Regional Transit System Plan

Presentation to the TPB Technical Committee
May 6, 2011
1999 Transit Service Expansion Plan

Four main elements:
(1) Improve Access to and capacity of the Metrorail system
(2) Improve bus service levels and expand to new service areas
(3) Selectively add stations, entrances and station capacity to the existing Metrorail system
(4) Expand fixed guideway services
**Regional Transit System Plan (RTSP)**

**Project Objectives**

- Develop a 30 year vision that connects the transit system, customers, and the community with a regional transit network comprised of:
  - Local Bus
  - Bus Rapid Transit
  - Light Rail
  - Streetcar
  - Metrorail
  - Commuter Rail

- Support regional transportation goals established in the TPB Vision and the Greater Washington 2050 Coalition’s Region Forward plan.
Key Long Range Issues to Address

Core Capacity
- Increasing current transit capacity to the core to meet current and projected future demand and promote continued employment growth

System Access
- Improving current station access for pedestrians, cyclists, bus and automobile operators

Surface Transit Corridors
- Providing priority for surface transit corridors including express bus on HOV, rapid bus on arterials, light rail, commuter rail, and streetcar projects

New and Emerging Markets
- Identifying, connecting, and improving transit access to regional activity centers
Regional Growth Trends

• 2010 to 2040 regional growth:
  – 31% population growth
  – 35% household growth
  – 39% employment growth

• Different growth rates across region have implications for transportation
  – Traditional commute to core growing at modest rate - direct impact on core capacity issues
  – Suburban-to-suburban trips represent a key growth market

<table>
<thead>
<tr>
<th>Jurisdiction</th>
<th>Population Growth (percent of total)</th>
<th>Employment Growth (percent of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core (DC/Arl CBD)</td>
<td>2%</td>
<td>5%</td>
</tr>
<tr>
<td>Central Jurisdictions</td>
<td>10%</td>
<td>14%</td>
</tr>
<tr>
<td>Outside Core</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inner Suburbs</td>
<td>29%</td>
<td>38%</td>
</tr>
<tr>
<td>Outer Suburbs</td>
<td>59%</td>
<td>43%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Markets</th>
<th>2008 to 2040</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Growth in Weekday Home-Based Work Trips</td>
</tr>
<tr>
<td>Traditional Commute to Core</td>
<td>86,000</td>
</tr>
<tr>
<td>Commute to Central Juris.</td>
<td>153,000</td>
</tr>
<tr>
<td>Reverse Commute</td>
<td>62,000</td>
</tr>
<tr>
<td>Central Circulation</td>
<td>76,000</td>
</tr>
<tr>
<td>Suburb-Suburb</td>
<td>1,236,000</td>
</tr>
</tbody>
</table>
2040 Base Condition Assessment

- Based on MWCOG 2030 CLRP & 2040 Land Use
- Findings:
  - Congestion increases most notable in outer suburbs to all destinations
  - Regional program of projects succeeds in maintaining transit share (4%)
  - Regional transit trip making expected to grow by 34%
    - Travel to core to grow by 19%
    - Travel to non-core areas to grow even faster
Strategies Being Evaluated

• ~ 20 different strategies developed and/or modeled to date
  
  – Rail Enhancements:
    • New rail lines through the Core, Extensions to new markets/activity centers, Rail Inter-lining, In-fill stations
  
  – Enhanced Surface Transit & New Connections:
    • Improved Priority Corridor Network & BRT/LRT/Streetcar Extensions
  
  – Improved Walk Access to Transit:
    • Improved pedestrian networks around rail stations, pedestrian station connections
  
  – Improved Parking Access to Transit:
    • PNR lots with shuttles to rail stations
  
  – Improved Land Use:
    • CLRP Aspirations
Measures of Effectiveness

All strategies are compared to 2040 base case & evaluated by a set of measures

MOE’s Address Five Key Areas:
1. Core Capacity
2. Access
3. Mobility
4. Efficiency
5. Auto Travel
## New Rail Lines Through the Core: Key Findings

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
</table>
| New Yellow N-S 10th St SW/NW | ➢ Continues direct service to high demand locations in core  
➢ Increased core capacity, reduces crowding on Green line and many core stations  
➢ Potential East Potomac Park station | ➢ Does not extend service to new core areas  
➢ Maintains much of transfer burden with little or no relief for Court House/Rosslyn link |
| New E-W Blue via M St / New Jersey Ave. | ➢ Increased core capacity, reduces crowding on Orange, Silver, and Green lines and many core stations  
➢ Increases Metrorail coverage and transit share to core areas with moderately-high levels of demand | ➢ New tunnel under utilized (15 trains per hour during peak)  
➢ Offers little or no relief for Yellow/Green lines at L’Enfant Plaza |

