Innovations in Transportation

Rick Schuman, Ted Trepanier

August 19, 2014

© 2014. Confidential & proprietary

INRIX

Positioned at the Intersection of Powerful Trends

Increased congestion

Big data & real-time analytics

Vehicle connectivity

Environmental responsibility

INRIX

Crowdsourcing & cloud services

Public sector traffic mgmt

Global urbanization

Mobile device proliferation

INRIX

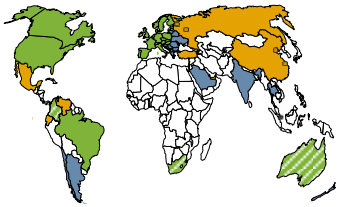
The INRIX Business Today

Emerging

Connected Car Services

Analytics & Applications

Mobile & Internet
Fleet & Commercial
Public Sector
Automotive
Media
Enterprise
Population



Traffic Data & Platform

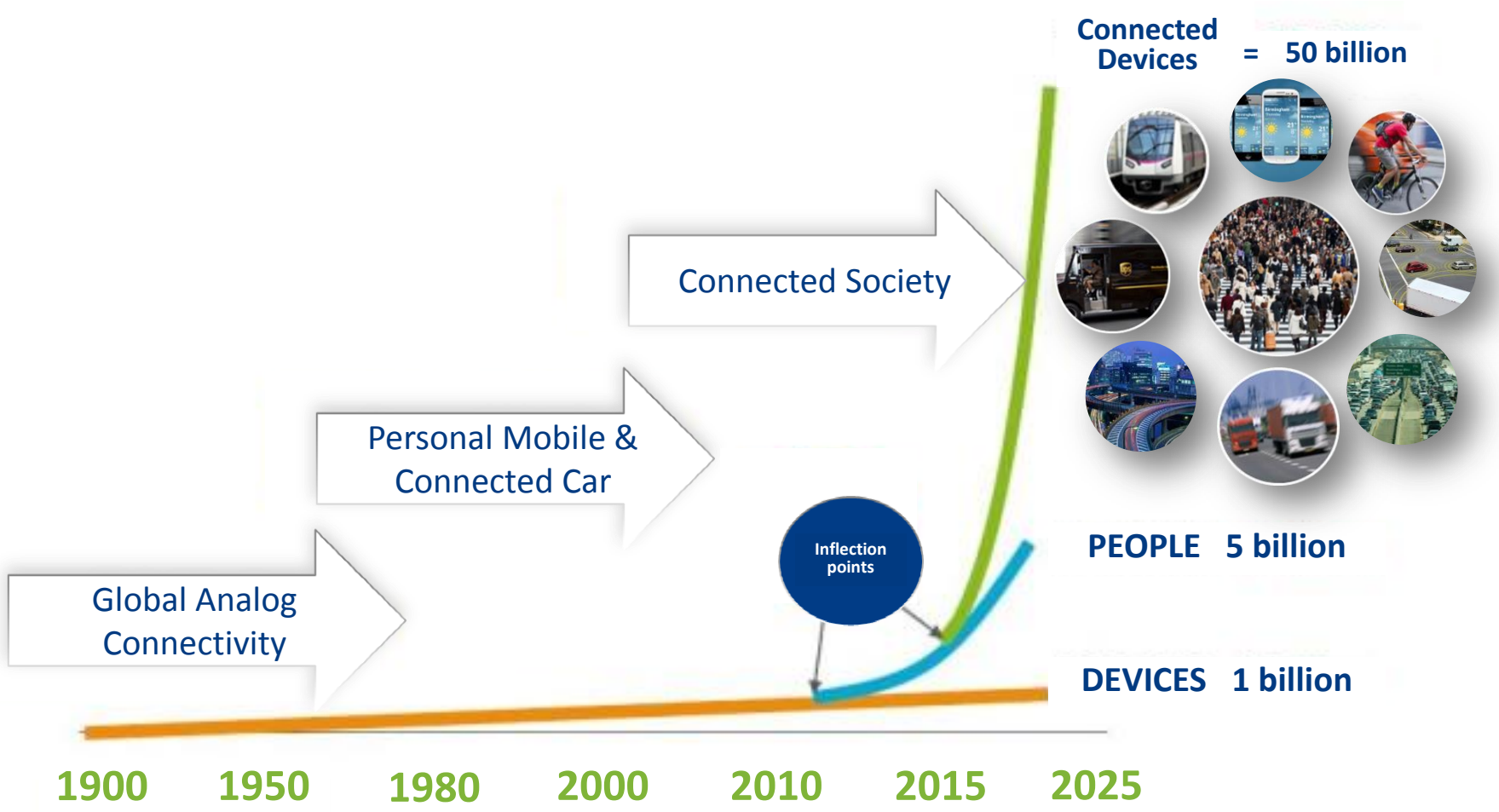
World's Largest Traffic Probe Network

More than 250+ Customers To-date

INRIX

From Traffic to the Movement of Things (ioT)

