Task 11 -

Transit Assignment for the Version 2.3 Travel Model

presented to

TPB Travel Forecasting Subcommittee

presented by

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Transportation leadership you can trust.

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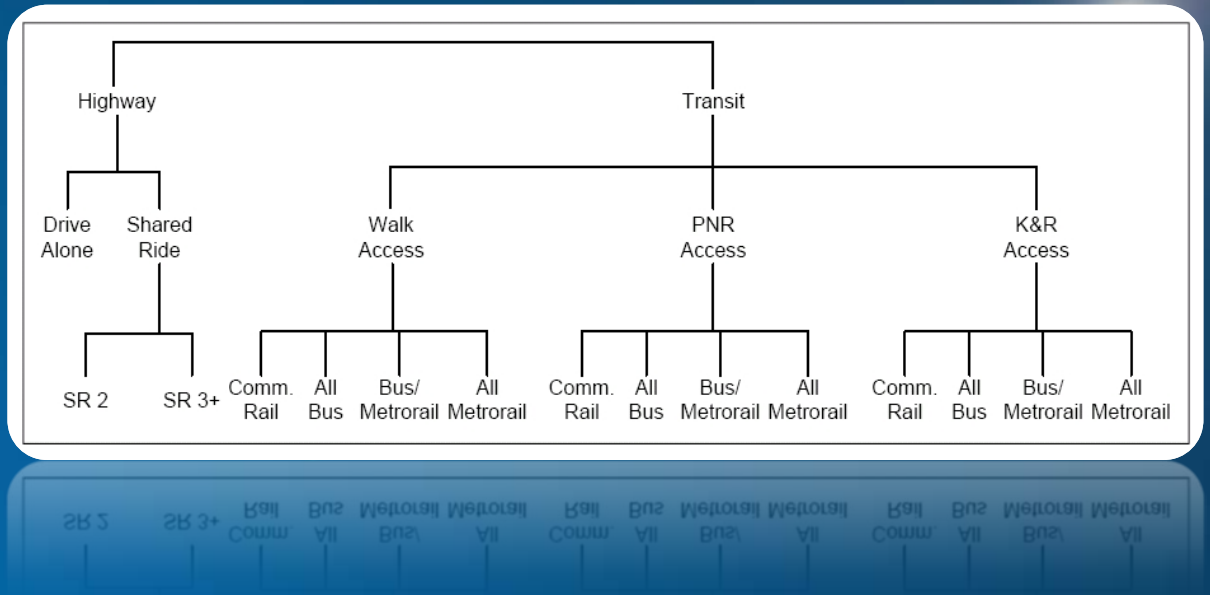
Task 11 Transit Assignment for the Version 2.3 Travel Model

- Focus on Rail Assignment
- Graphical Output Options
- Reasonableness Guidelines
- Data Sources

Challenges

- New Process
- Submodes
- Previous Model
  - » No Assignment
  - » Applied Transit Assignment Not Mode Specific
- Roots in the WMATA Post-Processor



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Challenges (continued)

- Data
  - » Boardings
  - » Passenger Loads
  - » Purpose
  - » Productions and Attractions
  - » Time-of-Day