### Maps

- **2040 Base Case**
- **Blue Line Via M St./New Jersey Ave.**
- **Yellow 10th St SW/NW**
Rail Interline Strategies

Three new rail services:
1. VA-772 to Mount Vernon Square using connectors 1 and 2 (Silver1)
2. Dulles to Branch Avenue using connectors 1, 2, and 3 (Green2)
3. Dulles to Vienna using connector 4 (Silver2)

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interline options – Rosslyn “Y”</td>
<td>▶ Better intra-Virginia service</td>
<td>▶ Does not address core capacity</td>
</tr>
<tr>
<td></td>
<td>▶ Reduces transfer volumes at Rosslyn</td>
<td>▶ Loads on service using interline do not justify 8-car trains</td>
</tr>
<tr>
<td></td>
<td>▶ Provided some flexibility in rail operations</td>
<td></td>
</tr>
<tr>
<td>Four Interline Connections</td>
<td>▶ Better intra-Virginia service</td>
<td>▶ Aggravates peak congestion problem at Rosslyn</td>
</tr>
<tr>
<td></td>
<td>▶ Reduces transfer volumes at Rosslyn</td>
<td>▶ Increases transfer volumes at more stations</td>
</tr>
<tr>
<td></td>
<td>▶ Provides considerable flexibility in rail operations</td>
<td>▶ Does not address core capacity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>▶ Loads on new rail lines do not justify 8-car trains</td>
</tr>
</tbody>
</table>
• Metrorail extensions to new markets/activity centers

Extension A

- BWI Airport
- Centreville
- Potomac Mills
- White Plains
- Bowie

Beltway Line

- Metropolitan Grove
- Leesburg
- Gainesville
- National Harbor
- Lorton
- White Plains
- Bowie

Extension B
## Rail Extensions: Key Findings

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
</table>
| Metro Extensions Run A | ➢ Metro Extensions to outer suburbs results in 50,000 new transit trips and 73,000 new Metrorail boardings  
 ➢ Addition of new Metrorail parking at new stations results in parking capacity relief at many existing Metrorail park-and-ride lots | ➢ Severe impact on Metrorail core capacity:  
   ○ Peak hour loads as high as 155 passengers per car on Green Line  
   ○ Peak hour loads on Blue Line to Rosslyn as high as 125 passengers per car |
| Metro Extensions Run B | ➢ Metro Extensions to outer suburbs results in 36,000 new transit trips and 44,000 new Metrorail boardings  
 ➢ Addition of new Metrorail parking at new stations results in parking capacity relief at many existing Metrorail park-and-ride lots | ➢ Severe impact on Metrorail core capacity:  
   ○ Peak hour loads as high as 130 passengers per car on Green Line  
   ○ Higher peak loads on Orange Line between Clarendon and Rosslyn |
Surface Transit Strategies

- Enhanced surface transit options
  - Priority Corridor Network

- New surface transit connections
  - LRT, Streetcar, Commuter Rail Services
Surface Transit: Key Findings

- **Enhanced PCN**
  - Improves transit coverage and access to regional activity centers resulting in improved transit share and access to jobs

- **Enhanced Commuter Rail**
  - Modest demand for new reverse peak/outbound service

- **Streetcar Network**
  - Limited relief to crowding on Green line, modest relief to core capacity on other lines

- **Light Rail Expansions**
  - Relieves congestion on Green line, but worsens peak crowding on Yellow line

### Summary of Weekday Transit Boardings by Mode: 2040

<table>
<thead>
<tr>
<th>Mode</th>
<th>2040 Base Case</th>
<th>PCN</th>
<th>PCN+</th>
<th>Streetcar Network</th>
<th>LRT Expansion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metrorail (Fare gate to fare gate)</td>
<td>1,054,000</td>
<td>1,039,000</td>
<td>1,027,000</td>
<td>1,029,000</td>
<td>1,058,000</td>
</tr>
<tr>
<td>Commuter Rail</td>
<td>51,000</td>
<td>49,000</td>
<td>60,000</td>
<td>51,000</td>
<td>52,000</td>
</tr>
<tr>
<td>Light Rail</td>
<td>37,000</td>
<td>27,000</td>
<td>28,000</td>
<td>37,000</td>
<td>93,000</td>
</tr>
<tr>
<td>Streetcar/BRT/Rapid Bus</td>
<td>29,000</td>
<td>244,000</td>
<td>345,000</td>
<td>215,000</td>
<td>19,000</td>
</tr>
<tr>
<td>Metrobus</td>
<td>554,000</td>
<td>450,000</td>
<td>414,000</td>
<td>449,000</td>
<td>544,000</td>
</tr>
<tr>
<td>Other Bus</td>
<td>193,000</td>
<td>181,000</td>
<td>159,000</td>
<td>190,000</td>
<td>187,000</td>
</tr>
<tr>
<td><strong>Total Transit Boardings</strong></td>
<td><strong>1,918,000</strong></td>
<td><strong>1,990,000</strong></td>
<td><strong>2,033,000</strong></td>
<td><strong>1,971,000</strong></td>
<td><strong>1,953,000</strong></td>
</tr>
<tr>
<td>% Growth vs. 2040 Max CLRP</td>
<td></td>
<td>3.8%</td>
<td>6.0%</td>
<td>2.8%</td>
<td>1.8%</td>
</tr>
</tbody>
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Improved Walk Access Strategy