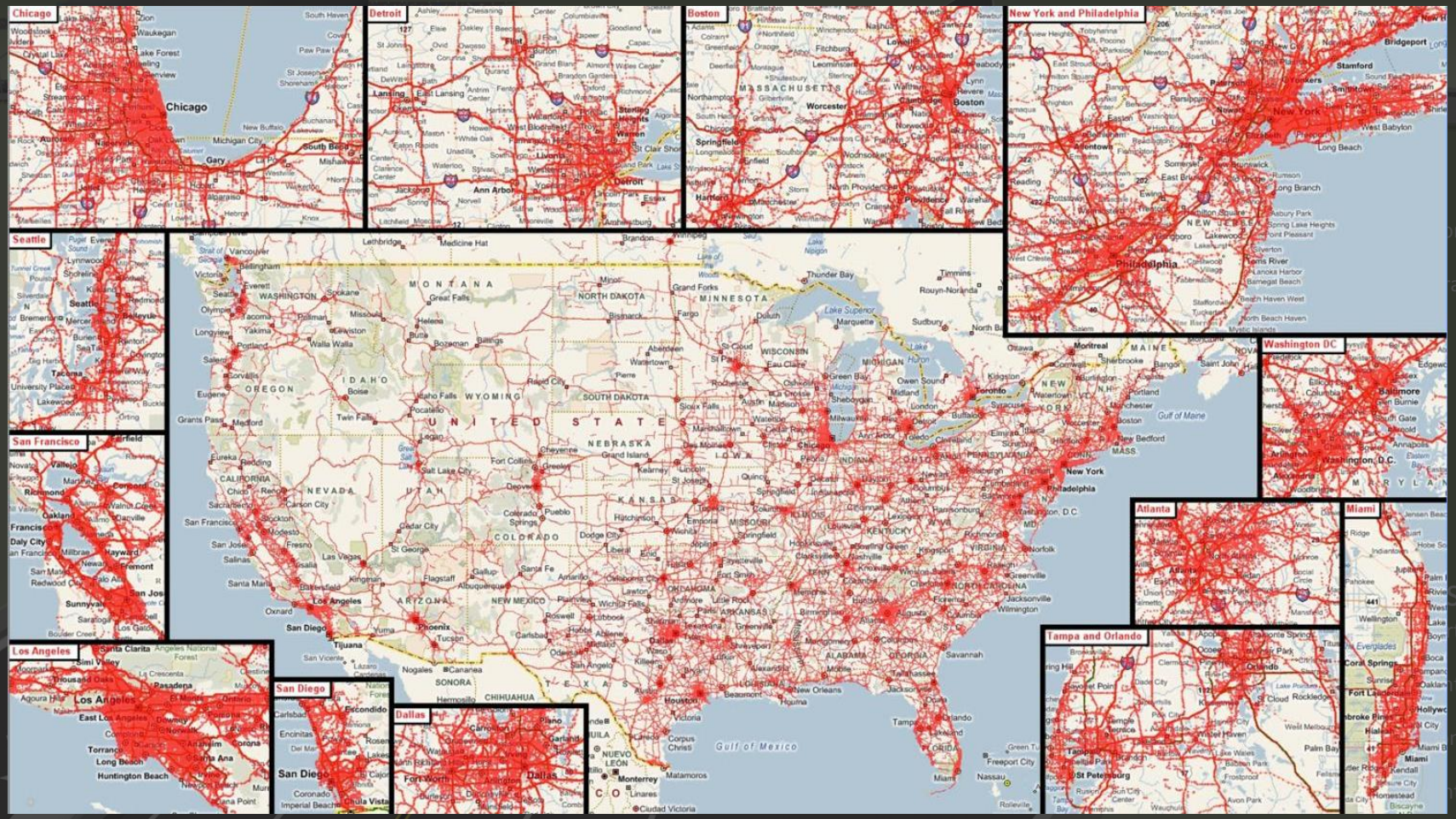
People, Vehicles & Devices



INRIX

INRIX Traffic Intelligence Network

North America, Spring 2010

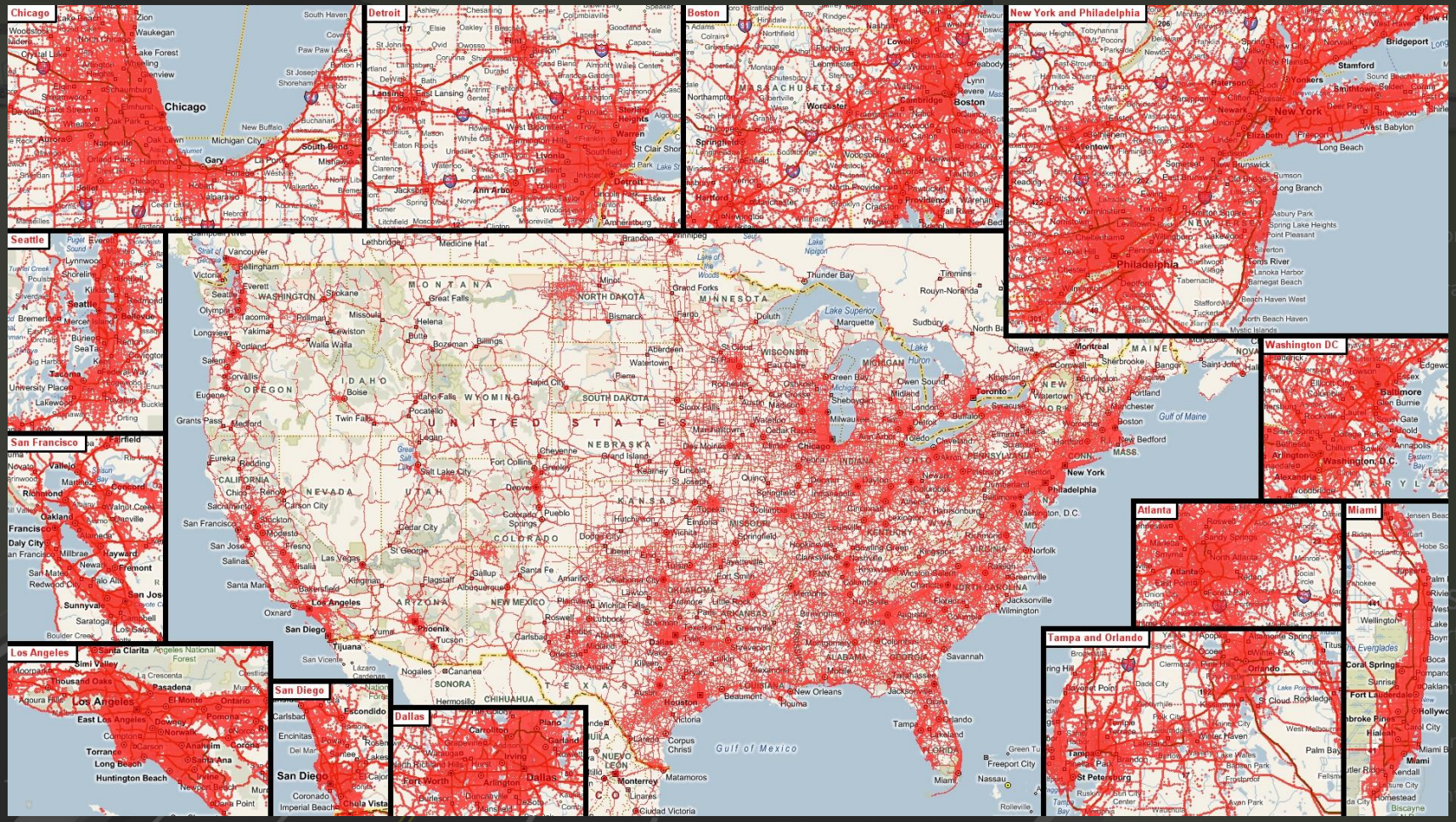


Examples of 15-Minute Real-Time Snapshots

INRIX

INRIX Traffic Intelligence Network

North America, Spring 2014



Examples of 15-Minute Real-Time Snapshots

INRIX

Applications and Uses Today

© 2014 Confidential & Proprietary

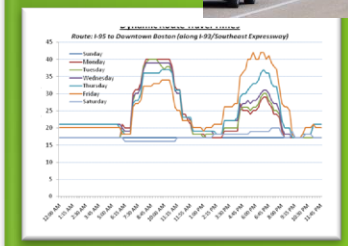
INRIX

INRIX Public Sector Suite

Provides a traffic platform for planning, analysis and operations of road networks

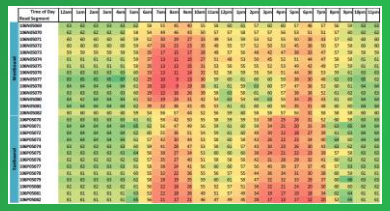
Real Time Traffic

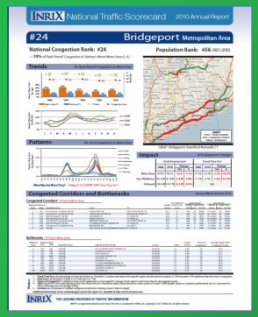
- Traffic Flow
- Dynamic Route Travel Times
- Traffic Incidents
- Traffic Cameras
- "XD" Monitoring



Historical Traffic

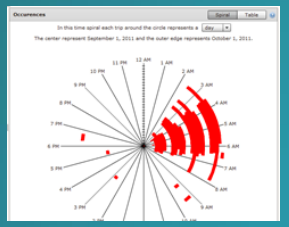
- Traffic Profiles
- Traffic Data Archive
- Freight Profiles/OD





Analytics

- Traffic Monitoring Dashboard
- Bottleneck & Congestion Analy
- User Delay Costs

