

I-40/I-81 Study Update

Nashville Region



September 4, 2007

Agenda

- **I-40/I-81 – The State’s Major Artery**
- Study Overview
- Corridor Deficiencies Assessment
- Initial Solutions
- Next Steps
- Future Stakeholder Involvement Opportunities

I-40/I-81 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

I-40/I-81 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

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Study Purpose

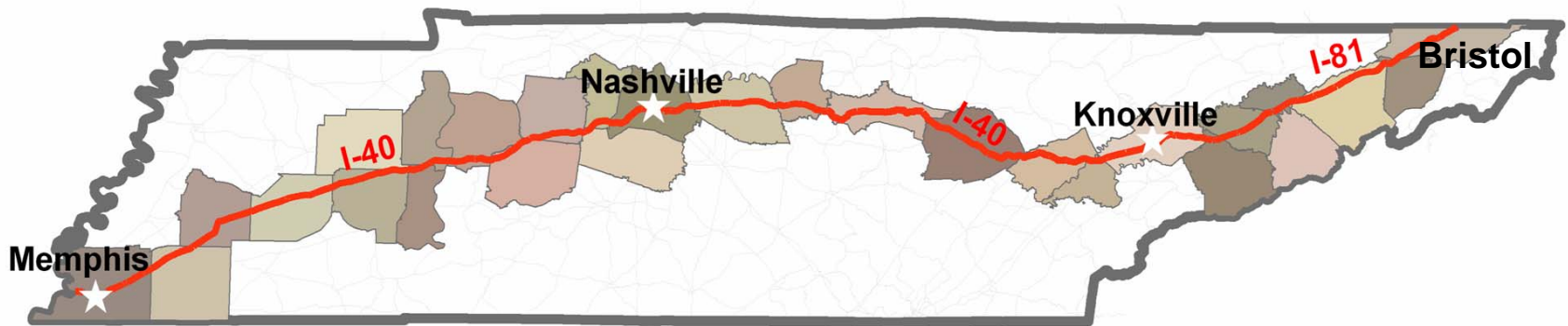
- Identify & address I-40/I-81 deficiencies
- Consider effectiveness of truck/rail diversion
- Consider multi-modal solutions:
 - HOV/HOT/Truck only lanes
 - Increased use of rail
 - Public transit

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

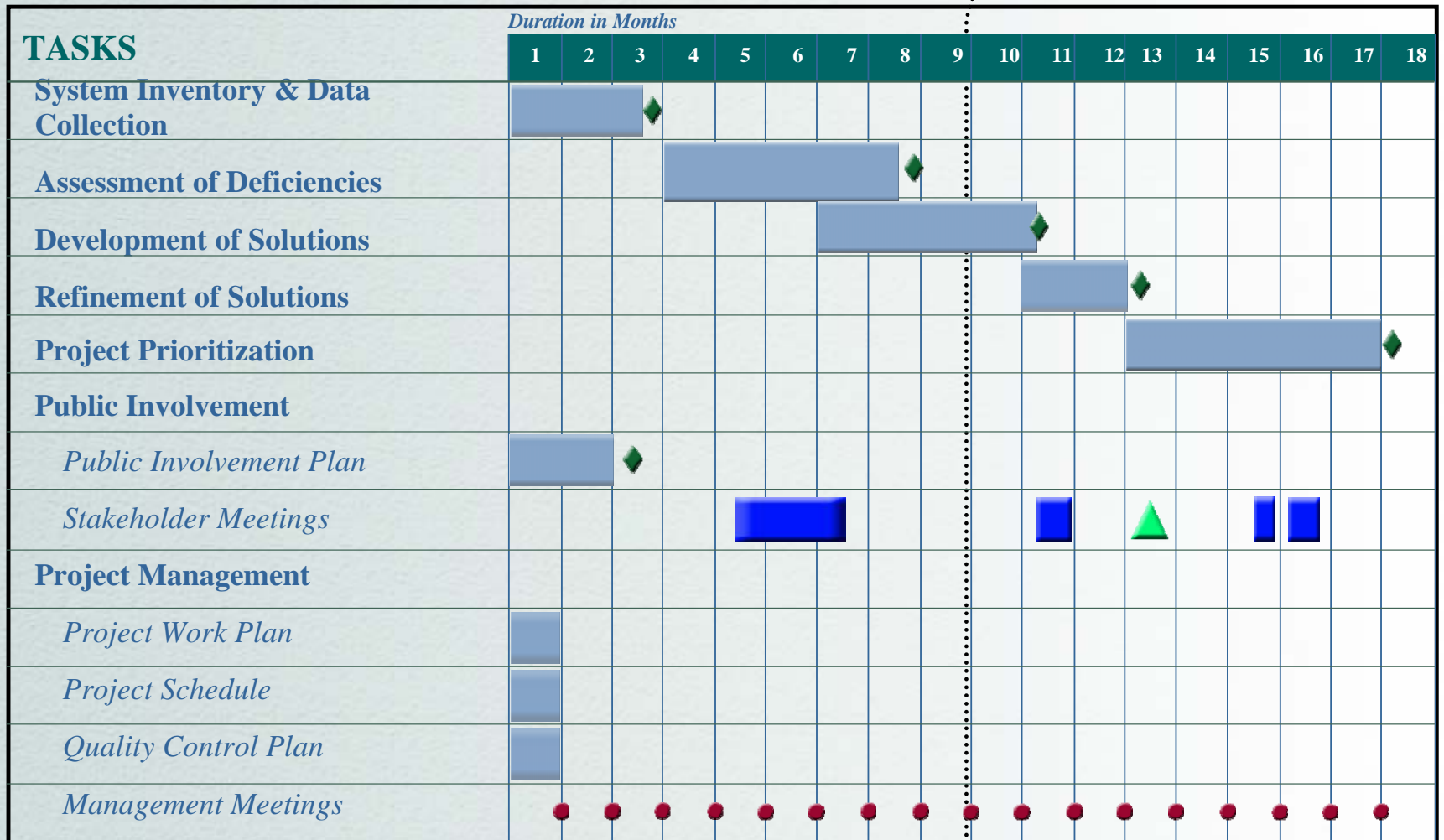


Study Outcome

- Projects & strategies for consideration by TDOT, MPOs/TPOs & RPOs
- List of short, mid & long-range prioritized projects and cost estimates

Study Schedule

.....September 1



- ◆ Technical Memorandum
- Meetings with TDOT Staff
- Meetings with the Public, Technical Advisory Committee (TAC) & Policy Advisory Committee (PAC)
- ▲ Resource Agency Collaboration Session

Other Regional Stakeholder Meetings

- Tri-Cities September 13
- Memphis September 17
- Jackson September 18
- Cookeville September 24
- Knoxville September 25

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Assessment of Deficiencies

- Capacity deficiencies from Statewide Model and urban travel demand models
- Existing capacity bottlenecks from field observations by stakeholder interviewees
- Operations deficiencies from field observations from TDOT and Department of Safety staff
- Critical accident locations from TDOT's crash database

