Impacts of Commercial Motor Vehicle Safety Alerts in Texas

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Messaging – The Early Era (1970-1990)

- Newspapers
- Static signs
- Highway Advisory Radio (HAR)
- Portable Changeable Message Signs (PCMS)

The ITS Era (1990's – 2000's)

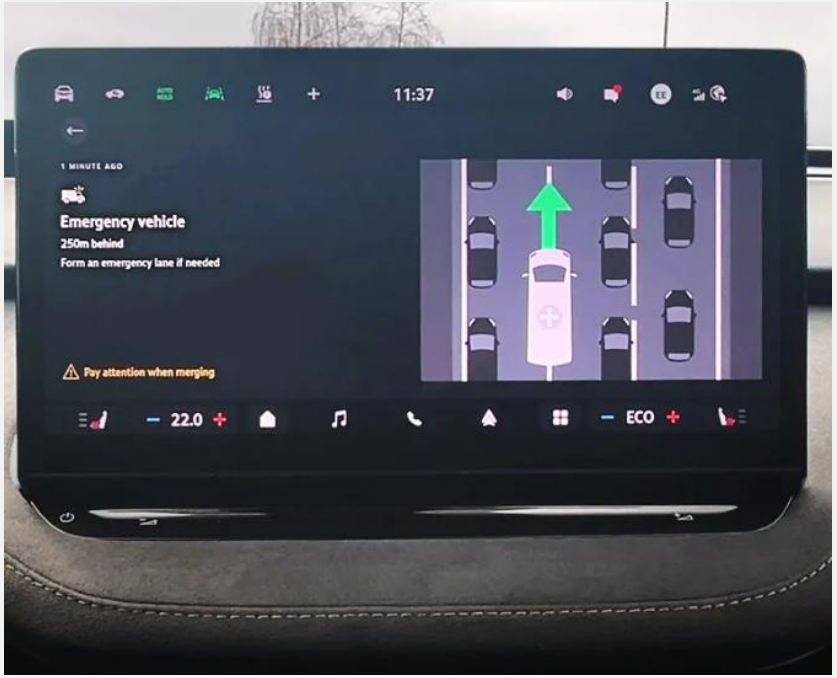
- Dynamic Message Signs (DMS)
- Manual on Uniform Traffic Control Devices (MUTCD)
- Traveler Information 511
- Growing list of Safety Messages beside congestion

The Digital Integration Era (2010's)

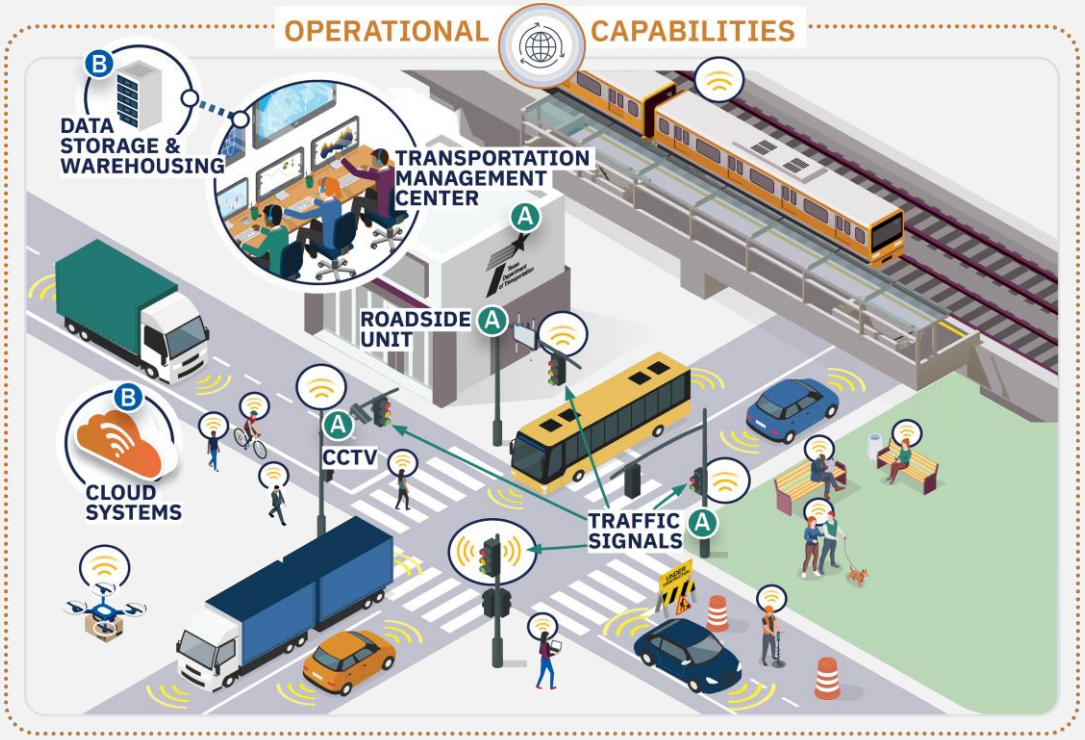
- Apps, websites, and social media
- Automated Messaging
- Human factors research
- Message prioritization policies

