

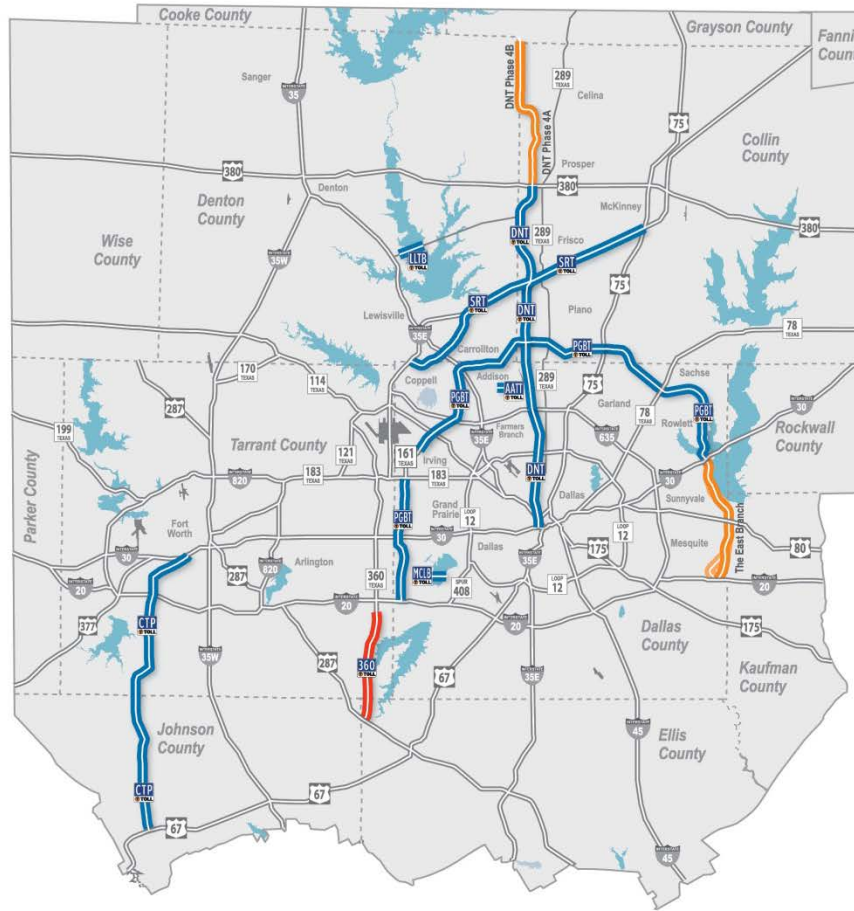
Rehabilitation and Capacity Management

S.A.M.E. Infrastructure Forum

**Mark Bouma, P.E.
Senior Corridor Manager**

February 2, 2018

NTTA System Map



LEGEND

- NTTA Roadway
- Under Construction
- NEPA Alignment(s)
- Corridor Study Area
- County Line
- Airports

TOLL FACILITIES

- Chisholm Trail Parkway
- President George Bush Turnpike
- Dallas North Tollway
- Sam Rayburn Tollway
- Addison Airport Toll Tunnel
- Lewisville Lake Toll Bridge
- Mountain Creek Lake Toll Bridge