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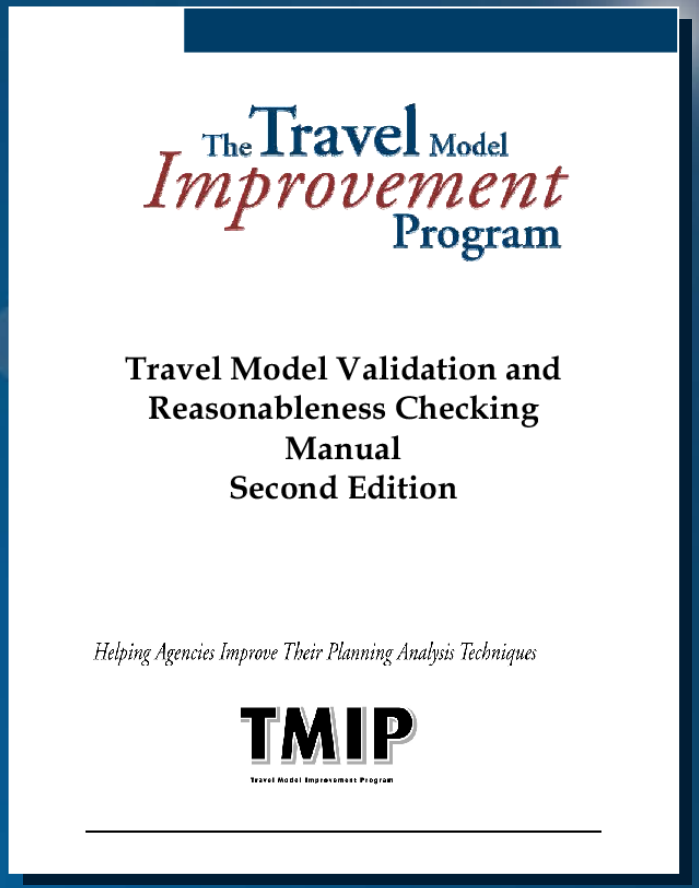
Metrics

- TMIP Travel Model Validation and Reasonableness Checking Manual Second Edition
- Screenlines and Cutlines
- Cordon Counts
- Passenger Miles Traveled
- No Performance Standard



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Metrics (continued)

- FSUMTS-CUBE Framework Phase II Model Calibration and Validation Standards
  - » Assigning On-Board Survey (FTA Recommendation)
  - » Estimated to Observed

Validation Statistic	Acceptable	Preferable
Regional Estimated-over-Observed Transit Trips (Boardings)	+/- 9 %	+/- 3 %
Transit Screenline	+/- 20 %	+/- 10 %
Transit Line Ridership: <1,000 Passengers per Day	+/- 150 %	+/- 100 %
Transit Line Ridership: 1,000 – 2,000 Passengers per Day	+/- 100 %	+/- 65 %
Transit Line Ridership: 2,000 – 5,000 Passengers per Day	+/- 65 %	+/- 35 %
Transit Line Ridership: 5,000 – 10,000 Passengers per Day	+/- 35 %	+/- 25 %
Transit Line Ridership: 10,000 – 20,000 Passengers per Day	+/- 25 %	+/- 20 %
Transit Line Ridership: 20,000 Passengers per Day	+/- 20 %	+/- 15 %

Focus

- Metro
  - » Boardings by Station Group
  - » Regional Boardings – Reasonable
  - » By Line - Reasonable
  - » Station Group Challenges
    - Mode of Access
      - ♦ Drive Access PNR Choice
      - ♦ KNR
    - Bus Competition
      - ♦ Walk Access