The Era of Connected & Coordinated Messaging (2020's)

- Advanced Traffic Management Systems (ATMS)
- Performance management
- V2X (Vehicle to Everything)
- Personalized or context-aware messages for connected vehicles.



What is Cooperative and Automated Transportation (CAT)?



CAT INFRASTRUCTURE EXAMPLES

Physical Infrastructure

- Multimodal infrastructure
- Traffic control devices
- Intelligent Transportation System (ITS) devices
- Traffic management centers
- Connectivity infrastructure

Digital Infrastructure

- Cybersecurity and data privacy
- Digital communication network
- Advanced sensing technologies
- Data management platform
- Edge computing infrastructure
- High accuracy geographic information systems (GIS)

Statewide Priorities

- Safety
- Delivery
- Innovation
- Stewardship

CAT Strategies

Incident Prediction and Management

Work Zone Management

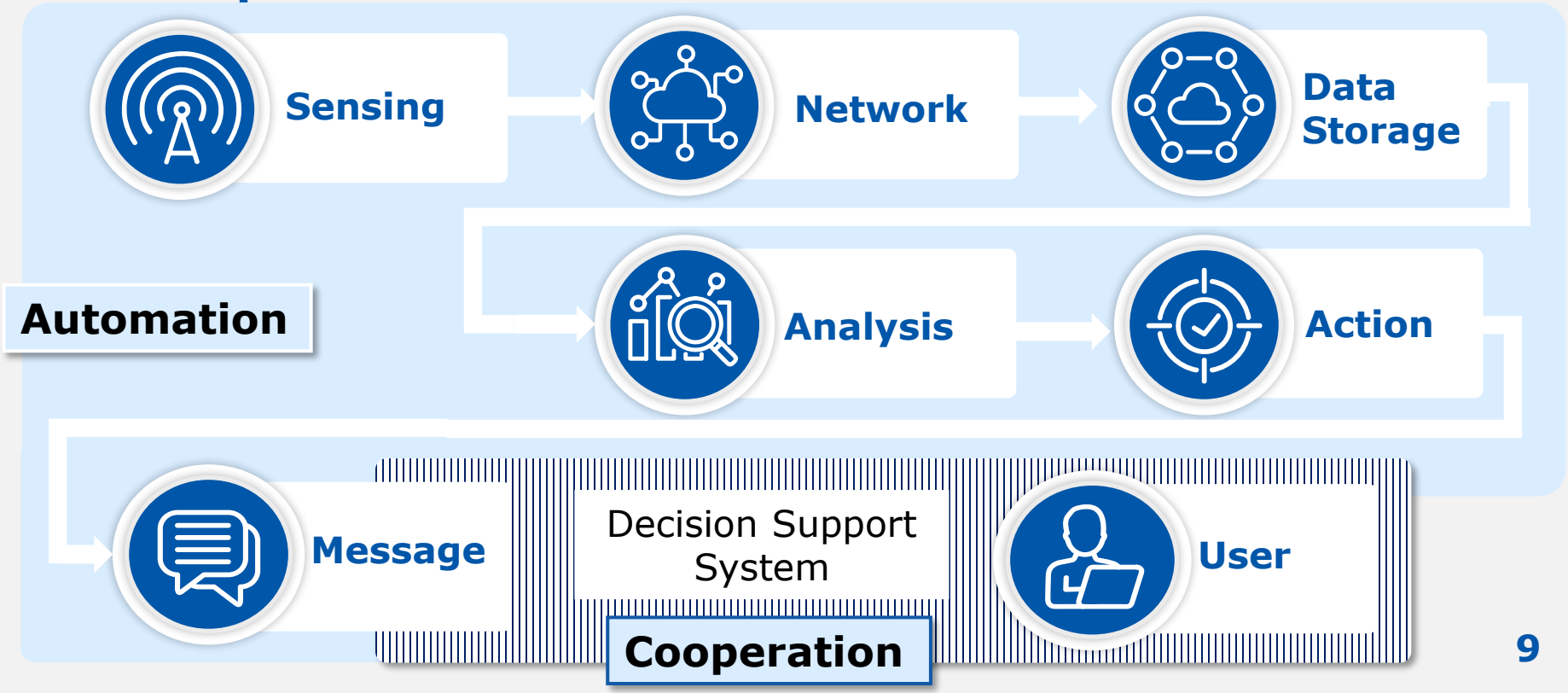
Asset Monitoring and Management

Traffic Management

CAT Applications

- Wrong-Way Driver Detection System
- Incident Detection and Response
- Flooding Detection and Response
- Connected Work Zone System
- Work Zone Intrusion and Monitoring
- Physical Assets
- Digital Assets
- Signal Timing Optimization
- Connected Emergency Vehicle Preemption
- Intelligent Traffic Management

