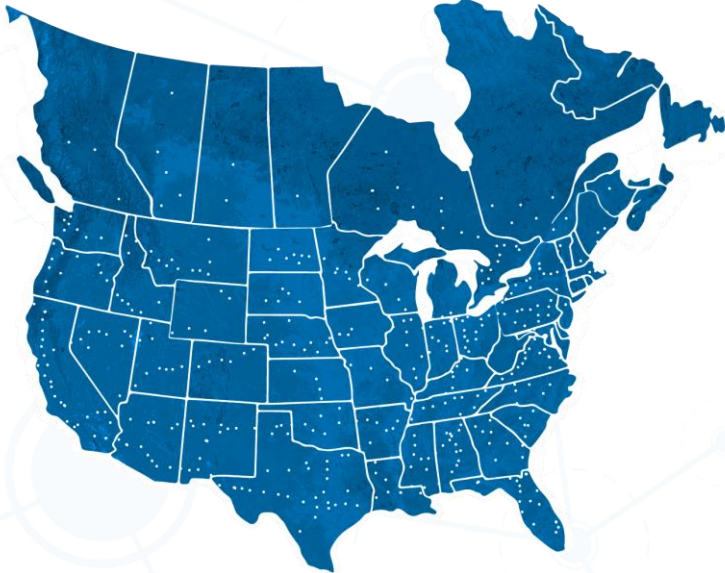


GPS Hazard Based Warning

Brian Mofford, Vice President of Government Experience

North America's largest Connected Truck Safety Network



2002

IIS begins deploying its commercial vehicle enforcement solutions to law enforcement agencies across North America

2012

Drivewyze PreClear is now available in almost 800 sites in 47 states and provinces

Today

With the addition of Drivewyze Safety Notifications, Drivewyze has built North America's largest connected truck safety network

The Challenge: Mitigating Driver Safety Risks

- Rollover events account for ~4% of both injury and fatal collisions in the USA
- 87% of all collisions are due to driver factors:
 - Excessive speed
 - Unfamiliarity with road

