TPB
Bus On Shoulders (BOS)
Task Force

Overview of BOS Issues and Experience

October 17, 2012

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Structure of Presentation

- TPB Task Force
  - Members, Schedule, and Work Plan
- Why BOS?
  - BOS in the Region
  - National Experience of BOS
- Application in Minneapolis - St. Paul
  - Minneapolis - St. Paul Network
  - BOS Criteria in Minneapolis – St. Paul
- Factors in BOS Operation
- 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.

TPB Task Force: 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

Tasks	2012 Sep	Oct	Nov	Dec	2013 Jan	Feb	Mar	Apr	May	Jun
Task 1										
Summary of Local and National Experience with Bus On Shoulders	■	■	■							
Task 2										
Assessment of the Feasibility of BOS at Specific Locations		■	■	■	■					
Task 3										
Analysis of Selected Locations in the Region				■	■	■	■	■		
Meetings		▲			▲			▲		
Technical Memoranda			■		■			■		

9/19/2012

TPB Task Force: 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.

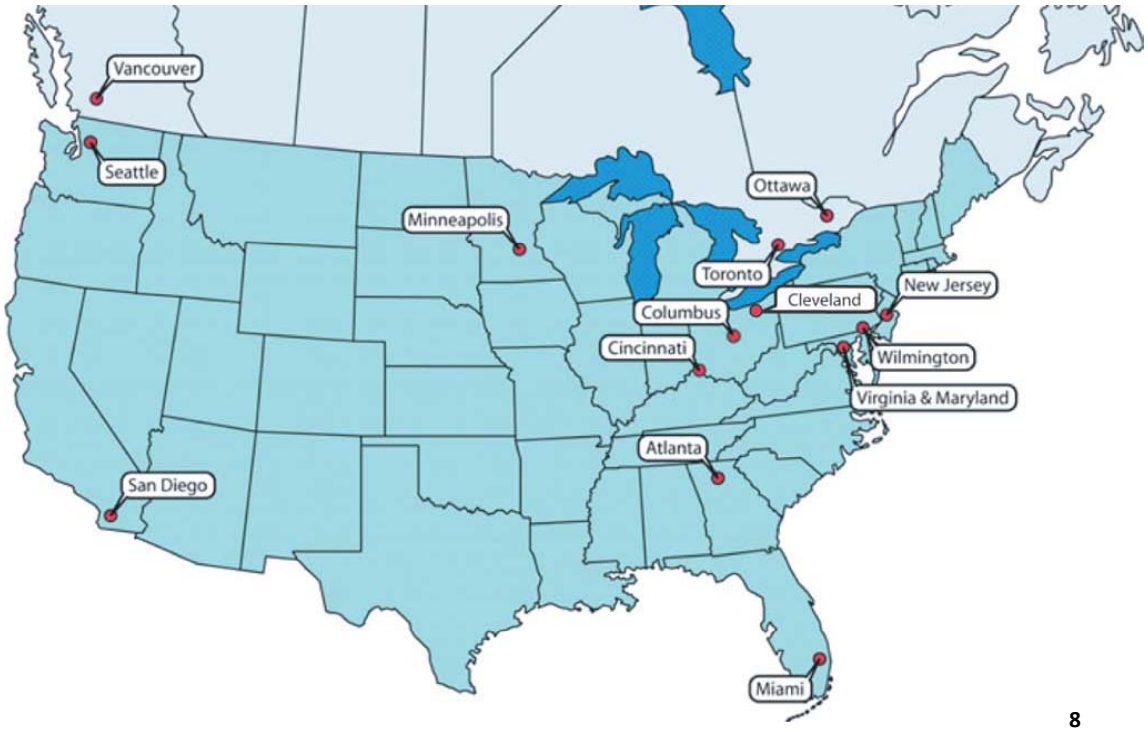
Why BOS?

- Benefits from effective BOS operations include:
  - Shorter travel times
  - More reliable travel times
  - Increased transit ridership
  - Reduced operating costs
- Increased interest in regional transit network using the region's highway network.
  - Increase transportation capacity (people throughput)
  - Provide alternatives to single-occupancy vehicles and auto-dependency

BOS in this Region

- Modest experience in this region:
  - 1.6 mile section of Dulles Airport Access Road (VA-267) into West Falls Church Metrorail Station,
  - US-29 near Burtonsville, MD,
  - Previously, on Maryland portion of Capital Beltway (I-495) near the American Legion Bridge.
- Currently, VDOT is conducting a technical assessment of the feasibility of BOS along I-66 inside the Beltway.
  - BOS is also being considered for connecting to the I-95 Express Lanes, at the southern terminus (Route 610/Aquia) and at the northern end (I-395/Edsall Road).

