

The Vehicle Probe Project Bi-Annual Program Update



What is Available

- Monitoring Site
- Data Feed
(real-time access for integration into applications)
- Data Archive
(1-min archive)
- VPP Suite (Performance Measures) and Archive
(real-time & historical tools for operations and planning)



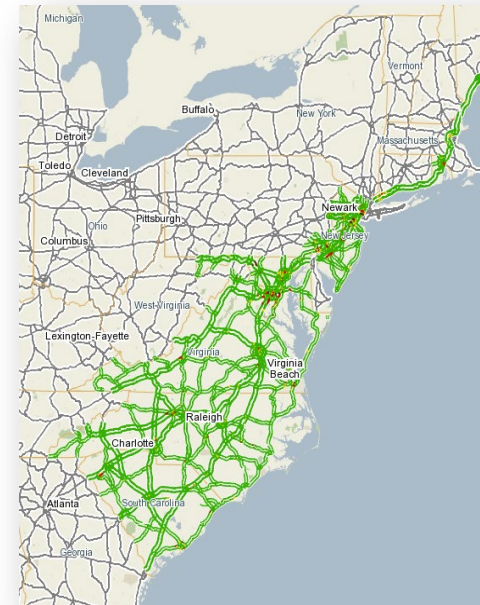
How it is Used

- Operations Center
(Real-Time Traffic Monitoring)
- TMC Software Integration
- Cross-border Incident & Traffic Monitoring
- Travel Times on
 - Signs
 - Websites
 - 511 IVR
 - Traffic Tile Overlay on 511 Site


*A Traffic Probe Data Marketplace for State Partners
Overseen by the I-95 Corridor Coalition and University of Maryland*

“The VPP works with a “traffic probe data marketplace” first created in 2008. Three highly qualified vendors (HERE, INRIX and TomTom) were selected by a team of agency members to provide data to agencies at a cost that was negotiated by the Corridor. The data is subjected to rigorous validation for reliability. In addition, all data, regardless of vendor, is available to each of the participating agencies providing a truly shared effort.”

“The use of the marketplace results in a savings of 55 - 62% per lane mile from free market pricing” depending on vendor.



Agenda



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(Technical) Validation Program Status Update

- 2019 Status – Year in Review
- 2020 Status – Current Plans
- Technical Process Update

(Marketing) Program Status Update

- New Pricing
- Ancillary Products (Inrix, HERE, TomTom)
- State Status

Data Sharing (DUA)

Quick Start Sheet Process

New RFP State Contracts

Technical

- ✓ **2019 Status - Year in Review**
- ✓ **Completed Reports**
- ✓ **Upcoming Reports**



State	Route	Month Completed
Pennsylvania	US-22	April
Georgia	US 80/GA-21/W/E Bay Street	April
Arterial Report	Update to 2015 report	August
New Jersey	Deployment today 6-19	Sept

<https://i95coalition.org/projects/vehicle-probe-project/>

Technical

✓ FY 2020 Status - Current Plans



Zach will be contacting states to set up these validations for FY2020

State	Route	Planned Month
PA TPK	TBD	Fall
Massachusetts	TBD	Fall
Maryland	TBD	Spring
North Carolina	TBD	Spring

Technical

✓ Deployment Stage - Data Validation Program

We need State locations defined in order to start.

