

Update on TIGER Priority Bus Transit: Transit Signal Priority Procurement

TPB Traffic Signal Subcommittee
July 10, 2012

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TIGER Grant for Priority Bus Transit in the National Capital Region

Five implementing organizations:

- City of Alexandria, DDOT, MDOT, PRTC, and WMATA

\$58.8 million (100% Federal) – 2011 through 2016

- **Takoma/Langley Transit Center**
 - \$12.3M Feb 2012 – Aug 2014
- **PRTC Buses and ITS**
 - \$10M Jan 2011 – Sep 2013
- **US-1 (VA) / Potomac Yard Transitway**
 - \$8.5M Jan 2012 – Oct 2013
- **DC and VA Bus Corridor Priority Treatments**
 - \$24.9M Jun 2011 – Jun 2013

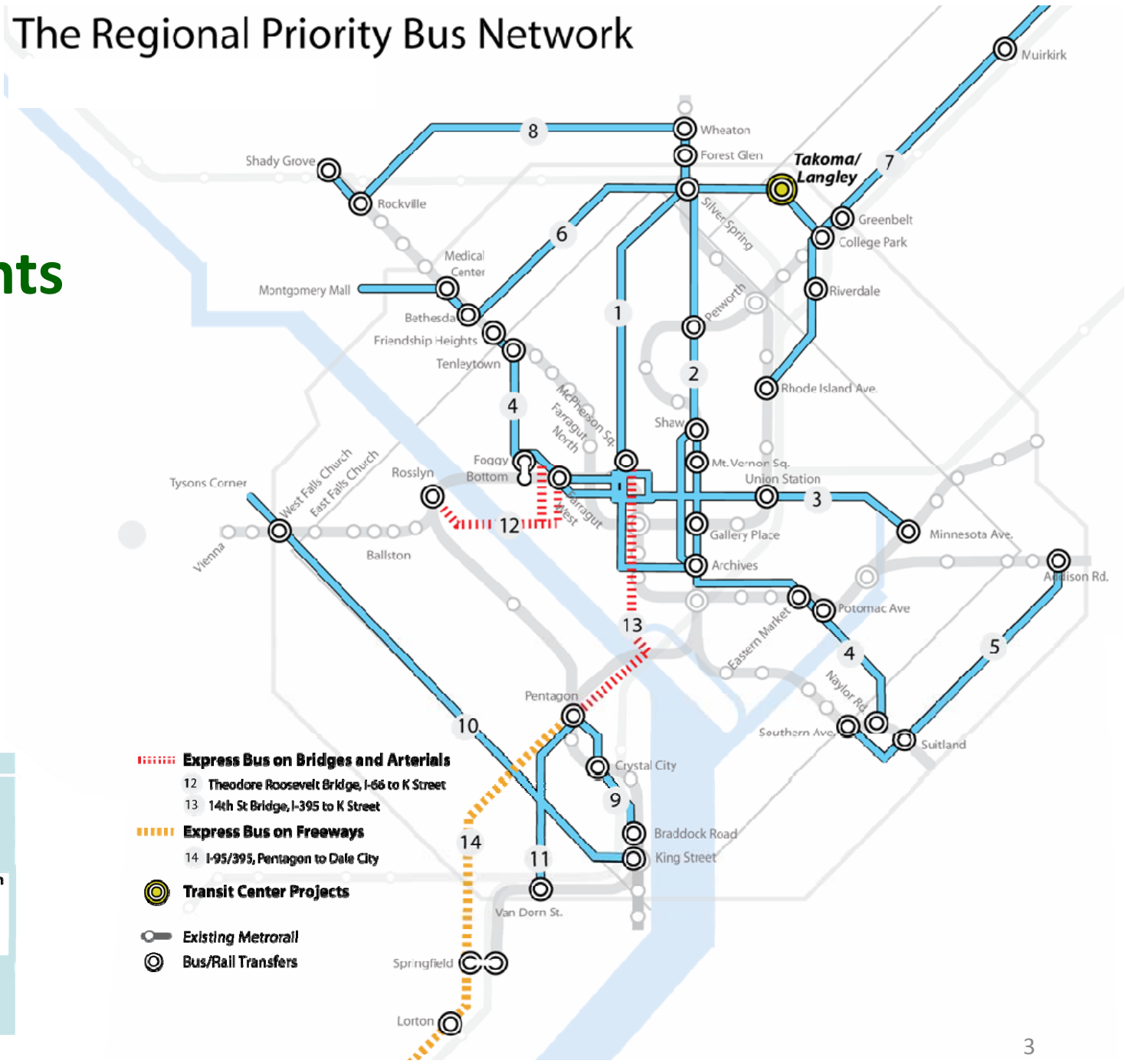


The Regional Priority Bus Network

TIGER Components

- Priority Arterial Corridors**
- 1 16th St, Downtown to Wheaton
- 2 Georgia Ave from Archives to Silver Spring
- 3 H St / Benning Road, Minn. Ave to Franklin Sq.
- 4 Wisconsin Ave, Naylor Rd to Friendship Heights
- 5 Addison Rd, Southern Ave to Addison Rd station
- 6 University Blvd, Bethesda to College Park
- 7 US 1, Laurel to Rhode Island Ave. station
- 8 Veirs Mill Rd, Shady Grove to Silver Spring
- 9 US 1 Transitway, Potomac Yard
- 10 VA 7, Alexandria to Tysons Corner
- 11 Van Dorn-Pentagon, via Shirlington

- Express Bus on Bridges and Arterials**
- 12 Theodore Roosevelt Bridge, I-66 to K Street
