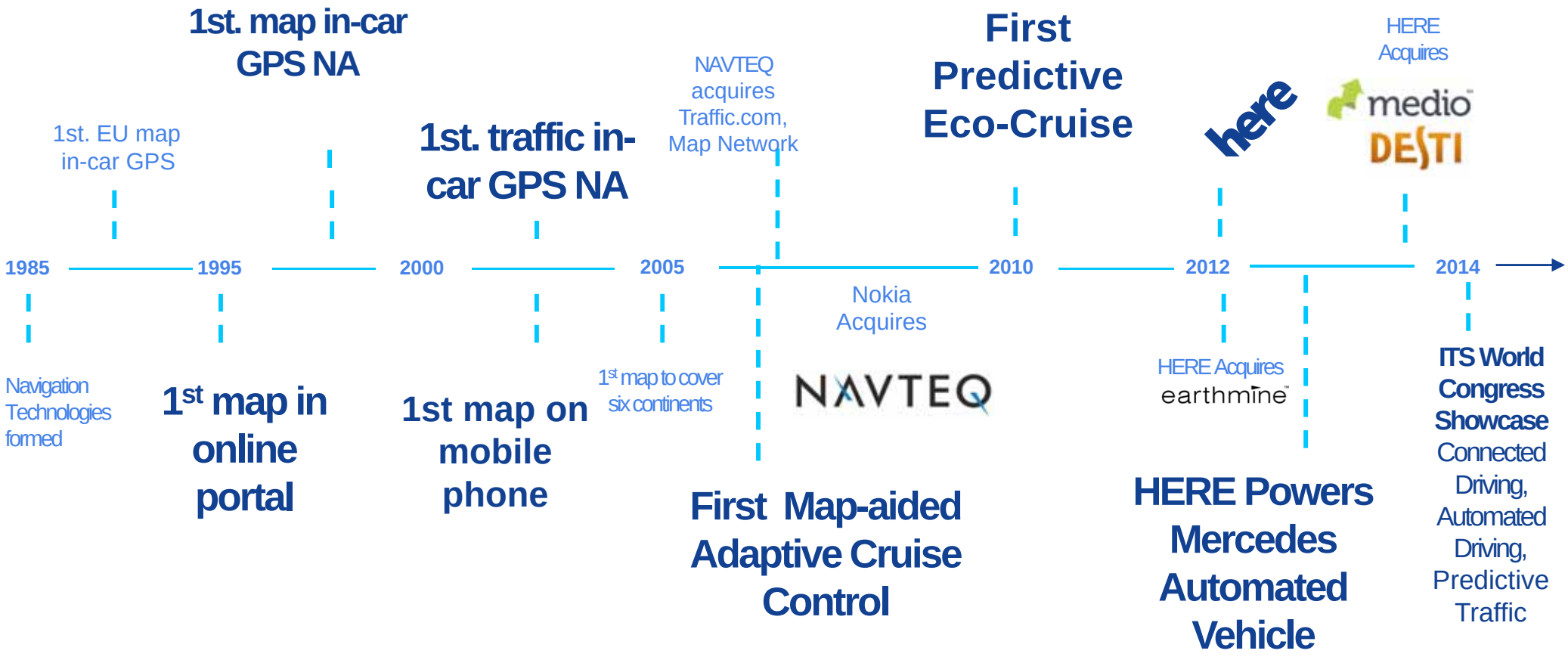
HERE Traffic Visualizing Big Data for Performance Management

Mike Finn
HERE Connected Driving

HERE's innovation leadership spans three decades



Data, data, data

Where does it all come from?

HERE collects real-time prob from a variety of sources

- **Connected Cars**
- **Mobile Devices**
- **Portable Navigation**
- **Commercial Fleet**
- **Sensors**

