Numetric Crash Data Analysis

The Problem

Data visualization tools are critical: Their ability to provide concise, consumable insights 'at-a-glance' is crucial to building a deep understanding of the type, time, location, and contributing factors involved in the huge volume of crash data generated across Texas. Continuously improving the ability to efficiently and effectively analyze crash data is vitally important as TxDOT works on many fronts to reduce roadway fatalities to zero.

The Innovation

AASHTOWare Numetric platform: Although TxDOT has collected, analyzed, and reported large amounts of traffic safety data for decades, improving the speed and efficiency with which actionable insights can be drawn helps ongoing efforts to make Texas roads safer. Adding the Numetric platform to TxDOT's arsenal allows data analysts, engineers, and safety professionals across the state to use all crashes (approximately 6.5 million reports) as the starting point on a map and filter down from there. Current Crash Records Information System (CRIS) Query tools require users to filter down to fewer than 50,000 crashes to get tabular or chart data, and further down to 5,000 or fewer before the data can be visualized on the map.

With Numetric, users can visualize all crashes at once, filter for the emphasis area they're interested in, and then pull latitude and longitude information to use in other GIS software. The scale change for mapping is an order of magnitude higher within the tool.

Other Highlights:

- CRIS data from Jan. 1, 2014 to Sep. 30, 2024 is loaded and available on the Numetric platform.

- User training for engineers and law enforcement has been conducted and training videos are available.

- Given the 'Texas-sized' scale of the traffic safety data that TxDOT manages, Numetric rolled out 'large organization support' for their toolset.

- The platform was fully implemented at TxDOT in February 2024.

TxDOT Resources

Crash data analysis and statistics (txdot.gov)

Annual Texas motor vehicle crash statistics (txdot.gov)

CRIS Query Tool (state.tx.us)

Texas Department of Transportation Traffic Safety Data Portal

#EndTheStreakTX (txdot.gov)
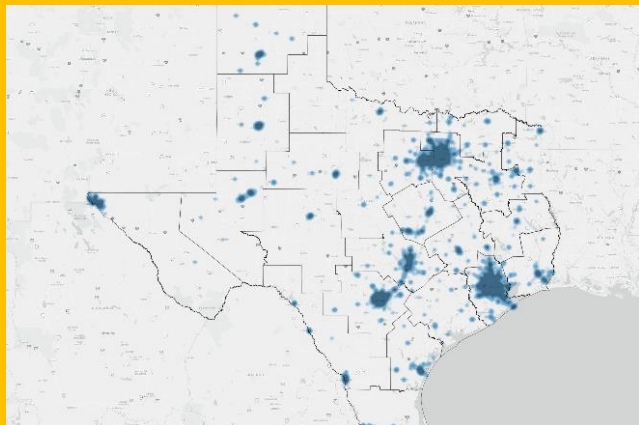
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Aligned with these TxDOT Goals
- Focus on the customer
- Promote safety

Contact
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The Benefits

- Improves visibility of crashes to help pinpoint areas that might need specific treatments, priority areas with higher crash rates, or locations where a particular type of crash is recurring.

- Helps identify the impact of mitigating strategies and/or safety interventions through the use of before-and-after timeframe analysis tools.

- Makes CRIS data more user-friendly and easier to work with.