

Shifting From A Hardware-first To A Data-Centric Framework In The Austin Region

ITS/ITE Texas 2024

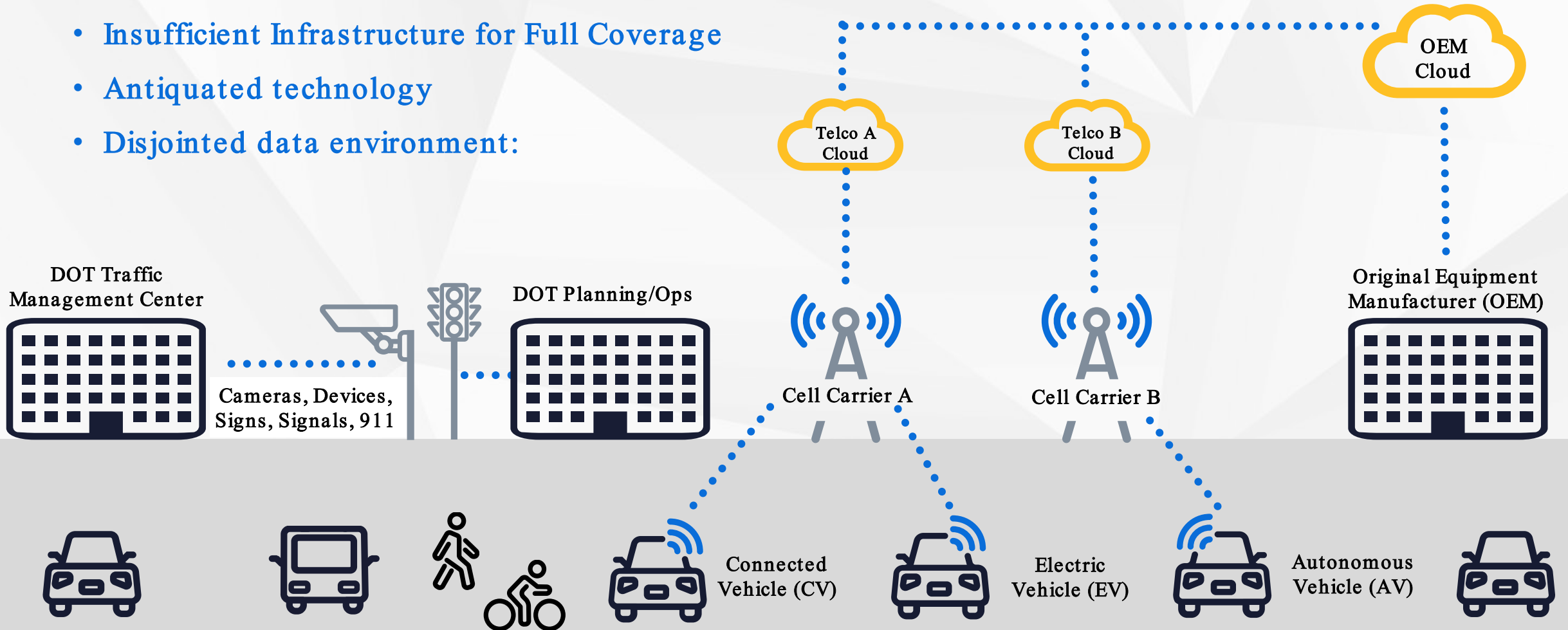
Paul-Matthew Zamsky

VP of Strategic Growth & Global Partnerships

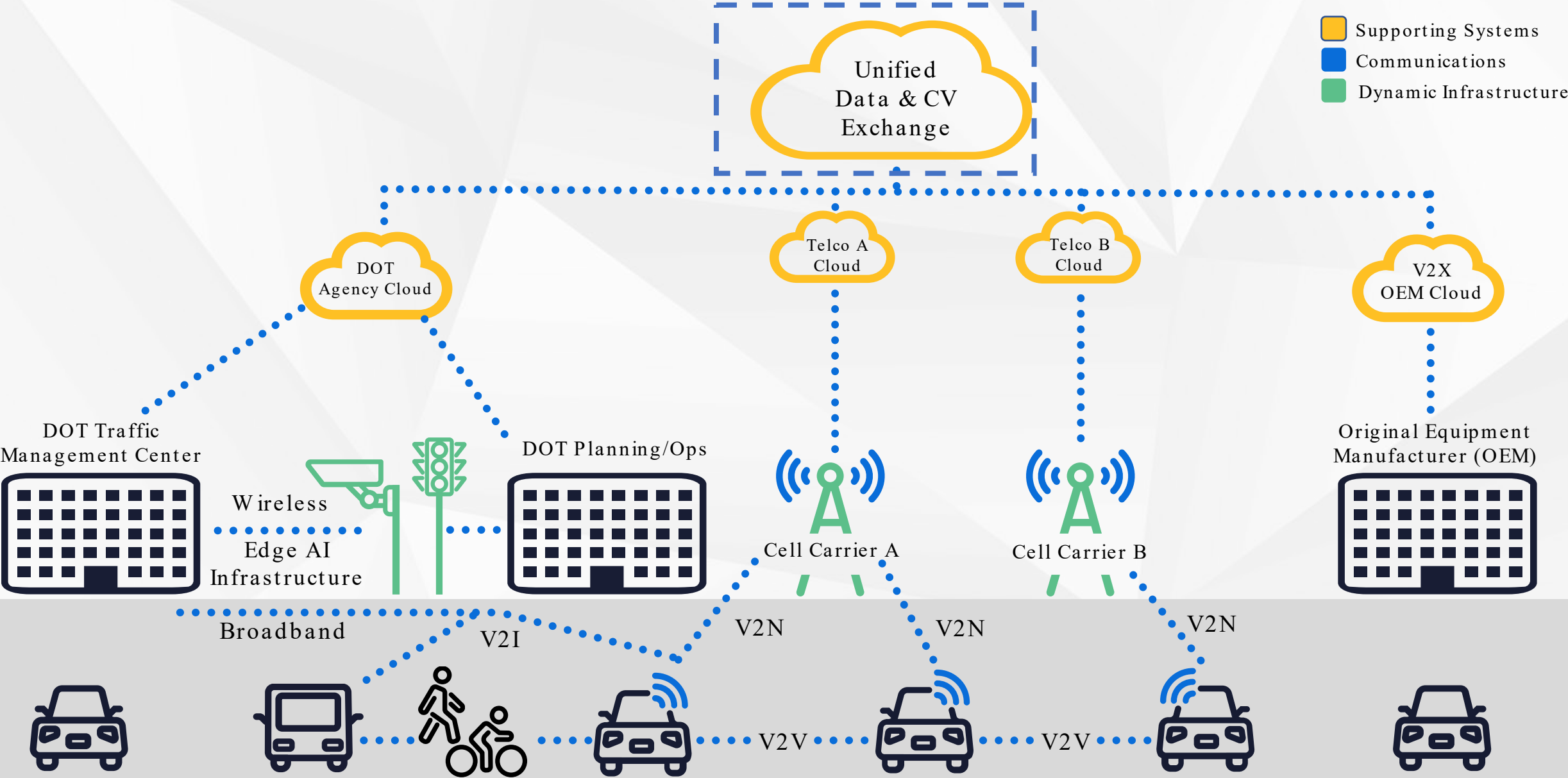


ITS Infrastructure Today

- Insufficient Infrastructure for Full Coverage
- Antiquated technology
- Disjointed data environment:



FHW A View of Digital Infrastructure



Rekor in The Austin Region

Since early 2020, TxDOT has closely followed Rekor's success with CTRMA, recognizing the transformative potential of our technology. Impressed by our impact, TxDOT quickly engaged Rekor as a trusted partner, aiming to tackle Austin's transportation challenges together with powerful, data-driven solutions.

