Mitigating Speeding Risks: A Data-Driven Approach to Improving Road Safety

Session 6B: Technology & Safety

ITS Texas Annual Meeting

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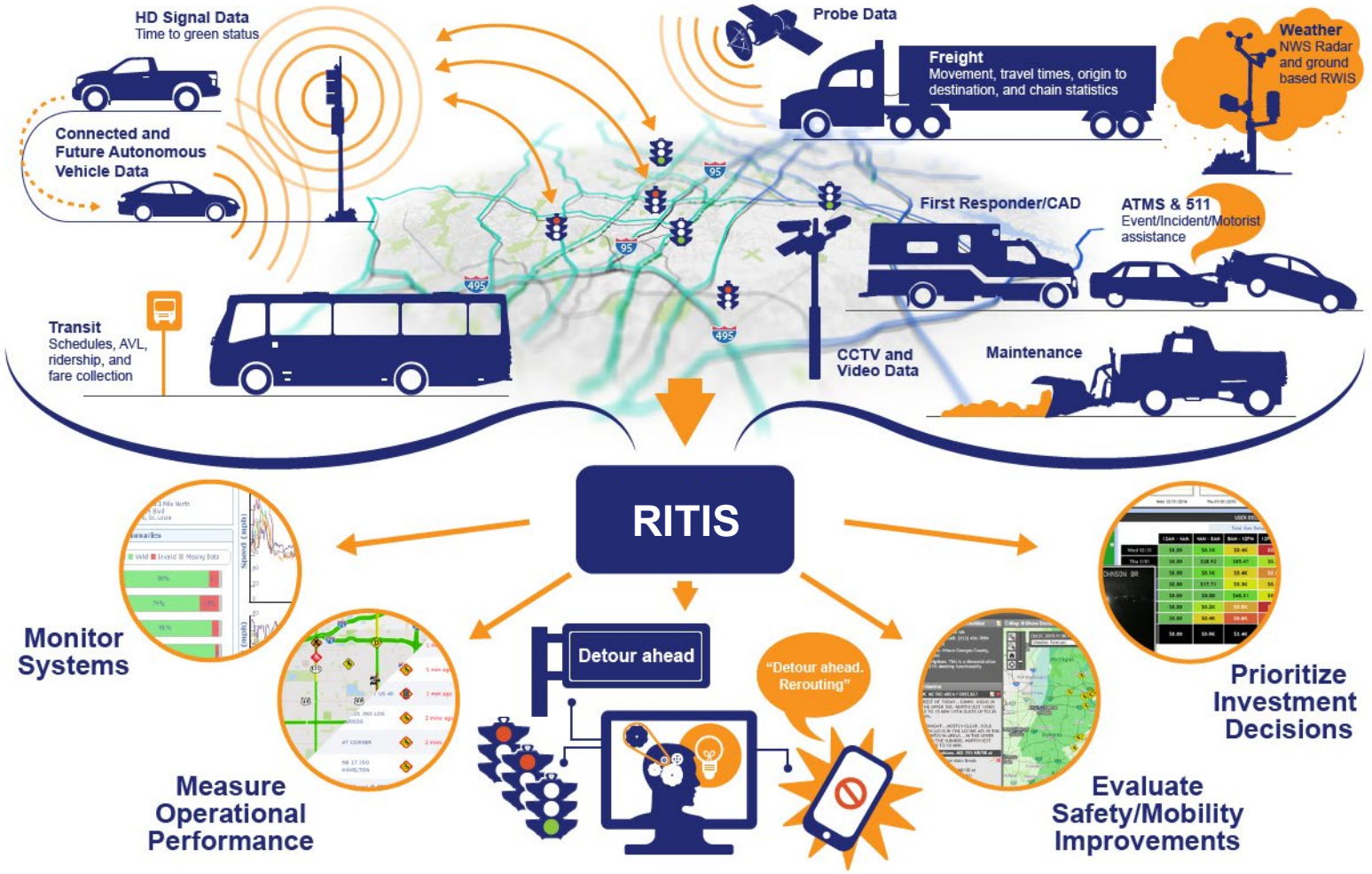
CATT Lab (who we are)

- The CATT Lab operates the world's largest transportation data archive and analytics platform
- We help transportation agencies across the nation use big data to improve transportation planning and operations
  - Big data analytics
  - Data visualization
  - System integration
  - Performance management

RITIS: the Regional Integrated Transportation Information System



Some sobering statistics

Speeding-related crashes account for:

- 28% of fatal crashes
- 12,151 fatalities
- 300,595 people injured

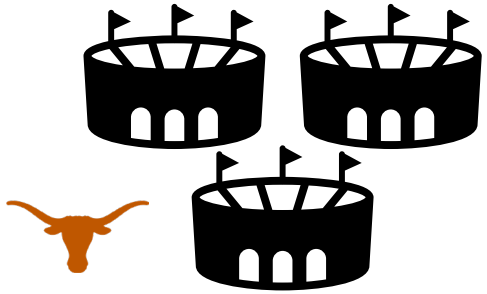
Speeding drivers involved in fatal crashes

- 29% without valid driver license (15% non-speeding)
- 52% not wearing seat belt (22% non-speeding)

87% speeding-related fatalities on non-interstate roadways

Source: 2022 data from NHTSA
https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/813582

300,595 = how many Texas stadiums filled?



