



National Capital Region
TRANSPORTATION PLANNING BOARD

Item #11

Report on the Kick-off Meeting of the

Vehicle Probe Data Users Group & Congestion Monitoring

Wenjing Pu
TPB Technical Committee
November 7, 2014



TPB Congestion Monitoring

- Triennial aerial photographic survey of freeways
 - 2014 report coming soon
- Special studies, including but not limited to:
 - HOV facility surveys
 - Cordon counts
 - Airport ground access travel time surveys
 - Arterial floating car travel time studies (phased out)
- **I-95 Vehicle Probe Project (VPP)**, 2009-present
 - 24/7/365 monitoring
 - Data come at 1-minute increments
 - Covers 5,500 directional miles in TPB



Other TPB Monitoring

- TPB also collects or compiles a wide range of transportation monitoring data, e.g.,
 - Traffic counts, including HPMS traffic counts
 - Transit ridership
 - Metrorail station boarding
 - Household travel surveys, including focused geographic subareas surveys
 - Transportation fatalities and injuries
 - Traffic signal timing optimization surveys
 - Regional bus surveys
 - Cooperative forecasts (employment, population & households)
 - Bike stations
 - Transportation Emission Reduction Measures (TERMs) evaluations, e.g.,
 - State of the Commute surveys
 - Guaranteed Ride Home surveys
 - Bike To Work Day surveys



Applications of VPP Data

- Congestion Management Process
 - CMP Technical Report: 2010, 2012, 2014
www.mwcog.org/cmp
 - Congestion Dashboard: www.mwcog.org/congestion
 - Special event analysis
- Travel demand model validations
- Regional Transportation Data Clearinghouse
- Support internal and member jurisdictions studies



Background for the Vehicle Probe Data Users Group

- I-95 Corridor Coalition Vehicle Probe Project (VPP)
 - Probe data became a major source for traffic and system performance monitoring
 - VPP2 in a multi-vendor fashion
 - Desire for enhanced consistency, collaboration and capabilities
- FHWA National Performance Management Research Data Set (NPMRDS)
 - May provide valuable freight movement information
- Potential future datasets
- MAP-21 and FHWA anticipated new rules
 - Performance measures, reporting, targets, etc.



MAP-21

- Under MAP-21, FHWA is establishing performance measures in 12 areas:
 - 4 areas in safety
 - 3 areas in pavement and bridge conditions
 - 1 area in on-road mobile source emissions
 - **Traffic congestion**
 - **Performance of the Interstate system**
 - **Performance of the non-Interstate NHS**
 - **Freight movement on the Interstate system**
- This Users Group can serve as the platform for DC-MD-VA-TPB **common data sourcing** and **traffic congestion performance measures calculation**



Mission as Proposed

The mission of the National Capital Region's Vehicle Probe Data Users Group (VPDUG) is to enhance regional ***coordination, consistency, and capabilities*** in the use of vehicle probe-based traffic data toward ***performance-based transportation planning and programming***.



Goals

1. Provide a **regional platform** for probe data information exchange, user experience sharing, and professional skills development.
2. Provide **user feedback** to vehicle probe data vendors and analytical tools developers.
3. Develop **technical recommendations** for probe data processing and performance measure calculation and improve the guidelines over time.
4. Address probe data-related **other data and system performance issues** to support performance-based transportation planning and programing.



Structure

- Sub-group of the Management, Operations, and Intelligent Transportation Systems (MOITS) Technical Subcommittee
- Quarterly meeting
- Volunteer participants
- Limited- term



October 9 Kick-off Meeting

- **26** Participants
 - VDOT, 4
 - MDSHA, 3
 - Montgomery County, 2
 - Fairfax County, 1
 - NVTA, 1
 - WMATA, 1
 - BMC, 1
 - Consultant, 1
 - CATT Lab, 2
 - COG/TPB, 10
- **4** main items:
 - Overview of the Group
 - Roundtable discussions
 - VPP Suite demo and transition to VPP2
 - COG/TPB's use of probe data and lessons learned
- **2.5** hours: 9:30 – noon, October 9, 2014
- Meeting highlights available now



Participants' Level of Experience

- Do not have access to vehicle probe data (a few)
- Just signed a DUA (one)
- Regular or power probe data users (many)



Applications

- Existing applications
 - Real-time operations (e.g., DMS)
 - Historical data (e.g., system performance reporting)
 - Some agencies purchased TomTom or AirSage data
- Future applications or expectations
 - Help micro- or meso-simulations
 - Merge probe data with transit AVL data (e.g., to improve NextBus bus arrival time forecasting)
 - Build “knowledge base” for transportation improvements
 - Identify travel behavior patterns



Challenges

- Major challenge: data quality concerns
 - Freeway: HOV/HOT lanes
 - Arterials: data quality varies by time and place
- Merge different probe data (e.g., INRIX and Bluetooth; INRIX + HERE + TomTom)
- Data sharing among agencies
- **Strengthening the relationship between**



Expectations for the Users Group

- In addition to the proposed Mission and Goals
 - Provide feedback to data vendors and VPP Suite developers
 - Create an online or email list that can be used as a “library” to share experience and knowledge



Next Meeting

- January 2015 (tentatively, Thursday, 1/15)
- Interest is high on arterial data quality, so that will be our theme
- More information about the Users Group and the meeting: www.tinyurl.com/vpdug

Metropolitan Washington Council of Governments
One Region Moving Forward

Transportation	Committee Business Description Events Calendar Documents Past Documents Member List Blog Vehicle Probe Data Users Group - Description Staff Contact: Wenjing Pu , (202) 962-3761 Mission The mission of the National Capital Region's Vehicle Probe Data Users Group (VPDUG) is to enhance regional coordination, consistency, and capabilities in the use of vehicle probe-based traffic data toward performance-based transportation planning and programming. Probe data such as those supplied by the I-95 Corridor Coalition Vehicle Probe Project (VPP) and the Federal Highway Administration's National Performance Management Research Data Set (NPMRDS) reveal unprecedented coverage and details of traffic conditions on surface roads, providing data support for a major transportation policy shift to establish accountable and performance-based transportation programs as required by the MAP-21 legislation. As an emerging data
Environment	
Housing & Planning	
Health & Human Services	
Homeland Security & Public Safety	
Cooperative Purchasing	
Information & Publications	
Events Calendar	
Committee Business	
News Room	

