Montgomery County:
Regional Transportation Model Conversion to Travel/4 Model and Trip Generation Study

Presentation to the
Travel Forecasting Subcommittee, TPB/MWCOG
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M-NCPPC, Montgomery County Planning Department has engaged VHB-led consultant team (includes RPG, Gallop, Frank Spielberg) to perform two tasks:

- **Upgrade the regional travel demand forecasting model from Travel/3 to Travel/4**

- **Update local trip generation rates used in support of traffic impact studies**

Project Background and Objectives

1. Travel/4 Model Upgrade

- The existing model, "Travel/3", is a County-focused adaptation of MWCOG's Ver2.1Dx50 model developed in 2004. More detail relative to Ver2.1Dx50 (network enhanced and 318 TAZs were used).

- The "Travel/4" upgrade is a County-focused adaptation of MWCOG's Ver2.3.57 model. More network and TAZ detail relative to Ver2.3.57. Validate to confirm improved performance in Montgomery County.

2. Trip Generation Rate Update

- Many current local trip generation rates used in support of TISs were developed in 1989 and do not adequately reflect travel associated with in-fill/mix-used development in "Smart Growth" areas.

- Update local trip generation rates to better reflect travel in "Smart Growth" and CBD/TOD areas.
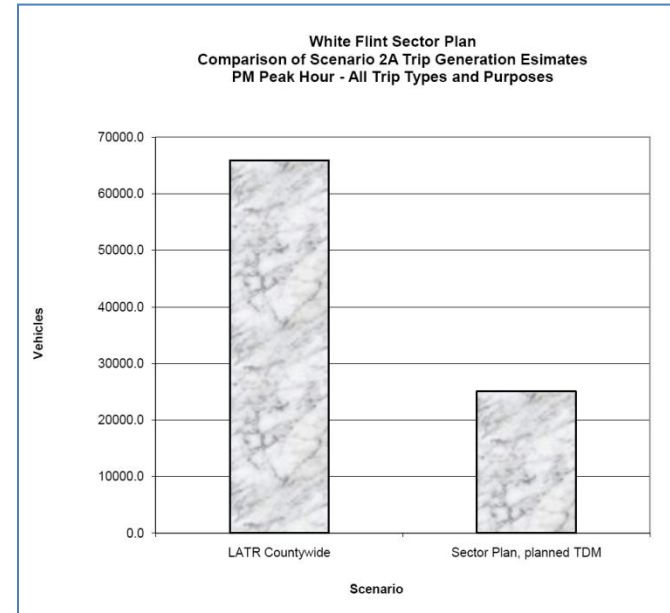
Project Schedule

Current Status

- **Updating highway and transit networks to convert the County's enhanced network to the new 3722-TAZ system**