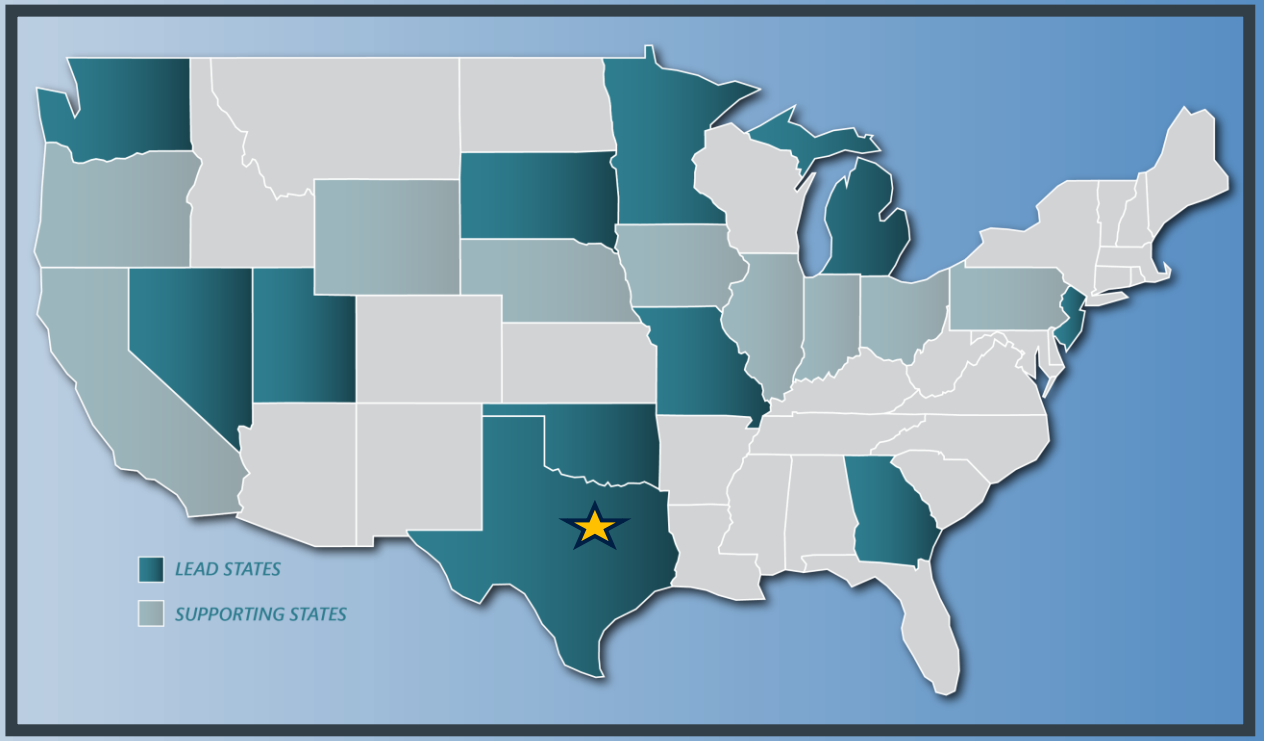
CAT Implementation Workflow



AASHTO Moonshot Project