TrafficCast sets out sensors & collects data

Data is sent to UMD for processing

Probe Vendors provide data to UMD

UMD publishes the final report

Deployment Planning

Bluetooth Data Collection

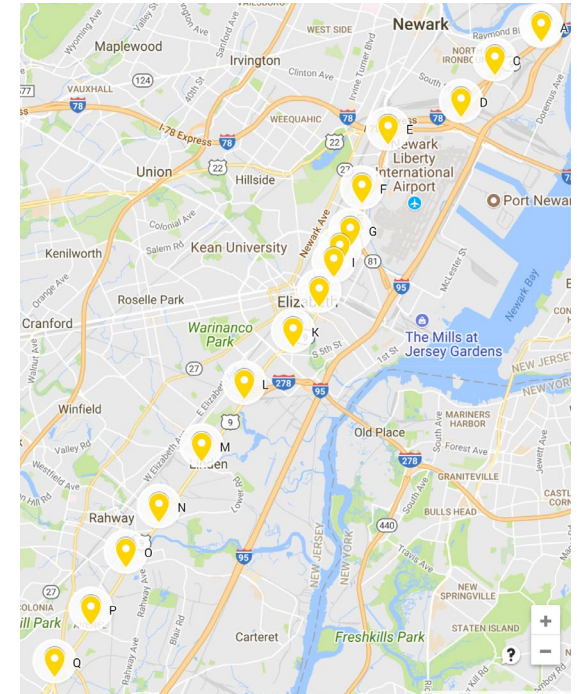
Bluetooth Data Processing

Probe Data Processing

Report Production

Comments

- Many people / jurisdictions involved
- Iterative process
- Slight changes in sensor placement due to mounting considerations
- Define validation paths based on final sensor locations
- Filter, aggregate, and evaluate data
- Vendor TMC definitions differ slightly
- Path <---> vendor-specific TMC mapping
- Calculate equivalent path speeds
- Quantify probe data performance under a variety of conditions



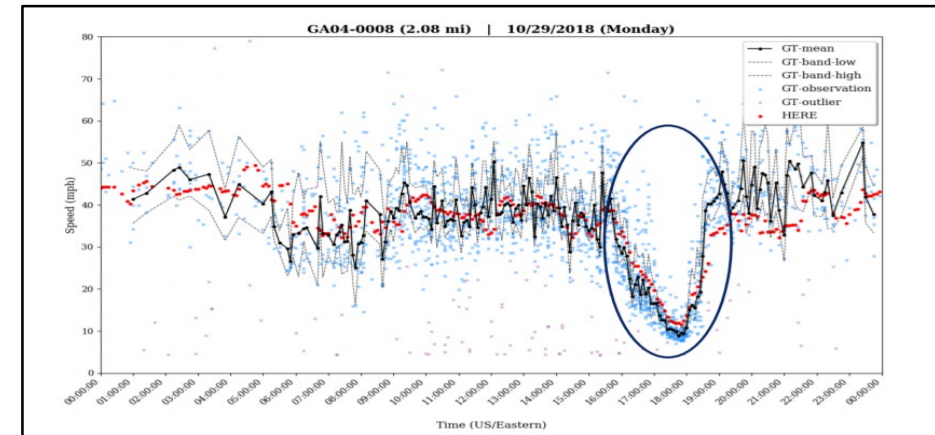
Permitting Requirement requires extra planning

Technical

✓ Validation Report Changes

- ✓ Executive Summary
- ✓ Methodology Section
- ✓ Slowdown Analysis (optional)

ES Table 2 – HERE Summary					
Speed Bin	Average Absolute Speed Error (<10mph)		Speed Error Bias (<5mph)		Number of 5 Minute Samples
	Comparison with SEM Band	Comparison with Mean	Comparison with SEM Band	Comparison with Mean	
0-15 MPH	1.64	3.9	1.44	3.06	1587
15-25 MPH	1.49	5.15	1.03	3.48	5316
25-35 MPH	1.15	5.33	0.33	2.66	11125
>35 MPH	1.58	4.88	-1.38	-2.74	19731
All Speeds	1.44	5.01	-0.42	-0.03	37759



Marketing

✓ Pricing Reductions * Probe Data * Validation * RITIS



Zero Management/Overhead Fees on Data Procurement and Ancillary Products



Effective immediately, for Coalition members who leverage the VPP Marketplace to buy probe data, there will be **Zero management and/or overhead fees** charged on the data procurement or any related ancillary product(s) provided by the vendors that are incorporated into the vendor into the vendor contracts

Cost Reductions on Validation Programs

The Coalition has been working with the University to develop an enhanced methodology used to evaluate data in the data validation program. Effective immediately, we have negotiated with the University to **reduce the cost** of using its resources for this validation program by **52%**.

Simplified Access to and Reduced Cost of the RITIS Platform

For many years, the Coalition's VPP Marketplace and the CATT Lab's RITIS products, have been accessible to members, but through separate contract. Agencies purchase data through the Coalition's Marketplace contract, and then purchase RITIS through the CATT lab's own separate contract vehicle. Many state have requested that the Coalition and the CATT lab work together to make both data and the RITIS platform available through one contracting vehicle. The Coalition and the CATT lab have heard you. Starting immediately, states that purchase 3rd part data from HERE< INRIX, or TomTom through the Coalition's VPP Marketplace can now add-on the CATT lab's RITIS platform – and do so at a reduced cost. CATT lab and Coalition staff will help to develop individualized cost comparison charts upon request to help states choose the best path forward.