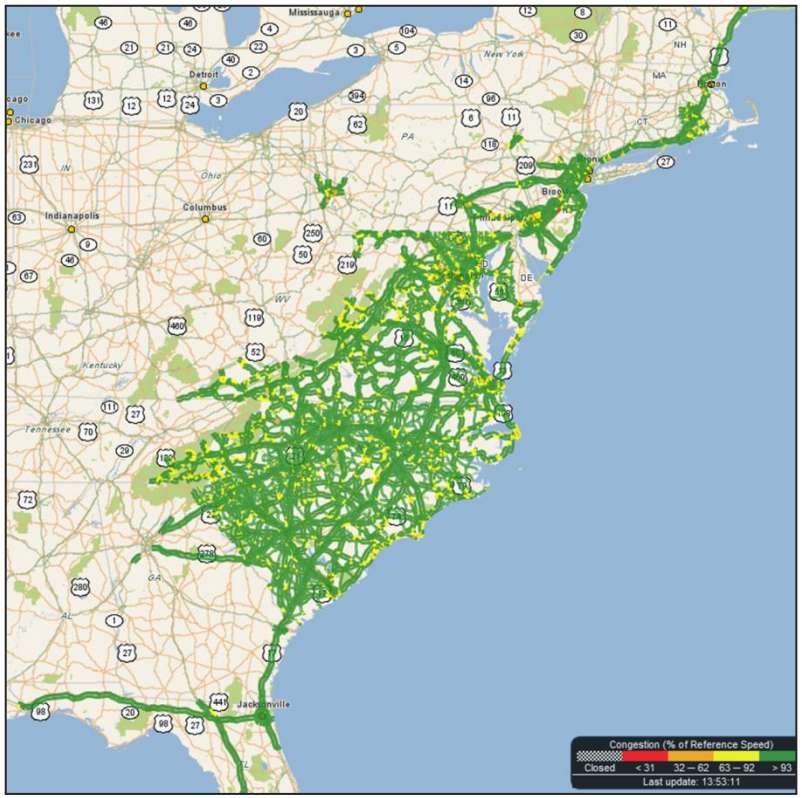


INRIX

I-95 Corridor Coalition

INRIX collaboration with regional government transportation agencies

INRIX partners with 16 states along America's eastern seaboard for what the *Wall Street Journal* called, "one of the biggest rollouts yet for technology designed to help motorists avoid traffic jams"



- INRIX provides travel times and traffic speeds in support of 511 call services, traveler information websites, traffic message signs; daily traffic operations and performance measures.
- Project spans the entire eastern seaboard from Maine to Florida covering approximately 8000 miles of freeways and over 30,000 miles of major secondary roadways.
- INRIX data accuracy is independently validated every month; Service went live in 2008. In 4+ years, INRIX has not missed its accuracy requirements once.

New Jersey Statewide Traffic Management Center

LIVE NOW

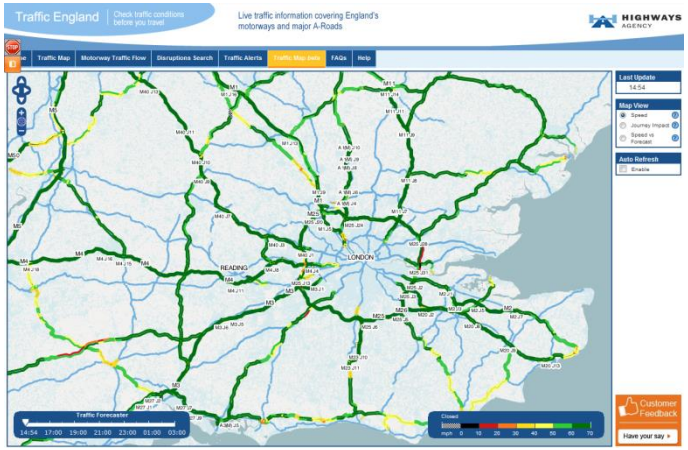
The NJDOT uses real-time INRIX Traffic flow data in their traffic operations centers to monitor traffic flow conditions across New Jersey and New York

INRIX

UK Highways Agency

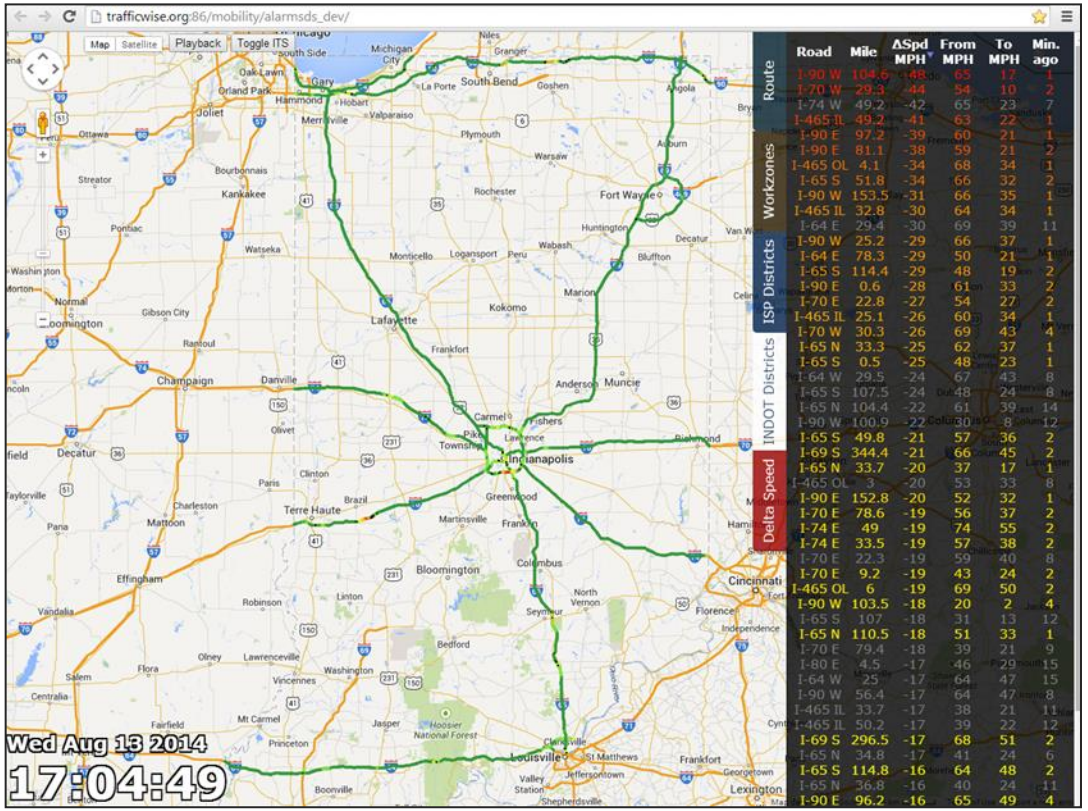
INRIX is a critical element of the National Traffic Information Service, a long-term contracted service for the UK Highways Agency that monitors and manages England's entire Strategic Road Network

- World's largest integration of agency sensor and private GPS Floating Vehicle Data (10,000+ km)
- Full nationwide motorway network speed monitoring and slowdown detection, updated every minute
- Greater network granularity than HA sensors alone; full system coverage regardless of sensor location and health status
- Automated alerts to operators of conditions deviating from normal conditions
- New national-wide traffic flow map for public at ntis.trafficengland.com



