

I-40/I-81 Study Update

Jackson



April 1, 2008

Agenda

- I-40/I-81 – Tennessee’s Major Artery
- Study Overview
- Process for Evaluating Potential Solutions
- Preliminary Study Results
- Remaining Steps

Corridor Importance

- A Corridor in the Strategic Investment Plan
- 55% of State's population live along the corridor (28 counties)
- Truck volumes along corridor are estimated to double by 2030; trucks carry 74% of freight in State
- Rail freight volumes projected to increase over 50% by 2030

Corridor Importance

- Major commuting route in urban areas
- Serves as a jurisdiction's "Main Street" and provides local access if parallel roads are congested or don't exist
- Demand along corridor is very different from original system function of facilitating interstate travel

Study Purpose

- Identify & address I-40/I-81 deficiencies
- Identify low-cost operational improvements along corridor
- Consider effectiveness of truck/rail diversion
- Consider multi-modal solutions

Identify, Evaluate & Prioritize Solutions That Address:

- Congestion & capacity
- Operations & maintenance
- Safety & security
- Freight movement & diversion
- Economic access
- Commuter patterns
- Inter-modal facilities (freight and/or passenger)

Study Corridor

- Bristol to Memphis, 550 Miles
- Includes 9 of State's 12 RPOs
- Crosses 8 of State's 11 MPOs/TPOs



Study Outcomes

- Projects & strategies for consideration by TDOT, MPOs/TPOs & RPOs
- Short, mid & long-range solutions and cost estimates

Previous Jackson Public Meeting

- Held on September 18, 2007
- Provided background on I-40/I-81 study
- Asked if there were deficiencies in the corridor beyond what we had identified
- Requested input into range of potential solutions to be considered

Purpose of Current Meeting

- Review study background
- Explain work accomplished since last meeting
- Present results of evaluation of potential solutions/projects for I-40/I-81 Corridor in Jackson and east to Tennessee River

Other Regional Stakeholder Meetings

- Memphis March 31
- Nashville April 3
- Knoxville April 7
- Tri-Cities April 8
- Cookeville April 10

Initial Screening Process

- Five “packages” of multimodal solutions for corridor analysis for 2030
 - Existing + Committed Improvements
 - Roadway Capacity
 - Corridor Capacity
 - Operational Solutions
 - Rail-Focused Solutions
- Developed performance measures from statewide and urban area models
- Off-model analysis for selected measures

Purpose of Evaluation Process

- Identify solutions/projects with highest benefit/cost (B/C) ratios, recognizing that this measure represents only one factor in project assessment
- Identify solutions/projects that will provide benefits in short- and mid-term periods

Evaluation Process

- B/C ratios estimated for projects from those “packages” found to be significant
- Benefits for each project **monetized** to allow consistent measurement across evaluation criteria
- Roadway cost estimates consistent with TDOT methodology
- Projects evaluated for multiple planning horizons
- Benefits estimated **only** for I-40 & I-81

