

Item 5

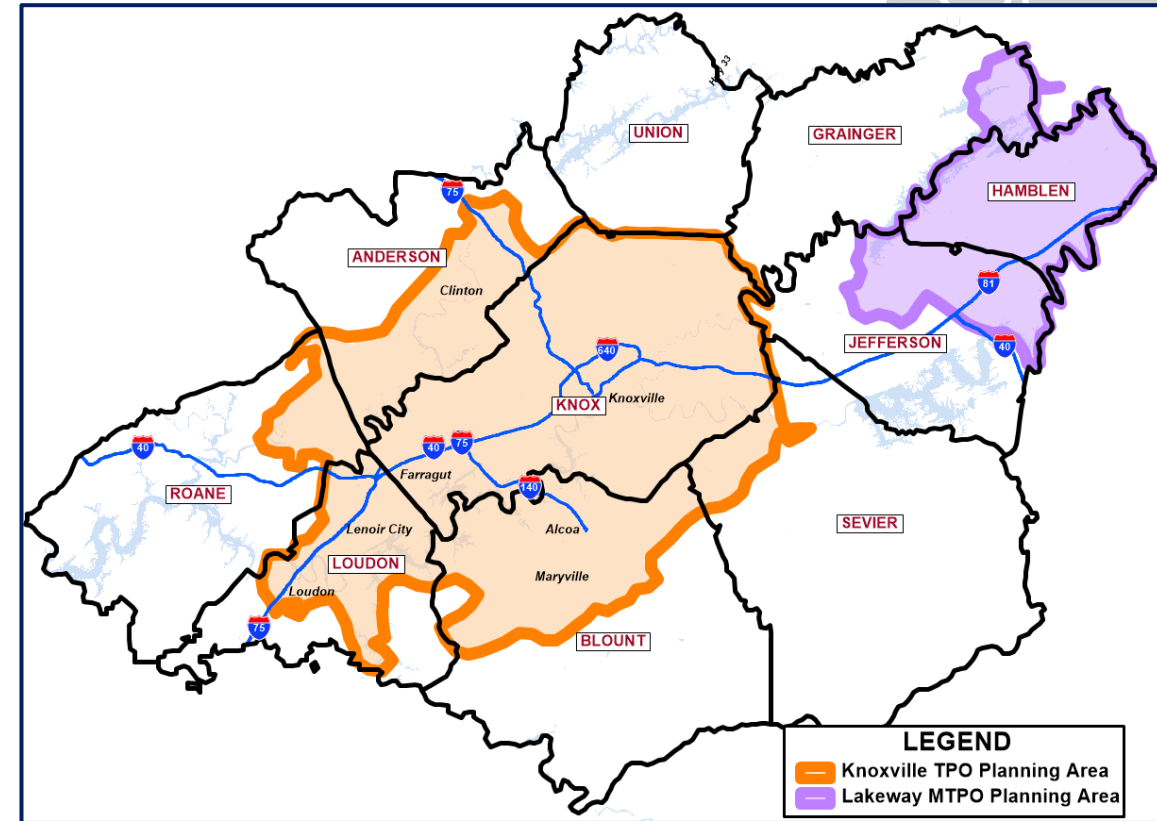
TPO Travel Demand Model Update Scoping Overview

