TPB
Bus On Shoulders (BOS)
Task Force

Meeting # 2

January 23, 2013

Eric Randall, DTP

Today's Agenda

BOS Task Force Meeting #2 – January 23

- Present preliminary analysis of select corridors/routes.
  - TPB staff
  - VDOT
  - SHA
- Discuss options for potential further analysis.

Structure of Presentation

- TPB Task Force – Schedule and Plan
- Task 1 – Key Findings of National Experience
- Task 2 – Potential BOS Corridors
- Next Steps

TPB Task Force on BOS

- At the July 18, 2012 meeting of the Transportation Planning Board (TPB), it was requested that a task force be established to identify promising locations in the region to operate buses on the shoulders of highways.
- The proposed membership, work plan, and schedule were approved at the September 19 TPB meeting.

BOS is an arrangement by which buses providing public transportation service operate on designated highway shoulders, when safe and practical to do so, in order to circumvent peak traffic congestion.

Members and Schedule

Departments of Transportation

- District of Columbia (DDOT)
- Maryland (MDOT)
- Virginia (VDOT)

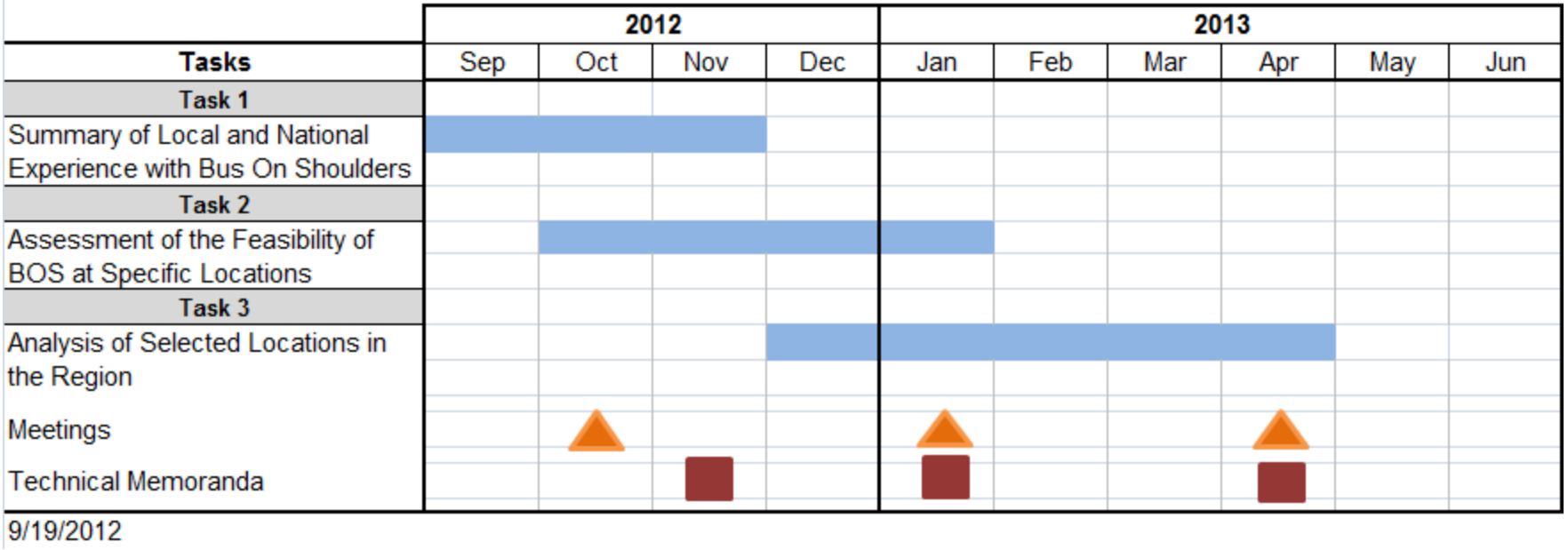
Transit Operators

- WMATA
- PRTC
- MTA Commuter Bus
- Loudoun Transit

Jurisdictions

- Fairfax County
- Frederick County
- Montgomery County
- Prince George's County
- Others…

Schedule



Work Plan

Task 1 – Summary of Local and Other Experience with BOS

- Evaluate BOS experience in the region and elsewhere, including safety, roadway engineering, and bus service operations aspects as well as federal regulations and state legislation.

Task 2 – Assessment of the Feasibility of BOS at Specific Locations

- Stakeholder agencies will identify potential corridors for BOS operation on the region's highway network, based on 1) existing highway congestion locations, 2) current bus service, and 3) highway shoulder conditions.