2020

2021

2022

2023



CENTRAL TEXAS REGIONAL
MOBILITY AUTHORITY

Deployment With CTRMA

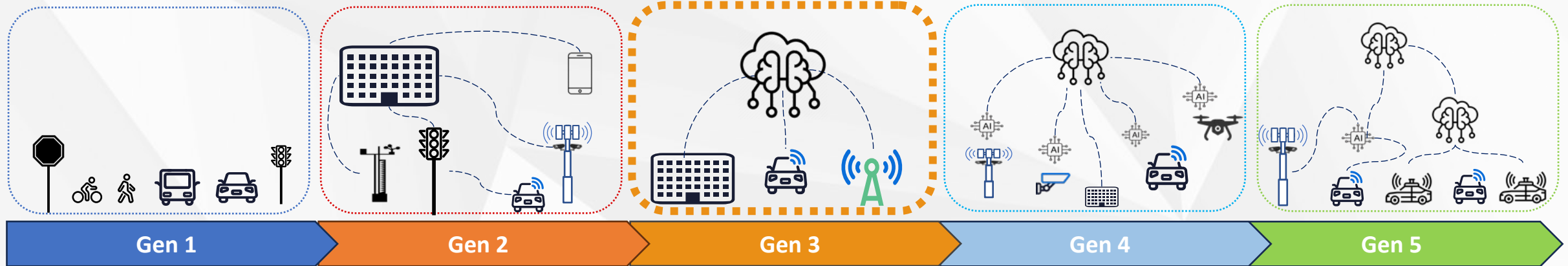
Texas DOT
Engagement with Rekor

Procurement of Software



TxDOT Austin District
Full Launch

Roadway Digital Infrastructure Implementation Levels



• **Characteristics:** Roads **with no intelligent** infrastructure.

• **Infrastructure:** May include traditional traffic operation components such as traffic signals and detectors.

• **Capabilities:** Basic feedback loops at the roadway level, utilizing detectors and responses from a traffic operations perspective.

• **Data:** **No real-time data being collected or used.**

• **Characteristics:** **Roads with some ITS generating data** being utilized for various applications with significant latency.

• **Infrastructure:** **ITS infrastructure**, including dynamic messaging signs, CCTV and speed detection.

• **Capabilities:** **Data latency of 10 to 30 minutes.**

• **Data:** Utilizes 3rd party data for origin-destination information and traffic management updates. Agencies can update ITS infrastructure and manage traffic systems accordingly, but the **data is slow and unsuitable for real-time responses.**

• **Characteristics:** **Roads integrating real-time data** from vehicles, 3rd party data and ITS (TxDOT & Local).

• **Infrastructure:** **Roadside equipped to act as virtual sensors**, enabling connectivity that supports early-stage autonomous functions.

• **Capabilities:** **30 second latency data for real-time awareness of incidents, work zones, and disruptions, crossing jurisdictional boundaries.**

• **Data:** **Vehicles generated data** contributes as virtual sensors, providing timely and relevant information.

• **Characteristics:** Roads with very low latency, supporting high levels of connectivity **fusion of edge AI and cloud AI.**

• **Infrastructure:** **Incorporates equipment such as V2X, ITS with compute ability** and other connected vehicle technologies.

• **Capabilities:** **Latency low enough to send alerts for human reaction, though not fully autonomous.**

• **Data:** **Low latency data environment from AI/ML** to support more immediate responses and higher-equipped vehicles, enhancing safety and efficiency.

• **Characteristics:** Roads with the **highest level of digital infrastructure, supporting full autonomy using AI/ML.**

• **Infrastructure:** **Fully integrated systems similar to Operational Design Domain**

• **Capabilities:** **Real-time, seamless connectivity and advanced data analytics.** Supports autonomous vehicles and fully integrated transportation systems.