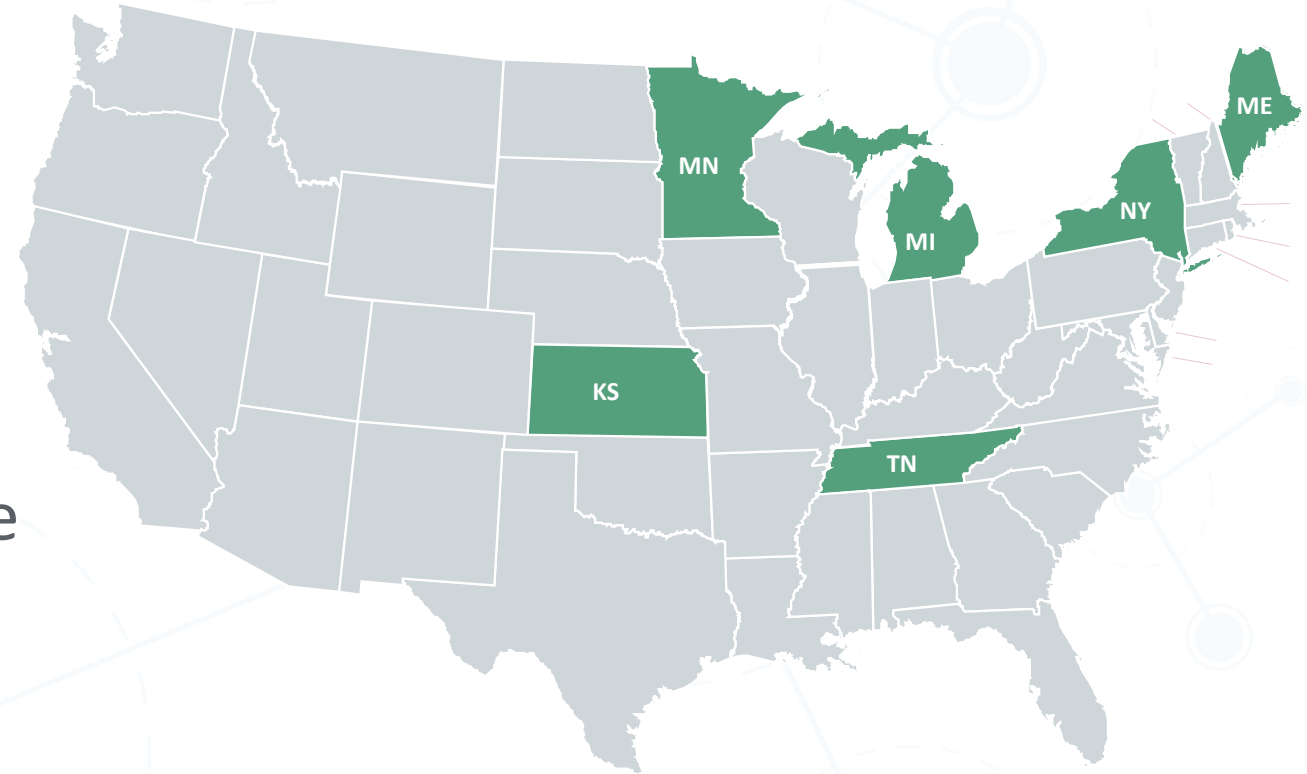


FMCSA-RRA-07-017 “The Large Truck Crash Causation Study” (<https://www.fmcsa.dot.gov/safety/research-and-analysis/large-truck-crash-causation-study-analysis-brief>)

FMCSA “Large Truck and Bus Crash Facts 2015” (<https://www.fmcsa.dot.gov/safety/data-and-statistics/large-truck-and-bus-crash-facts-2015>)

The Pilot: Rollover Event Analysis

- 37 sites across 6 states
- 15, 000 vehicles
- Nov 2015 – Nov 2016
- Compare behavior to baseline



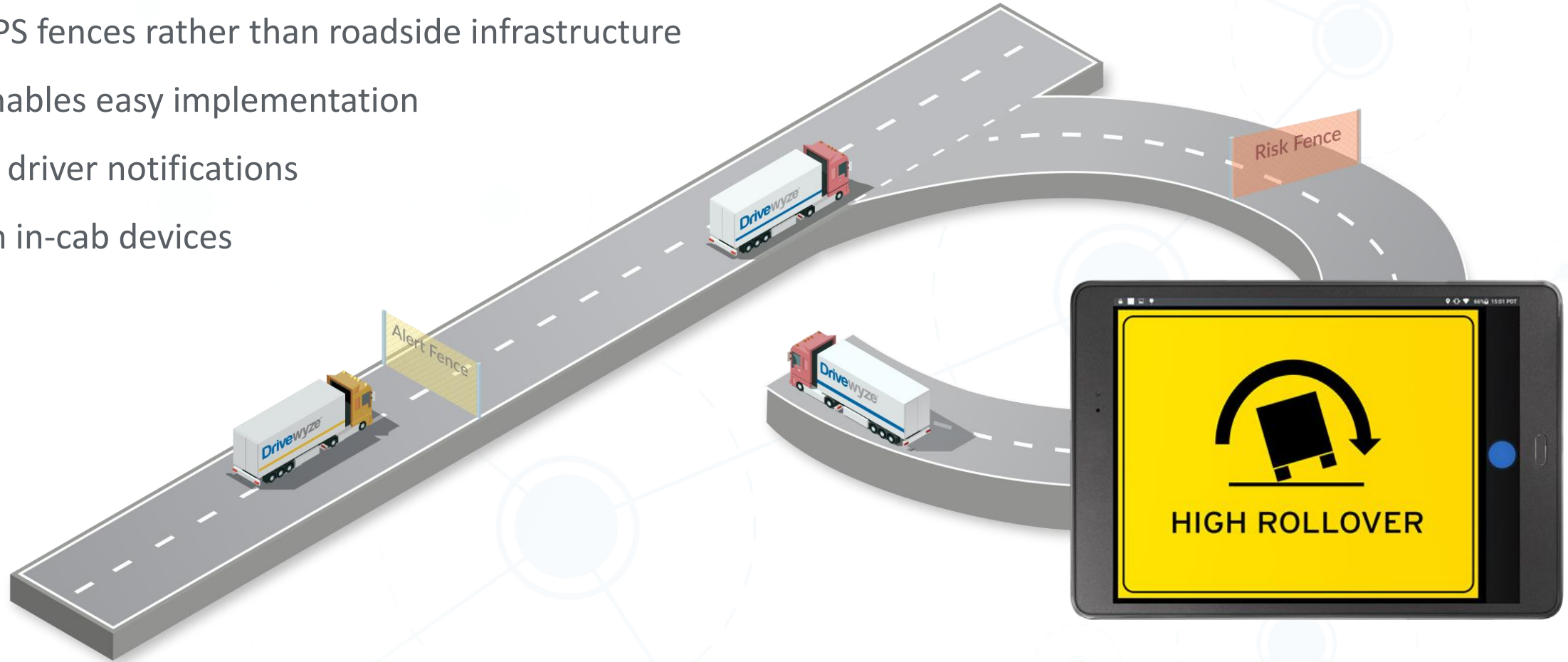
Our Goal: Change Driver Behaviour



- Reduce excessive speeding
- Improve familiarity with roadways
- Maintain driver attention

How it Works: In-Cab Notifications

GPS fences rather than roadside infrastructure enables easy implementation of driver notifications on in-cab devices



The Results: Reduction in Excessive Speed

We identified a 17% reduction in speeding incidents in rollover zones across the pilot fleet vehicles.