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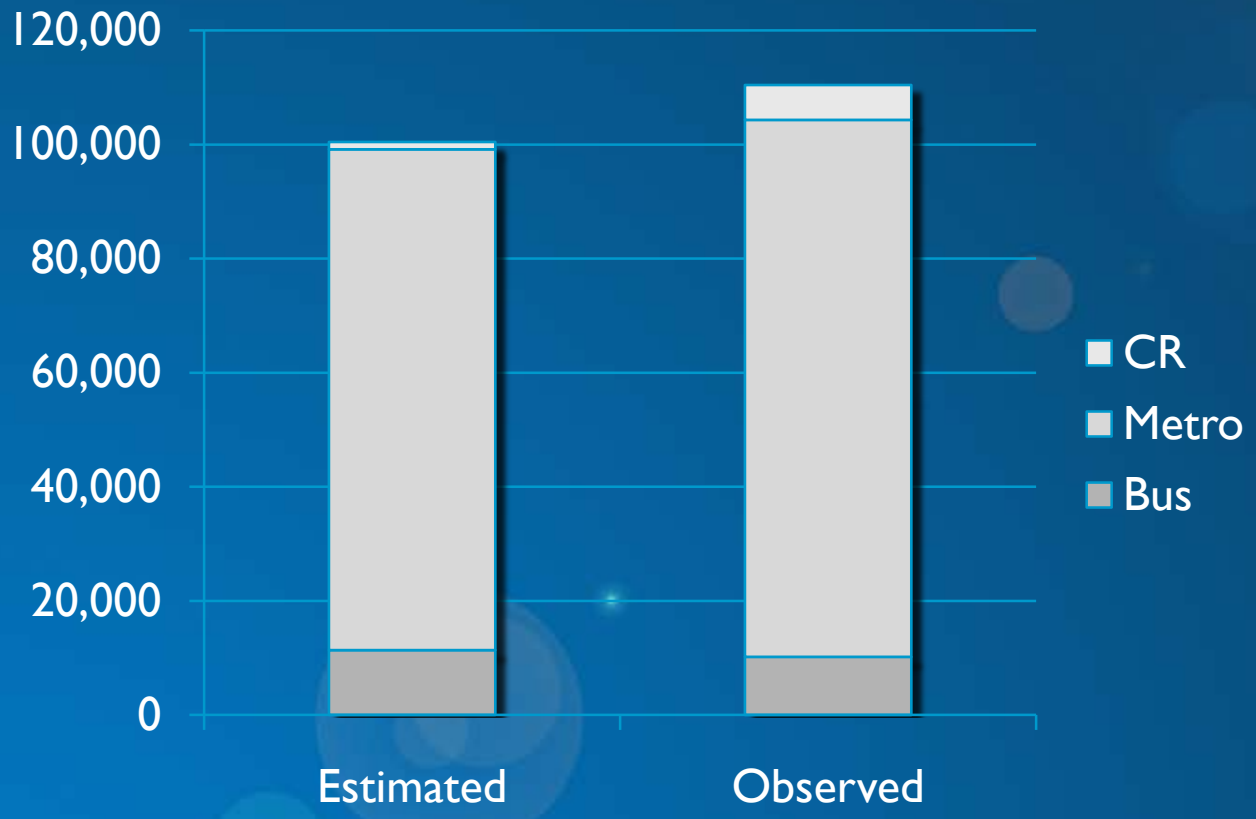
Focus (continue)

- Commuter Rail
  - » VRE
  - » MARC
- Directional Travel
- Boardings By Station
- Drive Access Issue PNR Choice