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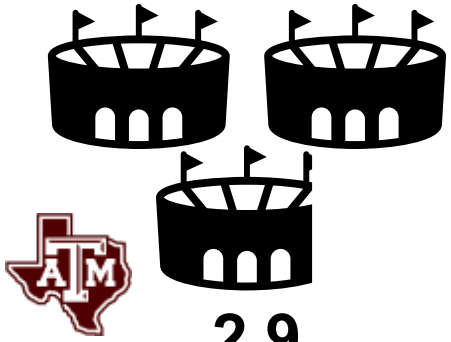
Texas Memorial Stadiums



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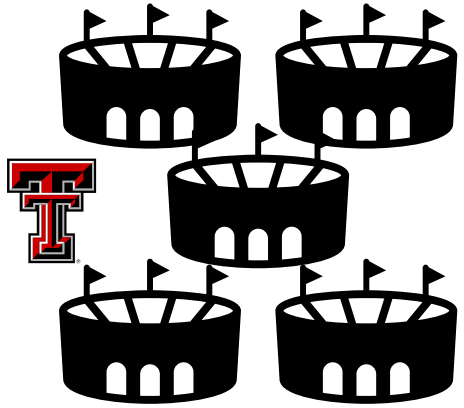
Kyle Fields



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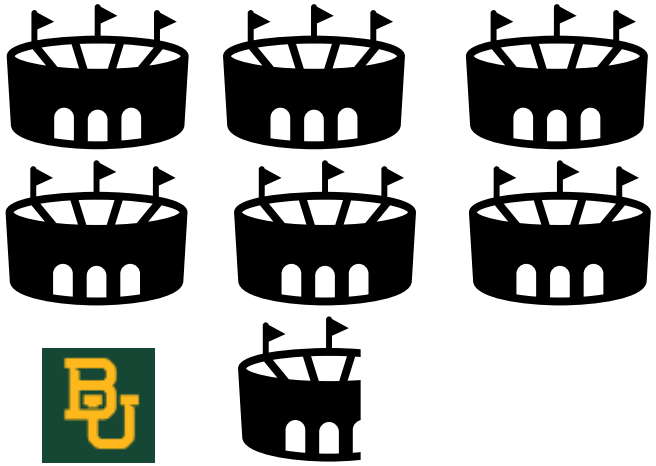
Jones AT&T Stadiums



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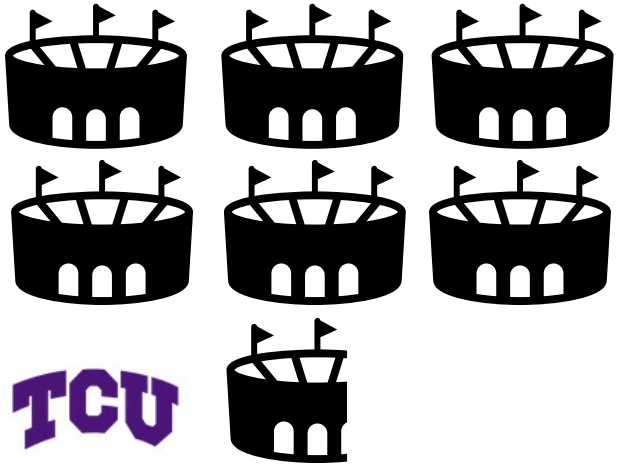
McLane Stadiums