Assessment of Deficiencies

- Safety deficiencies from field observations by stakeholder interviewees
- Steepness & length of grade deficiencies using AASHTO standards
- Impacts of future truck volumes from Statewide and urban travel models

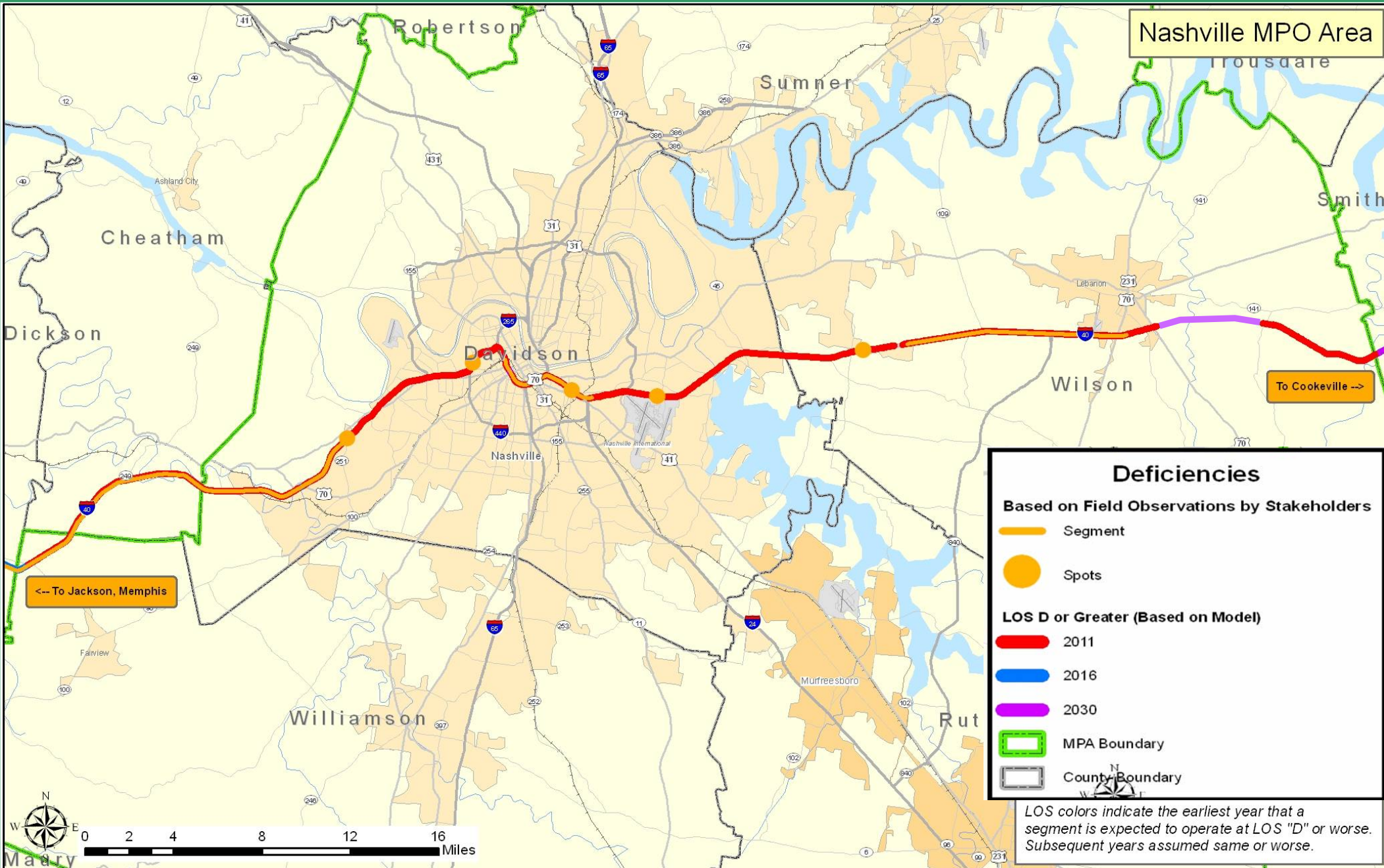
Stakeholder Interviews

- Completed 36 interviews
- Representatives of all MPOs/TPOs & RPOs
- TDOT Regional Directors, HELP Program, Highway Patrol & Commercial Vehicle Compliance
- TN Economic & Community Development
- Shortline Association, NS & CSX
- AR, VA, NC & MS DOTs

