

# On How to Evaluate RMPSS Task Force Recommendations

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## Purpose

- What has been learned from Tysons Corner, Montgomery County, and elsewhere?
  - Analytical tools are available to quantitatively assess the implications of proposed development recommendations and to consider directions for refinements.
  - Fairfax County and other agencies are much more interested today in helping groups like the RMPSS Task Force refine their recommendations than in passing judgment about whether they are acceptable.
  - We need to consider how best to facilitate this constructive dialog process using objective analysis to arrive at a consensus or compromise.

## Tysons' Scope and Key Findings

- More than six years of intense effort has culminated in an overwhelming consensus on adoption of an excellent Comprehensive Plan for Tysons with broad support from early opponents and skeptics in addition to the property owners and other principal stakeholders.
  - Work on implementation, funding, and further necessary detailed planning (e.g., plans for a circulator system, a bicycle plan, and an organizational structure to move implementation forward).
  - Many lessons have been learned that Reston can benefit from in moving forward.
  - A detailed report on the technical tools, results, and recommendations has recently been made available: Tysons Corner Transportation and Urban Design Study, prepared for Fairfax County Department of Transportation (DOT) by Cambridge Systematics, Inc.; September 30, 2010.
- The six-plus years of the Tysons' process involved three major rounds of debate, analysis, evaluation, and consensus building, including consideration of several development scenarios for 2030, 2040, and 2050 (see the 3 pages that follow: 2, 3, and 4: "Scenarios Tested," "Table 2.2" through "Table 2.4," and "Road Networks").
  - These scenarios were evaluated using the analytical tools described below and described in the Cambridge Systematics report referenced above (see Chapter 3 of that report).

## Scenarios Tested

Scenario	Land Use Within Tysons	Network
2005	2005	2005
Comprehensive Plan	Comprehensive Plan	Comprehensive Plan
2030 GMU High	2030 GMU High Forecast	Task Force Preferred
2030 GMU High (Modified)	2030 GMU High Forecast	Modified Task Force
2040 Prototype A	Prototype A (Similar to GMU 2040)	Modified Task Force
2050 Prototype B	Prototype B (Similar to GMU 2050)	Task Force Preferred
Task Force Preferred	Task Force Preferred (Beyond GMU 2050)	Task Force Preferred

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**Table 2.2 Population and Employment within Tysons Corner for Land Use Scenarios**

Scenario	Population	Employment
2005	16,000	103,000
Comprehensive Plan	41,000	139,000
2030 GMU High/2030 GMU High (Modified)	54,000	159,000
2040 (Prototype A)	73,000	159,000
2050 (Prototype B)	100,000	203,000
Task Force Preferred	147,000	213,000

**Table 2.3 Employment within Tysons Corner - TOD, Non-TOD Areas**

Scenario	TOD		Non-TOD	
	Employment	Percent	Employment	Percent
2005	53,000	51%	50,000	49%
Comprehensive Plan	61,000	44%	78,000	56%
2030 GMU High/2030 GMU High (Modified)	105,000	66%	54,000	34%
2040 (Prototype A)	104,000	65%	55,000	35%
2050 (Prototype B)	146,000	72%	57,000	28%
Task Force Preferred	160,000	75%	53,000	25%

**Table 2.4 Population within Tysons Corner - TOD, Non-TOD Areas**

Scenario	TOD		Non-TOD	
	Population	Percent	Population	Percent
2005	2,000	12%	14,000	88%
Comprehensive Plan	16,000	39%	25,000	61%
2030 GMU High/2030 GMU High (Modified)	29,000	54%	25,000	46%
2040 (Prototype A)	48,000	66%	25,000	34%
2050 (Prototype B)	49,000	49%	51,000	51%
Task Force Preferred	74,000	50%	73,000	50%