PRESENTER: MIKE CONGER, TPO STAFF

NO ACTION REQUIRED

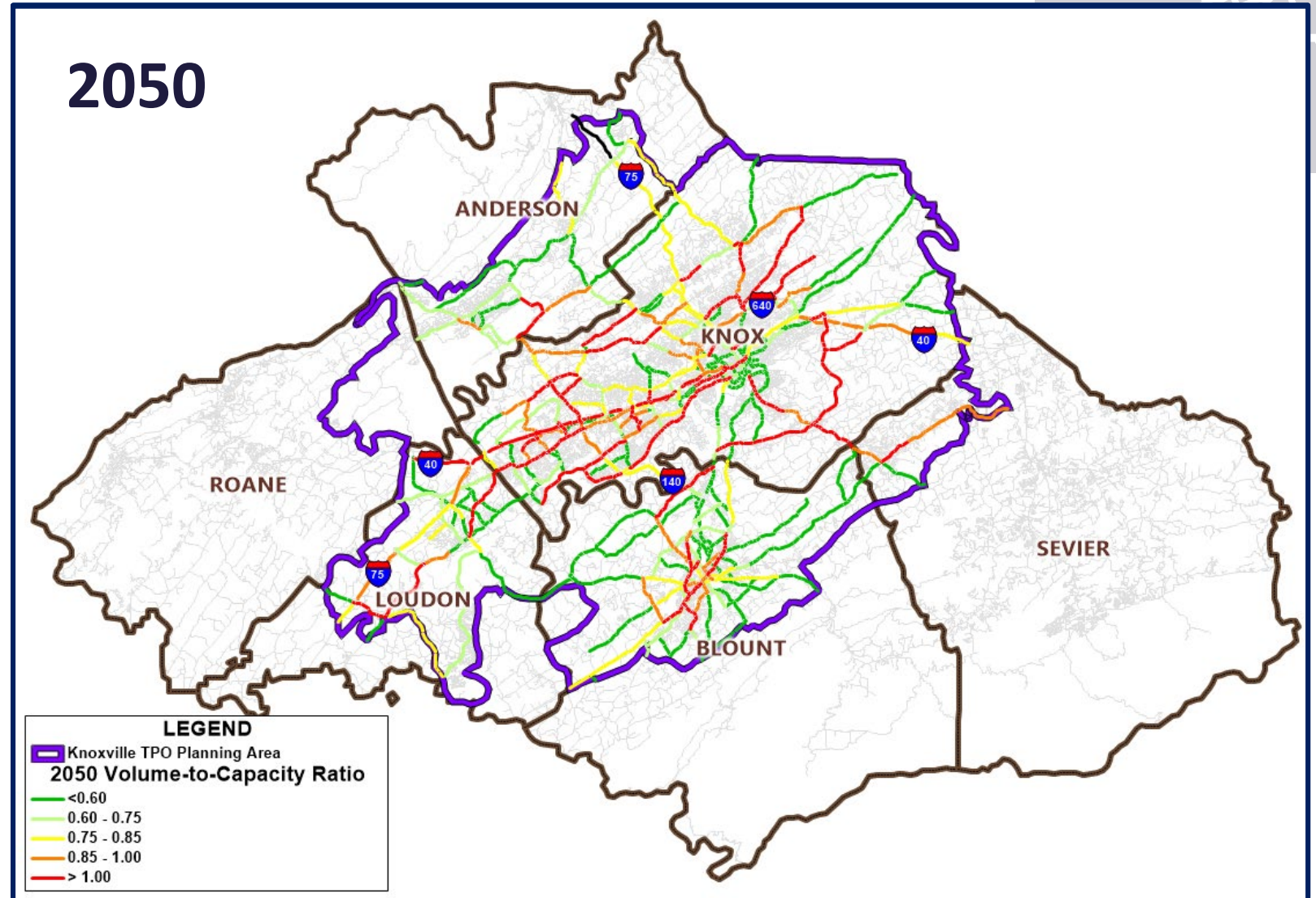
KRTM Overview & Purpose of Scoping Workshop

- Knoxville TPO Maintains a 10-County Regional Travel Demand Forecasting Model that includes all areas subject to Air Quality Conformity
 - Includes both the Knoxville TPO and Lakeway MTPO Planning Areas
- Current model validated to 2022 Base Year but based on platform originally developed in 2009/2010 – reaching end of life
 - Expectation for Mid and Large MPOs to Conduct Major Household Survey and Model Update every 10 years or so to capture changing travel behavior
- 2022 Model Update Contract with Caliper included Visioning/Scoping Exercise to lay groundwork for next major update
 - 1.5 hour Workshop held after July TC Meeting