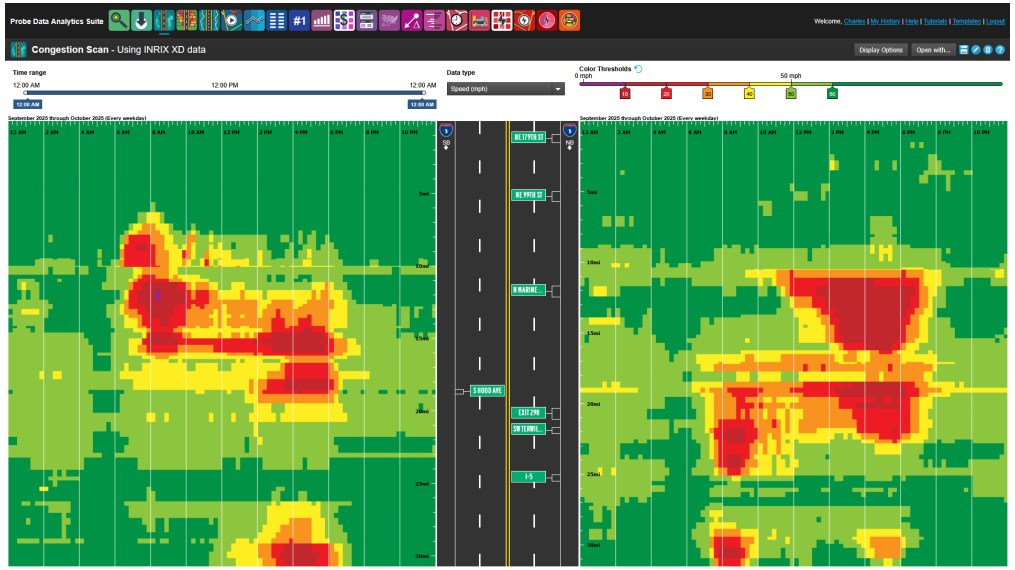
6.7

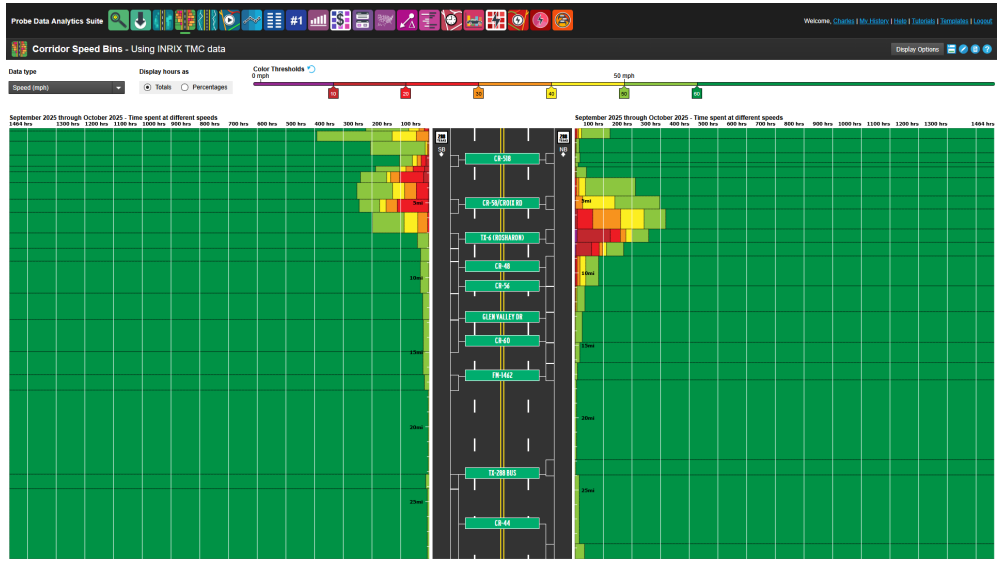
Amon G. Carter Stadiums

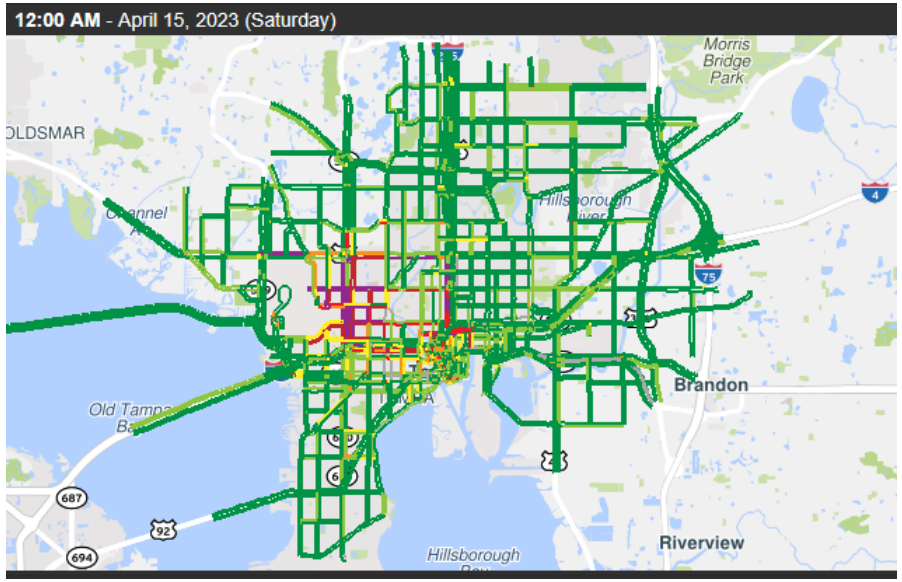
Any way you look at it, **that's a lot of people.**

The typical use of speed analysis visualizations

When and where does **congestion** occur? Find my **slow** segments.

