

# Briefing on the Version 2.3 travel demand model development

TPB Technical Committee (Item #3)

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National Capital Region Transportation Planning Board (TPB)

Metropolitan Washington Council of Governments (COG)

# Background

- ▣ The Version 2.3 travel demand model will be released this month
  - It replaces the currently adopted Version 2.2 model, released in March 2008
  - Like Version 2.2, Version 2.3 model is a conventional four-step model that is commonly used for metropolitan area transportation planning
  - The Version 2.3 model includes several refinements over Version 2.2
- ▣ Oversight body of the TPB's models development activities:
  - Travel Forecasting Subcommittee (or TFS)
  - Comprised of state and local transportation representatives
  - Open to consultants and the general public

# Recent history of Version 2.3

- Version 2.3 was released in draft over two years ago (June 2008)
  - Developed with the TPBs existing (2,191) zone (TAZ) system
  - Developed with dated travel data (i.e., 1994 Household Travel Survey)
- Two recent influences on the final Version 2.3 model release
  1. The 2007/08 Household Travel Survey (HTS) conducted
    - 11,400 household sample (over twice that of the 1994 HTS)
    - Survey area comprised entire modeled area (22 jurisdictions), in contrast to 13 jurisdictions surveyed in 1994
  2. A more detailed TAZ system developed
    - From 2,191 TAZs to 3,722
- TPB staff decided to delay the Version 2.3 release to take advantage of these developments

# The consequence of using new data and a new TAZ system: Delay

- A substantial amount of time has been spent:
  - Reviewing the new TAZ system about the highway network
  - Geo-coding, cleaning, checking the 2007/08 HTS
  - Building the highway and transit networks about the new TAZ system
  - Preparing zone level land use
  - Building calibration files
  - Preparing ancillary data sets supporting the calibration effort
    - HPMS –based traffic counts
    - Transit on-board surveys
    - INRIX highway speed information
    - 2007 American Community Survey (ACS)

# More on the new 3,722 TAZ system

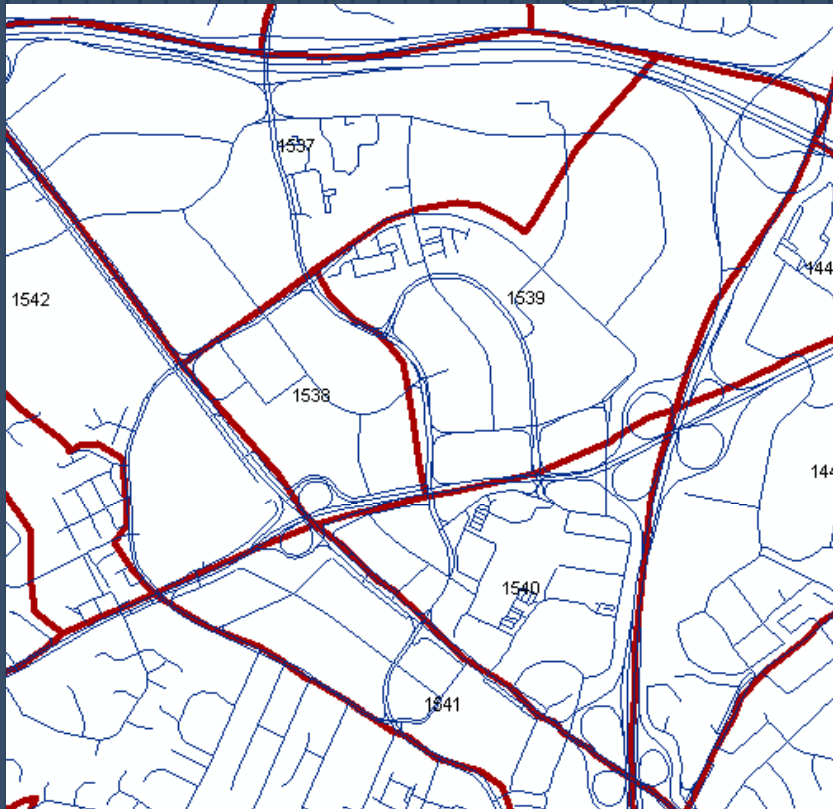
- Developed primarily to improve regional transportation planning
- Developed cooperatively by the local transportation and land use planning community
- Influenced heavily by “Activity Centers” and “Activity Clusters” approved by both COG’s Board of Directors and the TPB
  - Developed as a planning tool to guide land use and transportation planning decisions
- The new TAZ system almost doubles the number of TAZs currently used for modeling

