



I-95 Corridor Coalition - Vehicle Probe Project New Jersey Benefits

Benefits of the Vehicle Probe Project - New Jersey

Vehicle Probe data can be used to supplement incident detection systems and enhance or support travel information systems (511, etc.). The Vehicle Probe data has proven to be an excellent tool for the New Jersey Department of Transportation (NJDOT) to supplement its incident detection system. The time saved in incident detection translates into reductions in delay and cost savings. One example was

provided by NJDOT's Executive Director of Statewide Traffic Operations, Jim Hogan, during the 2008 ITS World Congress/ITSA Annual Meeting session, "Filling the Data Gap." During a surprise snowstorm in October 2008, the TOC was responding to an accident on I-80 via a CCTV camera. The Vehicle Probe Data monitoring site identified a second incident involving multiple jack-knifed tractor trailers along I-80 where there was no CCTV coverage.

Without the Vehicle Probe Data monitoring site, response to this second incident would have been delayed by as much as an hour as operators were busy responding to the first incident. Mr. Hogan estimated that the expedited response to the second incident translated into a \$100,000 savings in user delay costs.



Photo provided by Clip Art: Microsoft Office Online: j0443887.jpg

Savings in user delay costs through use of vehicle probe data: \$100,000 per incident

- *Estimated by NJDOT's Executive Director of Statewide Traffic Operations*

The Vehicle Probe Project has been serving as a model to be followed by other agencies and coalitions; the clarity of the data service requirements and terms of the Data Use Agreement have been used in comparable procurements by agencies

nationwide. Very liberal data use rights allow participating agencies to use the data for any real-time or historical application. Lastly, the validation process has established a model approach for agencies to assess the quality of private sector data and allow a process by which payments for data are tied to the data quality. New Jersey plans to incorporate Vehicle Probe Data into the 511 system data in early 2010. The New Jersey Planning Department is exploring other uses for Vehicle Probe data, such as in performance measures, alternative studies and traffic management strategies.



I-95 Corridor Coalition - Vehicle Probe Project New Jersey Benefits

Introduction to the Vehicle Probe Project

The I-95 Corridor Coalition's Vehicle Probe Project provides travel time and speed data on freeways and arterials to member agencies using probe technology and other data sources to present an accurate depiction of current traffic flow. This groundbreaking initiative began in December 2007, with the award of a contract with INRIX; data for a core area between New Jersey and North Carolina has been provided since July 1, 2008. New Jersey and North Carolina have utilized the contract to expand to statewide coverage and in August 2009, South Carolina utilized the provisions of the contract to join the project. Presently, more than 280 staff in fifteen agencies have access to the project's data in real-time, including USDOT, and the state DOTs of New York, New Jersey, Delaware, District of Columbia, Virginia, Maryland, North Carolina and South Carolina. Several of the nation's largest toll agencies, including the New Jersey Turnpike, Metropolitan Transportation Authority (MTA) Bridges and Tunnels in New York and the Maryland Transportation Authority have access to the data. Two transit agencies, the Potomac and Rappahannock Transportation Commission and the MTA, also have data access.

Vehicle Probe data is being used to supplement incident detection systems and enhance or support travel information systems.

Member agencies benefit from the Vehicle Probe Project by receiving travel time and speed data to support incident detection and travel information needs. Vehicle probe data can also be used in 511 applications and website travel information, displayed on variable message signs, used to supplement other incident management capabilities, and to provide a basis for performance measures. In addition, coalition members are able to use this contract to expand travel data coverage.

This paper presents an introduction to the Vehicle Probe Project and the benefits it provides to its member agencies. NJDOT's experience with the program is given as an example of how an agency can leverage the vehicle probe data feed to augment other travel information capabilities.

