

TEXAS FREIGHT NETWORK TECHNOLOGY AND OPERATIONS PLAN



Strategy

SMART FREIGHT CONNECTOR

Freight Technology Areas	Traffic Management, Intermodal Terminal Operations
Owner	TxDOT Divisions, Local Communities
Key Stakeholders	TxDOT Districts, Traffic Management Centers (TMCs), Local Communities, Metropolitan Planning Organizations (MPOs), Maritime Ports, Railroads
End-Users	TMCs, Truckers, Trucking Companies/Dispatchers

Motivation

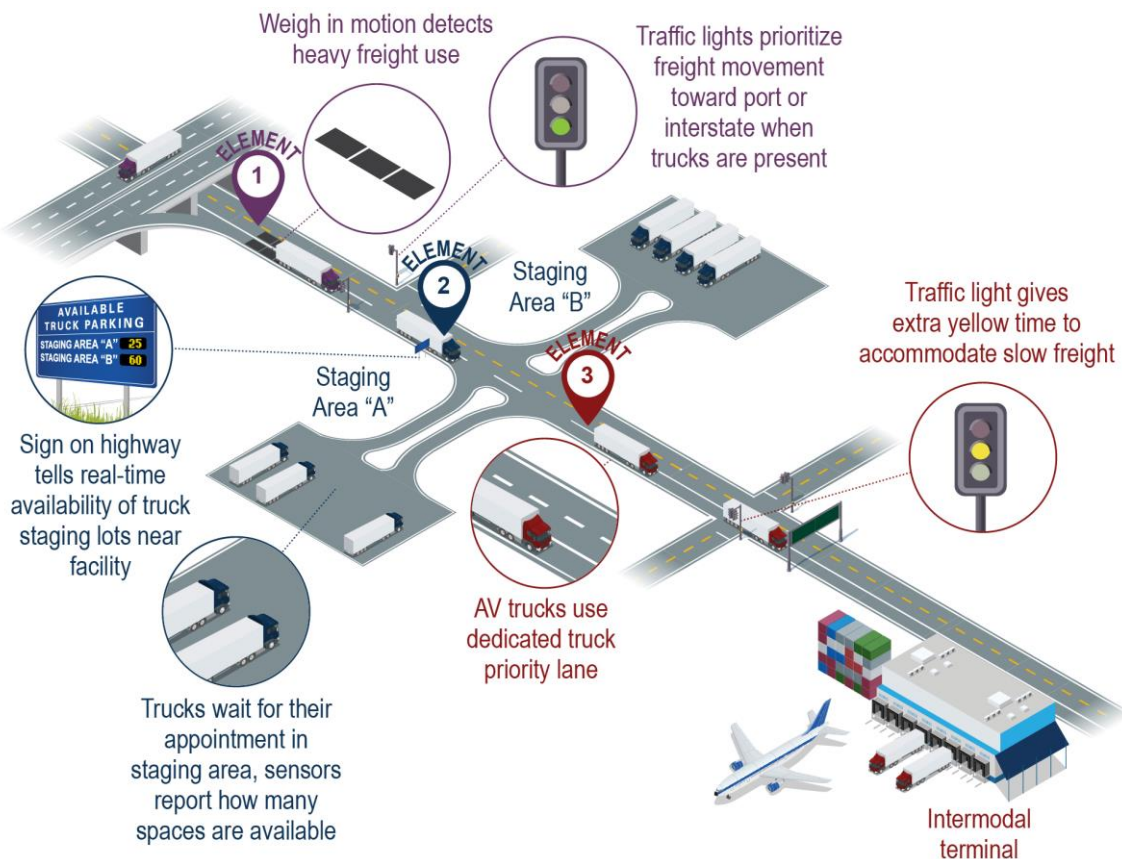
First and last-mile connections to intermodal facilities are heavily traveled by trucks, often creating congestion which disrupts mobility in the area. Implementing strategic technological and operational traffic management solutions along freight corridors would help improve mobility to and from intermodal facilities, freight generators (e.g. industrial parks, distribution centers), and international border crossings.

Strategy Description

Deploy freight-specific Intelligent Transportation System (ITS) technology (e.g., real-time traffic conditions, freight signal priorities, truck parking availability systems) on key truck routes to provide efficient operations and staging, such as on last-mile routes from interstates to intermodal facilities.

Contribution to 2018 Texas Freight Mobility Plan Goals

- ✓ Mobility and Reliability
- ✓ Multimodal Connectivity



Strategy Scope

- Invest in high-resolution traffic data services along key proposed truck “last mile” segments.
- Implement freight priority signals and “green flow progression” (i.e., consecutive green lights along a route) that is established in real-time based on freight precedence (i.e., directional volumes).
- Implement infrastructure improvements or lane restrictions that allow for truck-only lanes. Truck-only lanes should allow for reduced stopping and potential bypass for trucks.
- Implement real-time green time extension (i.e., longer green lights) for truck platoons at traffic signals. Implement increased yellow times (i.e., longer yellow lights) at high-crash intersections, particularly ones that can extend to longer intervals during inclement weather.
- Install traveler information services (i.e., dynamic message signs [DMSs]) along route to help encourage use of the smart corridor, such as by publishing destination-based travel times or parking information.
- Install staging lots along freight connectors and equip with parking availability sensors. Publish real-time parking availability for staging lots at strategic decision points.
- Increase deployment of Connected Vehicle (CV)-related safety and mobility applications upon national adoption of CV-related technologies.
- Work with terminal operators to explore drayage optimization opportunities to operate this route as a full Freight Advanced Traveler Information System (FRATIS) project.

Examples of User Needs Addressed*

- Need for more efficient and dynamic curbside management strategies to manage first and last mile issues.
- Need for more DMSs on primary freight corridors to relay traffic information.
- Need for more comparative travel time signs (CTT) for freight routes to improve routing decisions.
- Need for Freight Signal Priority systems to improve freight operations.

Potential Benefits*

Safety	Mobility	Economic Competitiveness
<ul style="list-style-type: none"> • 24% reduction in crashes 	<ul style="list-style-type: none"> • Up to 40% improved travel time • Up to 70% reduction in delay 	<ul style="list-style-type: none"> • Improvements in freight efficiency through better route reliability.

Cost Estimates*

Sample Capital Cost	Sample Annual O&M Cost
<ul style="list-style-type: none"> • Total System (including all 3 solutions along 1-mile route): \$858K - \$1.18M 	<ul style="list-style-type: none"> • Total System (including all 3 solutions along 1-mile route): \$107K

Timescale for Implementation

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

Freight Modes Covered: Highways Railroads Maritime Ports Border Crossings

* 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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