

I-40/I-81 Corridor Feasibility Study Update



September 5, 2007

Agenda

- Study Overview
- Corridor Deficiencies Assessment
- Truck/Rail Diversion Analysis
- Initial Solutions Packages
- Stakeholder Involvement Process

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

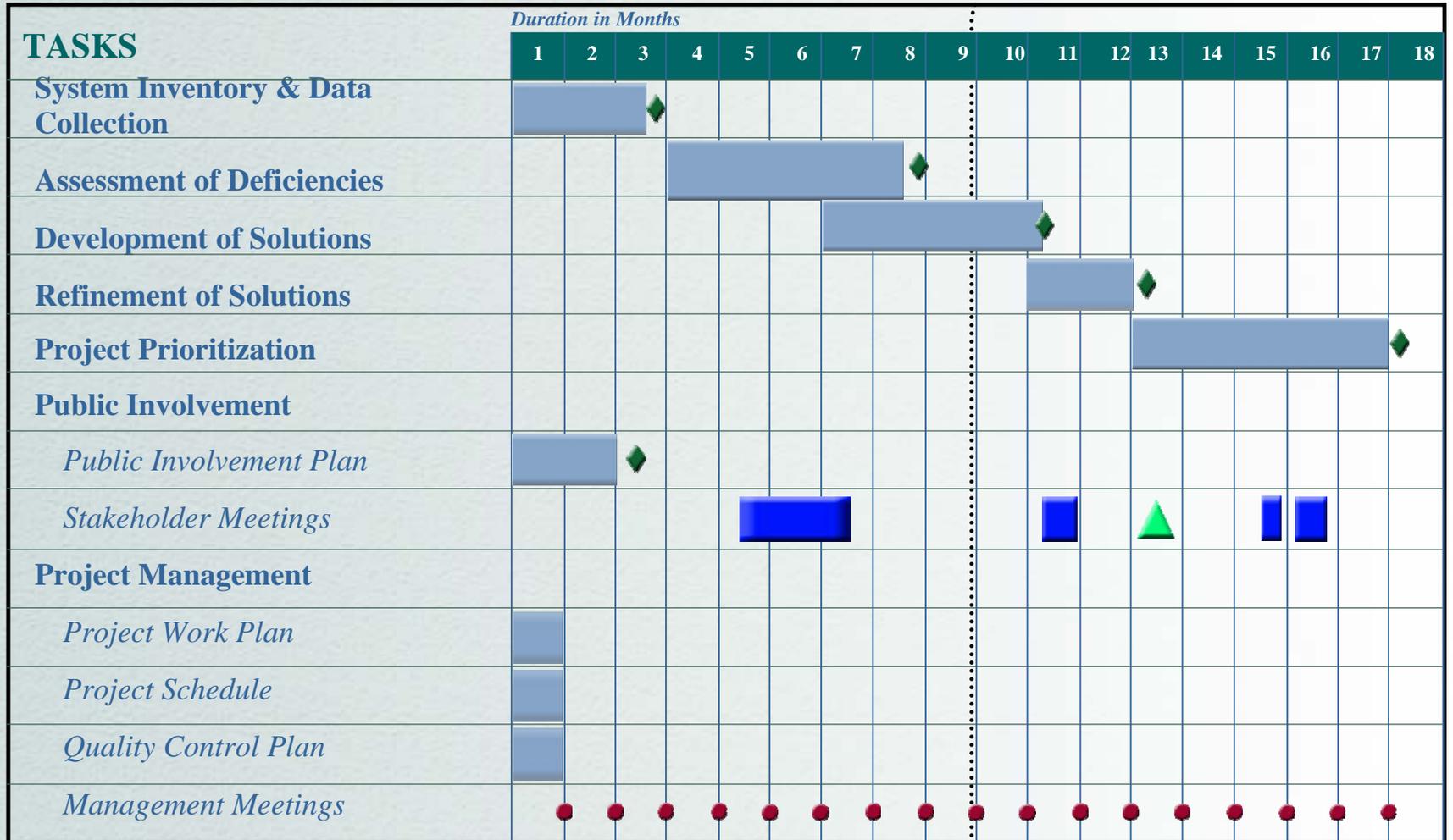


Study Outcome

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

Study Schedule

.....September 1

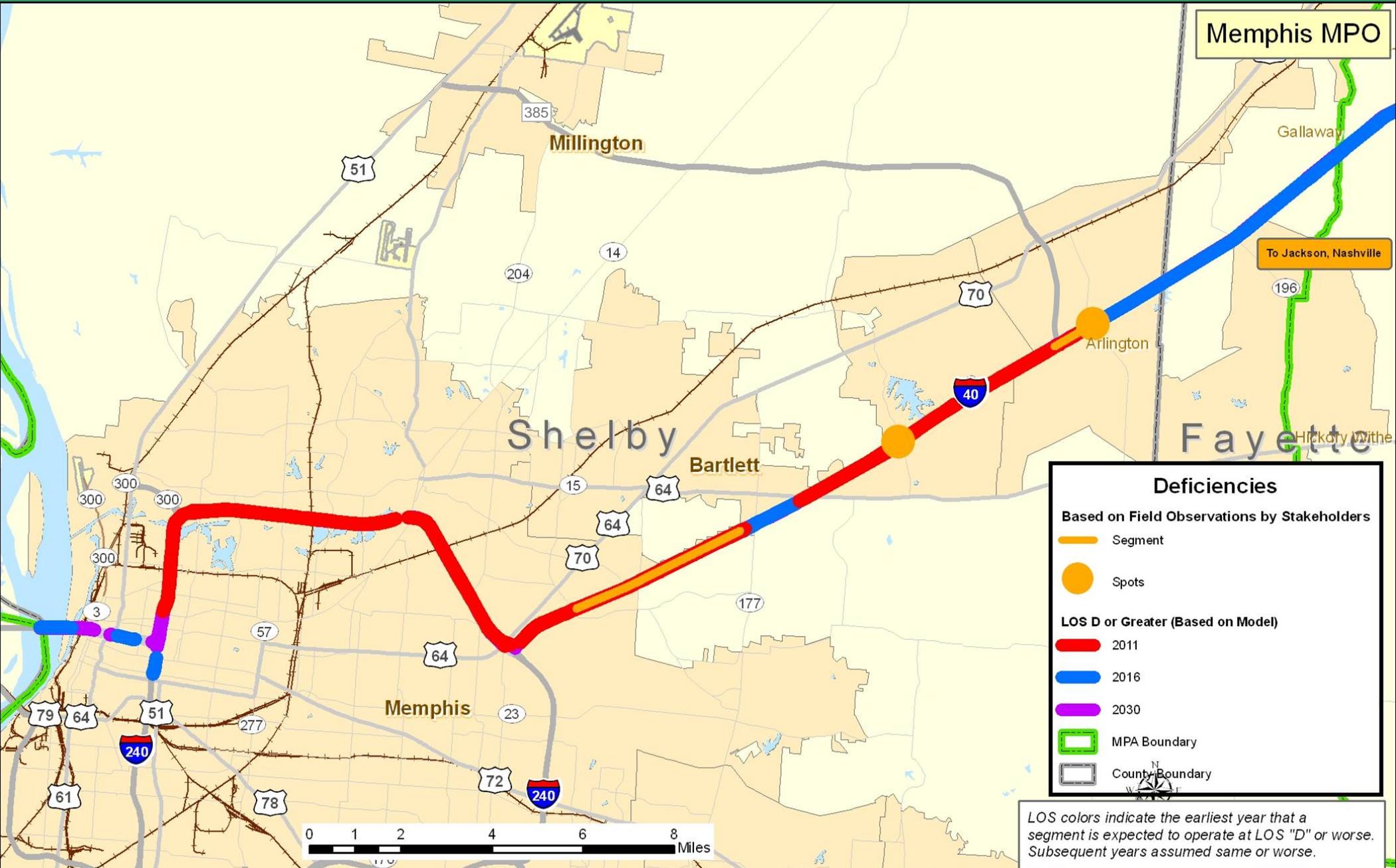


- ◆ Technical Memorandum
- Meetings with TDOT Staff
- Meetings with the Public, Technical Advisory Committee (TAC) & Policy Advisory Committee (PAC)
- ▲ Resource Agency Collaboration Session

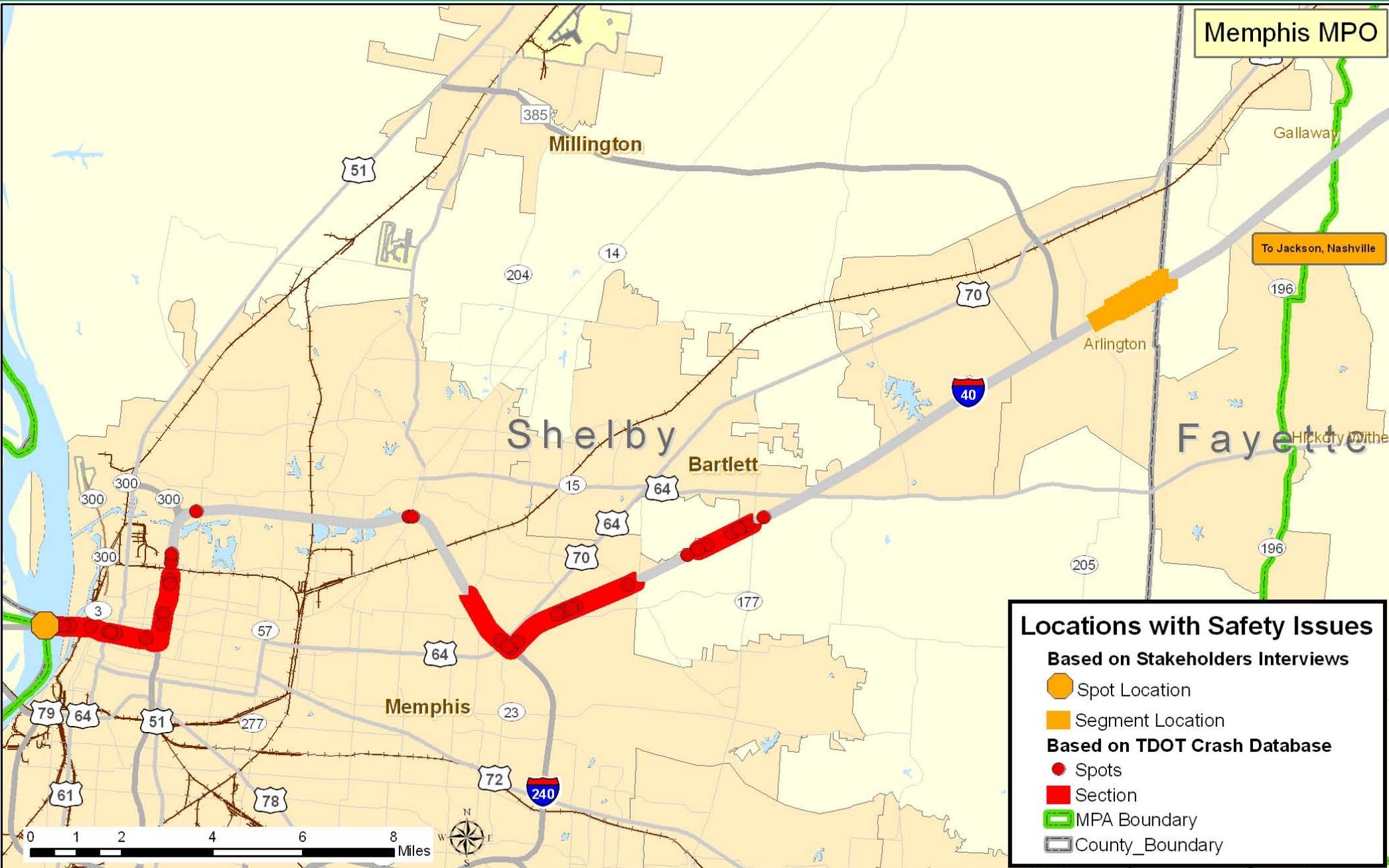
Memphis

- Significant congestion problems
- High number of critical accident locations
- HOV lanes are heavily used, but with high number of occupancy violations