HERE Processed
>**650** billion probe points
in real time in 2014

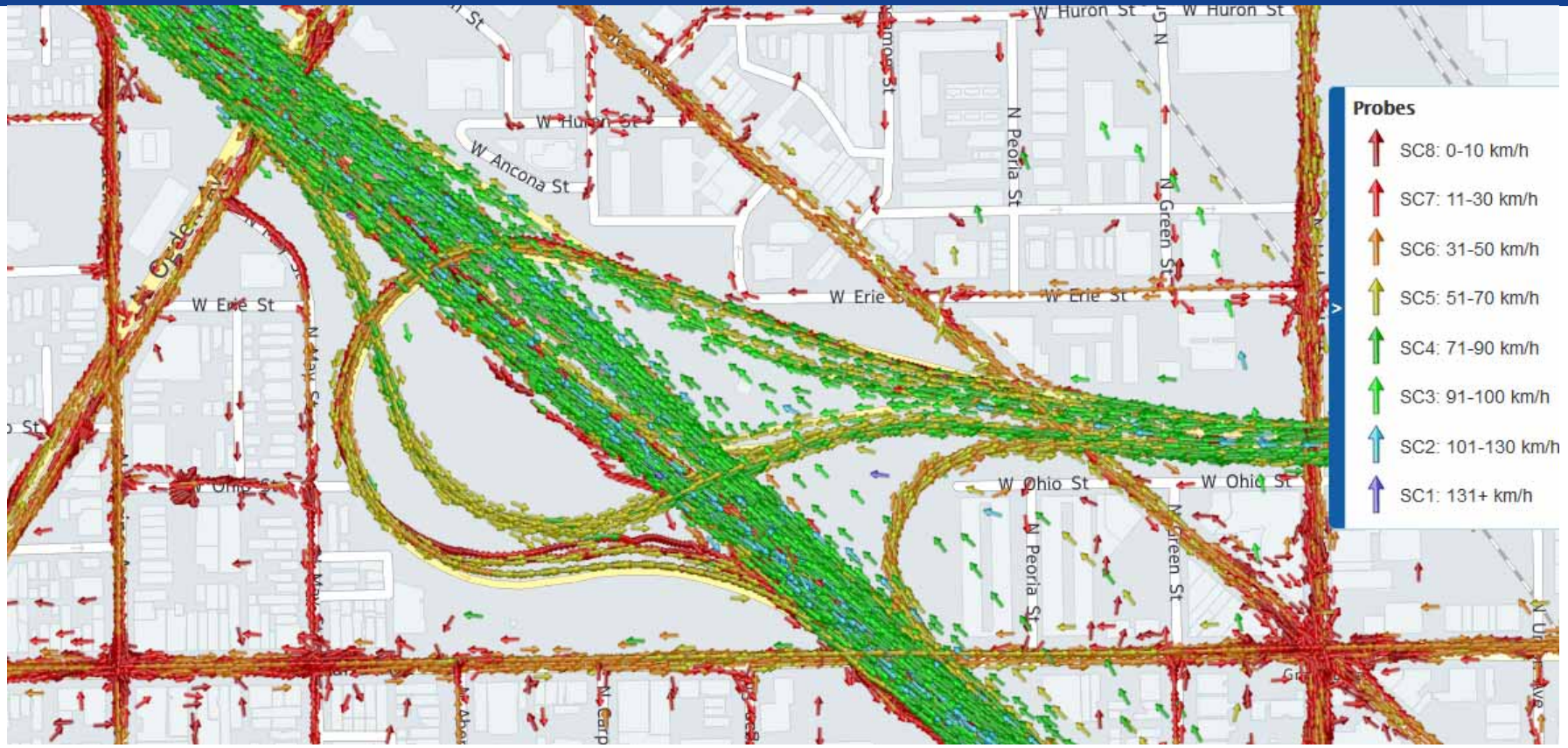
Exponential growth continues

Probe Data

Sample view of Chicago Loop

Probe Data

Sample view of I-90 and Ohio St interchange



Big Data turned into Useful Information: HERE Traffic

HERE Real Time Traffic

Continuous Dynamic Traffic Information, providing up to the minute data for 44 countries

- Real-time speeds and travel times
- Real-time incidents (accidents, construction)

HERE Advanced Analytics

Traffic Analytics

New

- A rich dataset of daily historical traffic speed and statistical information
- Sliced and diced on demand

NPMRDS

- Un-modeled research data set

Traffic Patterns

- Typical speeds & travel times by day/time based on historical data

HERE Predictive Traffic

New

Modeled real-time traffic forecasts for future time slots to help drivers, fleets, and road network operators make better decisions.

- Forecasted speeds and travel times
- 12 hours into the future

Data enables powerful solutions for transportation management

Multi-Modal Guidance
enable comprehensive real-world maps built to galvanize travel, transport, safety and security of the system

Real-time and Predictive Information
enable accurate, insightful real-time traffic services and data

Analytics and Performance Measurement
enable easy access and integration of maps, traffic, incidents, to assess network performance

Connected and Automated Vehicles
offer next wave of mobility and safety enhancement

Traffic Analytics

New

- A rich dataset of daily historical traffic speed and statistical information
- Sliced and diced on demand

1. Tell your story using a data driven approach
2. Show and prioritize where investment is needed
3. Quantify and measure network performance

here

Traffic Analytics

User defined historical data sets for performance measurement

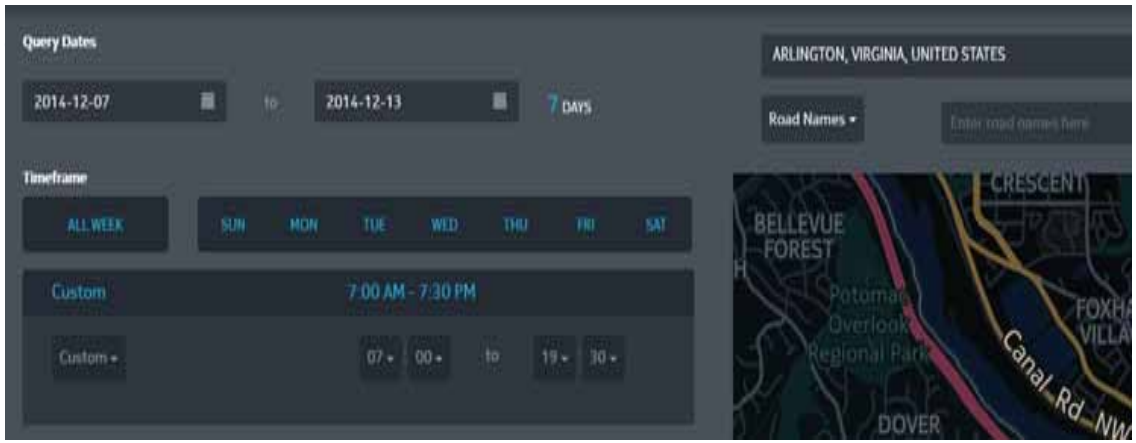
A rich dataset of daily historical traffic speed and statistical information

Traffic Analytics

User defined historical data sets for performance measurement

A rich dataset of daily historical traffi speed and statistical information

Slice and dice on demand by user preferences (date/time, location, resolution, modeling)



