



Washington Metropolitan Area Transit Authority

Priority Corridor Network (PCN) Evaluation

Identification of Running-way Locations and Benefits

Transportation Planning Board

January 19, 2011



Purpose of PCN Running-way Study

- Identify arterial corridor segments on the existing Metrobus network where running way improvements appear to increase person throughput
- Quantify regional benefits associated with a bus priority network





Background/Context

- Metro focusing resources on existing 23 top performing arterial corridors, referred to as the Priority Corridor Network (PCN)
- Metro does not own/operate any of the signal systems or roads in the region
- Need a vision to help advocate for bus running-way improvements





Vision Alternatives

- Service improvements only – assuming 10 minute, skip stop service overlaying local service on all 23 corridors
- Service and running-way improvements:
 - Exclusive bus lanes (3 minutes per mile)
 - Queue jumpers (0.4 to 0.6 minutes per mile)
 - Transit signal priority (0.4 to 0.6 minutes per mile)





Service Improvements Only

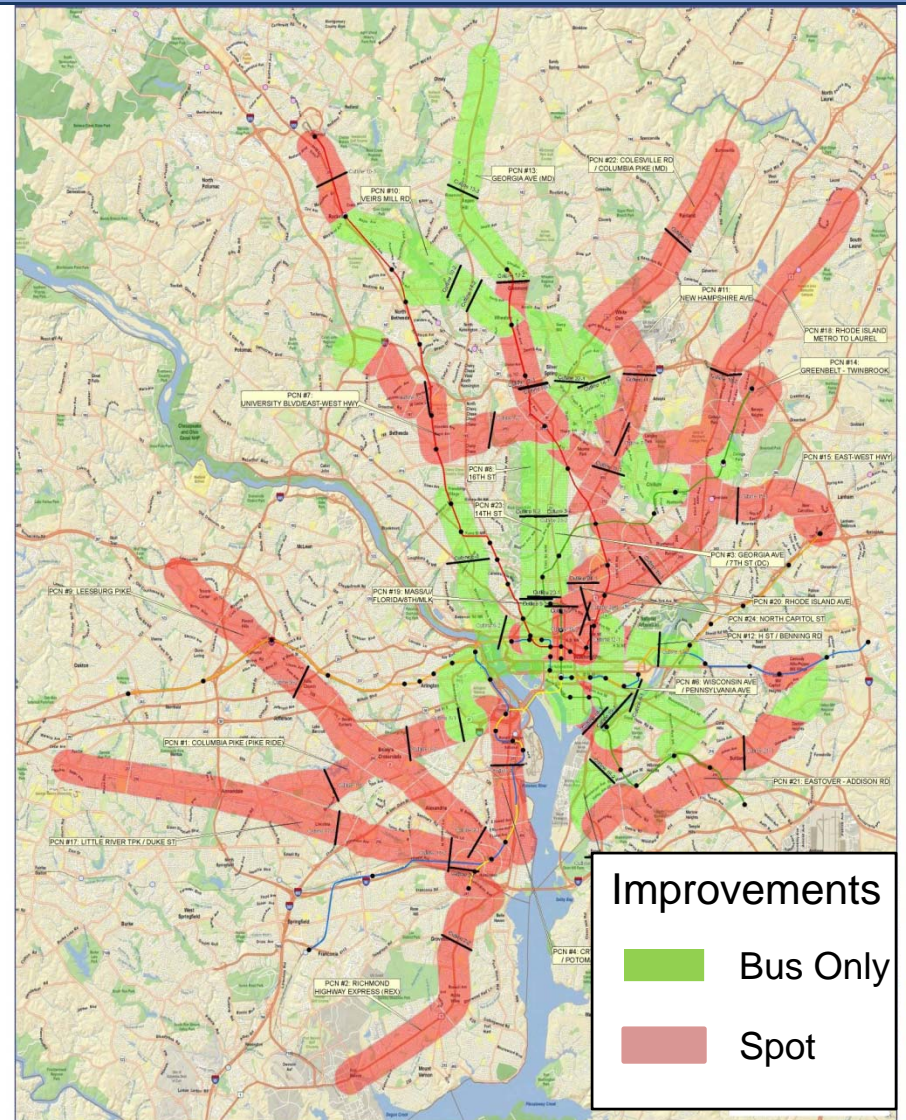
- Required resources
 - Fleet Needs: 250 buses
 - Garage storage and maintenance implications
 - Capital Costs: \$125 million rolling stock
 - Operating Costs: \$60 million a year
- PCN transit ridership increases by approximately 100,000 trips per day in 2030