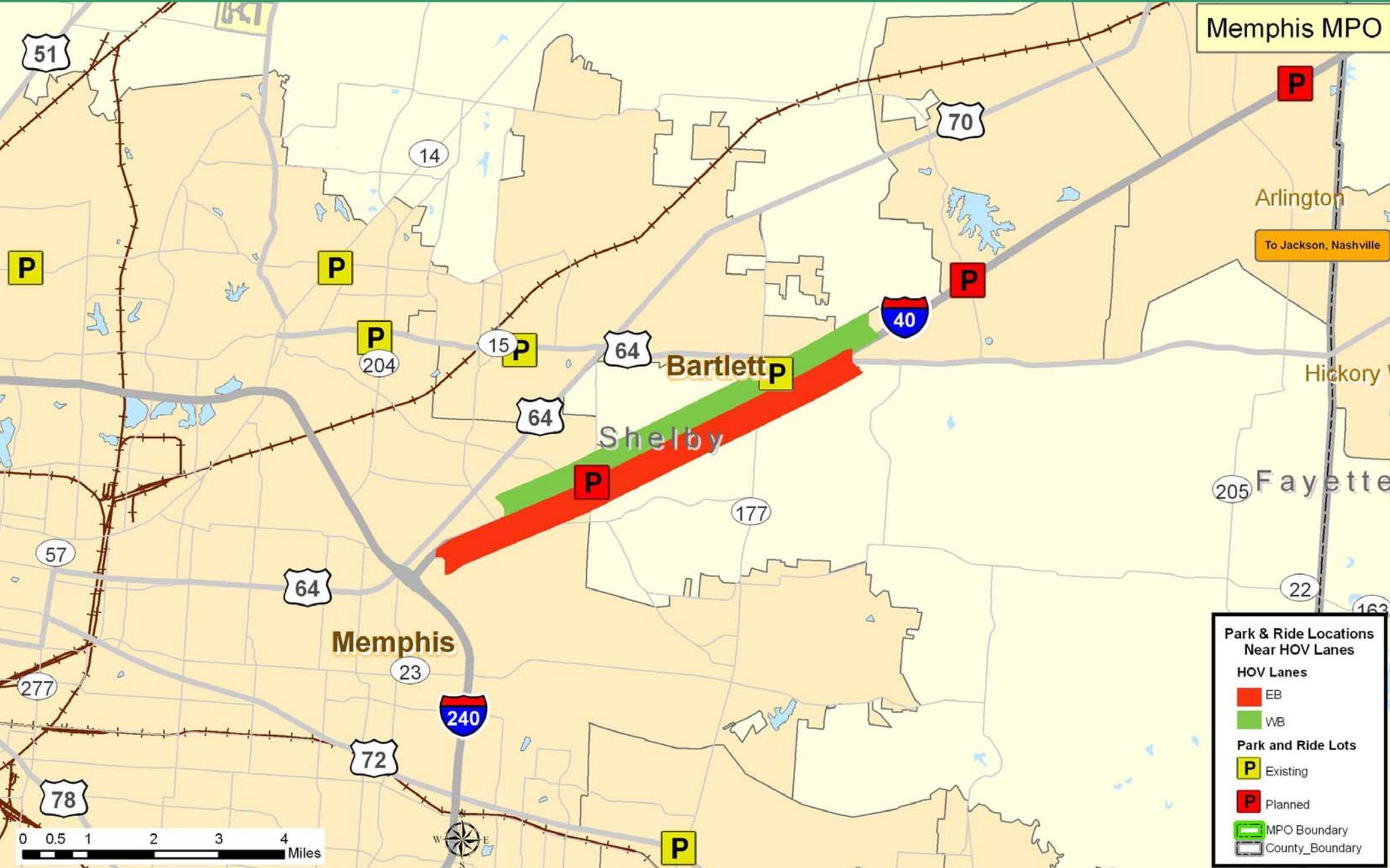
Memphis - Capacity Deficiencies



Memphis - Safety Deficiencies



Memphis - Mobility



Park & Ride Locations Near HOV Lanes

HOV Lanes

- EB
- WB

Park and Ride Lots

- Existing
- Planned

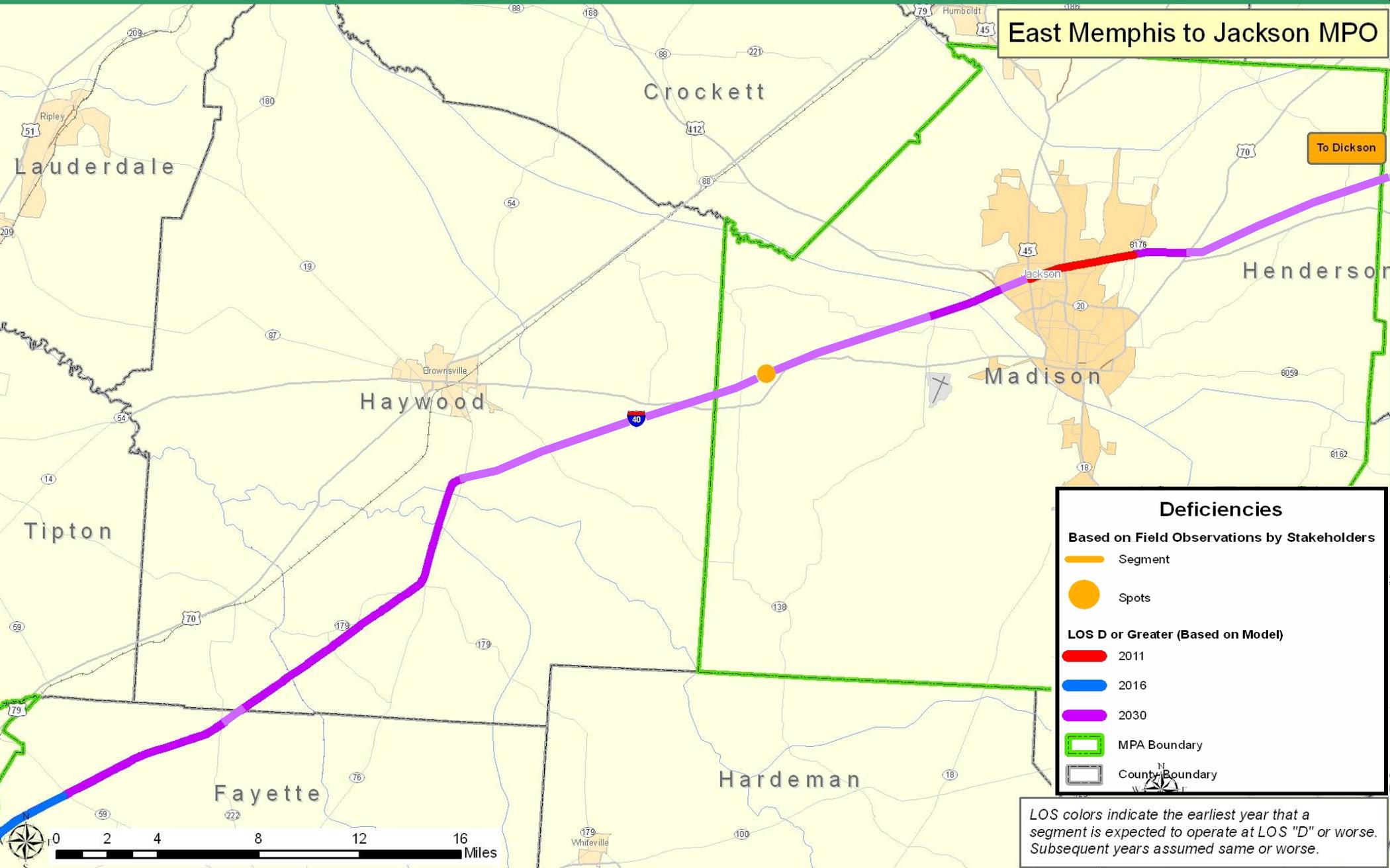
Boundaries

- MPO Boundary
- County_Boundary

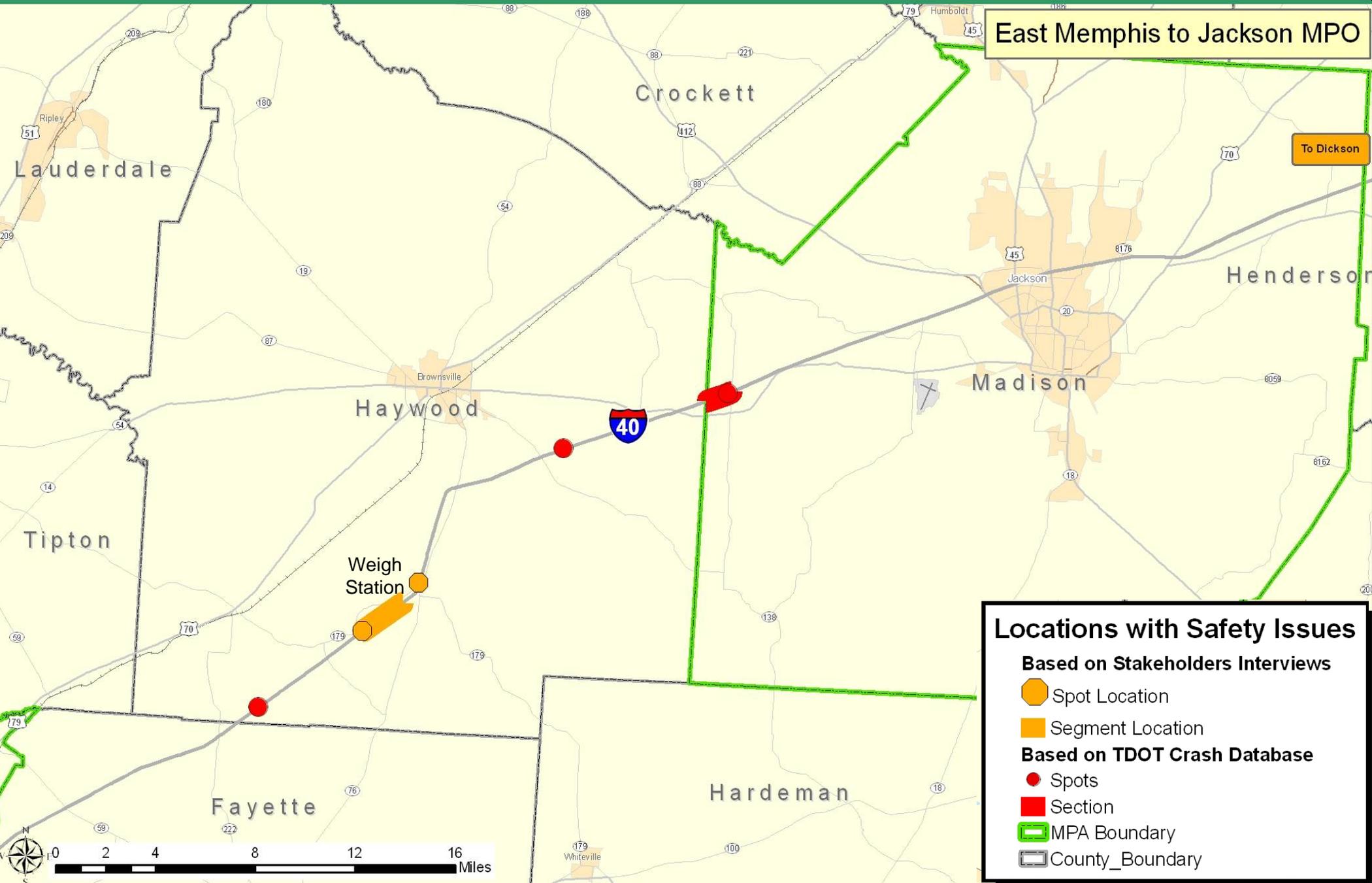
Memphis to Jackson

- Congested segments in Jackson
- Congestion in Fayette & Haywood Counties in 2016 & 2030
- Possible lack of parallel east-west arterial in Jackson