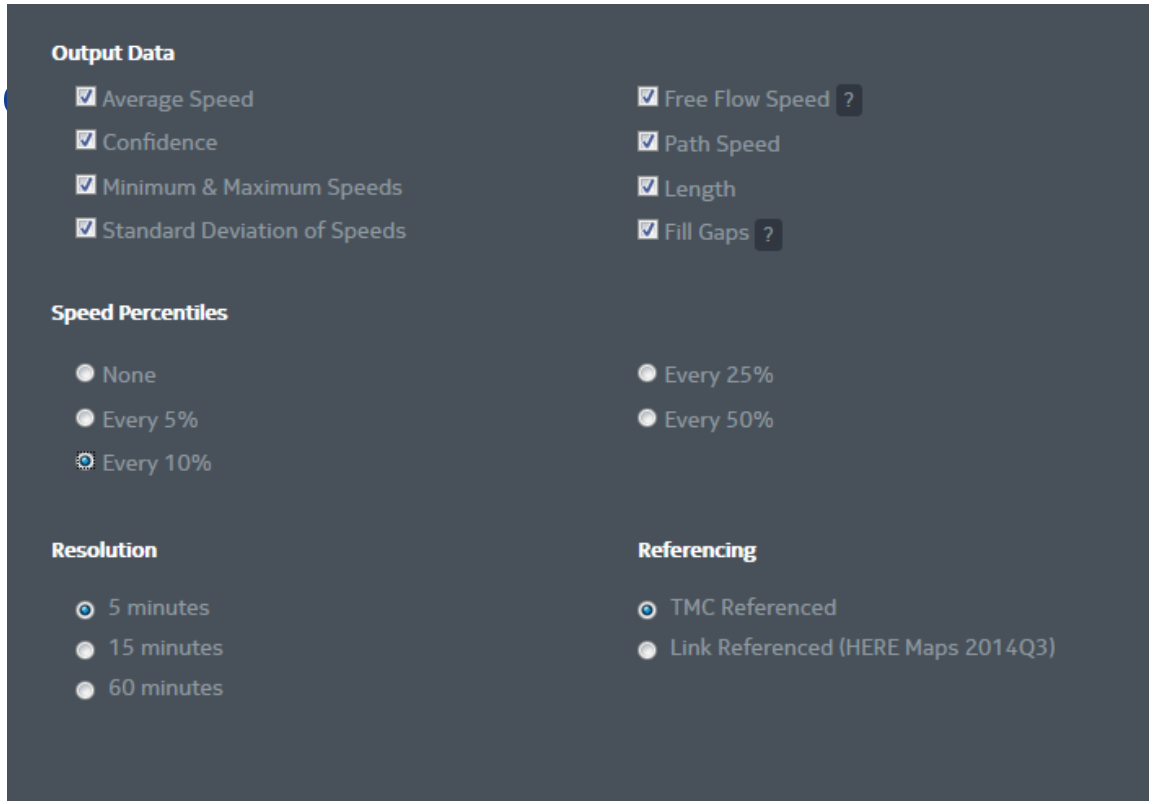
Traffic Analytics

User defined historical data sets for performance measurement

A rich dataset of daily historical traffi
speed and statistical information

Slice and dice on demand by user preferences (date/time, location, resolution, modeling)

Includes analytical details such as percentiles, standard deviation, gap filling and more



Traffic Analytics: Benefits over existing options

- More Data: All Roads. More Probes.
- Consistency over Time
- Granularity: Smallest road segments.
- Flexibility: Data constructed by user preferences.
- Usability: Manageable and customizable data sets.

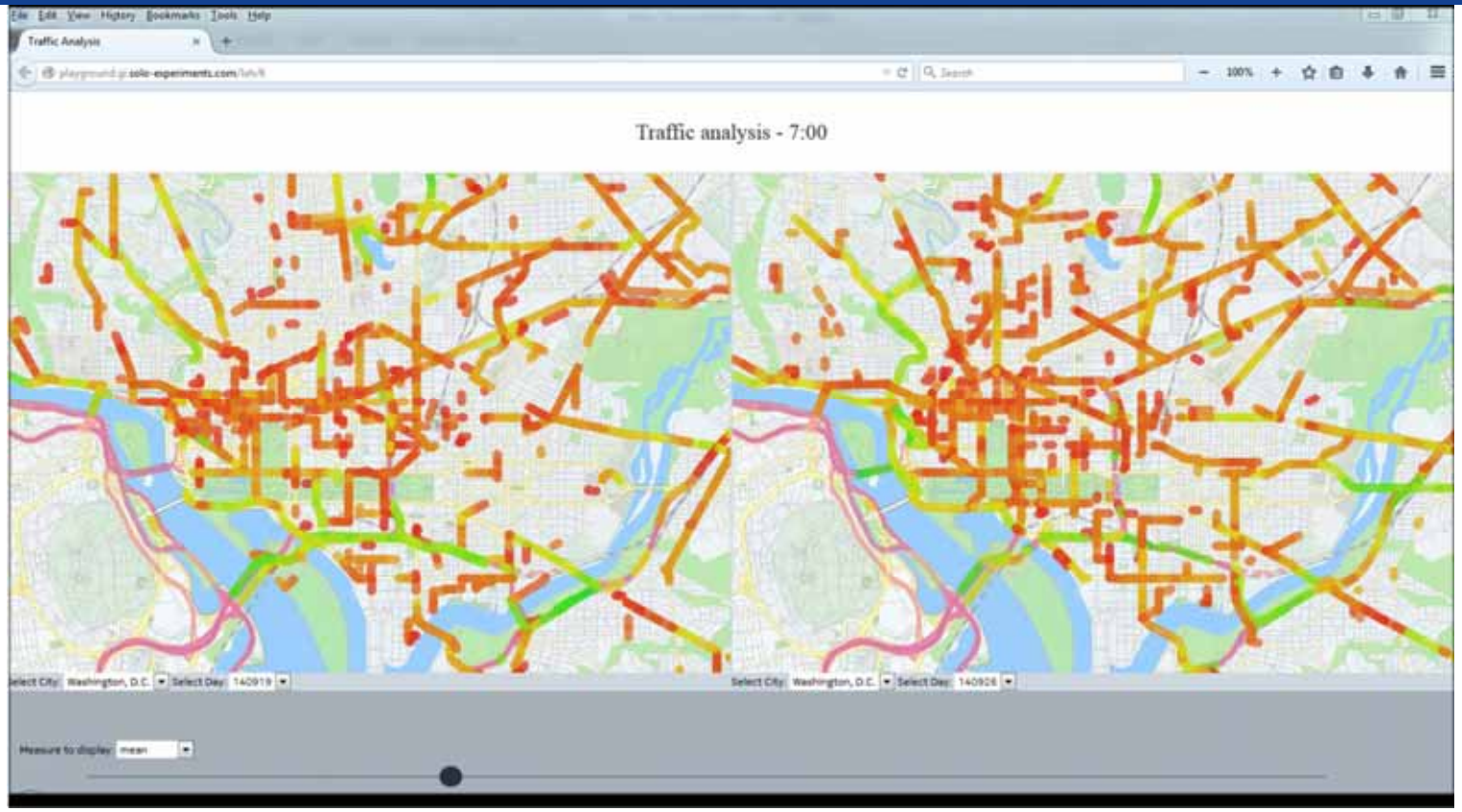
Traffic Analytics

Data can be visualized and analyzed for a number of use cases

- Analyze network performance
- Assess work zone impacts
- Before and after analysis of construction projects
- Demonstrate network operational improvements completed or needed
- Compare seasonal impacts on traffic