Examples of Good and Poor Walkability

Walkability Improvements

• Improving pedestrian networks near stations and promoting new development with small walkable blocks could significantly expand system access and ridership
## Improved Walk Access Strategy: Key Findings

### Summary of Weekday Transit Linked Trips:2040

<table>
<thead>
<tr>
<th>Attraction Location</th>
<th>2040 Base (CLRP)</th>
<th>Improved Walkability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core (DC/Arl CBD)</td>
<td>754,000</td>
<td>766,000</td>
</tr>
<tr>
<td>Central Jurisdictions Outside Core</td>
<td>322,000</td>
<td>361,000</td>
</tr>
<tr>
<td>Inner Suburbs</td>
<td>277,000</td>
<td>360,000</td>
</tr>
<tr>
<td>Outer Suburbs</td>
<td>4,000</td>
<td>4,000</td>
</tr>
<tr>
<td>Region-wide</td>
<td>1,357,000</td>
<td>1,491,000</td>
</tr>
</tbody>
</table>

| Percent growth vs. 2040 Max CLRP  | 9.9%            |

### Strategy

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved Walkability</td>
<td>➢ Total transit trips increase by 9.9% vs. Max CLRP</td>
<td>➢ Higher peak loads on Metrorail due to improved transit access/egress</td>
</tr>
<tr>
<td></td>
<td>➢ Reduces parking overflow by reducing short drive access to rail trips</td>
<td></td>
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<tr>
<td></td>
<td>➢ Increased utilization of reverse peak direction Metrorail capacity</td>
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New Infill Stations Strategy

• New potential infill stations could expand system access and ridership

Key Findings

<table>
<thead>
<tr>
<th>Infill Station Location</th>
<th>Potential Ridership</th>
<th>Strategy Results</th>
<th>Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>St. Elizabeth's Campus</td>
<td>High</td>
<td>Significant planned redevelopment in vicinity</td>
<td></td>
</tr>
<tr>
<td>Kansas Ave.</td>
<td>Medium to High</td>
<td>Existing development and planned redevelopment in vicinity</td>
<td></td>
</tr>
<tr>
<td>Oklahoma Ave.</td>
<td>Medium</td>
<td>Depends on accessibility to Benning Road corridor</td>
<td></td>
</tr>
<tr>
<td>Eisenhower Ave Valley</td>
<td>Low</td>
<td>Physical barriers limit access</td>
<td></td>
</tr>
<tr>
<td>Montgomery College</td>
<td>Low</td>
<td>Low-density land uses in vicinity</td>
<td></td>
</tr>
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</table>
Public Engagement Strategy

- **How will we engage the public?**
  - Jurisdictional Briefings
    - Metro’s staff briefs jurisdictional representative upon request by TAG members
  - Metro-hosted Workshops
    - Two rounds of two workshops in each jurisdiction
    - Working with TAG members and CIVR to determine locations
    - Metro will provide media notification & inform local representatives

- **What will be discussed at the Workshops?**
  - RTSP Purpose/People/Process/Product
  - Participant Break-out & Planning Team Exercises
  - Planning Team Presentations
  - RTSP Next Steps
  - Open House/Project Board Review
Next Steps

Goal & Strategy Development
Winter-Spring 2010

Strategy Modeling & Evaluation
Summer 2010-Spring 2011

Scenario Development, Modeling & Evaluation
Summer-Fall 2011

Selection of Preferred Scenario & Development of Final Plan
Winter-Spring 2012

Ongoing Technical Analyses & Feedback from Study Technical Advisory Group

WE ARE HERE 1st Round of Public Meetings

2nd Round of Public Meetings
How You Can Stay Informed

http://planitmetro.com

THANK YOU!

Tom Harrington
Director
Office of Long Range Planning
WMATA
E-mail: tkharrington@wmata.com