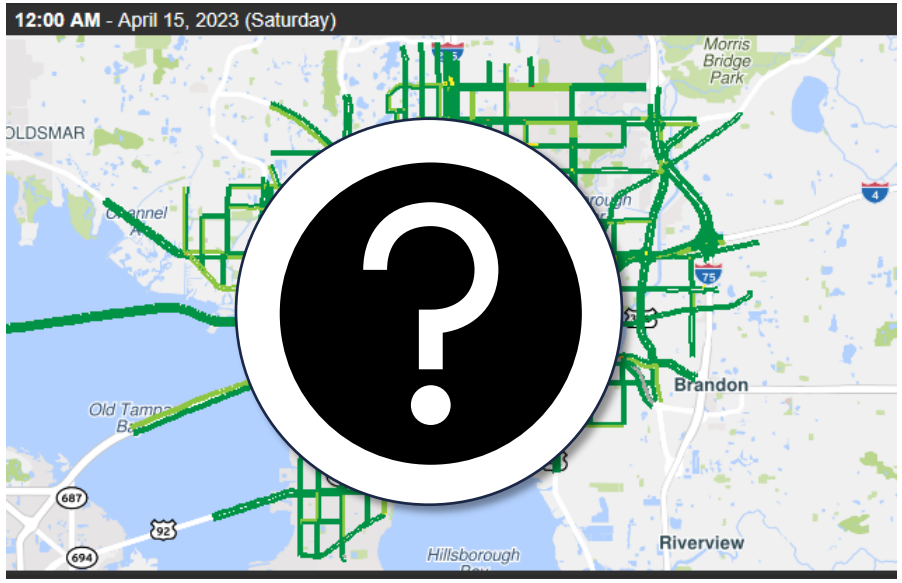


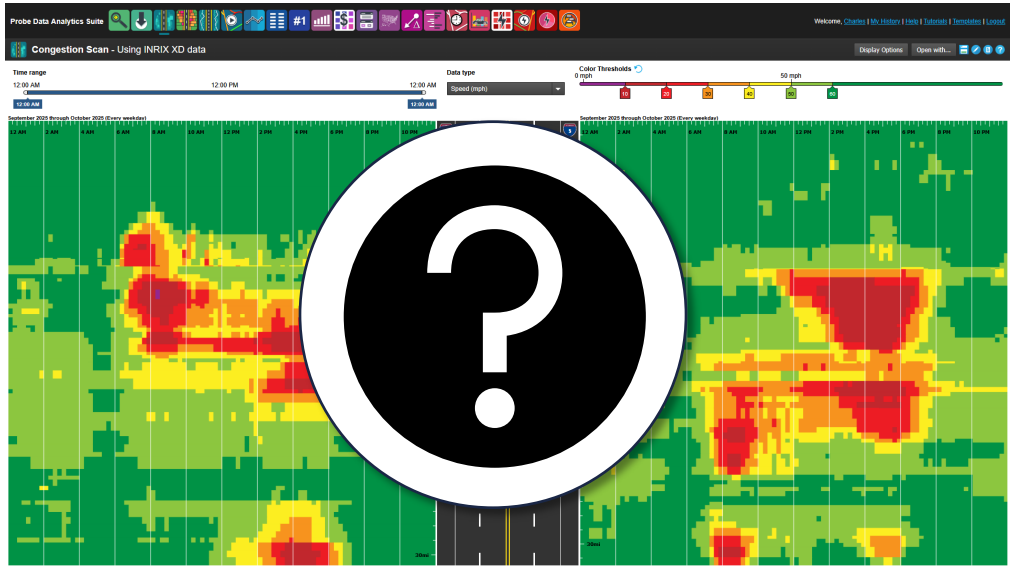


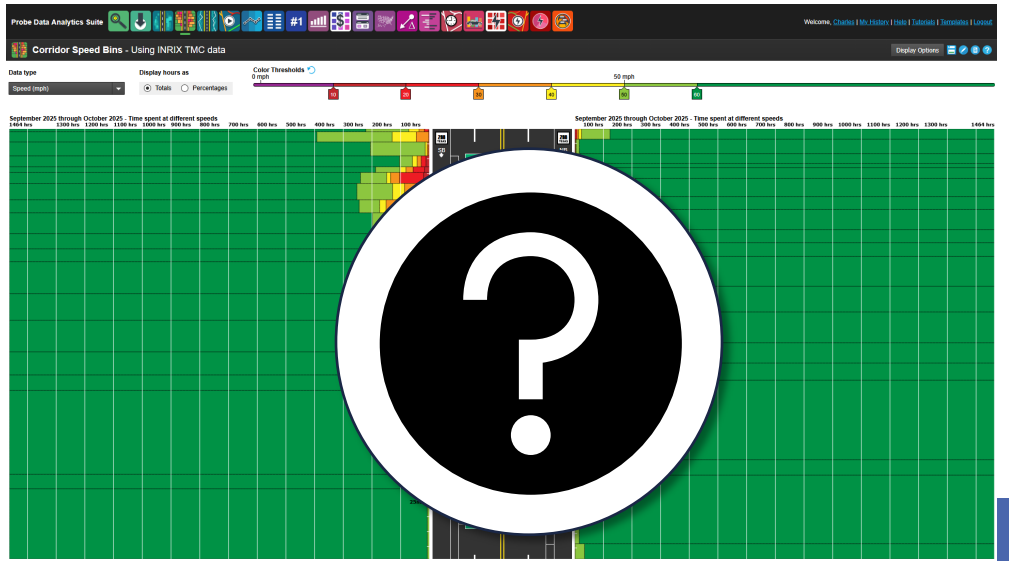


Another use of speed analysis visualizations

When and where does **excessive speeding** occur? Find my **fast** segments.







NPMRDS Analytics

Compare average top-end truck and passenger vehicle speeds using NPMRDS data.


Search Google Maps
I-10
Hankamer, Texas
Google Street View
May 2024
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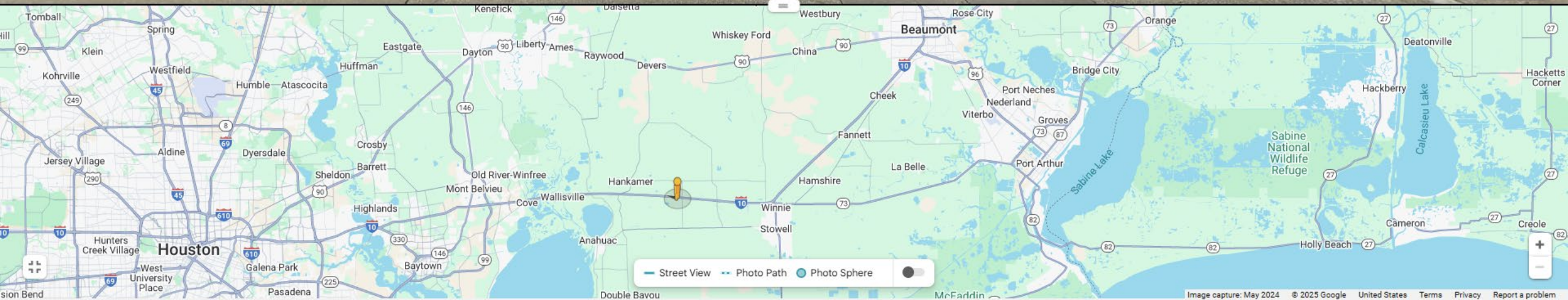
SPEED LIMIT 65
I-10


