

North Texas Tollway Authority

Traffic Safety and Congestion

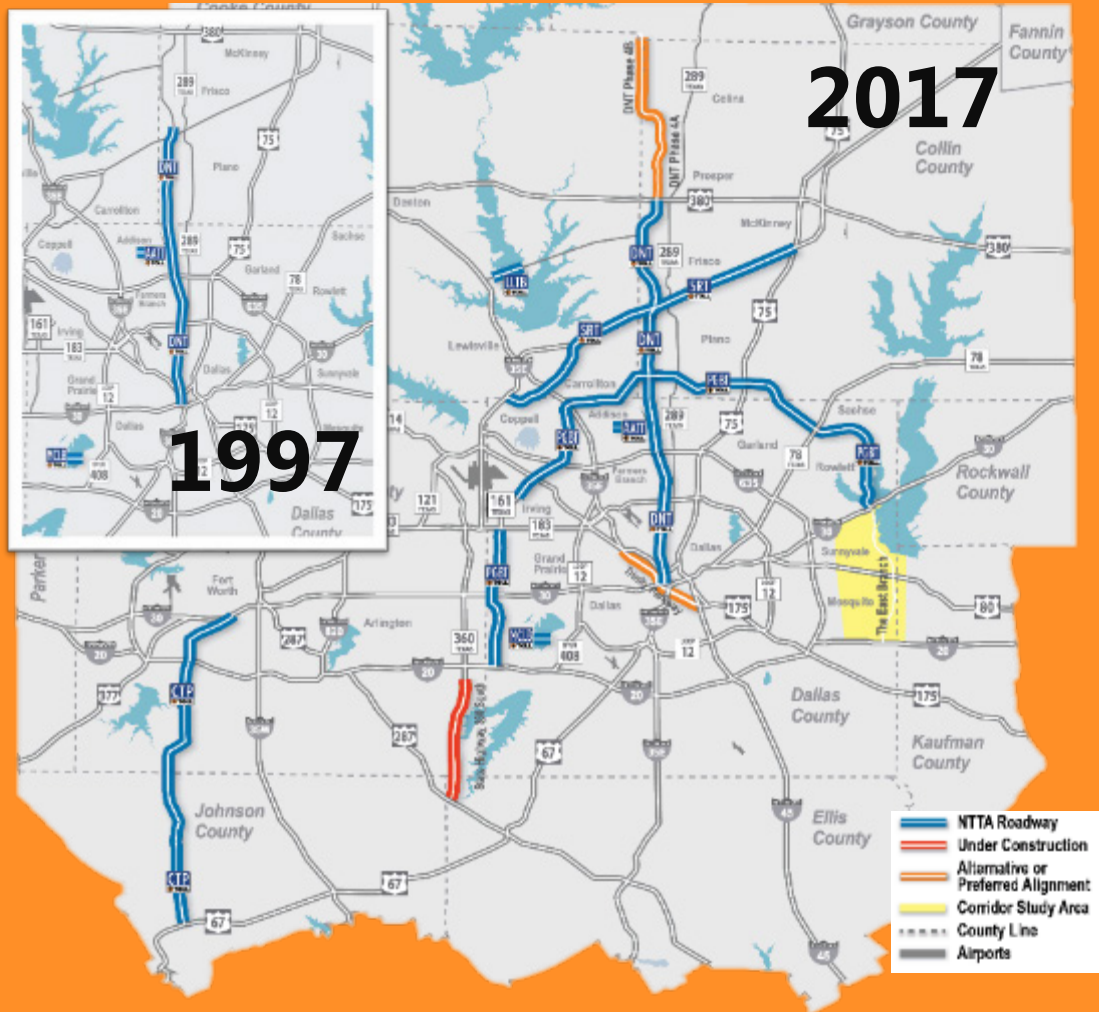
NCTCOG 18th Annual Public Works Roundup

May 10, 2017

Latest Edition

- NTTA established in 1997; non-budgeted state agency
- Texas Transportation Code 366
- \$3.4 billion to regional non-NTTA projects