Indiana DOT is…

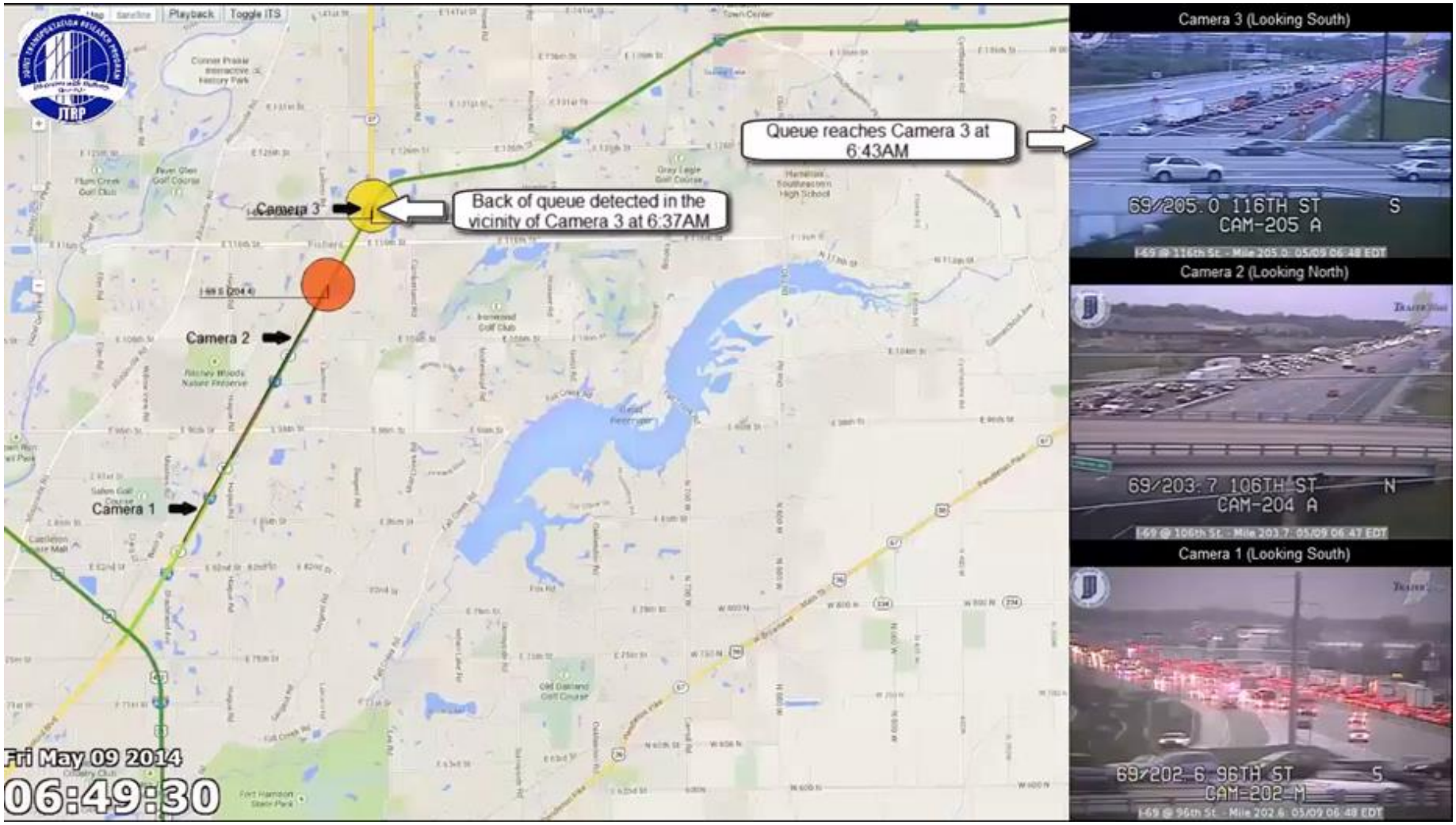
- Detecting Slowdowns and “back of queue”…
- On all interstates, statewide…
- Within 250 meters…
- In real-time…
- Updated every minute…
- Available to DOT and State Police (iPads in patrol cars)
- Results
  - Detecting incidents faster
  - Making Work Zones safer
  - W/O traditional ITS infrastructure
  - At a fraction of traditional ITS infrastructure cost



Confidential & proprietary

Indiana DOT Operational Site:

http://trafficwise.org:86/mobility/alarmsds_dev/

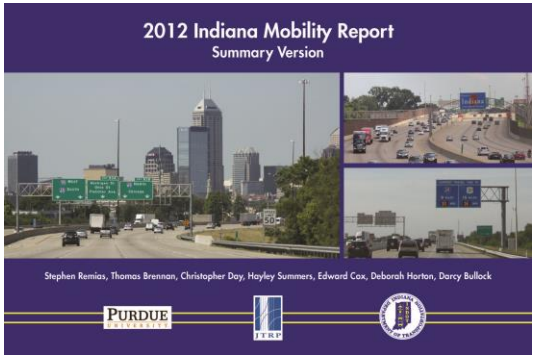


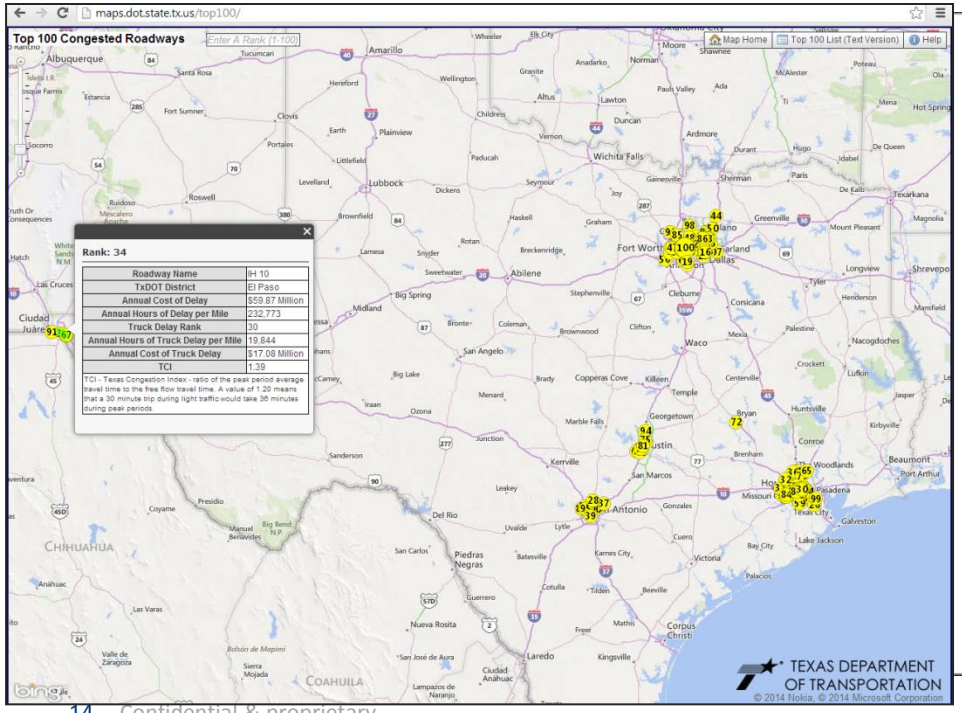
http://youtu.be/5eFwSBGZkqI

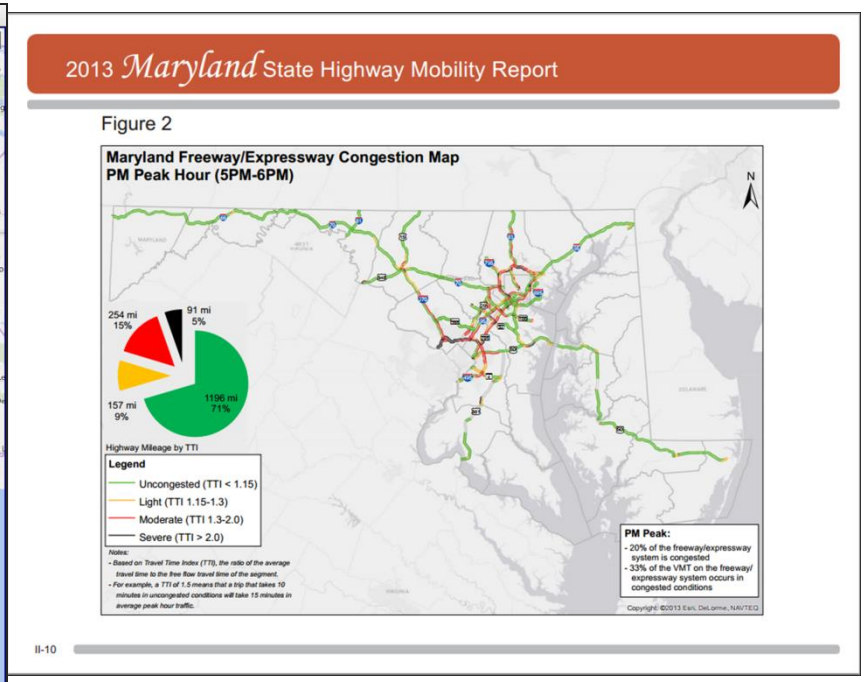
INRIX

Statewide Mobility Reports… Better, Faster, Cheaper

- Indiana Interstate Mobility Report
- Maryland State Highway Mobility Report
- “Texas 100” Most Congested Corridors