- Inadequate lanes @ weigh station cause trucks to back-up

Memphis to Jackson - Capacity Deficiencies



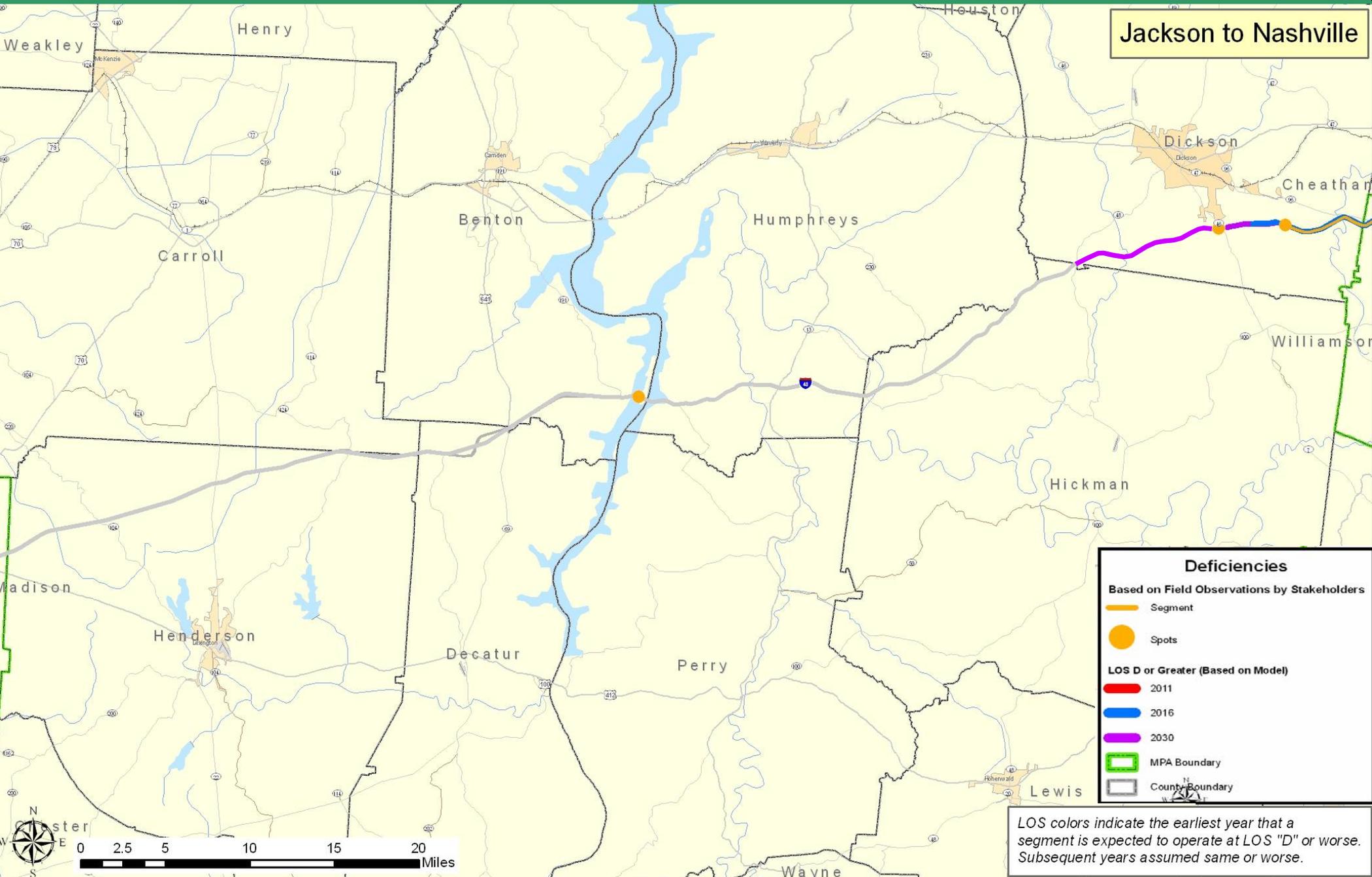
Memphis to Jackson - Safety Deficiencies



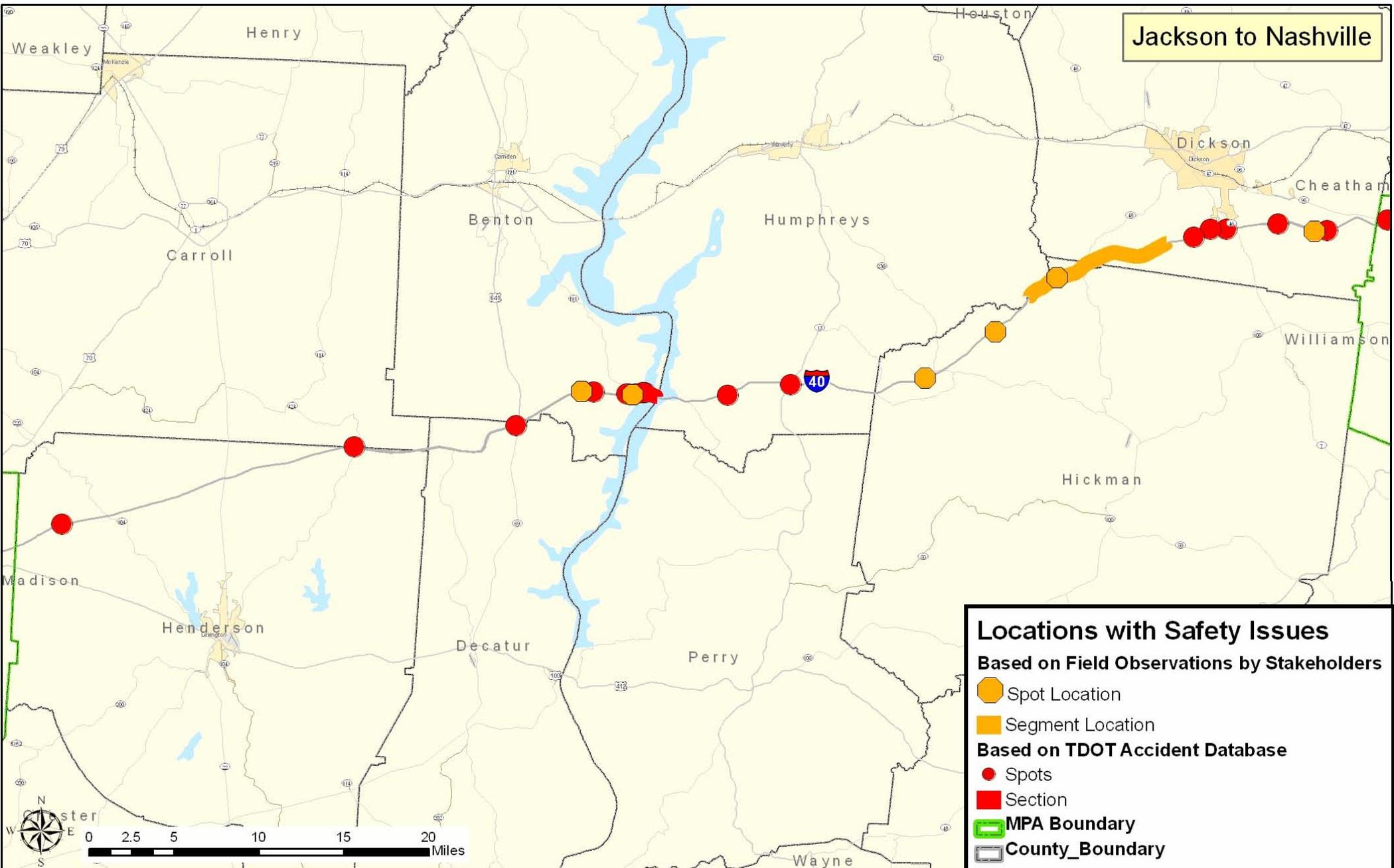
Jackson to Nashville

- Only forecasted congestion is in vicinity of Dickson
- Operational issues
 - Safety issues at Tennessee River and on I-40 south of Dickson
 - Incident diversion strategies for Tennessee River
- Truck operating issues cause limited congestion

