Rail Crossing Information Systems: Scaling Up Insights

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TRAINFO

ITS Texas Annual Meeting
November 21, 2025

Agenda

Train Detection Systems

Scaling Up

Analytics

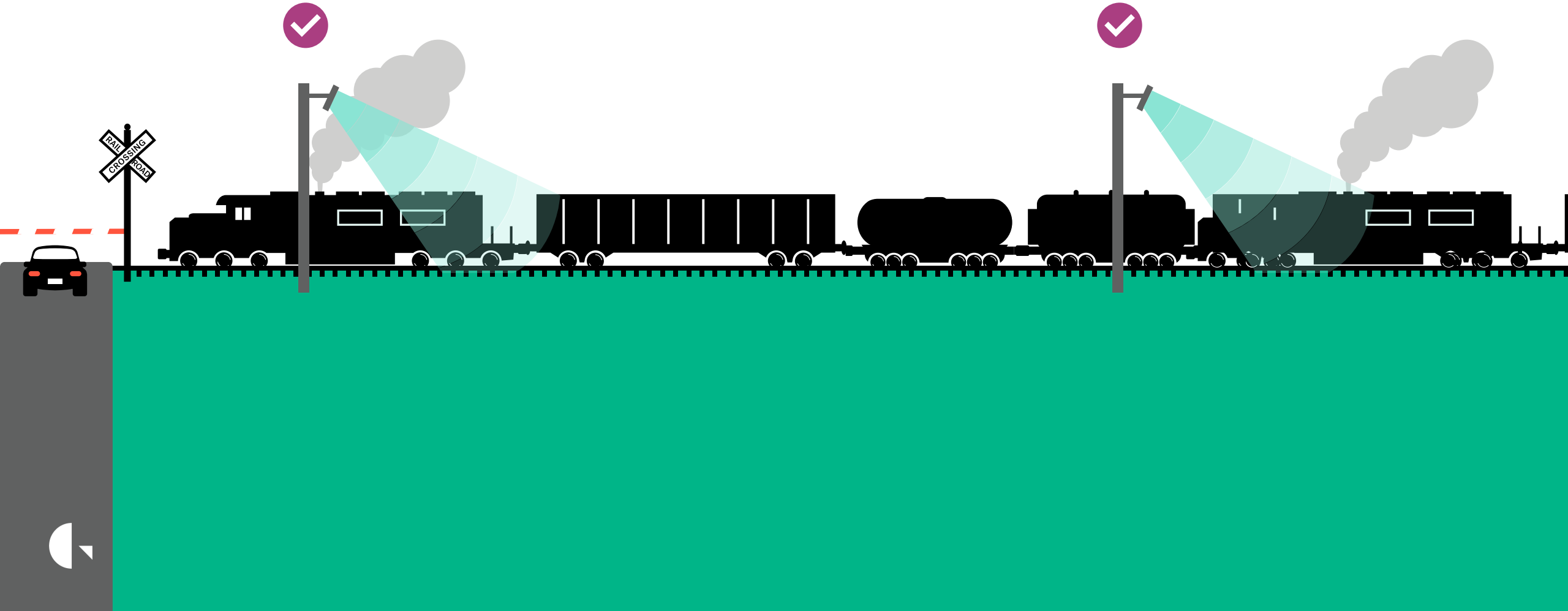
Expanded Use Cases

Train Detection Systems

Metairie Road Crossing, LA

Problem

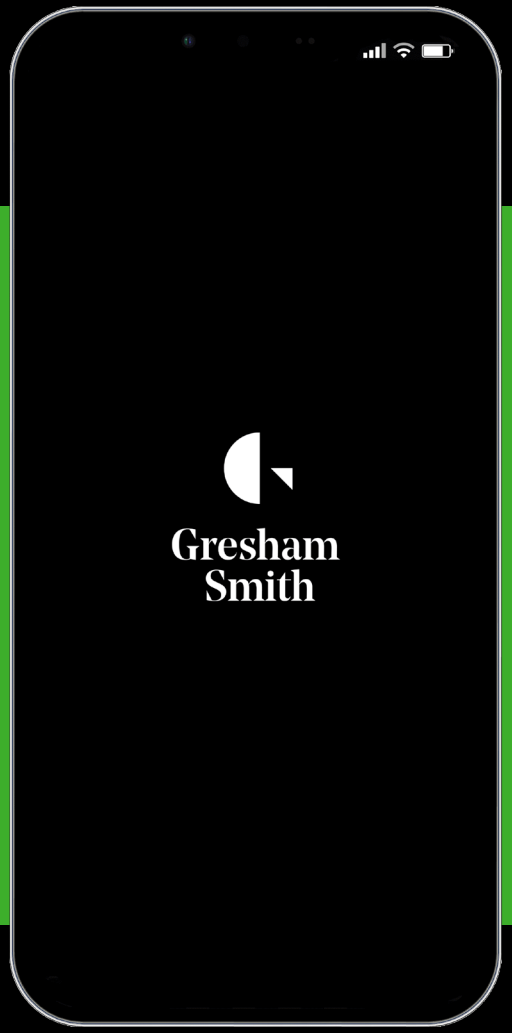
- Major Arterial Connection
- Very Active Crossing
- Limited Alternatives
- Significant Congestion
- Community Impact