Marketing

- ✓ ***New Ancillary Briefs***
- ✓ ***HERE * INRIX * TomTom***

Modifications to current contracts:

- ✓ **INRIX in place**
 - ✓ **HELP**
 - ✓ **Dangerous Slowdowns**
 - ✓ **Trip Reports**
 - ✓ **XD Traffic Archive Downloader**
 - ✓ **NPMRDS Extensions**



****These Options are added as part of Task 1 in the Work Plan /MOU now.**

Marketing

- ✓ ***New Ancillary Briefs***
- ✓ ***HERE * INRIX * TomTom***

Modifications to current contracts:

- ✓ **HERE awaiting pricing for modules**
 - ✓ HERE Speed Limits on Roadways
 - ✓ Split Lane Traffic Reporting at Junctions
 - ✓ HERE HOV Non-Barrier Separated Lanes
 - ✓ Hazard Warning
 - ✓ Automated Road Closure Detection
 - ✓ HERE Reversible Express Lanes
- ✓ **TomTom – mods and pricing almost complete**





NPMRDS Extensions – HELP Dangerous Slowdowns – Trip Reports

(See new ancillary products listed below)



INRIX's VPP contract includes negotiated pricing for core real-time traffic data services and five additional Ancillary Products available as separate options independent of the core service. These prices are the best available from INRIX for these services, discounted from standard pricing for Coalition members. Core services are scaled by road mileage and type, with a large discount for statewide coverage. Ancillary products vary in pricing based on population of state/region to be covered – all immediately available.

The Inrix “Core Bundle” What is included with your probe data procurement?

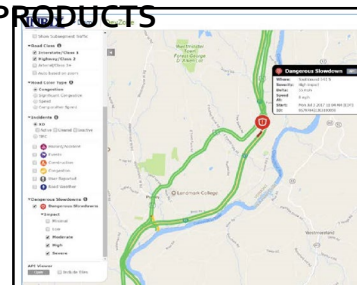
- ✓ An agency selects and funds road coverage based on pre-agreed pricing.
- ✓ Any Coalition member agency with an executed VPP Data Use Agreement (DUA) gets access to the multiple real-time data services for all licensed roads, updated every minute, for ATMS and ATIS/511 Integration:

Segment-based Speeds/Travel Times
Configurable Dynamic Traffic Maps
Incidents, including formatted congestion/queue information

- ✓ All real-time data licensed above can be archived.
- ✓ Staff/support contractors for all Coalition members with an executed VPP DUA can use for free the INRIX VPP Traffic Monitoring Site (<http://i95.inrix.com>) which is designed for operations center use, auto-refreshing real-time traffic conditions across the entire US.

- ✓ All available data services are defined in detail in the INRIX I-95 Interface Guide: http://i95coalition.org/wp-content/uploads/2015/02/I-95_VPP_II_Interface_Guide-March_2018.pdf?x70560

