



A new frontier in probe data and analytics

Through a Multistate Corridor Operations and Management Program (MCOMP) proposal, 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. **These early tasks are now complete and preliminary findings are available.**

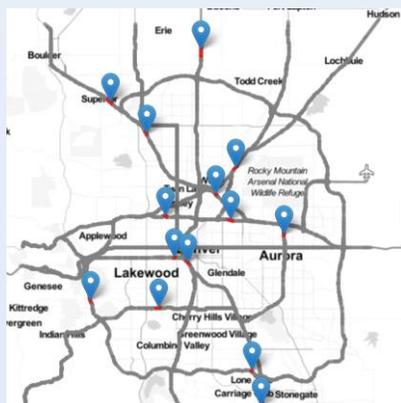
► Project Value



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:

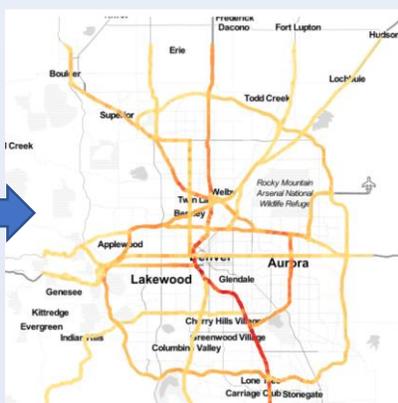
- *Improves incident management monitoring and action*
- *Enhances work zone monitoring, impact analysis, and safety*
- *Adds additional insight to anticipate and verify “jam” conditions*
- *Provides more accurate user delay cost reporting for weather, sporting or other events*
- *Improves traffic signal 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



To

Ubiquitous Traffic Volume Data



► Phase I Objectives Accomplished

- ✓ Created a practical and logical approach for the delivery of probe-based volume and turning movement 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 technology.
- ✓ Demonstrated the process in collaboration with industry, setting expectation 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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I-95 Corridor Coalition: VTM Project

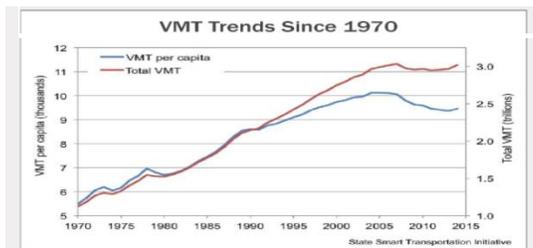


Phase II (Unfunded)

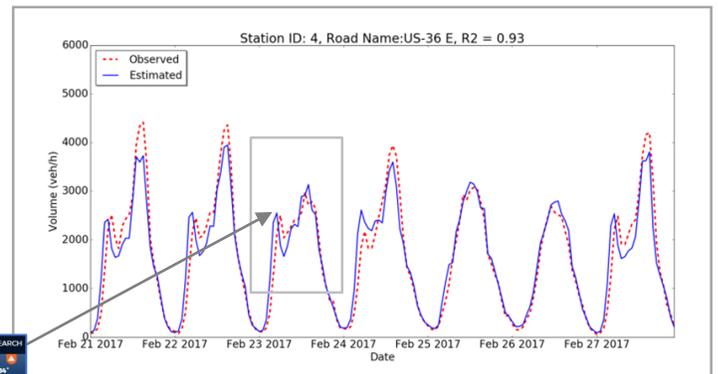
Next Steps: Moving VTM from Theory to Implementation

Draft questions and actions to include:

- Test implementation of Phase I with agency partners
- Confirm volume estimates can be used for AADT and ADT
- Expand calibration to arterials
- Quantify acceptable error bounds / thresholds for planning uses and for operations
- Explore if probe data can be used to test accuracy of non-ATR counters
- Include additional weather data into analysis
- 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
Mobility Program Manager
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
Senior Capital Program Coordinator
Delaware Valley Regional Planning Commission