New Jersey Vehicle Probe Project Experience

New Jersey, ranked as the most densely populated state in the nation, seized the opportunity to augment its incident detection capabilities through use of the Vehicle Probe Data

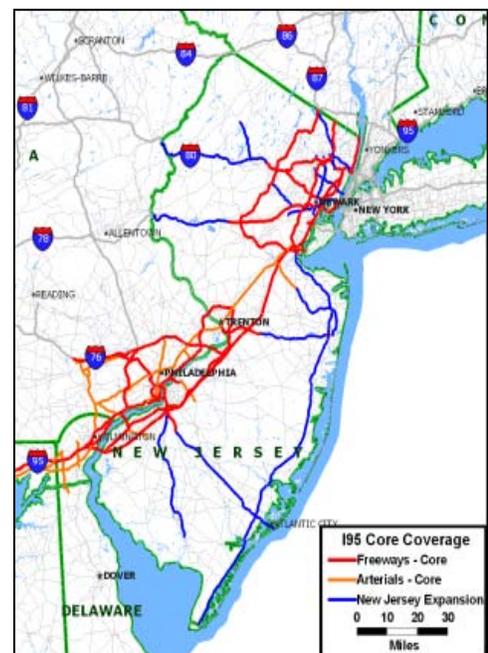


Figure 1:
New Jersey Core Coverage



I-95 Corridor Coalition - Vehicle Probe Project New Jersey Benefits

contract. New Jersey's core coverage agreement (Figure 1 on the previous page) with the I-95 Corridor Coalition included just over 534 miles of freeway facilities.

New Jersey then went beyond its original core coverage and used the contract to add 424 miles of limited access roadways; New Jersey now has full coverage of its limited access roadways. The vehicle probe data system now covers nearly 1000 miles, about 35 percent of the total centerline miles of roadway in New Jersey.



Figure 2:
NJDOT's Woodbridge TOC



Figure 3:
TMC Operator Station

Vehicle probe data is displayed for traffic monitoring purposes at the two state Transportation Operations Centers (TOCs). Operators have five monitors at their stations; one of those monitors has the vehicle probe data displayed at all times. The main displays within the TOCs include the Vehicle Probe monitoring site for New Jersey. The NJDOT uses the monitoring site to identify incidents, improve response time and reduce delay.

New Jersey is currently working toward integrating Vehicle Probe Data with other data sources to establish travel time as part of its 511 System and website. Vehicle Probe Data is planned to be included into the data pool in early 2010 to supplement the Transmit data currently being used.



Figure 4:
Vehicle Probe Monitoring Site
displayed at the TOC

The Woodbridge TOC is operational 24 hours a day, seven days a week.

A second TOC, located in Cherry Hill, is operational 16 hours a day, five days a week.

The New Jersey Planning Department is also exploring possible use of vehicle probe data for performance measures, transportation alternatives studies and traffic management strategies.



I-95 Corridor Coalition - Vehicle Probe Project ***New Jersey Benefits***

Conclusions

In what is believed to be the most comprehensive ground truth testing of probe data to date, the vehicle probe data validation effort continues on a monthly basis. Contract payment is tied directly to the validation results. The latest NJ data validation effort documented in October 2009, reported that data met the contract requirements. To date, approximately 770 hours of observations along seven New Jersey freeway segments (over nearly 17 miles of freeways), have been collected for the validation effort.

New Jersey also compares the Vehicle Probe Data results from the monitoring feed to what is learned from their central dispatch center, emergency service patrol, and the database at the operations center. Any Transmit data that may be available is also compared to ensure that the Vehicle Probe data is effective in its identification of traffic issues.

I-95 Corridor Coalition member agencies benefit from the Vehicle Probe Project by receiving travel time and speed data to support the dissemination of travel information using 511, websites and dynamic message signs. Additionally, the data supports improved performance measurement efforts and enhanced traffic management during incidents. A unified and accurate data source will be highly useful in incident management for events impacting jurisdictional boundaries. On the contracting side, Coalition members are able to use their contract with the Coalition to expand travel data coverage within their jurisdictions, further develop websites and interface with existing traffic management systems.