Task 3 – Analysis of Select Corridors/Routes in the Region

- Identify issues and challenges with safe implementation.
- Conduct a benefit-cost analysis for implementation of BOS service on selected corridors/routes.

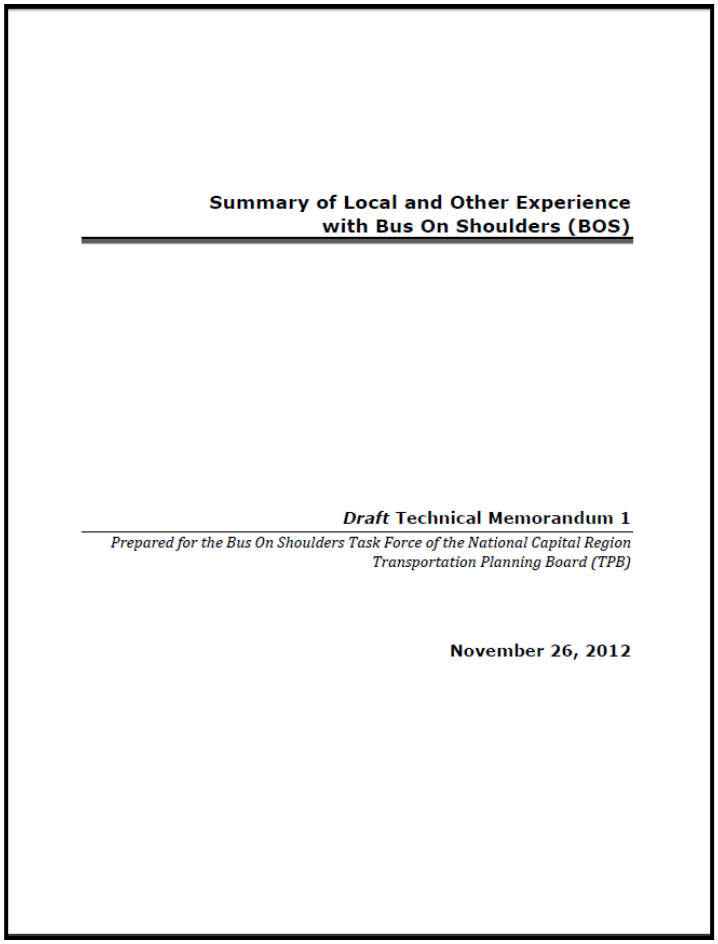
Task Force Progress

Task Force Meeting #1 – October 17

- Discussed local and other experience with BOS.
- Requested inputs on corridors to study.

Draft Technical Memo #1 published November 26

- Summary of local and other experience with key issues: implementation, design, operational, and regulatory.



Summary of Local and Other Experience with Bus On Shoulders (BOS)

Draft **Technical Memorandum 1**

Prepared for the Bus On Shoulders Task Force of the National Capital Region Transportation Planning Board (TPB)

November 26, 2012

Implementation Considerations

- Most BOS projects specify "failing" general traffic speeds before shoulders may be used:
  - Twin Cities standards are:

    1) must not use the shoulder when traffic is moving faster than 35 mph;
    2) cannot exceed the speed of general traffic by more than 15 mph; and
    3) maximum bus speed on the shoulders is 35 mph.

- Typically, policy criteria are set for implementing BOS:
  - Travel time savings,
  - Improved travel reliability (i.e., on-time performance),
  - Number of buses/riders benefitting.

Design Elements

- Shoulder width:
  - Minimum of 10 feet; standard lane width of 12 feet desired.
- Shoulder pavement thickness:
  - Increase needed, especially if frequent shoulder use is planned.
- Reconstruction shoulders to a flatter slope,
  - Same grades and slopes as the general purpose lanes ideal.
- Operations at ramp junctions
  - In complex or very busy intersections, shoulder use by buses is generally not permitted.
- BOS implementation nationally uses minimal traffic signing and road markings.

Operational Considerations

- The reported safety record for all BOS systems evaluated in the TCRP reports has been very good.
- Enforcement's primary role for BOS operation is to ensure only authorized buses make use the shoulders.
  - Combat both accidental encroachment and purposeful encroachment (i.e., jealous motorist) of the shoulders.
- Public outreach and education assist with smooth operations.

