Tools to Determine Pedestrian Safety Trends

2022 Texas Pedestrian Safety Forum

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Texas Department of Transportation

Session Outline

1. What is TxSTORM and how does it support a data-driven approach to pedestrian safety?

2. How can I use TxSTORM?

Session Outline

1. What is TxSTORM and how does it support a data-driven approach to pedestrian safety?

TEXASTRCC Overview

Partnership of Core Traffic Records Agencies

Improve Traffic Data Records Systems

- Accessibility
- Accuracy
- Completeness
- Consistency
- Timeliness
- Uniformity
- Integration (forthcoming)

Traffic Records Program Assessment Advisory, 2018 Edition

NHTSA
STRAP
Every 5 years

Core Agencies w/ Executive Voting Members

Texas Department of Transportation

Texas Department of Public Safety

TEXAS Health and Human Services | Texas Department of State Health Services

Texas Department of Motor Vehicles

Non-voting subcommittee members

Support

Texas Department of Transportation

Texas A&M Transportation Institute

https://texastrcc.org

- Resources
- Members
- Subcommittees
- Strategic Plans and Assessment
- Texas Traffic Records Diagram
- TxSTORM
- Meetings and Agendas
- Calendar
- Contact

Homepage

The Texas Traffic Records Coordinating Committee (TRCC) is a partnership of representatives from the transportation, law enforcement, criminal justice, and health professions. This statewide group of stakeholders uses the TRCC as a forum for the planning, coordination and implementation of projects to improve the State's traffic records system.

The TRCC uses Federal "State Traffic Safety Information System Improvement Grants (405c)" and other funds to promote projects to improve the accessibility, accuracy, completeness, consistency, timeliness, and uniformity of the traffic records systems in Texas. These projects include efforts to improve individual databases as well as to promote linkages between the core traffic records systems through the development of interfaces to improve direct business needs and integration to improve data analysis.

The Executive Texas TRCC includes members representing the six core traffic records databases in Texas:

RESOURCES

CLICK HERE to learn about traffic records resources and tools available to stakeholders.

Coming 9/22

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https://texastrcc.org

- Meets 4x / year
- TSIS annually: Traffic Records Information System Strategic Plan
- Website
  - Agendas/meetings minutes
  - Resources
  - TxSTORM
- Subcommittees
  - Stakeholder meeting 9/2022

email e-shipp@tti.tamu.edu

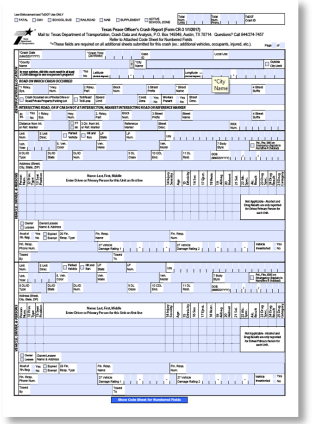
TEXASTRCC Members

Core Traffic Records Data

Crash Data

The Texas Department of Transportation's (TxDOT) website allows users to view Annual Summary Reports, create queries using the CRIS Query Tool, submit a request for publicly available data, or download extract files of large data sets.

Law enforcement agencies using TxDOT's CRASH website for crash report submission may also receive free access to MicroStrategy, which is a business intelligence tool to analyze crash data. Information on MicroStrategy training can be found here, and information on which pre-made canned reports are available can be found here.



Vehicle Data

Users can submit a request for vehicle data through the Texas Department of Motor Vehicle's (TxDMV) website. Note, there is a fee depending on the number of records requested.

Driver Data

Public data request forms can be found on the Texas Department of Public Safety's (TxDPS) website. Additional aggregated public driver license data can be found here.

Roadway Data

The roadway inventory can be accessed on TxDOT's website.

Citation Data

Online data requests can be found on TxDPS' website. DPS also publishes de-identified traffic stop data which can be downloaded by month and analyzed.

Texas law enforcement agencies may contact DPS' Highway Safety Operations Center (HSOC) for data requests. Law Enforcement will need to fill complete this form when making a request.