Jackson to Nashville - Capacity Deficiencies



Jackson to Nashville - Safety Deficiencies



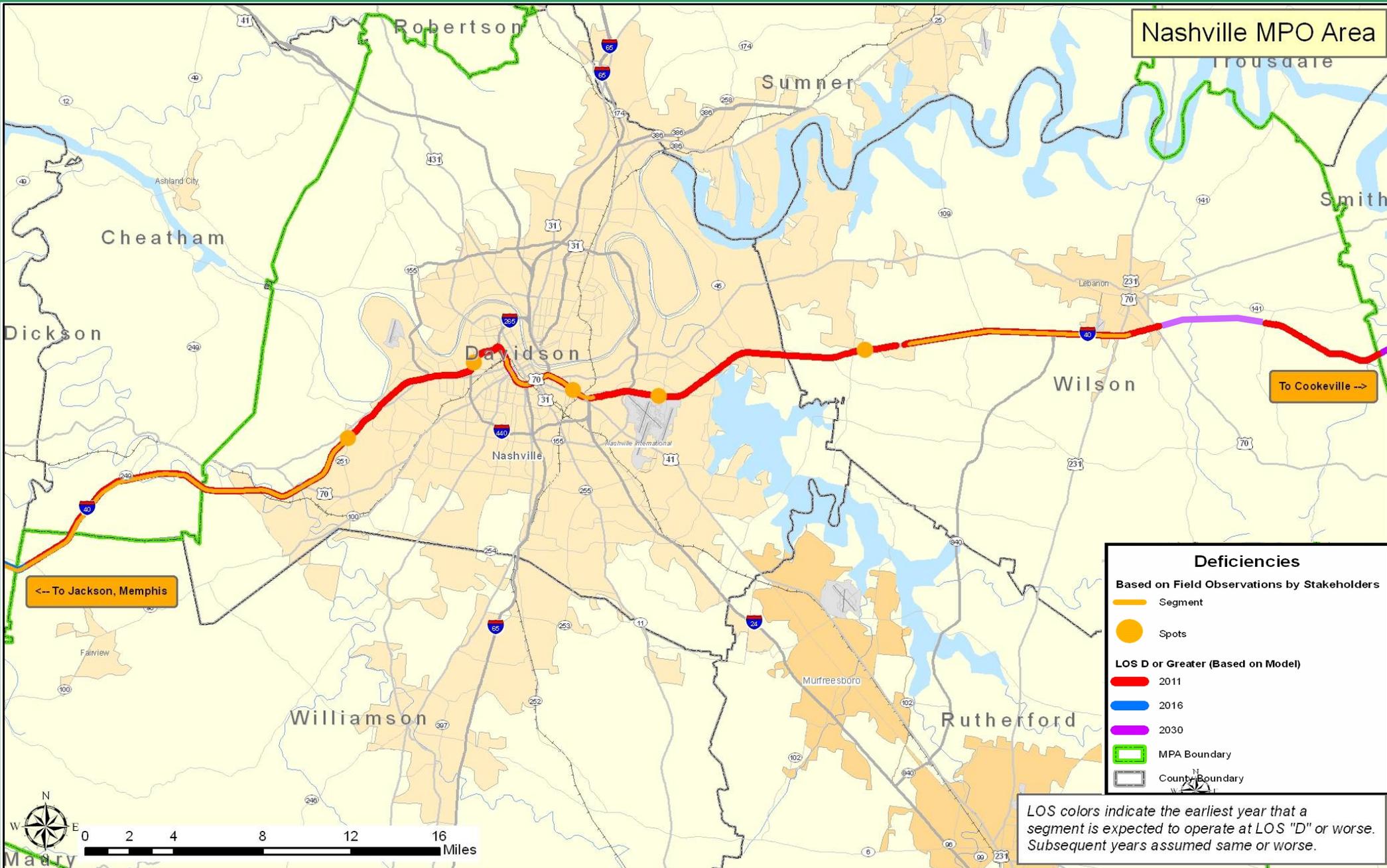
Jackson to Nashville - Grade Issues



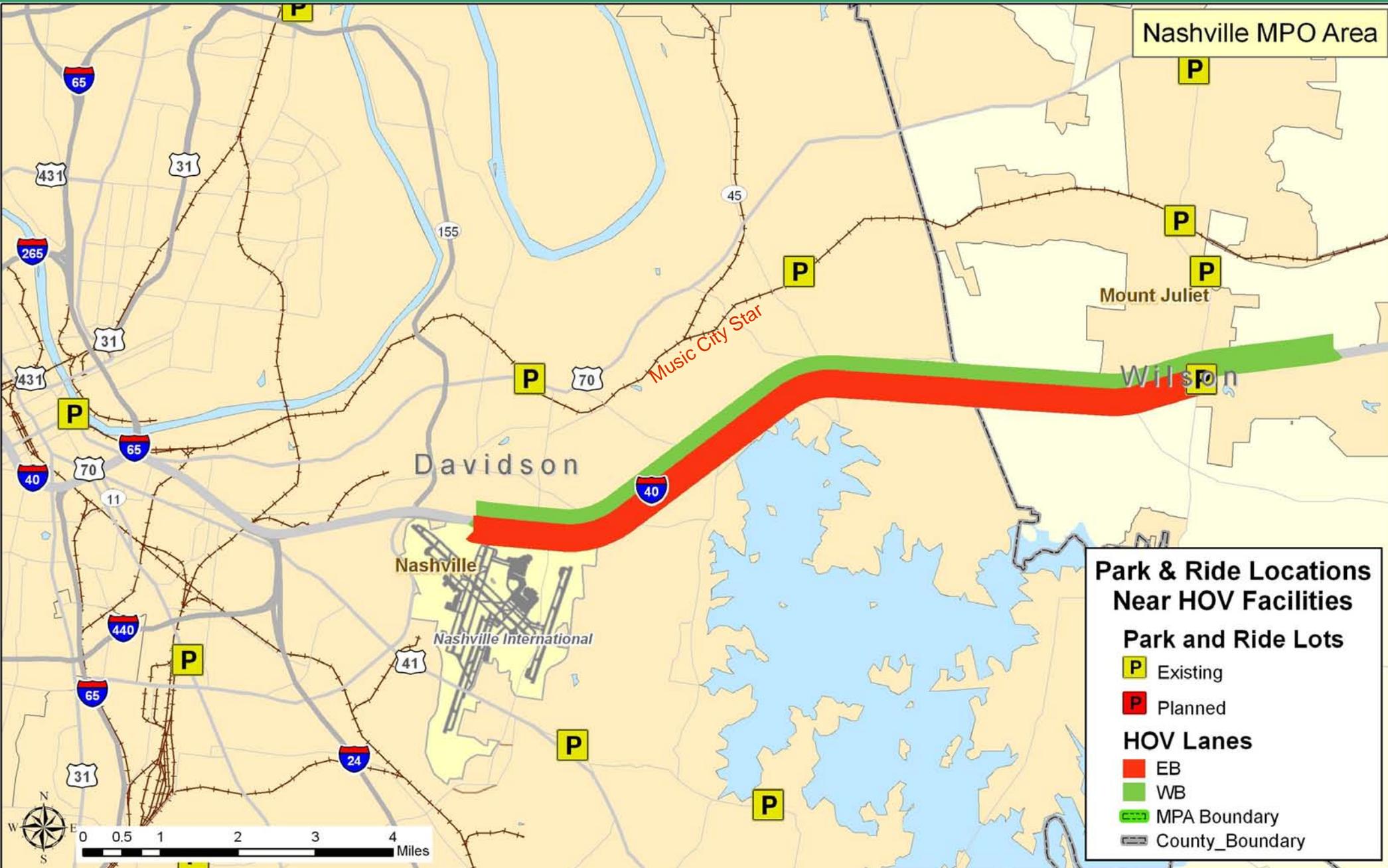
Nashville Region

- Corridor is congested from Dickson to east of Lebanon
- High number of critical accident locations
- HOV lanes have high number of occupancy violations