  1) a service awareness campaign,

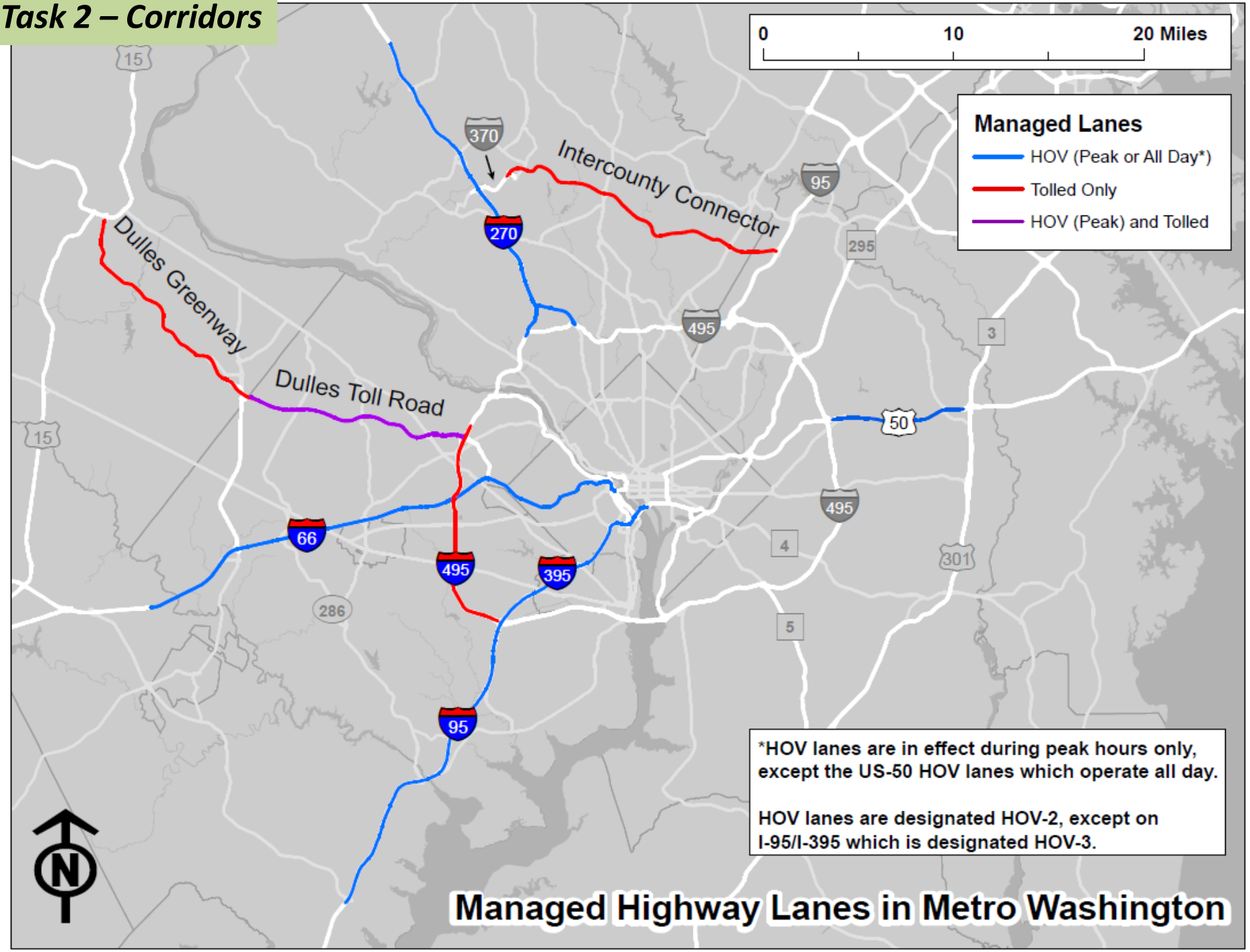
  2) a media and elected officials event, and

  3) public service announcements.
- Additional resources are needed to keep shoulders clear of debris or snow and safe for BOS operations.
- Driver training and ongoing supervision are essential.

Regulatory and Funding Considerations

- FHWA must approve design code exceptions to allow BOS along the National Highway System. State codes should also have supporting regulations.
- BOS operation is typically limited to public transit buses;
  - Vanpools don't have professional drivers,
  - Vans and paratransit vehicles are not of a size to make them clearly visible.
- Capital funding for BOS implementation typically comes from state and local sources.
  - In the long run, fixed guideway miles become eligible for federal transportation funds, and shoulders may qualify under certain criteria.