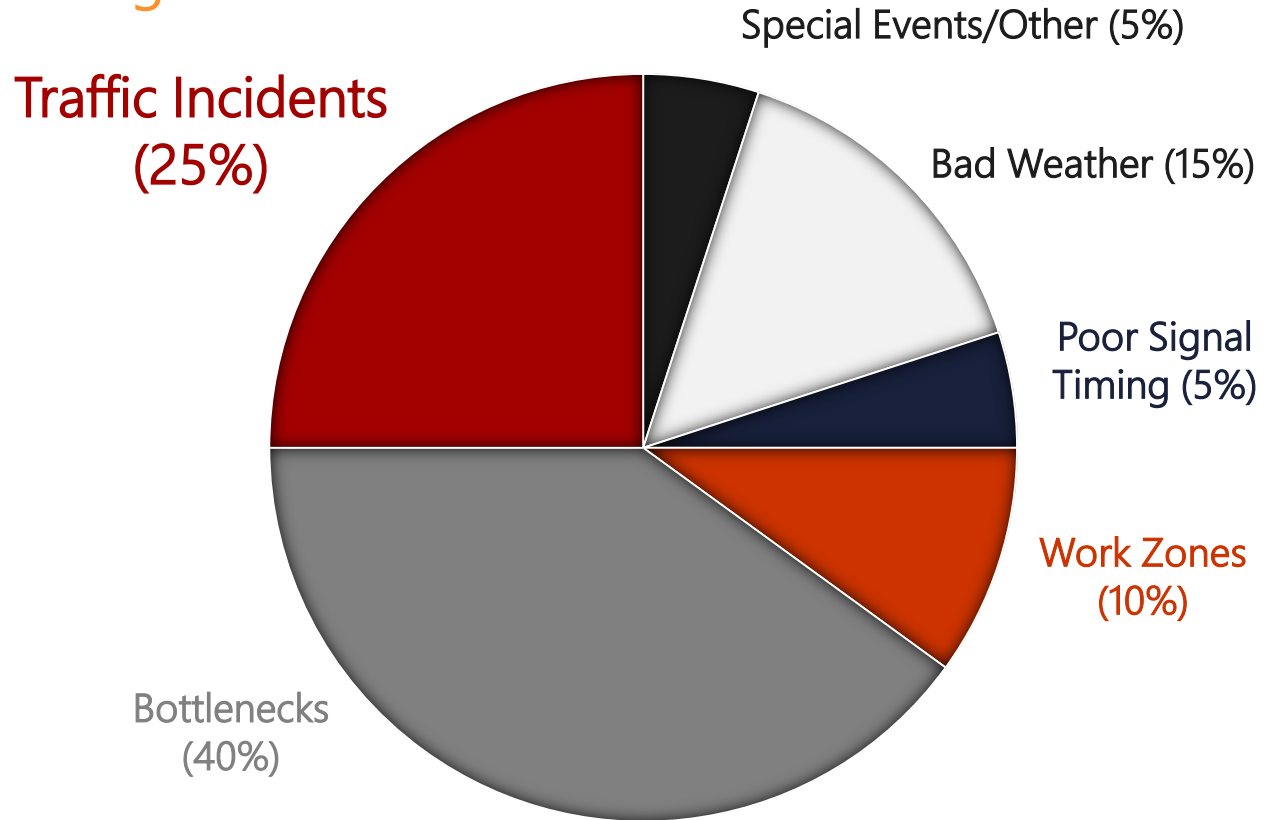
NTTA 1997 - 2017



25,640  ollTags
issued each week

4.41m active TollTags

Sources of Congestion



Source: Traffic Congestion and Reliability Final Report (2005)



Incident Management



Roadway Capacity Reductions

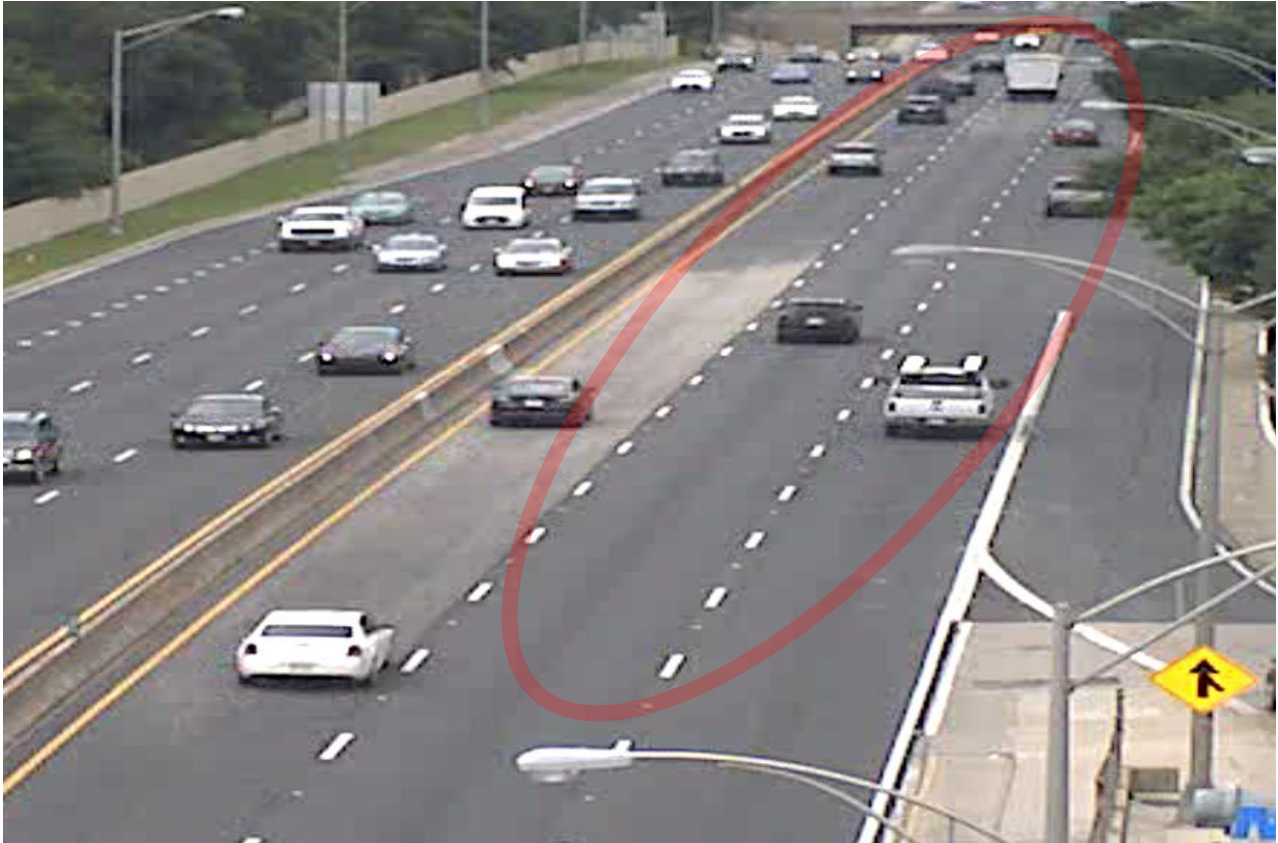
On a three lane roadway closing one lane reduces the capacity to 49%