RAIL
CROSSING
ROAD

MOVE METAIRIE

Tracking Forward

MoveMetairie.com



GET IT ON Google Play

Download on the App Store

Scaling Up Solutions

Helena, AL

3 of 4 crossings through Old Town (heart of the city)

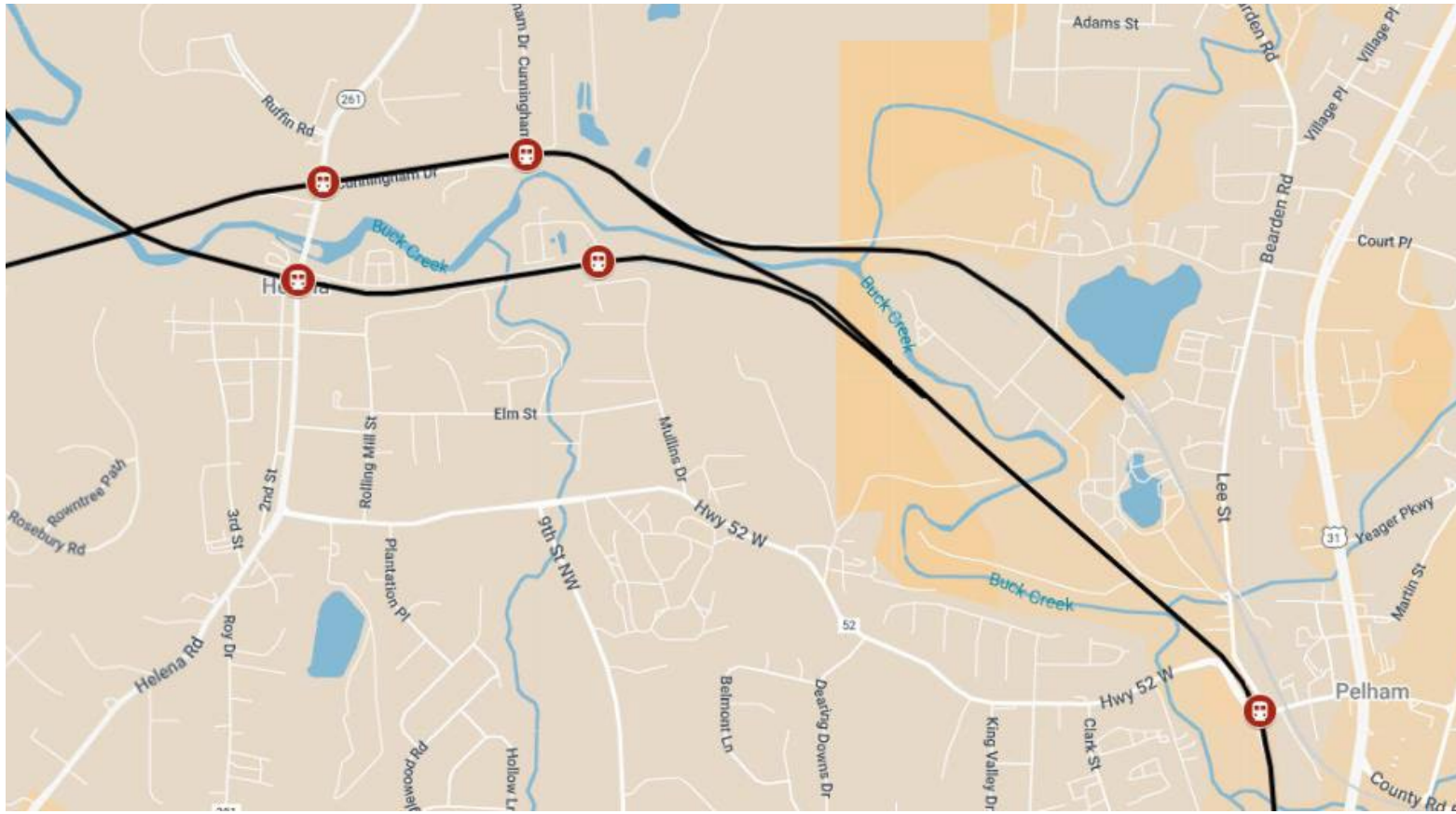
Crossings close to each other

Only one way out of the City that doesn't have an at-grade crossing

Typically

10-15

trains a day



How TRAINFO Works

We Produce Information

Train sensor in public ROW

Sensors installed within 100 ft of crossing & off rail ROW. 99.99...% Detection accuracy within 2 weeks.

Cloud-based data analysis

Classify train movements and predict blockages up to 10 minutes before train arrives

Integration into existing systems

Information delivered to traffic management centers, roadside signs, and emergency dispatchers

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TRAINFO Advantages