Evaluation Components

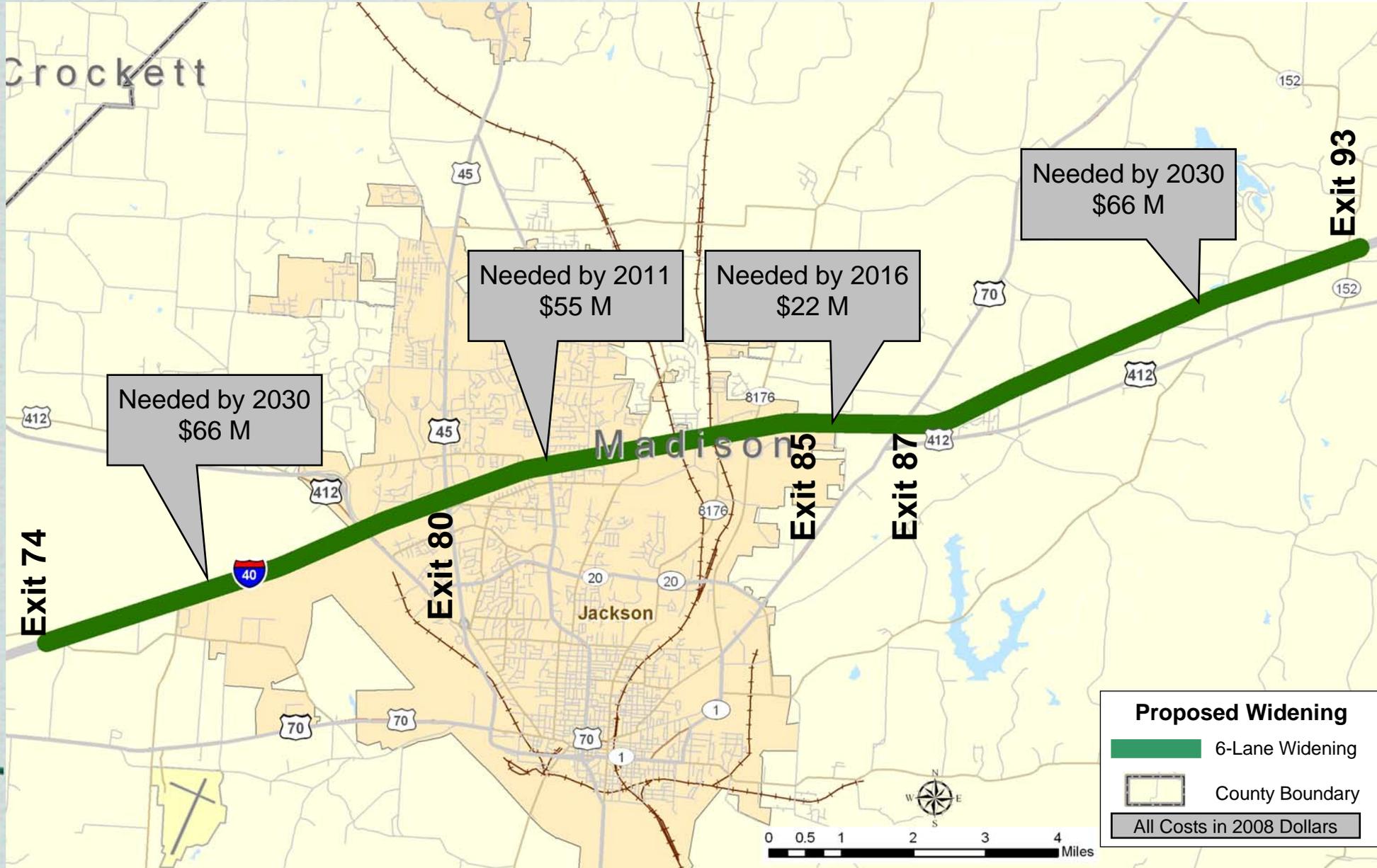
- Auto hours of recurrent delay
- Truck hours of recurrent delay
- Auto hours of non-recurrent (incident) delay
- Truck hours of non-recurrent (incident) delay
- Number of accidents
- Number of fatalities

Identified I-40 Widening Project

- **Widen to 6 Lanes between Exit 74 (Lower Brownsville) and Exit 93 (SR-152)**
 - 2030 B/C ratio of 0.8 for widening 19-mile segment at estimated total cost of \$208 million (2008 Dollars)
 - Modeling analysis shows need for widening between Exit 80 (US-45BP) and Exit 85 (Christmasville Rd) by 2011 and from Exit 85 to Exit 87 by 2016
 - Widening of remaining 12 miles needed by 2030

