Regional Rapid Transit Network: What was Learned from Tysons Analysis

Presented to:

The Joint Subcommittee (SJR 357)

October 6, 2009

Determine Transportation Infrastructure Requirements

- 2030 Analysis
  (84 million square feet of development)
- Beyond 2030 Analysis
  (96 and 128 million square feet of development)

Transit Improvements Included in 2030 Analysis

- Dulles rail
- Express bus service on I-66/I-495, I-95/I-495
- Improved bus service between Tysons and surrounding communities
- Improved bus service within Tysons

Highway Improvements Included in the 2030 Analysis

- The 2030 GMU High land use can be accommodated with:
  - The transportation improvements in the Comprehensive Plan
  - New connections to the DTR
  - The grid of streets
  - The Circulator
  - **Two collector-distributor lanes on each side of the DTR**
  - **An additional lane on the Beltway between Leesburg Pike and I-66**
- Further highway capacity improvements are limited

From the 2030 Analysis

- **Keep vehicle trips constant as Tysons grows beyond 2030**

Hypothetical Example of the Required Change in Transit Mode Share To Keep Vehicle Trips Constant

Intensity (total GFA, sq. feet)	Total Peak Period Person Trips	Peak Period Vehicle (auto, truck) Person Trips	Peak Period Transit Person Trips	Mode Share for Tysons	
				Vehicle (autos, trucks)	Transit
100 million	100,000	80,000	20,000	80%	20%
110 million	110,000	80,000	30,000	73%	27%

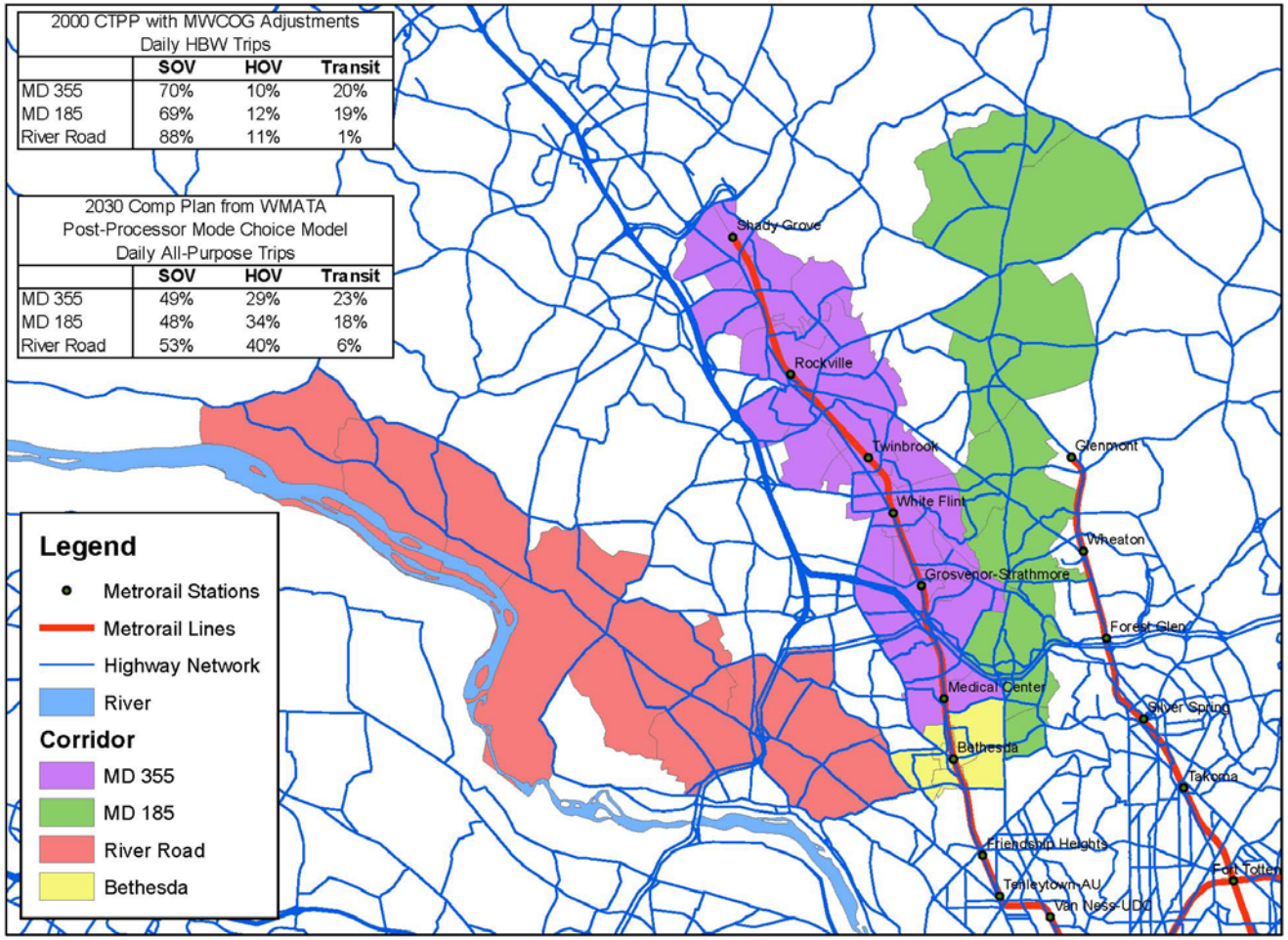
Required Percentage Transit Use **(all of Tysons)** To Keep Vehicle Trips Constant for Alternative Intensities of Development (evening peak, all purposes)