An end-to-end solution offering more than train detection

- ✓ Specialized train detection sensors with 99.99% accuracy that are installed *off rail property*
- ✓ Patented processes that provide train movement *predictions*
- ✓ Out-of-the-box *analytics* dashboards for transportation and 911 are used by the FRA and NAS.
- ✓ Seamless *integrations* into roadside signs, traffic management centers, mobile apps, 911 software, and more
- ✓ 24/7 remote *monitoring* and regular software updates to ensure system uptime and performance
- ✓ A dedicated rail solution engineer to provide on-going *support* and guarantee your satisfaction
- ✓ Up to *30%* reduction in congestion and collision risk & over *90%* reduction in 911 delays
- ✓ Less than *1%* of the cost of grade separation & eligible for FHWA Section 130 funding

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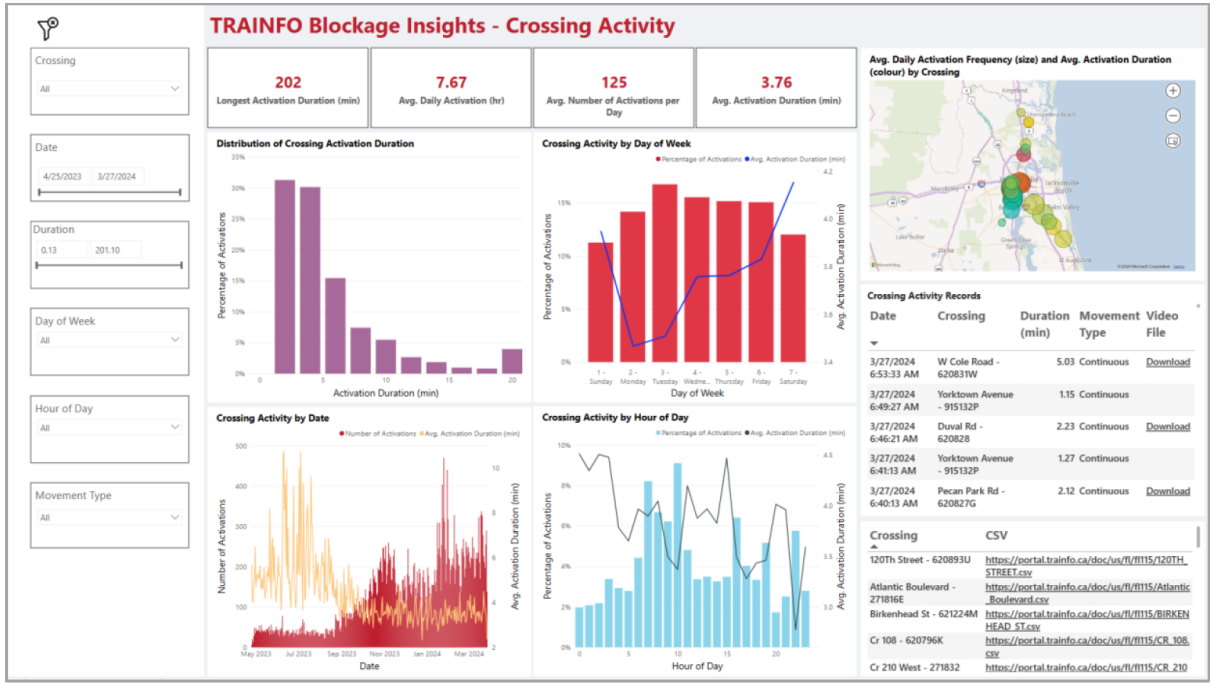
Analytics


