Washington Metropolitan Area Transit Authority

Regional Transit System Plan

Presentation to the
TPB Technical Committee

May 6, 2011

Regional Transit System Plan

Metro's Current Adopted Long Range Plan

1999 Transit Service Expansion Plan

Four main elements:

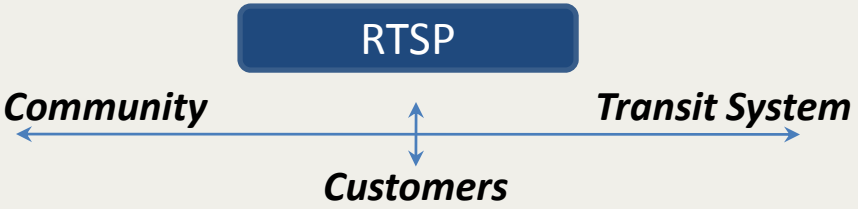
- (1) Improve Access to and capacity of the Metrorail system
- (2) Improve bus service levels and expand to new service areas
- (3) Selectively add stations, entrances and station capacity to the existing Metrorail system
- (4) Expand fixed guideway services

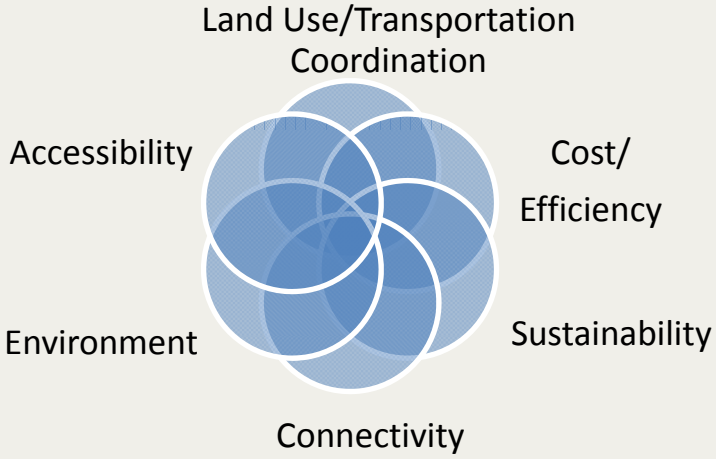
Regional Transit System Plan

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





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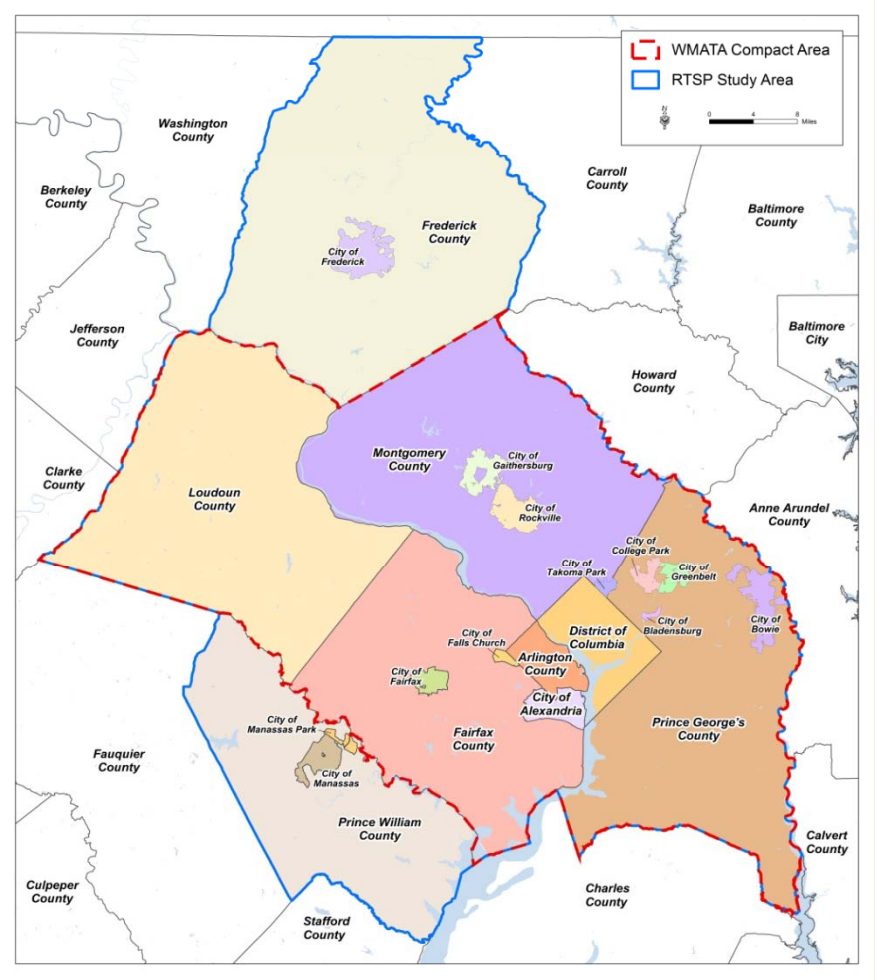
Key Long Range Issues to Address