Injury Surveillance

Publicly available data can be accessed on Department of State Health Services' (DSHS) website.

Texas auto registration fees would jump $5 in DMV plan; tax collectors opposed (chron.com)

Data Driven Safety: The Problem

Road to Zero needs crashes to be reduced statewide

- Eliminate all fatalities by the year 2050
  - Texas Transportation Commission: May 30, 2019

- National Roadway Safety Strategy
  - Secretary Buttigieg: "…only acceptable number is zero…"

[FHWA, ND]

Data Driven Safety: Moving Forward

Traditional Approach

- Count total crashes to identify critical areas
- Produce crash count “hot spot” maps
- Highly correlated with highly populated / high traffic areas

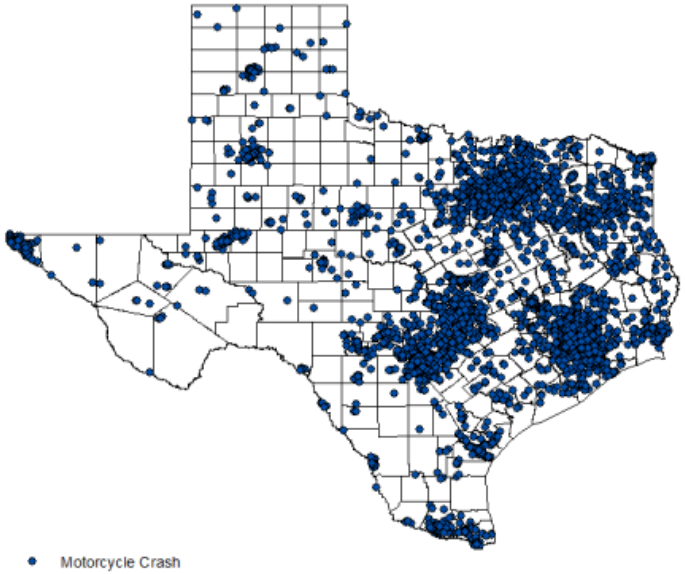


Figure 6. Motorcycle Crashes, 2020.

Hot Spot Map for Motorcycle Crashes

Trueblood et al., 2021

TEXASTRCC

https://texastrcc.org/txstorm/

TxSTORM

Texas State Trend Over-Representation Model

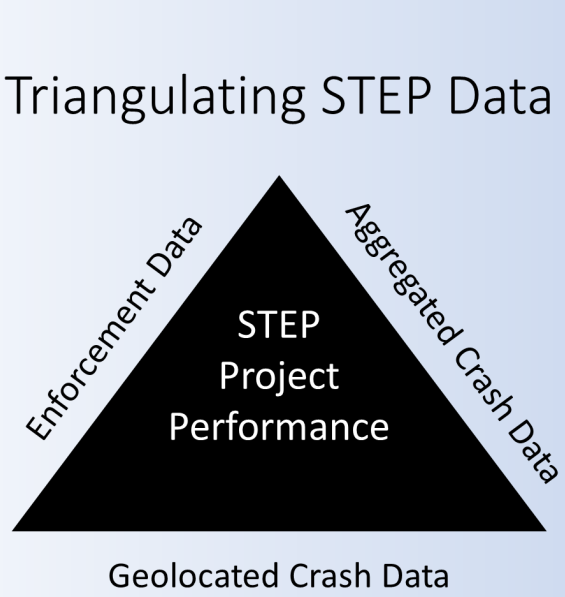
A multi-agency product of the Texas Traffic Records Coordination Committee designed to identify crash-related trends and facilitate the efficient deployment of resources.