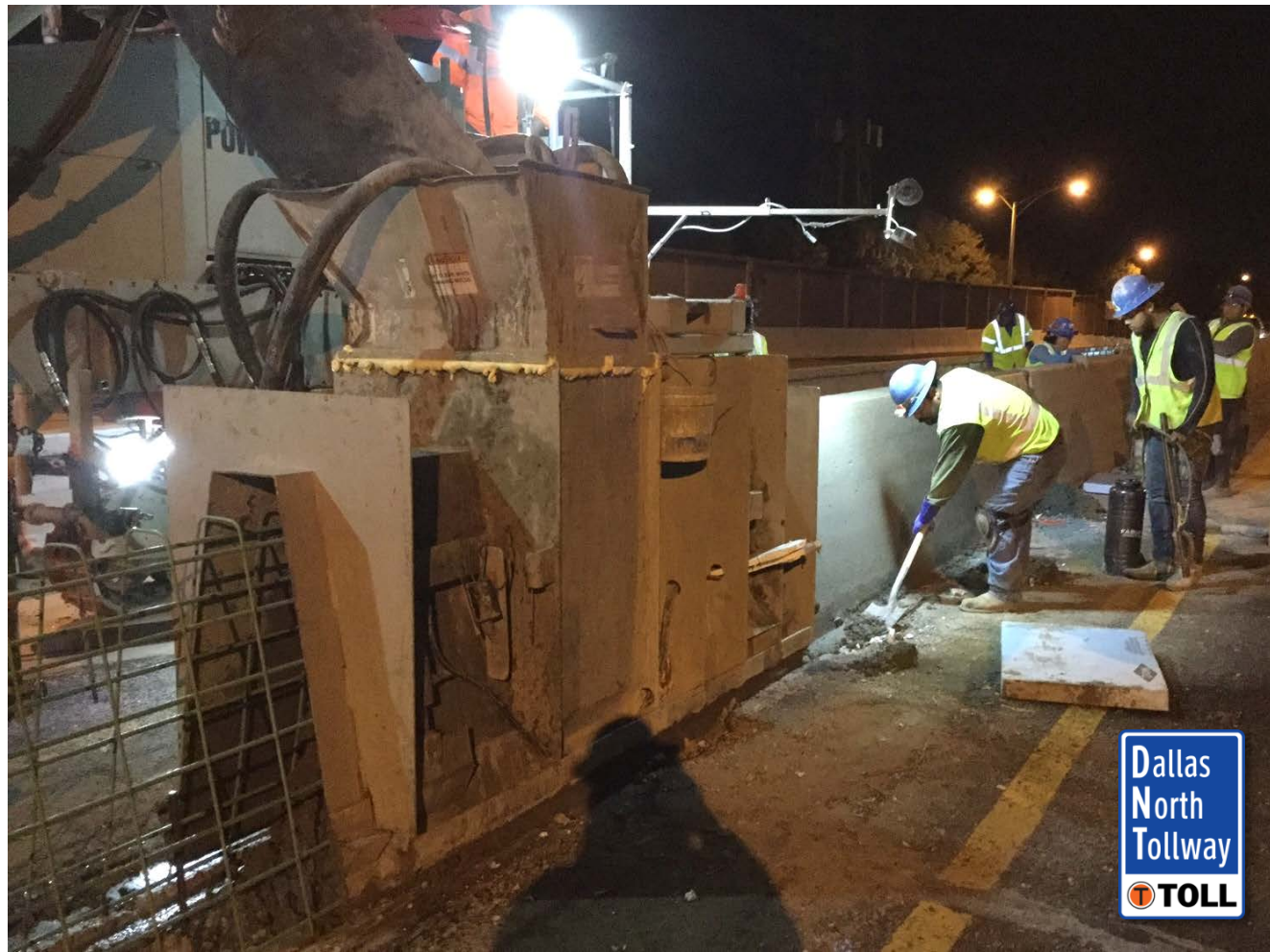
January 2018

A photograph of a complex multi-level highway interchange during sunset. The sky is a vibrant orange and yellow, with the sun low on the horizon. The concrete structure of the highway is silhouetted against the bright sky. A tall light pole stands on the upper level of the interchange. In the foreground, there is a field of dry, tall grass. A large orange rectangular box with a white border is overlaid on the bottom half of the image, containing the text 'Preserving Aging Infrastructure' in white. At the bottom of the slide, there is a grey horizontal bar with a dashed line and a small orange circle containing the number '2' on the right side.

Preserving Aging Infrastructure

DNT Overlay and Barrier Project

Placing concrete for
the new center barrier
near Inwood Road



Dallas North Tollway

Deck repair on the
I-35E to DNT direct-
connector ramp



Erosion Control

Landscape crew repairing erosion and installing new plants at Eldorado Pkwy.