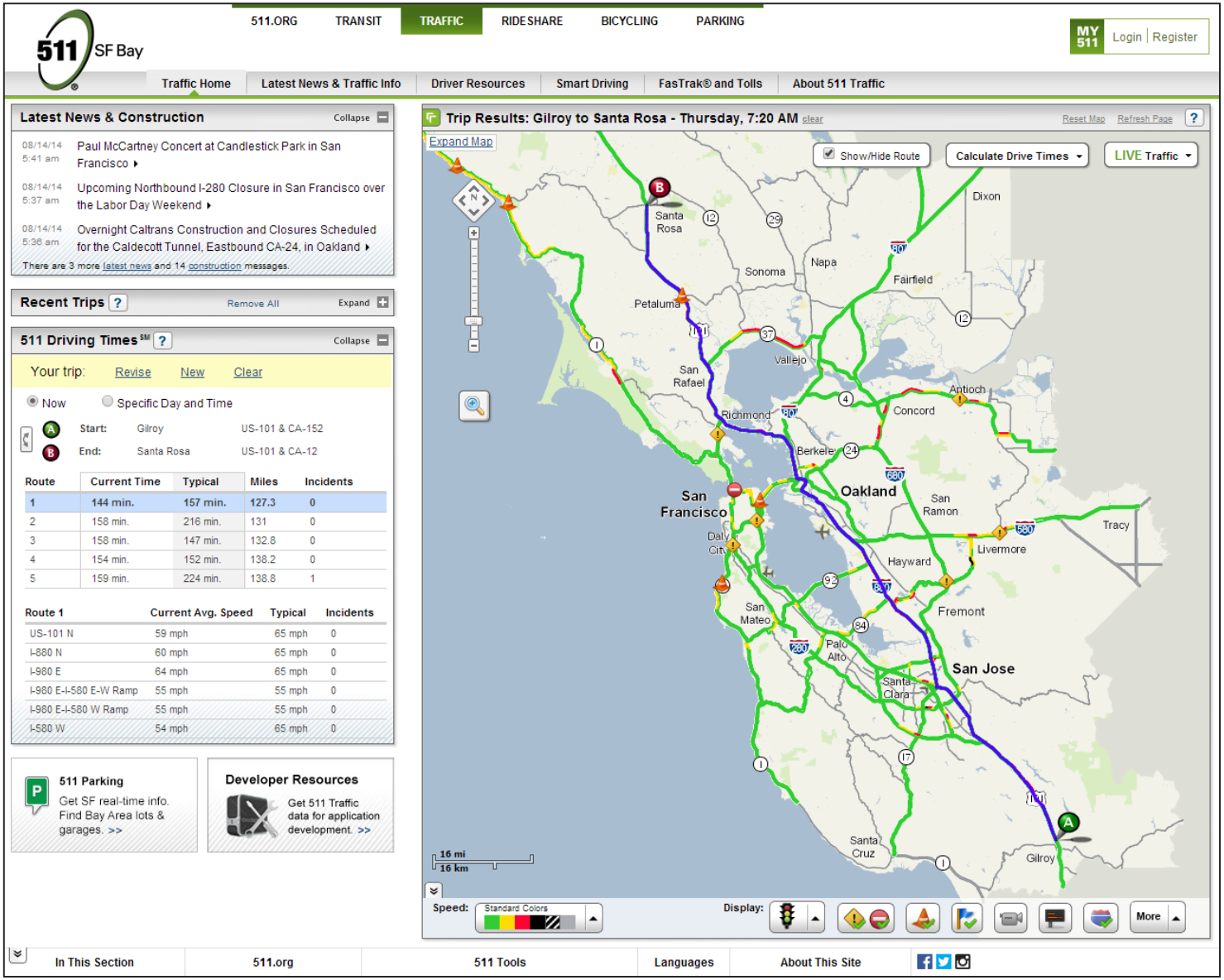


INRIX

Snoqualmie Pass Travel Times

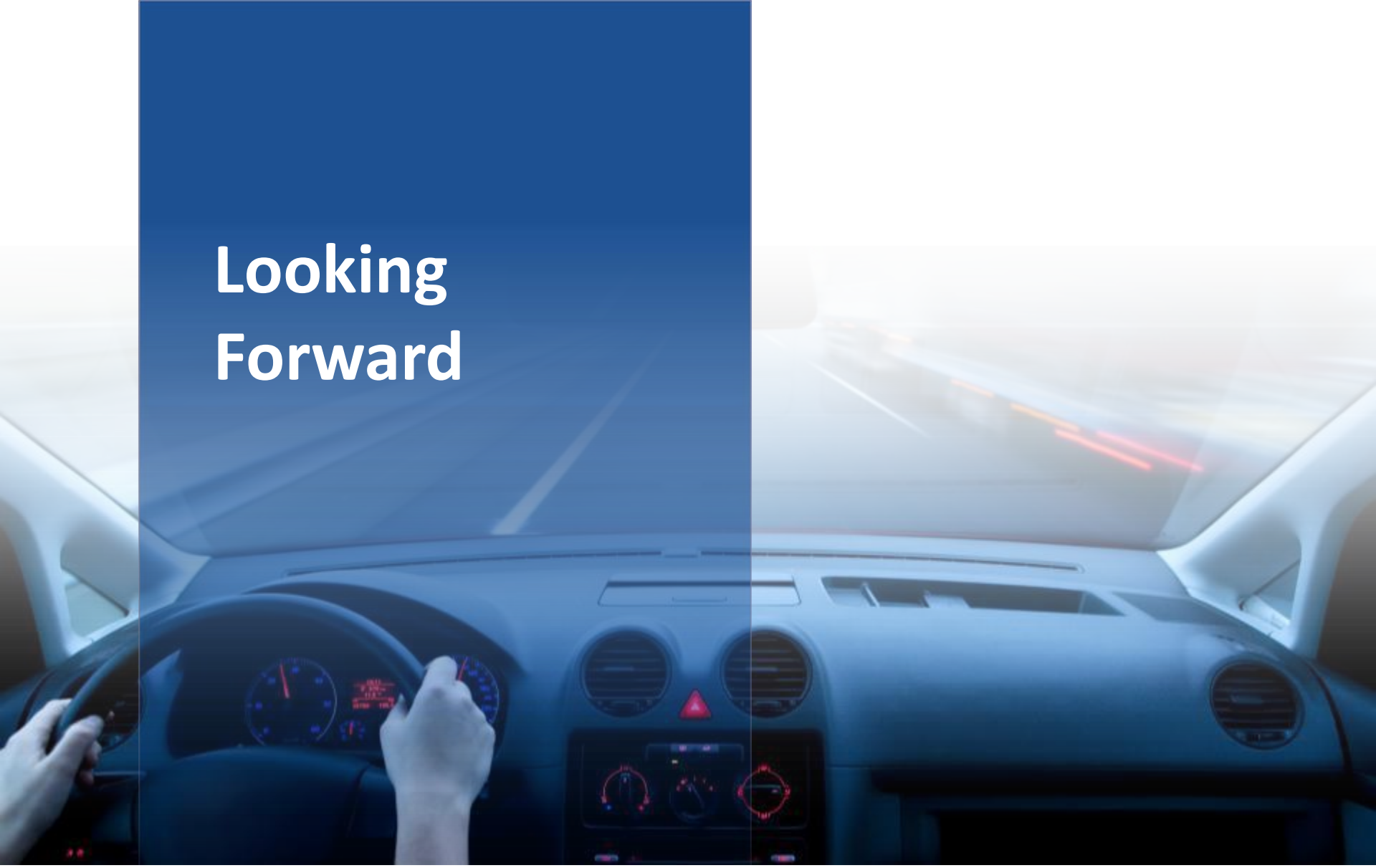
INRIX

MTC: Bay Area 511 Traffic Data



INRIX

Looking Forward



© 2014 Confidential & Proprietary

INRIX

Looking Forward

- Intermodal Routing
- EV Services
- Accessibility Measurement
- Push-Button Federal Performance Reporting
- Arterial Performance Measurement – Real-time and Historical
- Origin – Destination
  - Historical and Trends
  - Real-Time: Deviation from Normal, Detour Monitoring/Management
- Real-Time Traffic Volumes

Worlds First Global Intermodal Service

INRIX and BMW Driving Innovation in 17 countries

In North America:

- Atlanta
- Austin
- Boston
- Chicago
- Dallas
- Los Angeles
- Montreal
- Ottawa
- Philadelphia
- San Diego
- San Francisco
- Seattle
- Toronto
- Vancouver
- Washington

Expanding Quarterly as of May 2014

A visionary concept combining driving, public transport and mobility solutions for daily use and journey planning.

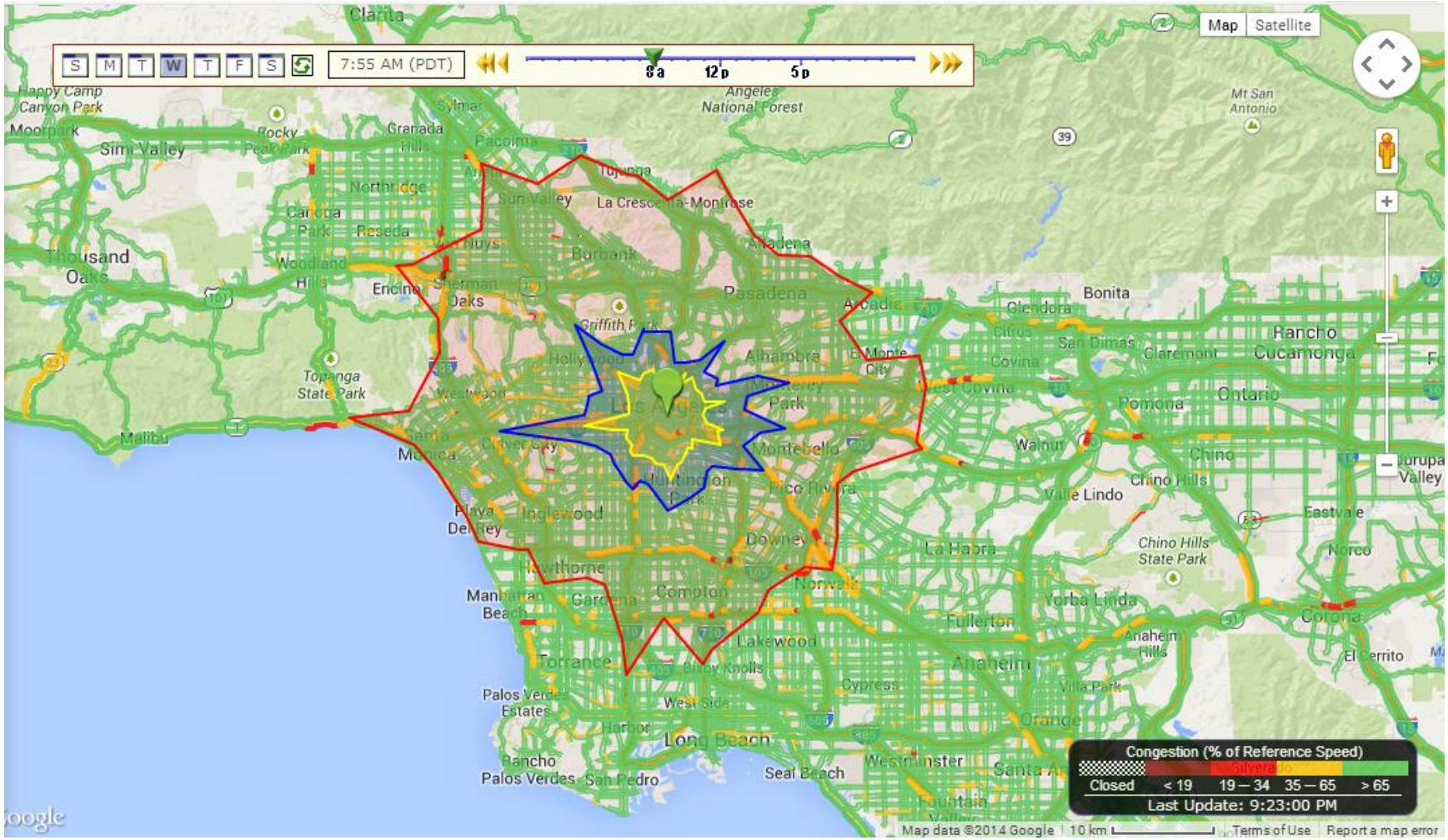
Intermodal Routing and EV Services: BMW iSeries

Highlights

- First intermodal system integrating public transit data into autos (EU & NA)
- EV charging station locations
- Traffic-influenced EV range calculations

