, and Pavement Markers characteristics.
Mainline Traffic Statistics

Monroe Expressway

**FY19 Q3 AWT**

- **Stallings**
  - January AWT = 10,950
  - March AWT = 14,770
  - **FY19 Q3 AWT = 12,930**

- **Lake Park**
  - January AWT = 10,950
  - March AWT = 14,770
  - **FY19 Q3 AWT = 11,830**

- Unionville
  - January AWT = 8,560
  - March AWT = 11,720
  - **FY19 Q3 AWT = 10,250**

- **Marshville**
  - January AWT = 5,530
  - March AWT = 7,730
  - **FY19 Q3 AWT = 6,660**
Triangle Expressway
ArcGIS and Collector

Alan Shapiro, P.E.
Roadway Manager
Triangle Expressway Maintenance

Introduction

• 18.8 miles of Roadway divided into 767 Linear Segments
• 1109 Signs
• 604 Pavement Symbols
• 1084 Drainage Inlets
• 400 Highway Lights
• 282 Decorative Support Columns
• 266 Plant Beds

Objectives and Vision

• Real-Time Data
• Total Asset Inventory
• Cost Tracking
• Identify and Report Problems Quickly and Precisely
## Historical Maintenance Tracking Methods

### Monthly Ride-Through Notes

<table>
<thead>
<tr>
<th>NC 540 South</th>
<th>Issue</th>
<th>Date</th>
<th>Status</th>
<th>Priority</th>
</tr>
</thead>
<tbody>
<tr>
<td>69.0 Mainline</td>
<td>• Exit 69 sign leaning</td>
<td>8/17/2017</td>
<td>Sign has been replaced</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>• MM 69.0 sign leaning</td>
<td>12/14/2017</td>
<td>Sign has been repaired</td>
<td>Medium</td>
</tr>
<tr>
<td>NC-54 Y-line</td>
<td>• NC-54 sign is leaning and damaged</td>
<td>8/3/2018</td>
<td>Spraying operation was completed in October</td>
<td>Medium</td>
</tr>
<tr>
<td>NC-54 On-Loop</td>
<td>• Joints to be sprayed for weeds</td>
<td>8/3/2018</td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td>68.8 Mainline</td>
<td>• Route sign leaning</td>
<td>9/22/2017</td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td>68.6 Mainline</td>
<td>• Loose marker on lane 3</td>
<td>6/5/2018</td>
<td>No longer loose on 12/5/18</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>• Cable rail posts are damaged through MM 6.6</td>
<td>6/5/2018</td>
<td>Posts have been repaired</td>
<td>High</td>
</tr>
<tr>
<td>68.4 Mainline</td>
<td>• MM 68.4 sign is leaning</td>
<td>8/3/2018</td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td>NC-147 Off-ramp</td>
<td>• Heavy vegetation around guardrail</td>
<td>8/3/2018</td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td>68.2 Mainline</td>
<td>• Exit 67 sign damaged</td>
<td>3/16/2018</td>
<td></td>
<td>High</td>
</tr>
<tr>
<td>68.0 Mainline</td>
<td>• Damaged guardrail (leaning post)</td>
<td>9/22/2017</td>
<td>Post has been repaired</td>
<td>High</td>
</tr>
<tr>
<td>68.0 Mainline</td>
<td>• Leaning Authorized Vehicle sign</td>
<td>9/22/2017</td>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>• Loose tension cable at guardrail</td>
<td>12/14/2017</td>
<td>Tension cable has been repaired</td>
<td>High</td>
</tr>
<tr>
<td>67.8 Mainline</td>
<td>• Rock on MVD pole (42-0050A)</td>
<td>10/21/2018</td>
<td>Rock has been removed</td>
<td>Low</td>
</tr>
<tr>
<td>67.6 Mainline</td>
<td>• Light hit by mower</td>
<td>10/21/2016</td>
<td>Light post has been repaired</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>• Cantilever sign column cracked</td>
<td>10/21/2016</td>
<td>Crack has been sealed</td>
<td>Medium</td>
</tr>
<tr>
<td>67.4 Mainline</td>
<td>• MM 67.4 sign leaning</td>
<td>8/17/2017</td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>• Vine growing on column</td>
<td>12/14/2017</td>
<td>Vine has been removed</td>
<td>Low</td>
</tr>
<tr>
<td>NC-147 On-ramp</td>
<td>• Merge sign is twisted</td>
<td>12/5/2018</td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td>67.2 Mainline</td>
<td>• Median guardrail missing delineators</td>
<td>8/17/2017</td>
<td>Delineators were replaced</td>
<td>Medium</td>
</tr>
<tr>
<td>67.0 Mainline</td>
<td>• Sweeping on gore</td>
<td>6/5/2018</td>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>• Rotated guardrail post</td>
<td>5/18/2018</td>
<td>Post has been repaired</td>
<td>Medium</td>
</tr>
<tr>
<td>66.8 Mainline</td>
<td>• MM 67.0 sign scratched</td>
<td>8/17/2017</td>
<td></td>
<td>Medium</td>
</tr>
</tbody>
</table>
Historical Maintenance Tracking Methods
Quarterly Maintenance Rating Program Report