Task 2 – Corridors



Task 2 Process and Methodology

- Stakeholder agencies identified potential corridors for BOS operation on the region's highway network,
- Screen potential corridors for:
  1. level of highway congestion
  2. current bus service ridership
  3. highway shoulder conditions
- This information will be used to screen out infeasible locations and to identify potential corridors and bus routes for refined analysis.

Study Corridors

Maryland

- MD 5/US 301 Corridor in Prince George's and Charles Counties.
- I-270 Corridor from City of Frederick to the Capital Beltway.

Virginia

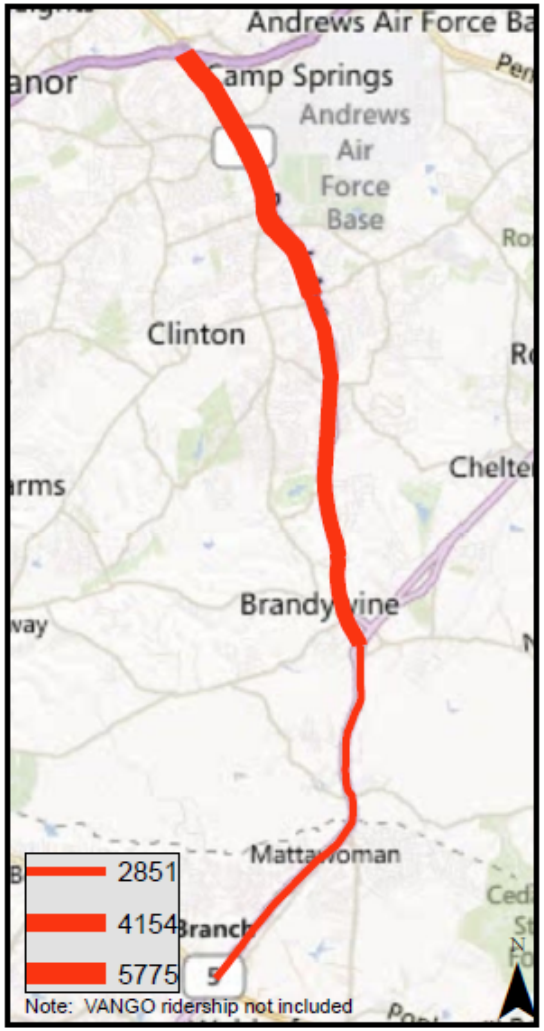
- I-66 Inside the Beltway.

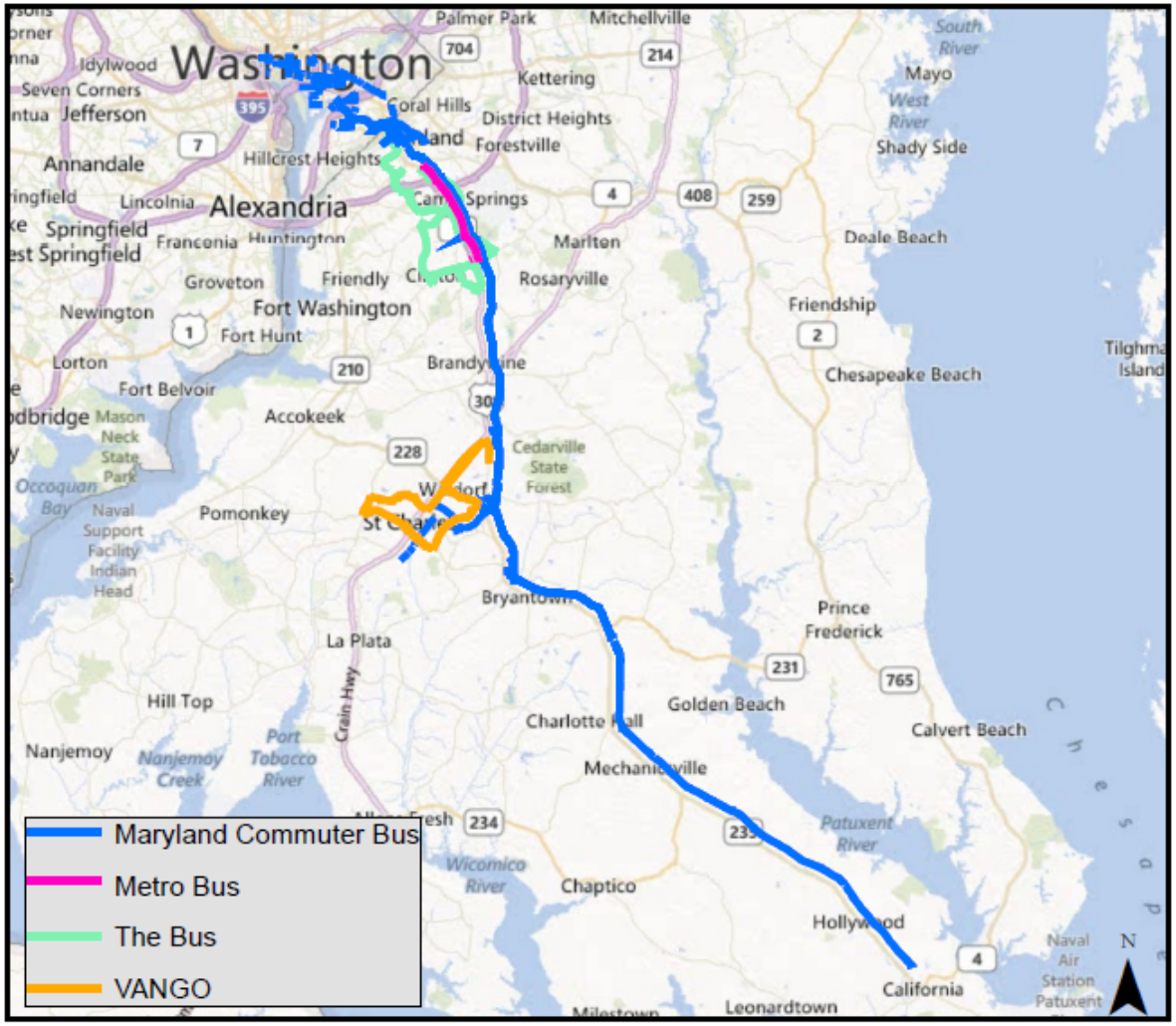
Other corridors were suggested, but are not being studied:

- DC-295 – Only potential corridor suggested for the District.
- US-29 corridor (Maryland) – Burtonsville (existing BOS) to I-70.
- MD 355 corridor – Germantown to Rockville.

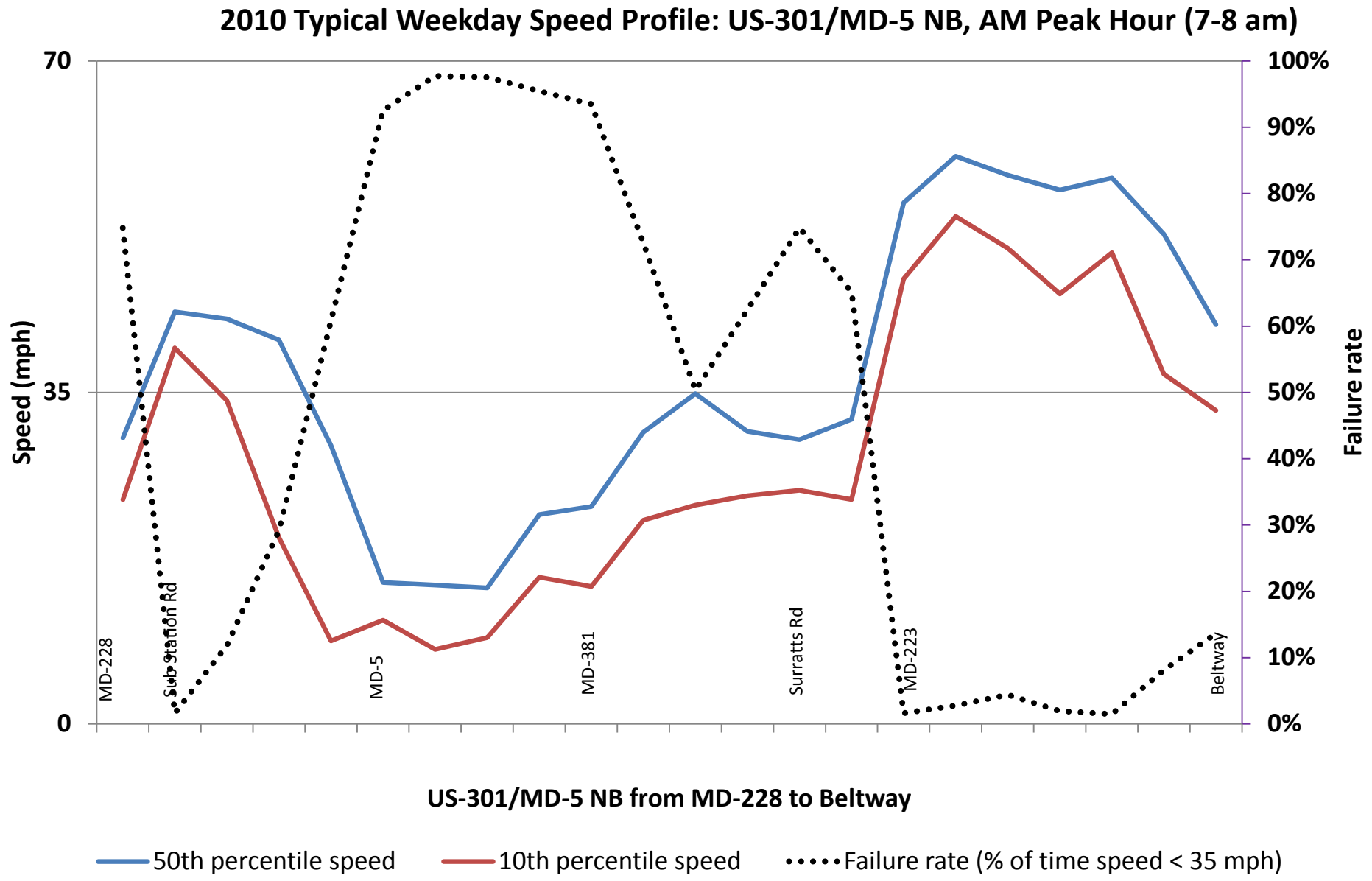
Task 2 – Corridors

Average Weekday Ridership	Bus Routes Serving Corridor



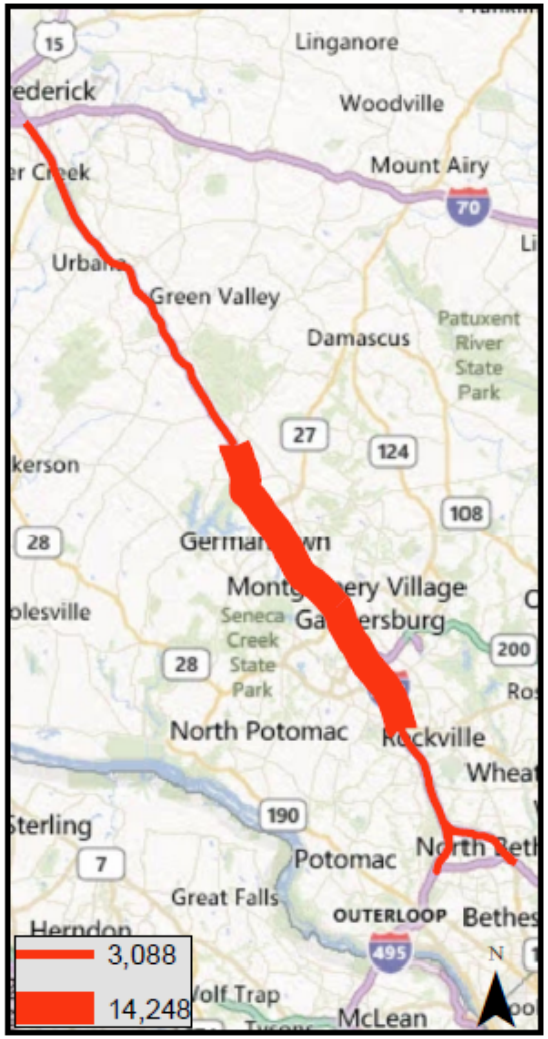


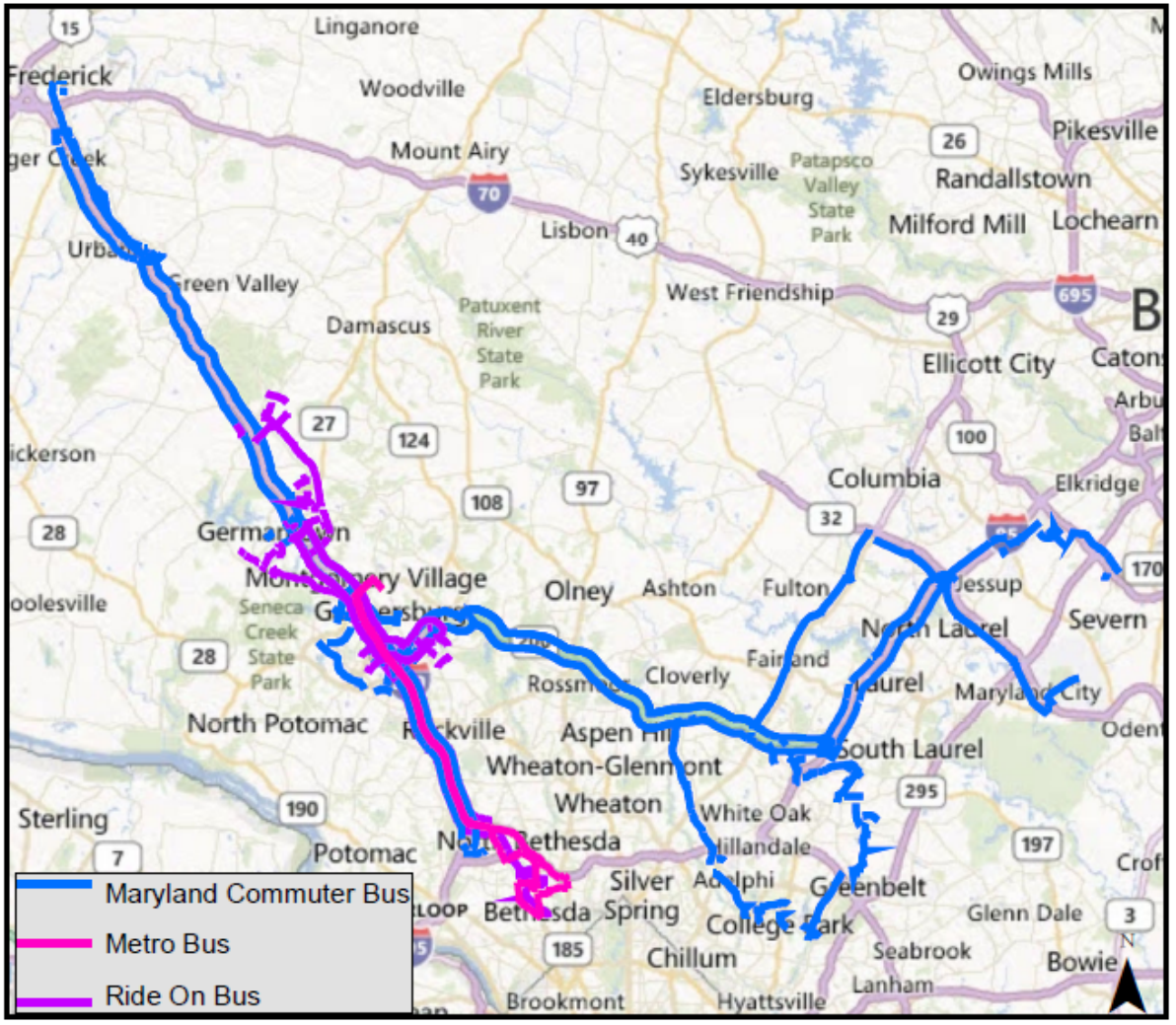
MD 5 / US 301 Corridor Prince George's and Charles Counties


2010 Typical Weekday Speed Profile: US-301/MD-5 NB, AM Peak Hour (7-8 am)
Speed (mph)
70
35
0
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Failure rate
MD-228
Substation Rd
MD-5
MD-381
Surratts Rd
MD-223
Beltway
US-301/MD-5 NB from MD-228 to Beltway
50th percentile speed
10th percentile speed
Failure rate (% of time speed < 35 mph)