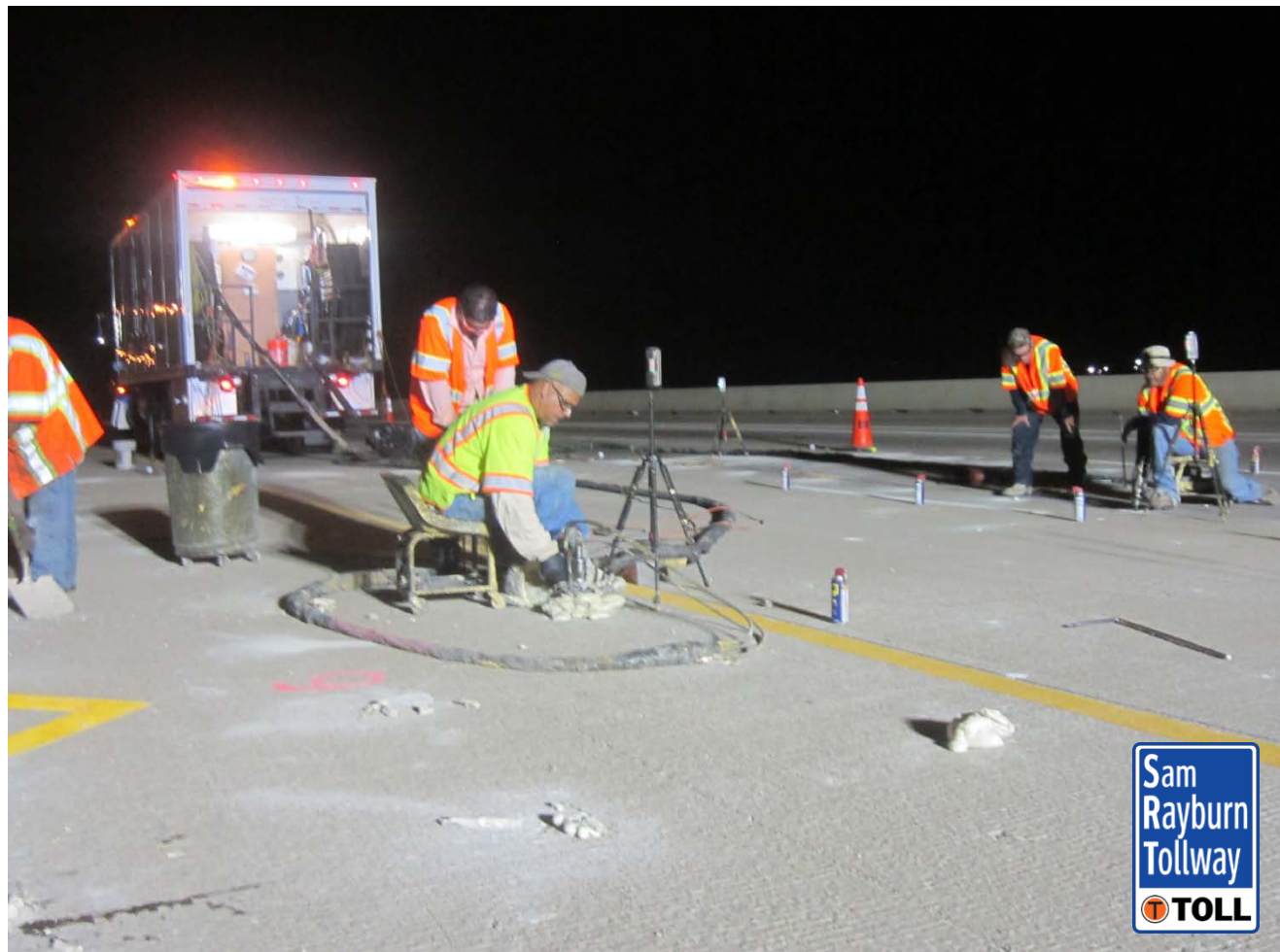
Before

After



Pavement Profiling

Foam injection to raise pavement section and improve ride quality