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

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Regional Growth Trends

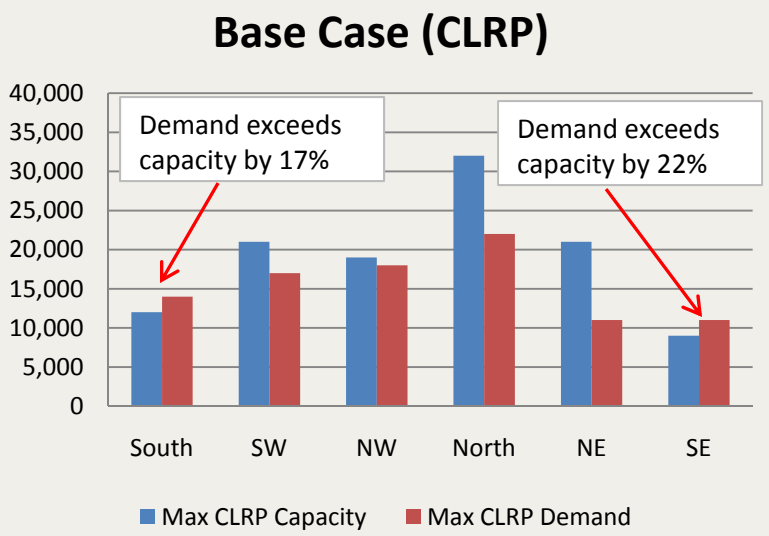
- 2010 to 2040 regional growth:
  - 31% population growth
  - 35% household growth
  - 39% employment growth

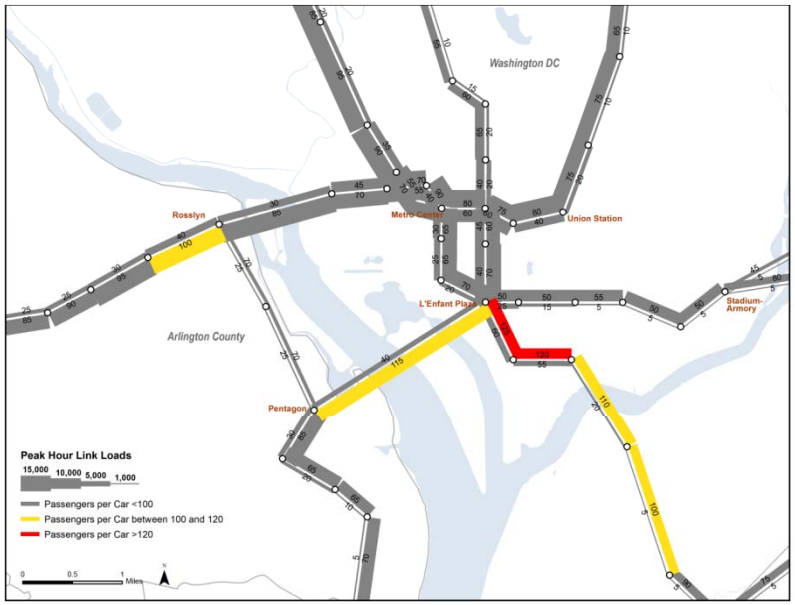
Jurisdiction	Population Growth (percent of total)	Employment Growth (percent of total)
Core (DC/Arl CBD)	2%	5%
Central Jurisdictions Outside Core	10%	14%
Inner Suburbs	29%	38%
Outer Suburbs	59%	43%

- 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

Markets	2008 to 2040 Growth in Weekday Home-Based Work Trips	Percent
Traditional Commute to Core	86,000	12%
Commute to Central Juris.	153,000	41%
Reverse Commute	62,000	35%
Central Circulation	76,000	39%
Suburb-Suburb	1,236,000	45%

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

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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

Alternative	Measures of Effectiveness											
	Core Capacity			Access				Mobility		Efficiency	Auto Travel	
	Sufficient Capacity to Serve Demand	Reserve Capacity/ Redundancy	Station Capacity	Transit System Coverage	Service to Major Activity Centers	Metrorail Parking Sufficiency	Reduce Dependence on Automobile to Access Metrorail	Region-wide Transit Share	Transit Access to Jobs	Passenger Miles Per Route Mile	Auto VMT and Trips	
Base												
Existing Conditions in 2008	Poor	Poor	Poor	Neutral	Very Poor	Poor	Neutral	Neutral	Neutral	Neutral	Poor	
2040 Constrained Long Range Plan	Very Poor	Very Poor	Very Poor	Poor	Poor	Very Poor	Neutral	Neutral	Poor	Good	Very Poor	