Number of Lanes	If Shoulder Blocked	Lanes Blocked		
		1	2	3
3	83%	49%	17%	0%

Studies indicate that the likelihood of a secondary incident increases 2.8% for each minute that a lane is blocked



Before Incident



Vehicle Stops



Vehicle Moves – (Stopped 2-1/2 Min.)



1 Minute Later



5 Minutes Later



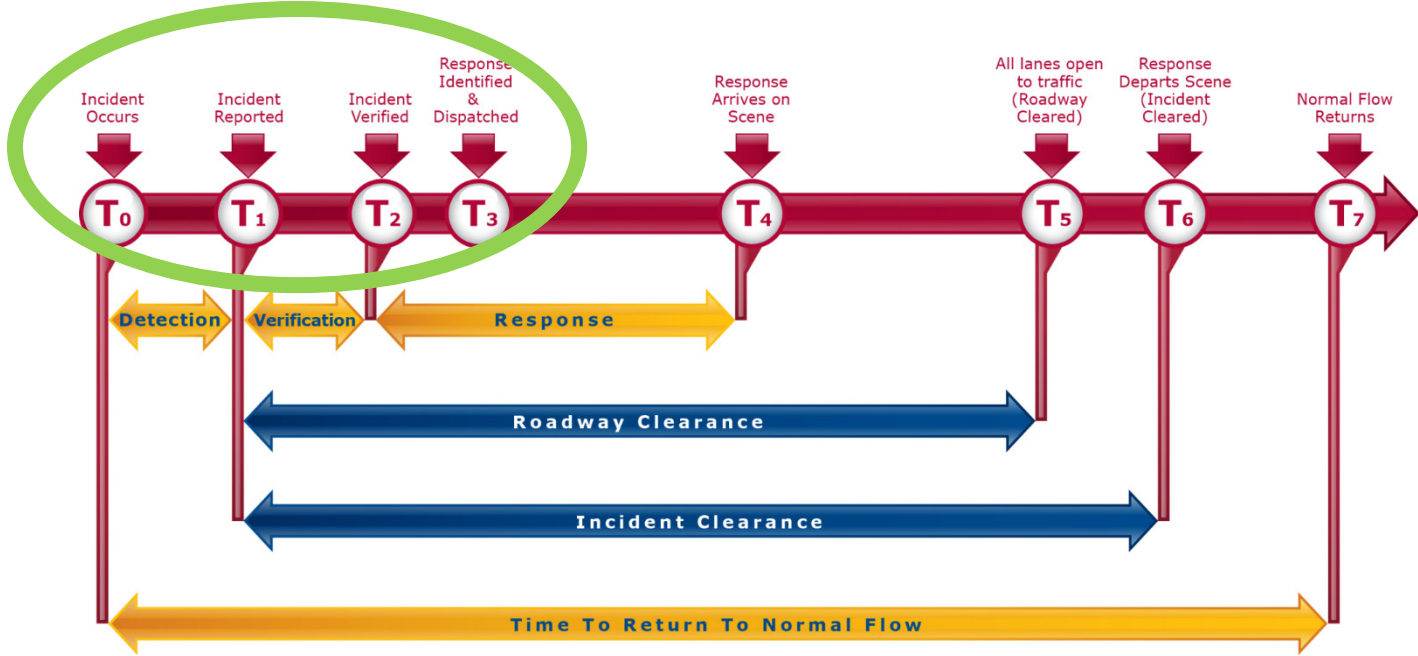
8 Minutes Later



10 Minutes Later



Traffic Incident Timeline



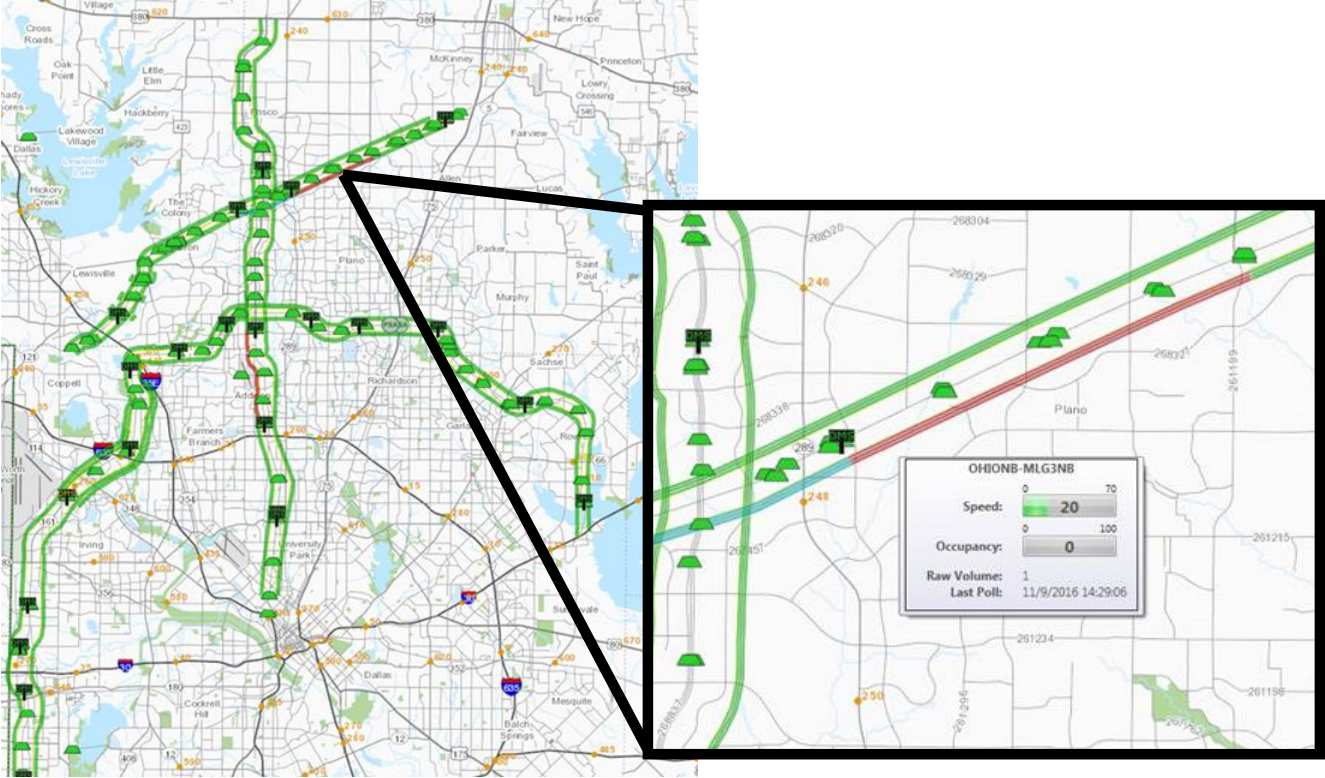
Safety Operations Center



**SAFETY
OPERATIONS
CENTER**



Travel Time Sensors



Dynamic Message Signs

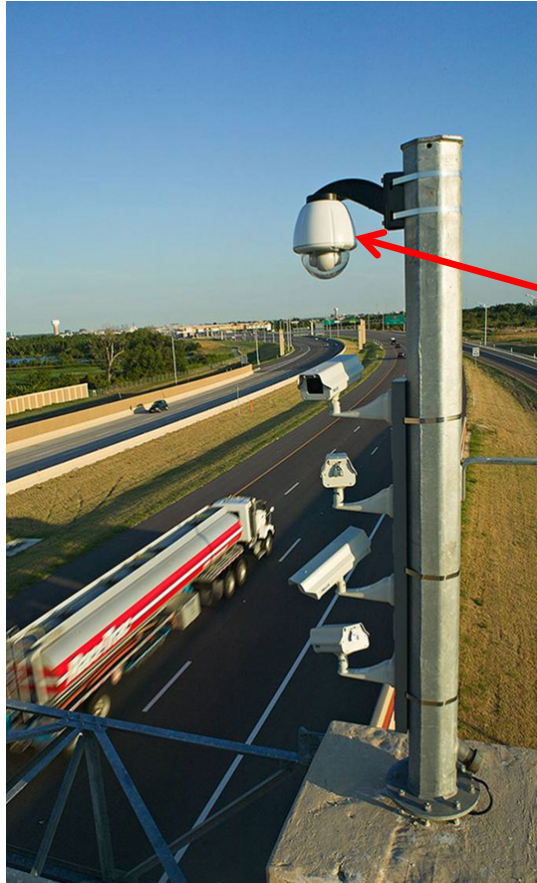


YOU TALK
YOU TEXT
YOU CRASH

HEADS UP
EYES FORWARD



Roadway Cameras



One pan-tilt-zoom camera for assessment and verification



Small Crash - Incident



Roadway Cameras



Four fixed cameras for incident detection

