

Transit Signal Priority Identification of On-Board Equipment Needs for WMATA Buses

*Project Update
MOITS
October 13, 2009*





Presentation Outline

- Reason for project
 - Ability to shift buses between divisions
 - Assist priority corridor implementation
 - Enhance reliability
- Phase 1 - Results
 - Average Bus Speed
 - Development of Communication Concept
 - System Requirements
- Phase 2 – Future Project
- Stakeholder Involvement





Reason For Project Existing Projects

Several jurisdictions are initiating TSP projects

- District of Columbia (Georgia Avenue)
- Fairfax County (Richmond Highway)
- Arlington County (Columbia Pike and Lee Highway)

Issue: Need ability to shift buses between divisions, requiring identical TSP equipment





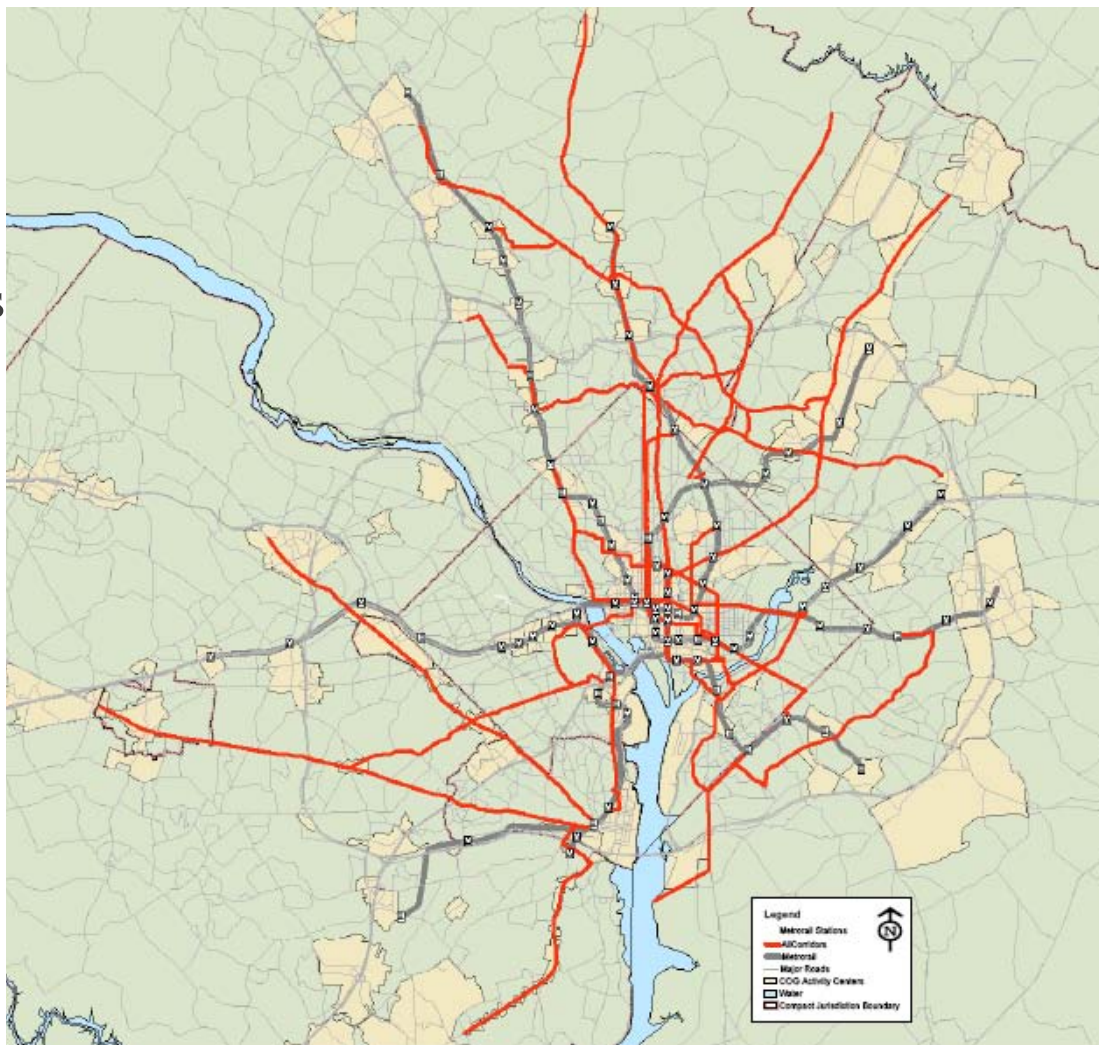
Reason For Project

Priority Corridor

Six Year Program of Projects

- Improve bus travel times, reliability, capacity, and productivity on 14% of lines (24) and over 50% of ridership
- TSP is part of traffic signal management, need pockets of assistance

Issue: Assistance at specific intersections in support of Priority Corridor network





Reason For Project

System Wide Reliability

WMATA buses are off schedule 25% of the time

- Region has second worst traffic congestion in Country
- Intersections are bottlenecks for vehicle delays
- TSP one of many tools to be considered