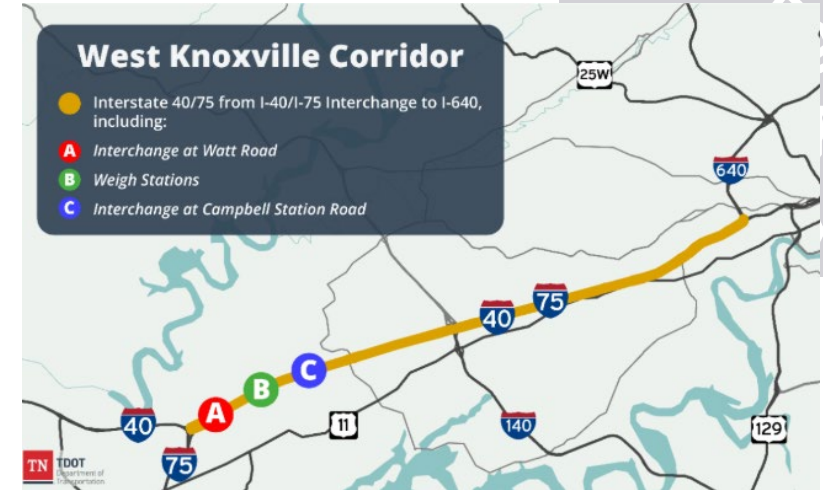
Travel Demand Modeling – Brief Overview

- Mathematical Representation of Travel Demand and Supply
- Origins in 1950's, known as a “4-step Model”
 - Trip Generation
 - Trip Distribution
 - Mode Choice
 - Traffic Assignment
- Allows the TPO to test future scenarios of population growth and impacts to roadway congestion