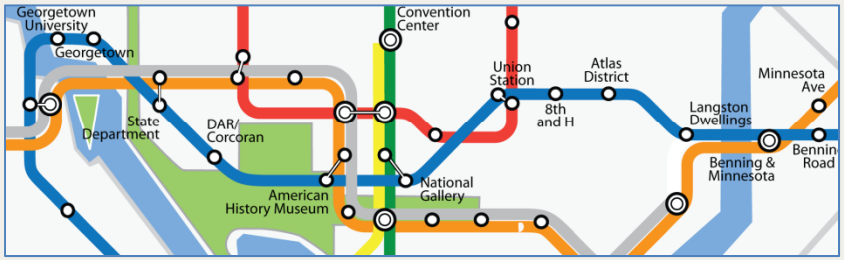
- All strategies are compared to 2040 base case & evaluated by a set of measures

- MOE's Address Five Key Areas:
  1. Core Capacity
  2. Access
  3. Mobility
  4. Efficiency
  5. Auto Travel

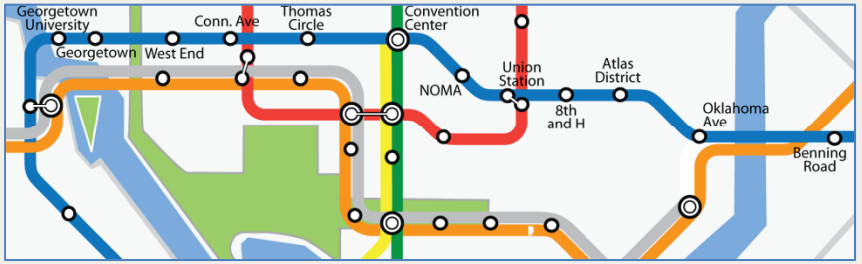
Key	
Very Poor	
Poor	
Neutral	
Good	
Excellent	

New Rail Lines Through the Core

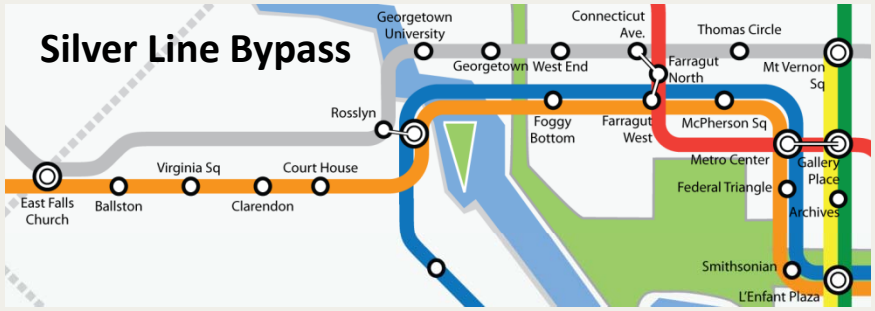
Blue Line Via M St. & Constitution Ave. NW



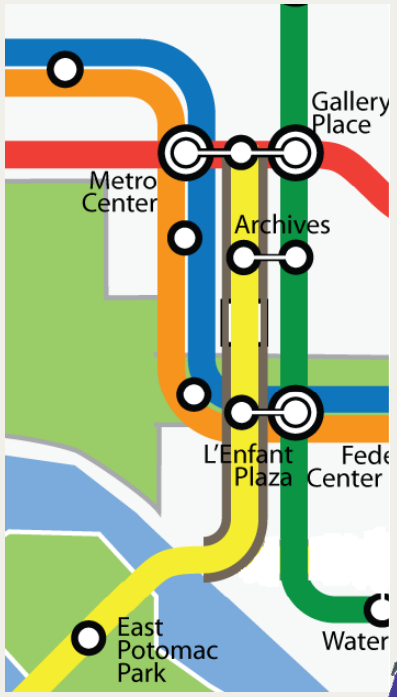
Blue Line Via M St. & New Jersey Ave. NW



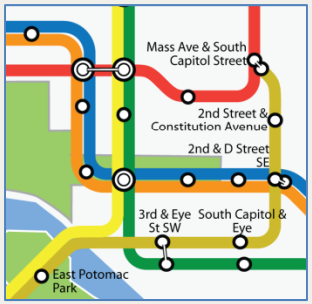
Silver Line Bypass



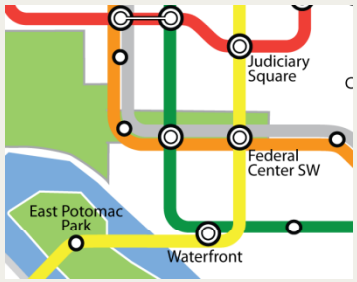
Yellow Line Via 10th St.