- **Added 19 new TAZs to the current 376 TAZs in Montgomery County**

- **Reviewing Travel/3 and Version 2.3 Comparison**

- **Evaluating accessibility-related variables ("6Ds") to support identification of "Smart Growth" sites for trip generation rate update. (Use information derived from the MWCOG model as appropriate.)**
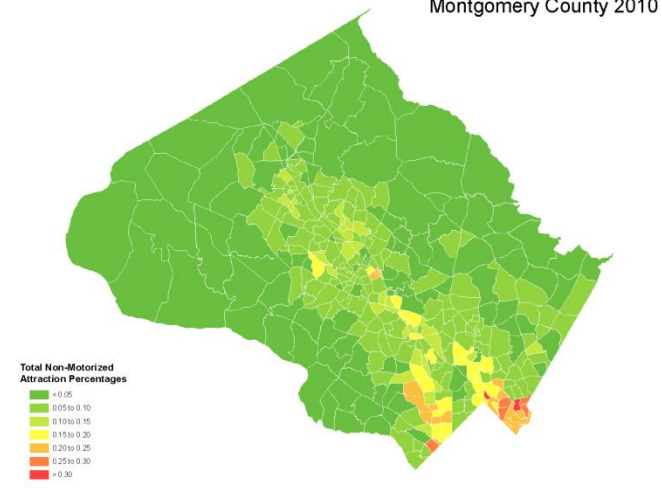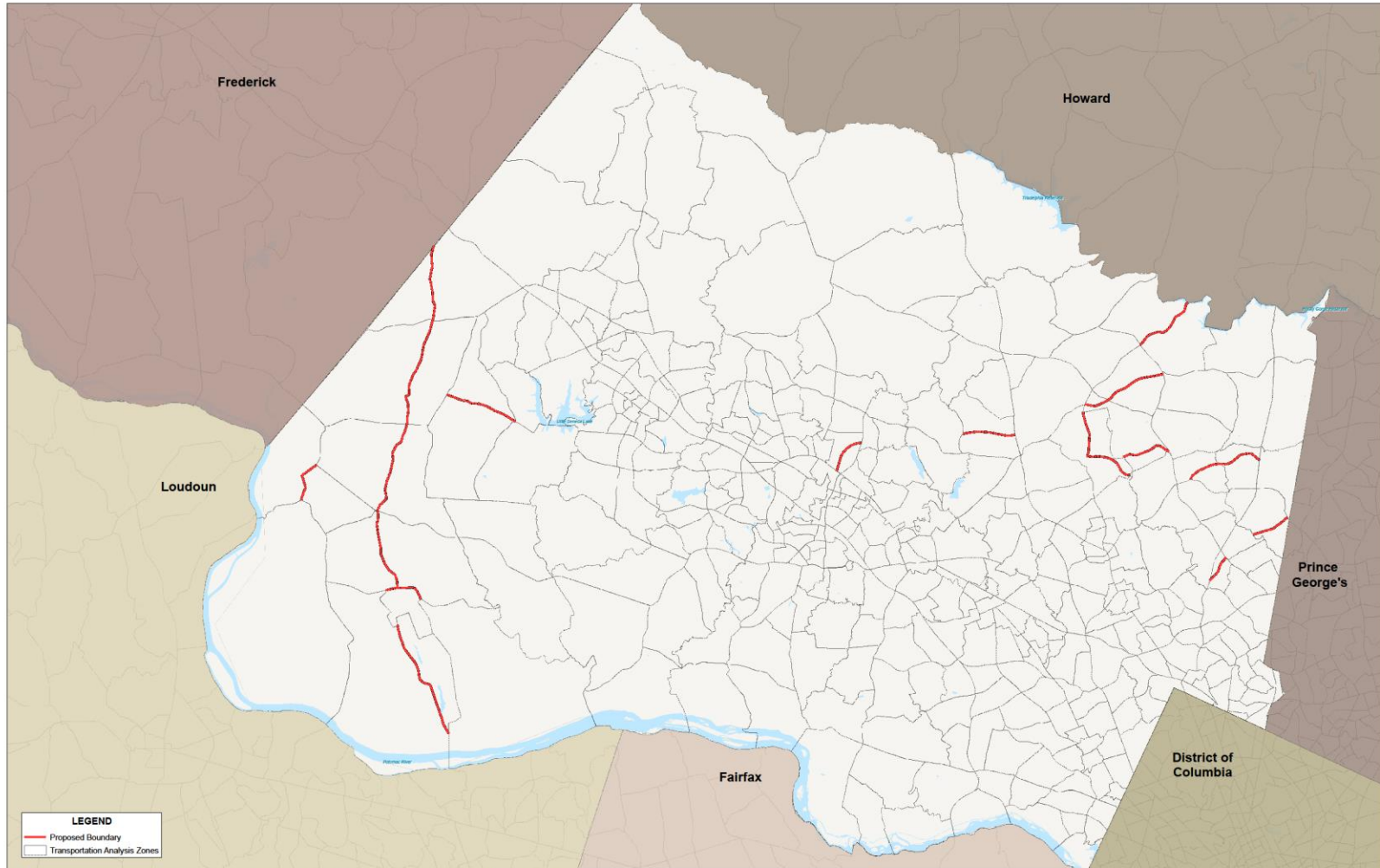
Trip Generation Study

- Refine/revise local vehicle trip generation rates in *LATR/TPAR Guidelines*

- Reflect current thinking on smart growth variables (6Ds)

- Leverage new ITE *Trip Generation Handbook* focus on person trip / vehicle trip conversion

- Incorporate non-auto-driver-mode share (NADMS) information in MWCOG model

- Develop vehicle trip adjustment factors at policy-area scale for most Ds; at site-level scale for distance to transit.