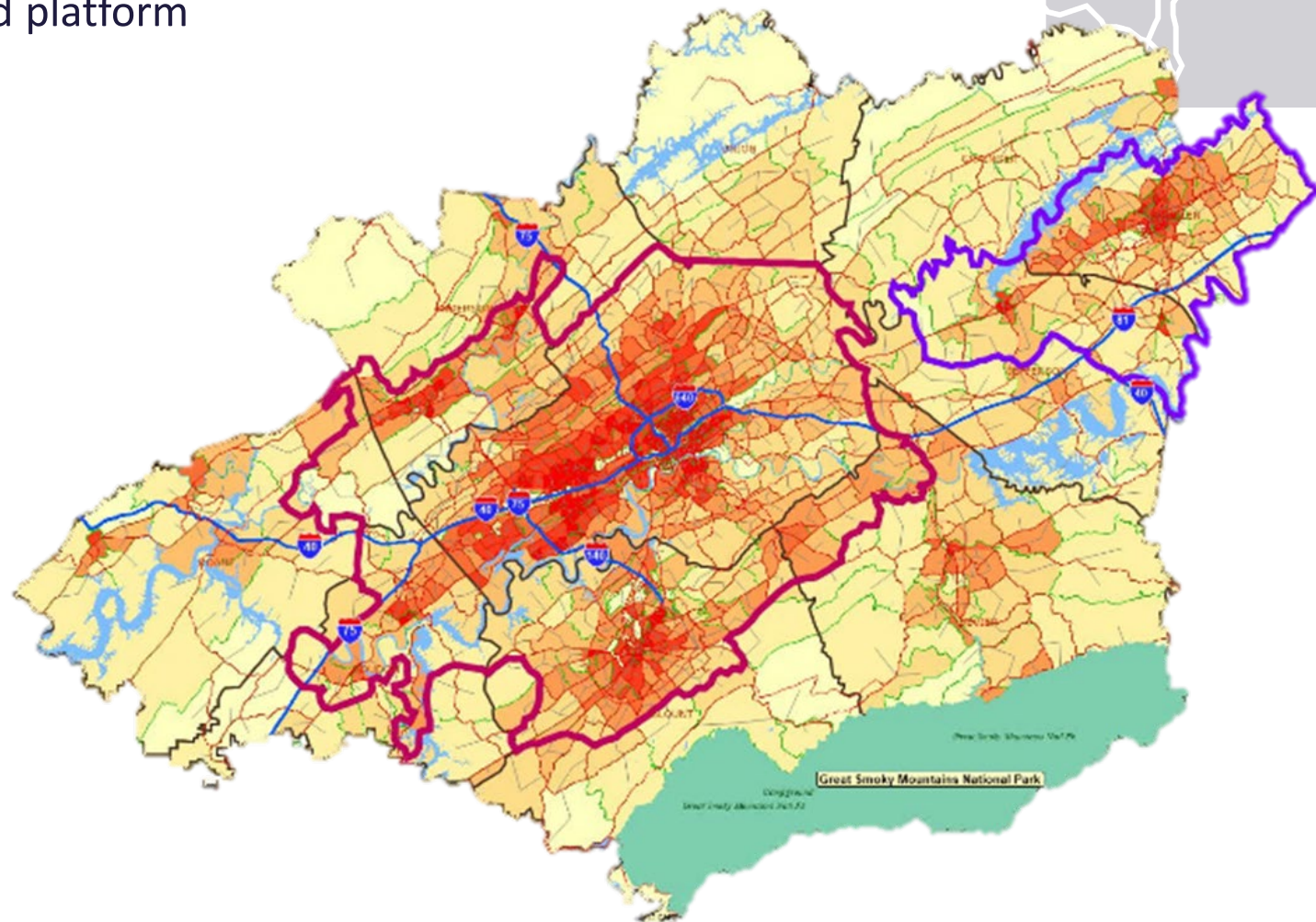
Model Update Key Considerations

- Maintain/Improve the Core Uses
 - Mobility Plan Needs Analysis & Project Prioritization
 - Air Quality Conformity Analysis
 - Project/Design Traffic Forecasting, e.g. I-40/75 West Knoxville Corridor Study
- Determine Need/Importance of Alternate Uses
 - Subarea Studies
 - Traffic Operations
 - Non-motorized & Transit Modes
 - Tolling
 - Autonomous Vehicles
- Spatial Resolution
 - Microzones
 - Road Network Detail – Turn Lane Length, Signal Timing, etc



Model Update Key Considerations (cont.)

- Model Framework
 - Current “Hybrid” traditional/activity-based platform
 - Runtime – 3 to 6 hours
 - Cost - \$250k - \$500k + data
 - Activity-Based Model
 - Runtime – 12 to 24 hours
 - Cost - \$450k - \$750k + data
- Geographic Coverage
 - Still Include Lakeway MTPo counties?
 - Not as important from Air Quality Perspective
 - Tourist Areas of Sevier County
 - Sevier County has developed its own independent model
- Assess Tradeoffs
 - Costs
 - Data Needs
 - Runtime



STAKEHOLDER SURVEY

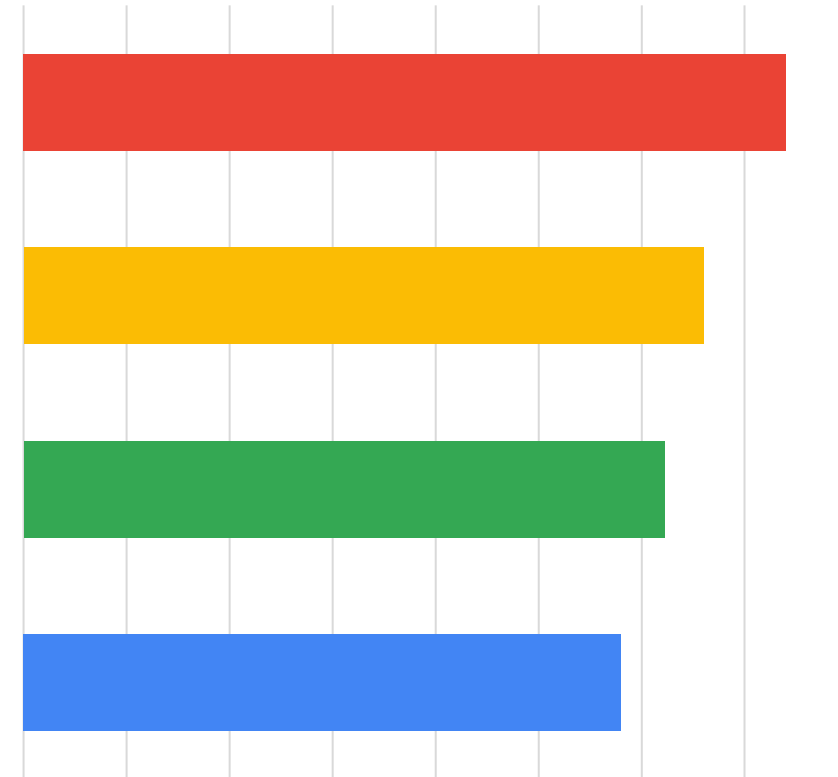


RESPONDENTS

- 12 responses
- Most had not used the model
- But 1/3 claimed a technical background