Service & Running-way Improvements

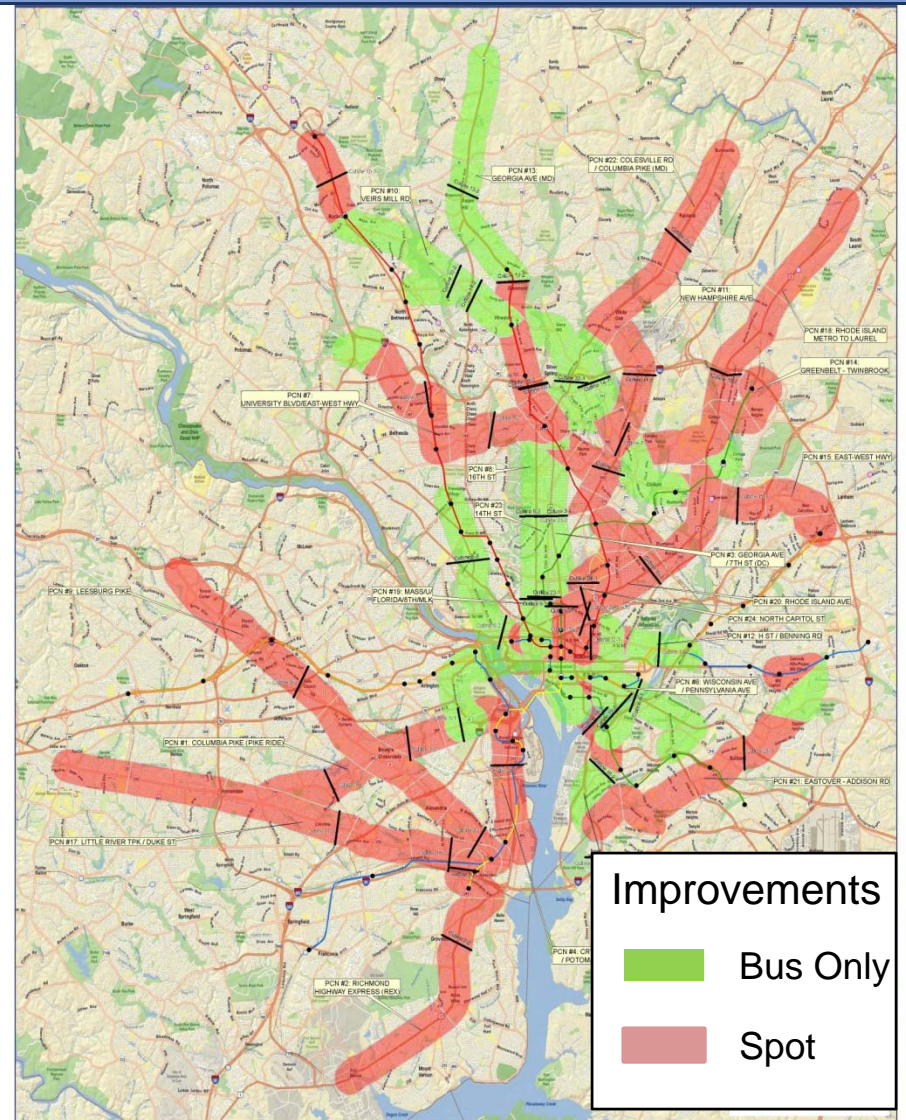
- Warrant Analysis
 - Analyzed each segment for impacts on adjacent traffic and transit ridership
- Exclusive bus lanes appear warranted along approximately 90 (of 235) miles of the PCN network
 - 145 miles of “spot improvements” including transit signal priority and queue jumpers





Service & Running-way Improvements

- Required resources
 - Fleet Needs: 175 buses
 - Capital Cost: \$87 million rolling stock + \$75-450 million infrastructure
 - Operating Cost: \$42 million a year
- PCN transit ridership increases by approximately 190,000 trips per day
 - 100,000 new transit trips
 - 90,000 diverted MetroRail





Service & Running-way Improvements

- Benefits (compared to 2030 service improvements only)
 - Average daily bus speeds increase by 15%
 - Average travel time per PCN passenger decreases by 10%
- Impacts (compared to 2030 service improvements only)
 - Average daily auto vehicle hours increase by 2%
 - No significant impact on regional VMT