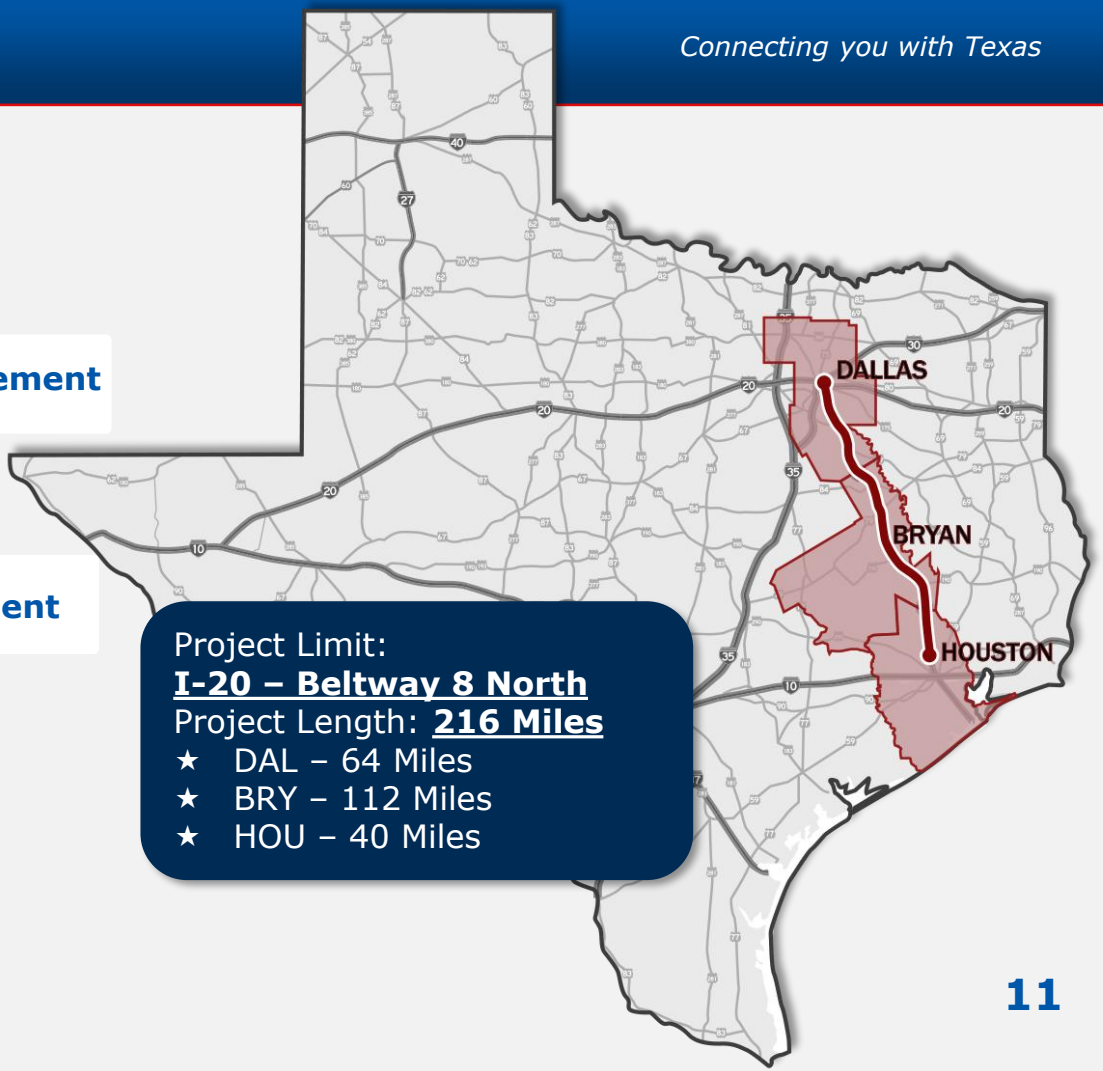
National: An effort to draft a cohesive national transportation vision.