Yellow Line Split Via 2nd St. NE



Yellow Line Via 2nd St. NW



Brown Line

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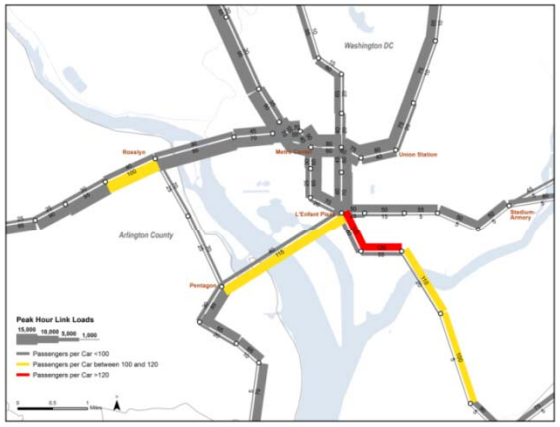
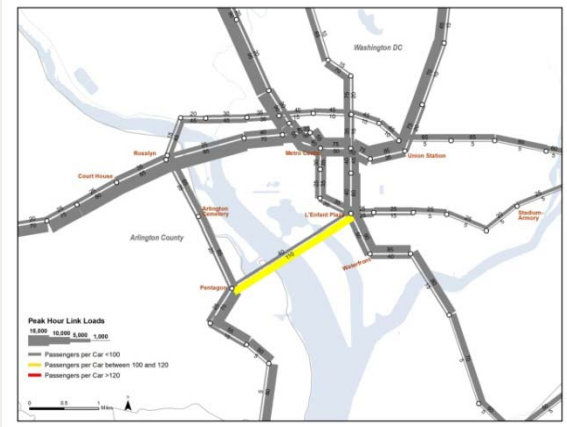
New Rail Lines Through the Core: Key Findings

Strategy	Pros	Cons
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

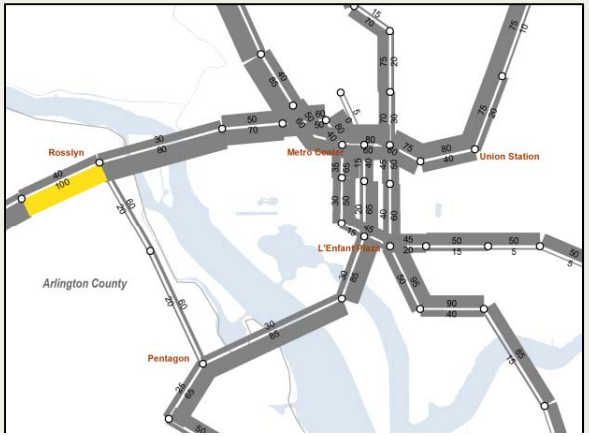
2040 Base Case



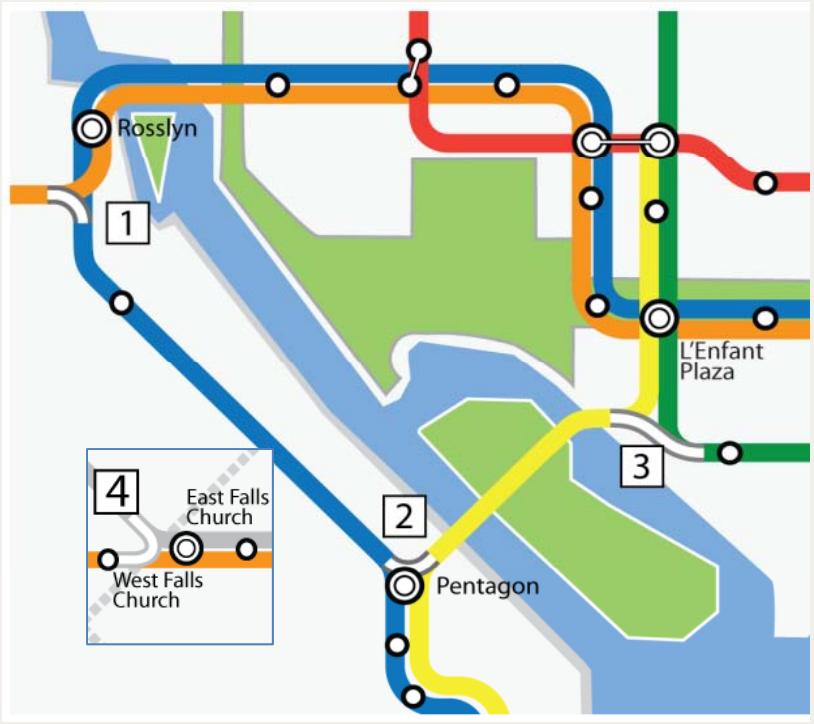
Blue Line Via M St./New Jersey Ave.