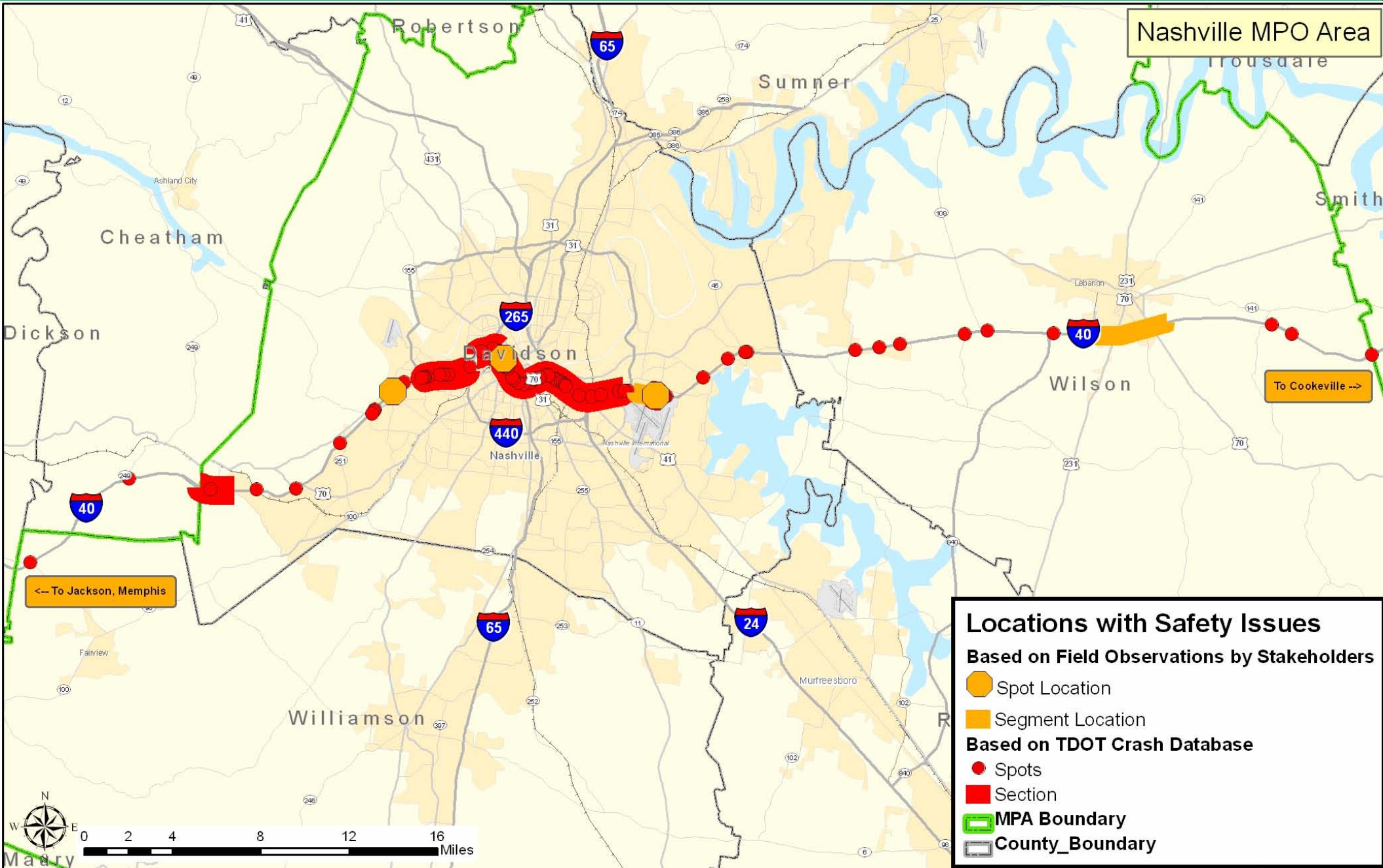
Nashville Region

- Corridor is congested from Dickson to east of Lebanon by 2011 according to model
- Major bottlenecks identified by stakeholder interviewees
- High number of critical accident locations from State crash database
- HOV lanes have high number of occupancy violations