Appendix A: Triangle Expressway 2018 Fourth Quarter Asset Assessment Locations

<table>
<thead>
<tr>
<th>Curb and Gutter (CG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Turf Condition (TF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#</td>
</tr>
<tr>
<td>----</td>
</tr>
<tr>
<td>5</td>
</tr>
</tbody>
</table>
ArcGIS and Collector for Maintenance

- Geographic Information System (GIS) is a framework for collecting, managing and analyzing geographic data in real-time
- ArcGIS is a GIS software platform developed by ESRI and utilized by NCDOT
- Collector is a mobile GIS applications that integrates with ArcGIS to collect and manage web map data
ArcGIS and Collector for Maintenance
ArcGIS and Collector for Maintenance

Identifying Repairs
ArcGIS and Collector for Maintenance
Identifying Repairs
ArcGIS and Collector for Maintenance
Tracking Repair Information
ArcGIS and Collector for Maintenance
Attaching Pictures to Asset
ArcGIS and Collector for Maintenance
Data Collection and Reporting

- Information Includes:
  - Asset ID
  - Asset Type
  - Last Assessment Date
  - Status
    - Good Condition
    - Low Priority Repair
    - High Priority Repair
  - Comments
  - Date of Repair
  - Value of Repair
  - Task Number of Repair
  - Attached Documents
    - Photos
    - Invoices
Compliance Policies & Procedures

David Roy
NCTA Director of Finance
NCTA Compliance

Annual, semi-annual and quarterly filings
- Bond Holders (MSRB/EMMA)
- Assured Guaranty
- Build America Bureau (TIFIA)
- Wells Fargo (Trustee)

Event Notices
Digital Assurance Certification (DAC)

NCTA retained DAC in September 2018

Provide post-issuance compliance services

Industry leading compliance technology
- Filing templates
- Reminders of filing deadlines
- Rating change alerts
- Model policies and procedures
Policies & Procedures

Establish guidelines for presenting related financial reports and events to interested third parties

Guidelines for:
• Annual Reporting Requirements
• Event Notice Requirements
• Voluntary Disclosure Requirements
• Third Party/Quarterly Disclosure Requirements
• Website Disclosure
• Training
Triangle Strategic Tolling Study Results

Kenneth Withrow, AICP
Senior Transportation Planner, NCAMPO
Study Background

- The Triangle Region is growing rapidly and to stay competitive with other regions, a study was conducted to:

  - Evaluate the regional transportation network
  - Determine if express toll lanes may be beneficial to the Triangle Region
  - Use study findings in project development process for MTP updates
Study Overview

- The study began in June 2017
- Stakeholder engagement has included:

  - NCTA staff were members of the Core Technical Team
  - Secretary Trogdon and Beau Memory were interviewed in January 2018
This study was a collaborative effort of:

- Capital Area MPO
- Durham-Chapel Hill-Carrboro MPO
- NCDOT
Toll Road vs. Express Toll Lanes

- Everyone pays a toll to use the facility
- **Route-based Choice:** option to use the Toll Road or use a different non-toll facility
- **Lane-based Choice:** option to use the Express Toll Lanes or use the toll-free general purpose lanes

- Only Express Toll Lane users pay a toll
Benefits of Tolling & Express Lanes

Toll Roads and Express Toll Lanes provide higher travel speeds, lower and consistent travel times, and a higher quality of trip than toll-free general purpose lanes ...