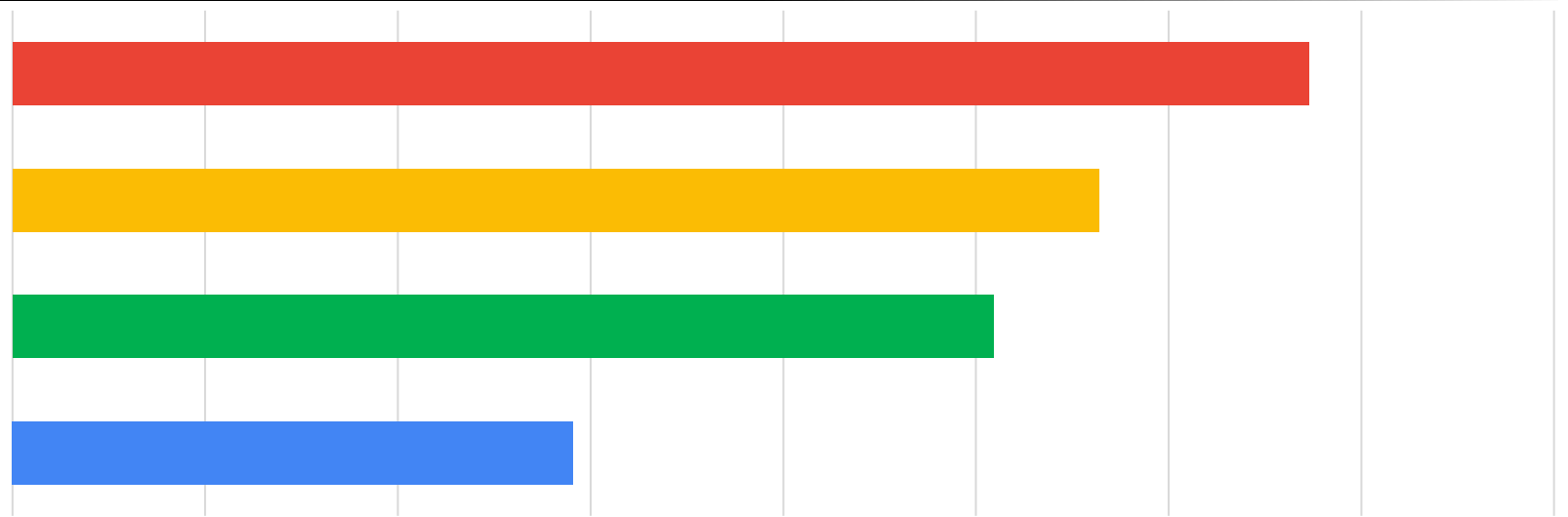
IMPORTANCE IN PRIORITIZING NEEDS

1. **Technical analysis** (quantifying objective, measurable factors, e.g., minutes of delay, vehicle-miles-of-travel)
 - All respondents thought it was very or fairly important
2. **Voter / taxpayer direct input**
3. **Principles / values** (e.g., sustainability, economic benefits, equity, etc.)
4. **Elected officials' priorities**