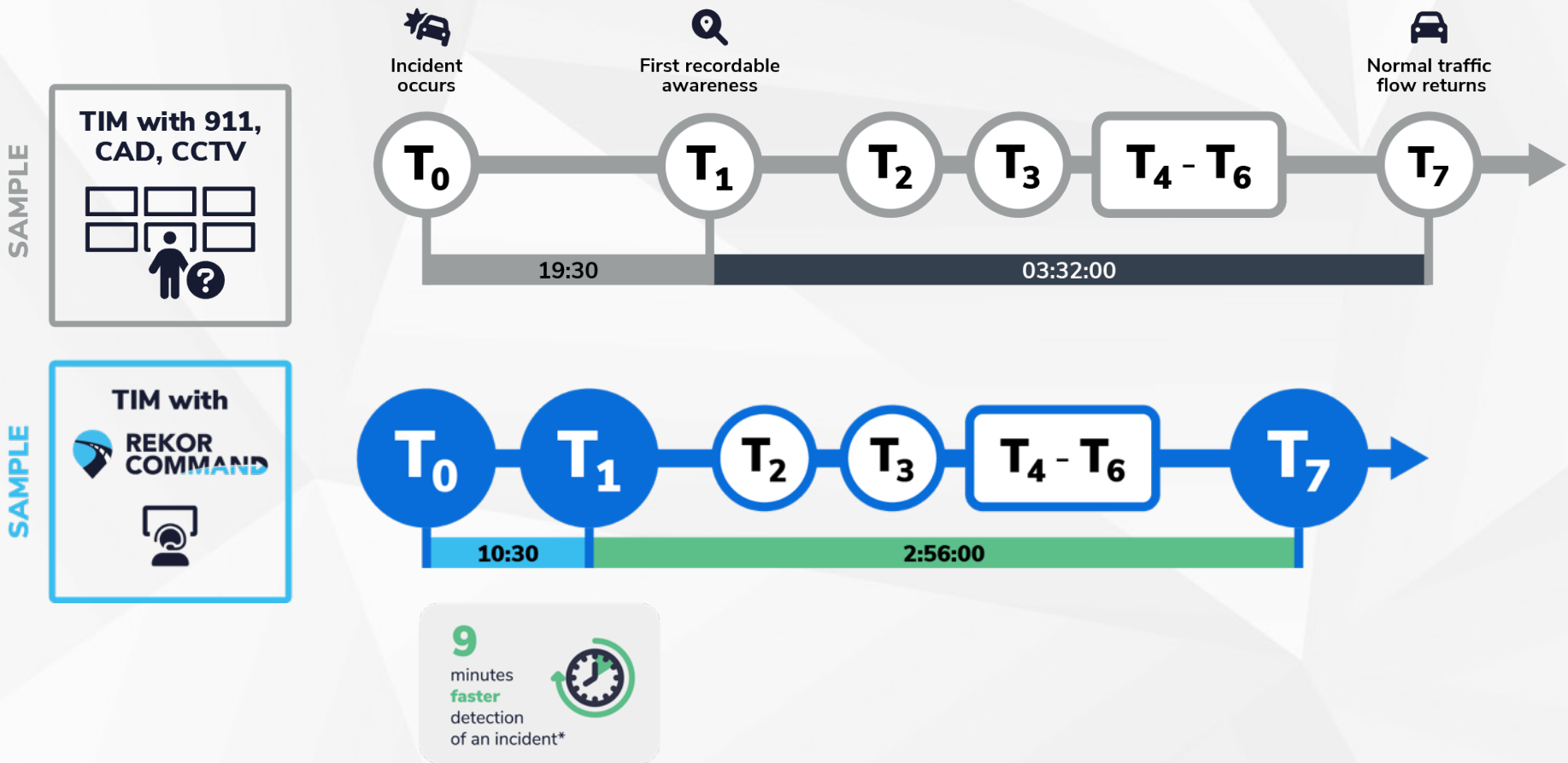
• **Data:** **Provides the lowest latency and most comprehensive data integration**, setting the stage for the future of roadway infrastructure.

