



Towards smarter traffic management

Utilizing historic and real-time data from HERE to overcome traffic management and planning challenges

Table of contents

Empower decisions with data _____	3
In this eBook _____	4
Did you know? _____	5
Traffic operators face real-time challenges _____	6
How HERE enhances operational capabilities, in real time _____	7
Transportation planners need reliable data _____	8
How HERE helps analyze past traffic flow and trips _____	9



Empower decisions with data

Rising urbanization and upward of a billion vehicles in operation across the world have brought unprecedented levels of traffic and congestion to our major towns and cities.

Governments and departments of transport are battling to ensure their region's economy, safety, and environment aren't negatively impacted by increased pressure on their road networks.

On the frontline are the traffic operators and planners. Every day, they face complex challenges as they attempt to improve traffic flow, minimize incidents, and unearth solutions to network issues.

If they can be helped to overcome these challenges, the task of moving people and goods safely and efficiently through an urban area could be simplified.

As the foremost global provider of traffic incident information, HERE is well-placed to help. In fact, it already provides access to real-time, predictive, and historic traffic flow and incidents data to help governments across the world improve the operation of their road networks.

Implementing transformative technology can improve critical decision-making and help transport authorities enhance the management and future operation of their road networks.



In this eBook

We'll examine common challenges faced by traffic operation managers and planners across the globe as they battle to keep their populations safe and on time.

We'll then look at the way in which a supply of high-quality traffic data can start to alleviate many of these challenges.

We'll also explore the rich set of features available through HERE's suite of traffic data products and see how each can play a role in helping to improve decision making across a transport authority.

Did you know Ovum ranks HERE as the world's leading location platform?

In the latest edition of its Location Platform Index: Mapping and Navigation report, Ovum assessed 14 major location platform vendors, ranking them according to mapping, technology, and reach across developer communities and industries.

For the first time, HERE Technologies was placed higher than Google in the overall ranking. Ovum highlighted progress HERE made in high-definition and indoor mapping, as well as its introduction of new technology supporting secure and efficient over-the-air delivery of software and data.

[Go here for more information](#) ▶

... And Counterpoint named HERE the “undisputed leader” in location-based services.

The 2018 Counterpoint Research Location Ecosystems Update compared 16 location platform vendors, including Google, TomTom and Mapbox.

Counterpoint recognized HERE's progress in strengthening its developer offering, analytics and location intelligence capabilities.

[Go here to read more](#) ▶

Traffic operators face real-time challenges

The daily aim of every traffic operation manager is to optimize traffic flow, ensure a high level of safety, and keep congestion to a minimum across their road network. Of course, days have a habit of rarely running as desired and, as such, an operations manager needs to be alive to potential disruption.

Incident response

One of the principal challenges faced by a network operations manager is incident management. This can be broken into two main parts: becoming aware of an incident at the earliest possible moment and then overseeing the response. The time and manner in which incidents are managed can have significant bearing on safety, congestion, and the well-being of road users. It's therefore vital that information is highly accurate and as fresh as possible, so that the right decisions can be taken in a timely way.

Monitoring and coordination

If your task is to manage a road network in real time, monitoring all the elements that can impact performance takes on critical importance.

This can mean oversight of multiple sources of information - traffic sensors, distress calls, video feeds, social media – and then, dependent on the situation, coordinating with officials and outside agencies for an appropriate response. Reliable traffic flow information is a fundamentally important tool for an operations manager. With good quality data detailing truths from their roadways, managers can oversee construction and maintenance zones in almost real time, prevent bottlenecks turning into critical congestion, and quickly establish when and where incidents occur.

How HERE enhances operational capabilities, in real time

Data and technology that helps managers understand the dynamics of their transportation system can boost safety and reduce congestion before it becomes critical.

HERE Real-Time Traffic delivers up-to-the-minute information to road network operators about traffic conditions and incidents that could cause delays, including slower than normal traffic flow, road works, and accidents.

Traffic Flow and Incident content is created through a combination of journalistic data and human resources. It's delivered with optimized data consumption and uses automotive grade probes to provide a traffic service to rival those used by drivers through smartphone applications.

HERE Real-Time Traffic is used by a range of transportation agencies to:

- ▶ Manage roadways by viewing up-to-date and accurate areas of congestion
- ▶ Provide travel times on roadway dynamic message signs
- ▶ Report on performance measurements such as reliability and travel times
- ▶ Warn about live event occurrences, such as road closures or unusual conditions

Our traffic feed provides sub-TMC granularity and is updated every 60 seconds from billions of GPS probe points, road sensors, and connected vehicles.