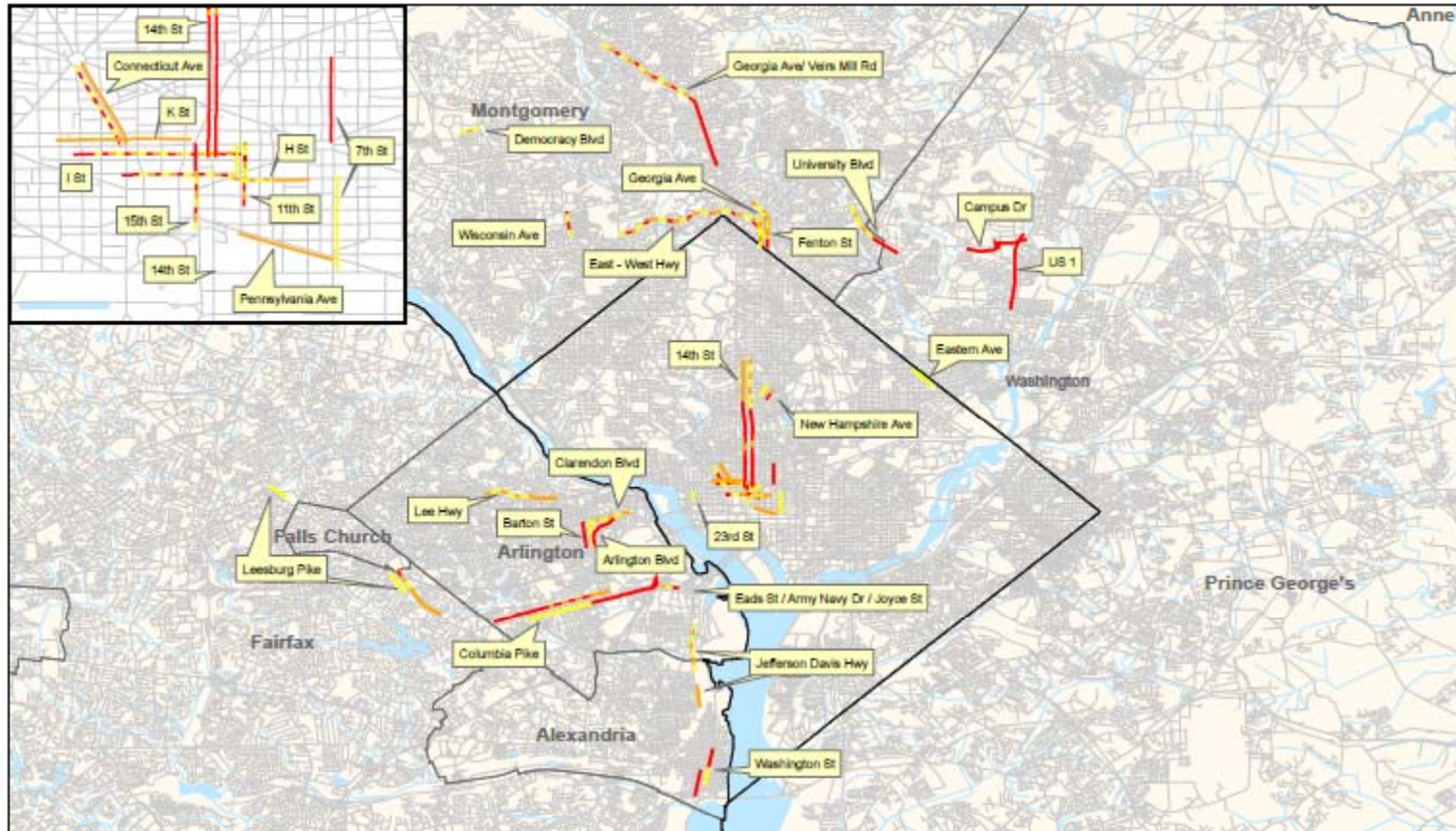
Implementation

- PCN Running-way vision based on 2030 timeline
- Short Term “Hot Spots”
 - TIGER Locations
 - 11 PCN Corridors receiving funding for transit signal priority and queue jump implementation including:
 - DC – 14th Street, 16th Street, Georgia Avenue, Wisconsin Avenue and H Street/Benning Road
 - MD – Addison Road, University Boulevard, Route 1 (MD) and Veirs Mill Road
 - VA – Leesburg Pike and Route 1 (VA)
 - Top 10 list for each jurisdiction
 - Correlated high WMATA bus frequency with slow average bus speeds



Budget Reduction "Hot Spots"

Top 10 Priority Corridors for Performance Enhancement for Each Jurisdiction





Next Steps

- Constraints
 - Planning Funding
 - COG Technical Assistance Funds
 - Capital Funding
 - Federal Small Starts or Very Small Starts
 - Technical Issues
 - Traffic Signal Systems Upgrades
 - Local Jurisdictional Implementation Concurrence



Next Steps

- Working groups/active projects
 - Awarded TIGER–running way improvements on 11 PCN corridors
 - DDOT
Bus-Only Lane Implementation team
 - MDOT
Coordination with system preservation program
 - VDOT
Transit Signal Priority Implementation team



Questions?