NEW ANCILLARY PRODUCTS



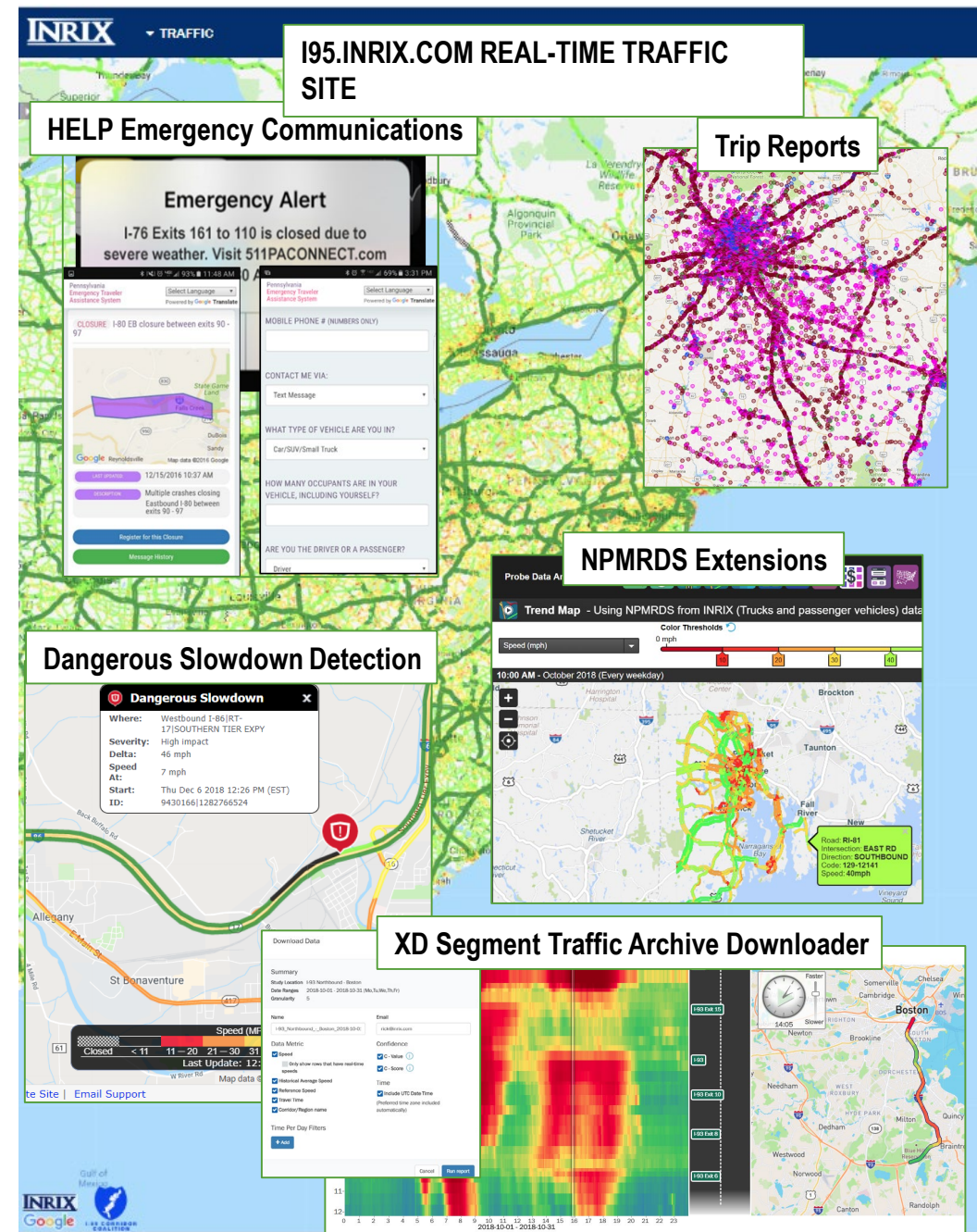
Dangerous Slowdown API

From the outset of VPP, the Coalition has supported a 'one agency pays, all agencies can use' model. Any member agency (including affiliate members) of the Coalition, neighboring agencies and partner agencies can access/use an INRIX, HERE or TomTom dataset licensed through the I-95 CC VPP Marketplace with no additional fees, so long as they have an executed VPP Data Use Agreement.

Contractors/consultants working for any member agency with an executed DUA that ties back to that member agency can also use this same data at no additional cost.



December 2018





HERE Speed Limits – Split Traffic Reporting HOV Non-Barrier Separated Lanes – Hazard Warnings Automated Road Closure Detection – iPeMS Analytics

See Ancillary Product information below

HERE's VPP contract includes negotiated pricing for core real-time traffic data services and additional Ancillary Products available as separate options independent of the core service. These prices are the best available from HERE for these services, discounted from standard pricing for Coalition members. Core services are scaled by road mileage and type, with a large discount for statewide coverage.

The HERE "Core Bundle" What is included with a statewide probe data procurement?

HERE Traffic Service /HERE Real Time Traffic delivers up-to-the-minute information about traffic conditions and incidents. It helps drivers by improving the accuracy of arrival times.

Traffic Analytics: Speed Data and Trip Data is a suite of data products that help enterprise and government customers make informed decisions such as road network performance.

HERE Location Platform (Application Programming Interfaces (APIs) and Software Development Kits (SDKs) for native mobile operating systems) delivers global location based services that can bring location-intelligent products and services to the market. HERE Platform features and functionalities are offered through seven key components: Maps, Geocoder, Direction, Places, Traffic, Transit and Visualization.

ANCILLARY PRODUCTS

HERE Speed Limits on Roadways enables applications to advise users against traffic speed violations or traffic restrictions as it warns users about the maximum permitted speed on a road.