TRAINFO Blockage Insights - Crossing Activity
7972
19.10
80
14.34
Distribution of Crossing Activation Duration
Crossing Activity by Day of Week
Crossing Activity by Date
Crossing Activity Records
Date
Crossing
Duration (min)
Movement Type
Video File
RAIL ROAD CROSSING
2 TRACKS

Congestion analytics

Interactive dashboard provides:

- Number of blockages
- Blockage duration
- Blockages due to stopped trains
- Vehicle-delay by crossing & O-D
- Queue recovery time
- Raw data download in .csv format



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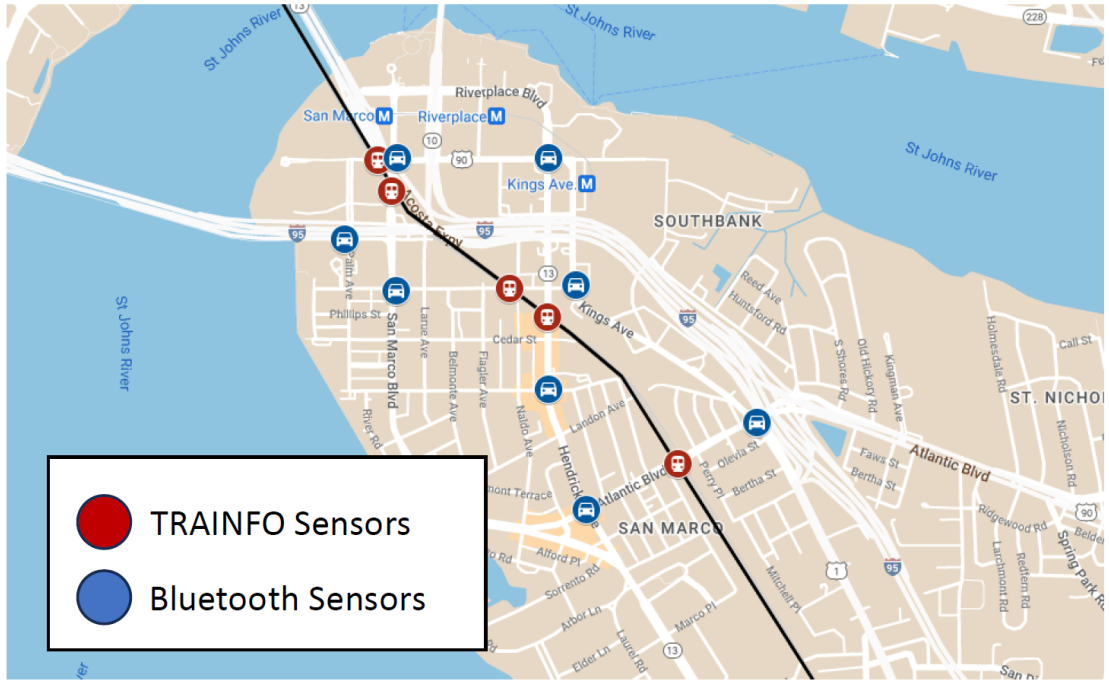
FDOT & City of Jacksonville