Potomac Screenline



+/-10% Threshold

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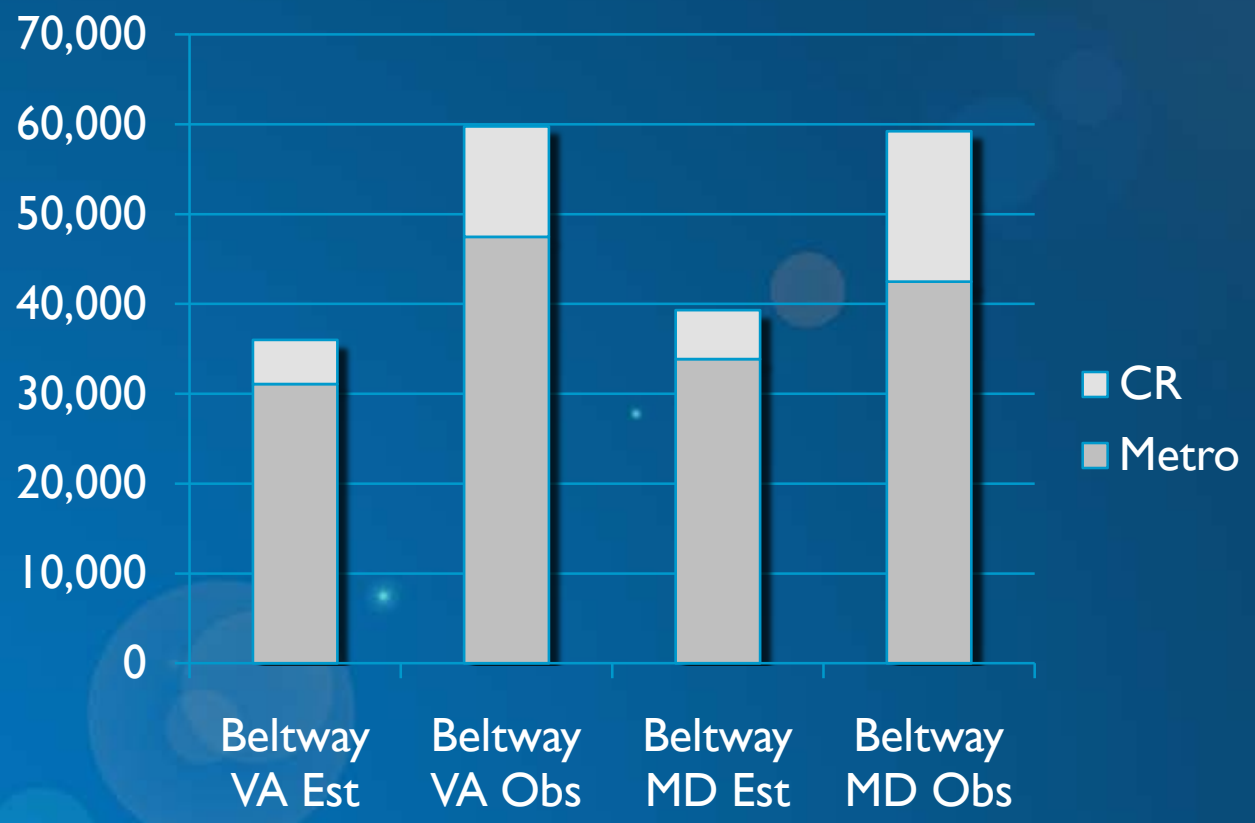
Beltway Screenline



- *The screenline is missing bus passengers.*
- *The impact of the drive access and PNR choice is a potential issue.*
- *Requires special attention in corridor studies outside of the Beltway.*

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Other Agencies

Seattle Transit Validation

Transit Operator	2000 Modeled Boardings AM	MD	Daily	2000 Observed Boardings Daily	Percent Difference
King County Metro	92,940	77,627	294,226	329,913	-11%
Pierce Transit	9,987	11,440	36,661	45,265	-19%
Community Transit and Everett Transit	10,070	7,662	30,660	33,318	-8%
Kitsap Transit	4,403	3,967	14,410	11,889	21%
Washington State Ferries	11,372	2,114	23,979	21,000	14%
Sound Transit	10,006	8,900	32,560	see note	n/a
Total	**138,778**	**111,710**	**432,497**	**441,385**	-2%

Other Agencies (continued)

Baltimore Transit Validation

Transit Boardings by Submode

Submode	2000 Observed Boardings	Version 3.3 2000 BMC Model Estimate	% Error
Bus	239,908	273,280	14%
Rail	74,968	64,962	13%
MARC	17,899	12,842	-28%

Other Agencies (continued)

- NYMTC Best Practices Model
  - » Iterative Transit Assignment Using O-D Trip Tables
  - » Transit Capacity Incorporated Using BPR-like Congestion Equations
  - » Five Iterations - 2.5 days to Run
  - » Validated for Morning Peak Only
    - Subway Station Boardings
    - Screenlines for Bus Volumes
    - Commuter Rail Ridership by Line