... as evidenced by 43 variably priced facilities in operation and 13 under construction in 11 states.
Corridor Screening

- Estimated 2045 peak-period congestion levels and speeds using Triangle Regional Model
- Examined current PM peak hour congestion using Google
- Used Triangle Regional Model to generate demand volumes for projected express toll lane network (assuming 2045 Metropolitan Transportation Plan build-out)
- Applied ECONorthwest’s Toll Optimization Model© using regional model outputs to test future performance of express toll lane facilities
Initial Corridors
Corridors for Detailed Evaluation
Detailed Corridor Evaluation

- Evaluated seven corridors & divided I-40 into 3 segments
- Analyzed express lane performance using seven factors:
  - Projected revenue collection
  - Travel time savings
  - Trip dependability
  - Transit supportive
  - Impacts on low income residents
  - Access to jobs
  - Construction costs
Projected Revenue Collection

- Forecasted by ECONorthwest’s Toll Optimization Model©
  - Has been in use for over 20 years
  - Reflect prices at various times & under different circumstances
- Supplied with TRM demand forecasts to test future performance of toll facilities
- Revenue assumptions are:
  - Future year of 2045
  - All express lane users pay
  - Buses & vanpools use the express lane for free
2045 Projected Annual Revenue
Projected Travel Time Savings

- Difference between travel times in the general purpose & express lanes along the same corridor
- Estimated by Toll Optimization Model© using Triangle Regional Model inputs
- Projected travel time savings of half-minute per mile along longer corridors for express lanes
Trip Dependability

- Used FHWA’s Buffer Time measure
- Buffer time is extra time allowed to ensure on-time arrival during times of high traffic.
  - Trip to work when being late could mean job loss
  - Trip to airport when being late means a missed flight
  - Trip to daycare when being late incurs a penalty
- Express lanes have lower buffer times than general purpose lanes (more travel time certainty)
Cost Estimate Assumptions

- **“Constrained” Typical Section (lower cost)**
  - Fit within existing typical section
  - May include Design Exceptions for lane and shoulder width and sight distance
  - Minimal buffer area
  - Shoulder use (if applicable)

- **“Full Feature” Typical Section (higher cost)**
  - Preferred dimensions with minimal Design Exceptions
  - Increases footprint of roadway
  - Higher likelihood of bridge and interchange reconstruction

- Estimates exclude Direct Connects
- Used Triangle Regional Model 2045 transit routes
- Identified transit routes using a significant portion of the corridor
- Identified peak and off-peak hours of operation and frequency
- Calculated number of buses in peak, off-peak, and daily
Estimating Low Income Populations and Access to Jobs

- Identified interchange locations for each corridor
- Buffered interchange locations with 2 mile buffer
- Used model employment data to capture “jobs” within the buffered area
- Used US Census data to identify households below the poverty level within the buffered area
Fact Sheets

Developed for each corridor summarizing performance versus the evaluation criteria.
Updating Partners & Stakeholder Groups

- Closing the Loop on Study Outcomes (May & June)
- Presentations to:
  - MPO Boards - Joint CAMPO & DCHC MPO Meeting
  - NCDOT NCTA Staff Leadership
  - NCTA Board of Directors
  - NCDOT Board of Transportation (Local Members)
  - NCDOT Local Divisions Staff & Others
  - FHWA
  - WakeUP Wake County
  - Regional Transportation Alliance
More Information?

- http://triangletollingstudy.com
- Kenneth Withrow, AICP
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  (919) 996-4394
- Andy Henry, AICP
  Andrew.Henry@durhamnc.gov
  (919) 560-4366, ext. 36419
- Lynn Purnell, PE, ENV SP
  Lynn.Purnell@wsp.com
  (704) 342-5405
Thank You!