Camera – Content Analysis View



Incident Occurs



Incident Detected





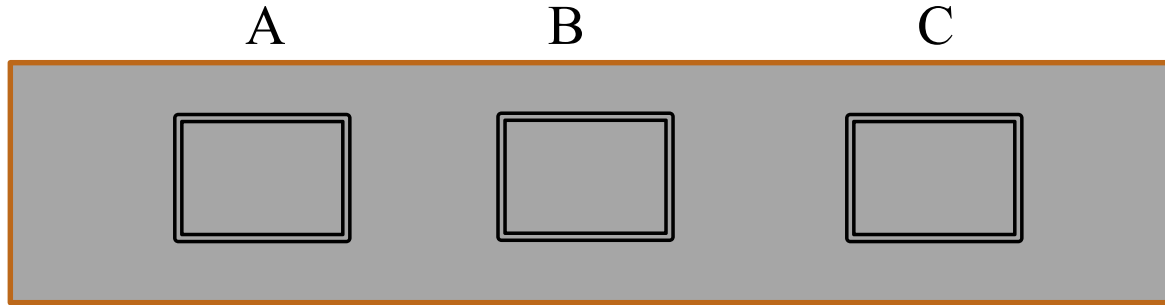
**ROADSIDE
SAFETY SERVICES**
Your safety comes first.



Roadside Safety Services – Arrives



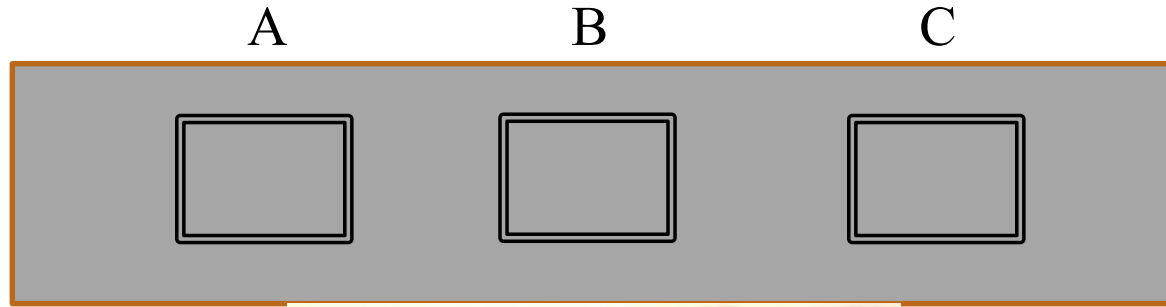
WWD Loop Detection



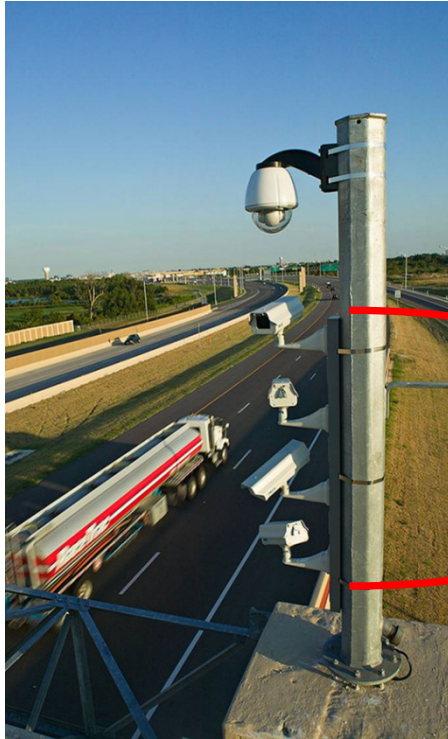
Thank You
For Driving
With **NTTA**



WWD Loop Detection



Traffic Camera - WWD Detection



Four fixed cameras
for incident detection

WWD - Event



Operational Impacts

- Reduce incident detection times
- Reduce road hazard crashes
- Improved air quality & fuel efficiency
- Traffic management = customer satisfaction



FREE ROADSIDE ASSISTANCE



214-224-2203

Questions

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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