INRIX Drive Time

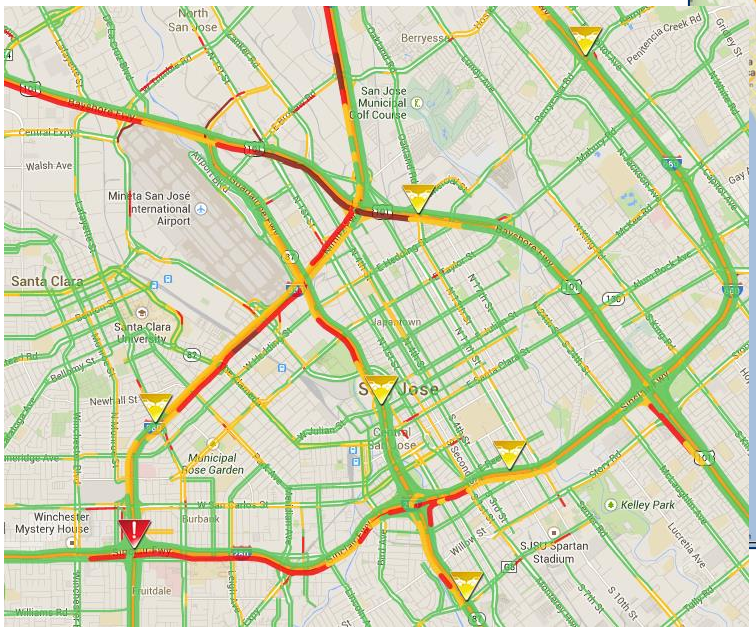
Travel time polygon – EV Range and Accessibility Measurement

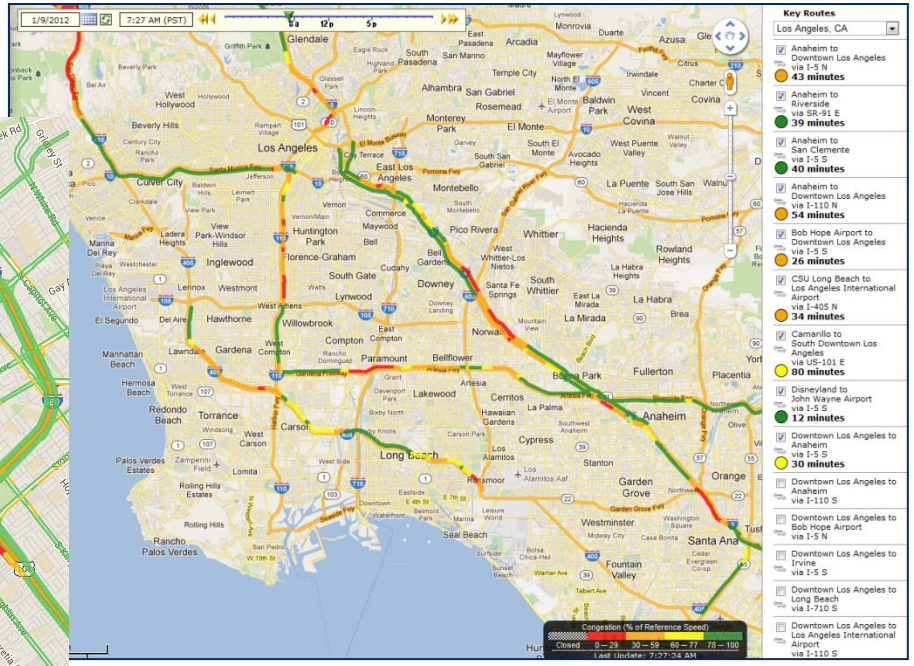


Push-Button Performance Reports

Turn-key reports for all Federal requirements

- Construction activities
- Roadway or lane blocking incidents
- Roadway weather observations
- Travel time information



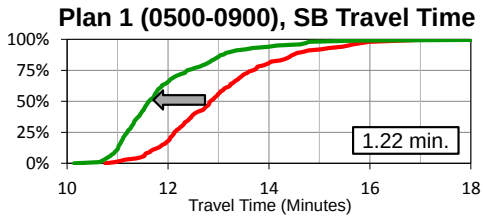


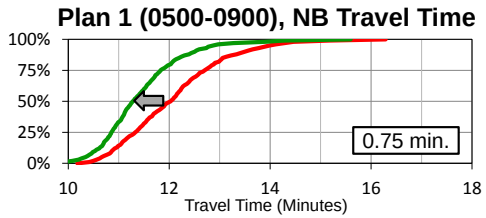
INRIX

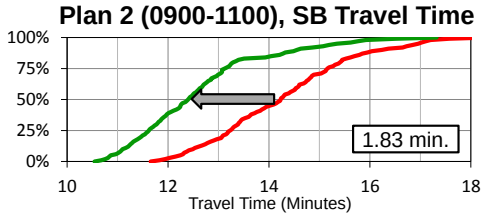
Arterial Performance Measurements

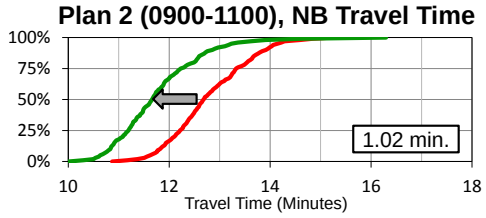
Building on current metrics

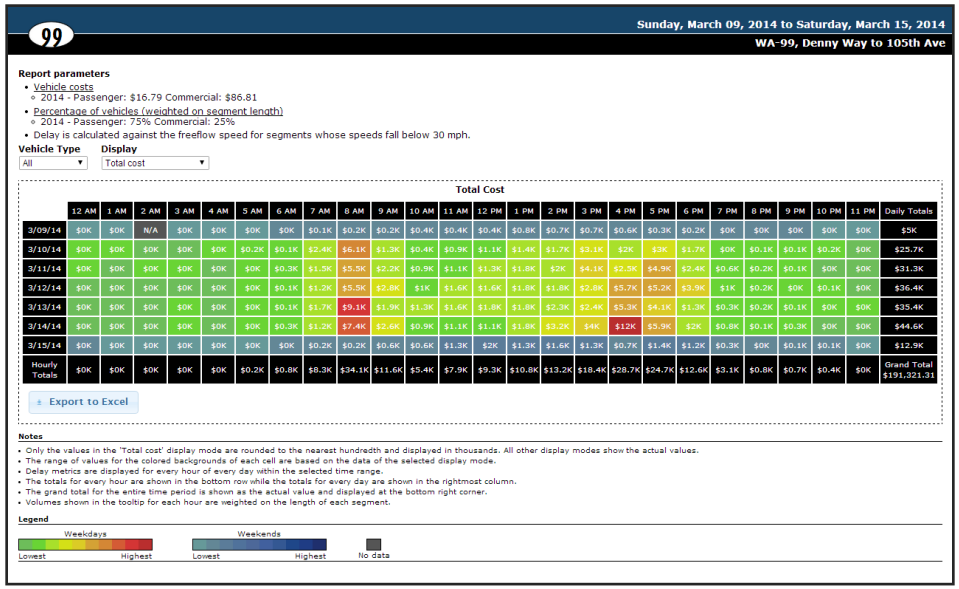
- Travel Times and Index
- Buffer Times and Index
- Planning Times and Index
- User Delay Cost
- Coordination Diagrams











99

Sunday, March 09, 2014 to Saturday, March 15, 2014

WA-99, Denny Way to 105th Ave

Report parameters

- Vehicle costs
  - 2014 - Passenger: $16.79 Commercial: $86.81
- Percentage of vehicles (weighted on segment length)
  - 2014 - Passenger: 75% Commercial: 25%
- Delay is calculated against the freeflow speed for segments whose speeds fall below 30 mph.