AI/ML – Data Management & Integration



Improving TIM performance


Detection time and return to normal flow





Key performance indicators

Rekor Command™ was deployed for the Texas Department of Transportation Austin resulting in outstanding ROI metrics and expansion into additional districts spanning the state

March - August
2023 Results

 **9 min.**
Median **faster**
detection of incidents

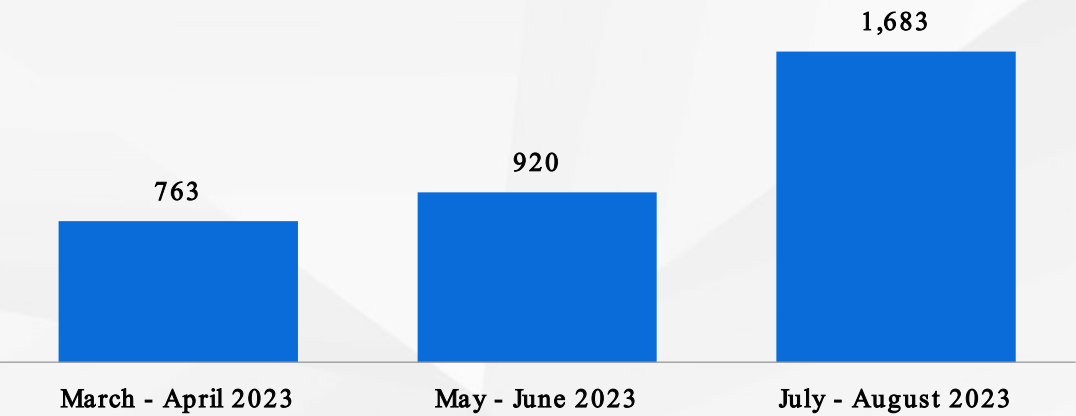
 **70%**
Of new incidents were
verified by operators

 **34%**
Rekor **uniquely**
identified incidents

Potential Impact

- ✓ **29%⁽¹⁾** reduction in chance of secondary crashes
- ✓ **44 min.⁽¹⁾** average time for traffic to return to normal
- ✓ **\$8M⁽¹⁾** reduction in direct cost to Texas Department of Transportation Austin per year