Nashville Region - Capacity Deficiencies



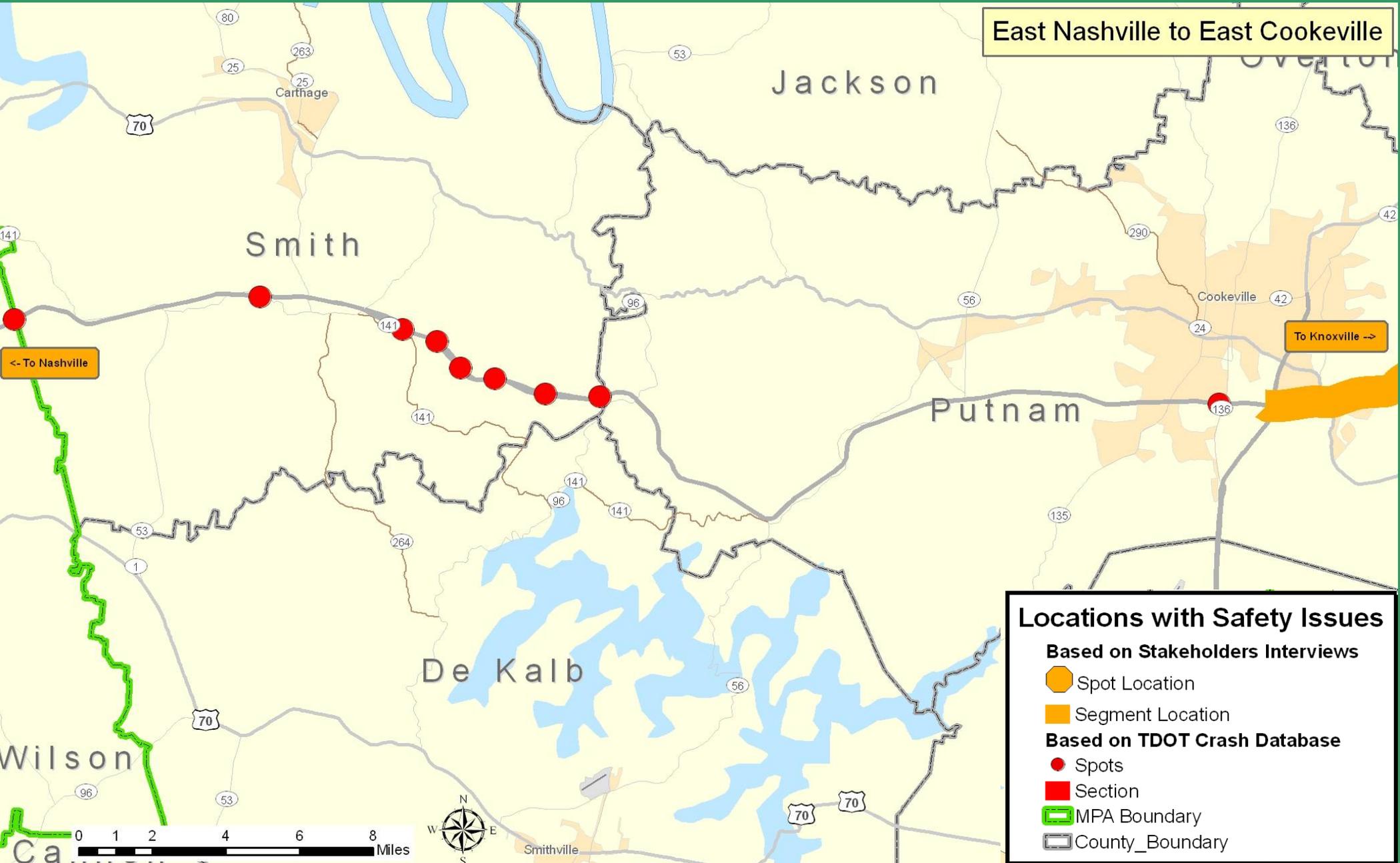
Nashville Region - Mobility



Nashville to Cookeville

- Entire segment is forecasted to be congested by 2030
- Critical accident locations in Smith County

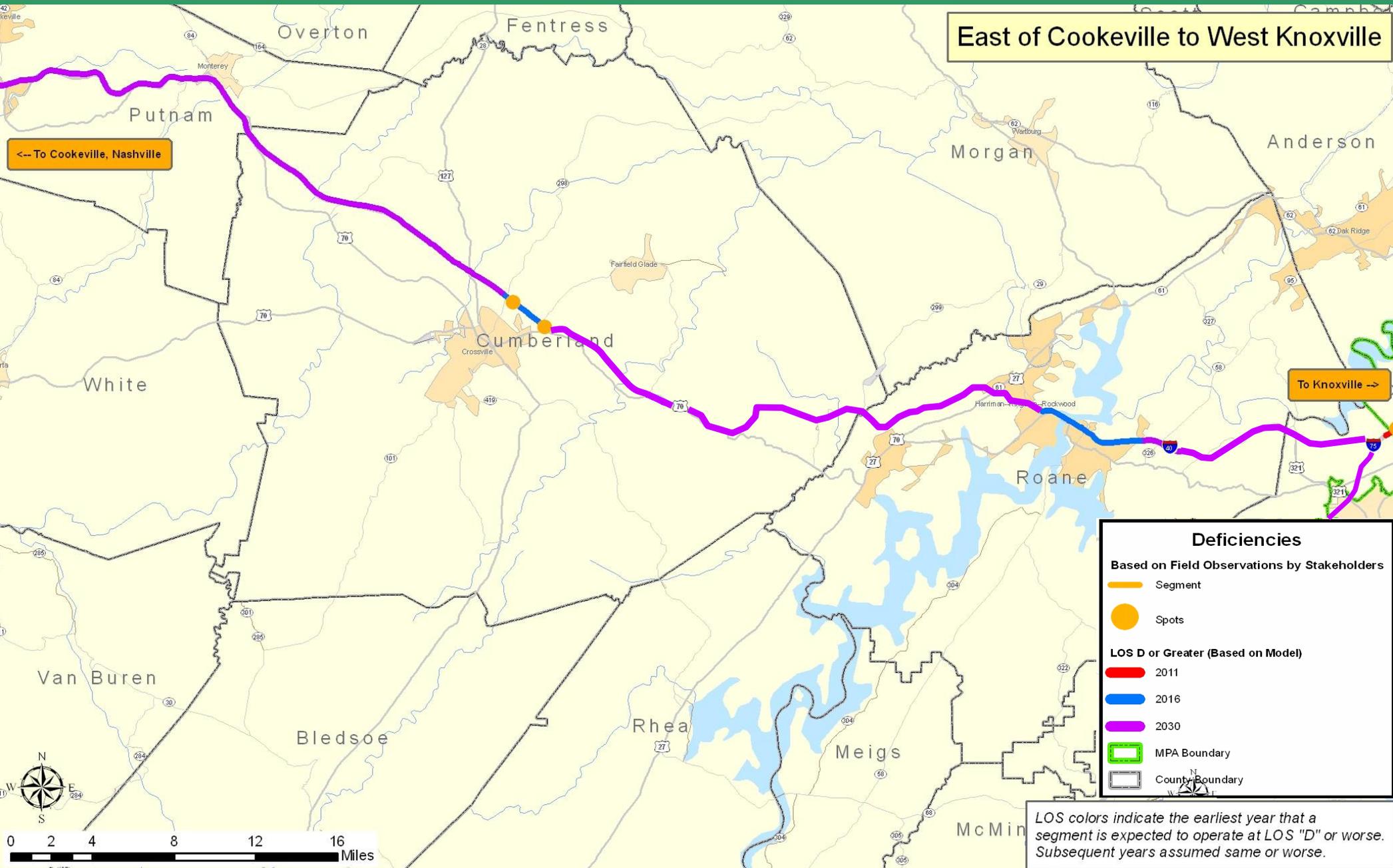
Nashville to Cookeville - Safety Deficiencies



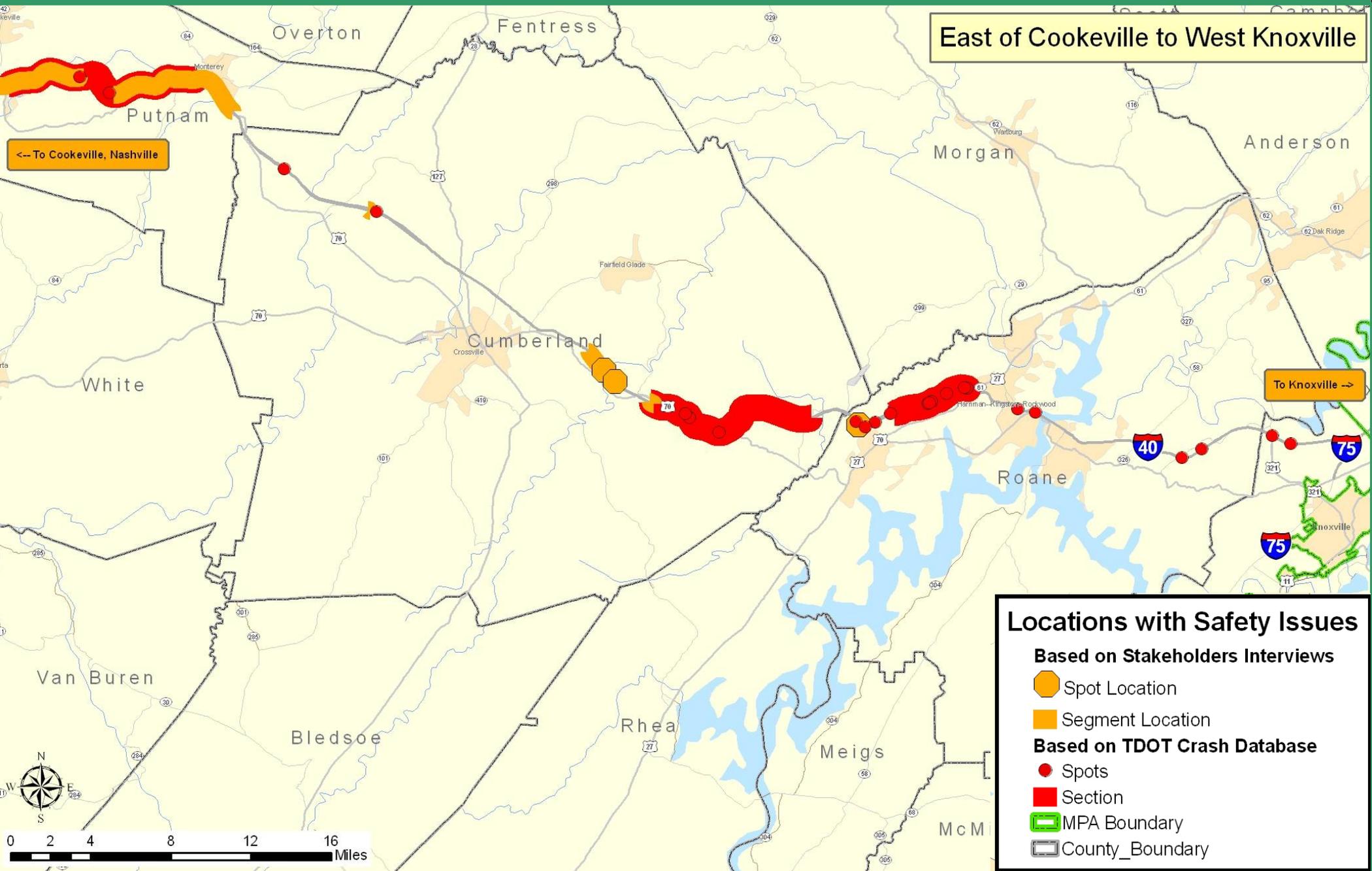
Cookeville to Knoxville

- Incident issues at Monterey & Roane Mountains
 - Weather
 - Accidents
- Forecasted congestion near Clinch River
 - Terrain issues
 - Truck volumes
 - Highway curves
- Steepest grades along I-40