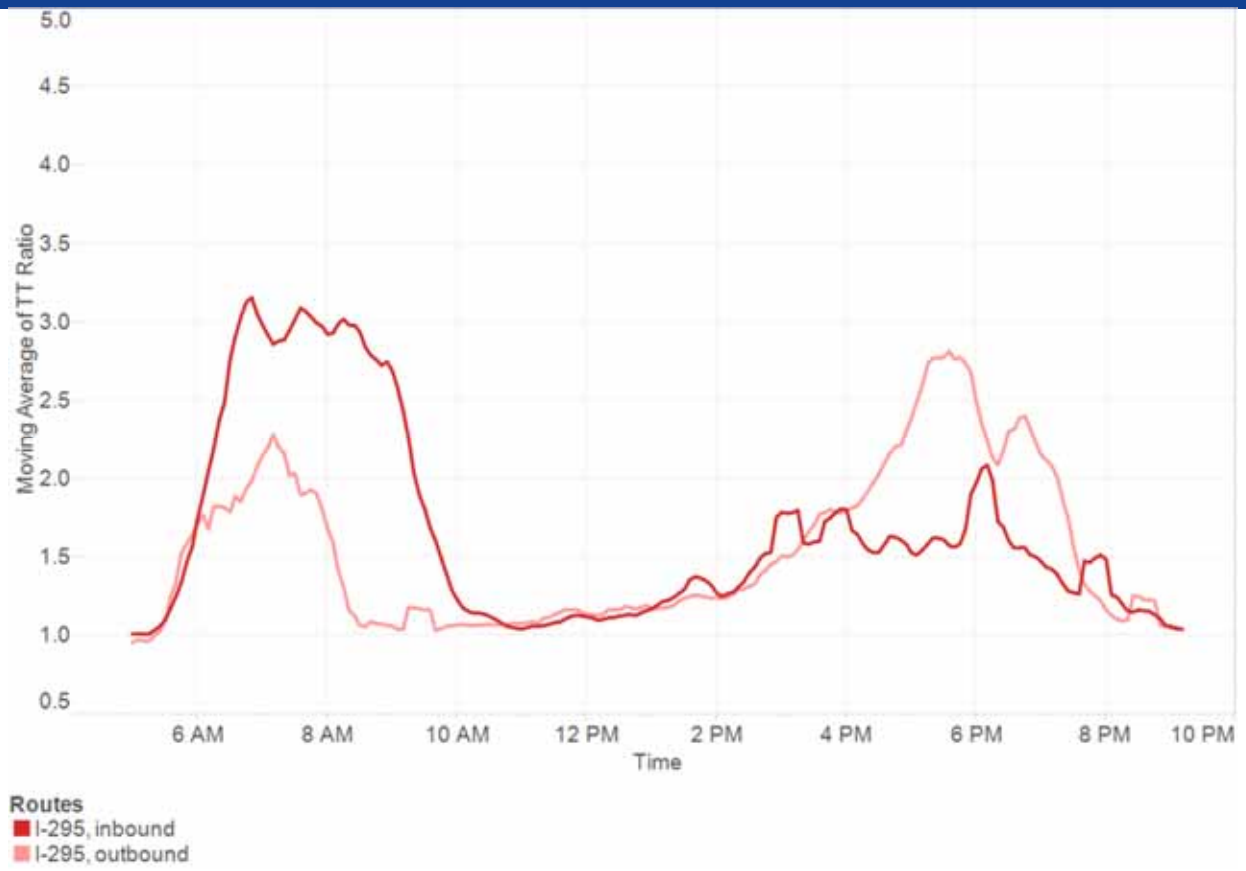
Traffic Analytics

Analyze network performance



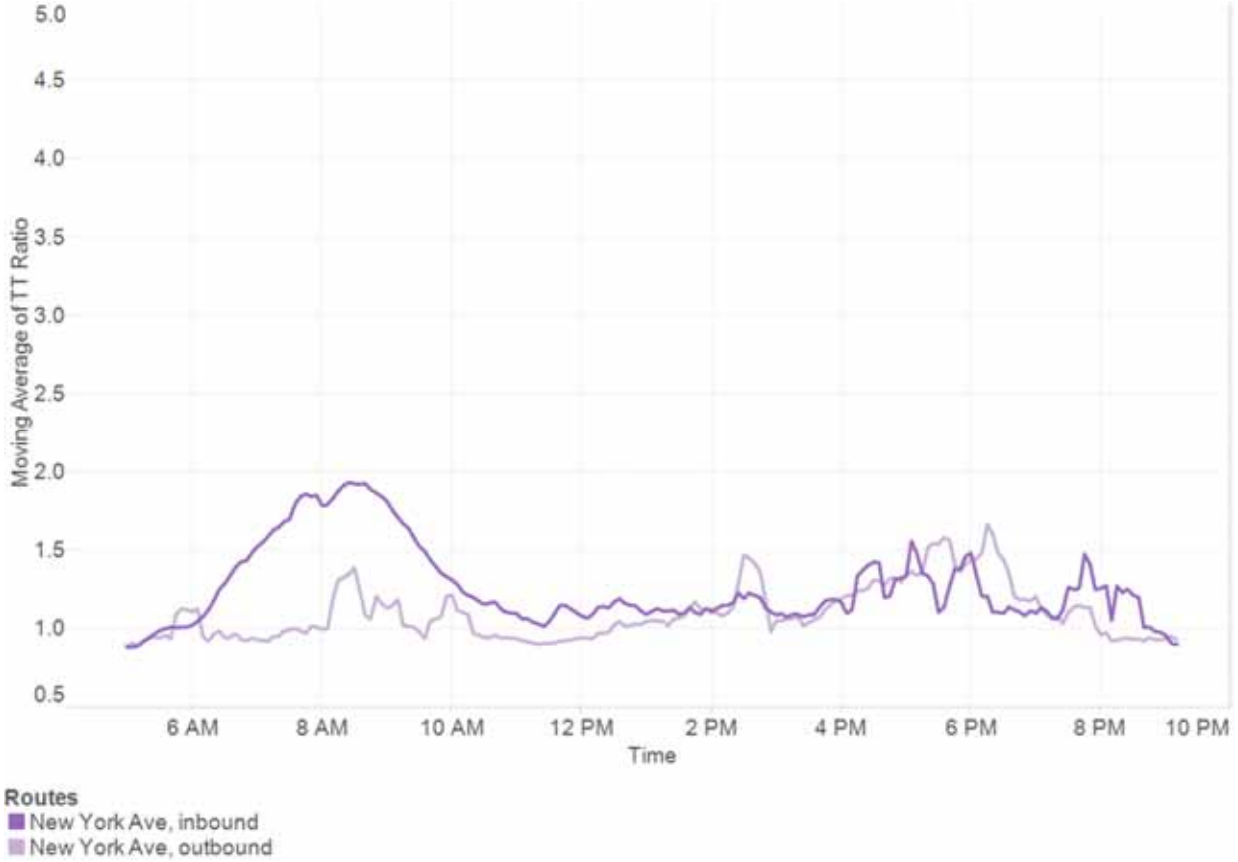
Traffic Analytics

Analyze network performance