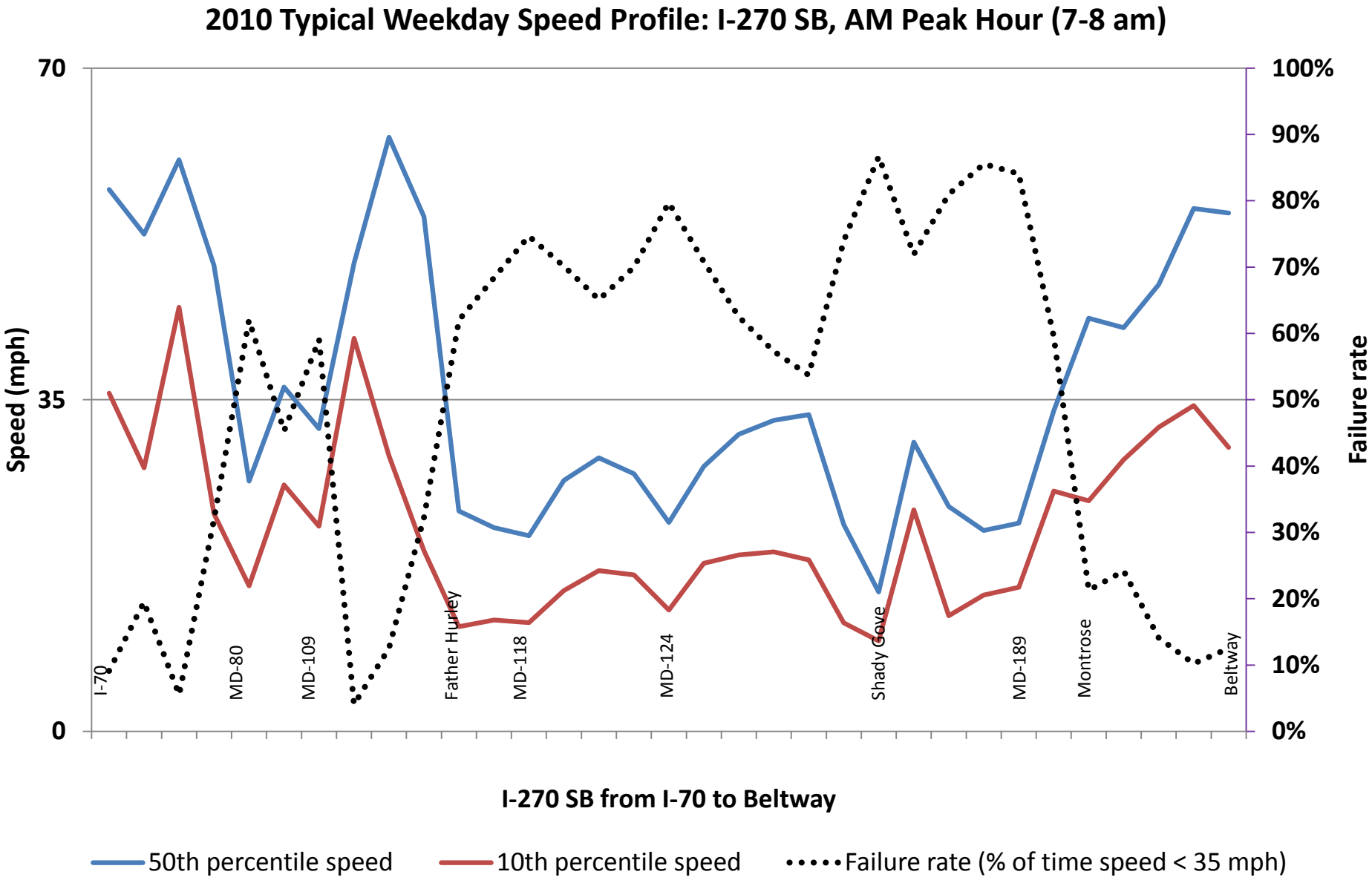
Task 2 – Corridors

Average Weekday Ridership	Bus Routes Serving Corridor





I-270 Corridor from City of Frederick to Beltway


2010 Typical Weekday Speed Profile: I-270 SB, AM Peak Hour (7-8 am)
70
35
0
Speed (mph)
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Failure rate
I-70
MD-80
MD-109
Father Hurley
MD-118
MD-124
Shady Grove
MD-189
Montrose
Beltway
I-270 SB from I-70 to Beltway
50th percentile speed
10th percentile speed
Failure rate (% of time speed < 35 mph)

Task Force – Work Items

Tech Memo #1 – Summary of Local and Other Experience

- Comments received
- Publish final version - February

Tech Memo #2 – Assessment of Feasibility of BOS

- Summarize findings / discussion from this meeting
- Publish draft version for comment - February

Tech Memo #3 – Analysis of Select Corridors/ Routes

- Coordinate further information collection and analysis actions with stakeholder agencies
- Conduct benefit-cost analysis using available information
- Publish draft version for comment - April

Task Force – Third Meeting

Task Force Meeting #3 – April 17

- Present benefit-cost analysis of select corridors/routes.
  - Rider benefits
  - Bus operating impacts
  - Estimated capital and operating costs for implementation
- Discuss steps necessary for BOS implementation in the region.
  - Funding, inter-agency coordination, timeline.
- Summarize findings for final report
  - Compilation of three technical memoranda.

Questions?

http://www.mwcog.org/bostf