Yellow 10th St SW/NW



Rail Interline Strategies



Three new rail services:

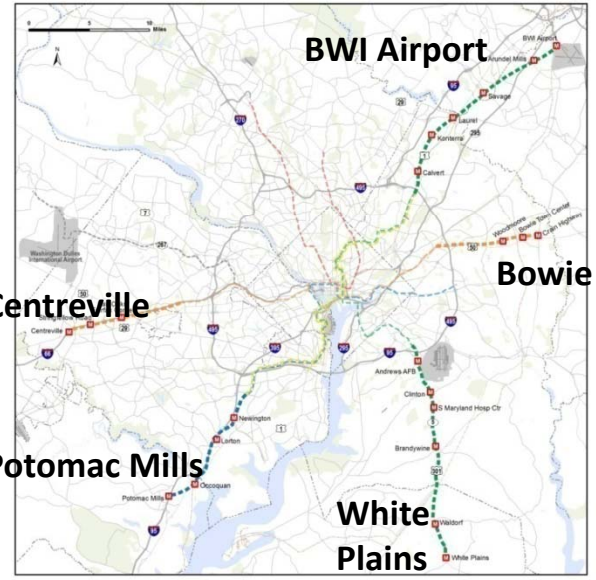
1. VA-772 to Mount Vernon Square using connectors 1 and 2 (Silver1)
2. Dulles to Branch Avenue using connectors 1, 2, and 3 (Green2)
3. Dulles to Vienna using connector 4 (Silver2)

Strategy	Pros	Cons
Interline options – Rosslyn "Y"	➢ Better intra-Virginia service ➢ Reduces transfer volumes at Rosslyn ➢ Provided some flexibility in rail operations	➢ Does not address core capacity ➢ Loads on service using interline do not justify 8-car trains
Four Interline Connections	➢ Better intra-Virginia service ➢ Reduces transfer volumes at Rosslyn ➢ Provides considerable flexibility in rail operations	➢ Aggravates peak congestion problem at Rosslyn ➢ Increases transfer volumes at more stations ➢ Does not address core capacity ➢ Loads on new rail lines do not justify 8-car trains

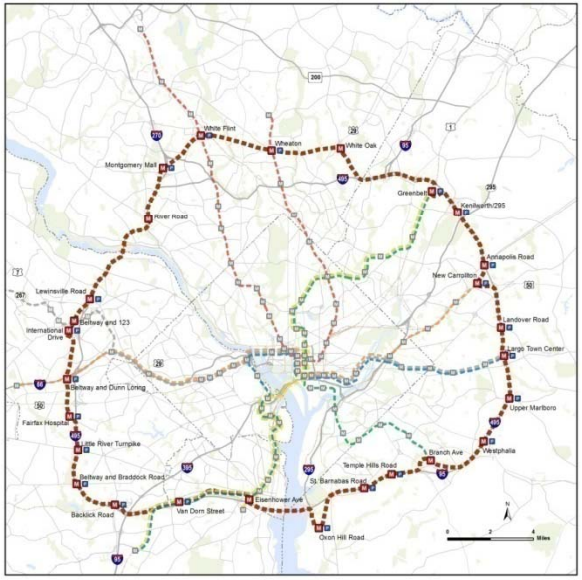
Rail Extensions & New Connections

- Metrorail extensions to new markets/activity centers

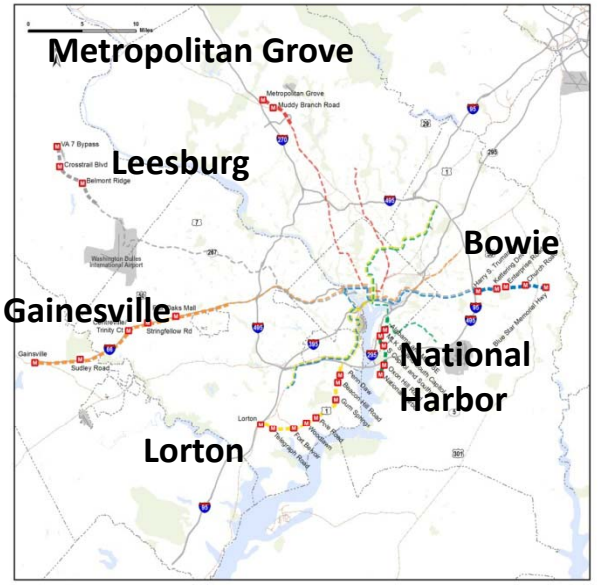
Extension A



Beltway Line



Extension B



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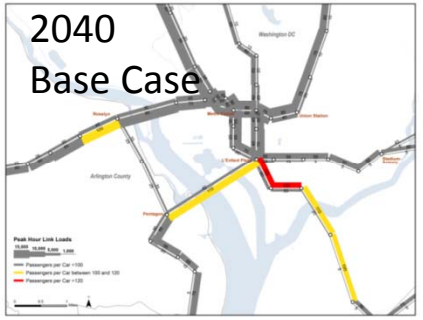
Rail Extensions: Key Findings

Strategy	Pros	Cons
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: o Peak hour loads as high as 155 passengers per car on Green Line o 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: o Peak hour loads as high as 130 passengers per car on Green Line o Higher peak loads on Orange Line between Clarendon and Rosslyn