18th Annual Public Works Roundup

Traffic Congestion and Safety

Tom Bamonte

**Program Manager, Automated Vehicles
North Central Texas Council of Governments**

May 10, 2017

Status Quo: DFW Mobility Challenges

Public sector: \$120+ billion investment

Second highest household cost

Vehicle Miles Traveled: Up 55%

Highway capacity: Up 18%

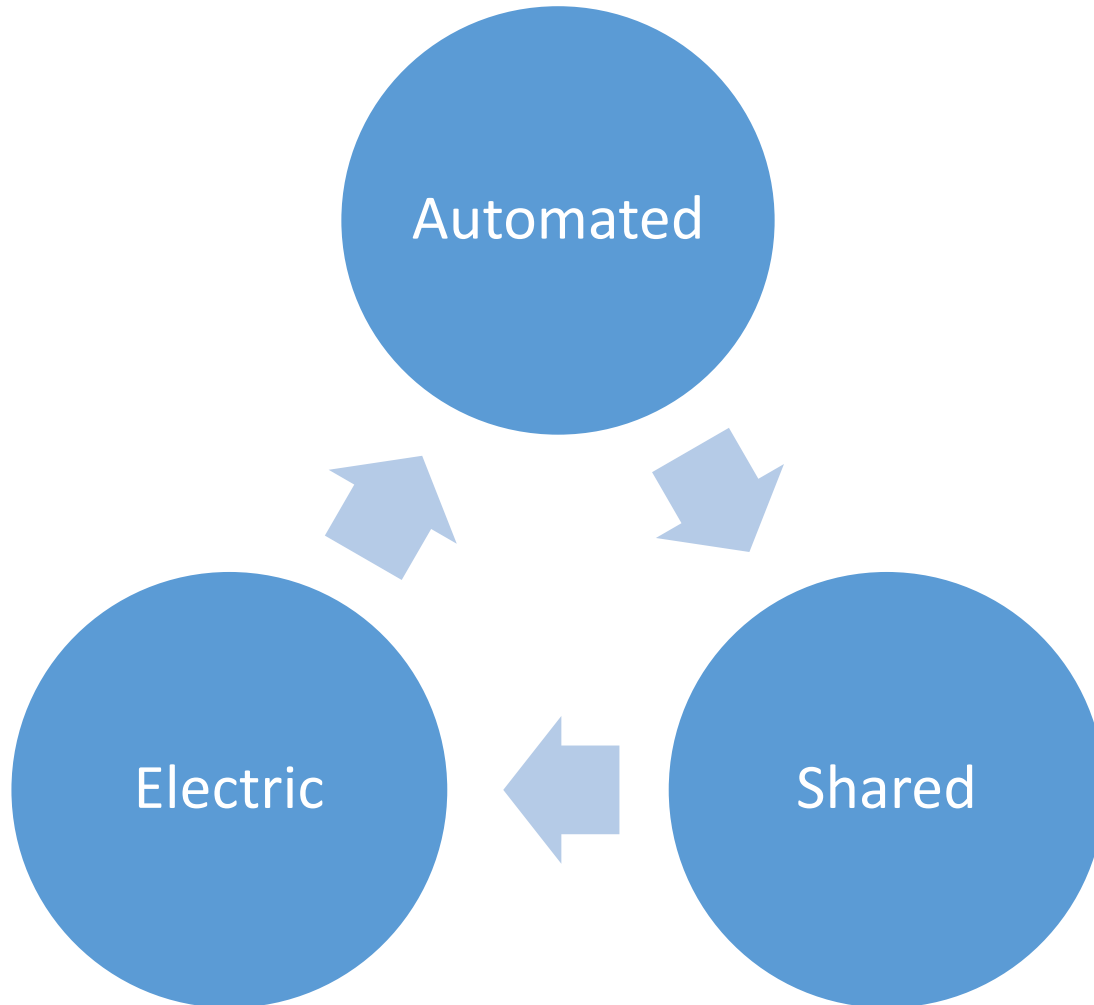
Vehicle hours in delay: Up 136%

Highway deaths: 15,000

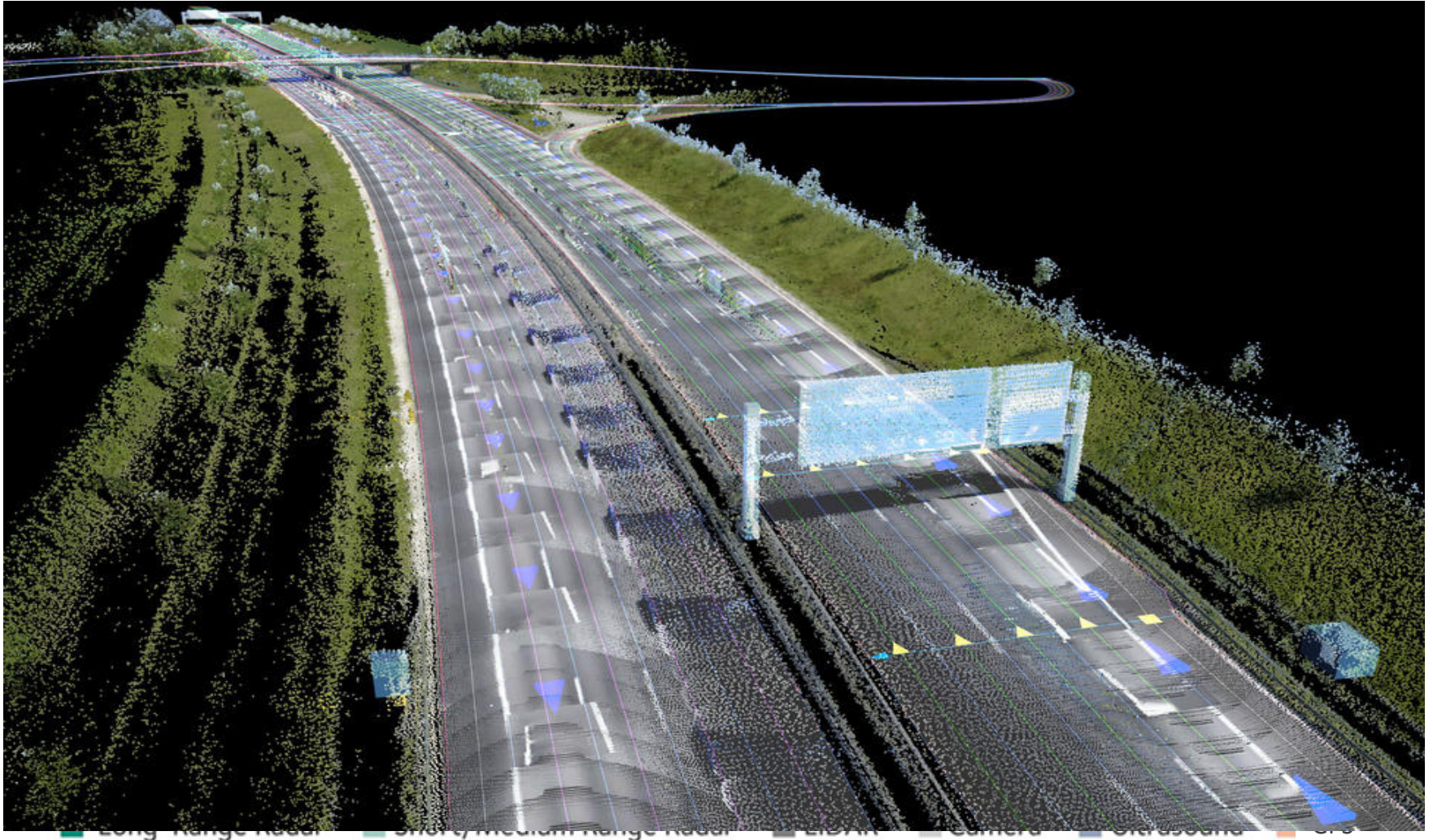
Highway injuries: 1,000,000



