

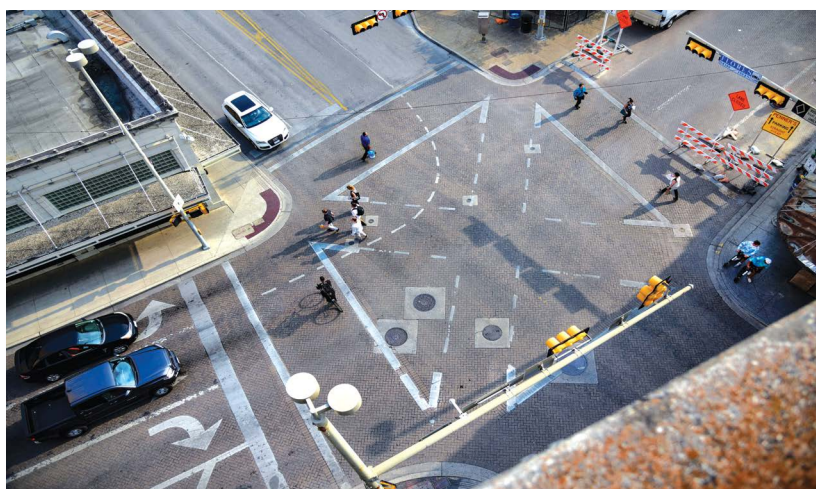
Saving Lives with Connectivity: Accelerating Vehicle to Everything (V2X) Deployment



USE CASE #11 Houston SPaT Enabled Intersections

WHAT IS VEHICLE-TO-EVERYTHING (V2X)?

V2X functions like a group chat for the road. It allows cars, traffic lights, and other road users to communicate in real-time by sending messages to each other, and each message can carry different safety and roadway information.



Aerial view of intersection with pedestrians, cars, & construction barriers. (source TTI)

USE CASE #11 DESCRIPTION

Intersections can be unpredictable, especially during busy travel periods. This use case provides drivers with real-time information about signal timing and intersection activity before they arrive. With insight into current light status and upcoming changes, drivers can make smoother, safer decisions as they approach.

WHAT CAN I EXPECT FROM THIS USE CASE?

At select intersections in the Houston region, V2X-equipped vehicles will display intersection insights, such as the current light status, when the light is expected to change, and whether a vulnerable road user like a pedestrian is present.

HOW DOES IT WORK?

V2X-equipped intersections broadcast standardized messages that contain real-time light status, timing for light changes, and intersection layout. These intersections also use cameras to detect people, translating that information into V2X messages. By exchanging V2X messages, intersections and V2X-equipped vehicles can speak the same language and keep everyone informed.

HOUSTON 2022 TRAFFIC CRASHES

323
DEATHS

1,592
SERIOUS
INJURIES



>1/3 of crashes on Texas roadways involve PEDESTRIANS

DISREGARDING:



STOP SIGNS
and



TRAFFIC
SIGNALS

...is linked to

14% of
traffic deaths

22% of
serious injuries

USER STORY

The Challenge: You deliver packages across town during the afternoon rush. In a hurry, you speed toward an intersection hoping to make the green light.

V2X Solution: As you approach, your V2X-equipped vehicle receives a V2X message showing the current light status and that it will turn red in a few seconds

Outcomes & Benefits: Realizing you don't have enough time, you slow down, stop, and wait — keeping yourself and others safe.

Houston SPaT Enabled Intersections

TEXAS TRUST PROJECT

The Transforming Roads: Unleashing Smart Technologies (TRUST) project is a federally funded initiative led by the Texas A&M Transportation Institute (TTI).

TTI, in partnership with state, local, and industry partners, is implementing V2X technology in Houston and Bryan-College Station through 15 real-world use cases that demonstrate how V2X can enhance safety, mobility, efficiency, and economic growth. TRUST aims to develop solutions that work across different technologies and regions, while sharing insights to help create a national blueprint to accelerate V2X adoption and implementation nationwide.

USE CASES

LOCATION:

GREATER HOUSTON AREA

- 10. Roadway Flood Warning
- 11. SPaT-Enabled Intersections**
- 12. Right Turn on Red Warning
- 13. Red Light Violation Warning
- 14. Wrong Way Driving Detection
- 15. Emergency Vehicle Response Time and Safety



LEARN MORE ABOUT TEXAS TRUST & V2X

For more information on Texas TRUST and to explore V2X educational resources, project updates, and use cases, please visit: <https://v2xtexastrust.com/>

For a list of supporting references used in these materials, visit: [V2X Use Case Sources](#).



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