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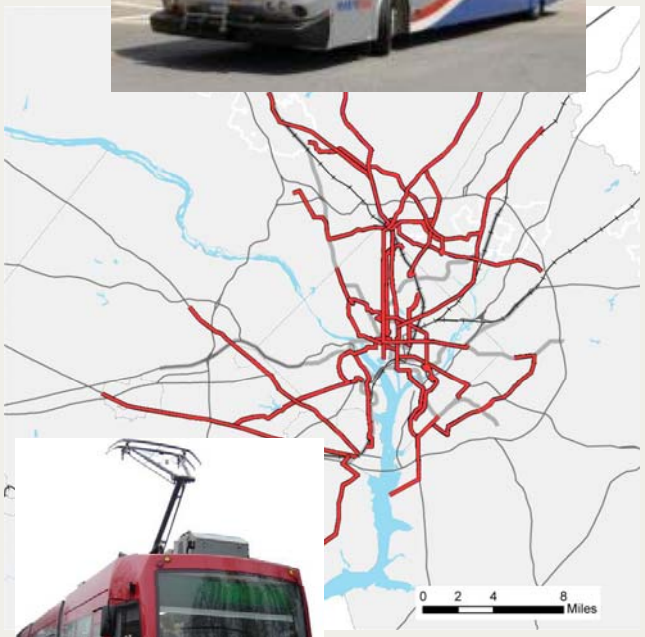
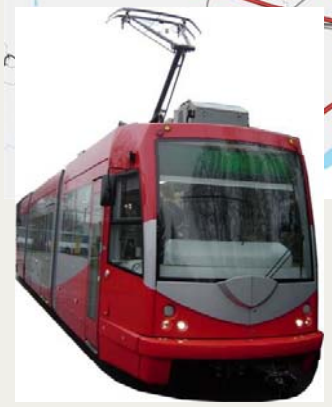
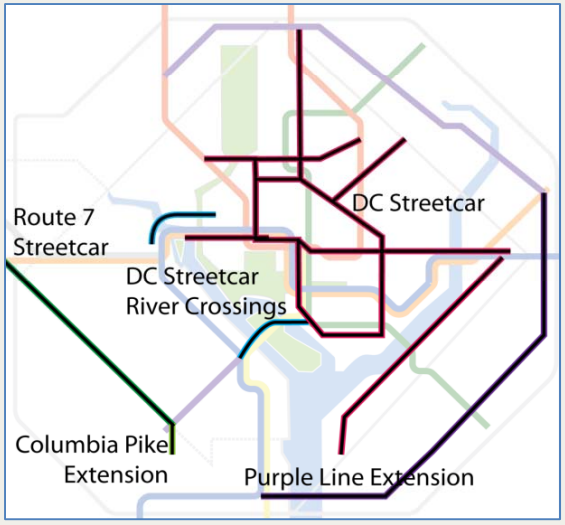
Surface Transit Strategies

- Enhanced surface transit options
  - ➢ Priority Corridor Network
- New surface transit connections
  - ➢ LRT, Streetcar, Commuter Rail Services







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Surface Transit: Key Findings

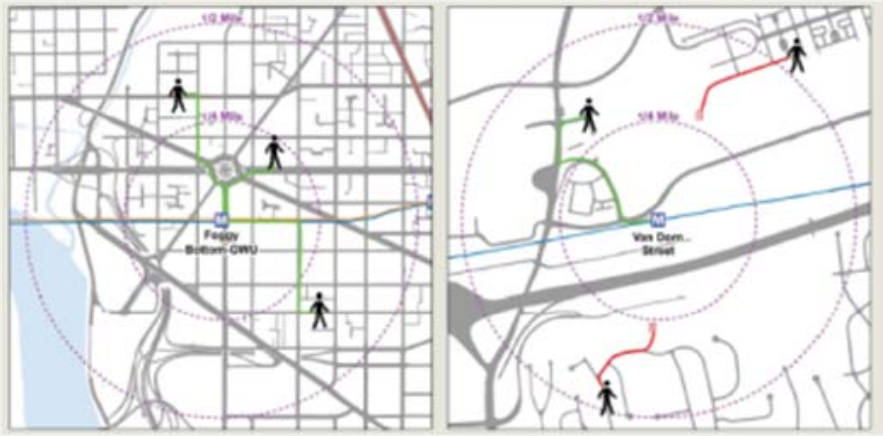
- Enhanced PCN
  - Improves transit coverage and access to regional activity centers resulting in improved transit share and access to jobs
- Enhanced Commuter Rail
  - Modest demand for new reverse peak/outbound service
- Streetcar Network
  - Limited relief to crowding on Green line, modest relief 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