Percentage of Drivers that Exceeded Posted Speed or Caution Road Signs

Site	State	Before	After	% Change	Signage
I-75 → I-24E	TN	75.0%	49.5%	- 25.5%	Caution
I-75 → I-24W	TN	48.6%	27.5%	- 21.1%	Speed
I-75 → I-24S	TN	23.4%	9.7%	- 13.7%	Speed
I-40EB Curve	TN	69.7%	57.4%	- 12.3%	Speed
I-84 → I-684EB	NY	82.7%	69.0%	- 13.7%	Caution

The Results: Reduction in Preventable Accidents

Top 1%

of Over Speeders were **4x** more likely to have an accident than non-speeders

Top 5%

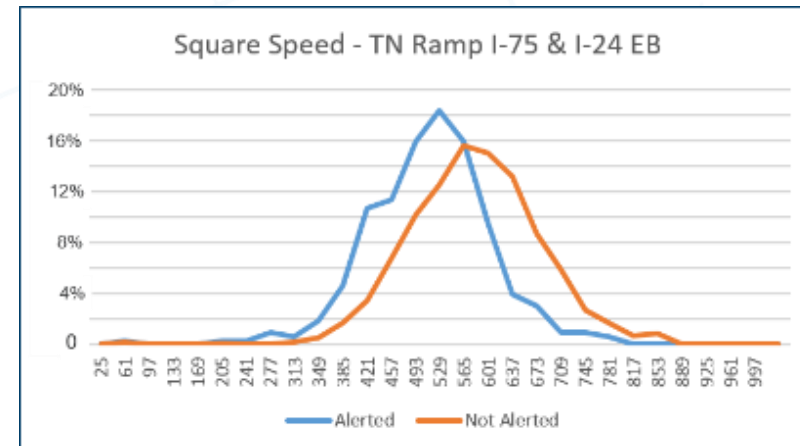
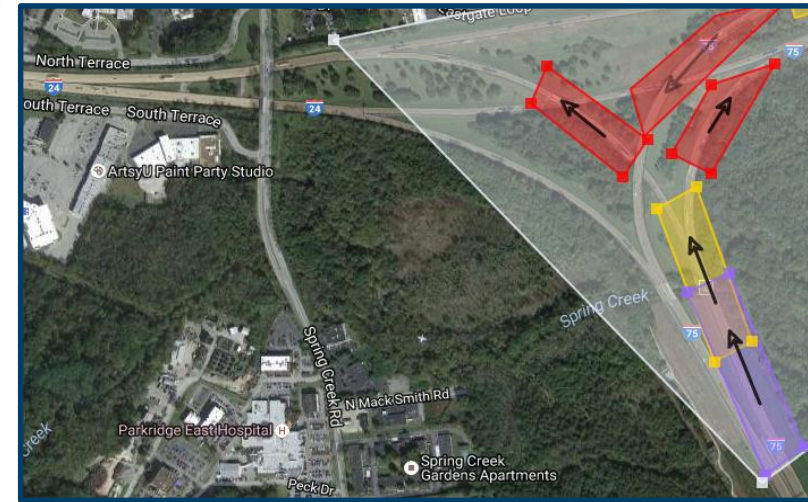
of Over Speeders were **2.5x** more likely to have an accident

The Results: Reduction in Lateral Forces

Resulted in 11.9% mean reduction in lateral forces*

Site	State	Change in Lateral Forces
I-75 & I-24 EB	TN	-11.9%
I-75 & I-24 WB	TN	-14.1%
I-75 & I-24 SB	TN	-12.0%
I-40 EB Curve	TN	-7.6%
Route I-17 SB Curve	NY	-3.1%
I-84 & I-684 EB	NY	-11.6%

* Based on measured speed. Assuming mass and radius remain constant.