Problem – Data and analysis for rail projects in San Marcos

Solution - Congestion Analytics



San Marcos Neighborhood

More than 10 trains per day

Proximity of train draw bridge results in frequent stopped trains

No ability to grade separate

Proximity of interstate created complex driver OD pairs

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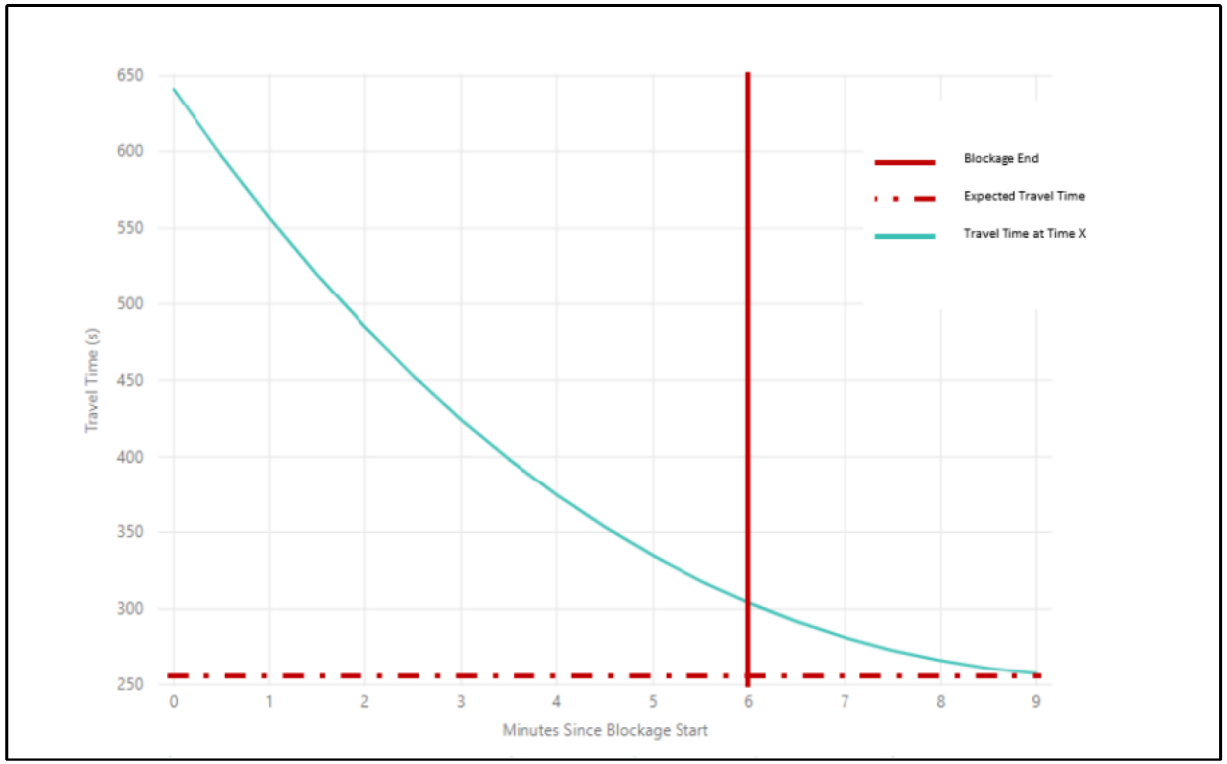
FDOT & City of Jacksonville

Traffic Delay		
Before Train Arrives	Train at Crossing	Queue Recovering

Congestion Analytics



Benefits

- Able to right size the strategy for congestion mitigation
- Improved benefit costs analysis for improvements at one crossing to support multiple crossings

Next Steps

- Address safety and congestion at more crossings
- Address first responder delays
- Address freight bottlenecks
- Support funding for grade separation projects
- Integrate into Waze and state 511
- Initiate trespassing study

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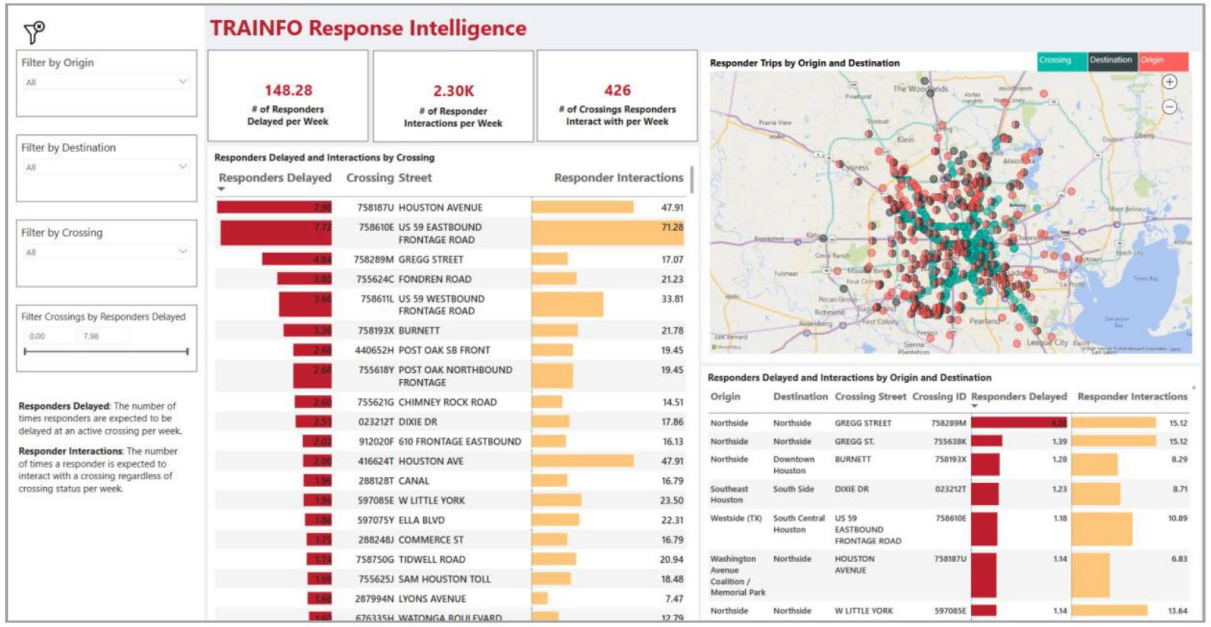
911 analytics