Proposed 6-Lane Widening of I-40

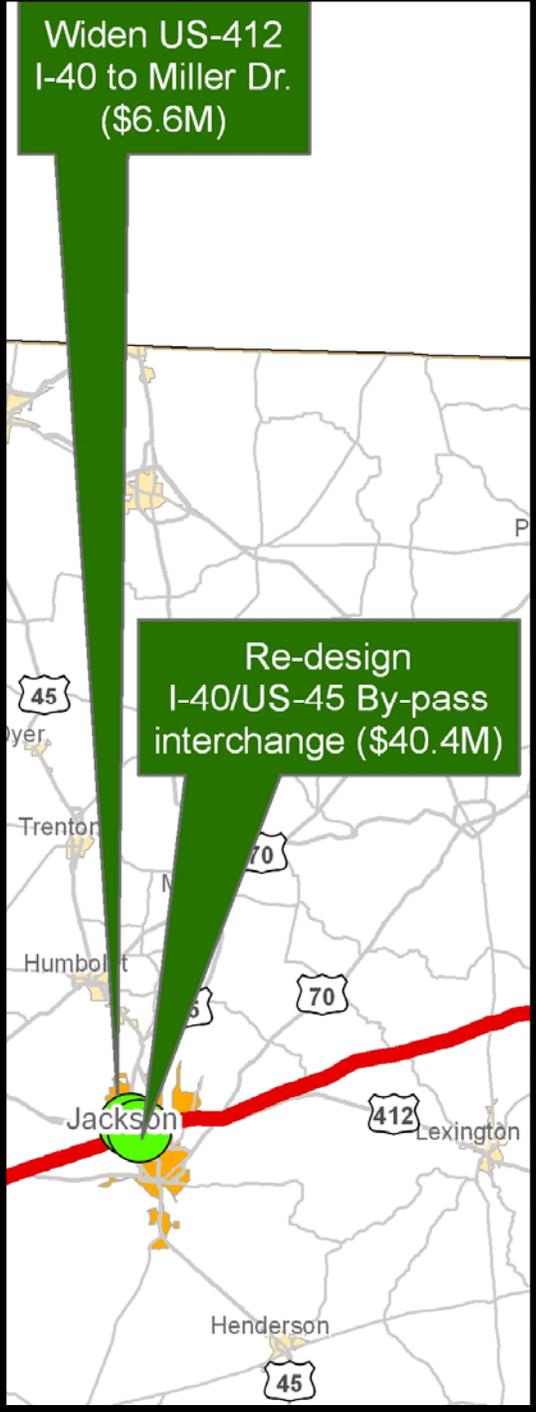
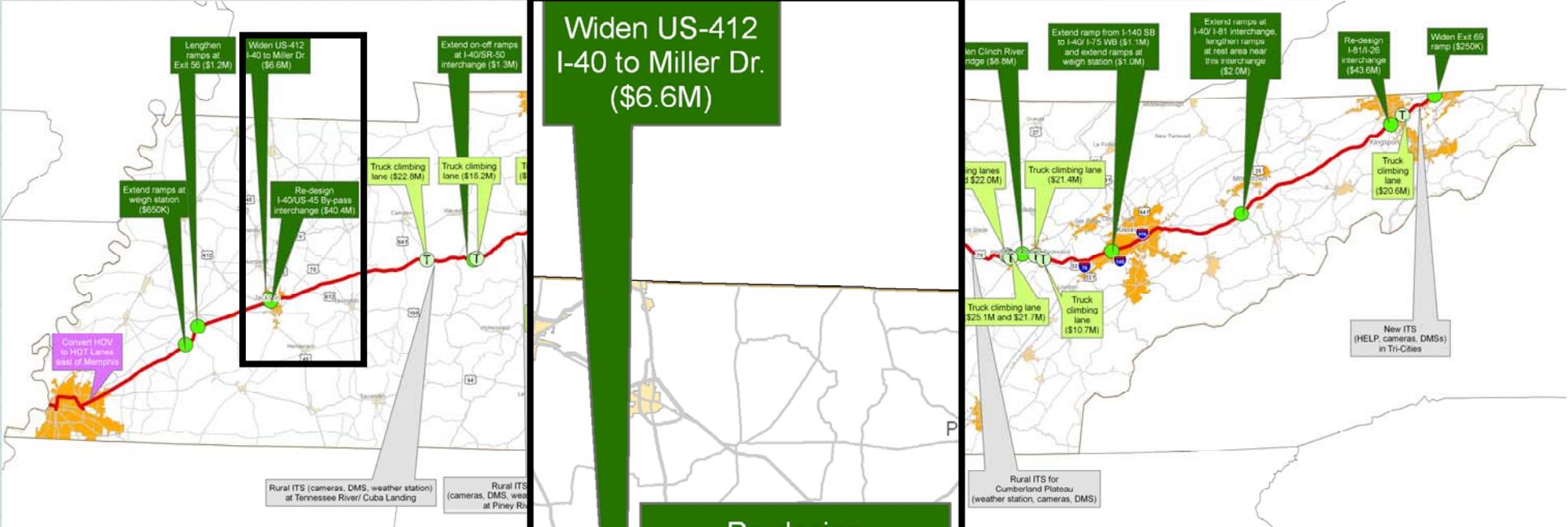
I-40 / I-81 CORRIDOR FEASIBILITY STUDY



I-40/I-81 Operational Solutions

- Interchange, rest area & weigh station ramp improvements
- Intelligent Transportation System (ITS) improvements
- Truck climbing lanes
- High occupancy vehicle (HOV) or high occupancy toll (HOT) lane expansion or conversion

I-40/I-81 Operational Solutions



US-412 Widening

- Widening of Hollywood Drive to 5 lanes between I-40 and Miller Drive
- Estimated cost of \$6.6 million (2006 Dollars)
- B/C ratios were not calculated for smaller projects
- Safety and other factors will be used to prioritize these projects

Interchange Improvements at Exits 80 and 82

- Re-design of US-45 Bypass and US-45 interchanges
- Add new I-40 auxiliary lanes between interchanges
- Represents preliminary concept for addressing deficiencies at this location
- Estimated cost of \$40 million (2008 Dollars)
- Need for improvements suggested during stakeholder interviews

ITS Implementation along I-40

- Rural ITS at Tennessee River/Cuba Landing
- From Exit 133 (Birdsong Rd) to Exit 143 (SR-13S), about 10 miles
- Equipment cost of \$1 million with annual operating/maintenance cost of \$70,000 (2008 Dollars)
- System includes:
 - Surveillance cameras
 - Dynamic message signs at each end of section