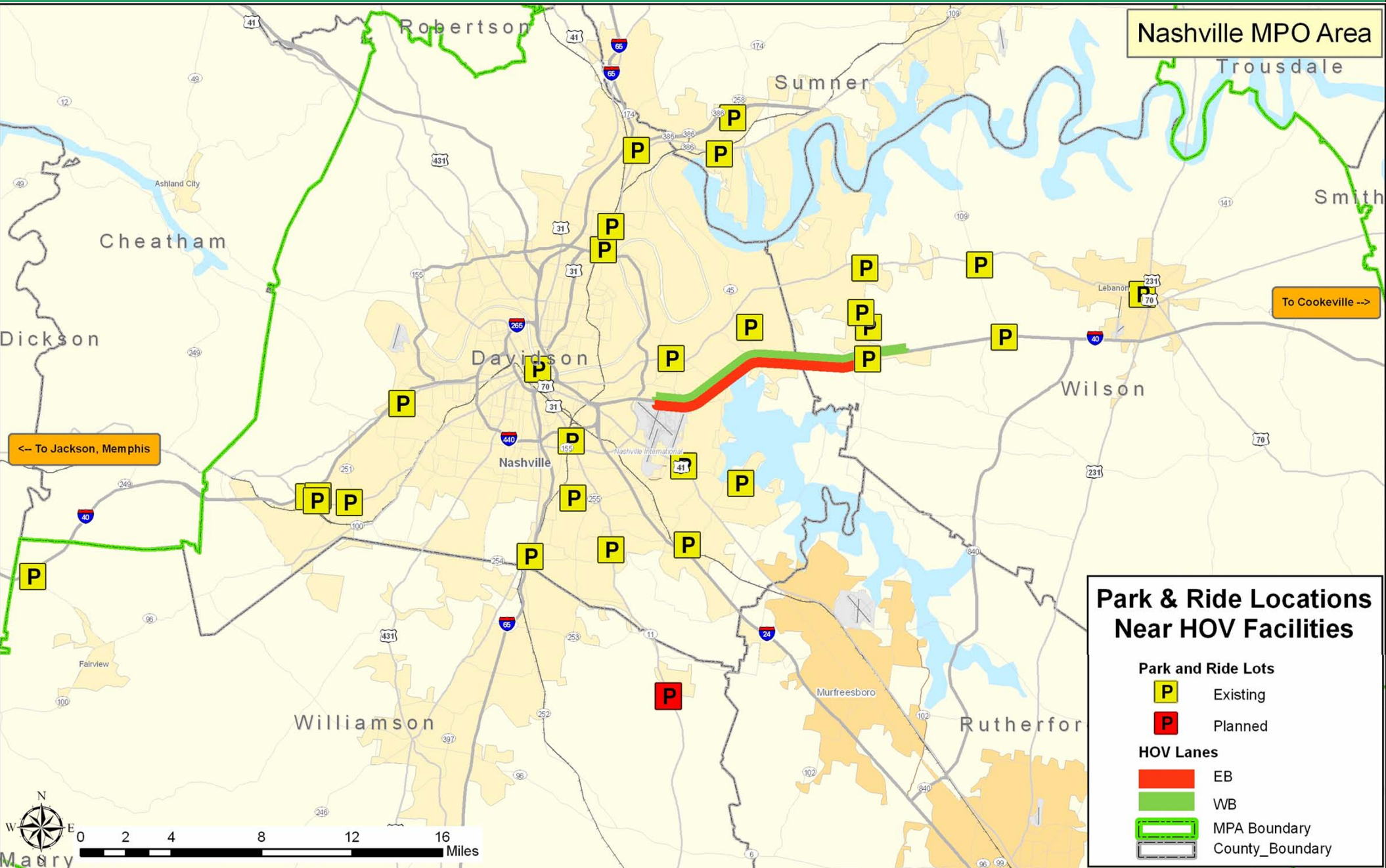
Nashville Region-Capacity Deficiencies



Nashville Region-Safety Deficiencies



Nashville Region-Mobility



Nashville MPO Area

Park & Ride Locations Near HOV Facilities

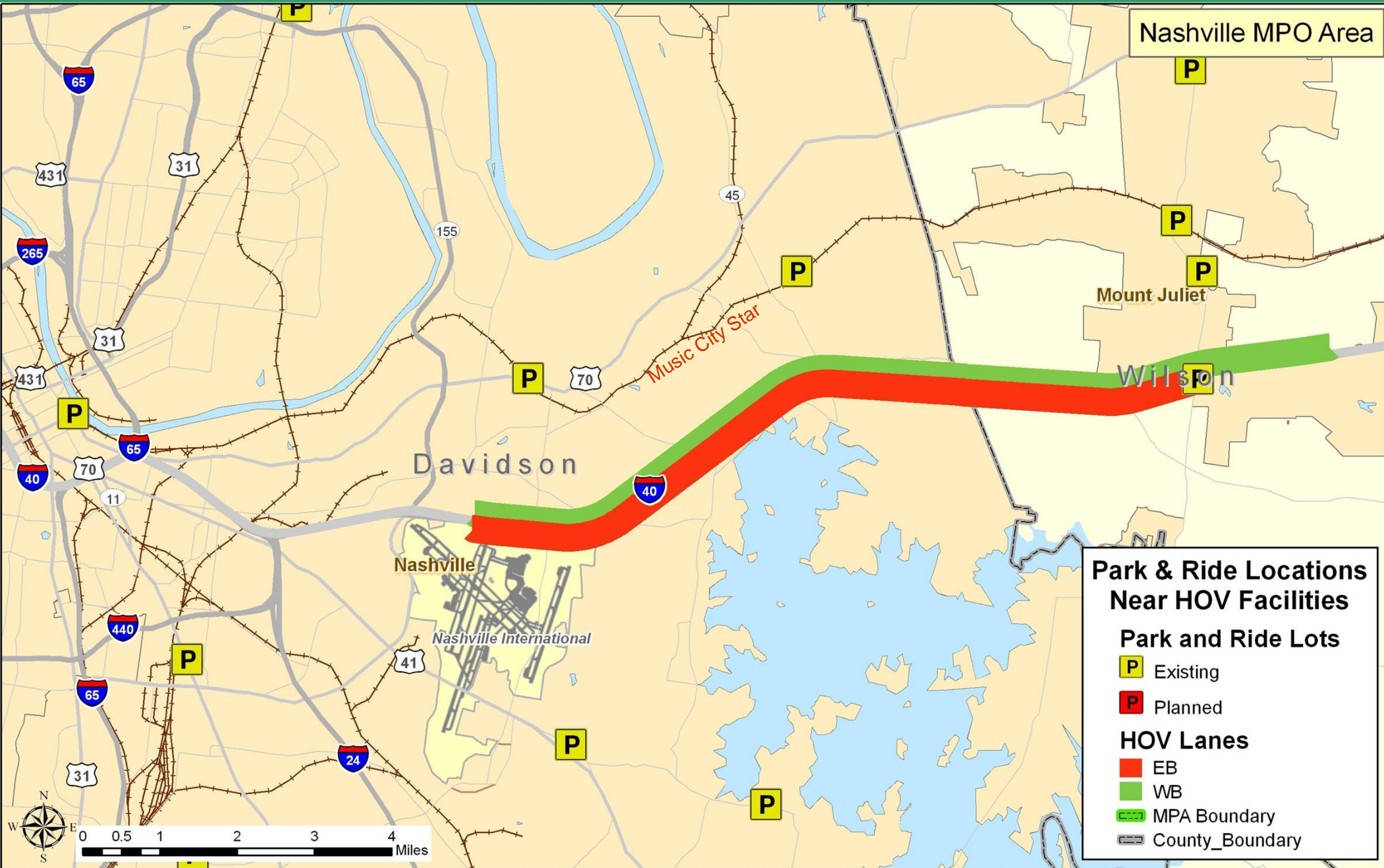
Park and Ride Lots

- P Existing
- P Planned

HOV Lanes

- EB
- WB
- MPA Boundary
- County_Boundary

Nashville Region-Mobility



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Initial Screening Process

- 4 packages of multimodal solutions for corridor analysis
 - Roadway Capacity
 - Corridor Capacity
 - Operational Solutions
 - Rail-Focused Solutions
- Report performance measures from statewide and urban area models
- Off-model analysis for selected measures

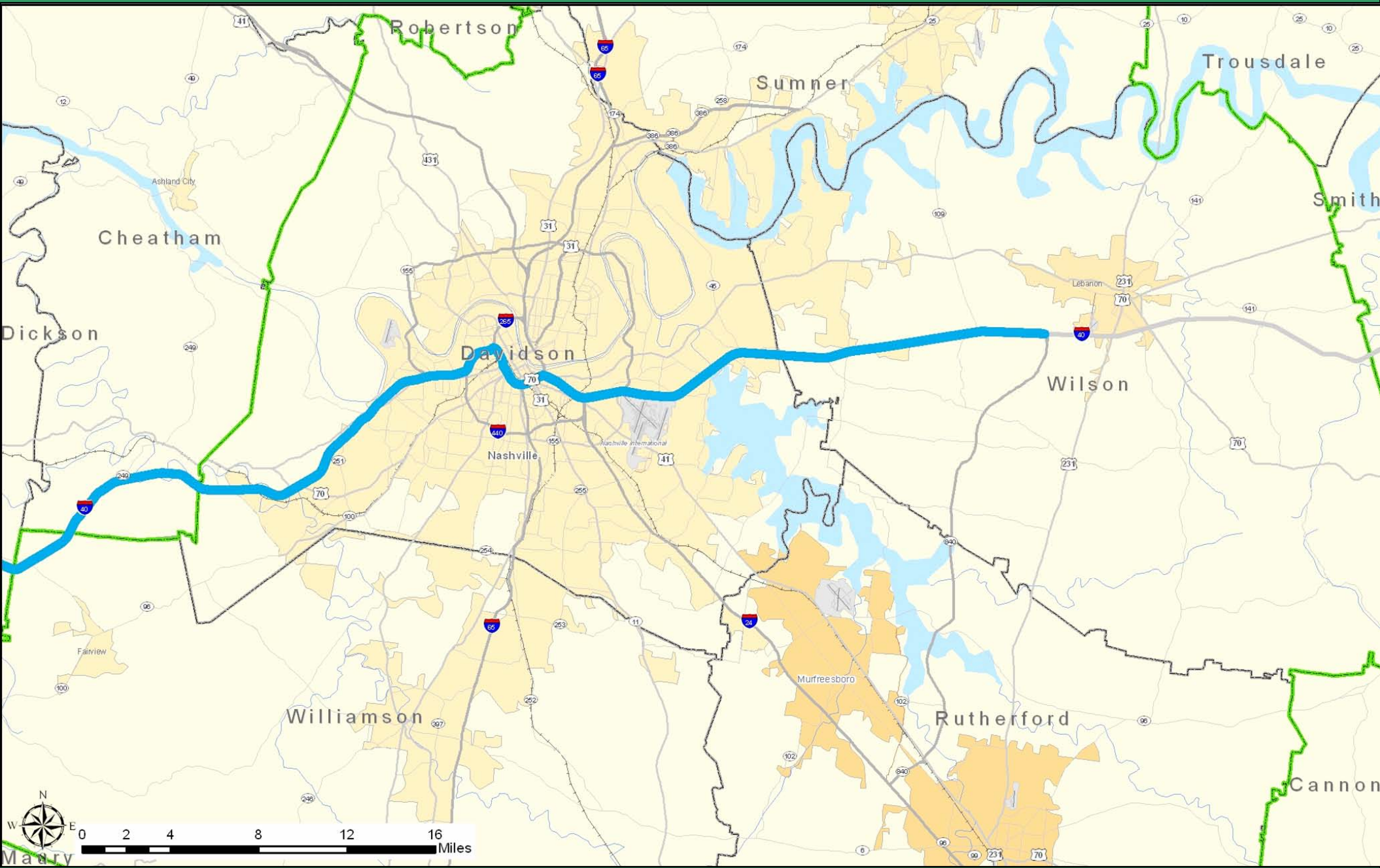
Roadway Capacity Package

- Design of new capacity based on available ROW and potential impacts
- New lanes in urban areas where congestion is greatest
- Potential new capacity through “managed” lanes (HOV/HOT/Truck Only)