Interactive dashboard provides:

- Number of 911 trips crossing tracks
- Number of 911 trips delayed by train
- Data to support business cases & grant applications

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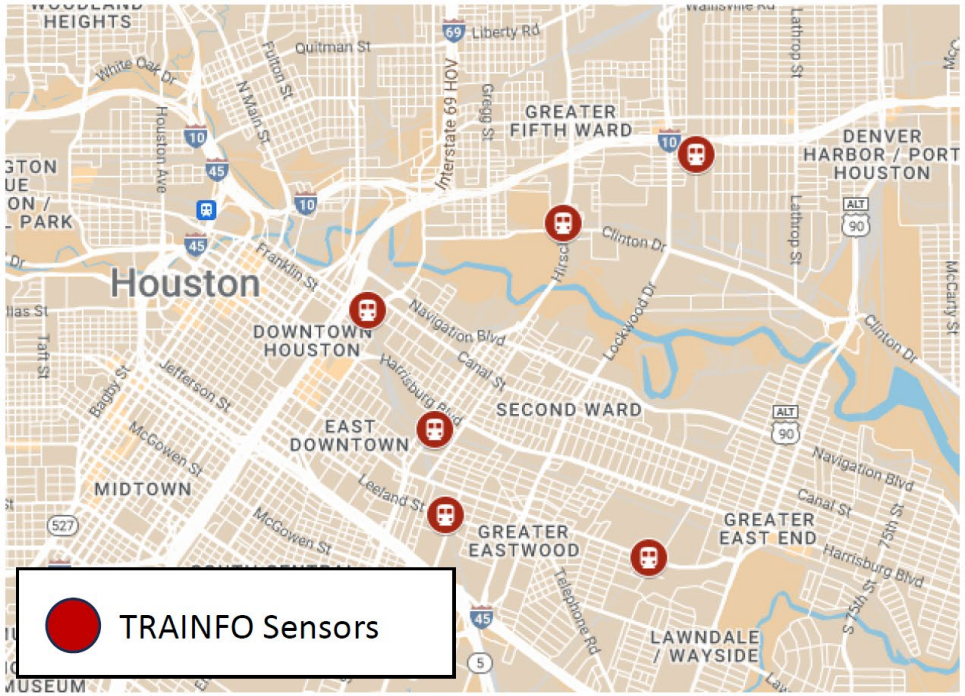
City of Houston

Problem – 911 Responder Delays at rail crossings

Solution – Crossing Prediction



City of Houston

More than 500 grade crossings

Avg. crossing experiences more than 15 trains per-day

Volume of yards and terminals results in frequent stopping and shunting movements

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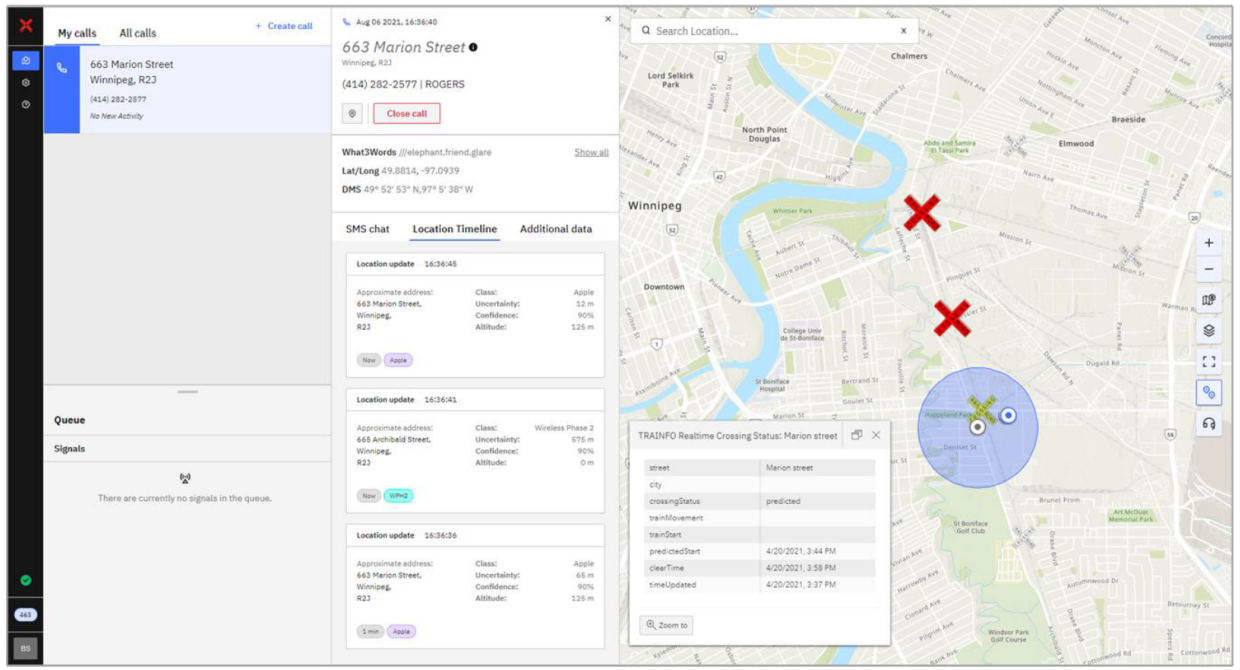
City of Houston