- 13 14th St Bridge, I-395 to K Street
- Express Bus on Freeways**
- 14 I-95/395, Pentagon to Dale City
- Transit Center Projects**
- Existing Metrorail**
- Bus/Rail Transfers**



Overview: Transit Signal Priority (TSP)

- The purpose of bus priority is to provide travelers with quick, reliable transportation: more, faster, better, cheaper, safer!
 - 50-60% of bus time is spent in motion
 - 20% is spent at bus stops
 - 20-30% is spent at traffic signals
- All of these can be improved upon with various types of bus priority treatments
- Transit signal priority takes time from current signal cycles and the competing needs of parallel and intersecting vehicle traffic and pedestrian crossings.

TIGER – Transit Signal Priority (TSP) on Bus Corridors

What is TSP?

Modification of traffic signal timing to benefit transit vehicles operating along a roadway.

TSP green phase for buses can be: extended, early/advanced, or inserted in cycle.

Types of TSP:

Passive - signals are retimed to account for transit travel speeds or to maximize person throughput rather than vehicle throughput.

Active - bus “announces” its approach to a signal and the signal adjusts the cycle based on predetermined parameters.

- **Conditional** - only giving priority when a bus is behind schedule.
- **Unconditional** - occurs for all buses.



TSP Locations (77 total)