TEXASTRCC

https://texastrcc.org/txstorm/

Data Driven Philosophy

- Establish the “average” year for each reporting jurisdiction
  - 3-year baseline vs current trend
  - Lessens impact of anomalies
- Identifies & measures adverse trends
  - Measures difference between local & statewide trends
  - Forecasts net change between baseline & year-to-date data
  - Single numerical value expresses relative impact of local trend



STEP: Selective Traffic Enforcement Program

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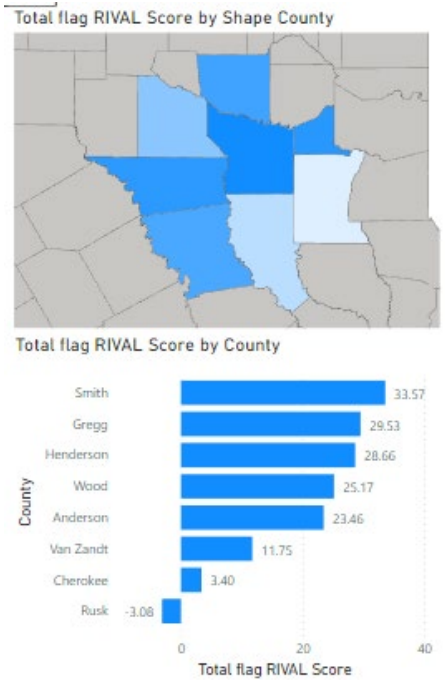
TxSTORM

- Provides basis for setting achievable targets
- Supports program design & implementation
  - Where should we put our resources?
  - Are we contributing to a positive change?
- Useful for more than STEP!



