



A new frontier in probe data & analytics – Phase I Summary

Through a Multistate Corridor Operations and Management Program (MCOMP) grant, the **I-95 Corridor Coalition** sponsored research to achieve accurate volume and turning movement estimates through outsourced probe data for both operations and planning purposes.

Phase I tasks are now complete and findings are available.

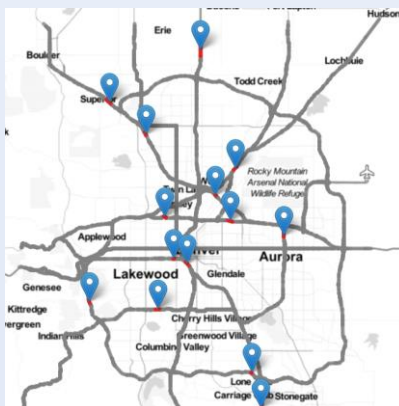
► Project Value



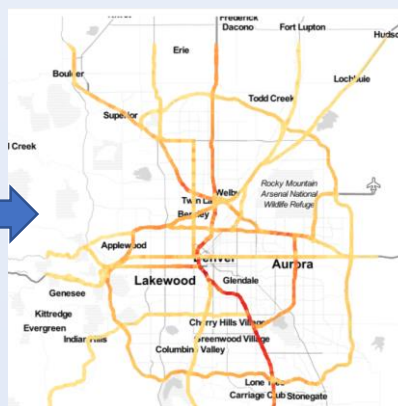
For many agencies, network-wide volume and turning movement data remain key missing dimensions for complete and actionable situational awareness, accurately assessing transportation system performance and developing targeted, cost-effective mobility projects and programs. Having the ability to easily access and leverage these data (both in real-time and historic) along with probe speed and travel time data, offers these substantial benefits:

- *Improves incident management monitoring and action*
- *Enhances work zone monitoring, impact analysis, and safety*
- *Adds additional insight to anticipate and verify “jam” conditions*
- *Provides more accurate user delay cost reporting for weather, sporting or other events*
- *Improves traffic signal system timing management, enabling more cost effective, timely, and accurate updates to signal timing plans*
- *Provides data for more complete after-action reviews*
- *Advances travel demand modeling accuracy*
- *Better addresses air quality and emissions requirements and energy analysis inquiries*

From Point Data



Ubiquitous Traffic Volume Data



To



► Phase I Objectives Accomplished

- ✓ Created a practical and logical framework for the delivery of probe-based volume estimate.
- ✓ Documented the properties and requirements to support a variety of DOT applications.
- ✓ Developed methods to ensure and measure the accuracy of the volume estimator.
- ✓ Developed the algorithms and methods using machine learning.
- ✓ Demonstrated the process in collaboration with industry, setting expectations for fidelity, form, granularity, and usability.
- ✓ Estimated the cost and resources needed to create, support, and maintain such a system at a statewide, or even national level.

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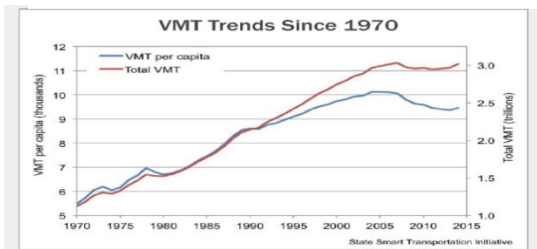
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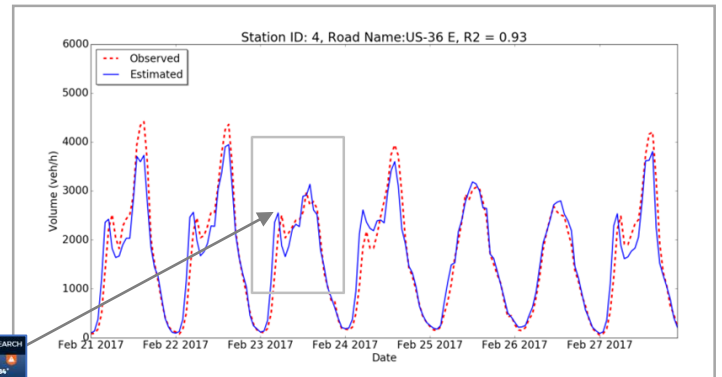


► Next Steps: Moving VTM from Theory to Implementation

- Testing implementation of Phase I with agency partners
- Confirming volume estimates can be used for AADT, ADT and real-time operations applications
- Expanding calibration to arterials and turning movements
- Quantifying acceptable error bounds / thresholds for planning uses and for operations
- Exploring if probe data can be used to test accuracy of non-ATR counters
- Summarize lessons learned and tips to address conflation needs
- Maintain neutral third party aspect of research



Measures VMT more efficiently and measuring VMT increasingly matters



Effectively captures volume changes due to February snow storm



► What our members are saying



"Real-time volume data would be of great value to NCDOT, especially for incident and work zone management - including timelier detouring or route diversions – better control of evacuations in the event of a hurricane, and improved special event traffic management."



Kelly Wells, PE
State Traveler Information Engineer
North Carolina Department of Transportation

"Having robust estimated volume and turning movement data derived from probe data would be a tremendous asset for DVRPC, complementing the speed and travel time data we're already using from the VPP Project to facilitate analysis of our entire road network, including problem identification, project development, and comprehensive, accurate system performance evaluation."



Jesse Buerk
Capital Project Development Manager
Delaware Valley Regional Planning Commission