Pavement Grinding to Reduce Hydroplaning

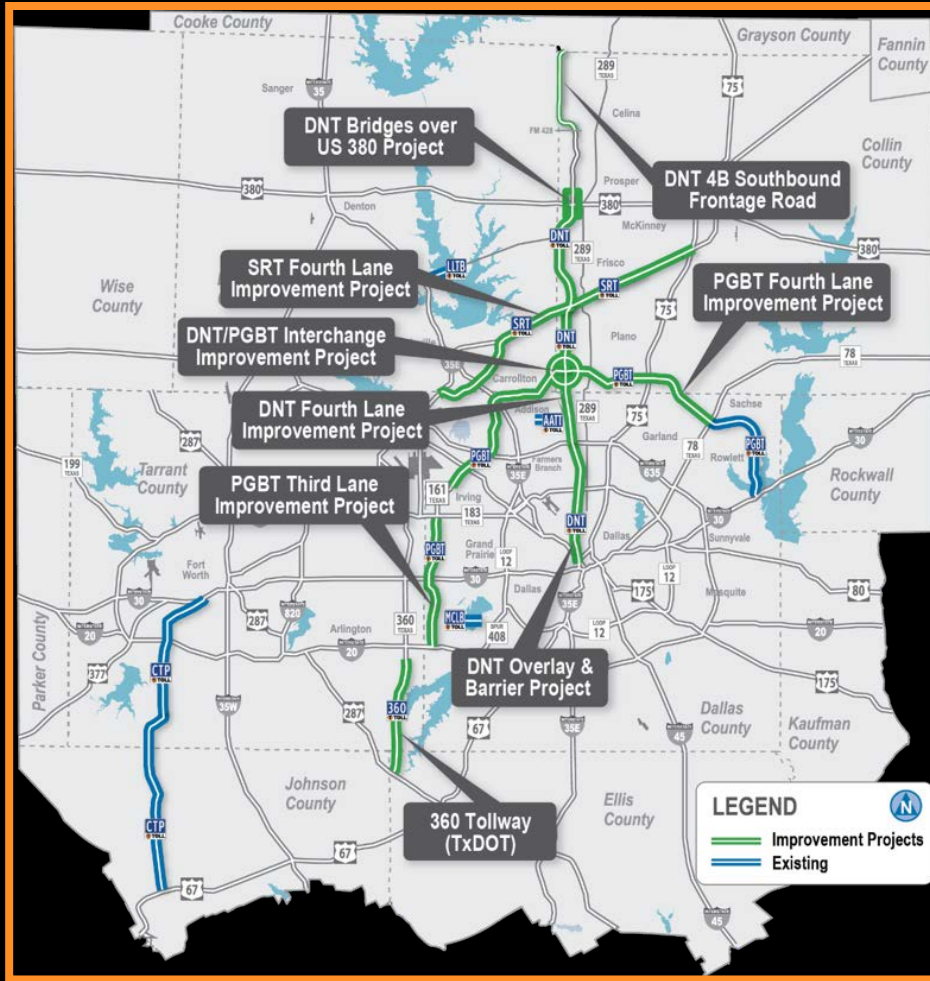
Innovative idea to use diagonal grinding to channel water off of pavement