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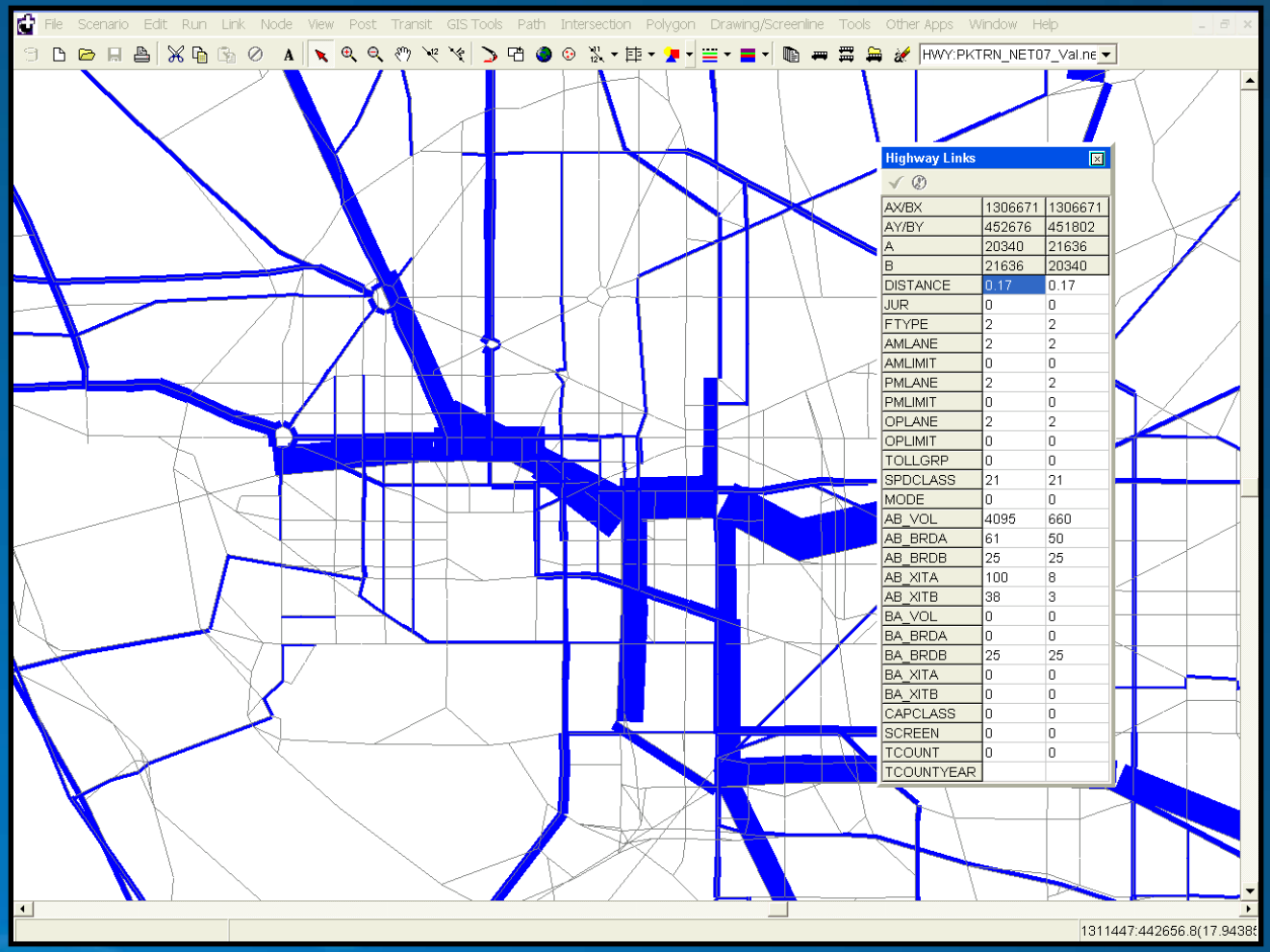
Graphical Output



- Transit Assignment DBF Files Output
- Sort DBF by Mode
- Sum Volumes by Link for Motorized Modes
- Build Network with Rail Modes
- Upload Sorted DBF Files

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Summary

- Data is a Challenge
- Drive and Walk Access Present Challenges
- Future Exploration Would be Assigning Drive Access Trips
- Need to Define The Expectation of the Transit Assignment Based on the Focus of the Study

Questions or Comments

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