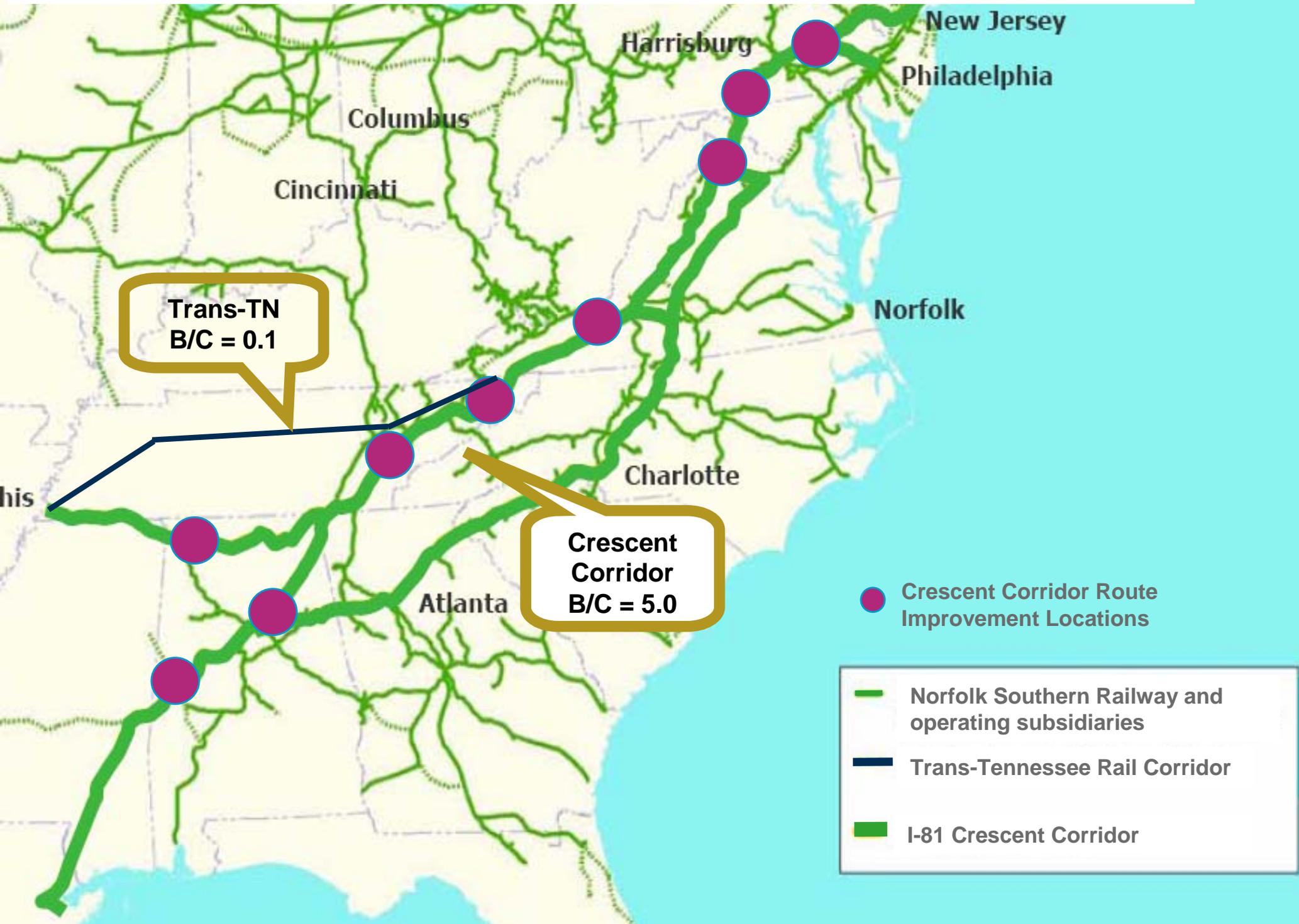
I-40 Truck Climbing Lane

- Located just west of Exit 133 (SR-191)
- About a mile long, in eastbound direction
- Estimated cost of \$23 million (2008 Dollars)
- Need for climbing lane suggested during stakeholder interviews

I-40 Rail-Focused Improvements

- **Norfolk Southern Crescent Corridor**
 - 2030 B/C ratio of 5.0 warranting further analysis of planned improvements in and out of the state
- **Trans-Tennessee Rail Corridor**
 - 2030 B/C ratio of 0.1, but **only** includes benefits for I-40/I-81 Corridor & economic benefits identified in *An Evaluation of Tennessee Rail Plan's Treatment of a Trans-Tennessee Rail Routing*

I-40/I-81 Rail Improvement Alternatives



Project Programming

- Near-term, medium-term and long-term projects with highest B/C ratios identified for each region
- Projects divided into constructible segments
- Segments are programmed based on timing of impacts and availability of funds

Remaining Steps

Late April

Review public comments with
TDOT

Present draft capital program to
Commissioner

May

Complete capital program &
Final Report

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