Tyler Scores

TEXASTRCC

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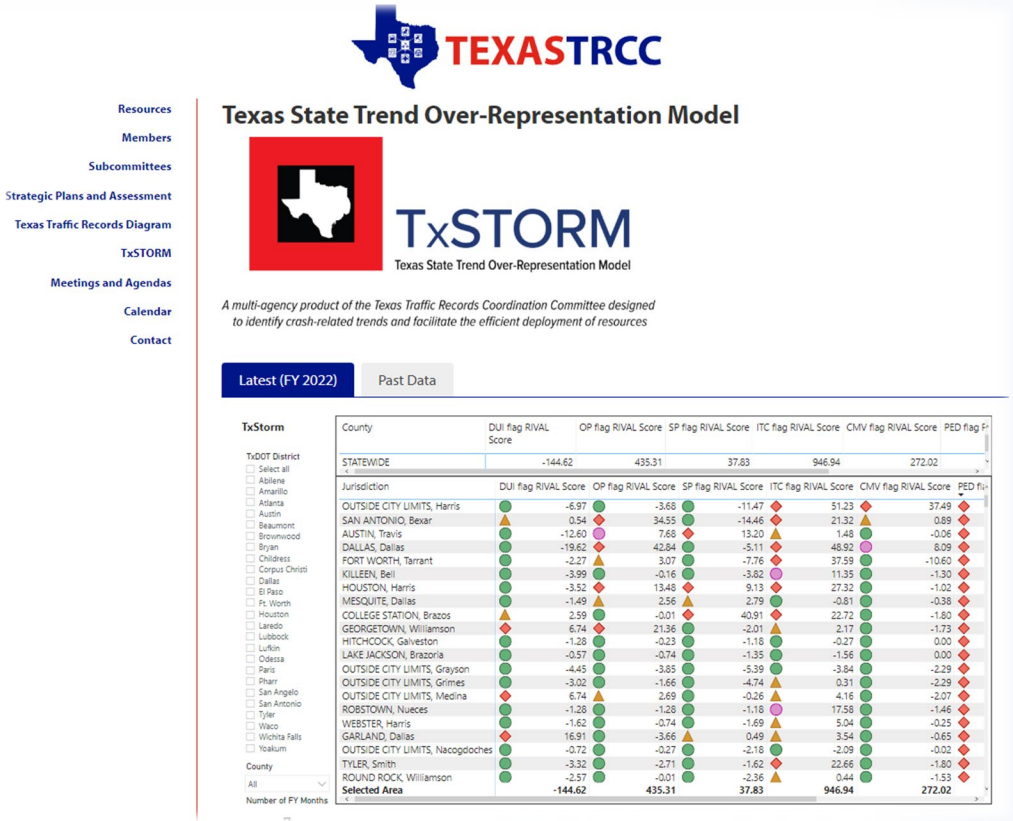
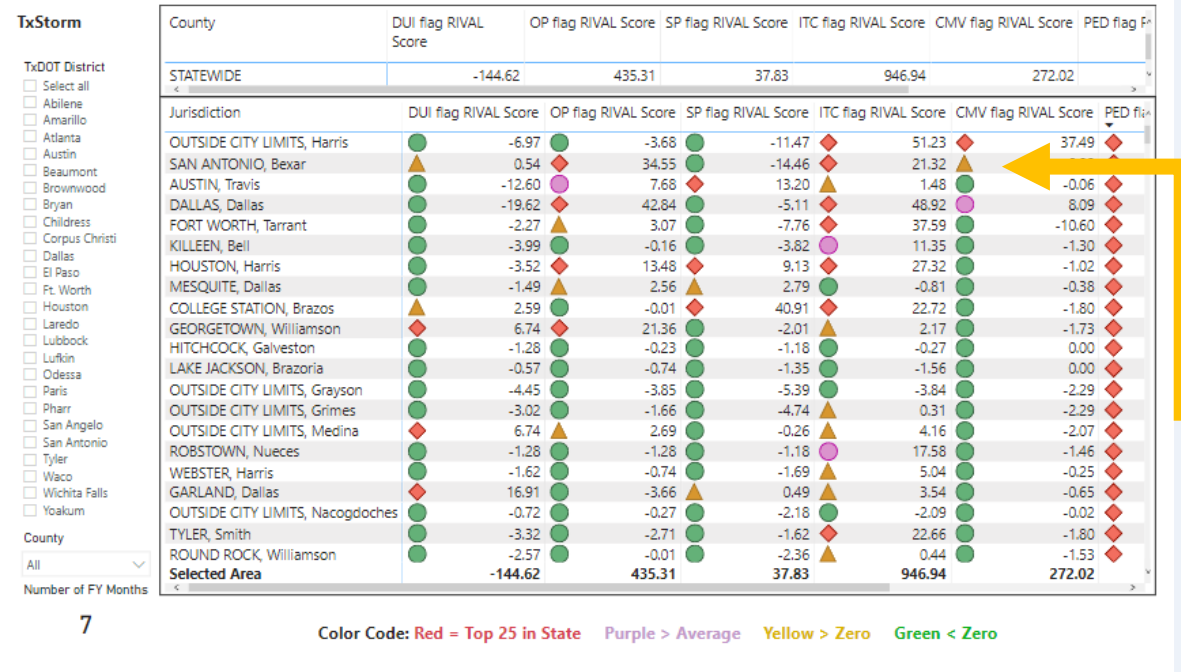


TxSTORM

- Interactive data dashboard
- 12 “pages”
- Filter by location: state, jurisdictions, TxDOT Districts, and County
- Filter by crash severity: KA or KABCO
- Filter by crash type (e.g., speeding)

https://texastrcc.org/txstorm/



County	DUI flag RIVAL Score	OP flag RIVAL Score	SP flag RIVAL Score	ITC flag RIVAL Score	CMV flag RIVAL Score	PED flag F
STATEWIDE	-144.62	435.31	37.83	946.94	272.02	