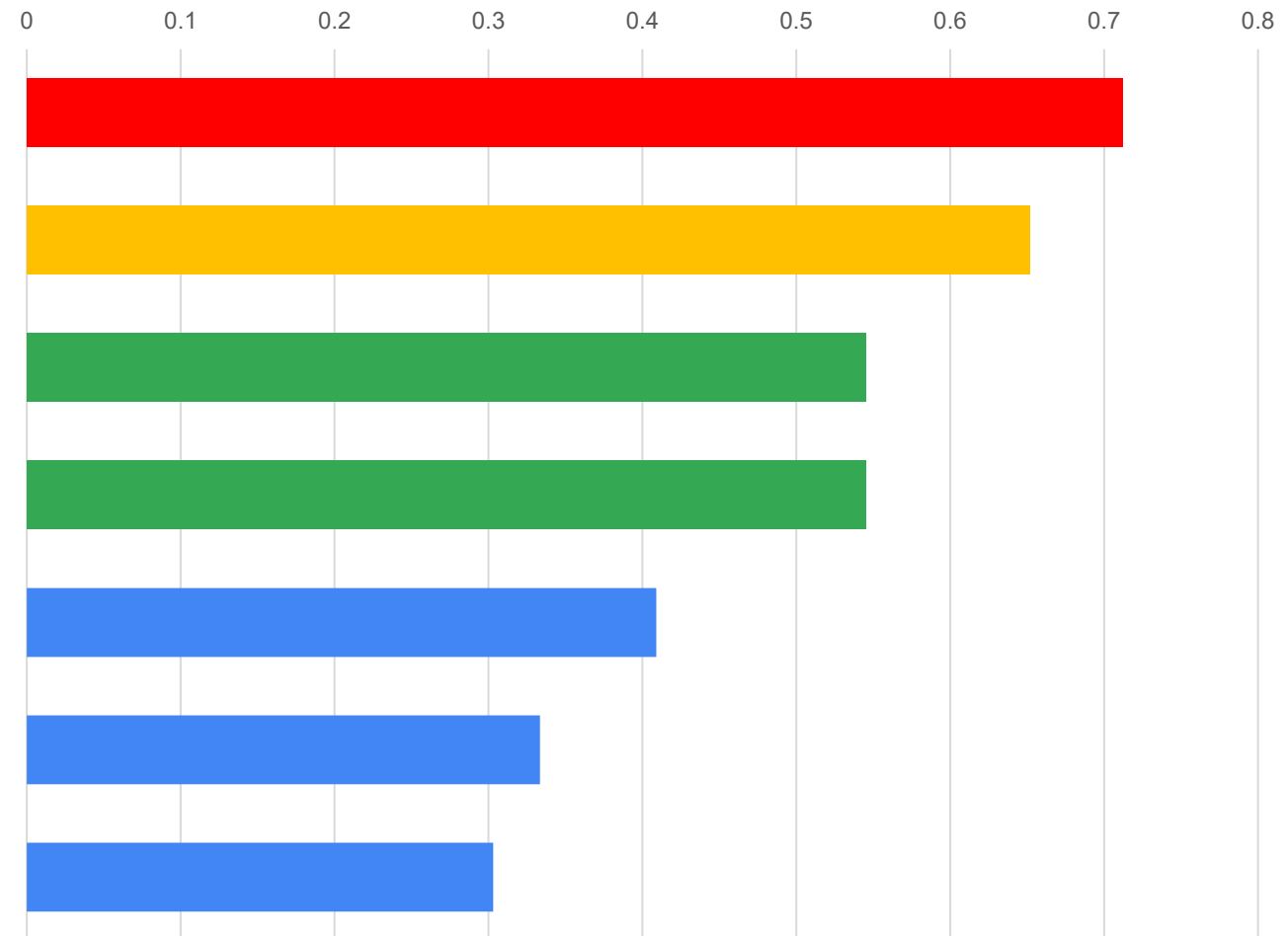
MODELING FOR SPECIAL STUDIES

1. Subarea Plans
2. Transit Studies
3. Bike/Ped Plans
4. Toll Studies



IMPORTANCE OF NEW/OTHER MODEL ANALYSES

1. **Traffic Impacts**
2. **Land Use Scenarios**
3. **Accessibility**
4. **Benefit-Cost**
5. *Modal Investment Strategies*
6. *Technology/Trends*
7. *Equity Analysis*