Initial Roadway Capacity Solutions for Nashville Region

- “Managed lanes” on I-40 through Nashville
- More capacity along I-40 on west side (west of I-440)
- Widening between Old Hickory Blvd. & Briley Pkwy.
- Widen I-40 on east side to SR-840
- Additional capacity on I-40 between 21st & I-65

Nashville Region- Initial Roadway Capacity Solutions



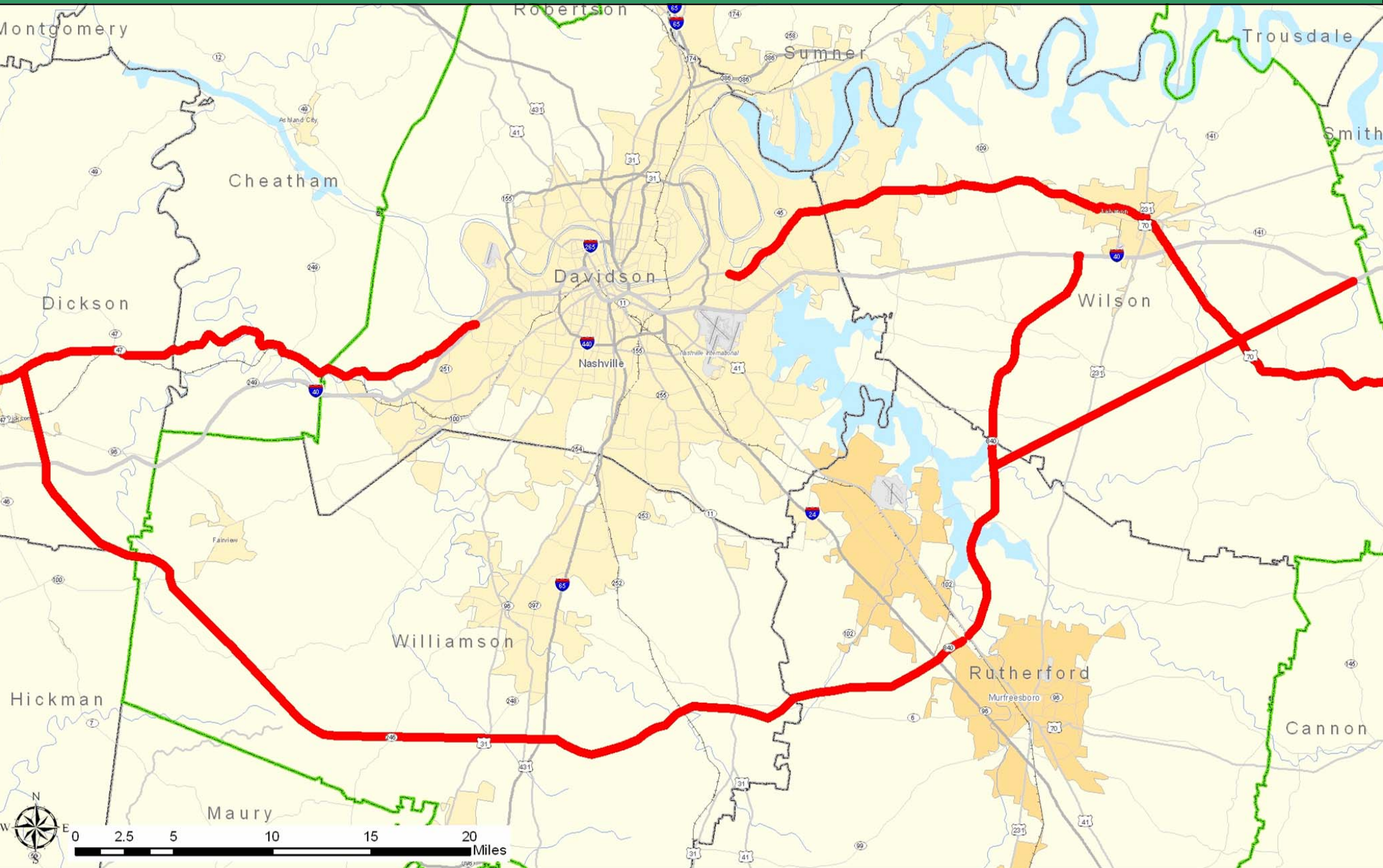
Corridor Capacity Package

- Urban area by-passes
- Improved parallel facilities
- New river crossings
- High-capacity transit improvements based on MPO plans

Initial Corridor Capacity Solutions for Nashville Region

- Complete SR-840 South
- Widen US-70 to four lanes where it is less than four today
- New commuter rail line between Nashville & Dickson