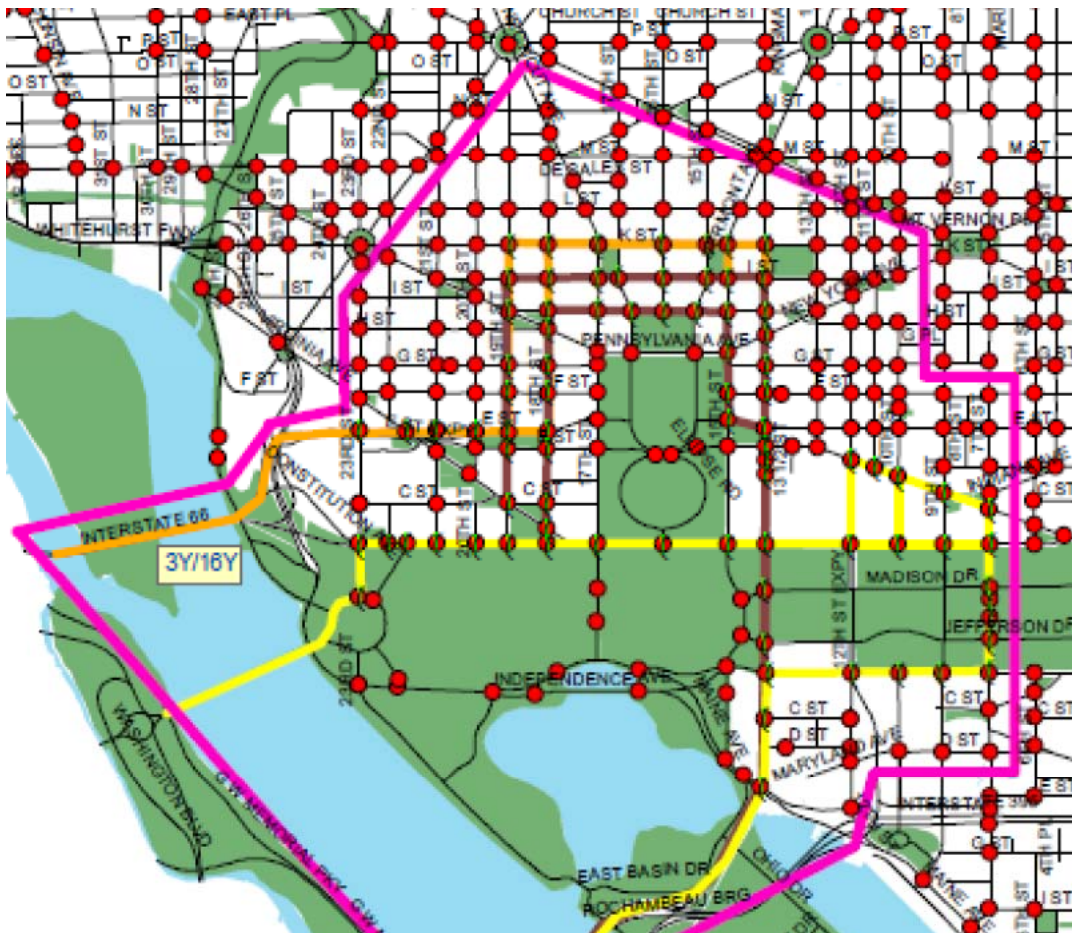
- 16th Street (6)
- Georgia Avenue (4)
- Wisconsin Avenue (5)
- University Blvd (20)
- US 1 - MD (7)
- Van Dorn / Beauregard (8)
- VA-7 / Leesburg Pike (27)

Funding: \$3.2M

TIGER - Signal Optimization & Prioritization

TR Bridge and 14th Street Bridge to K Street

- 203 Traffic Signals in Downtown Core to be improved



- 82 signals to be both optimized and prioritized
- 121 signals to be optimized

Funding: \$6M

Transit Signal Priority (TSP) Procurement & Implementation

- WMATA conducted procurement, with input from regional stakeholders.
 - Technical selection complete.
 - Contract award expected by end of July.
 - Options for additional agencies to purchase same equipment.
- Installation schedule following timing plans and design:
 - Apr to Aug 2013 for bus corridors in DC and Virginia.
 - Apr to Aug 2014 for DC downtown core.

Transit Signal Priority (TSP) Criteria

- When does the bus receive TSP?
 - Peak direction only? Or both directions?
 - What if only peak direction is preferred? Don't want empty bus prioritized over full bus.
 - How often does TSP work?
 - For every bus? Only once every 10 minutes? Once every 5 minutes? What if buses are bunched?
 - When does TSP work?
 - Only in rush hour periods? Or 24/7?
- Each jurisdiction can set own parameters, but does regional consistency make sense?
 - Enable knowledge transfer, common standards, inter-jurisdictional operation of traffic signals and buses.
 - Limits experimentation or local optimization.