# Benefits of the 3,722 TAZ system

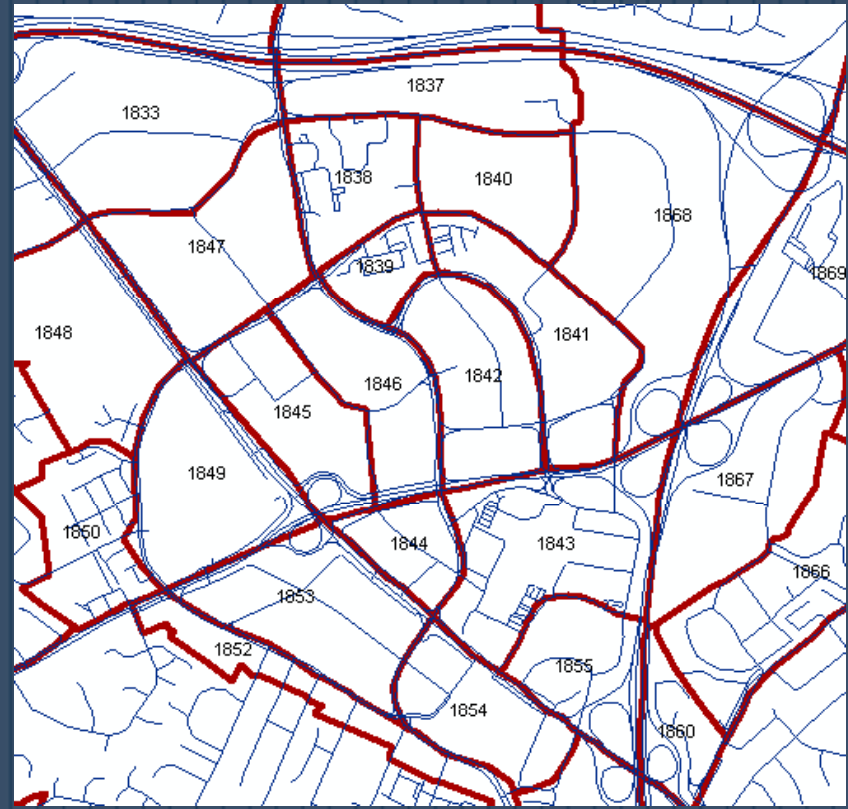
- ❑ Improved resolution of local development patterns in the regional network
- ❑ Improved depiction and sensitivity to transit service access
- ❑ Improved sensitivity to pedestrian modes
- ❑ Improved depiction of highway access

