Transportation Modeling Overview

Presentation to the East County Science Center Master Plan CAC

September 20, 2011
Regional Model/Local Model Relationship

**Local Model**

- More Detailed “Fine Grain” Analysis
- Output - Critical Lane Volumes (CLVs) for Intersections - including “Four Corners” @ US 29/MD 193
- Compare with established policy area standards (1475 CLV in this case)
- Regional Model “feeds” through trips into more detailed Local Area Model

**Regional Model**

- Same tool as that used by MWCOG
- Reflects regional traffic effects (including those from Howard and Prince George’s Counties)
- Output – PAMR results used to evaluate area-wide land use/transportation balance
Four-Step Regional Travel Forecasting Model

1. Trip generation
2. Trip distribution
3. Mode choice
4. Trip assignment

Highway and transit networks
Zone-to-zone travel times, costs, etc.

Land use data
Highway and transit trips
Traffic volumes

Congested traffic speeds
• **Trip generation:** How many trips are produced?

• **Trip Distribution:** Where are people going?
• **Mode Choice:** What method/mode of travel are people using?

• **Trip Assignment:** What route are people taking?
Master Plan Travel Forecasting Process

Land Use

Regional
- Regional Land Forecast (Round 8.0) → Regional COG Model
- Existing Conditions (ORIO and Du’s)
- Future Conditions (ORIO and Du’s)
- Current Adopted Plan Yield (ORIO and Du’s)

Local
- Develop Alternative(s) (ORIO and Du’s)

Process

1. COG Model
2. Planning Depart. Travel / 3 Model
3. Local Area Model

Measurement
- Air Quality Conformity
- Regional Financially Constrained Long Range Plan
- PAMR

Outcome
- CTP and CIP
- Balance
- Master Plan Recommendations

Used in ...
- Germantown
- Great Seneca Science Corridor
- White Flint
- Kensington
- Wheaton
- Chevy Chase Lake

ORIO = Jobs by office, retail, industrial, and other categories
Du’s = Residential Dwelling Units

= Master Plan studies Land Use Alternative
East County Intersections Currently Exceeding CLV Standards

Exceeding Standard

US 29 @ Steward Lane (PM)

US 29 @ Lockwood (AM/PM)

From Policy Standpoint …

Severe intersection congestion problems along US 29 addressed with grade-separated interchange improvements
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Current Traffic – US 29

US 29 Mobility

Problems are generally at failing intersections

Definition of future relative arterial mobility adequacy can be determined with the regional model
Modeling Summary

Regional and local models work in tandem

Local model efforts pragmatic for Plan area where local planning/zoning recommendations will be made

Process works for master plan level decision making as in Germantown, Great Seneca Science Corridor, and White Flint
Year 2040 PAMR Chart - Round 8.0

Relative Arterial Mobility: (Congested Arterial Speed Relative to Arterial Free Flow Speed)

Relative Transit Mobility: (Overall Transit Speed Relative to Overall Speed Using Arterials)
Network Assumptions: CLRP

Highways

Transit
ECSC BRT Alignment

Connecting US 29 and NH Ave to Greenbelt Metro and MARC

Concept 3A: Site 2 Hub /US 29 Crossing
1. **Existing Conditions:** 2010 Land Use/2010 Network

2. **Base Future Year:** 2040 Round 8.0 Land Use/CLRP Network

3. **Master Plan Alternative 1:** Scenario 2 Land Use + “**Aggressive**” Interpretation of ECSC Property Owner Vision/Scenario 2 network + BRT alignment(s) + local roadway network improvements
Questions?

"I think you should be more explicit here in step two."
“Supplemental” Slides Follow
Existing Interchanges:
- US 29/New Hampshire Avenue
- US 29/East Randolph-Cherry Hill Road
- US 29/Briggs Chaney Road
- US 29/Spencerville-Sandy Spring Road

Under Construction: US 29 at ICC

Proposed Grade-Separated Interchanges from 1997 White Oak and Fairland Master Plans:
- US 29/Stewart Lane
- US 29/Tech Road/Industrial Parkway
- US 29/Mugrove Road-Fairland Road
- US 29/Greencastle Road