Nashville Region- Initial Corridor Capacity Solutions



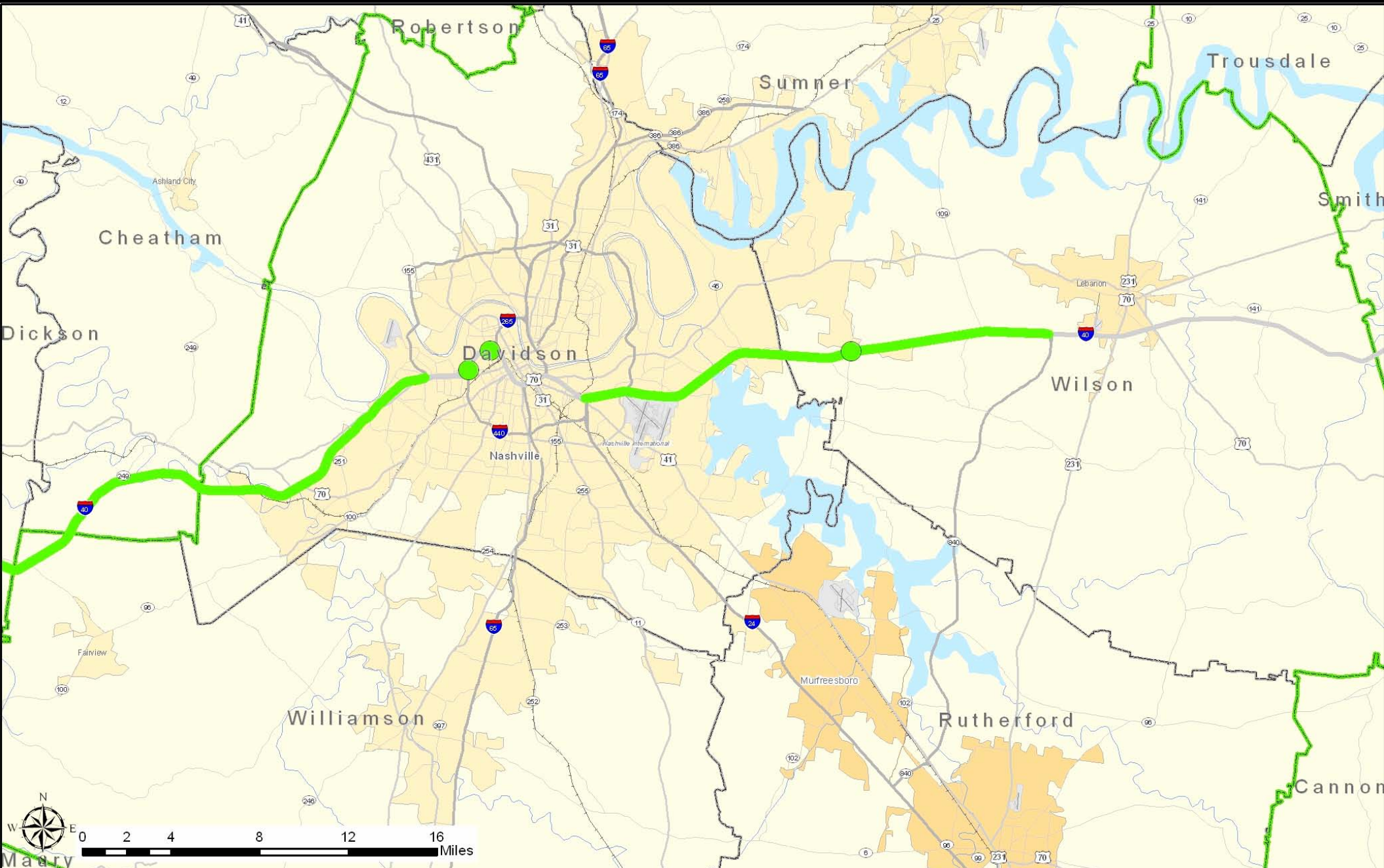
Operational Package

- Intelligent Transportation System (ITS) improvements
- Interchange re-design
- Truck climbing lanes
- Enhanced bus service in urban areas
- HOV/HOT lane expansion or conversion
 - in exurban areas where implementation does not require major construction

Initial Operational Solutions for Nashville Region

- Extend ITS east of Nashville from I-24 to SR-840 (HELP, VMS, cameras)
- Improve ramps at I-40 and I-440 interchange
- Enhanced bus service
- Convert existing I-40 HOV facility to HOT lanes

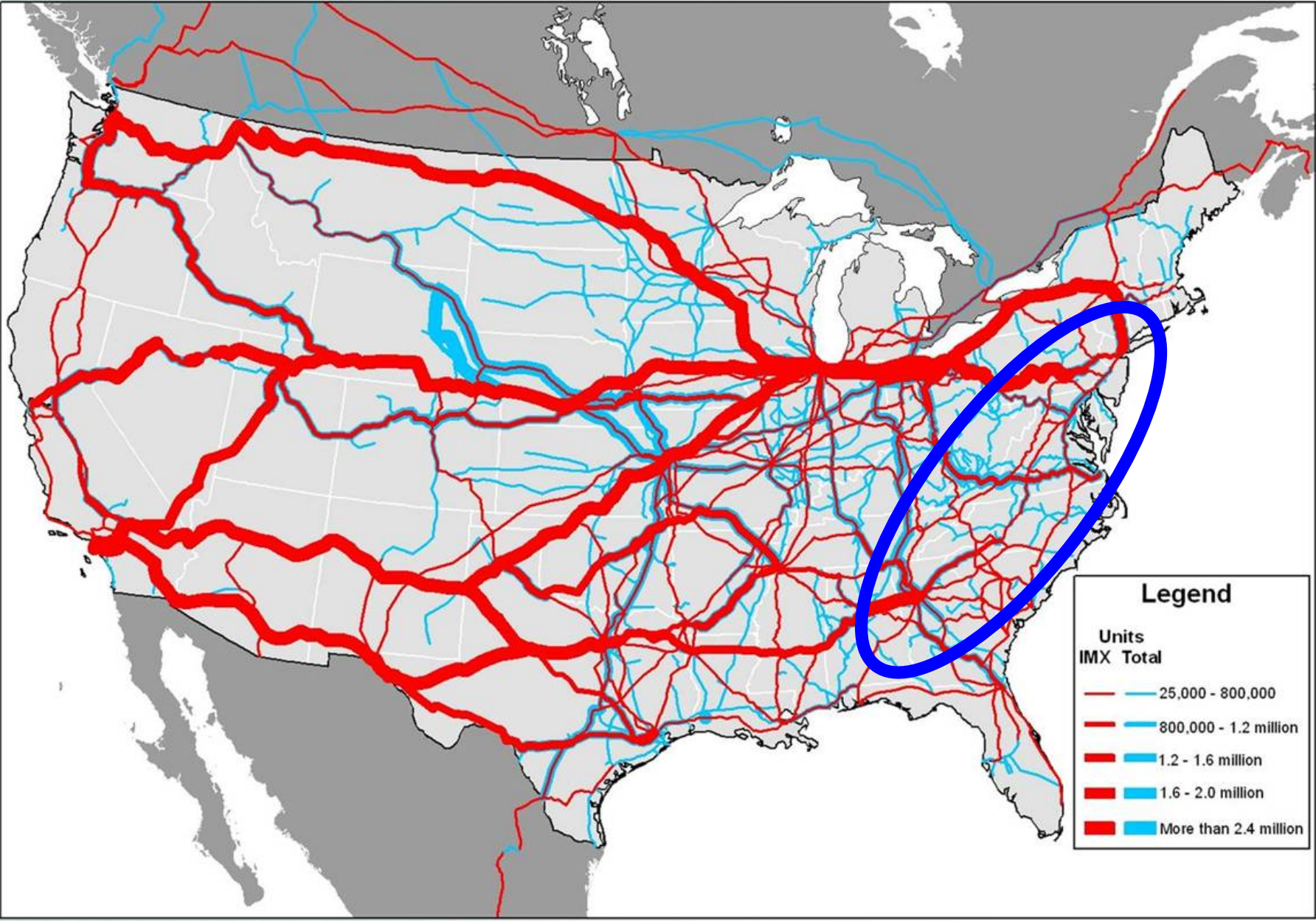
Nashville Region- Initial Operational Solutions