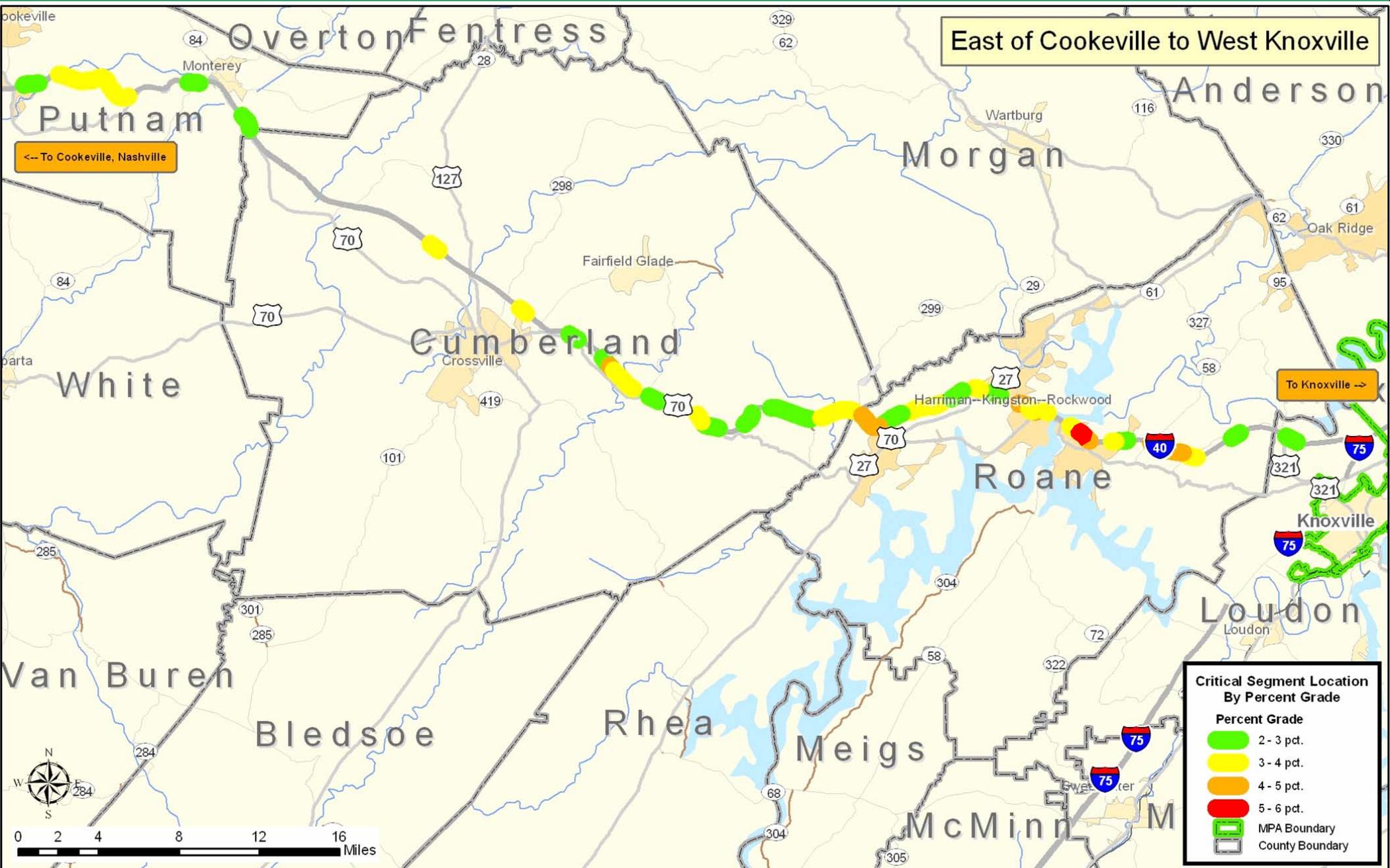
Cookeville to Knoxville - Capacity Deficiencies



Cookeville to Knoxville - Safety Deficiencies



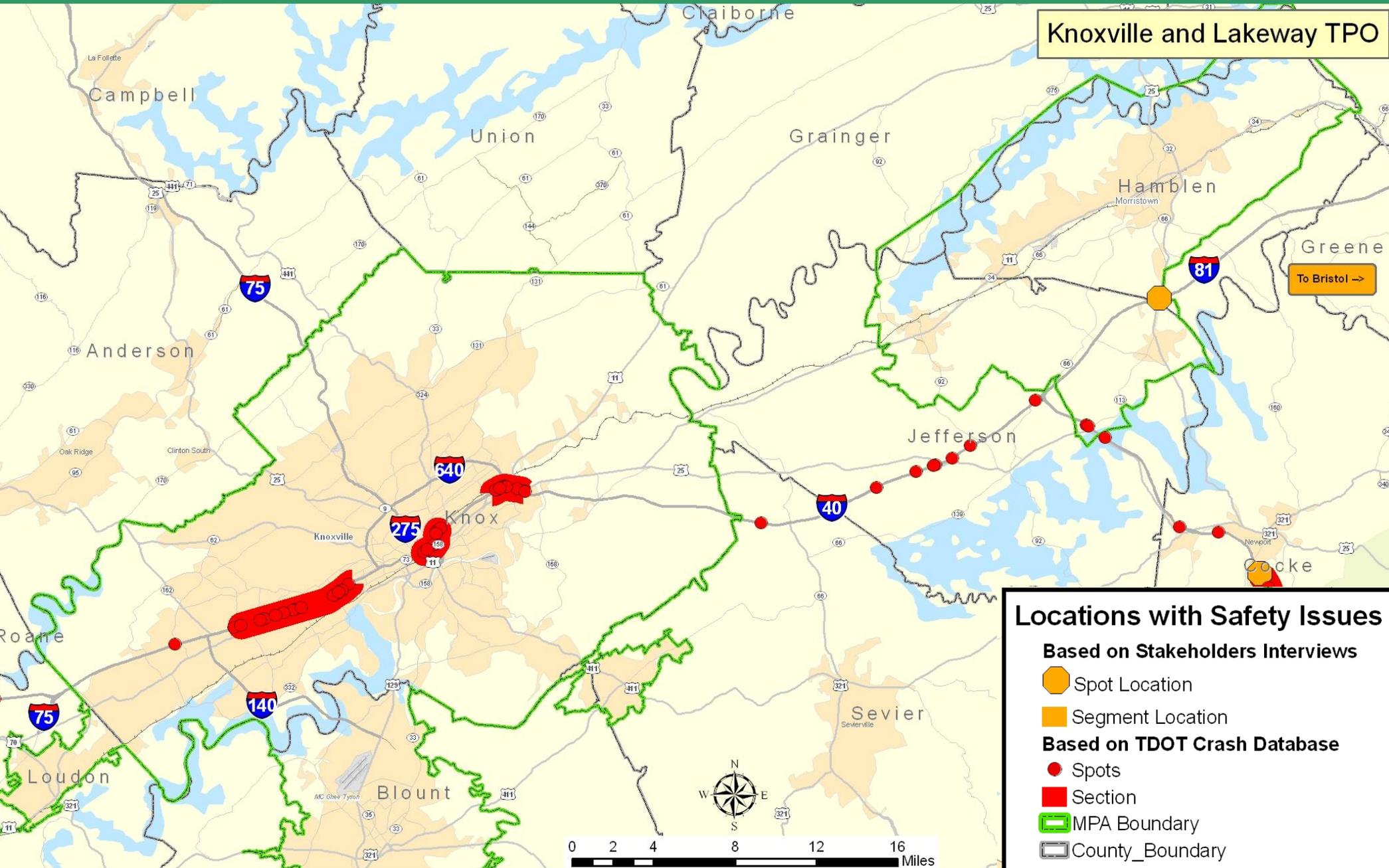
Cookeville to Knoxville - Grade Issues



Knoxville to Lakeway

- High number of critical accident locations in Knoxville
- Knoxville segments are congested
- Forecasted congestion south of Morristown
- Operational issues at I-40/I-81 rest area

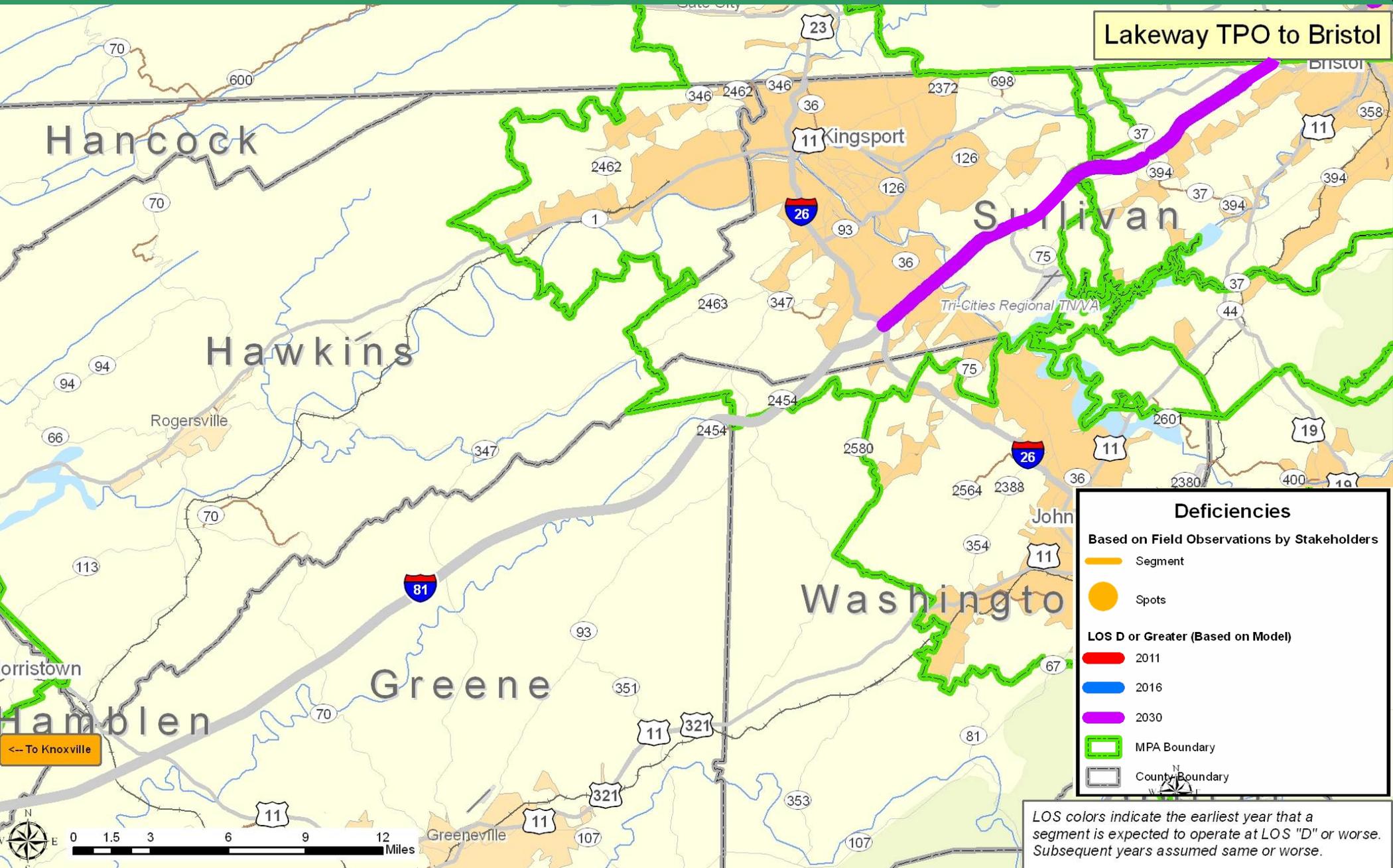
Knoxville to Lakeway - Safety Deficiencies