3 Drivers of Transportation Future



Automated Vehicles: Operation



Automated Vehicles: Cellular Connection to Cloud



Vehicle Automation All Around



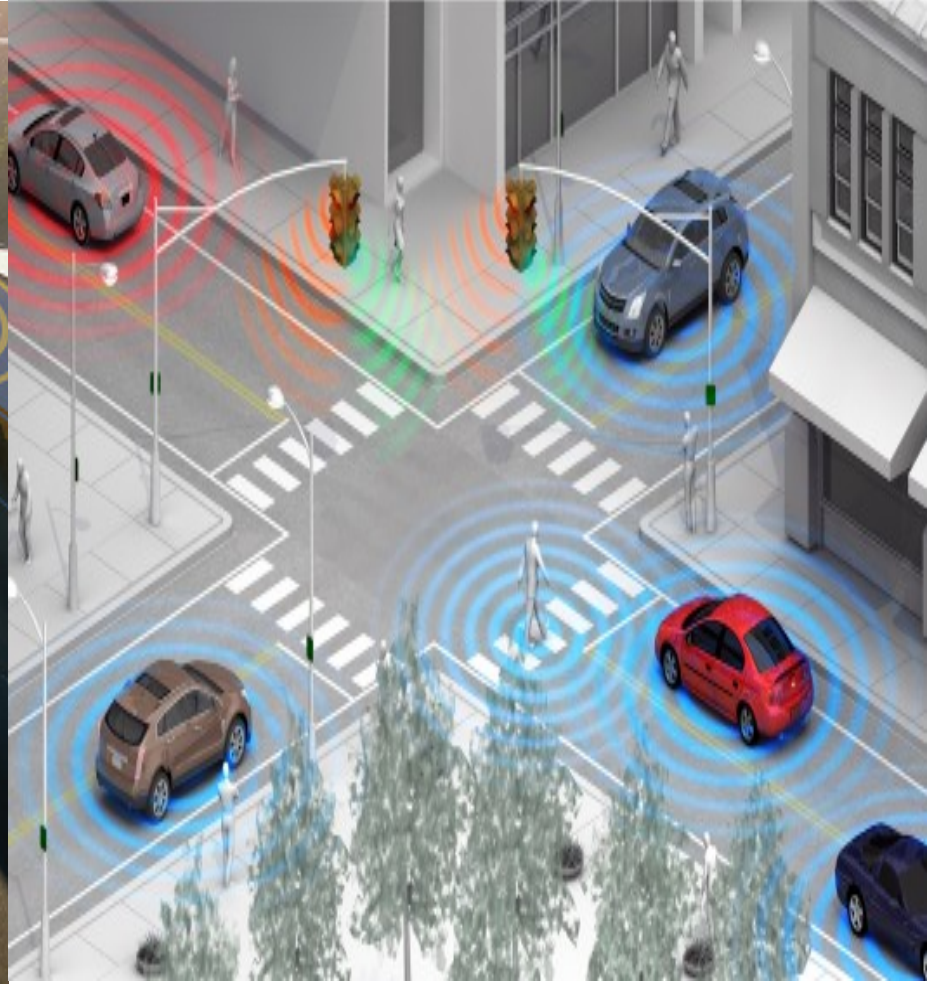
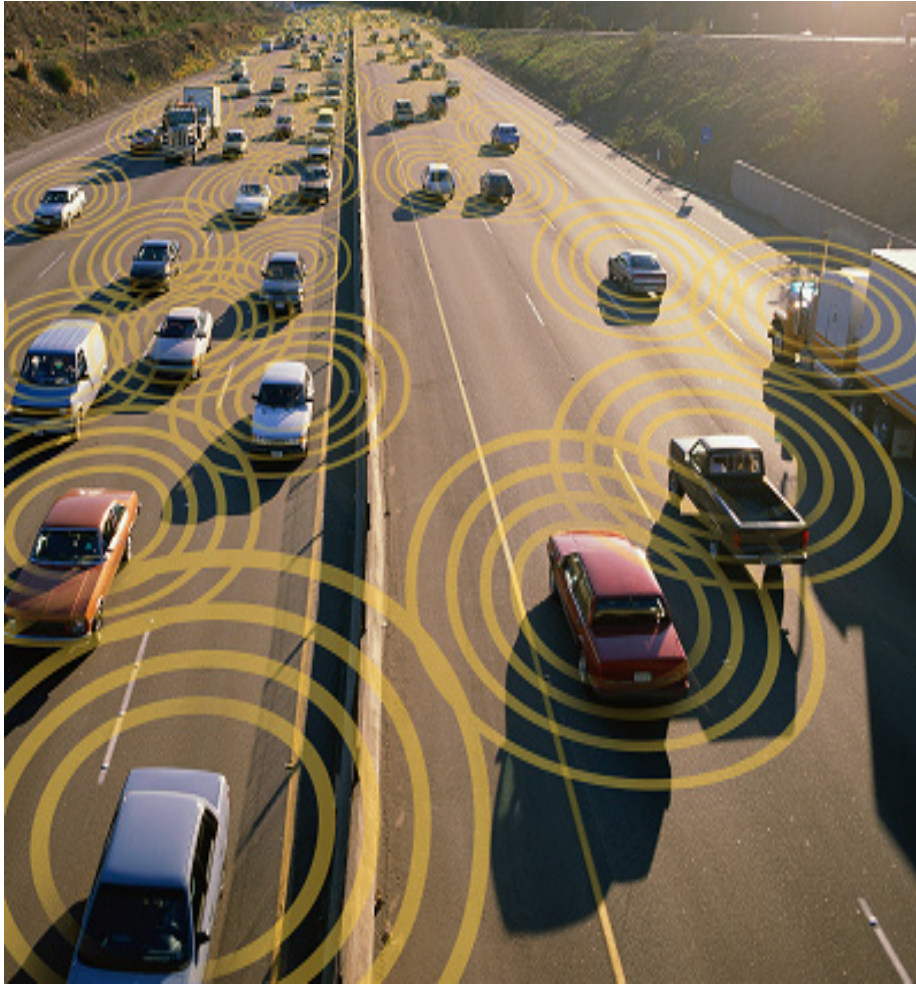
Texas First: AVs in Arlington