Expansion of Existing Systems





DNT: I-635 to PGBT

Improvements

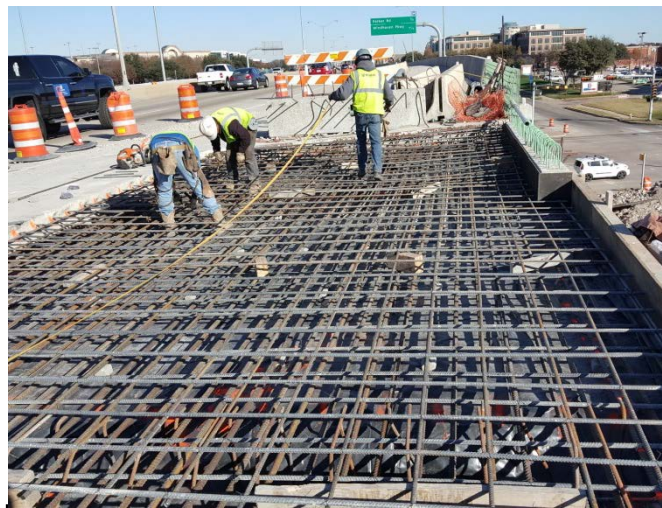
Looking north, the
paved main lanes of
the DNT near
Interstate 635



DNT: 4th Lane Construction Underway

New lanes opened in
December 2017

To be completed
this spring



PGBT: 4th Lane Construction Underway

Phased Opening
Between 2016 - 2021

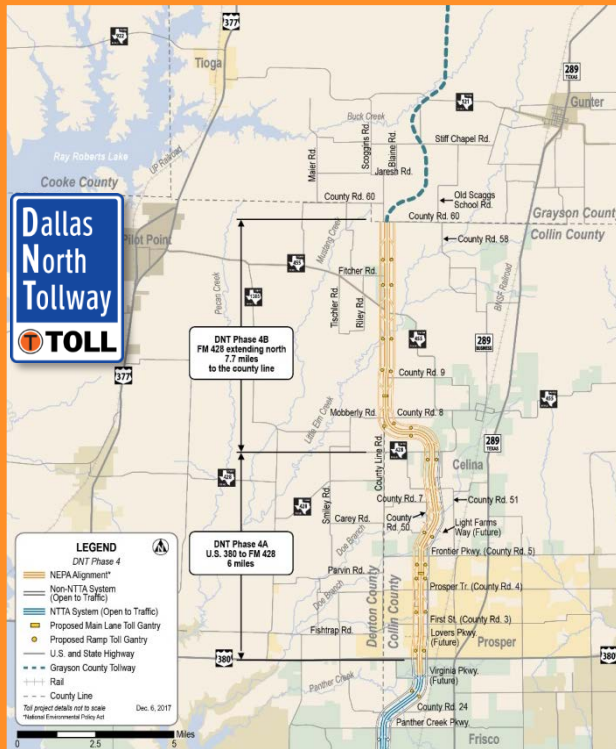


Design Underway SRT: 4th Lane

Opens Late 2021



New Roadways and Extensions



360 Tollway: Opens This Spring

The 360 Tollway
main lanes and
ramps over
Walnut Creek



Progress Underway

**DNT Mainlane
Bridges
Over US 380**

Opens 2022



DNT 4B Southbound Frontage Road

Design Underway
Opens 2020





Using Technology to Improve Safety

CCTV Camera Infrastructure



CCTVs
(1,825)

Detect traffic
accidents
and incidents



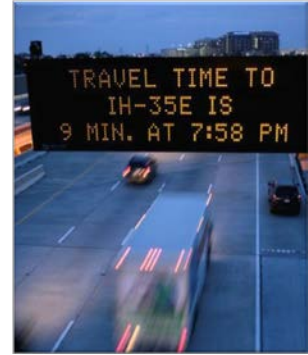
Travel Time Sensors
(42)