TxDOT: Developing digital infrastructure along I-45 Innovative Corridor.



Project Overview

- **Incident Prediction and Management**
- **Work Zone Management**
- **Asset Monitoring and Management**
- **Traffic Management**

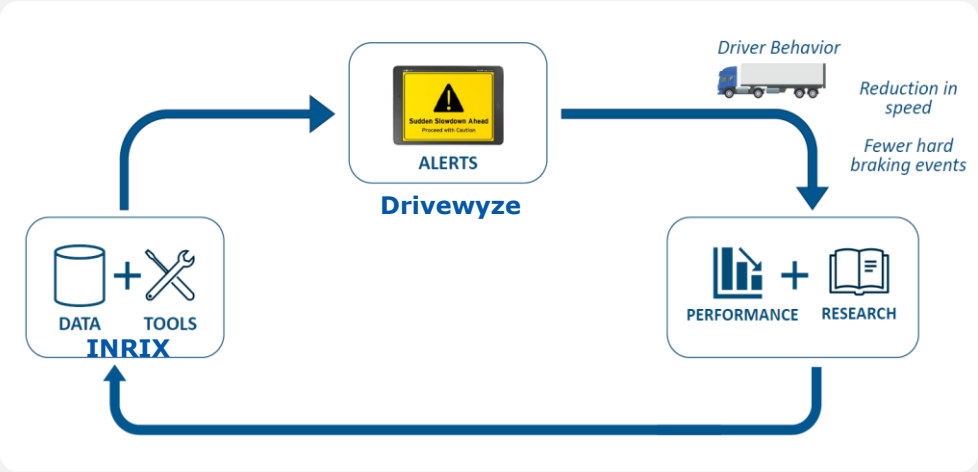


Project Limit:
I-20 – Beltway 8 North
Project Length: **216 Miles**
- ★ DAL – 64 Miles
- ★ BRY – 112 Miles
- ★ HOU – 40 Miles

Commercial Motor Vehicle Alerts

Congestion and Safety Alert on Drivewyze family of ELD

- Pilot in IH-45 – Starting Dec 2023
- Statewide on all Interstate – Since July 2024



Delivered Through Always-On Applications for CMV Drivers

Data Details | View: Original | Save Custom View | Data Guide | Watch | Share

Traffic Alert Dashboard | AlertsBySite-MoMTrend | AlertsBySite-Alerts/Mile | Heatmap | IncidentDetails | AlertsByType-KPI | SpeedChanges-5mph | SpeedChanges-10mph | SpeedChanges | Braking Summary | Braking Frequency Heatmap | Braking Severity Heatmap | Braking Event Drill Down | Braking Frequency per month

Drivewyze By Fleetworthy

CMV Traffic Alert Dashboard - TX

Through 12/31/2025 11:00:00 PM

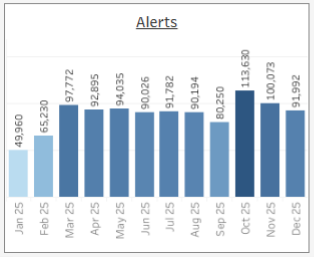
Data available via this portal is for the most recent 12 months only.