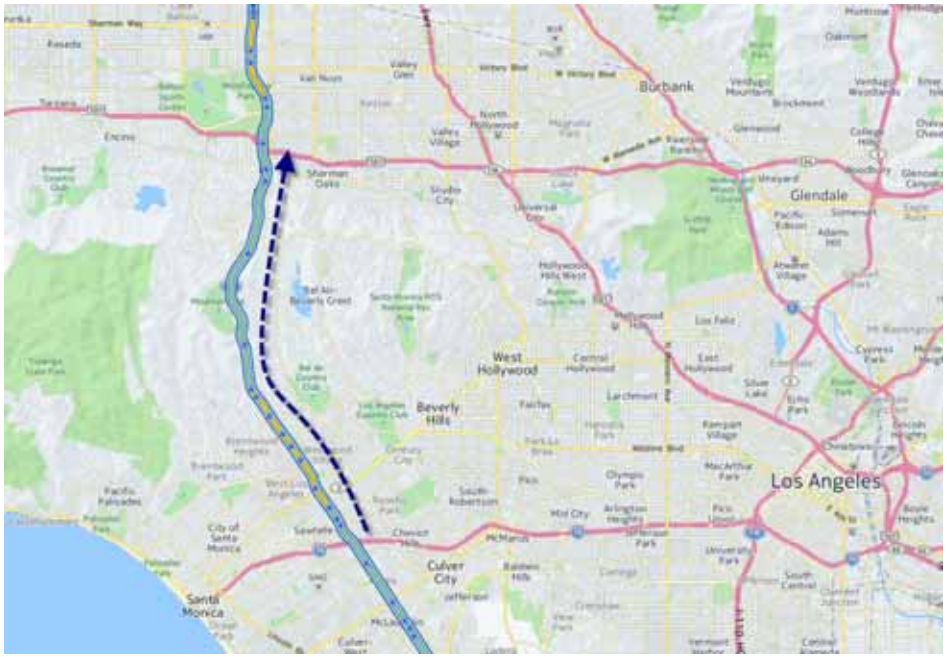
Traffic Analytics

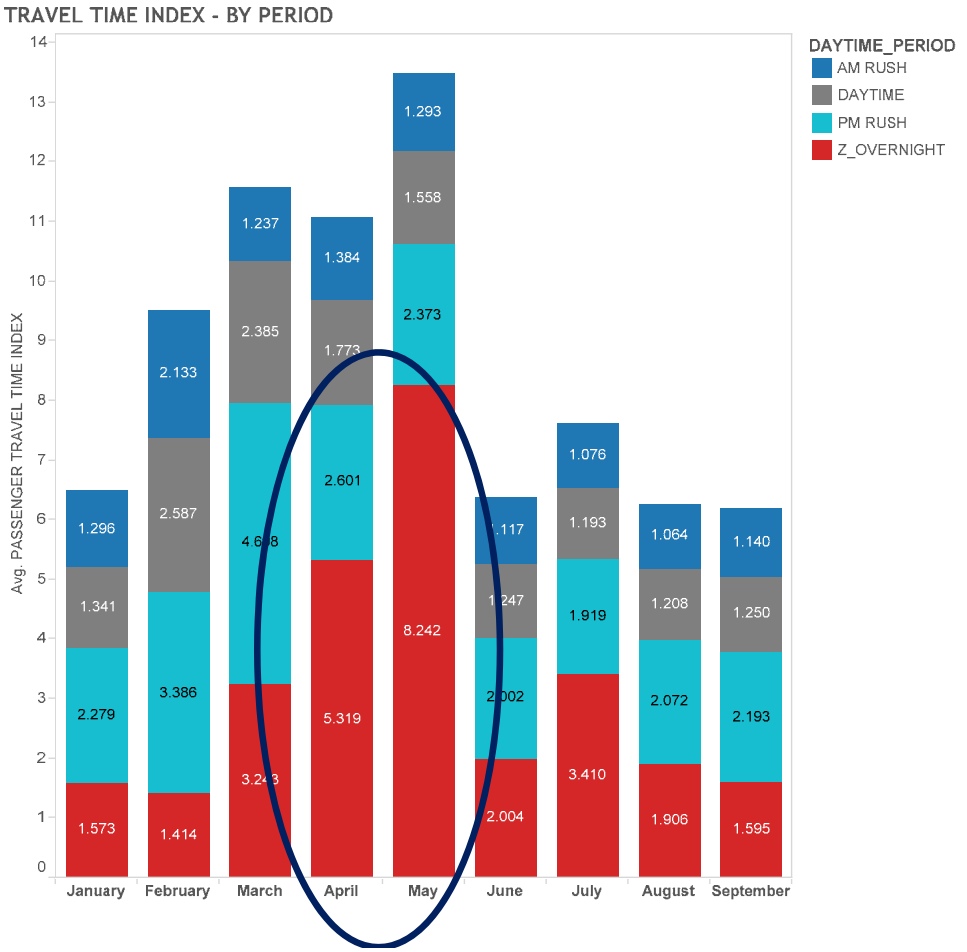
Analyze network performance



Traffic Analytics