Send data to DMS and
NTTA.org



**Road weather
information systems
site sensors (8)**

Report pavement
conditions



**Dynamic
Messaging Signs**
(26)

Displays traffic
information

Additional CCTV Installations

Additional camera locations will provide full coverage of NTTA roadways



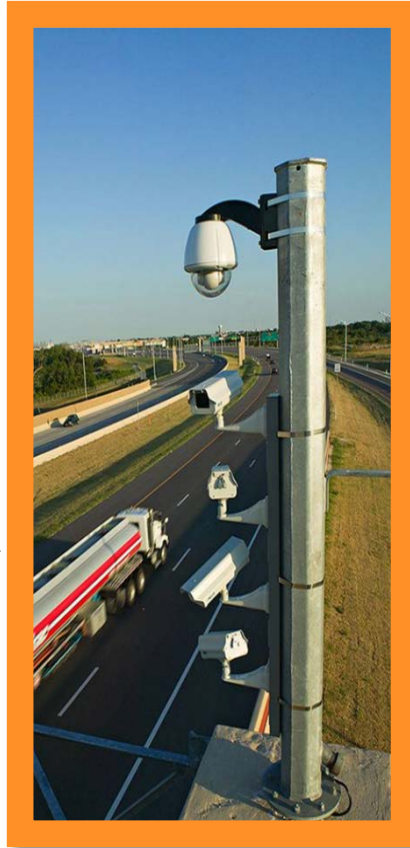
Incident Detection

Pavement Loops

- Existing infrastructure
- Wrong way driver detection

Accident Review Comm.