North American Experience

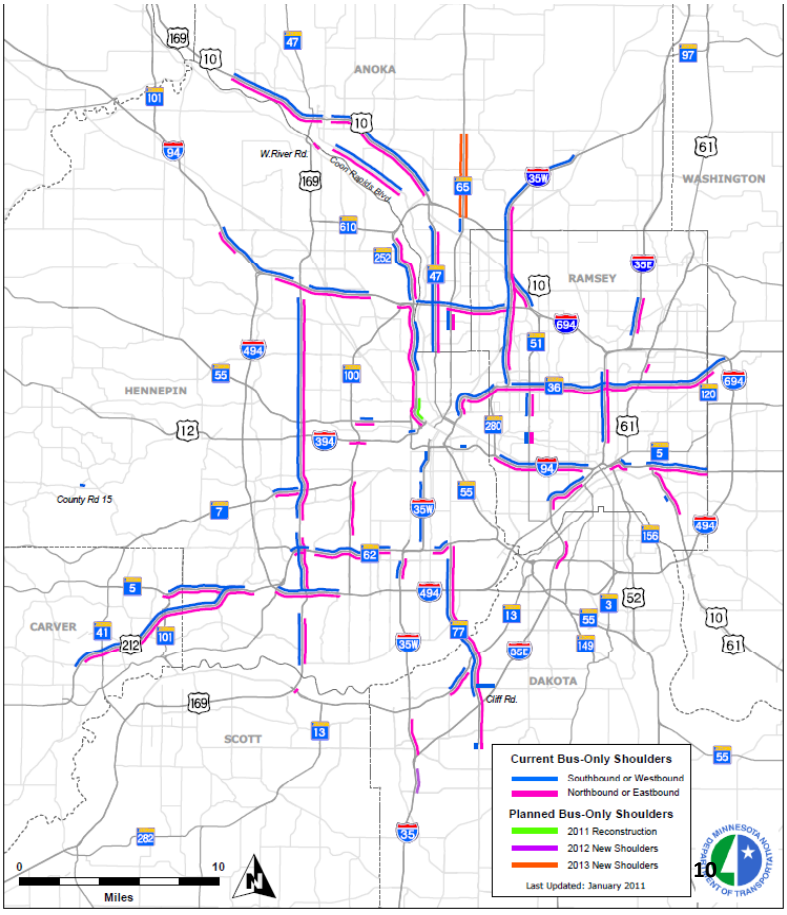


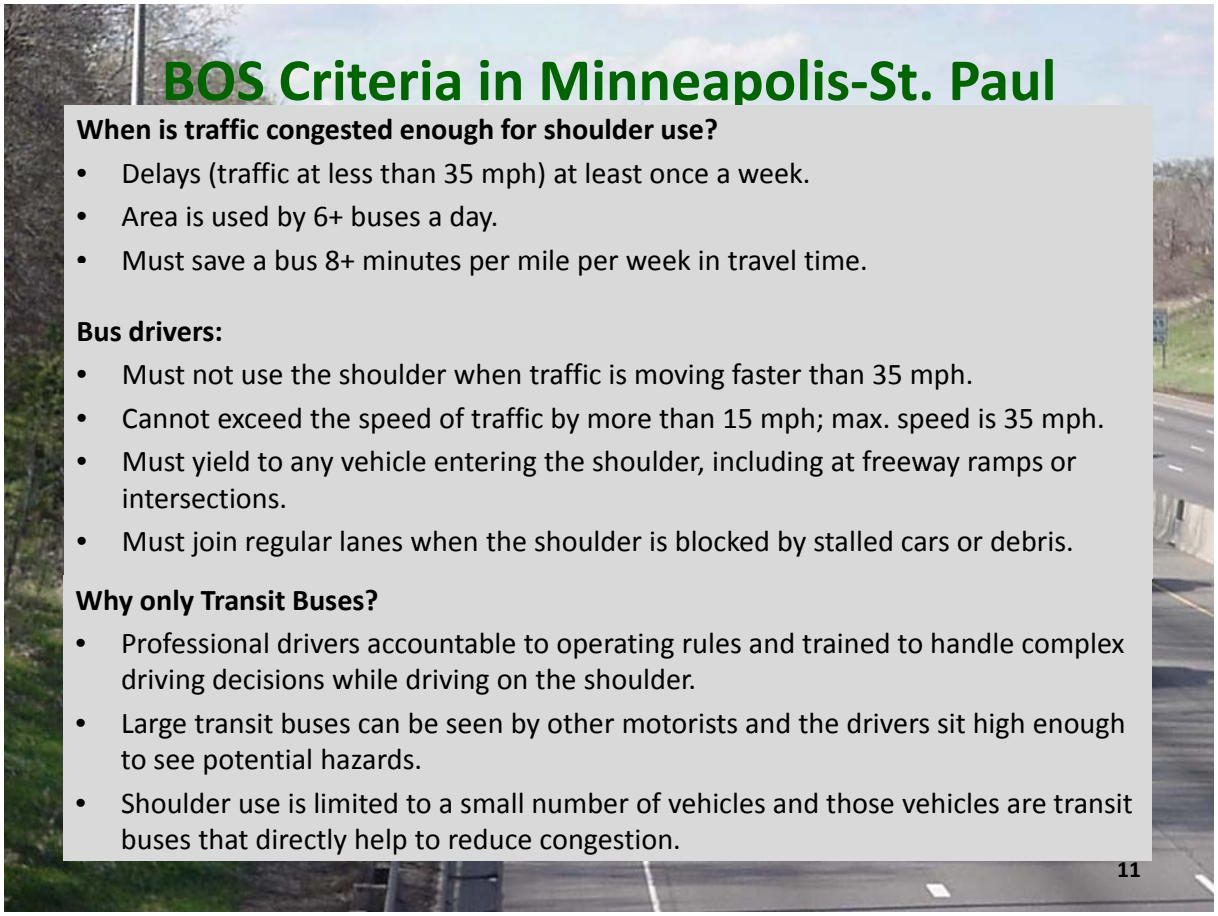
Application in Minneapolis-St. Paul

- Minneapolis-St. Paul is the leading example of BOS nationally:
  - ❖ Started in 1991; now a 280-mile network.
  - ❖ Add four to eight miles per year, at a cost of $150K - $250K per mile.
    - o Dedicated funding source of $1M/year.
  - ❖ 1700 bus trips a day using BOS (400 buses).
  - ❖ Rider perception of time savings is 2X greater than actual.

Minneapolis BOS Network

- Grid network of highways
- Multiple segments (i.e., not contiguous)





BOS Criteria in Minneapolis-St. Paul

When is traffic congested enough for shoulder use?

- Delays (traffic at less than 35 mph) at least once a week.
- Area is used by 6+ buses a day.
- Must save a bus 8+ minutes per mile per week in travel time.

Bus drivers:

- Must not use the shoulder when traffic is moving faster than 35 mph.
- Cannot exceed the speed of traffic by more than 15 mph; max. speed is 35 mph.
- Must yield to any vehicle entering the shoulder, including at freeway ramps or intersections.
- Must join regular lanes when the shoulder is blocked by stalled cars or debris.

Why only Transit Buses?

- Professional drivers accountable to operating rules and trained to handle complex driving decisions while driving on the shoulder.
- Large transit buses can be seen by other motorists and the drivers sit high enough to see potential hazards.