Split Lane Traffic Reporting at Junctions: The advanced algorithm of this GPS based technology is the first to detect divergent speeds and report traffic conditions on a multiple lane level before a junction.

HERE HOV Non-Barrier Separated Lanes: HERE's new feed provides HOV lane level traffic flows on roads with HOV lanes that are non-barrier separated, these lanes are not physically separate from the standard lanes (for example, separated only by painted lines)

Hazard Warnings - Directly from Connected Vehicle Sensor Data: HERE Hazard Warnings provides information to notify drivers and C-ADAS applications about potential road hazards in real time. The data can be used for the following use case warnings:

- Accident – Broken-down vehicle – Slippery road – Reduced visibility – Heavy Rain – Fog

Automated Road Closure Detection: Using complex artificial intelligence, this service detects unreported closures. In addition, the HERE Incident Management Center validates and corrects closures that road authorities publish.

HERE Reversible Express Lanes: HERE is the only service to report congestion on roads with changeable direction, indicating which way traffic is flowing. This enhancement enables drivers to make more intelligent routing decisions and improves ETAs

Advanced Traffic Analytics Functions w/ iPeMS: New product functionality: (Map Animations & Favorites, Bottlenecks, Incident Integration, Reliability Index Map feature, Congestion Cost Reports, Hyperlocal weather, Regional Dashboards

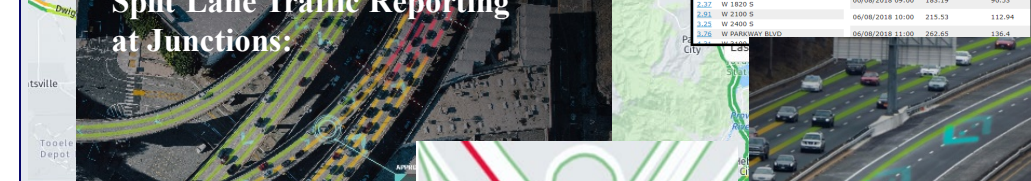
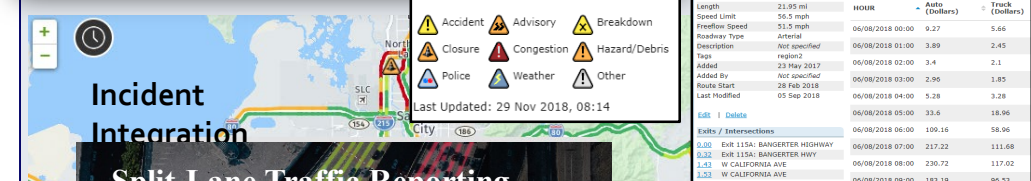
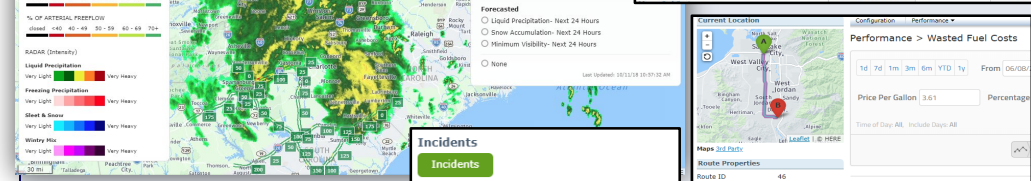
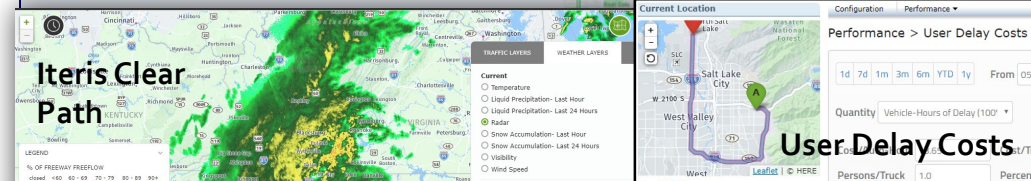
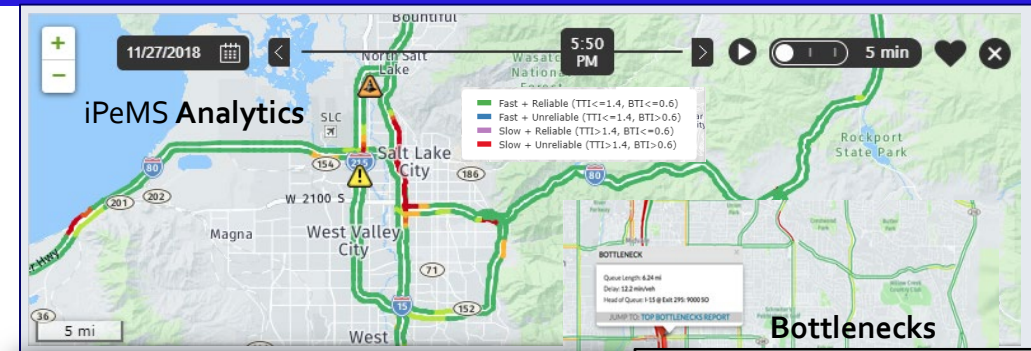
From the outset of VPP, the Coalition has supported a 'one agency pays, all agencies can use' model. Any member agency (including affiliate members) of the Coalition, neighboring agencies and partner agencies can access/use an INRIX, HERE or TomTom dataset licensed through the I-95 CC VPP Marketplace with no additional fees, so long as they have an executed VPP Data Use Agreement.