Tomball
Spring
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Devers
Kenefick
Daisetta
Westbury
Whiskey Ford
China
Beaumont
Rose City
Orange
Deatonville
Hacketts Corner
Bridge City
Port Neches
Nederland
Viterbo
Groves
Cheek
Fannett
Hackberry
Calcasieu Lake
Sabine National Wildlife Refuge
Sabine Lake
Port Arthur
La Belle
Hamshire
Hankamer
Wallisville
Cove
Winnie
Stowell
Anahuac
Mont Belvieu
Old River-Winfree
Sheldon
Barrett
Crosby
Dyersdale
Aldine
Jersey Village
Highlands
Houston
Hunters Creek Village
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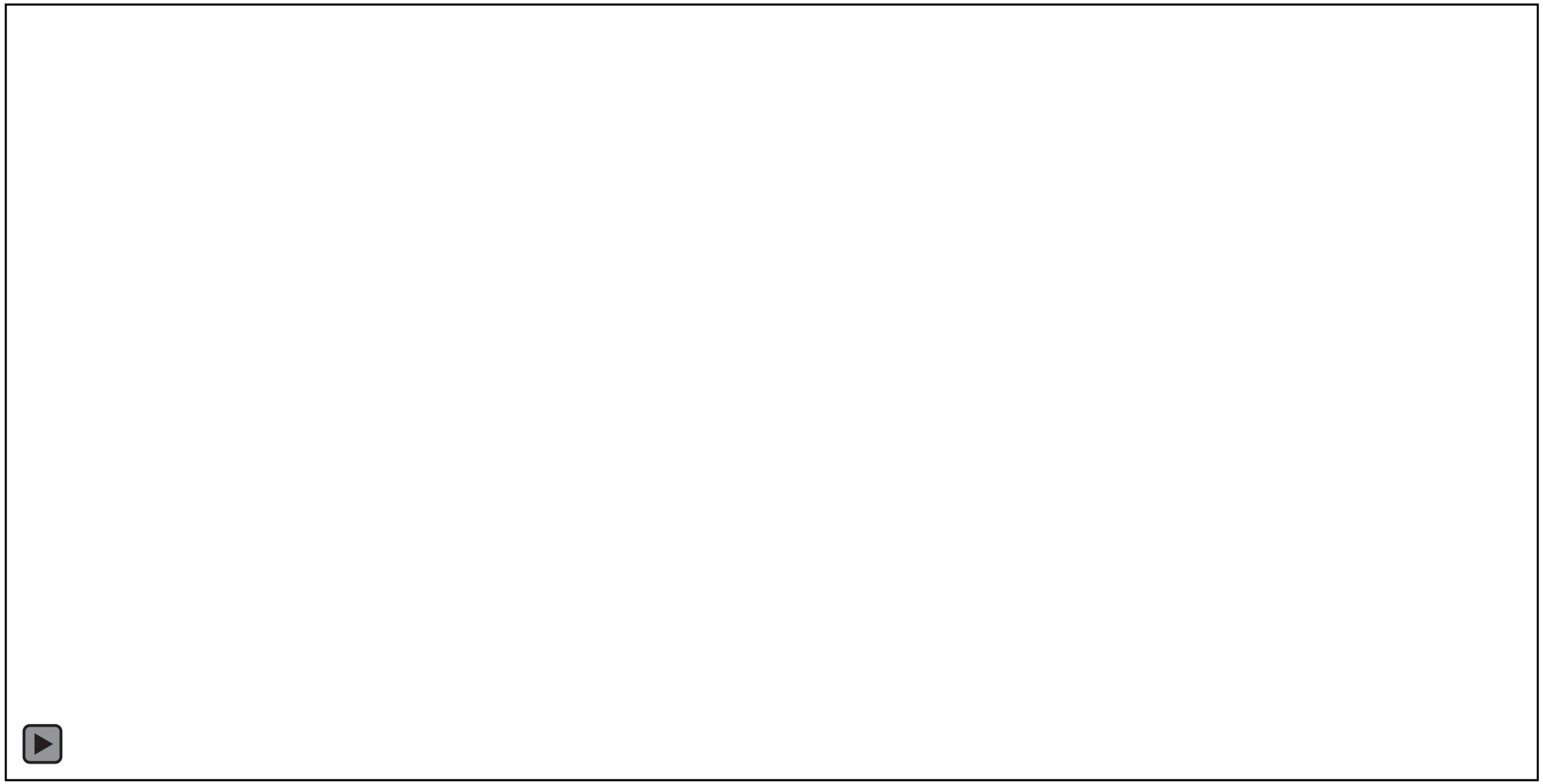
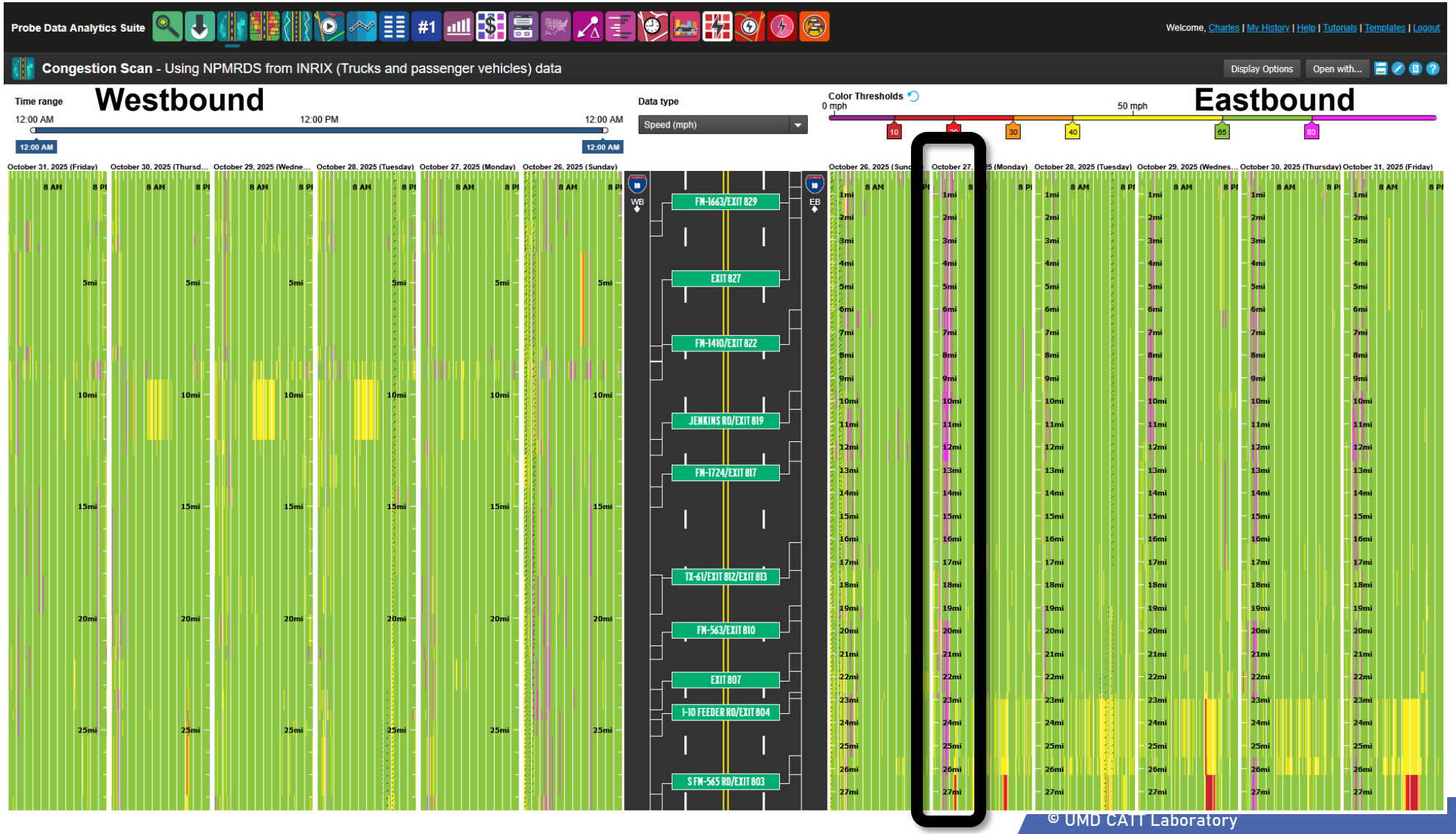
Trend Map shows time and location of high-speed travel