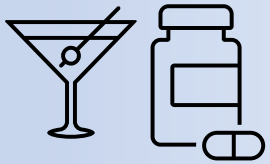
Jurisdiction	DUI flag RIVAL Score	OP flag RIVAL Score	SP flag RIVAL Score	ITC flag RIVAL Score	CMV flag RIVAL Score	PED fl
OUTSIDE CITY LIMITS, Harris	-6.97	-3.68	-11.47	51.23	37.49	
SAN ANTONIO, Bexar	0.54	34.55	-14.46	21.32		
AUSTIN, Travis	-12.60	7.68	13.20	1.48	-0.06	
DALLAS, Dallas	-19.62	42.84	-5.11	48.92	8.09	
FORT WORTH, Tarrant	-2.27	3.07	-7.76	37.59	-10.60	
KILLEEN, Bell	-3.99	-0.16	-3.82	11.35	-1.30	
HOUSTON, Harris	-3.52	13.48	9.13	27.32	-1.02	
MESQUITE, Dallas	-1.49	2.56	2.79	-0.81	-0.38	
COLLEGE STATION, Brazos	2.59	-0.01	40.91	22.72	-1.80	
GEORGETOWN, Williamson	6.74	21.36	-2.01	2.17	-1.73	
HITCHCOCK, Galveston	-1.28	-0.23	-1.18	-0.27	0.00	
LAKE JACKSON, Brazoria	-0.57	-0.74	-1.35	-1.56	0.00	
OUTSIDE CITY LIMITS, Grayson	-4.45	-3.85	-5.39	-3.84	-2.29	
OUTSIDE CITY LIMITS, Grimes	-3.02	-1.66	-4.74	0.31	-2.29	
OUTSIDE CITY LIMITS, Medina	6.74	2.69	-0.26	4.16	-2.07	
ROBSTOWN, Nueces	-1.28	-1.28	-1.18	17.58	-1.46	
WEBSTER, Harris	-1.62	-0.74	-1.69	5.04	-0.25	
GARLAND, Dallas	16.91	-3.66	0.49	3.54	-0.65	
OUTSIDE CITY LIMITS, Nacogdoches	-0.72	-0.27	-2.18	-2.09	-0.02	
TYLER, Smith	-3.32	-2.71	-1.62	22.66	-1.80	
ROUND ROCK, Williamson	-2.57	-0.01	-2.36	0.44	-1.53	
Selected Area	**-144.62**	**435.31**	**37.83**	**946.94**	**272.02**	

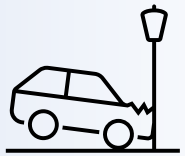
Key Terms (Will see again in demo!)

- RIVAL Score
  - **R**elative **I**mpact **Val**ue
  - Top 25 most critical above statewide average
  - Color & shape coded
    - Red = Top 25 in state
    - Purple = above state average
    - Yellow = above 0
    - Green = below 0

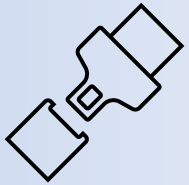
TxSTORM
Texas State Trend Over-Representation Model

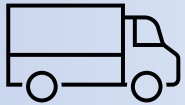
Data Categories

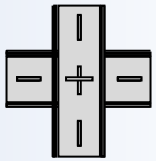




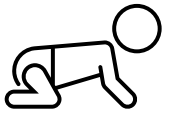
Total crashes



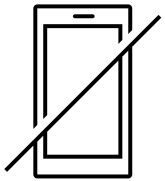




Operators ≤ 25 years
≥ 65 years



Occupant ≤ 8 years



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TxSTORM
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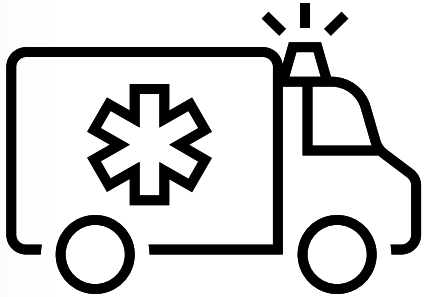
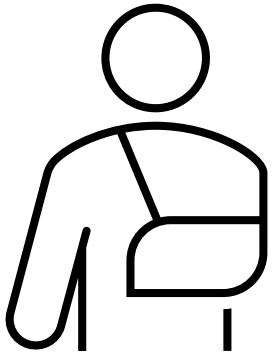