Rekor Incidents Verified by Operators

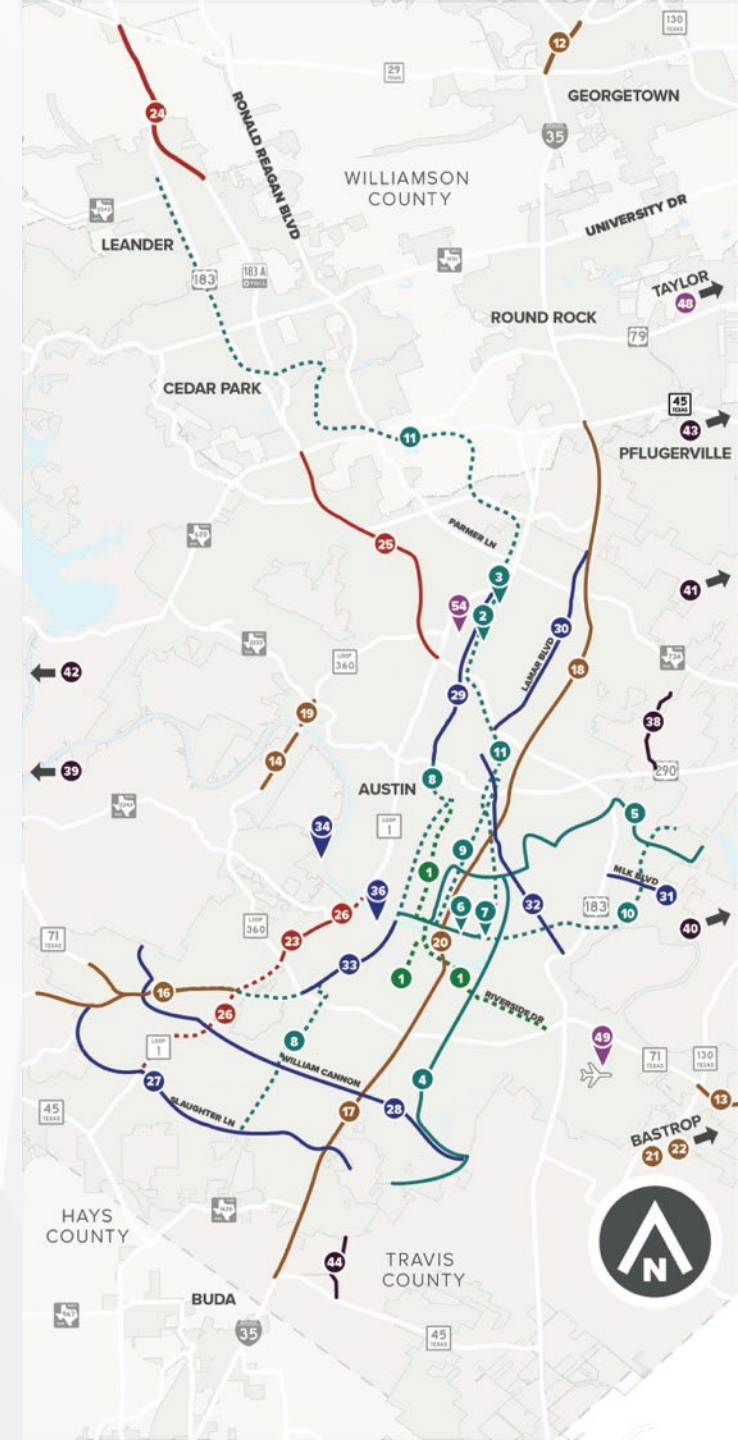


Rekor Command™ detects more incidents, faster, resulting in greater response time, less congestion, and ultimately lower fatality rates



Transforming Texas Transportation with AI

- ✓ Manages 80,000+ miles of roadways across Texas—the largest state-maintained highway system in the U.S.
- ✓ Six of the fastest-growing counties in the nation are in Texas.
- ✓ Austin: 2nd fastest-growing major metro in 2023, with increased cars, bikes, and pedestrians.
- ✓ I-35 Capital Express Project: One of Texas' most complex infrastructure projects with a \$7 billion investment to reduce congestion and enhance safety.
- ✓ Rekor was selected by TxDOT to optimize incident detection, safety, and resource allocation amidst Texas' rapid growth.

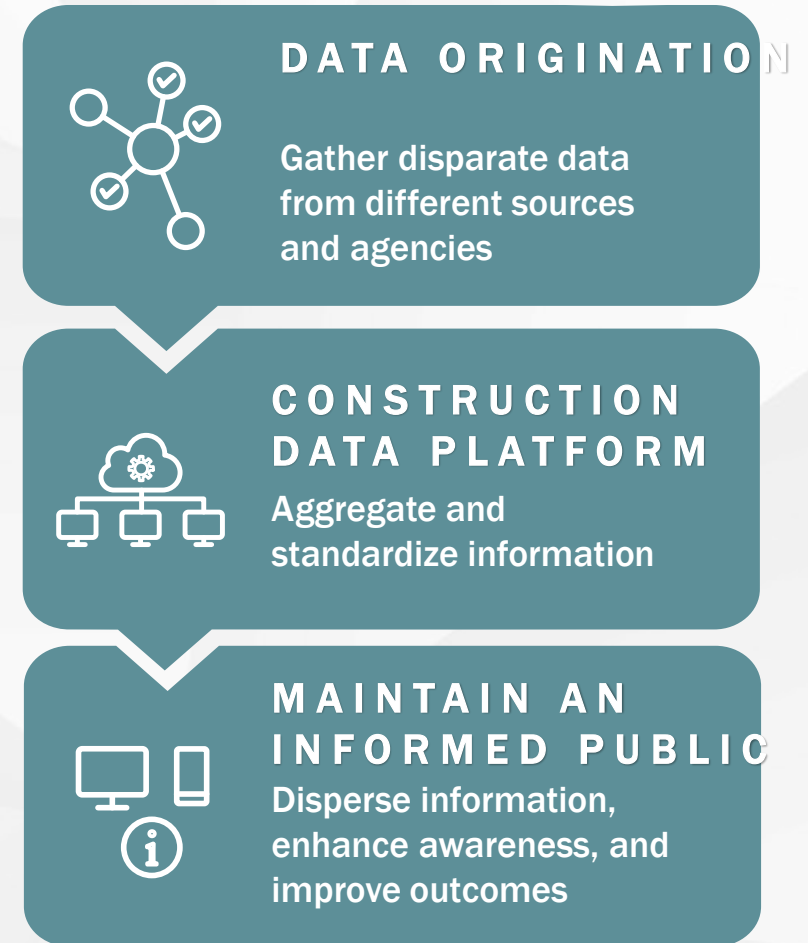


Enhanced Integration – Interagency Collaboration



35+ significant construction projects that are soon-to-be under way in Central Texas, representing more than \$20B in infrastructure investment from federal, state and local funding sources. The region's transportation agencies have come together to form CPP to:

- ✓ Improved Coordination
- ✓ Enhanced Safety
- ✓ Maintained Mobility
- ✓ Informed Public
- ✓ Long-Term Scalable Foundation

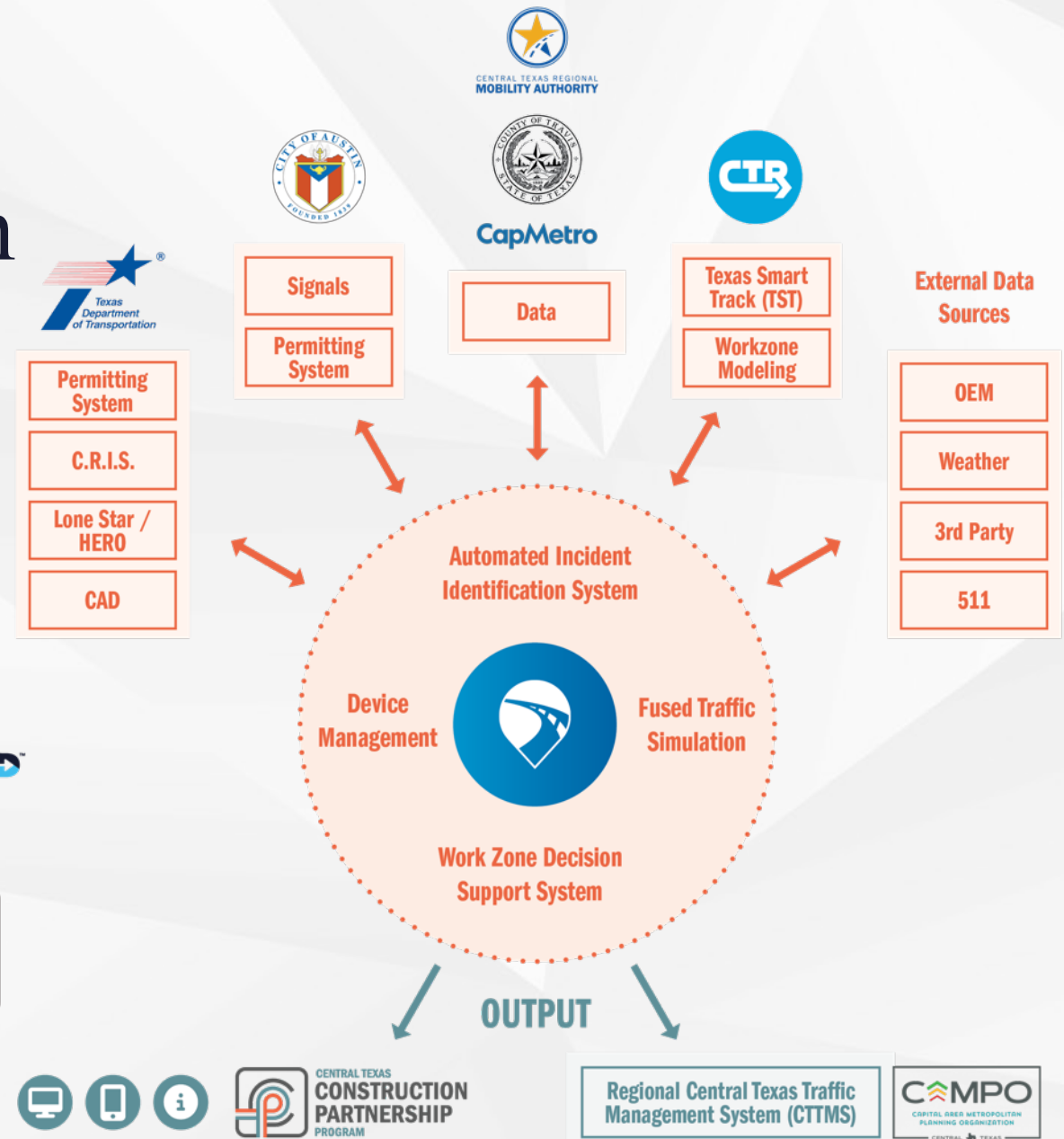


Enhanced Integration – Interagency Collaboration

Construction Data Exchange Powered by 



In Collaboration



Enhanced Integration – Interagency Collaboration

Designed to provide scheduled and real-time information to best serve the traveling public, elected officials, and construction workers.

A COMPANION APP TO