Contractors/consultants working for any member agency with an executed DUA that ties back to that member agency can use this same data at no additional cost.

Data Sharing



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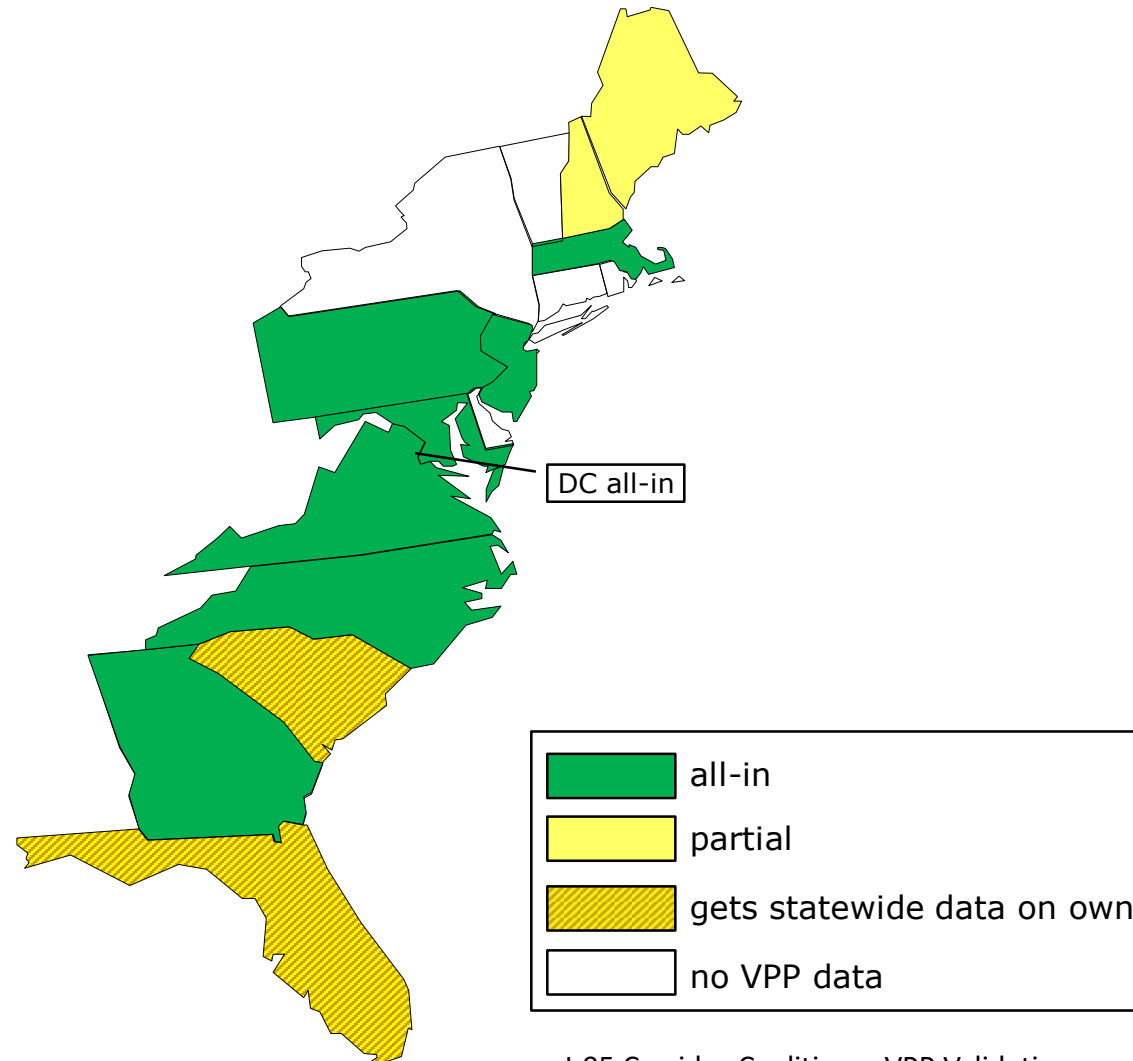