Traffic Delay

Before Train Arrives	Train at Crossing	Queue Recovering

Crossing Prediction



Benefits

- Dispatchers selecting units with an understanding of what's happening at crossings
- Increased fleet capacity
- 90% Reduction in responder delays
- 5-minute improvement in response times
- Quantified response time risk to support grants

Integrations – PSAP Tactical map integration

Next Steps

- Address responder delays at more crossings
- Address grade crossing safety and congestion
- Integration into Spillman CAD

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Use Case Expansion

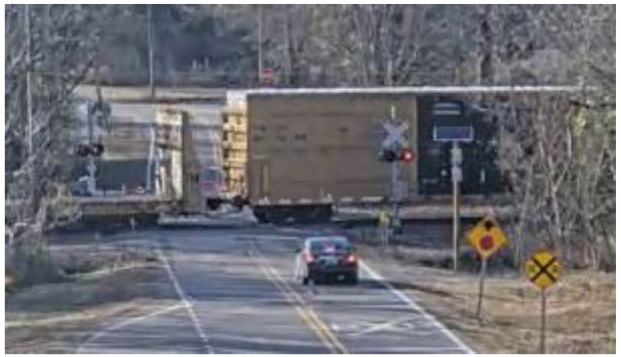
Up to **30%** decrease in congestion & emissions

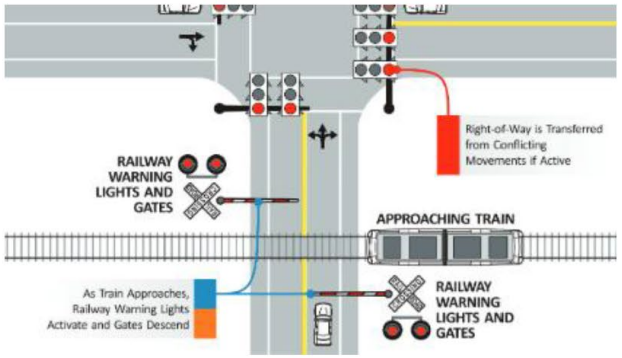
Up to **25%** decrease in collision risk

Up to **90%** decrease in first responder delays

Upcoming Features

Sensor Less Analytics





Existing cameras *– TRAINFO will consume the RTSP stream to produce grade crossing statistics*

Signal Pre-Emption *– TRAINFO will consume pre-emption from the ATMS to support congestion analysis*

Traffic Count and Travel Time Data *– Through TRAINFO's partnership with Google Maps, traffic analysis can be performed in TRAINFO Mobility*