Appendix



TIGER Funded PCN Corridors

PCN Corridor Improvements Funded with TIGER Grant

PCN Corridor	Lead Implementing Agency	TIGER Funding	Description
14th Street	DDOT	\$ 5,200,000	Real time arrival displays and transit signal priority connecting the 14 th Street Bridge with K Street
16th Street	DDOT	\$ 1,295,000	Real time arrival displays and transit signal priority
Georgia Avenue	DDOT	\$ 4,111,000	Real time arrival displays and transit signal priority and transit only lane between W and Florida
TR Bridge to K Street	DDOT	\$ 1,800,000	Real time arrival displays and transit signal priority
Wisconsin Avenue	DDOT	\$ 745,000	Real time arrival displays and transit signal priority
H Street/Benning	DDOT	\$ 415,000	Bus stop Improvements and real time arrival displays
Route 1 (VA)	City of Alexandria	\$ 8,500,000	Develop BRT transitway in the median of Route 1 in Alexandria
Leesburg Pike	WMATA	\$ 1,340,000	Real time arrival displays and transit signal priority
Addison Road	WMATA	\$ 200,000	Bus stop Improvements and real time arrival displays
University Boulevard	MDOT	\$ 1,262,000	Bus stop Improvements real time arrival displays and transit signal priority
Route 1 (MD)	MDOT	\$ 805,000	Queue jump lanes and transit signal priority
Veirs Mill Road	MDOT	\$ 265,000	Bus stop Improvements real time arrival displays
Total		\$ 25,938,000	



Top 10 "HOT SPOT" Locations

DC Corridors

Rank	Corridor	Direction	Start	End	Length (mi)	Average Speed	Buses per Day
1.	I St NW	WB	13th St NW	19th St NW	0.7	6.0	443
2.	11th St NW	NB	Pennsylvania Ave NW	H St NW	0.4	2.5	209
3.	13th St NW	NB	H St NW	K St NW	0.4	6.0	376
4.	H St NW	EB	17th St NW	13th St NW	0.5	6.1	369
5.	Connecticut Ave NW	SB	Dupont Cir	K St NW	0.5	4.7	225
6.	New Hampshire Ave NW	SB	Georgia Ave NW	Sherman Ave NW	0.3	3.5	155
7.	14th St NW	NB	I St NW	Monroe St NW	2.1	6.4	245
8.	14th St NW	SB	Monroe St NW	I St NW	2.1	6.3	205
9.	7th St NW	SB	P St NW	K St NW	0.5	7.4	254
10.	K St NW	EB	20 th St NW	13 th St NW	0.7	7.2	211

Maryland Corridors

Rank	Corridor	Direction	Start	End	Length	Average Speed	Buses per Day
1.	Georgia Ave	NB	Eastern Ave	Spring St	1.1	7.7	170
2.	East-West Hwy	WB	Georgia Ave	Colesville Rd	0.5	9.5	185
3.	East-West Hwy	WB	Colesville Rd	Connecticut Ave	2.7	7.0	98
4.	US 1	NB	Queensbury Rd	Campus Dr	1.8	3.6	62
5.	University Blvd	WB	New Hampshire Ave	Riggs Rd	0.6	10.7	122
6.	Veirs Mill Rd	EB	Randolph Rd	Georgia Ave	2.3	11.8	145
7.	Wisconsin Ave	NB	Norfolk Ave	Wood Rd	0.5	9.9	83
8.	University Blvd	EB	Colesville Rd	Piney Branch Rd	1.8	11.8	101
9.	Campus Dr	WB	Adelphi Rd	Baltimore Ave	1.3	12.1	110
10.	Georgia Ave	SB	Veirs Mill Rd	Capital Beltway	1.6	12.7	121

Virginia Corridors

Rank	Corridor	Direction	Start	End	Length	Average Speed	Buses per Day
1.	Columbia Pike	WB	Walter Reed Dr	George Mason Dr	0.8	9.1	187
2.	Joyce St	NB	Army Navy Dr	Columbia Pike	0.3	10.4	205
3.	Army Navy Dr	WB	Fern St	Joyce St	0.4	9.7	156
4.	N Barton St	SB	Clarendon Blvd	Pershing St	0.6	2.3	64
5.	Leesburg Pike	WB	Patrick Henry Dr	Arlington Blvd	0.5	10.6	176
6.	Washington St	NB	Duke St	Pendleton St	0.6	11.6	143
7.	Columbia Pike	EB	Walter Reed Dr	Joyce St	1.4	12.1	162
8.	Washington St	SB	Duke St	Capital Beltway	0.6	9.9	92
9.	Columbia Pike	WB	George Mason Dr	Jefferson St	1.1	12.1	161
10.	Arlington Blvd	SB	Queen St	N Pershing Dr	0.8	10.7	106



Documented Average Bus Speeds

Average PM Peak (3:00 PM - 6:00 PM) Bus Speeds as Determined by Recorded AVL Data: November 2009