Vehicle Type: All | Display: Total cost

Total Cost

	12 AM	1 AM	2 AM	3 AM	4 AM	5 AM	6 AM	7 AM	8 AM	9 AM	10 AM	11 AM	12 PM	1 PM	2 PM	3 PM	4 PM	5 PM	6 PM	7 PM	8 PM	9 PM	10 PM	11 PM	Daily Totals
3/09/14	$0K	$0K	N/A	$0K	$0K	$0K	$0K	$0.1K	$0.2K	$0.2K	$0.4K	$0.4K	$0.4K	$0.8K	$0.7K	$0.7K	$0.6K	$0.3K	$0.2K	$0K	$0K	$0K	$0K	$0K	$5K
3/10/14	$0K	$0K	$0K	$0K	$0K	$0.2K	$0.1K	$2.4K	$6.1K	$1.3K	$0.4K	$0.9K	$1.1K	$1.4K	$1.7K	$3.1K	$2K	$3K	$1.7K	$0K	$0.1K	$0.1K	$0.2K	$0K	$25.7K
3/11/14	$0K	$0K	$0K	$0K	$0K	$0K	$0.3K	$1.5K	$5.5K	$2.2K	$0.9K	$1.1K	$1.3K	$1.8K	$2K	$4.1K	$2.5K	$4.9K	$2.4K	$0.6K	$0.2K	$0.1K	$0K	$0K	$31.3K
3/12/14	$0K	$0K	$0K	$0K	$0K	$0K	$0.1K	$1.2K	$5.5K	$2.8K	$1K	$1.6K	$1.6K	$1.8K	$1.8K	$2.8K	$5.7K	$5.2K	$3.9K	$1K	$0.2K	$0K	$0.1K	$0K	$36.4K
3/13/14	$0K	$0K	$0K	$0K	$0K	$0K	$0.1K	$1.7K	$9.1K	$1.9K	$1.3K	$1.6K	$1.8K	$1.8K	$2.3K	$2.4K	$5.3K	$4.1K	$1.3K	$0.3K	$0.2K	$0.1K	$0K	$0K	$35.4K
3/14/14	$0K	$0K	$0K	$0K	$0K	$0K	$0.3K	$1.2K	$7.4K	$2.6K	$0.9K	$1.1K	$1.1K	$1.8K	$3.2K	$4K	$12K	$5.9K	$2K	$0.8K	$0.1K	$0.3K	$0K	$0K	$44.6K
3/15/14	$0K	$0K	$0K	$0K	$0K	$0K	$0K	$0.2K	$0.2K	$0.6K	$0.6K	$1.3K	$2K	$1.3K	$1.6K	$1.3K	$0.7K	$1.4K	$1.2K	$0.3K	$0K	$0.1K	$0.1K	$0K	$12.9K
Hourly Totals	$0K	$0K	$0K	$0K	$0K	$0.2K	$0.8K	$8.3K	$34.1K	$11.6K	$5.4K	$7.9K	$9.3K	$10.8K	$13.2K	$18.4K	$28.7K	$24.7K	$12.6K	$3.1K	$0.8K	$0.7K	$0.4K	$0K	Grand Total $191,321.31

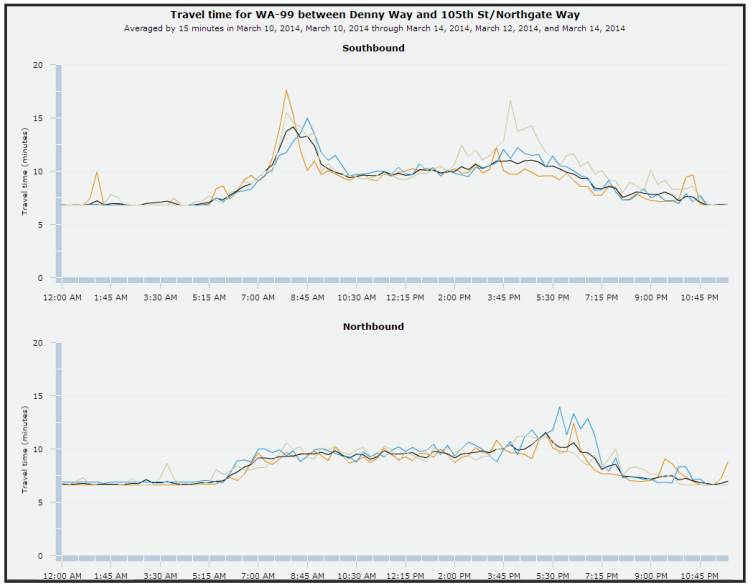
Export to Excel

Notes

- Only the values in the 'Total cost' display mode are rounded to the nearest hundredth and displayed in thousands. All other display modes show the actual values.
- The range of values for the colored backgrounds of each cell are based on the data of the selected display mode.
- Delay metrics are displayed for every hour of every day within the selected time range.
- The totals for every hour are shown in the bottom row while the totals for every day are shown in the rightmost column.
- The grand total for the entire time period is shown as the actual value and displayed at the bottom right corner.
- Volumes shown in the tooltip for each hour are weighted on the length of each segment.

Legend

Weekdays: Lowest – Highest | Weekends: Lowest – Highest | No data

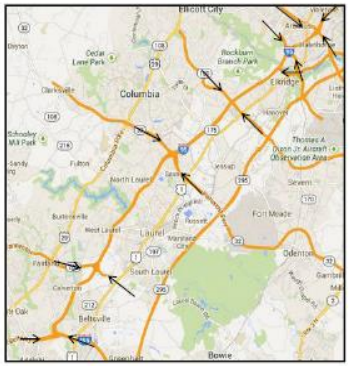


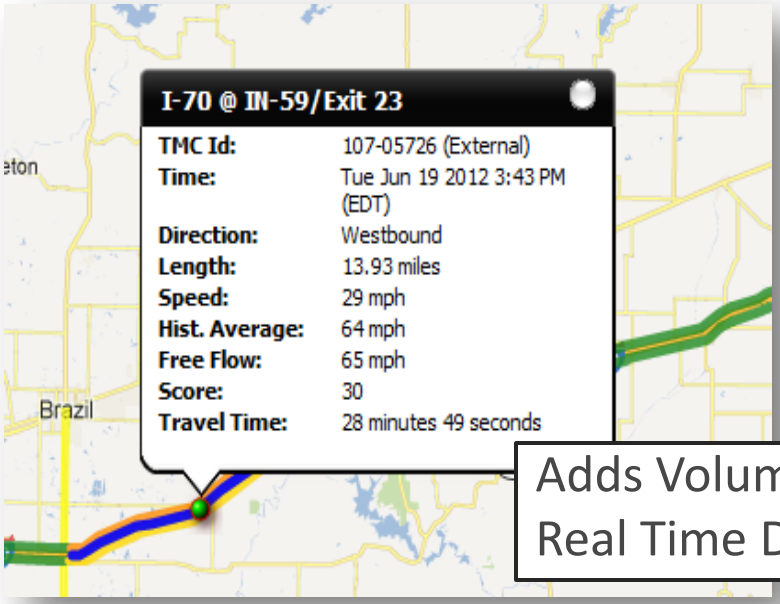
INRIX

Volume and Origin - Destination

New in 2015

- Real Time Volume Data Service
- Origin Destination Analytics





Adds Volume to Real Time Data

INRIX

Driving Intelligence

© 2014 Confidential & proprietary

INRIX