High speeds in the overnight hours (80mph +)



Congestion Scan

Another way to visualize time and location of traffic flow

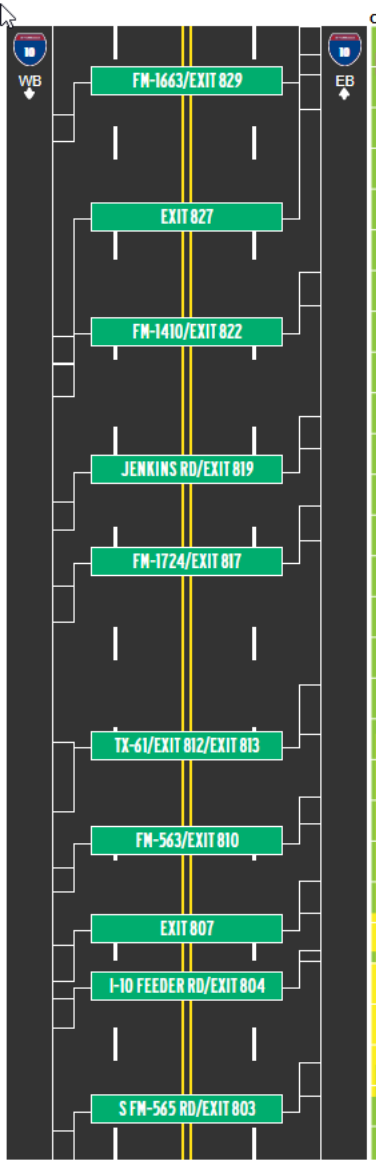


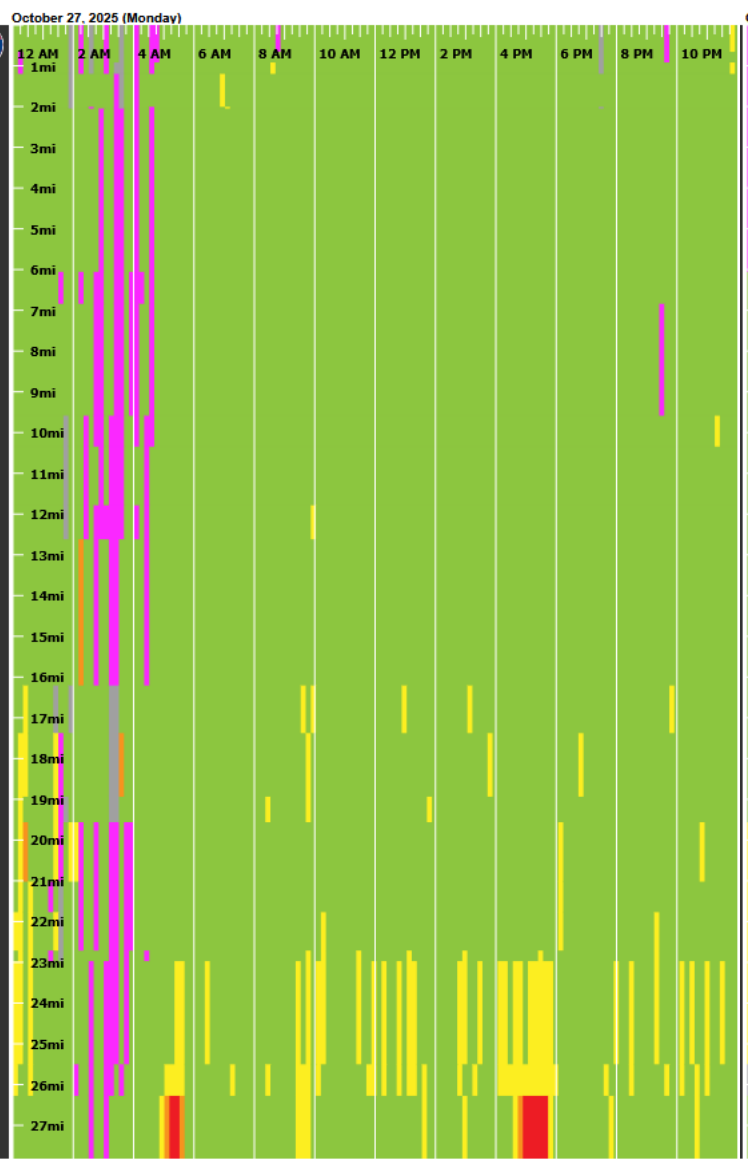
October 27, 2025

Passenger vehicles are primary contributors

A few high-speed trucks between 2AM and 4AM

Trucks and passenger vehicles





Passenger vehicles

Trucks

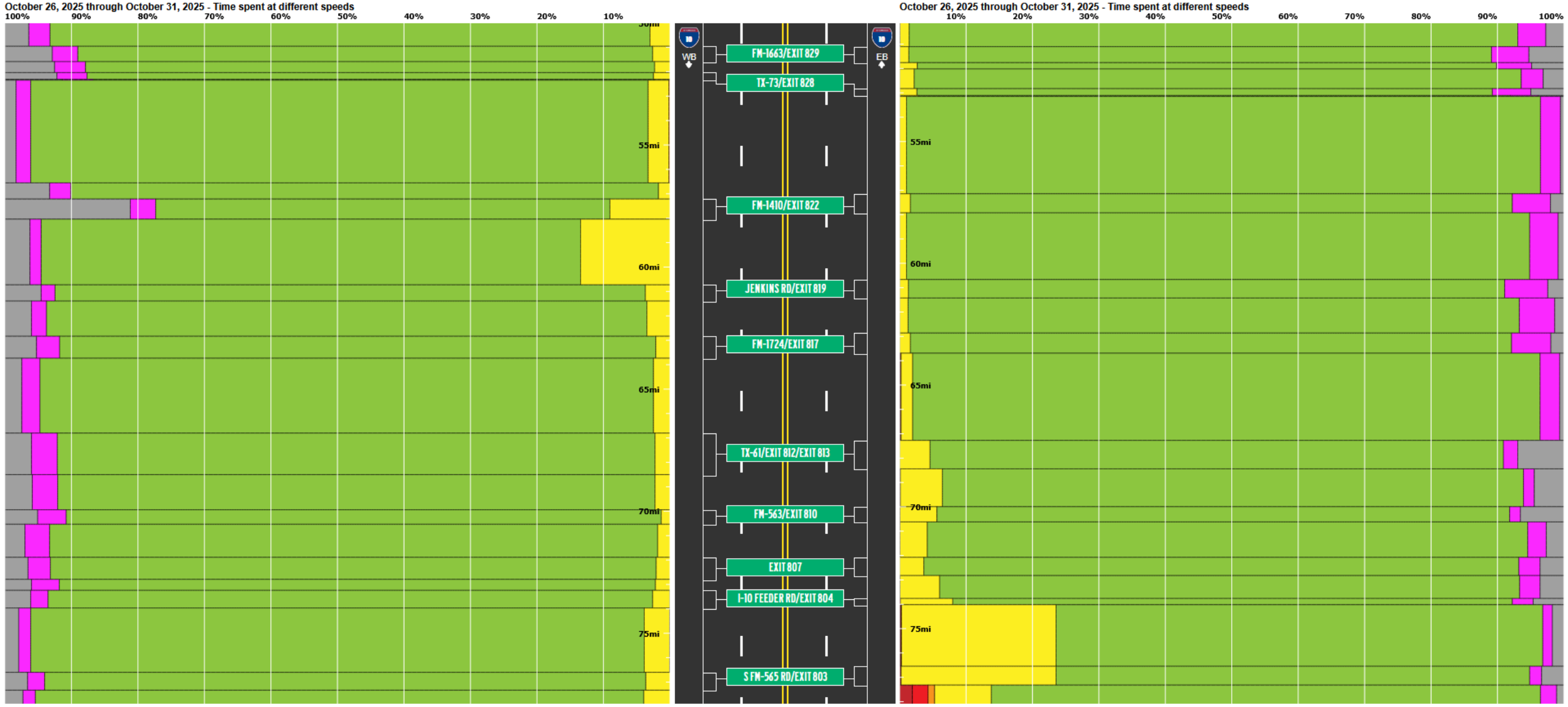
Corridor Speed Bins - Using NPMRDS from INRIX (Trucks and passenger vehicles) data

Display Options

Data type: Speed (mph)