December 2018

Marketing

✓ Website Updates

I-95 Corridor Coalition Probe Data Coverage



June 19, 2019

I-95 Corridor Coalition – VPP Validation

Overview of Summary Coverage for Participating States

I-95 Corridor Coalition - Vehicle Probe Project II				
Coverage Summary Table				
State	Freeway	Arterial	Total Miles	Description
Maine	146	0	146	Coverage on I-95
New Jersey	920	8,498	9,418	State is all-in
Pennsylvania	2,752	20,851	23,603	State is all-in
Maryland	785	6,562	7,347	State is all in. Redundant coverage on select corridors
Massachusetts	910	6,435	7,345	State is all-in
Washington DC	28	371	399	State is all-in
Virginia	1,571	15,804	17,375	State is all-in
North Carolina	1,716	12,834	14,550	State is all-in
Georgia	1,411	14,331	15,742	State is all-in
Total	10,239	85,686	95,925	
Date: June 19, 2019				

Marketing

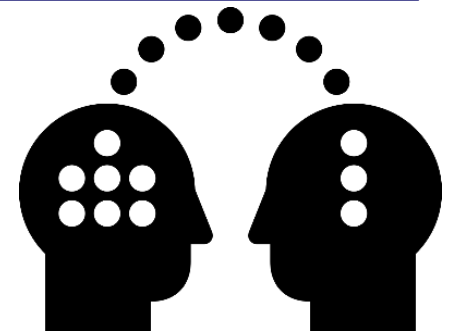
✓ Data sharing – Data Use Agreement

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Any member agency (including affiliate members) of the Coalition, neighboring agencies and partner agencies can access/use an INRIX, HERE or TomTom dataset licensed through the I-95 CC VPP Marketplace with no additional fees, so long as they have an executed VPP Data Use Agreement.

Contractors/consultants working for any member agency with an executed DUA that ties back to that member agency can also use this same data at no additional cost.

“Currently this applies to travel time and speed data only”







So... your agency is interested in obtaining access to the Vehicle Probe Project (VPP) Data?

Now what do you do?

Quick Start Sheet

First, check to see if the roads in which you are interested are covered by the VPP. Contact Kathy Frankle (UMD) at kfrankle@umd.edu to find out. Then, apply the following steps to gain access to ANY data within the VPP.

NOTE: ONCE ANY DATA IS PURCHASED UNDER THE VPP CONTRACT, EVERY MEMBER AGENCY HAS FULL RIGHTS TO ACCESS AND USE IT REGARDLESS OF THEIR LOCATION.

Step 1	Step 2
Not a member of the I-95 Corridor Coalition? Your agency first needs to become one.	Execute a Data Use Agreement to use the Vehicle Probe Project Data
<p>Send an e-mail to Trish Hendren requesting membership in the I-95 Corridor Coalition (please copy Patty Reich). Eligibility requirements are provided on the Member Eligibility section of the Coalition website. You will receive a response in less than one week.</p> <p>Dr. Patricia Hendren phendren@i95coalition.org</p> <p>Patty Reich preich1@i95coalition.org</p>  <p>I-95 Corridor Coalition <i>Beyond Boundaries</i></p>	<p>Signing the Data Use Agreement (DUA) does NOT commit you to purchasing data – it simply extends the data license to your jurisdiction. Click here for the DUA.</p> <p>Completed DUAs should be submitted to Karen Swick (UMD) at kswick@umd.edu. Processing of DUAs could take up to 2 weeks as multiple legal entities must counter-sign the agreement.</p> <p>Questions regarding VPP contracts or DUAs should be sent to Kathy Frankle.</p>  <p>I-95 Vehicle Probe Project</p> <p>I-95 CORRIDOR COALITION</p> <p>(511) INRIX TomTom</p>
<p>Please note that Steps 1 & 2 need to be completed only once per organization. Universities and consultants are not eligible for Coalition membership; however, universities and consultants working for a Coalition member on a project requiring access to VPP data may be granted access for that specific project. Please work with your agency to obtain the needed approval and complete 'Attachment A' along with the Data Use Agreement.</p>	