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

Improved Walk Access Strategy

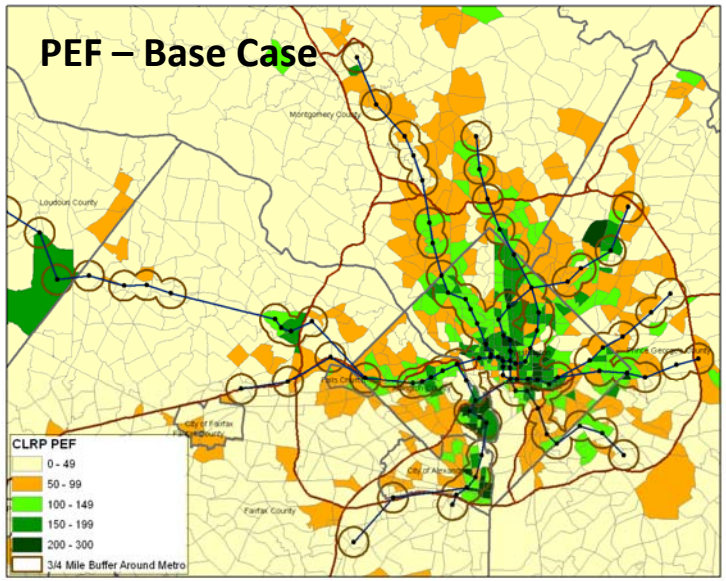
Examples of Good and Poor Walkability

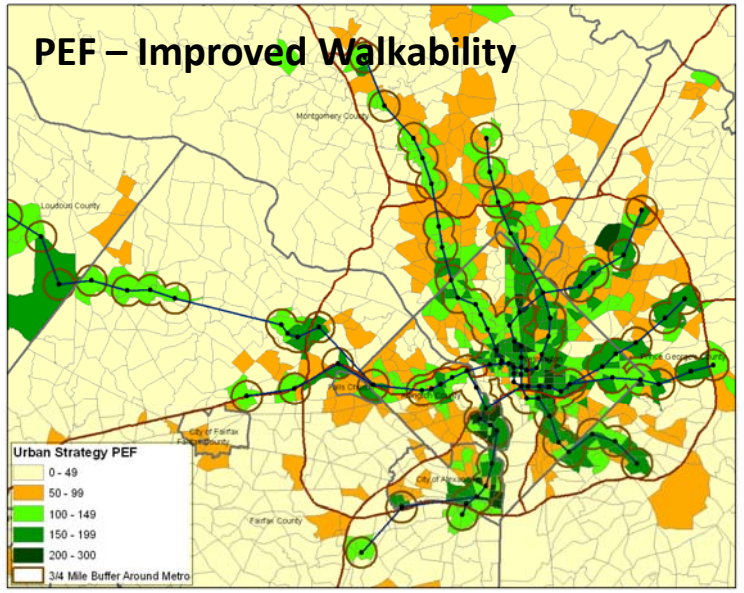


Good Poor

Walkability Improvements

- Improving pedestrian networks near stations and promoting new development with small walkable blocks could significantly expand system access and ridership



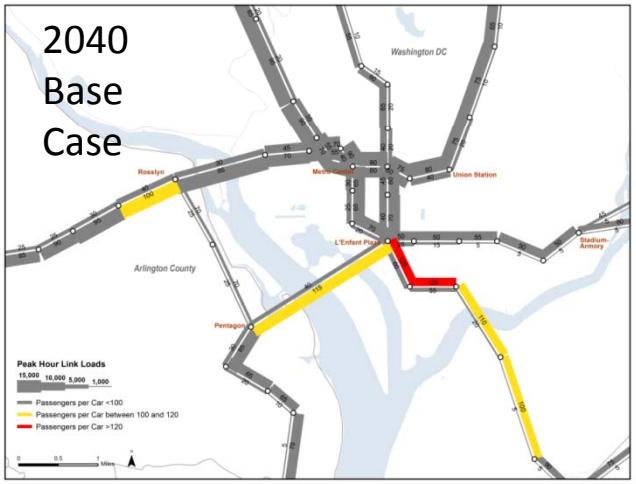


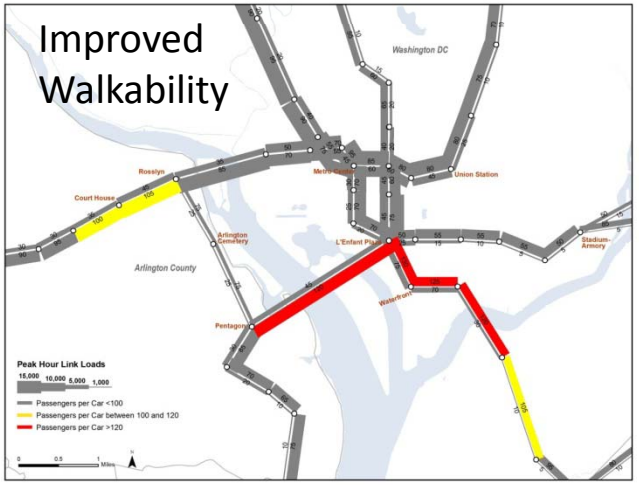
Improved Walk Access Strategy: Key Findings