Truck/Rail Diversion

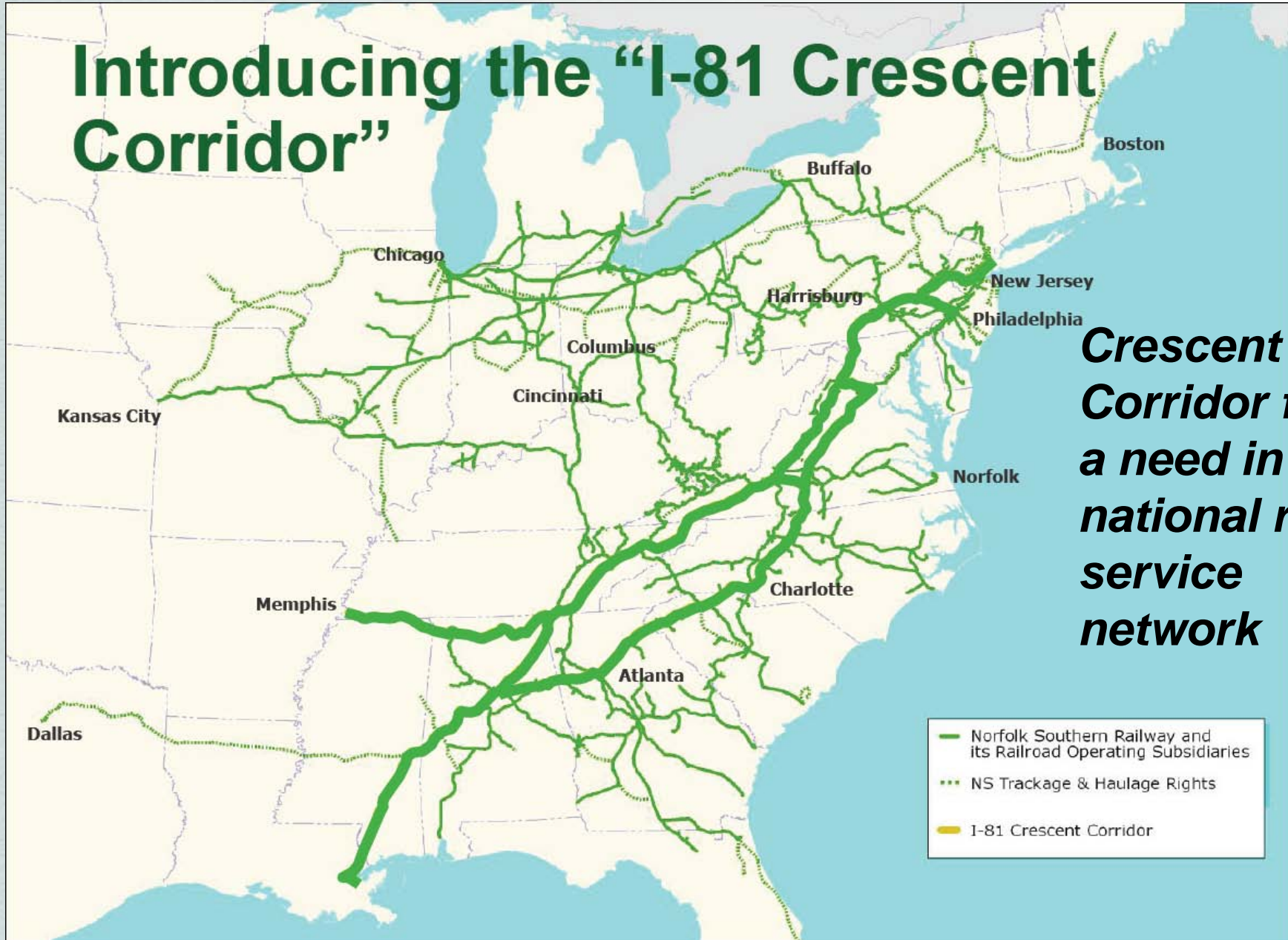
- Truck trips are divertible to rail if
 - Trip distances are long (greater than 500 – 750 miles)
 - Commodities can be handled easily by rail
 - Bulk goods
 - Non-perishable goods
 - Goods easily packaged and shipped using intermodal containers
 - Rail network matches desired trip origin and destination

Existing Rail Flows



Crescent Corridor

Introducing the "I-81 Crescent Corridor"



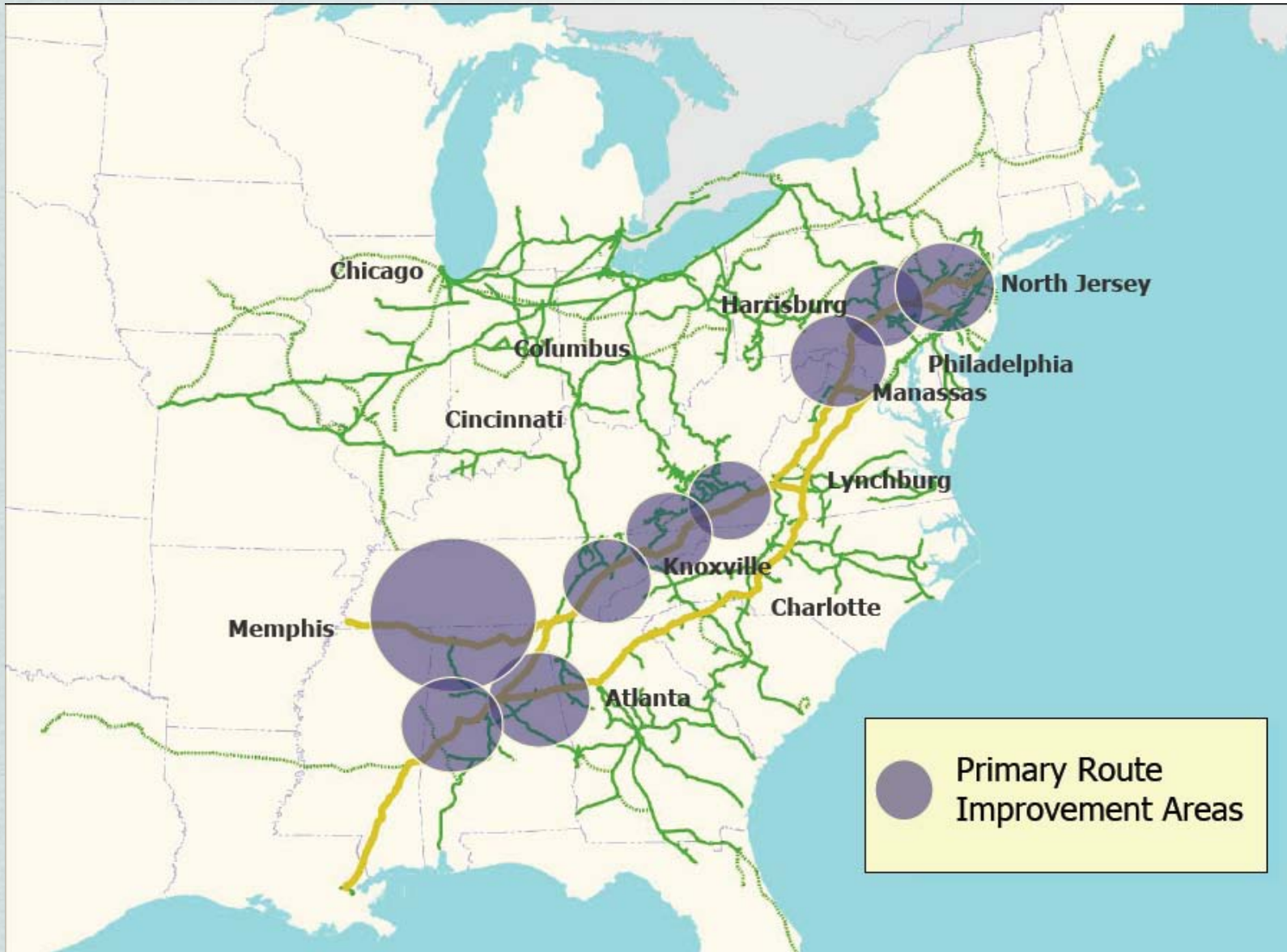
Crescent Corridor fills a need in the national rail service network