Google Maps

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Upcoming Features

Safety Analysis

Quantify the frequency of grade crossing trespassing

Support before and after analysis for grade crossing treatments

Integrations

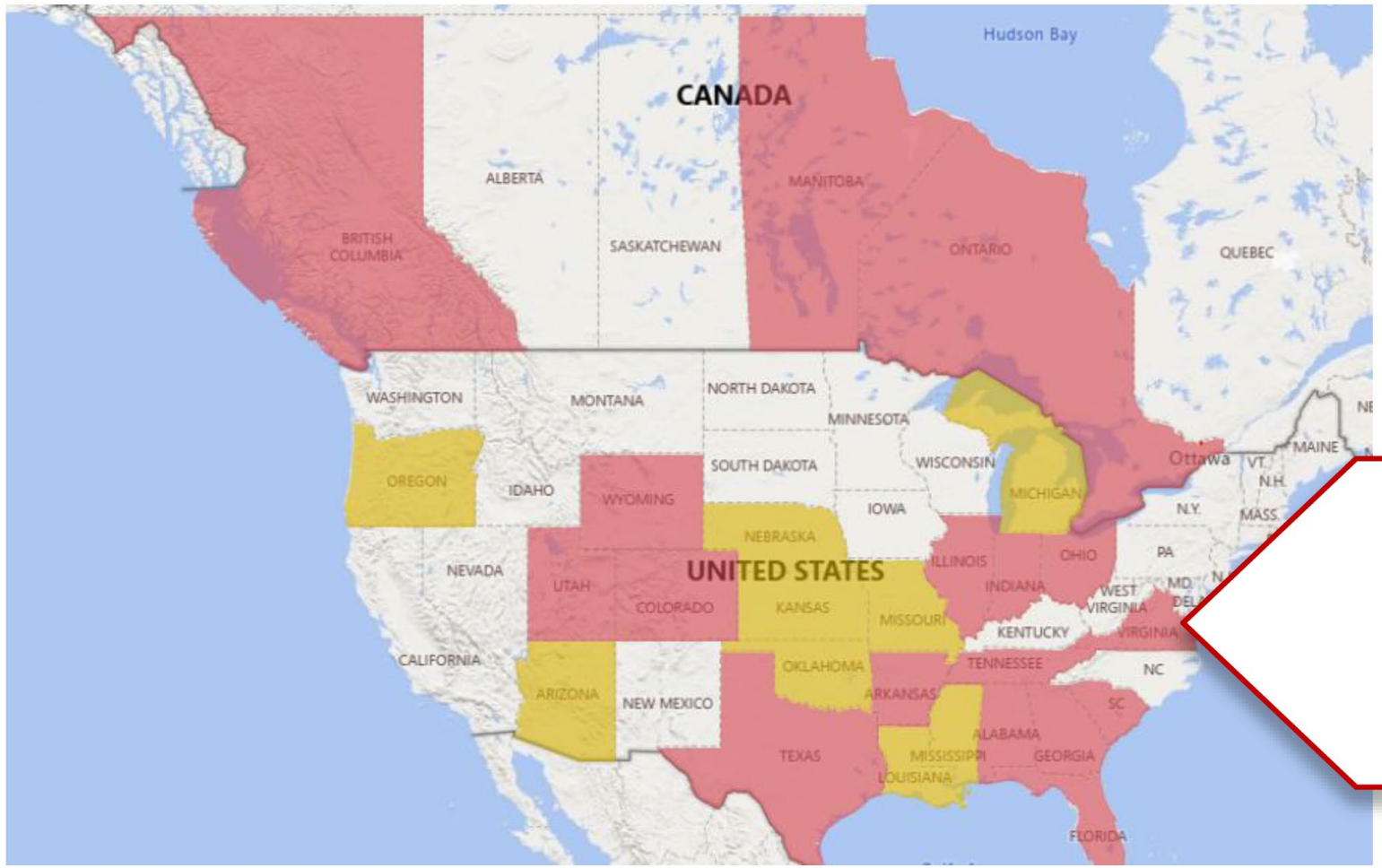
Google Maps

CENTRALSQUARE

Swiftly

3 new integration partners added to our existing list of 30+ existing partners

Deployments Across North America



2,500+ Trains Detected Per Day

2 million+ Trains Detected All Time

Currently deployed in **14 states** and **3 provinces**
9 new coming in 2025

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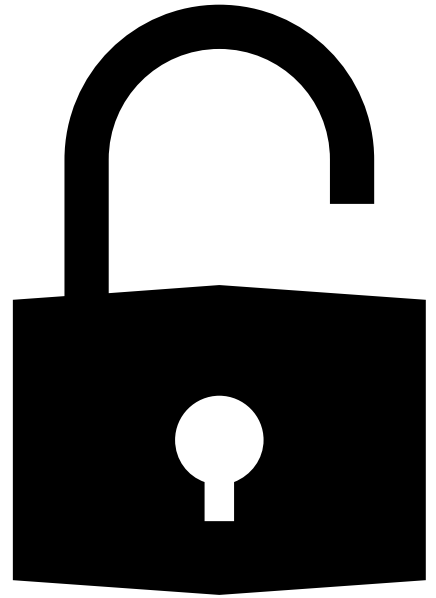
What else is possible?

Expanded Data Fusion / Insights

Regional / Statewide Scale

Training data for bespoke AI agents



Questions?

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