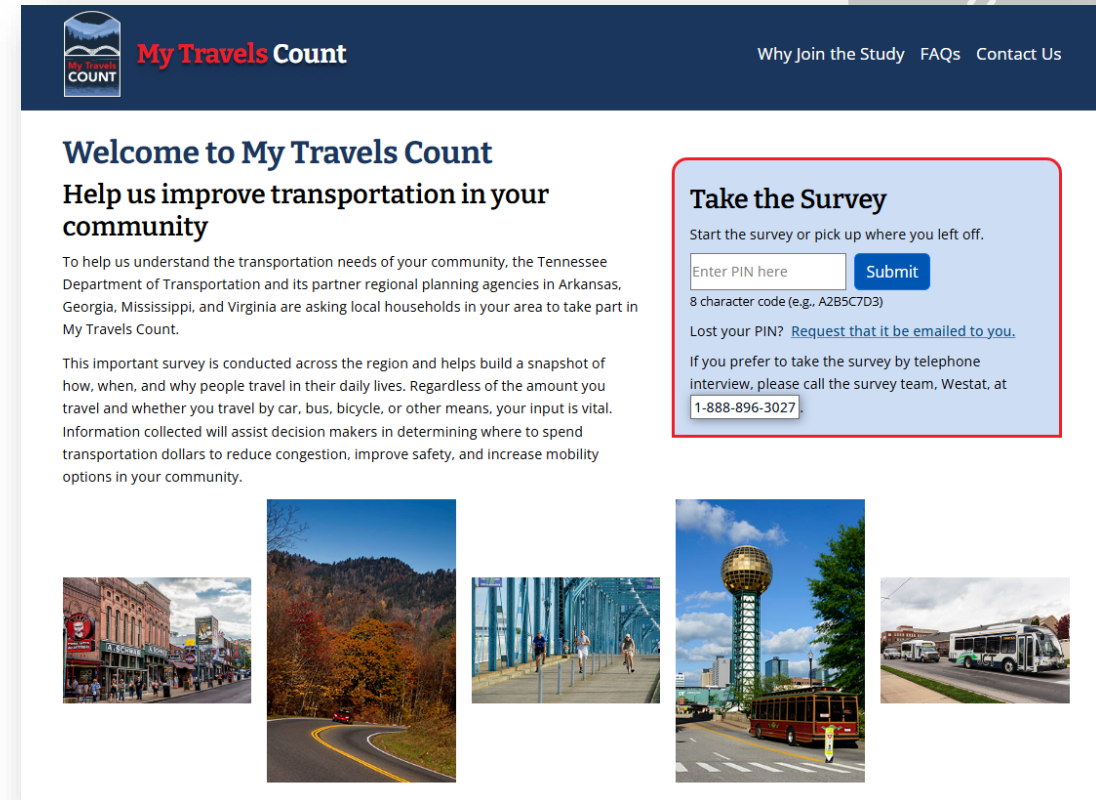


TAKE AWAYS

- All agree that technical analysis is important
 - Most thought further investment in technical analysis could benefit planning for the region
- Important additional analyses identified
 - Subarea plans
 - Traffic impacts
 - Land use scenarios
 - Intersection operations
 - Bike / pedestrian planning
- Model users want short run times and more spatial resolution

Summary & Next Steps

- Model Visioning/Scoping Final Report:
 - Summarize workshop findings
 - Analysis of pros and cons for various model update approaches
 - Identify Data Needs and Costs
- New Regional Household Travel Survey Underway – My Travels Count
 - Complete by end of 2025, Will Provide Primary Data to Develop new Model
 - 3,000 sample Target in KRTM Area – roughly 1,000 collected in Spring, will resume in Fall
- Plan to Release Model Update RFP following completion of Household Survey with Refined Scoping and Final Budget once Modeling Consultant Retained



The screenshot shows the 'My Travels Count' website. The header is dark blue with the logo on the left and navigation links 'Why Join the Study', 'FAQs', and 'Contact Us' on the right. The main content area has a white background. A large heading reads 'Welcome to My Travels Count' followed by 'Help us improve transportation in your community'. Below this is a paragraph explaining the survey's purpose. To the right, a red-bordered box titled 'Take the Survey' contains a form with a 'Submit' button and a phone number. At the bottom, there are five small images: a street scene, a winding road, a bridge, a water tower, and a bus.

My Travels Count

Why Join the Study FAQs Contact Us

Welcome to My Travels Count

Help us improve transportation in your community

To help us understand the transportation needs of your community, the Tennessee Department of Transportation and its partner regional planning agencies in Arkansas, Georgia, Mississippi, and Virginia are asking local households in your area to take part in My Travels Count.

This important survey is conducted across the region and helps build a snapshot of how, when, and why people travel in their daily lives. Regardless of the amount you travel and whether you travel by car, bus, bicycle, or other means, your input is vital. Information collected will assist decision makers in determining where to spend transportation dollars to reduce congestion, improve safety, and increase mobility options in your community.

Take the Survey

Start the survey or pick up where you left off.

8 character code (e.g., A2B5C7D3)

Lost your PIN? [Request that it be emailed to you.](#)

If you prefer to take the survey by telephone interview, please call the survey team, Westat, at .