Summary of Weekday Transit Linked Trips:2040

		2040 Base (CLRP)	Improved Walkability
Attraction Location	Core (DC/Arl CBD)	754,000	766,000
	Central Jurisdictions Outside Core	322,000	361,000
	Inner Suburbs	277,000	360,000
	Outer Suburbs	4,000	4,000
	Region-wide	1,357,000	1,491,000
	Percent growth vs. 2040 Max CLRP	-----	9.9%

Strategy	Pros	Cons
Improved Walkability	➢ Total transit trips increase by 9.9% vs. Max CLRP ➢ Reduces parking overflow by reducing short drive access to rail trips ➢ Increased utilization of reverse peak direction Metrorail capacity	➢ Higher peak loads on Metrorail due to improved transit access/egress





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New Infill Stations Strategy

- New potential infill stations could expand system access and ridership

Key Findings

Infill Station Location	Strategy Results	
	Potential Ridership	Factors
St. Elizabeth's Campus	High	Significant planned redevelopment in vicinity
Kansas Ave.	Medium to High	Existing development and planned redevelopment in vicinity
Oklahoma Ave.	Medium	Depends on accessibility to Benning Road corridor
Eisenhower Ave Valley	Low	Physical barries limit access
Montgomery College	Low	Low-density land uses in vicinity

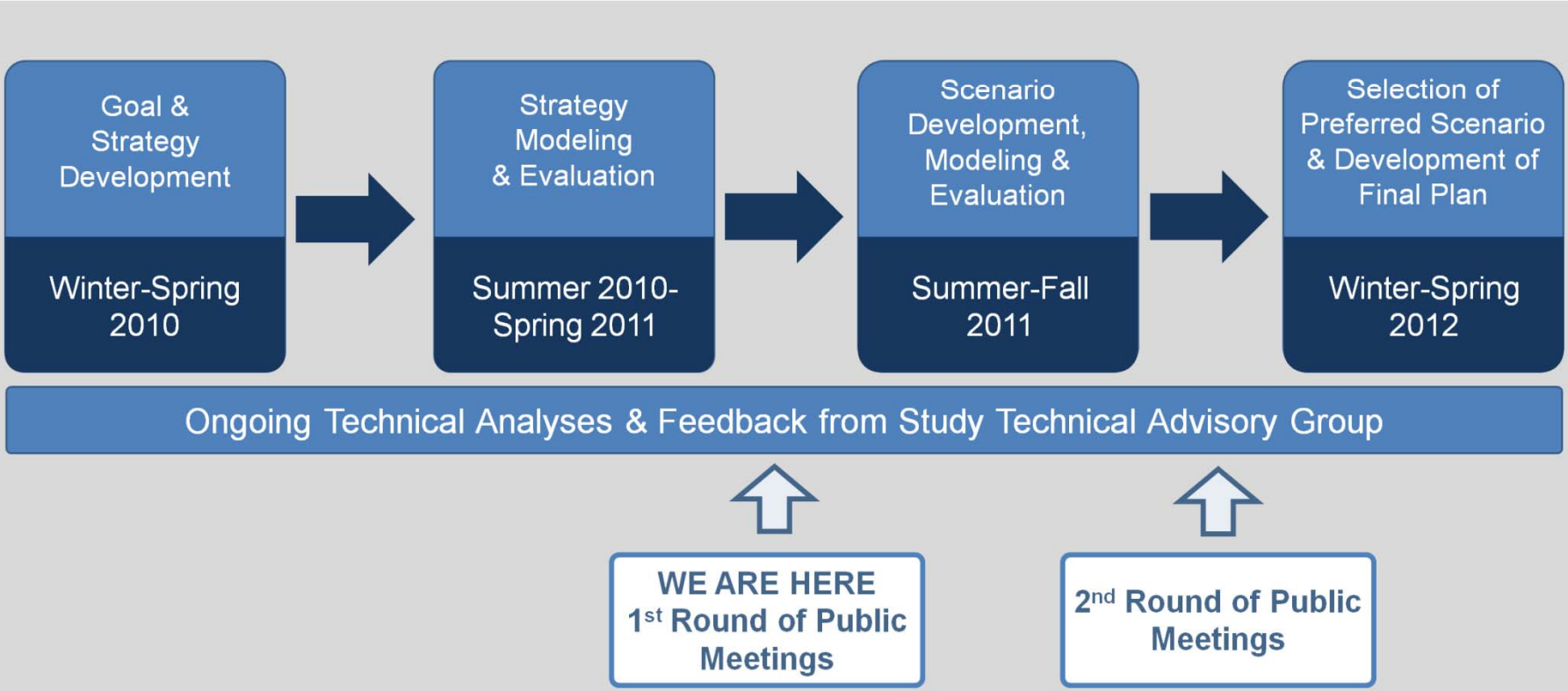
Public Engagement Strategy

- **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



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How You Can Stay Informed

http://planitmetro.com

THANK YOU!

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