TRADITIONAL JOURNEY PLANNING
TOOLS



REAL-TIME INFO

- Traffic Map
- Trip Planner
- Road Work
- Incidents
- Travel Times



USER EXPERIENCE

- Personalization of Construction Alerts
- Data integrations with agency systems (i.e. Report an Issue)



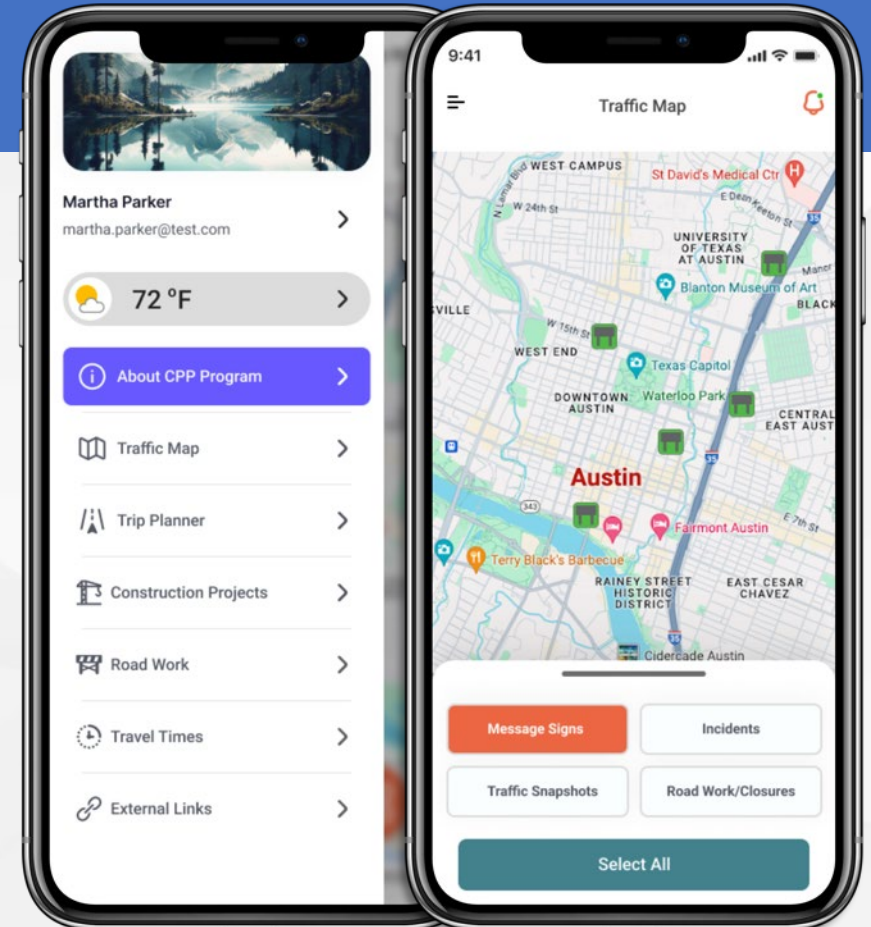
PRIVACY & SECURITY

- Security by Design
- Data Protection



ACCESSIBILITY

- Customizable Settings
- English/Spanish Language
- ADA Compliant





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