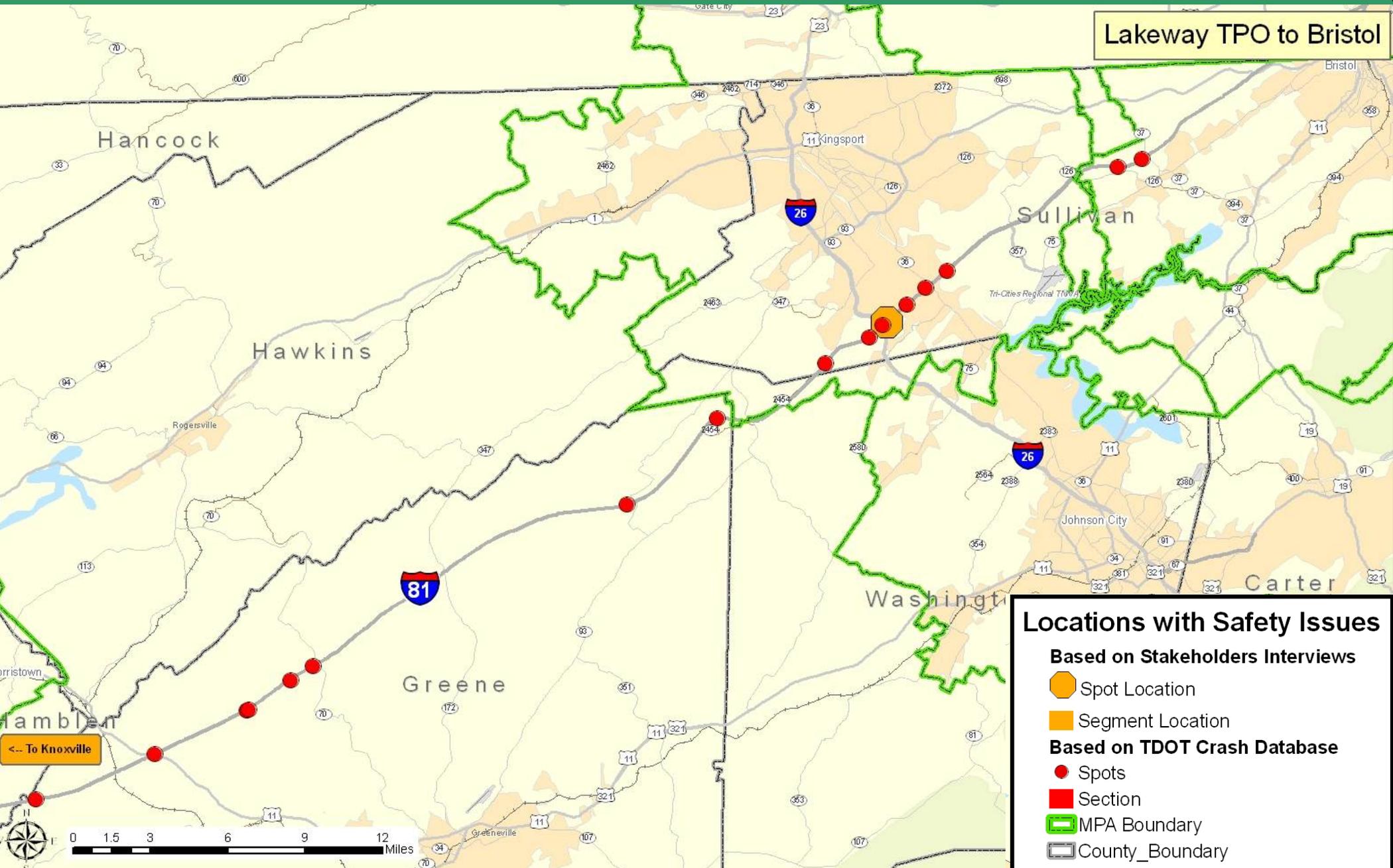
Lakeway to Bristol

- Forecasted I-81 congestion between Kingsport & Bristol by 2030
- Critical accident locations throughout segment (spot locations)
- Potential intermodal site within corridor area
- Truck climbing lanes

Lakeway to Bristol - Capacity Deficiencies



Lakeway to Bristol - Safety Deficiencies



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)

Corridor Capacity Package

- Urban area by-passes (SR-840, SR-475)
- Improving parallel facilities (US-70, US-11E, US-11W)
- New I-40 bridge over Mississippi River in Memphis
- High-capacity transit improvements based on MPO plans