Incident Type: Congestion, Sudden Slowdown | Jurisdiction: Texas | Agency: TX DOT | Corridor Name: (All) | Date: Previous year | Driving Segment: Fastest 5%, Faster 5%

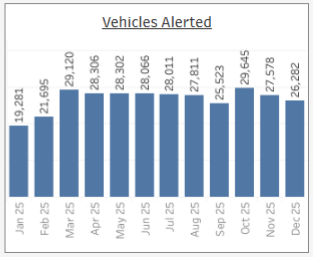
Program Stats

	Alert Count	Incident Count	Vehicle Count	Avg. Incident Duration
Congestion	1,047,163	141,259	91,007	44
Sudden Slowdown	10,676	5,910	8,531	7
Grand Total	1,057,839	147,169	91,792	42

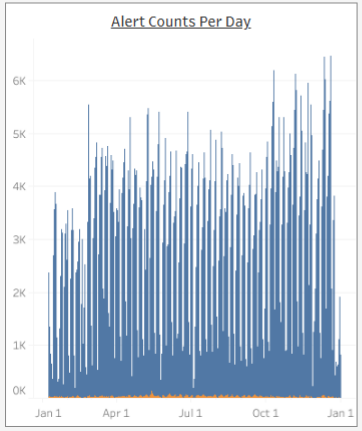
Alerts



Vehicles Alerted



Alert Counts Per Day



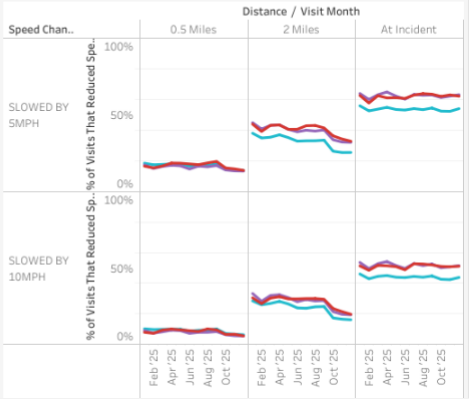
Speed Reduction by 5+ MPH

Distance	Driving Segment	Jan '25	Feb '25	Mar '25
0.5 Miles	Fastest 5%	17%	15%	17%
	Faster 5% to 25%	17%	15%	16%
	Slowest 75%	19%	17%	18%
2 Miles	Fastest 5%	44%	39%	43%
	Faster 5% to 25%	45%	41%	43%
	Slowest 75%	38%	35%	35%
At Incident	Fastest 5%	63%	58%	63%
	Faster 5% to 25%	64%	60%	63%
	Slowest 75%	56%	53%	54%

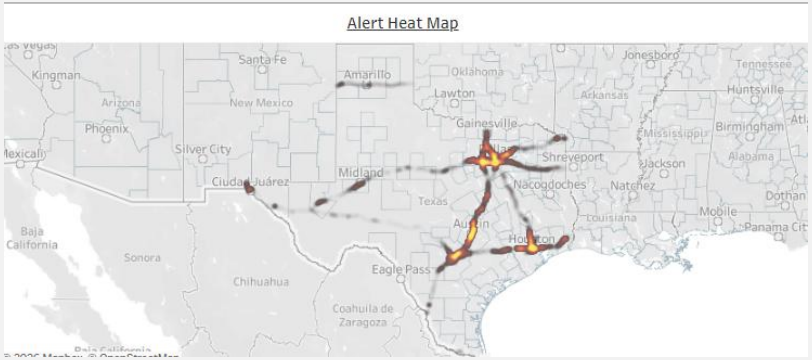
Speed Reduction by 10+ MPH

Distance	Driving Segment	Jan '25	Feb '25	Mar '25
0.5 Miles	Fastest 5%	8%	7%	9%
	Faster 5% to 25%	9%	7%	8%
	Slowest 75%	10%	10%	10%
2 Miles	Fastest 5%	30%	27%	30%
	Faster 5% to 25%	33%	28%	32%
	Slowest 75%	28%	26%	27%
At Incident	Fastest 5%	51%	48%	52%
	Faster 5% to 25%	54%	50%	53%
	Slowest 75%	46%	43%	45%

Monthly Speed Change



Alert Heat Map



By the Numbers:

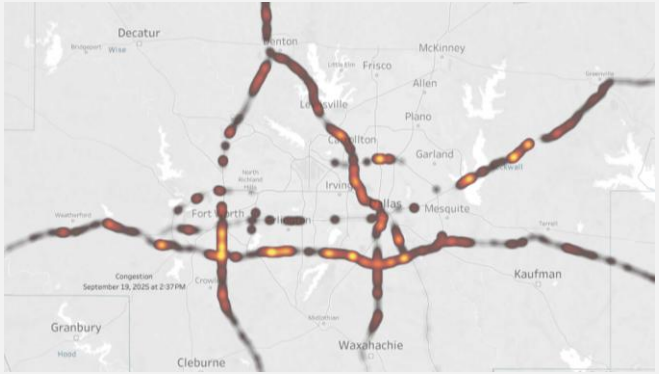
- **13-20%** of trucks that slow down at least 5 mph a half-mile from receiving an alert.
- **25-44%** of trucks that slow down at least 5 mph 2 miles from receiving an alert.
- **53-65%** of trucks that slow down at least 5 mph at the incident.

Interstates in "DFW" by the Numbers (CY 2025)*

	IH-20	IH-30	IH-820	IH-35W	IH-35E	IH-45	IH-635
Alert Count	**221,193**	40,249	3,746	52,976	62,678	11,788	8,796
Incident Count	**20,657**	6,413	931	9,273	11,104	1,392	2,067
Vehicle Count	**47,999**	19,580	2,343	18,603	24,283	7,165	5,801
Average Incident Duration	49	28	27	37	34	**54**	22

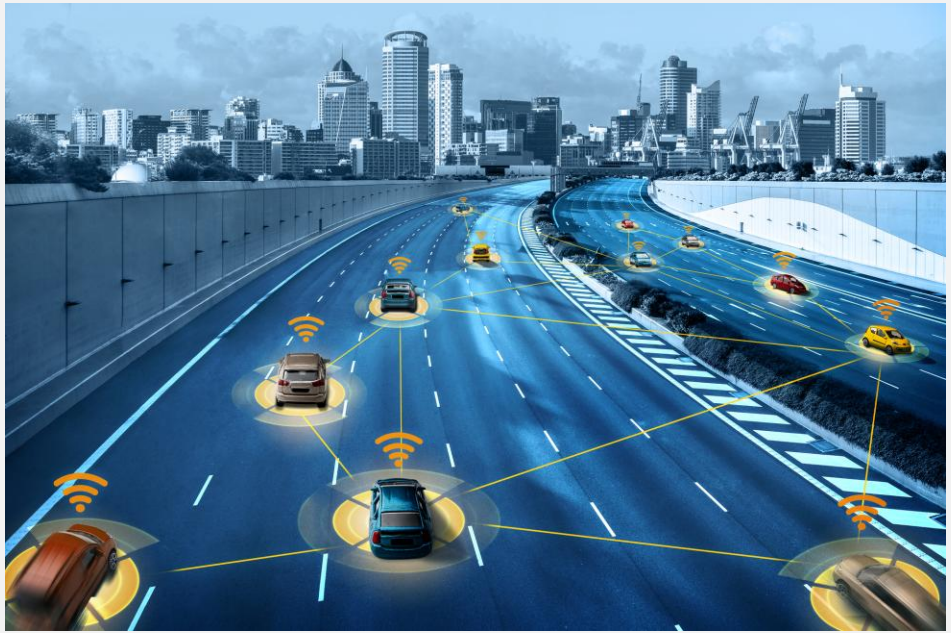
Region-wide within the Dallas and Fort Worth District*

- **10-31%** of trucks that slow down at least 5 mph a half-mile from receiving an alert.
- **30-62%** of trucks that slow down at least 5 mph 2 miles from receiving an alert.
- **50-79%** of trucks that slow down at least 5 mph at the incident



Summary of Road User Messaging

- Other Safety Messages
- Benefits
  - Empower Positive Driving Behavior
- Limitations
  - Coverage and Penetration
- Future Work
  - Planning Tool
  - Human Factors



TxDOT Statewide Data Contract

Unlock digital roadway insights with TxDOT's statewide connected vehicle data contracts.

Services

- Real-time and historic traffic and trip data
- Granular connected vehicle data

Who can access data and data services?

- TxDOT employees
- TxDOT contractors and consultants
- Texas research partners
- Texas public transportation partners (cities, counties, metropolitan planning organizations, and other Texas state agencies and their consultants)

TxDOT statewide data contract

Thank you!

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