Issue: Enhance reliability





Phase 1 – Current Project

Major components

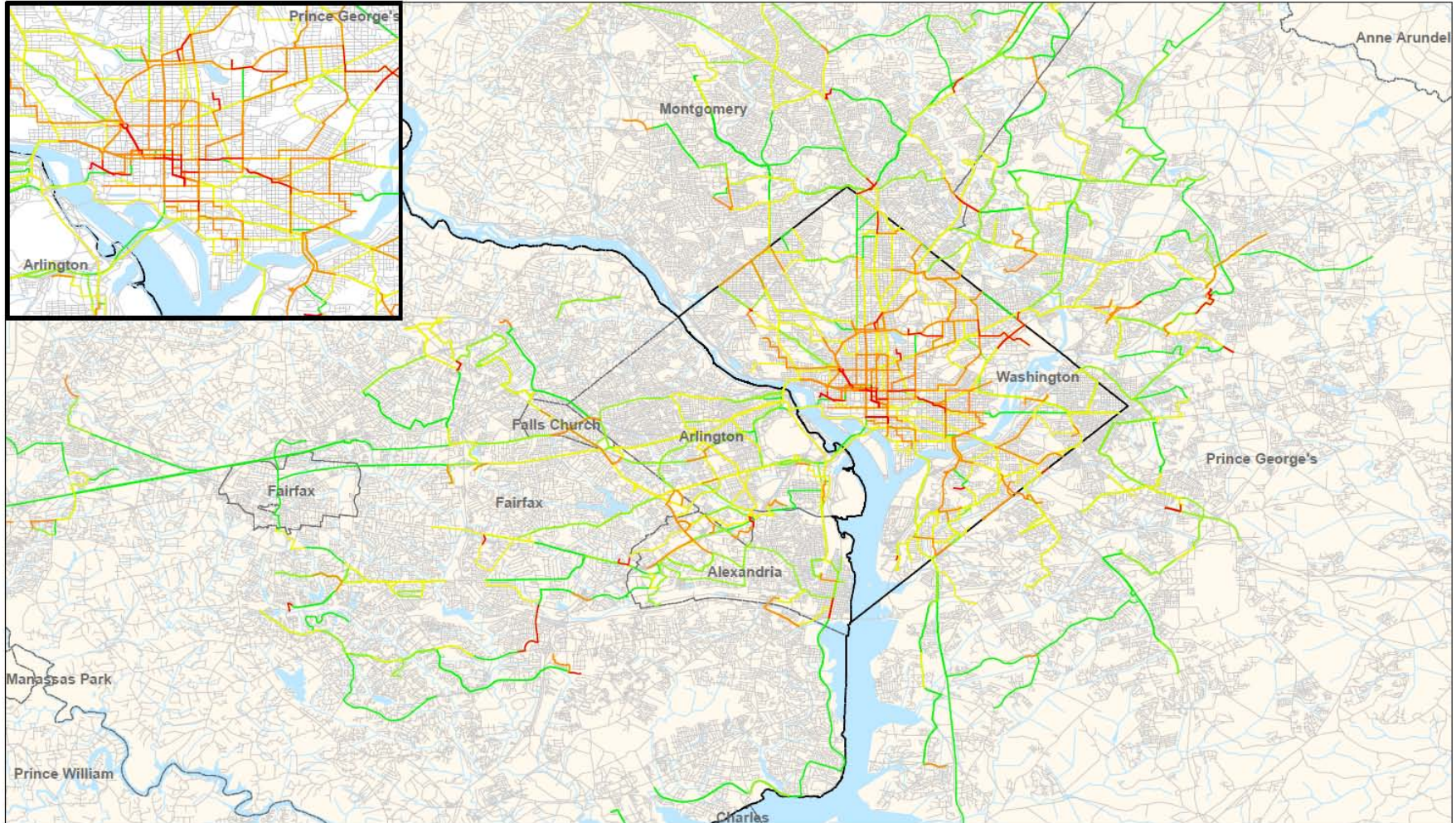
- Identify route segments in region with excessive bus delay
- Evaluate TSP technologies and identify communication strategy
- Identify what WMATA must purchase to put on bus





Phase 1 – Average Bus Speed

Average Weekday (AM Peak) Bus Speeds as Determined by AVL Recorded Data: June 2008





Phase 1 – Development of Communications Concept

Distributive System

- Priority decision made at intersection
 - Signal systems operate as they are today with timing plans residing in the local signal controllers
 - Traffic controllers receive priority message via detection hardware at intersection

Issue: 3 of 17 jurisdictions (DC, Montgomery County and Arlington County) have a centralized system.. 2 of which mainly monitor signal status while 1 controls signal phasing

- Smart Bus
 - Bus fleet vehicles determine priority request

Issue: AVL system must be integrated with schedule system



Phase 1 – System Requirements

Intersection

- Communication

- Mesh network along corridor (802.11 b/g radio)
- Custom software to interface with the multiple controller types

Issue: additional routers to maintain mesh between widely separated intersections

- Hardware components at intersection

- No additional hardware is required within signal cabinet aside from bus detection equipment
 - Detector card slides into a slot in rack
 - Wireless router or modem
 - Associated cabling

Issue: Some cabinets may be too full



Phase 2 – Future Project

Demonstration Corridors – TIGER Grant

- Route 7 in VA
- Several PCN corridors under consideration in MD
 - Had a Novax demonstration last month





Stakeholder Involvement

MOITS Involvement

- Participate in regional decision making (identify MOE's etc.) for demonstration corridor evaluation
- Possible participate in demonstration project(s)





Follow-up

For copy of technical memo:

Contact

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Questions