- ▶ HERE Real-Time Traffic is the first traffic service that updates the direction of traffic flow on metropolitan reversible express lanes
- ▶ HERE Real-Time Traffic is the first service to deliver a live depiction of road conditions based on aggregating the rich sensor data from multiple car brands' connected vehicle fleets
- ▶ HERE Real-Time Traffic utilizes archived data to deliver an accurate, comprehensive average traffic speed information
- ▶ In addition to immediately processing data, HERE captures detailed sets for further analysis

By making use of Real-Time Traffic, transportation agencies can empower operations managers to:

- ▶ Assess incidents in real-time and provide immediate response
- ▶ Receive real-time information on the road situation to avoid lasting bottlenecks
- ▶ Make use of traffic flow content to show congestion and speeds on roadways (this content is enhanced with vehicle probe data to bring greater accuracy)
- ▶ Gain sight of all levels of traffic - including all levels on off-TMC roads



Transportation planners need reliable data

The fundamental purpose of transportation planning is to help implement programs that reduce congestion and incidents across a road network – but planning and suggesting road network improvements can be littered with challenges.

Not least amongst them is the need to ensure the accuracy and reliability of data used to determine expensive schemes of work.

Reliability

Without a reliable source of traffic data, planners can be limited by the difficulty, time and expense of conducting studies that may only ever return a narrow scope of information.

Planners lacking reliable data taken from real events that unfold across the network could be unable to take fully-informed decisions about how best to expand their networks.

Granular data

Access to granular historical traffic information that makes use of large volumes of probe and sensor data from multiple sources can improve road infrastructure development and help inform new road safety schemes.

By utilizing high-quality maps and rich historical traffic data, planners can also overcome the challenge of establishing baseline ‘normal’ road conditions. This will help them better understand the impact of incidents and closures - and also help them generate reliable travel metrics.

How HERE helps analyze past traffic flow and trips

HERE Traffic Analytics is a suite of data products that helps governments and transportation agencies make informed decisions about future traffic flow management by using historical road traffic data.

The data from this suite of products – including Speed Data and Trip Data – enable deep insights into historic and comparative traffic flow and road network performance.

Speed data

Vehicle speed and analytic information is taken from a database of trillions of GPS probe data points. It enables customized traffic analysis through enterprise and government applications. Using speed data, organizations can accurately model the effect of planned changes on road networks and use robust statistical parameters to give realistic, actionable results.

Planners can select the area, time span, and level of statistical detail to meet a wide range of specific analytical needs. Speed Data is available for both cars and trucks.

Key speed data features:

- ▶ Data is averaged in five-minute increments and includes analytical fields such as standard deviation, min/max speeds
- ▶ Using five-minute increments, speed records are provided for every day in a year (365x24x12)
- ▶ Modeling isn't applied: to enable the best possible analysis, this is an unaltered record of what was observed
- ▶ Arterial probe path speeds increase the data available for analysis and more accurately represent arterial conditions
- ▶ Three-years of historical probe information included
- ▶ Optional gap filling feature for better compatibility with existing solutions
- ▶ HERE's patented and exclusive Split Lane Traffic feature provides lane-level precision on highways and ramps
- ▶ HERE's Reversible Express Lanes feature is the only service to report congestion on roads with changeable directions and indicate which way traffic is flowing

Trip data

Transportation agencies use this big data resource to better understand the movement of people around their cities and regions by examining the trips they take across a road network.

By analyzing where vehicles are going to and coming from, planners can better allocate costs for improvements across the networks and among the municipalities they serve.

Key trip data features:

- ▶ Counting passenger vehicles as they travel from one zone to another
- ▶ Customers supply the zone definitions (these could be Traffic Analysis Zones (TAZs), postal code zones, or census tracts) and HERE provides the counts
- ▶ Counts measured by day, month, or year - even by time of day
- ▶ Privacy is protected by aggregation algorithms
- ▶ Trip Data product includes two years of historical probe information

How Missouri DOT increases road safety

The Missouri Department of Transport uses HERE data to create several measures related to recurring congestion, work zones impact, the cost of congestion, and impacts from lane-blocking traffic incidents.

Before using HERE data, MoDOT could only report these types of impacts by completing manual drive times, or by catching an event on camera and manually tracking the impact.

How Florida DOT improves road performance

The Florida Mobility Performance Measures program includes multimodal mobility metrics pertinent to both passenger and freight vehicles reliant on assessing travel time reliability and average travel speed. To ensure the highest quality travel information, Florida Department of Transport opted to use HERE Traffic data of probe-based travel speeds in place of the modeled speeds.



Want to know more?

To assess your needs and provide the highest quality service, HERE offers a personalized consultation. Get it touch with our experts to find out more about this offer.

About HERE Technologies

HERE, the Open Location Platform company, enables people, enterprises and cities to harness the power of location.

By making sense of the world through the lens of location we empower our customers to achieve better outcomes – from helping a city manage its infrastructure or an enterprise optimize its assets to guiding drivers to their destination safely.

To learn more about HERE, including our new generation of cloud-based location platform services, visit www.here.com