- Shoulder use is limited to a small number of vehicles and those vehicles are transit buses that directly help to reduce congestion.

Factors affecting BOS Operation

- Operational Speeds, Hours, Limits (e.g., weather).
- Congestion – recurring and non-recurring
- Shoulder Width, Structural Strength, Slope
- Roadway Geometry and Sight Distances
- Clearance at Barriers and Overpasses (horizontal & vertical)
- Merging at Intersections and Ramps
- Posted Signage, Markings, and Warning Devices (e.g., rumble strips)
- ITS: Dynamic Signage and Lane Control

Other Factors affecting BOS

- Enforcement
- Public Outreach and Education
- "Jealous Motorist" Issues
- Emergency Incidents and Responder Access
- Shoulder Cleaning / Snow Removal
- Federal and State Exceptions to Design Code
- State and Local Legislation (coordination across state lines…)
- Bus Travel Time Savings / Reliability
- Eligible Vehicles
- Bus Driver Training Requirements and Supervision
- Funding for Construction and Implementation

Next Steps

- November 2012
  - Prepare Technical Memorandum summarizing BOS experience in the region and elsewhere, along with considerations for further implementation in this region.
- January 2012
  - Draft Technical Memorandum identifying 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.
  - Second task force meeting proposed for Wednesday, January 16 (morning of the TPB meeting).


Questions?
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