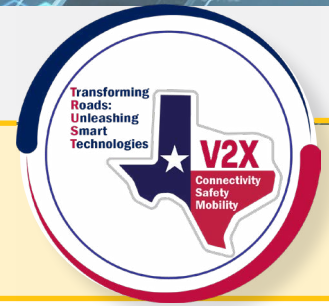


Saving Lives with Connectivity: Accelerating Vehicle to Everything (V2X) Deployment



USE CASE #5

Enhanced Highway Construction Worker Safety

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.



Highway crew manages work zone with cones and convoy vehicle guiding traffic. (source TTI)

USE CASE #5 DESCRIPTION

Mobile work zones are moving operations that support roadway maintenance, such as debris pickup, roadway sweeping, and repairs. They move with the crew and do not rely on fixed signs. Drivers may only see a sign on the back of a work vehicle, offering little advance notice. This use case leverages V2X to send real-time alerts to drivers approaching the work area.

WHAT CAN I EXPECT FROM THIS USE CASE?

On specific roadways, V2X-equipped vehicles will receive real-time alerts about mobile work zones ahead. Because these operations move with the crew and may only display a rear-mounted sign board, drivers benefit from earlier digital warnings that improve visibility and provide additional time to adjust speed.

HOW DOES IT WORK?

Work vehicles are equipped with V2X technology that broadcasts alerts as they move. These messages are received by V2X-equipped vehicles, notifying drivers of nearby mobile work activity even when sight distance is limited.

(2024) **Brazos County**
 **159 work zone crashes**

Texas **~28,000**
work-zone crashes
 **215 DEATHS**
825 SERIOUS INJURIES

2024-2025 **1,900+**
active work-zones statewide

USER STORY

The Challenge: You are driving at highway speed when you suddenly encounter a slow-moving maintenance vehicle ahead. With only a warning sign on the back of the truck, you brake abruptly, increasing risk to road workers and nearby drivers.

V2X Solution: As you approach, your V2X-equipped vehicle receives a real-time alert about the mobile work zone ahead, even before it comes fully into view.

Outcomes & Benefits: You slow down earlier, adjust lanes more smoothly, and pass the moving work crew with greater awareness

Enhanced Highway Construction Worker Safety

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).

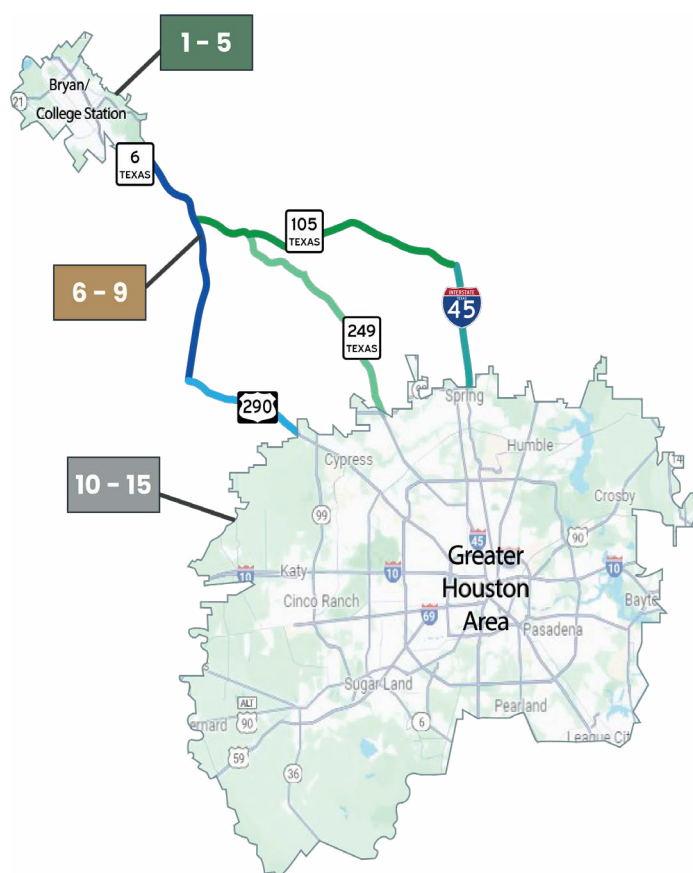
TTI, in partnership with state, local, and industry partners, is implementing V2X technology in Houston and Bryan-College Station through 15 real-world use cases that demonstrate how V2X can enhance safety, mobility, efficiency, and economic growth. TRUST aims to develop solutions that work across different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

USE CASES

LOCATION:

BRYAN/COLLEGE STATION

1. SPaT-Enabled Intersections for VRU Identification and Protection
2. Traffic Signal Preemption and Priority
3. Transit Fleet Integration
4. Every Day a Gameday
5. **Enhanced Highway Construction Worker 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](#).



Robert Brydia, PMP
Division Head
System Operations and Technologies
Texas A&M Transportation Institute



Questions? Email us at v2xtexastrust@tti.tamu.edu