# Road Networks

2005



Comprehensive Plan



Modified Task Force



Task Force Preferred



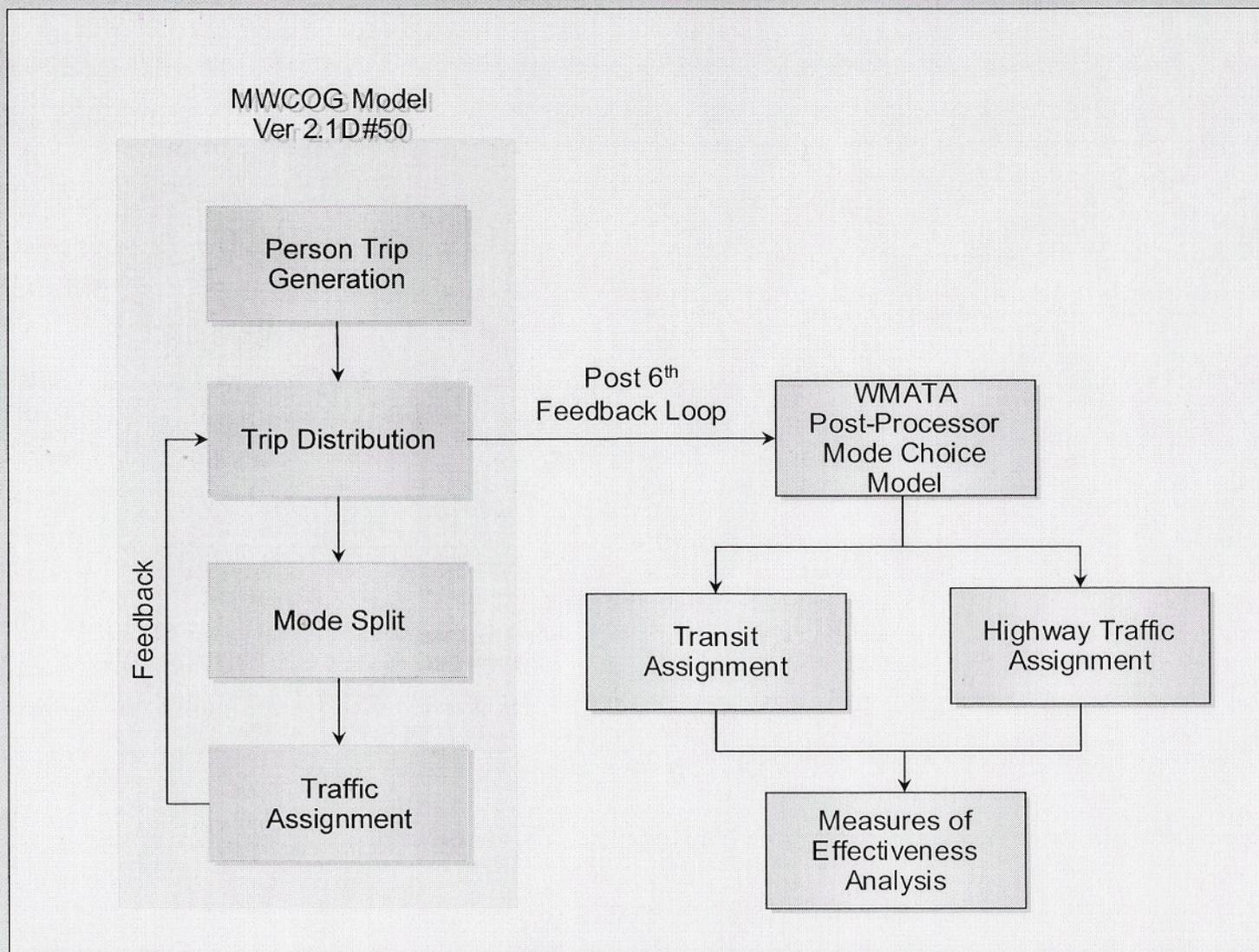
## Analytical Tools

- On October 26 and December 14 the RMPSS Task Force heard presentations by Fairfax County DOT on the traditional urban transportation planning model which has been used throughout the County's work in this field for several years.
  - That model, which has been refined from time to time by the Metropolitan Washington Council of Governments, is similar to models which have been in use throughout urban areas in the U.S. and abroad for several decades and have come to be depended upon by many agencies of government including U.S. DOT and EPA.
  - That model, despite efforts of many of the leading transportation planners throughout the country, has not been able to deal with the kind of issues of concern being debated by the RMPSS Task Force or other TOD planners elsewhere.
- As a result of these serious shortcomings of the traditional urban transportation model, several leading agencies have been developing additional analytical tools that will come to grips with current urban issues including TOD planning.
- Three of these additional analytical tools have been developed and used in the Tysons Corner planning process.
  - The first of these is the Washington Metropolitan Area Transportation Authority's "WMATA Post-Processor Mode Choice Model."
  - This model was used in the Tysons Corner modeling process in the manner shown in "Analysis Process" in the flow chart on page 6. What it does is to modify the results of the traditional model, represented in that flow chart by the four boxes on the left described as MWCOG Model Ver.2.10#50. These refinements are based on some, but not all, of the types of characteristics for land use, density, and balance of uses being developed by the RMPSS Task Force.
- The second of these three "Post-Processor" models used in the Tysons planning process is the Transportation Demand Management (TDM) model developed by the Federal Highway Administration. That model modifies the results of the traditional model and the WMATA Post-Processor Mode Choice Model to reflect each of the six "Enhanced Travel Demand Management (TDM)" strategies listed in the graphic on page 7. It is based on actual experience achieved in applying these strategies in urban areas around the country.
- The third "Post-Processor" model is the Urban Design Effects model, also known as the "4D Analysis" because it makes further refinements on the traditional model to take into account the effects of Density, Diversity (balance of uses), Design (comfort and convenience of pedestrian/bicycle movements), and Destinations (proximity of desired destinations).

# Analysis Process

WMATA Post-Processor provides enhanced transit forecasting capabilities.

Fairfax County submodel provides enhanced highway assignment capabilities.