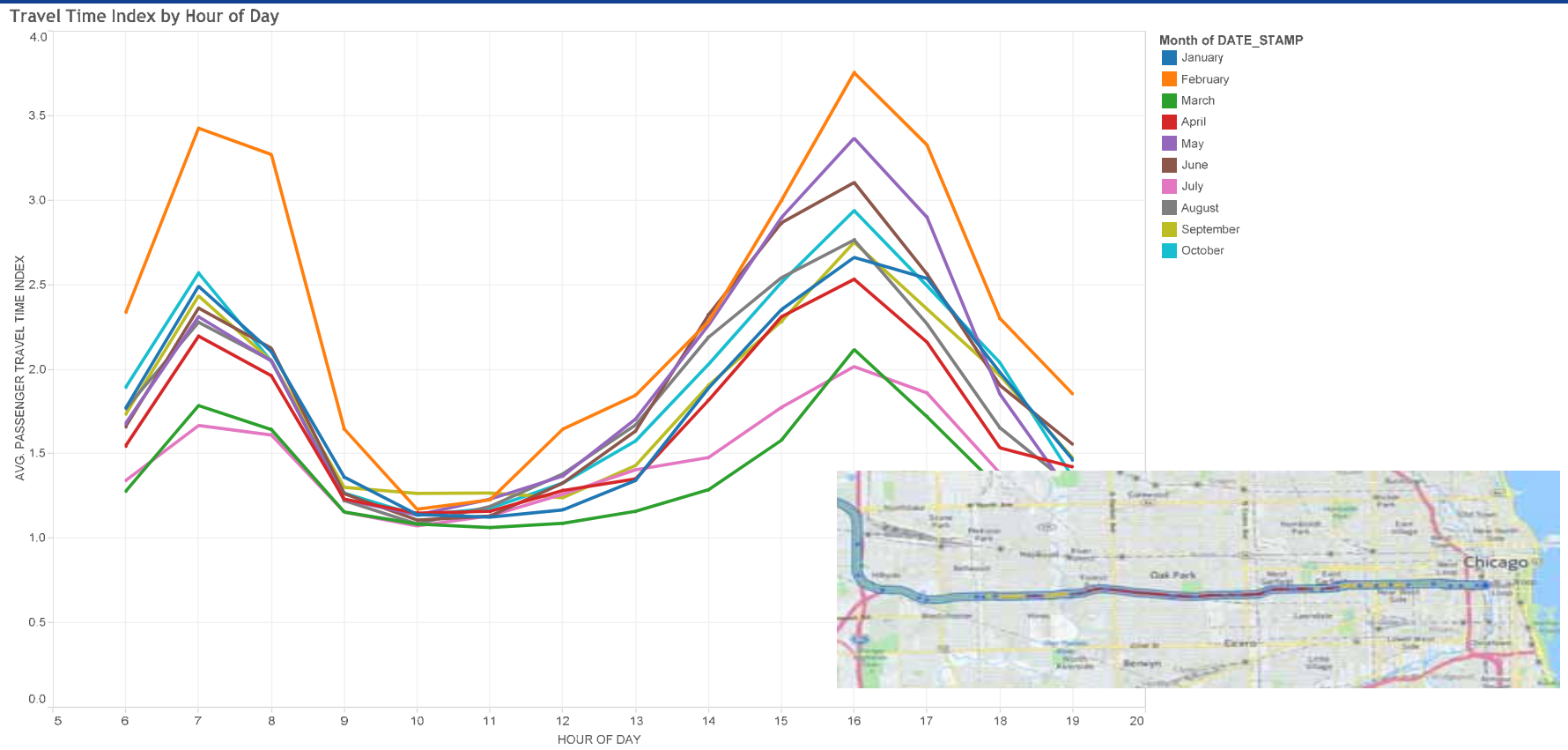
Assess work zone impacts



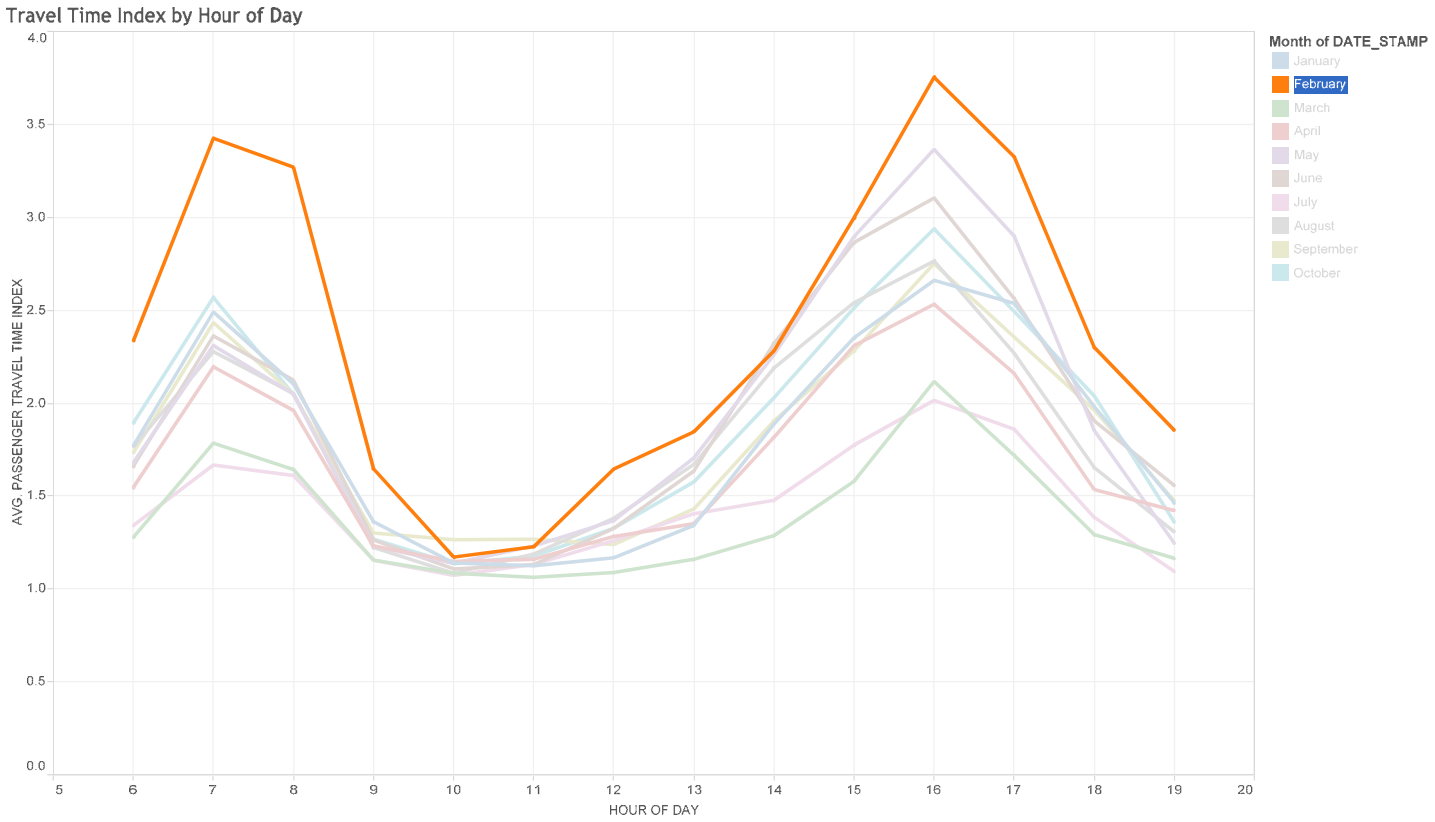


Traffic Analytics

Compare seasonal impacts on traffic