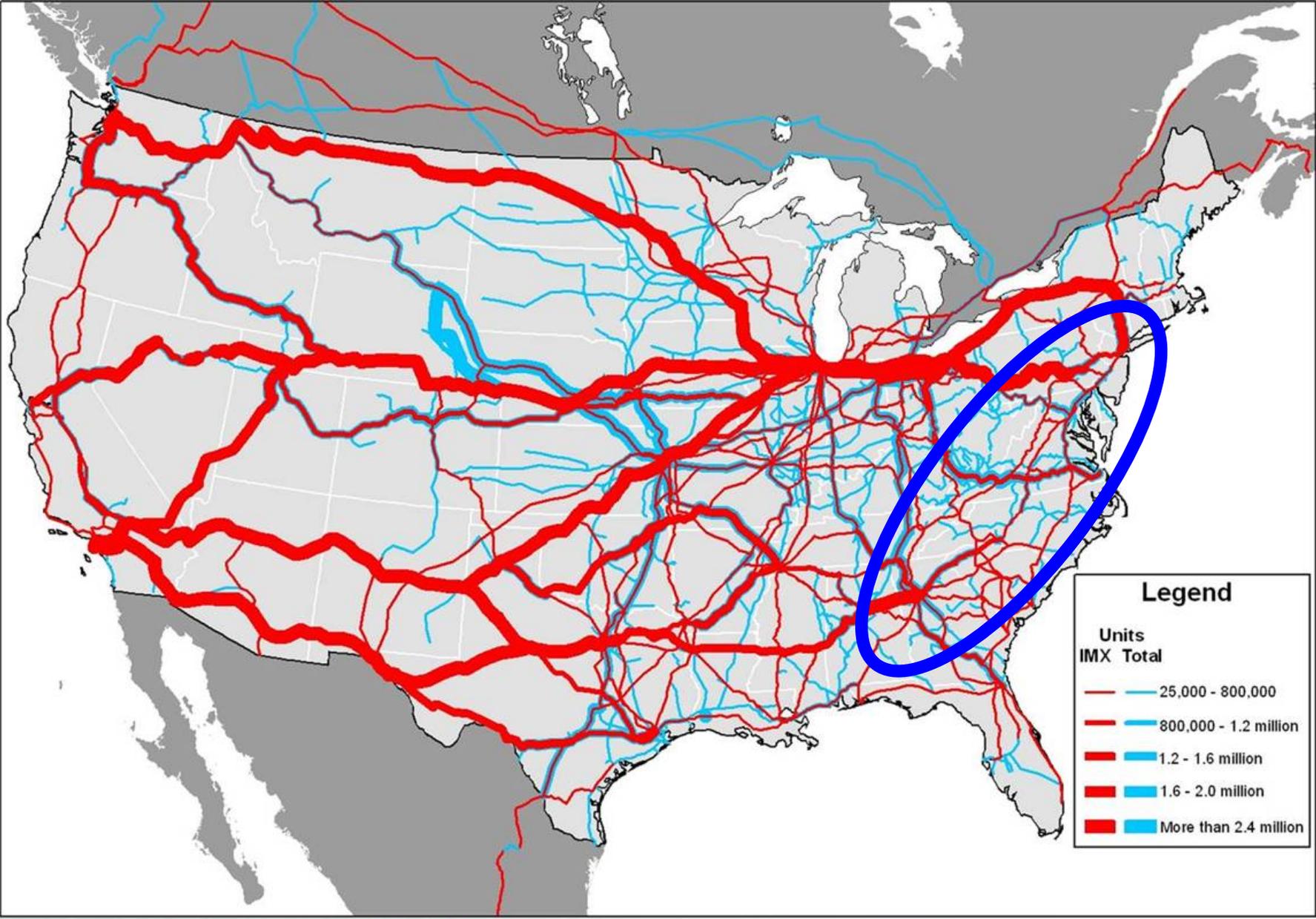
Operational Package

- 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

Truck/Rail Diversion

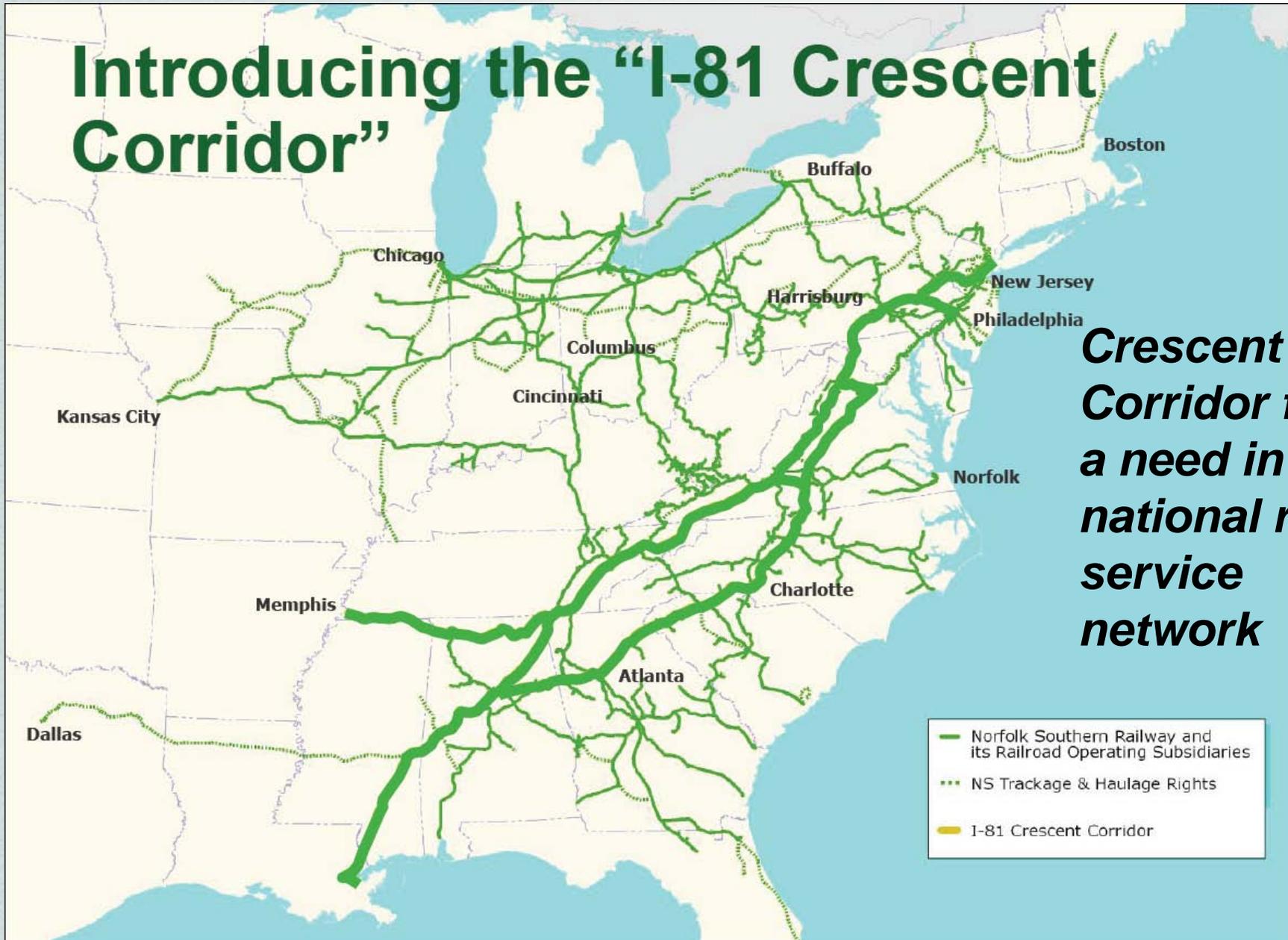
- Truck trips are divertible to rail if:
 - Trip distances are long (greater than 500 – 750 miles)
 - Commodities can be handled easily by rail
 - Bulk goods
 - Non-perishable goods
 - Goods easily packaged and shipped using intermodal containers
 - Rail network matches desired trip origin and destination

Existing Rail Flows



Crescent Corridor

Introducing the "I-81 Crescent Corridor"

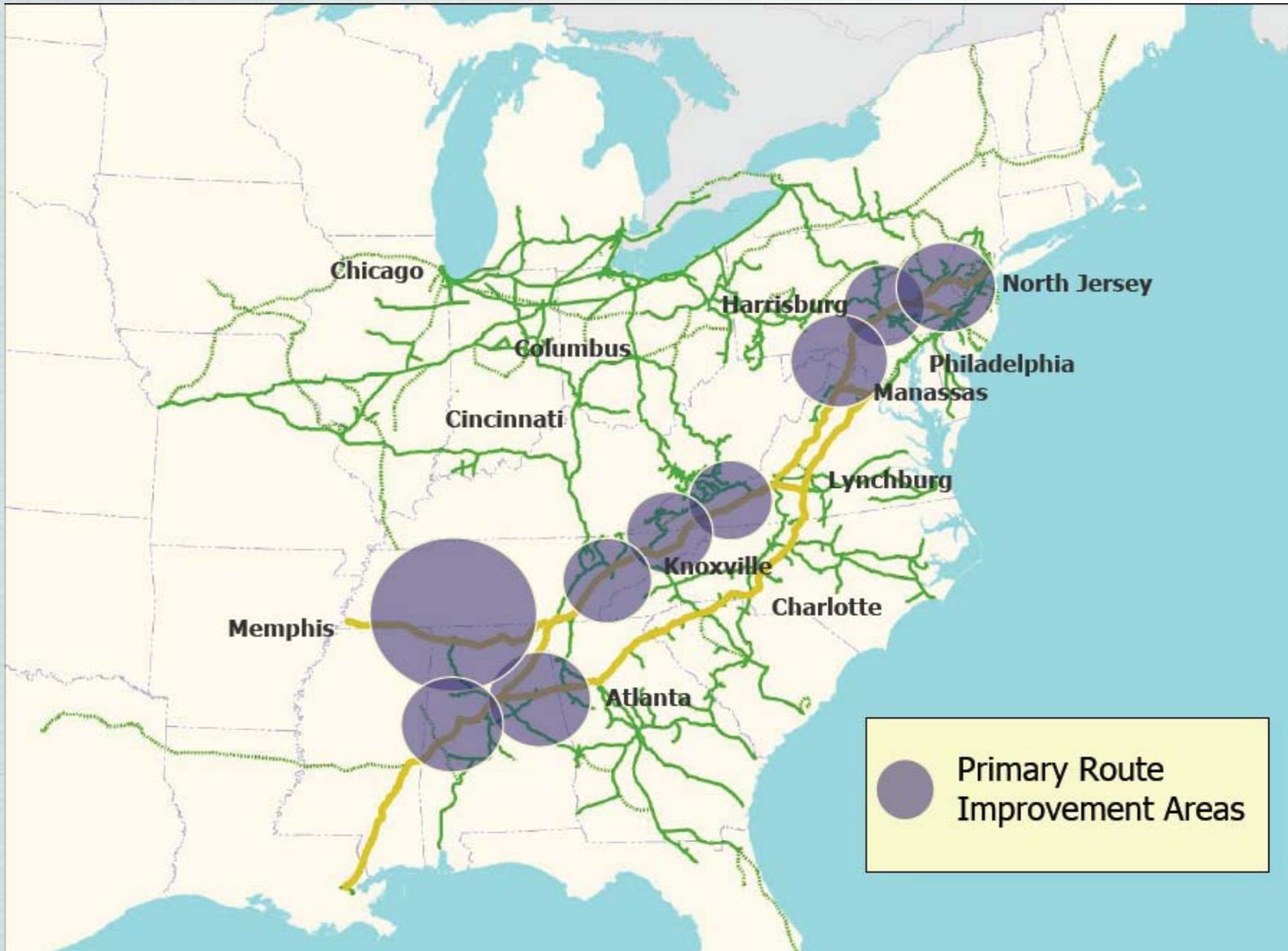


Crescent Corridor fills a need in the national rail service network

Crescent Corridor Service

- Preliminary 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

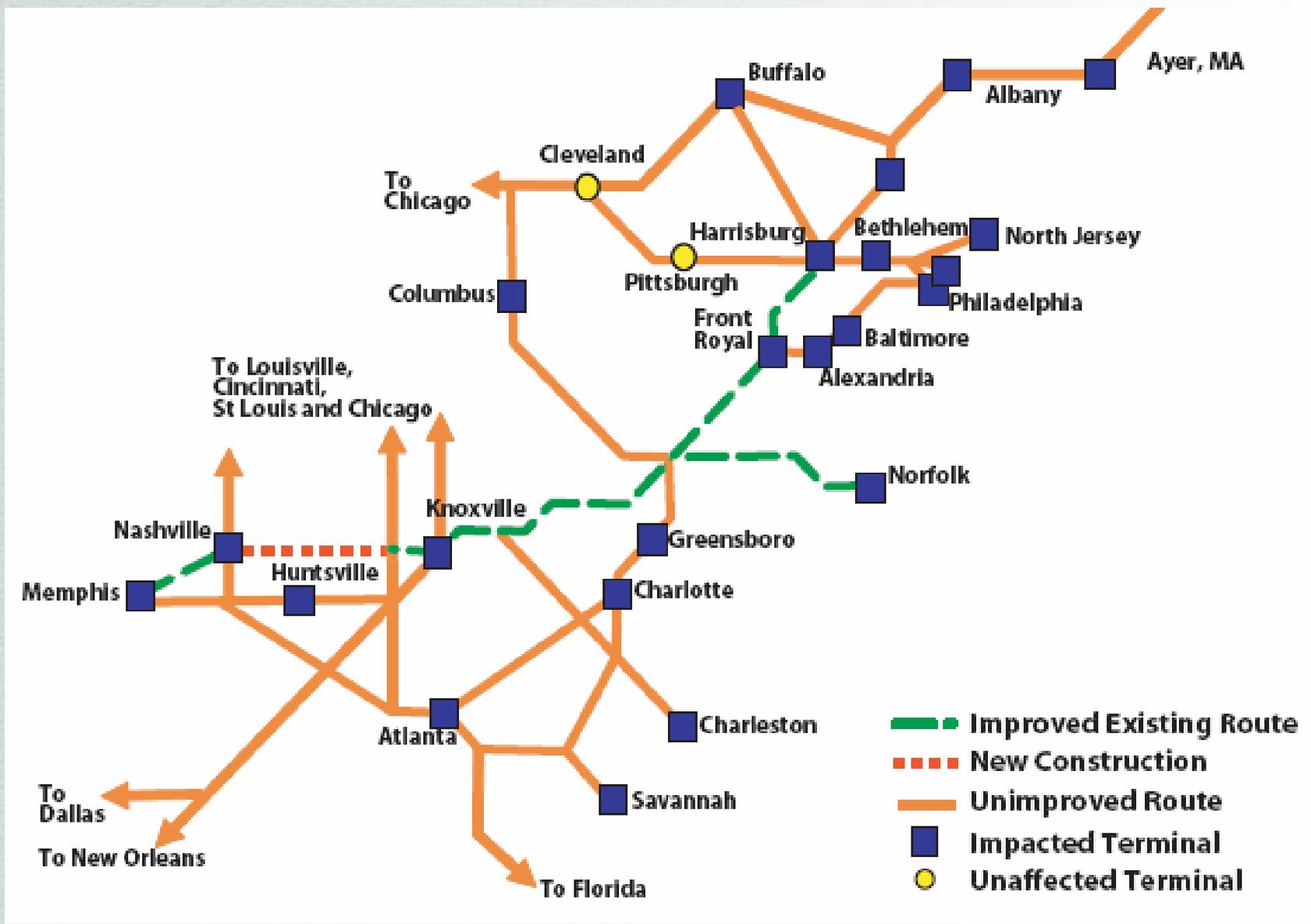
Crescent Corridor Route Improvements



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 (East Tennessee, re-location of Nashville yard to outside of urban area)
- Rail line on new I-40 bridge over Mississippi River bridge in Memphis
- Enhanced rail connectivity
 - Includes analysis of NS Crescent Corridor
 - Completion of statewide east-west rail line

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

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

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

Stakeholder Meetings

- First round in September
- Purpose is to review study purpose, corridor deficiencies, & initial solutions
- Meetings in Memphis, Jackson, Nashville, Cookeville, Knoxville & Kingsport
- Meet with MPO/TPO/RPO staff during day & stakeholders in evening

Stakeholder Meetings – Round 2

- 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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