- Detailed review major accidents
- Engineering alternatives



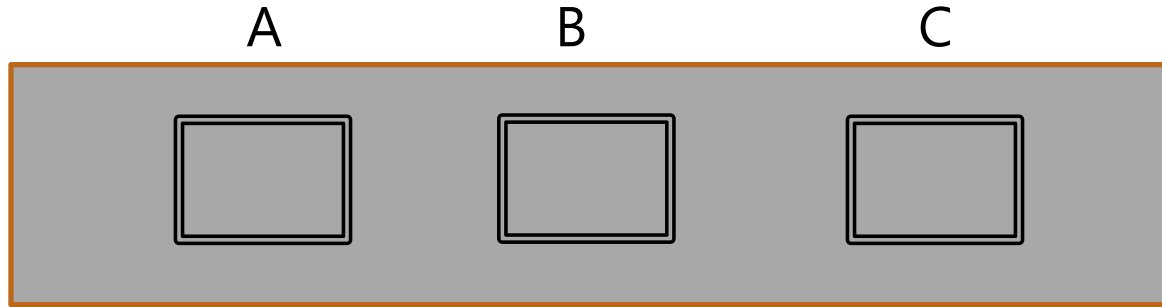
Hardware/Software

- Four fixed cameras
- One pan-tilt-zoom camera
- Content analysis software

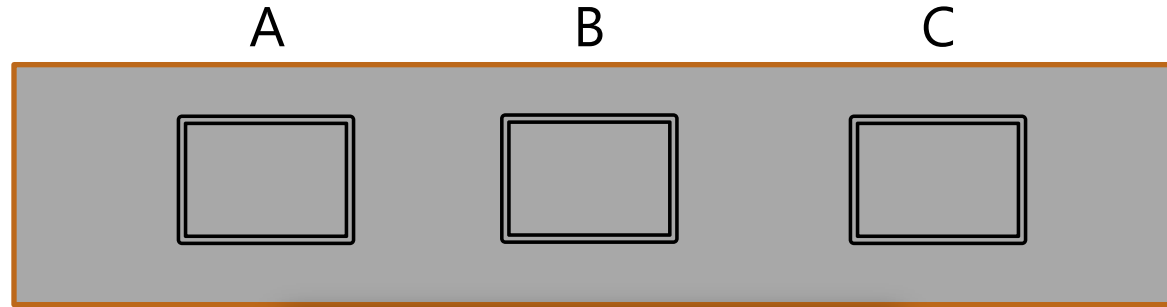
Incident Mapping

- Hot spots identified and studied
- Engineering alternatives

Wrong-way Driver Loop Detection



Wrong-way Driver Loop Detection



Accident Review Committee

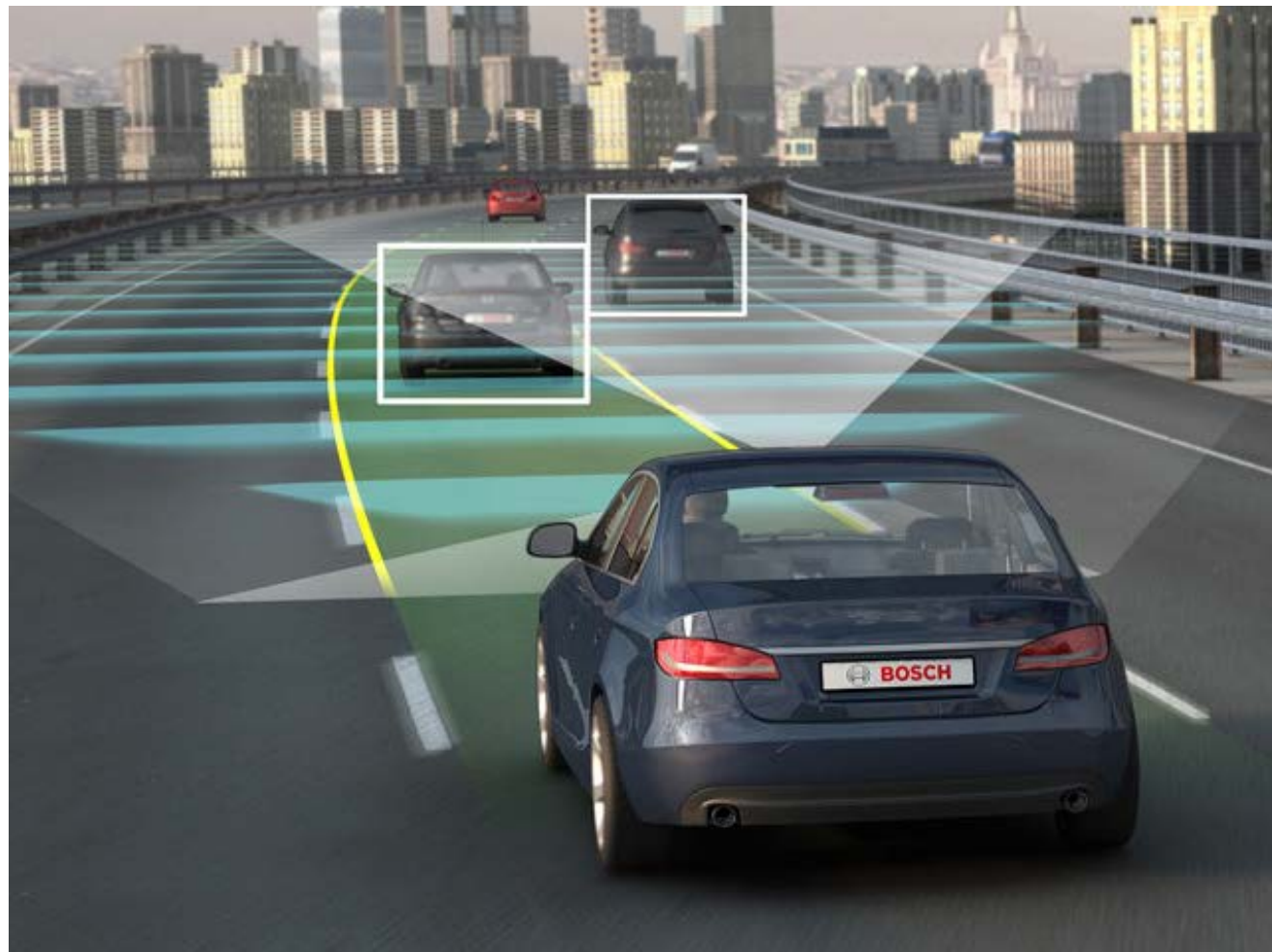


- Collaboration
- Debrief incident
- Review accidents
- Evaluate patterns

- Engineering
- Education
- Enforcement

Preparing for the future

New driver safety
systems and
autonomous
vehicles





| **QUESTIONS?**

North Texas Tollway Authority

Our Mission

❖ **Provide** a safe and reliable toll road system ❖ **Increase** value and mobility options for customers ❖ **Operate** the Authority in a businesslike manner ❖ **Protect** our bondholders ❖ **Partner** to meet our region's growing need for transportation infrastructure