# The current (2,191) vs. the new (3,722) TAZ system: Tysons Corner

2,191 TAZ System

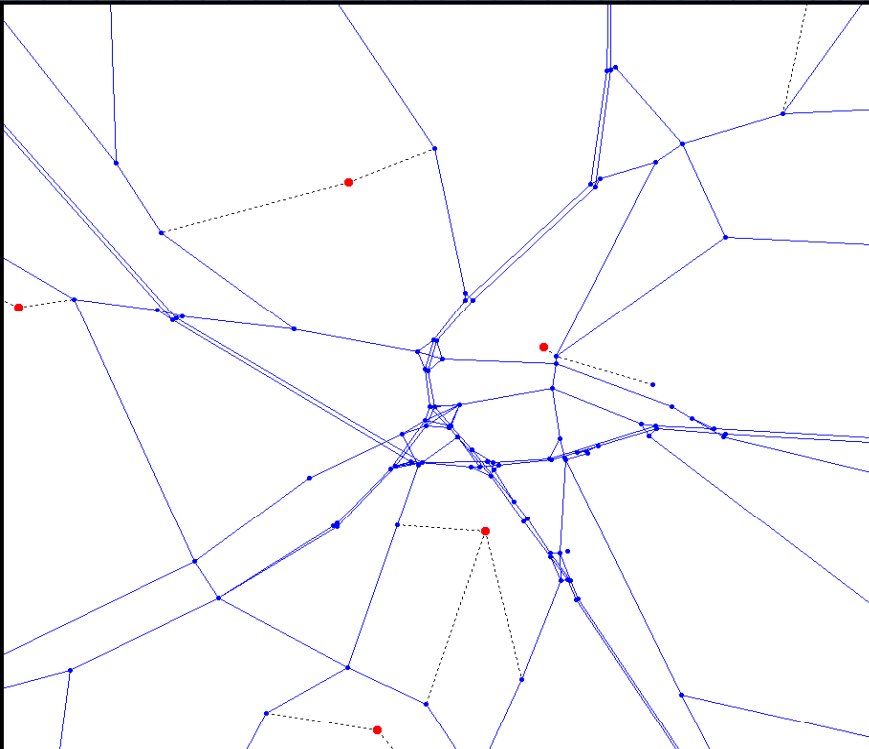


3,722 TAZ System

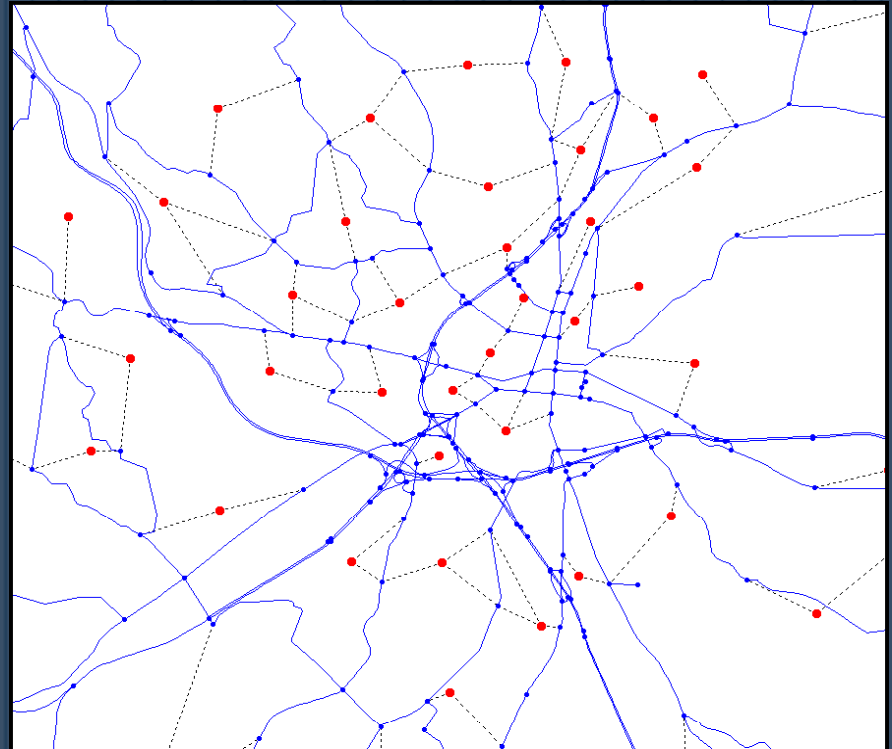


# More detailed networks: City of Frederick, Maryland

2,191 TAZ Highway Network



3,722 TAZ Highway Network





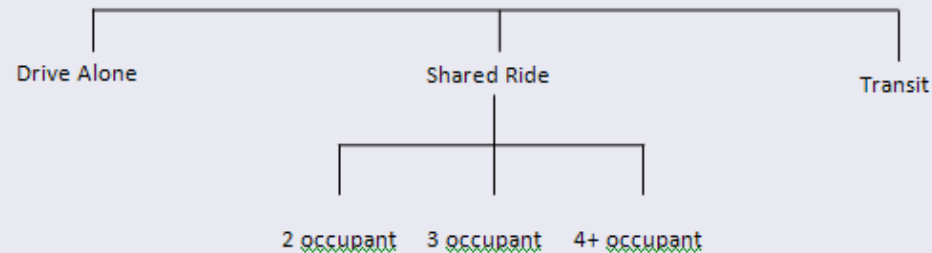
# V2.3 Features: Trip generation -- Increased purposes and modes

Version 2.2 on 2,191 TAZ	
Purpose	Mode
Home-Based Work	Motorized
	Non-motorized (Walk/Bike)
Home-Based Shop	Motorized
Home-Based Other	Motorized
Non-Home-Based	Motorized