Decipher travel patterns throughout the month or season



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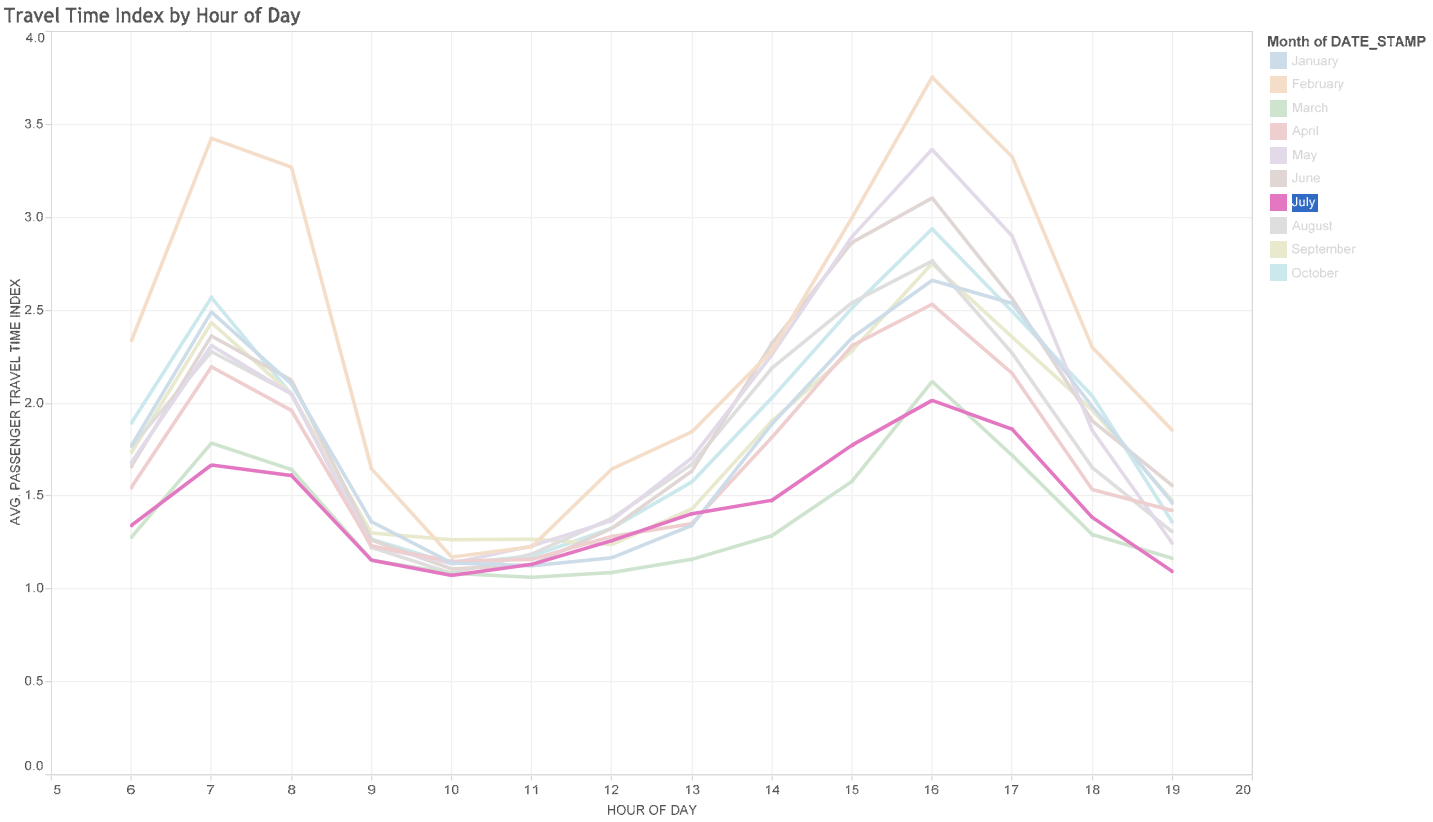
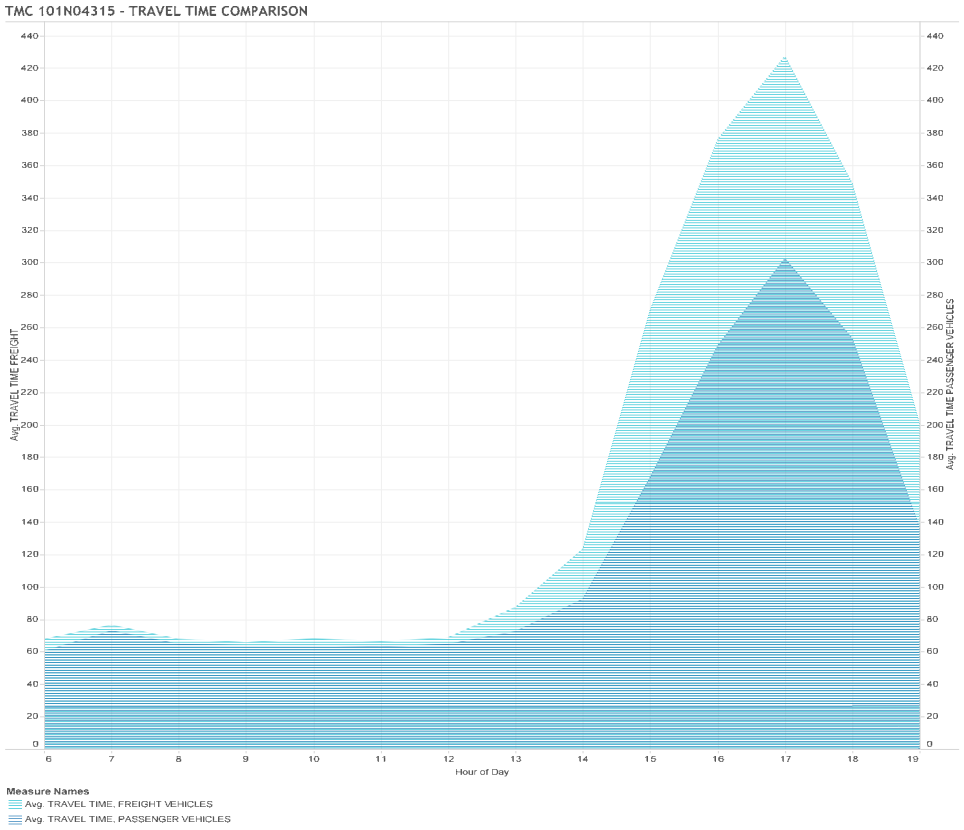