Land Use Alternative	Intensity (total GFA, sq. feet)	Projected Transit Mode Share (2030 level transit service)	Required Transit Mode Share
GMU 2030 High	84 million	22%	22%
GMU 2050 Mid-Range (i.e. Prototype A)	96 million	23%	27%
GMU 2050 High (i.e. Prototype B)	128 million	23%	42%

Bethesda Corridors

2000 CTPP with MWCOG Adjustments Daily HBW Trips			
	SOV	HOV	Transit
MD 355	70%	10%	20%
MD 185	69%	12%	19%
River Road	88%	11%	1%

2030 Comp Plan from WMATA Post-Processor Mode Choice Model Daily All-Purpose Trips			
	SOV	HOV	Transit
MD 355	49%	29%	23%
MD 185	48%	34%	18%
River Road	53%	40%	6%



Bethesda Corridors

Corridor	Transit Mode	2030 Transit Mode Share (daily, all trip purposes)
MD 355 (Red Line)	Rail	23%
MD 185	Frequent Bus	18%

Fairfax County Corridors

Corridor	Transit Mode	2030 Transit Mode Share (evening peak, all trip purposes)
Dulles Toll Road	Rail	20%
I-66	Express Bus	14%

Reference TOD Mode Shares in the Washington, D.C. Area (Suburban and Urban Employment Centers)

Location	Mode Share (work trips, daily)
Tysons, 2005	5%
Bethesda	19%
K-Street, Downtown Washington, D.C.	51%

Source: 2000 CTPP with MWCOG adjustments

Reference Mode Shares for CBDs With Rail Transit Service, (High Density Areas)

Location	Mode Share (work trips, daily)
Dallas CBD	13%
North End and West End Boston	47%
Downtown Boston	56%
San Francisco Financial District	60%

Source: 2000 CTPP for work-trip destinations

Required Percentage Transit Use **(all of Tysons)** To Keep Vehicle Trips Constant for Alternative Intensities of Development (evening peak, all purposes)

Land Use Alternative	Intensity (total GFA, sq. feet)	Projected Transit Mode Share (2030 level transit service)	Required Transit Mode Share
GMU 2030 High	84 million	22%	22%
GMU 2050 Mid-Range (i.e. Prototype A)	96 million	23%	27%
GMU 2050 High (i.e. Prototype B)	128 million	23%	42%

Growth Beyond 2030
Strategy 1: Enhanced TDM

Examples:

- In-house carpool and vanpool matching services
- On-site bus pass sales and a ½ time transportation coordinator
- Significant employee participation in telework