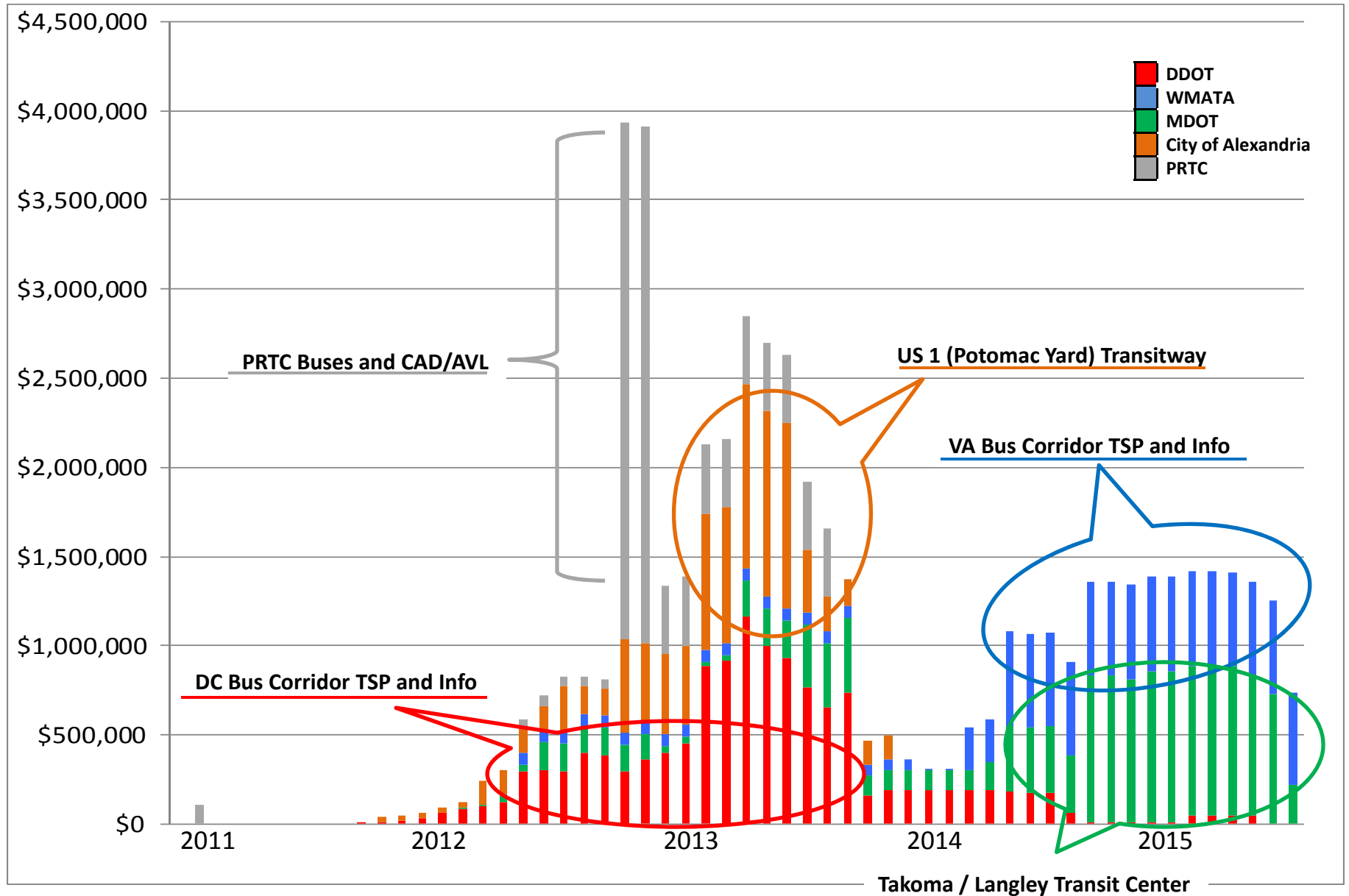
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Questions?



Extra Slides

TIGER Expenditure Schedule



May 8, 2012

TIGER – Real Time Passenger Information (RTPI)



- Initially for Metrobus
- Funding also for collecting and displaying local bus info

Locations (225 signs total)

- 16th Street (30)
- Georgia Avenue (25)
- H St / Benning Rd (28)
- Wisconsin Avenue (40)
- Addison Road (14)
- University Blvd (19)
- Veirs Mill Road (25)
- VA-7 / Leesburg Pike (31)
- Pentagon and Franconia-Springfield Stations (13)

Funding: \$2.4M

Other TIGER Improvements

- **Queue Jump Lanes (14 total)**
 - University Blvd (4)
 - US-1 MD (7)
 - Veirs Mill Road (1)
 - Van Dorn - Beauregard (2)
- **Georgia Avenue Bus Only Lane**
 - Florida Ave to Barry Place (*Howard University*) (~1/3 mile).
- **Shelter Improvements, Emergency Call Boxes, Signal Power Supplies, Curb Extensions.**