Bar & Grill

Automated Vehicles: Other Connections



Automated Vehicle Program RTC- Approved Funding Summary

Texas AV Proving Ground Network

- UTA campus/streets - \$350,000
- Second AV shuttle deployment - \$250,000
- I-30 test corridor (Managed Lanes 3.0) - \$1M

Transportation data infrastructure

- Traffic signal data sharing - \$250,000
- Transportation data sharing (Waze/511DFW) - \$250,000

“Mover” prototype - \$575,000

Traffic Signal Data Project



“Texas city takes big step toward self-driving cars with vehicle-to-infrastructure communication”



Evaluation Criteria

Amount requested [10%]

Quality of proposed technical solution [60%]

- Number of traffic signals made accessible
- Number on Routes of Significance
- Traffic volumes served by traffic signals
- Connectivity w/other data-sharing jurisdictions
- Ability to share data w/multiple parties

Can implement solution in timely fashion [30%]

Waze/511DFW Data Sharing Project



1. What Information to Share

Planned road closures

Special events likely to impact traffic

Road closures due to weather or other incidents

2. With Whom to Share Information

Waze/Google Maps: Closures@Google.com

Inrix: Support@Inrix.com

HERE: [HERE Traffic Alerts@here.com](mailto:HERE_Traffic_Alerts@here.com)

3. How to Share

EventRoadClosureForm

Event Road Closure Form

EventID

*Event Name

Reporting Organization

*Event City

Event Recurrence

Event Website

*Event Start Date

*Event End Date

*Event Start Time (24hr) 1PM = 13, 2PM = 14, 3PM = 15, 4PM = 16, 5PM = 17, 6PM = 18, 7PM = 19,
8PM = 20, 9PM = 21, 10PM = 22, 11PM = 23, 12 AM = 00, 1AM = 01 etc

*Event End Time (24hr)

StreetEventInfo subform

*Street Being Closed EventID

*Closure Direction

*Closed From: *TO:

Google Map Link

Record: 1 of 2 | No Filter | Search

EventSentToProvidersYI Event Sent Date

Additional Positive Proposal Elements

1. Join the Waze Connected Citizens Program: <https://www.waze.com/ccp>
2. Coordinate transportation data sharing with 911 Operations
3. Utilize .xml data feeds

Evaluation Criteria

Amount requested [10%]

Quality of proposed technical solution [60%]

- Routes of Significance in community
- Traffic volumes
- Population
- Connectivity
- Ability to share data with multiple parties

Ability to implement proposed solution in a timely fashion [30%]

Data Infrastructure

Long-Term Regional Approach



Contact Information

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