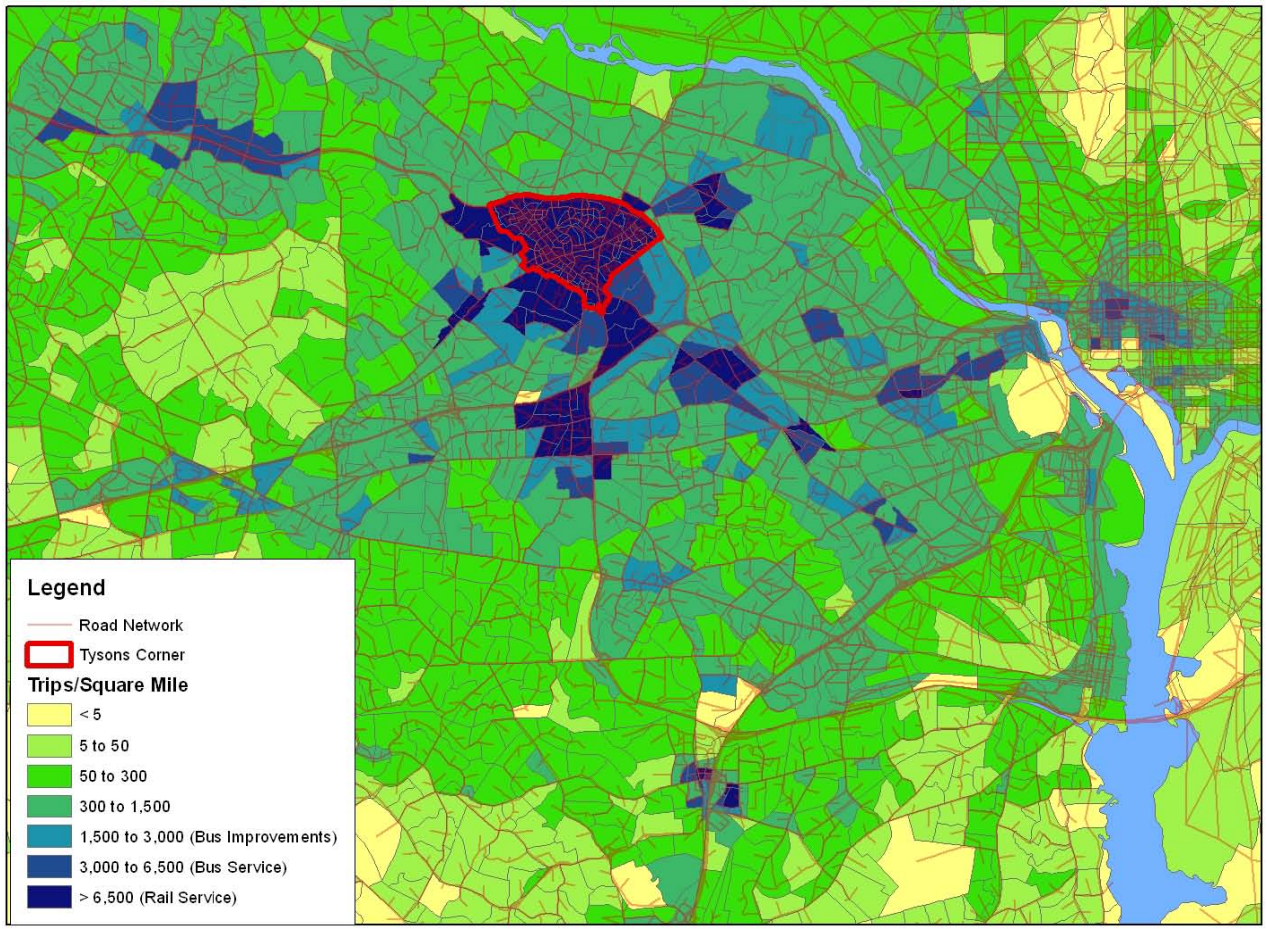
Required Percentage Transit Use To Keep Vehicle Trips Constant for Alternative Intensities of Development With Enhanced TDM (evening peak, all purposes)

Land Use Alternative	Intensity (total GFA, sq. feet)	Projected Transit Mode Share (2030 level transit service)	Required Transit Mode Share
GMU 2030 High	84 million	22%	22%
GMU 2050 Mid-Range (i.e. Prototype A)	96 million	23%	25%
GMU 2050 High (i.e. Prototype B)	128 million	23%	36%

Growth Beyond 2030
Strategy 2: Lower Cost Improvements To Increase Transit Share

- Indentify transit corridors for improvement

Transit Corridors for Improvement



Lower Cost Improvements To Increase Transit Share

- Neighborhood feeder buses (Dulles Toll Road)
- Enhanced express buses, BRT (I-66, Beltway)
- Additional park-and-ride capacity (various locations)

Required Transit Use **(all of Tysons)** To Keep Vehicle Trips Constant for Alternative Intensities of Development With Enhanced TDM and Lower Cost Transit Improvements (evening peak, all purposes)

Land Use Alternative	Intensity (total GFA, sq. feet)	Projected Transit Mode Share (2030 level transit service)	Required Transit Mode Share
GMU 2030 High	84 million	22%	22%
GMU 2050 Mid-Range (i.e. Prototype A)	96 million	23% + (3% to 7%)	25%
GMU 2050 High (i.e. Prototype B)	128 million	23% + (3% to 7%)	36%

Growth Beyond 2030
Strategy 3: Additional Rail/High Quality Bus Rapid Transit Corridors Combined with TOD

- Rosslyn, Court House, and Ballston stations over 16 years from 1990 to 2006: boardings increased by 28 %
- Boardings at 34 other Metrorail stations over same period increased by10%

Source: TCRP Report 95, Chapter 17, Transportation Research Board

Required Transit Use **(all of Tysons)** To Keep Vehicle Trips Constant for Alternative Intensities of Development With Enhanced TDM and Lower Cost Transit Improvements and Additional High Quality Transit Corridors (evening peak, all purposes)

Land Use Alternative	Intensity (total GFA, sq. feet)	Projected Transit Mode Share (2030 level transit service)	Required Transit Mode Share
GMU 2030 High	84 million	22%	22%
GMU 2050 Mid-Range (i.e. Prototype A)	96 million	23% + (3% to7%) + ?	25%
GMU 2050 High (i.e. Prototype B)	128 million	23% + (3% to7%) + ?	36%

Growth Beyond 2030
Strategy 4: Traffic Management and Parking Management

- Increase tolling and congestion pricing
- Limit parking and parking pricing

Uncertainty of implementation

Summary/Conclusions

- Expansion of highway capacity is limited
- TDM and lower cost transit improvements help but are limited
- Additional Rail/High Quality Rapid Transit Corridors **combined with TOD** have the potential to increase the percentage of transit use over time