Presentation Overview

• Study Background
• Nashville 2010/2040 Model
• Subarea Model Validation
• Preliminary Results
• Model Application Tips
• Next Steps
Study Background

- Task 1: Development of Vision, Goals, Objectives, and Investment Strategies
- Task 2: Stakeholder and Public Involvement Plan and Activities
- Task 3: Inventory of Existing Conditions
- Task 4: Assessment of Current and Future Needs
- Task 5: Transportation Recommendations
- Task 6: Best Practices Guidebook
- Task 7: Workbook, Adoption and Implementation
• Outreach has included an interactive online map for folks to provide input
Study Background (Cont’d)

- Catalyst Sites – 2 sites were chosen based on potential for rapid development

Golden Bear Gateway

Adams Parkway
Study Background (Cont’d)

- Proposed Connectivity & Laneages
Nashville 2010/2040 Model

- Model recently updated to base year 2010 & future year 2040
- Request for model files includes filling out MPO’s data sharing agreement & travel demand model data request form
- Model covers 7 counties:
  1. Davidson County (Metro-Nashville)
  2. Maury County
  3. Robertson County
  4. Rutherford County
  5. Sumner County
  6. Williamson County
  7. Wilson County (Mt. Juliet)
Nashville 2010/2040 Model (Cont’d)

- Major enhancements vs. the prior 2035 model include:
  - All-road network based on the Tennessee Roadway Information Management System (TRIMS)
  - Population synthesizer
  - Vehicle-ownership model
  - New trip purposes
  - Destination-choice model for passenger trips (gravity model still used for trucks and externals)
  - Integrated mode-choice model
Nashville 2010/2040 Model (Cont’d)

- New person trip purposes in model:
  - Home-Based Other (HBO)
  - Home-Based Work (HBW)
  - Home-Based Pickup/Delivery (HBPD)
  - Home-Based School (HBSCH)
  - Home-Based Shop (HBS)
  - Non Home-Based Work (NHBO)
  - Non Home-Based Other (NHBW)

- 3 airport trip purposes added: Air HBO, Air Visit, Air NHBW (from Raleigh model)

- Also Multi-Unit Trucks, Single-Unit Trucks, & Commercial Vehicle components
Subarea Model Validation

- Review regional validation statistics
- Review screenline volume-over-count ratios in Mt. Juliet/Western Wilson County

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<tr>
<th>ID</th>
<th>Screen/Cut Line</th>
<th>Model</th>
<th>Counts</th>
<th>Number of Counts</th>
<th>% Error</th>
<th>FHWA standard</th>
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</table>

Figure 8-2: Screen Line and Cut Line Locations
Subarea Model Validation (Cont’d)

- Review volume-over-count ratios in Mt. Juliet/Western Wilson County by corridor
- Confirm completeness of traffic counts
- Verify base year 2010 laneages, assignment location codes, and functional classifications
  - Assignment LOC – Determines links used in traffic assignment
Subarea Model Validation (Cont’d)

• Adjust centroids and centroid connectors to better conform to local access patterns in Mt. Juliet

• In some cases, this involved activating some links not previously used in assignment

• Make corrections to laneages where coded incorrectly
Subarea Model Validation (Cont’d)

- Link volume-over-count ratios (before & after)
Preliminary Results

- For initial public meetings, prior to subarea validation and receipt of updated MPO files...
  - Mapped PM V/C Ratios for 2015 vs. 2040
  - As expected, V/C Ratios are generally worse in 2040
Preliminary Results (Cont’d)

• For initial public meetings, prior to subarea validation and receipt of updated MPO files...
  • Mapped PM Travel Time Isochrones for 2015 vs. 2040
  • As expected, travel times are generally longer in 2040 (note color spectrums are slightly different)
Model Application Tips

• Files MUST be located here: C:\Nashville
• Nashville Model System Requirements *(for real)*
  • Microsoft Windows 7 64bit
  • JAVA JRE 7 64bit or newer
  • JAVA JDK SE 7 64bit or newer
  • 12 GB Memory
  • TransCAD 6.0 6 4bit build 9065 or newer
• Don’t mistakenly edit networks using TransCAD 7 and try to run in TransCAD 6… it won’t work!
  • Likewise, .MAP files created in TransCAD 7 can not be opened using TransCAD 6
Model Application Tips (Cont’d)

• 32-bit TransCAD 6.0 doesn’t seem to work so be sure to use 64-bit software version
• Different model scripts are required for 2010 vs. other years (issue related to HOV lanes)
• Best to have transit network open while editing highway network even if you’re only editing links without transit routes on them
• Make sure you have the latest files from the MPO before proceeding… file updates might not work in conjunction with other older files
• Confirm replication of MPO’s results
Next/Future Steps

• Consider need for one more 2010 base year run with additional centroid modifications
• Make final 2010 network edits to 2040 network
• Update 2040 V/C ratios and travel time isochrones
• Consider adjustments to plan recommendations based on updated model
• Possible final 2040 run with any plan changes
Next/Future Steps (Cont’d)

- Not surprisingly, there are some very large TAZs in the model within the Mt. Juliet area.
- Consider zone splits though likely beyond scope and budget for Mt. Juliet Plan...
- Certainly recommended for next MPO model update.
Acknowledgements

- City of Mt. Juliet, especially Andy Barlow, Assistant Public Works Director and Rob Ealy, GIS Technician
- Nashville MPO, especially Hary Prawiranata
- Others on the Stantec team, especially Mike Rutkowski, Project Manager
Questions?