

TEXAS FREIGHT NETWORK TECHNOLOGY AND OPERATIONS PLAN



Strategy

FREIGHT INTEGRATED CORRIDOR MANAGEMENT

Freight Technology Area	Traffic Management, Advanced Traveler Information Systems
Owner	TxDOT Divisions, Local Communities
Key Stakeholders	TxDOT Districts, Local Communities, Metropolitan Planning Organizations (MPOs)
End-Users	Truckers

Motivation

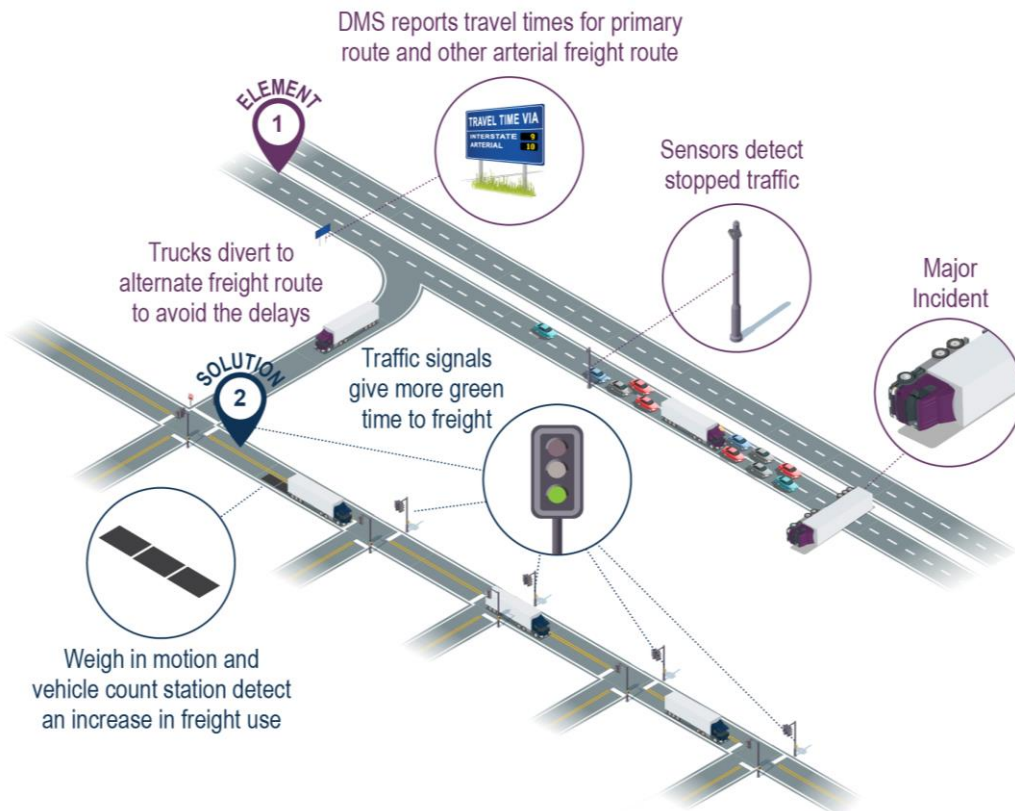
Disruptions on key freight routes can cause massive delays for both trucks and passenger vehicles. When looking to get around major disruptions, truck drivers are not always aware of alternate parallel routes that are approved and capable of handling truck traffic. When alternate routes are available, they often lack Intelligent Transportation System (ITS) technology to help manage the increased traffic volumes caused by the rerouted traffic.

Strategy Description

Implement advanced technologies along key corridors with adjacent parallel freight routes that experience high traffic volumes and high rates of incidents, congestion, and/or disruptive events. Utilize traffic management strategies to more comprehensively operate the freight corridor across multiple parallel routes to improve freight mobility.

Contribution to 2018 Texas Freight Mobility Plan Goals

- ✓ Mobility and Reliability
- ✓ Asset Preservation and Utilization
- ✓ Safety



Strategy Scope

- Implement advanced ITS technologies on arterial or rural freight corridors that operate in parallel to a major freight corridor that experiences frequent disruptions.
- Implement advanced technologies on freight corridors to improve traffic flow, such as freight signal priority to provide better traffic progression, extended yellow times (i.e., longer yellow lights) at traffic signals to accommodate slower trucks, and managed alternative routes to accommodate primary route disruptions.
- Implement advanced wayfinding information with high-resolution traffic data to provide comparative travel time information and offer alternative route selections for freight.
- Establish strategic traffic management plans on alternative routes based on incident type, which would be part of a selection library that is agreed to by local road owners via an operating Memorandum of Understanding (MOU).

Examples of User Needs Addressed*

- Need for rural ITS in high-traffic freight areas to help support operations.
- Need for more urban arterial management to manage freight deliveries.
- Need for more advanced notice of real-time traffic conditions (delays, incidents, construction, weather conditions) to improve routing decisions.

Potential Benefits*

Safety	Mobility	Emissions
<ul style="list-style-type: none"> • Expected reduction in secondary crashes by providing alternate route for traffic and reducing time spent in queues. 	<ul style="list-style-type: none"> • Expected savings on hours of travel by providing alternative options with better travel times. 	<ul style="list-style-type: none"> • Potential reduction in fuel consumption per year by reduced idling in queues.

Cost Estimates*

Sample Capital Cost	Sample Annual O&M Cost
<ul style="list-style-type: none"> • Urban Deployment: \$193K for hardware and software, \$694K per mile for ITS devices, \$10K per intersection for signal upgrades. • Suburban Deployment: \$193K for hardware and software, \$229K per mile for ITS devices, \$10K per intersection for signal upgrades • Rural Deployment: \$193K for hardware and software, \$107K per mile for ITS devices, \$10K per intersection for signal upgrades 	<ul style="list-style-type: none"> • Urban Deployment: \$10K for hardware and software, \$50K per mile for ITS devices, \$8K per intersection for signal upgrades. • Suburban Deployment: \$10K for hardware and software, \$25K per mile for ITS devices, \$8K per intersection for signal upgrades. • Rural Deployment: \$10K for hardware and software, \$12K per mile for ITS devices, \$8K per intersection for signal upgrades.

Timescale for Implementation

Near-Term (0-2 years)	Medium-Term (2-5 years)	Long-Term (5-7 months)
✓ Plan	✓ Deliver	✓ Operate & Maintain

Freight Modes Covered: Highways

* The full list of user needs and supporting sources for benefits and costs can be found in the FNTOP Strategies and Conceptual Framework Report.

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