White Flint Sector Plan
Comparison of Scenario 2A Trip Generation Esimates
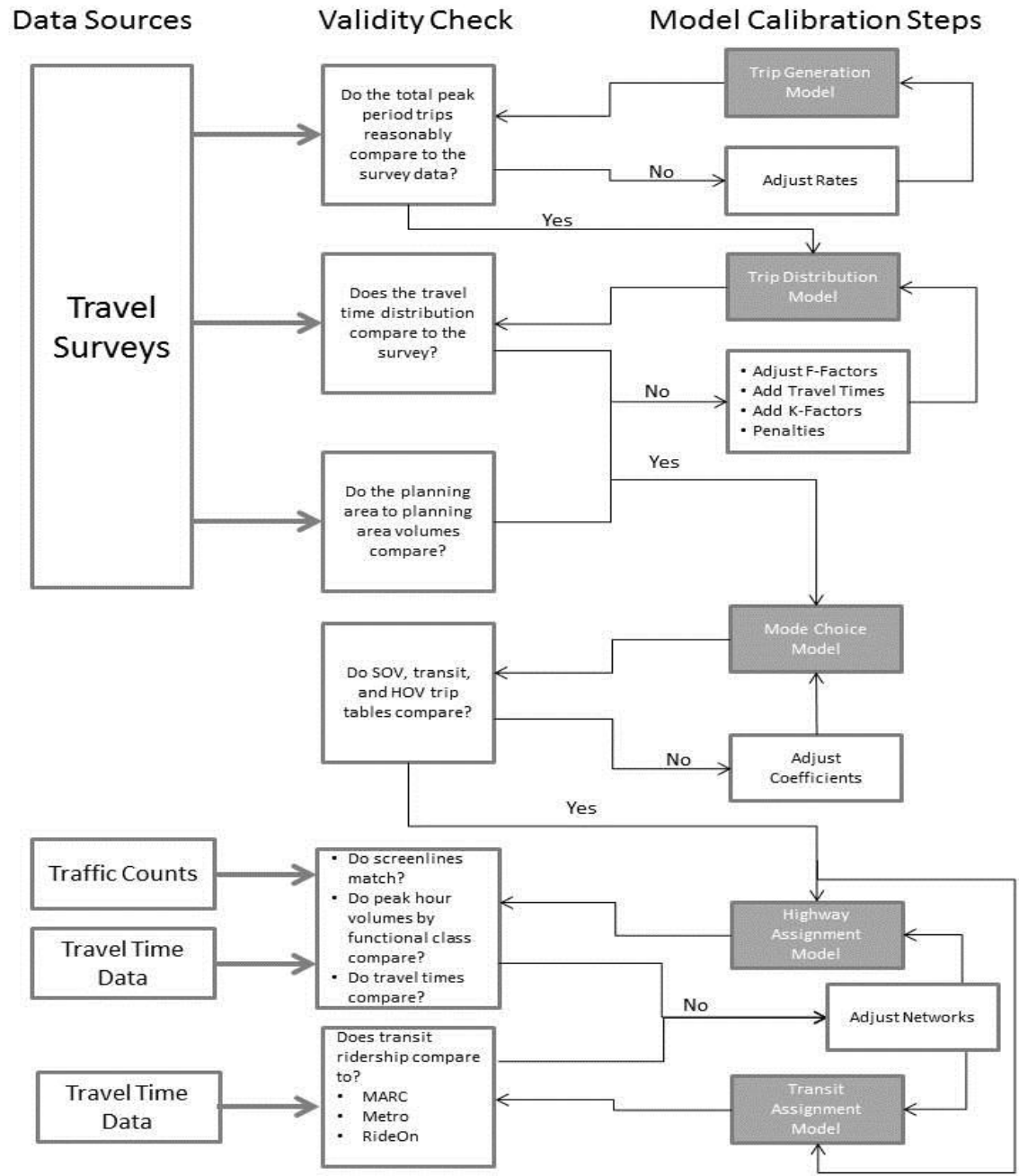PM Peak Hour - All Trip Types and Purposes

Montgomery County 2010

Montgomery County TAZ Modifications

Montgomery County Transportation Analysis Zones with Proposed Boundaries
N-NCPPC Regional Transportation Model Conversion to Travel 4 Model/Trip Generation Study
Date: 9/2/2014

Maryland-National Capital Park and Planning Commission

Travel/4 Model Conversion Flow Chart

Standard

Trip Generation Model

Trip Distribution Model

Mode Choice Model

Assignment

County wide:
- 10% of CTPP Work Trips
- 25% of MWCOG Survey for Non-work Trips

County Planning District Level Interchanges:
- 25% of CTPP Work Trips
- 25% of MWCOG Survey for Non-work Trips

County wide Transit, HOV, SOV Mode Share:
- 20% of CTPP Work Trips
- 20% of MWCOG Survey for Non-work Trips

County Screenlines Volumes with in 15% of Observed Volume

Compare Volumes by Functional Class for the County:
- Freeway 7%
- Principal Arterial 10%
- Minor Arterial 15%
- Other Roads 25%

Transit Boardings by Corridor & Screenline with in 20%

Calibration & Validation Criteria

Travel/4 Goal

County wide:
- 5% of CTPP Work Trips
- 7% of MWCOG Survey for Non-work Trips

County Planning District Level Interchanges:
- 20% of CTPP Work Trips
- 20% of MWCOG Survey for Non-work Trips

County Planning District Level Interchanges:
- 0.89 Ratio Estimated to Observed Home End
- 0.82 Ratio Estimated to Observed Non-work

County Screenlines:
- 10% Difference Estimated to Observed
- 3% Major North-South Estimated to Observed
- Metrorail Estimated to Observed at County Station 0.9 Entering and 0.85 Exiting

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Next Steps

- **Complete Travel/3 and Version 2.3 Comparison**

- **Establish Our Calibration and Validation Criteria**

- **Compile Data Sets**

- **Calibration**

- **Validation/Sensitivity Testing**

- **Establish GIS Data Management Procedures**

- **Documentation**