## Enhanced Travel Demand Management (TDM)

- **Carpool Program**
  - Includes programs such as preferential parking for carpool, and increase to a ½ time transportation coordinator
- **Vanpool Program**
  - Includes programs such as financial assistance such as vanpool purchase loan guarantees, and increase to a ½ time transportation coordinator
- **Vanpool Preferential Parking**
  - One minute walk time reduction
- **Transit**
  - Includes programs such as on-site bus pass sales, and increase to a ½ time transportation coordinator
- **Telecommuting/Alternate Work Schedules**
  - Includes telecommuting, flex-time, and 9/80 work weeks
- **Employer Participation in Programs**
  - Mandatory for new development for station areas and the North Central and Old Courthouse districts, and voluntary for other districts

*The reduction in vehicle trips due to additional TDM strategies was approximately the same for each scenario (~5%). A further reduction could occur with aggressive parking management.*



- The results of the application of these three post-processor models show that the greatest reductions in vehicle trips are expected to occur under the "Task Force Preferred" scenario described on pages 2, 3, and 4. Walk and bike trips are expected to increase from 5 % of work trips for the (old) Comprehensive Plan scenario to about 22 % for the Task Force Preferred scenario, based on the application of the WMATA Post-Processor Mode Choice Model. Application of the Urban Design Effects Post-Processor model show that non-work vehicle trips are expected to decrease by 13 % for the Task Force Preferred scenario. Most of this vehicle trip reduction is expected to be due to increases in density and balancing of land uses (11.6 %).

### **Measures of Effectiveness**

The Measures of Effectiveness that were developed and applied in the Tysons Corners evaluation process were:

- Travel times between seven pairs of zones (e.g., Reston/Herndon to Tysons, Reston/Herndon to Rosslyn, Fairfax City to Tysons. etc.)
- Number of peak period trips by mode into and out of Tysons and the internal trips within Tysons
- Percentage reduction of vehicle work trips
- Mode share of trips
- Comparison of mode share for destinations within Tysons compared to downtown D.C. destinations
- Traffic impacts on neighborhoods surrounding Tysons
- Congested lane miles and vehicle miles within Tysons
- Through trips (with no origin or destination in Tysons)

### **Constraints for Reston**

- Money! Fairfax County does not have the funds at this time to pay for complete application of the above models for Reston's RMPSS Task Force process. Nor is there sufficient time to do so and have this work completed and used in making Comprehensive Plan changes before rail operations begin. We must prioritize how we can best use the results of work already done in Tysons and elsewhere.

### **Recommendations**

- The ideal would be to have Cambridge Systematics work closely with Fairfax County Planning & Zoning and DOT staffs and the RMPSS Task Force using the same set of

analytical tools used in Tysons to evaluate a set of several scenarios; and then to come to a consensus on a final recommended scenario.

- The scenarios to be evaluated should be developed by working with the Task Force and its steering committee. Here is a preliminary suggested list of scenarios:
  - (1) A composite of the recommendations of the three station area committees, either unchanged or modified for greater consistency and completeness.
  - (2) A modified version of such a composite based on the recommendations that are being prepared by the Vision committee.
  - (3) A high density compact scenario, perhaps developed following the direction that the Tysons Task Force took in the final of its three phases of scenario development and evaluation.
  - (4) A maximum non-motorized mode split scenario maximizing walk to work trips, with the growth in resident labor force being significantly greater than the growth in jobs (requiring a target growth rate with a balance of residential to commercial gross square feet of about 4:1).
- The time-frame for defining and evaluating the scenarios should be 2030, with all forecasts of growth based on the latest round of COG mid-range growth and the definition of the scenarios to be developed.

The evaluation should be designed to produce something like the eight Measures of Effectiveness used in the Tysons planning process, as listed above on page 8.

- As discussed in the first meeting of the RMPSS Task Force Steering Committee, the emphasis in developing new scenarios (i.e., beyond the composite of the three station area committees) should be on long-term visions, as distinct from scenarios of what might be developed by 2030. However, in developing these forecasts of growth based on the scenarios, considerations of staging of development and negotiations that will have to be made between developers and the County should not be of concern -- these considerations will have to be made later when the Comprehensive Plan language is being prepared, and beyond that in preparation of proffers and in the plan approval process. So, the lawyers in the Task Force should be asked to put aside these concerns during the scenario development and evaluation process.
- Priorities for a less ambitious evaluation process, assuming funds are not available to perform the ideal scenario evaluation process described above (in order of priority from least costly to greater cost

(1) Evaluate all scenarios [(1) & (3) might be combined] for Town Center only

(2) Evaluate all scenarios for Town Center and Reston East

- (3) Evaluate all scenarios for all three station areas
- (4) In addition apply FHWA's Travel Model Improvement Program (TMIP) model judgmentally based on Tysons experience
- (5) Apply the TMIP model to Reston as was done in Tysons
- (6) In addition perform a ramp connection feasibility analysis as was done in Tysons
- (7) In addition perform an internal street and arterial grade separation analysis as was done in Tysons and discussed by Leonard Wolfenstein at the RMPSS Task Force meeting on December 14.

### **Follow-on Process after the Evaluations**

- Sufficient time (up to about 2 months) and resources should be scheduled to allow the RMPSS Task Force to interact with staff and Cambridge Systematics and arrive at consensus with limited analytical work to address issues that may arise in that process.