Traffic Analytics

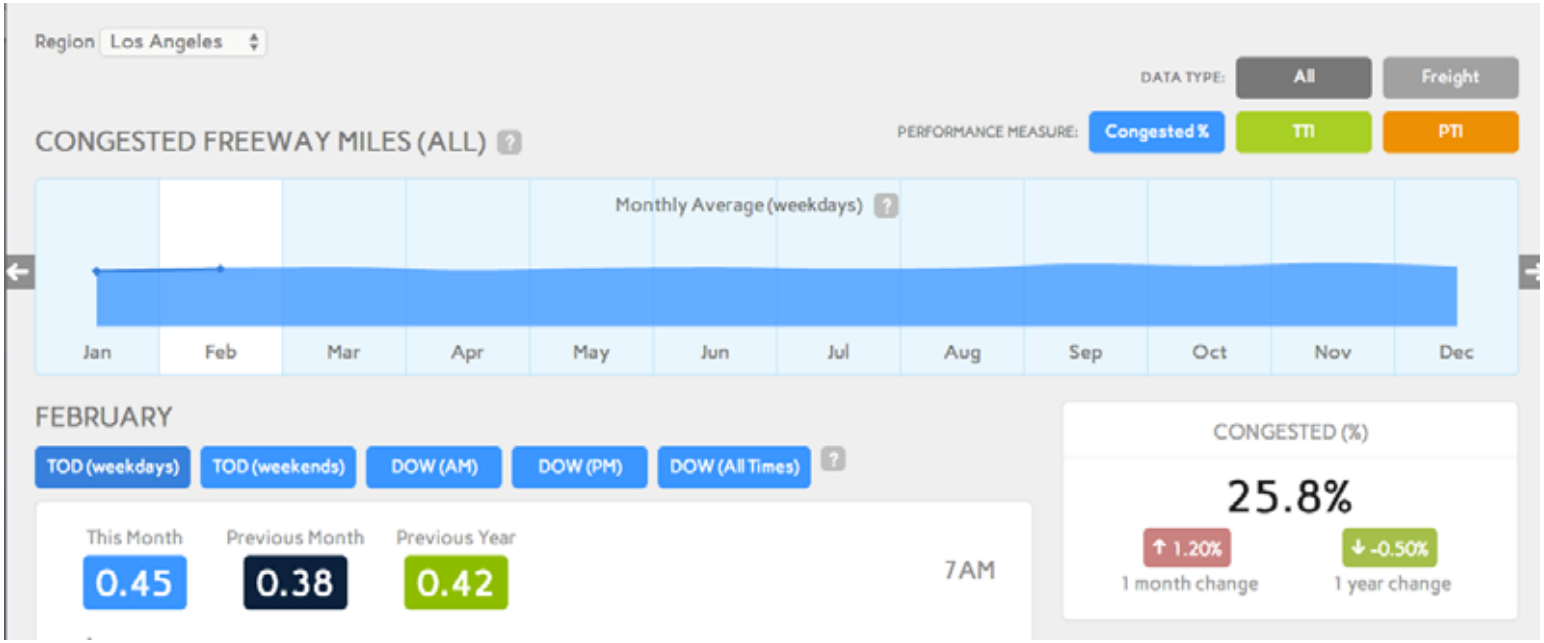
Compare travel times across passenger and freight

- I-285 EB approaching I-85 on North side of Atlanta



Traffic Analytics

Partner applications - Iteris



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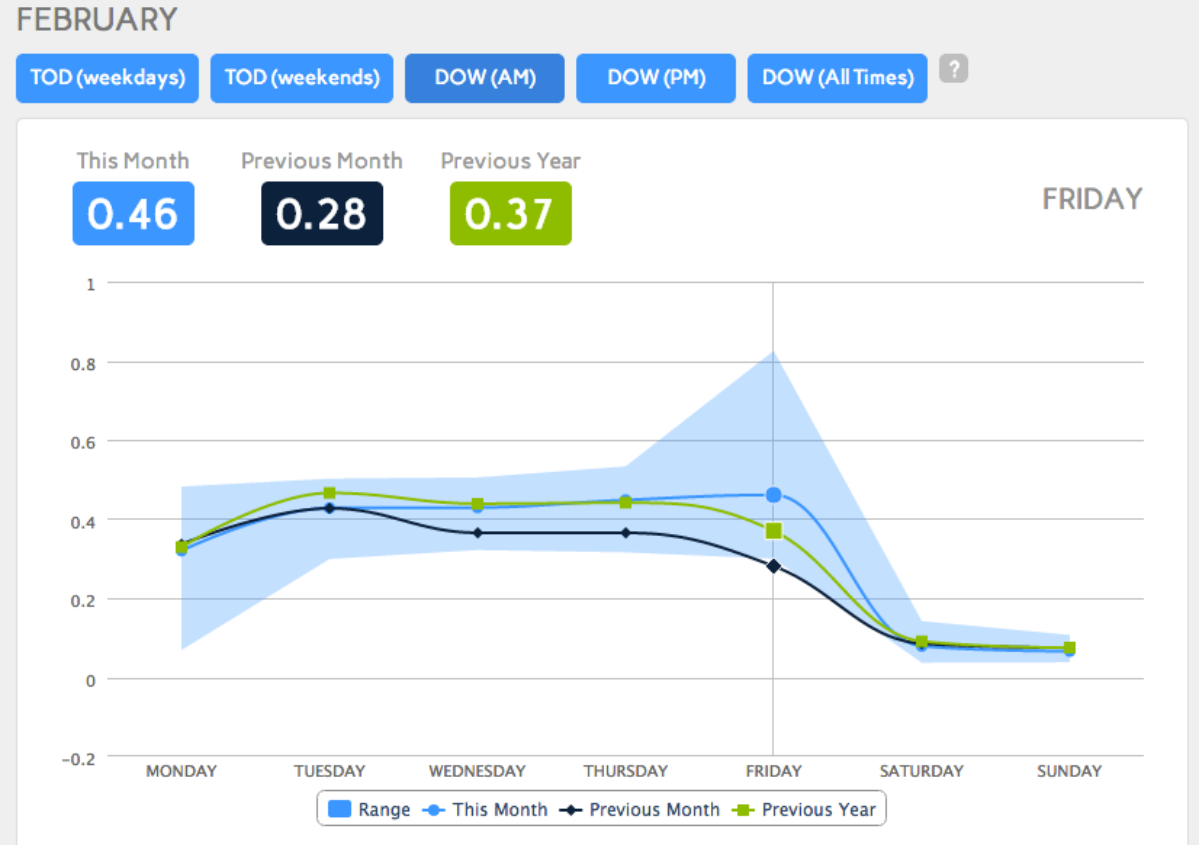

Data enables powerful solutions for transportation management

Automotive and Mobile Navigation

Traveler Information Applications

Performance & Operations Management

Enterprise and Fleet Optimization

here

Thank you!