- Norfolk Southern Railway and its Railroad Operating Subsidiaries
- ... NS Trackage & Haulage Rights
- I-81 Crescent Corridor

Crescent Corridor Service

- NS estimates over 1 million divertible truckloads in the corridor
- Plans forecast 28 new trains per day
- NS seeking public-private partnerships to improve the rail network
 - VDOT has committed \$16 million
- Impact on I-40 and I-81 in Tennessee will be estimated using diversion tool

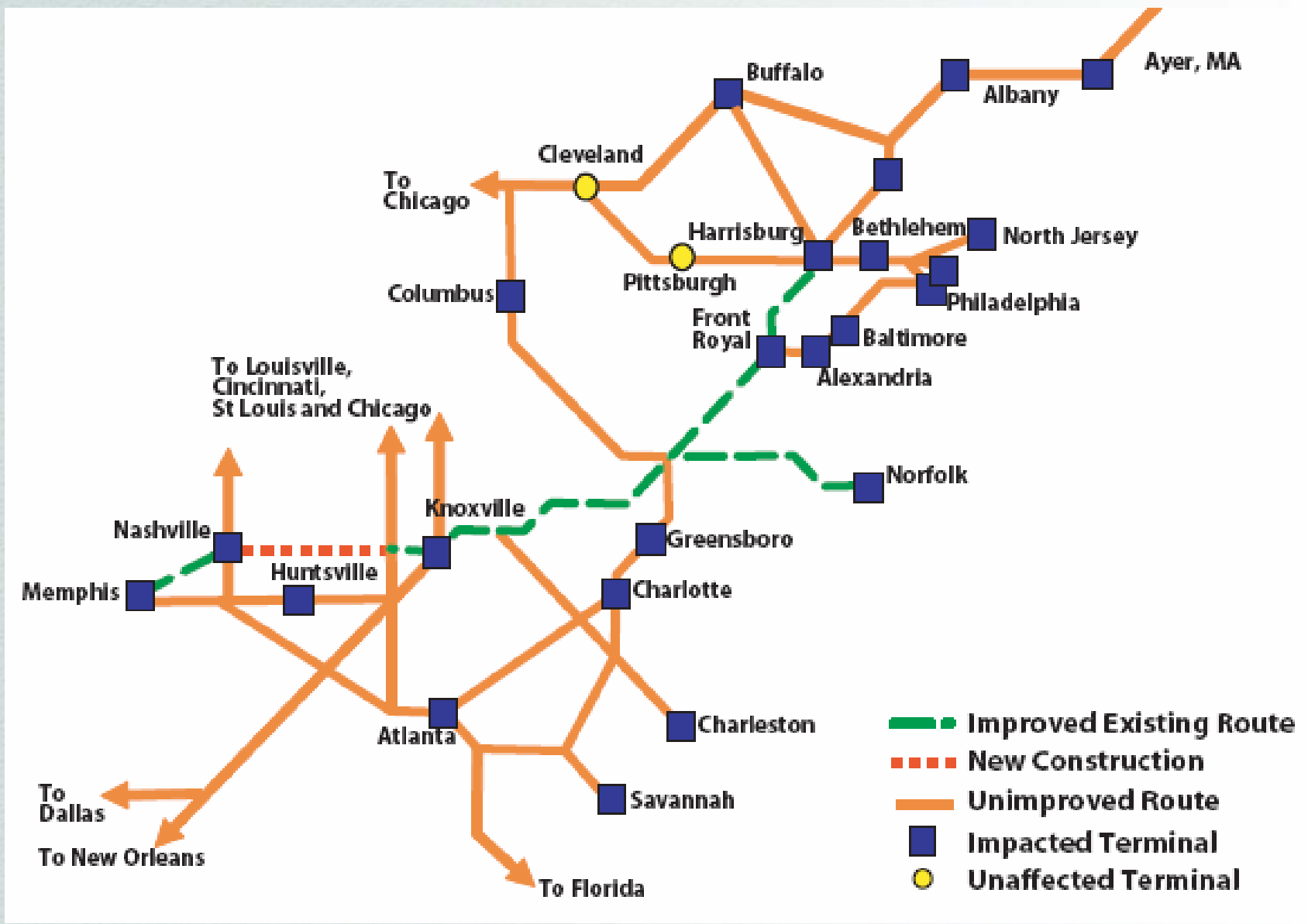
Crescent Corridor Route Improvements



Truck/Rail Diversion

- Tool will be used in solutions analysis to estimate impact of systemwide rail improvements

Truck/Rail Diversion Tool



Rail-Focused Package

- Rail-highway grade separations
- New inter-modal yards
- Rail line on new river crossings
- Enhanced rail connectivity
 - Includes analysis of NS Crescent Corridor
 - Completion of statewide east-west rail line

Initial Rail-Focused Solutions for Nashville Region

- Rail-highway grade separations
- Re-location of Nashville intermodal yard to outside of urban area
- Enhanced rail connectivity (completion of statewide east-west rail line)

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Upcoming Tasks

- Refine initial solutions based on stakeholder comments
- Use Statewide & urban travel demand models to analyze solutions “packages”
- Evaluate solutions based on performance criteria
- Identify “best” solutions from each package

Upcoming Tasks (cont.)

- Complete “high-level” environmental review of refined solutions
- Perform constructability analysis of solutions
- Prepare construction cost estimates of identified improvements
- Prioritize projects for stakeholder review

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Stakeholder Involvement

- Project Stakeholder Involvement Plan
- Initial Stakeholder Interviews
- Two rounds of Stakeholder Meetings across state – September 07 & February-March 08
- Website: www.tdot.state.tn.us/i40corridor
 - Fact Sheet
 - Task 2 Technical Report – Deficiencies
- Comment Forms

Round II of Stakeholder Meetings

- February and March 2008
- Meetings in Memphis, Jackson, Nashville, Cookeville, Knoxville & Tri-Cities
- Purpose is to review draft prioritization of projects
- One month lapse between meetings with staff & stakeholders to refine project prioritization

For Information or questions about the study,
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