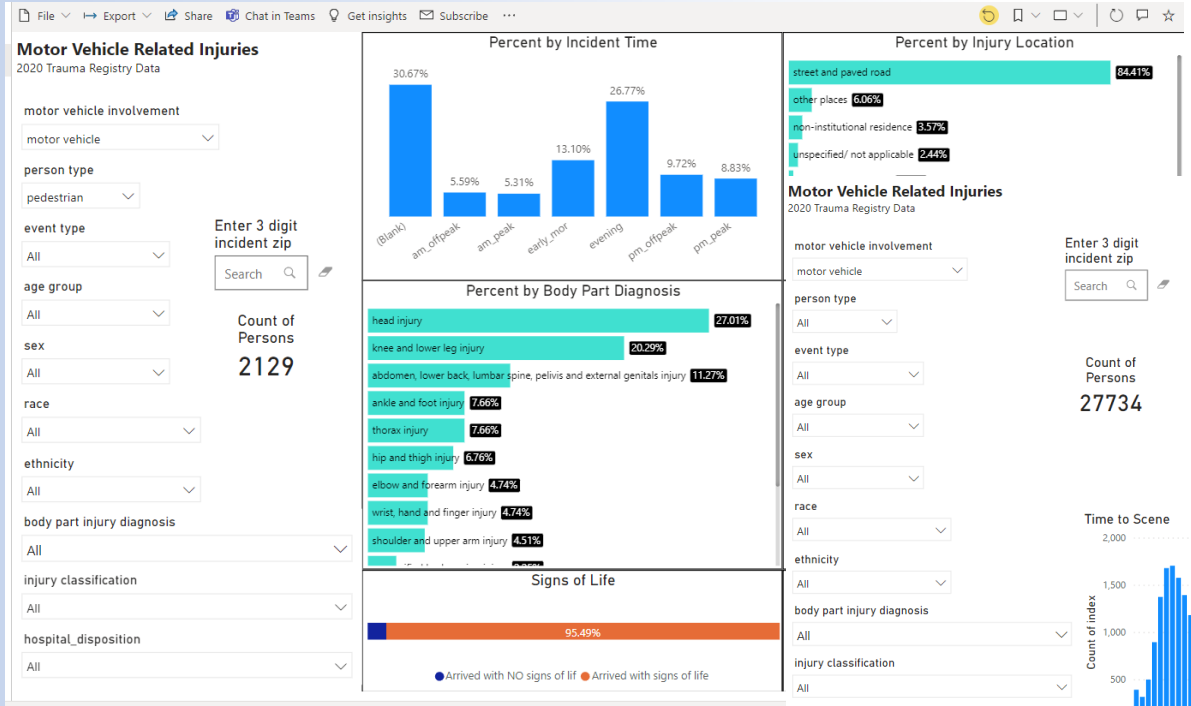
And more….

TxSTORM

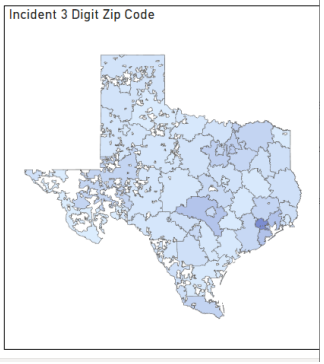
Texas State Trend Over-Representation Model

TRAUMA DASHBOARD

coming soon



incident_zipcode	Average of time to scene	Min of time to scene	Max of time to scene	Count of time to scene
884	33.88	6	57	8
883	26.92	8	51	13
879	26.55	2	51	11
881	26.18	0	51	17
734	25.69	4	55	36
735	24.40	8	48	10
999	23.78	12	37	9
764	22.17	0	57	128
739	21.89	0	55	9
882	21.47	0	58	45
747	21.28	1	52	64
745	21.17	0	51	12
Total	**12.23**	**0**	**59**	**20241**



TxSTORM
Texas State Trend Over-Representation Model

Summary

Strengths

- Shows near-real time trends with regular updates
- Excellent “screening” tool
- Diagnose traffic safety problems
- Guide resource deployment/actions
- Provides overall & specific crash types

Limitations

- Trends changes may not be causal

Pedestrian TxSTORM Demo

2. How can I use TxSTORM?

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QUESTIONS?

https://texastrcc.org/txstorm/

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