Display hours as: Totals / Percentages

Color Thresholds
0 mph — 10 — 20 — 30 — 40 — 50 mph — 65 — 80

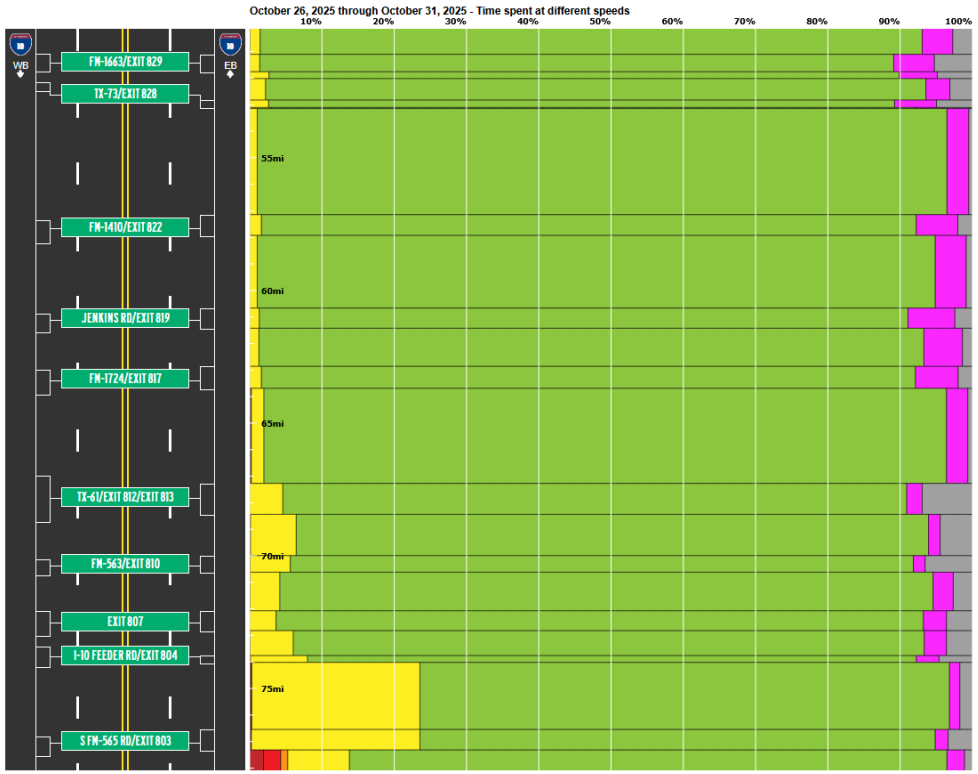


Corridor Speed Bins

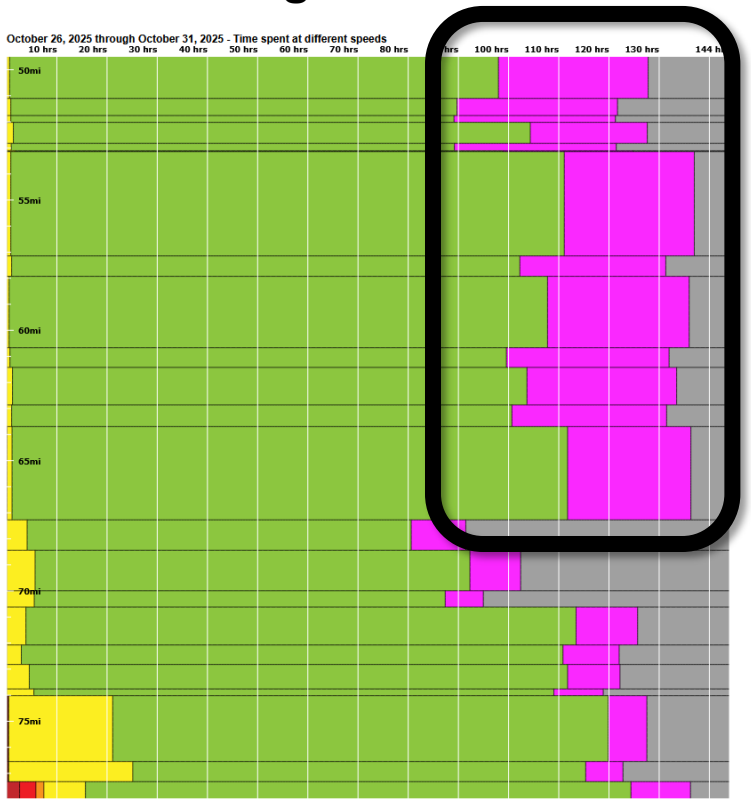
Passenger vehicles are primary contributors

Average speeds over 80mph 20% of the time

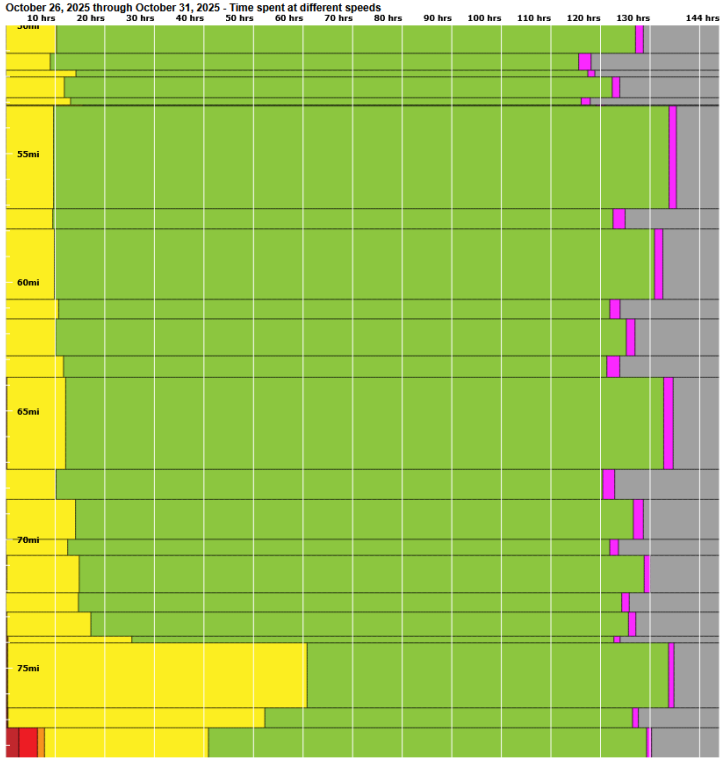
Trucks and passenger vehicles



Passenger vehicles



Trucks



Summary

- Speed visualizations can screen for likely areas of excessive speeding
- Good for selecting general areas to focus on
- Need to consider local speed limit when evaluating
- Point-based methods (e.g., TTI's Virtual Speed Zoning) better for determining speed percentiles for speed studies

QUESTIONS

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