Rollout: Driver Safety Notifications

- Driver warned 1000 feet ahead of zone
- 500 Sites across 32 US states
- Prioritized by collision data
- 70% Intersections, 30% Curvy roads



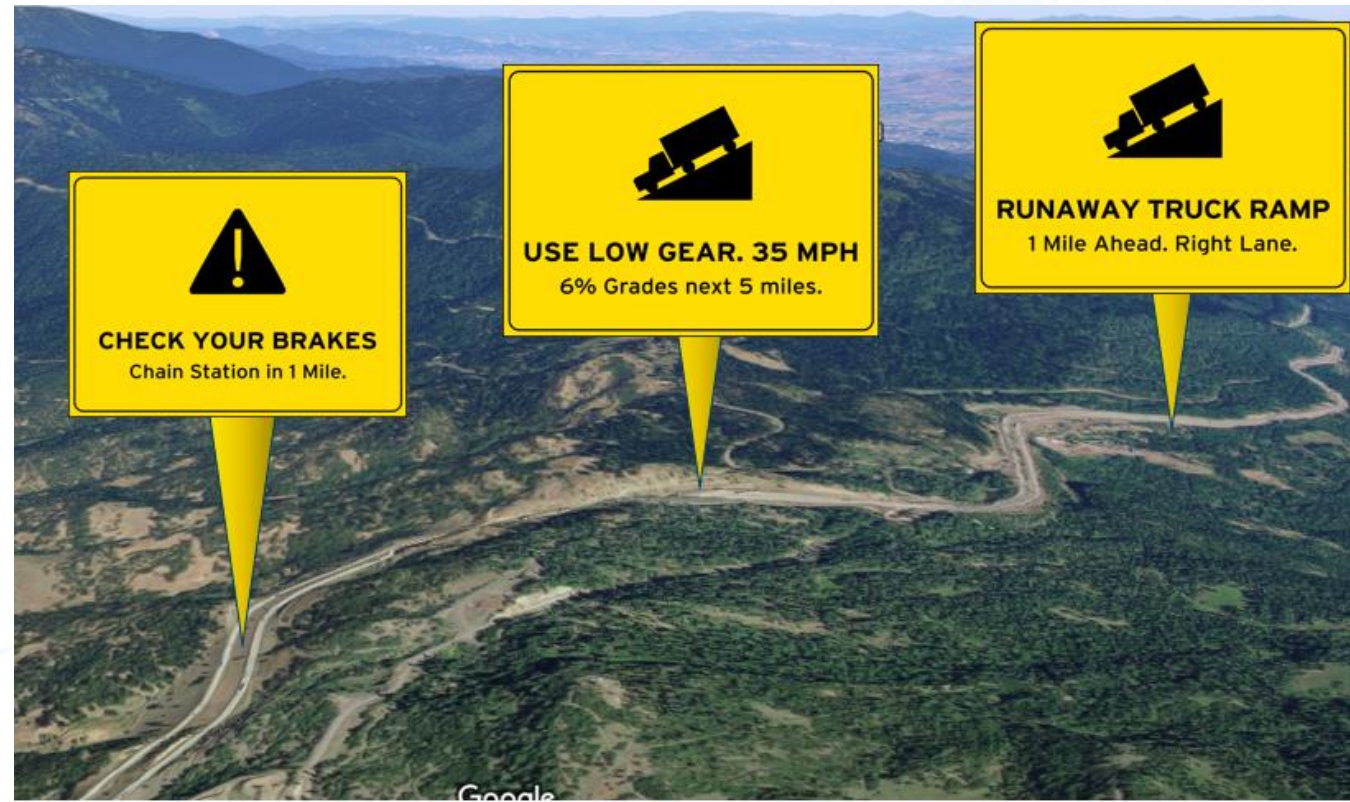
Additional Alerts: Low Bridges



- Drivers notified in advance allowing pursuit of alternate route (1-2 blocks in cities)
- 1500 Sites across US and Canada
- Location-specific bridge height and warning text

Additional Alerts: Mountain Corridors

- 120 sites across 20 US states
- Covers Interstate sections with 5% steep grade declines and higher, and all runaway ramps
- Site-specific advisories guide driver on speed limits or lane usage



Dynamic Safety Notifications

Existing safety notification help improve driver behavior by giving alerts around static and frequently encountered hazards



Using shared data from many sources to notifications: weather, emergency, 511, etc.



A network diagram background consisting of several interconnected nodes and lines. The nodes are represented by circles of varying sizes, and the lines are thin and light blue. The overall structure is a complex web of connections, with some nodes having multiple connections and others having only one or two. The background is a solid dark blue color.

Thank You