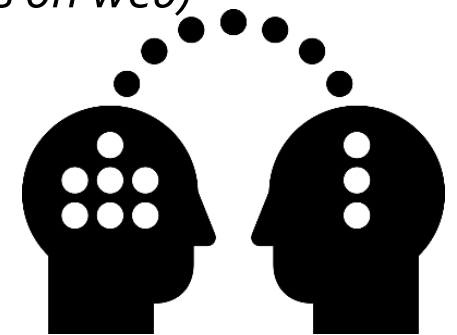
Data Use Agreements

The Coalition is looking at the Data Use Agreement:

1. *State Agency DUA is part of the contracting process*
2. *Quick Start Guide on Web is for the subcontractors requesting access via Agency Approval*
3. *Signed DUA must be approved by Agency POC*
 1. *Note: We are requesting a change to the quick start to have the DUA sent to the agency for approval first before sending onto UMD*
 2. *Note: The correct DUA has signatures on it. (Located under contract docs on web)*
 3. *Note: Recommendation is to include an editable Attachment A*
4. *Signed DUA's tracked by UMD/Coalition and reviewed every 6 months*

www.i95coalition.org

Select Vehicle Probe Project under Traveler Information



Data Use Agreements

ATTACHMENT A
Any Data Licensee that is
a Subcontractor must provide the following information
About its Contract with a Member/Affiliate to “Establish Need to Know”

1. Name and Address of Subcontractor/Data Licensee:
2. Contractor from whom data is requested (check all that apply)
☐ INRIX ☐ Here North America ☐ TomTom
3. Explain why You Need Access to Licensed Data:
4. Prime Contract/Subcontract Source
5. Contract/Agreement Number
6. **Contract/Agreement Period-of-Performance:**

From: _____ **to:** _____
7. Contact Information from Contracting Agency (Coalition Member/Affiliate):

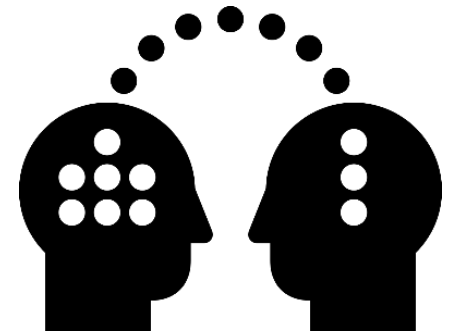
Name: _____
Phone: _____

E-mail _____
Address: _____

Subcontractor's authorized official certifies that the information provided above is current and accurate.

By: _____ Date _____

Name and Title:

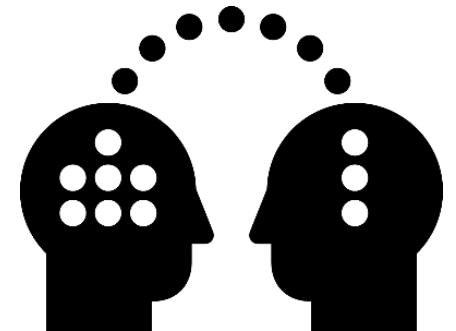


Data Use Agreements

Per the VPPII DSA--when **any** agency purchases data from any of the vendors (TomTom, HERE, or INRIX) through the VPPII contract, all other agencies within the Coalition are allowed to use that data as well (so long as they have also signed the VPPII Data Sharing Agreement).

What does this really mean? It means that states can share data back-and-forth with one another and access the same APIs and data feeds that the vendors provide for the states.

What this doesn't mean: States don't just get free access to RITIS and the Probe Data Analytics Suite. There is a separate cost associated with storing data and integrating it into our tools. RITIS is not linked with the Probe Data Vendors. It is an extra service that folks can opt into if they so choose.



Additional General Info

☐ **New RFP being started for release in 2020.**

☐ **State Contract Status**

QUESTIONS??
Thank You