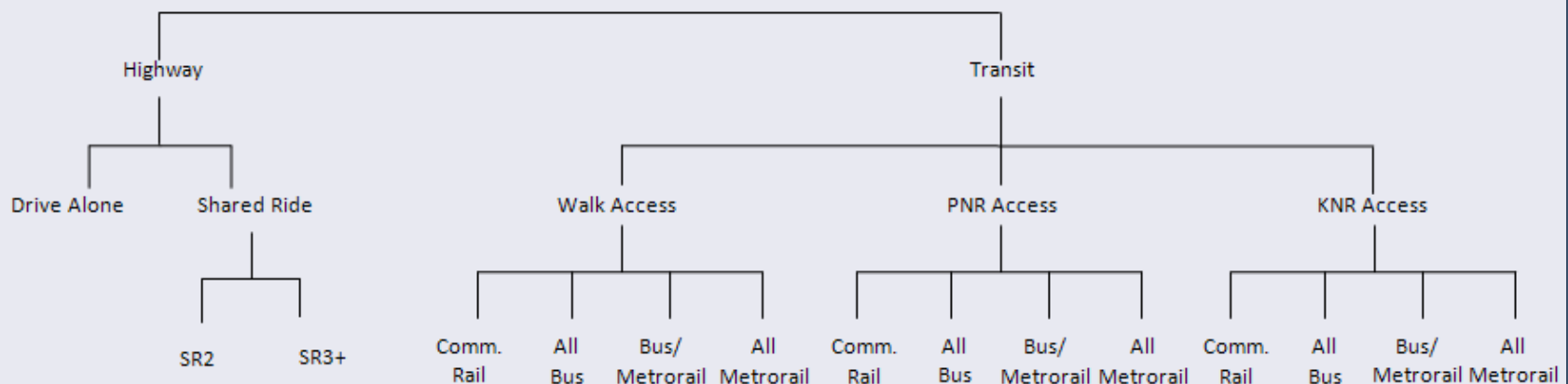
Version 2.3 on 3,722 TAZ	
Purpose	Mode
Home-Based Work	Motorized
	Non-motorized (Walk/Bike)
Home-Based Shop	Motorized/ Non-motorized
	Motorized/ Non-motorized
Non-Home-Based Work	Motorized/ Non-motorized
	Motorized/ Non-motorized

# A more detailed choice set & transit assignment capability

## Version 2.2 Modeled Choice Set



## Version 2.3 Modeled Choice Set



# V2.3 Features:

## Time of day & traffic assignment-

### More time periods are addressed

Version 2.2 on 2,191 TAZ	
Time Period	Hours
AM	6 AM- 9 AM
PM	4 PM-7 PM
Other	12 AM- 6 AM 9 AM- 4 PM 7 PM- 12 AM

Version 2.3 on 3,722 TAZ	
Time Period	Hours
AM	6 AM- 9 AM
PM	3 PM- 7 PM
Midday	9 AM- 3 PM
Other	12 AM- 6 AM 7 PM- 12 AM

# Upcoming dates for Ver. 2.3 model on 3,722-TAZ area system

## □ January 2011

- Release of **draft model** to TFS, along with documentation

## □ February 2011

- Release of AQC draft scope of work to Tech. Comm. , which includes selection of travel model

## □ March to October 2011

- Testing of new travel model on AQC networks
- Refinement to travel model, based on tests

## □ October 2011

- Draft model results to Tech. Comm.

## □ November 2011

- TPB approval of AQC determination
- Ver. 2.3 travel model becomes **adopted model**

# Conclusions on Version 2.3

- About to be released
- Includes several enhancements over the TPB's existing travel model capabilities
  - Larger set of purposes and modes are addressed
  - A more detailed zone system
  - Informed by the latest transportation data available

## Version 2.3 will better address a number of goals established by COG and TPB

- Two transportation goals from *Region Forward* (Jan. 13, 2010)
  - We seek a broad range of public and private transportation choices for our Region which maximizes accessibility ... and minimizes reliance upon single occupancy use of the automobile.
  - We seek a transportation system that maximizes community connectivity and walkability, and minimizes ecological harm to the Region and world beyond.
- Goal #2 from the 2009 CLRP & FY 2010-2015 TIP (Jul. 15, 2009)
  - The Washington metropolitan region will develop, implement, and maintain an interconnected transportation system that enhances quality of life ... including a healthy regional core and dynamic regional activity centers with a mix of jobs, housing and services in a walkable environment.