



CONCEPT OF OPERATIONS FOR THE IH30 CORRIDOR

2017 Study

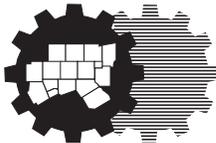


What is NCTCOG?

The North Central Texas Council of Governments is a voluntary association of cities, counties, school districts, and special districts which was established in January 1966 to assist local governments in **planning** for common needs, **cooperating** for mutual benefit, and **coordinating** for sound regional development.

It serves a 16-county metropolitan region centered around the two urban centers of Dallas and Fort Worth. Currently the Council has **236 members**, including 16 counties, 168 cities, 24 independent school districts, and 28 special districts. The area of the region is approximately **12,800 square miles**, which is larger than nine states, and the population of the region is about **7 million** which is larger than 38 states.

NCTCOG's structure is relatively simple; each member government appoints a voting representative from the governing body. These voting representatives make up the **General Assembly** which annually elects a 17-member Executive Board. The **Executive Board** is supported by policy development, technical advisory, and study committees, as well as a professional staff of 350.



NCTCOG's offices are located in Arlington in the Centerpoint Two Building at 616 Six Flags Drive (approximately one-half mile south of the main entrance to Six Flags Over Texas).

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NCTCOG's Department of Transportation

Since 1974 NCTCOG has served as the Metropolitan Planning Organization (MPO) for transportation for the Dallas-Fort Worth area. NCTCOG's Department of Transportation is responsible for the regional planning process for all modes of transportation. The department provides technical support and staff assistance to the Regional Transportation Council and its technical committees, which compose the MPO policy-making structure. In addition, the department provides technical assistance to the local governments of North Central Texas in planning, coordinating, and implementing transportation decisions.

Prepared in cooperation with the Texas Department of Transportation and the U. S. Department of Transportation, Federal Highway Administration, and Federal Transit Administration.

"The contents of this report reflect the views of the authors who are responsible for the opinions, findings, and conclusions presented herein. The contents do not necessarily reflect the views or policies of the Federal Highway Administration, the Federal Transit Administration, or the Texas Department of Transportation."



CONCEPT OF OPERATIONS FOR THE IH₃₀ CORRIDOR

2017 Study



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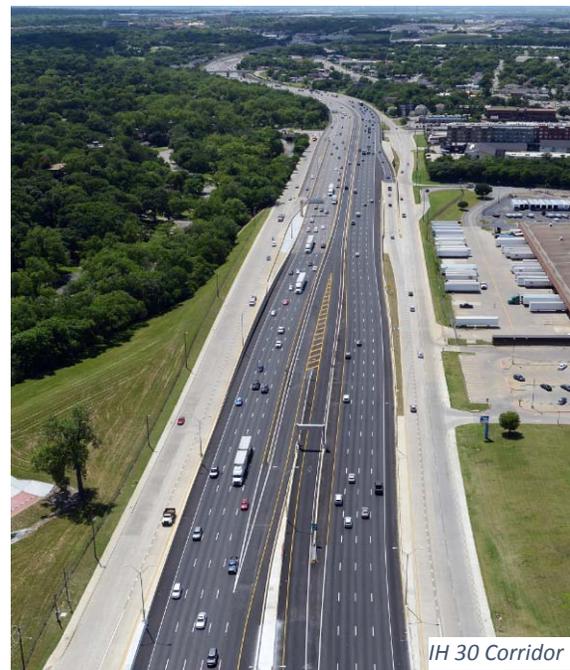
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1 OVERVIEW

1.1 Introduction

The North Central Texas Council of Governments (NCTCOG) has served as the Metropolitan Planning Organization (MPO) for transportation in the Dallas-Fort Worth Metropolitan Area since 1974. NCTCOG's Transportation Department works closely with regional, state and federal partners to plan and recommend transportation projects that will improve mobility and encourage more efficient land use. The Department provides technical support and staff assistance to the Regional Transportation Council and its technical committees, which compose the MPO policy-making structure.

This document is the Concept of Operations (ConOps) for the Interstate Highway (IH) 30 Corridor from Arlington to Dallas. A ConOps provides a broad scope and outlines operational issues and achieves operational objectives for a transportation corridor. The ConOps for this corridor will also be used as a framework for ConOps to be developed for other corridors within the Dallas-Fort Worth region. The Dallas-Fort Worth region has varying operators and modes along corridors involving multiple partner agencies. This framework will allow the region to identify and engage the appropriate stakeholders as well as systems and operations.



The ConOps defines how components or agencies work together to operate a corridor. The following elements serve as a framework:

- Motivation (Why): Reasons for developing a ConOps, based on operational concerns, including the documentation of responsibilities for operations on the facility. In addition, ConOps outlines how the current corridor functions, including technology and human resources.

- Operational Objectives (What): What are the near-term (within the next five years) outcomes that are necessary for successful operation of the corridor?
- Approach (How): At a high level describe how the operational objectives will be met.
- Relationships and Procedures: What institutional agreements are in place? Are there existing or needed Memorandums of Understanding, protocols, information sharing or other items?
- Physical Improvements: Is there a need for additional equipment, software, integration or infrastructure to meet outlined objectives? If so, what are the needs?
- Resource Arrangements: What are the sources and uses of funding, staff and equipment?

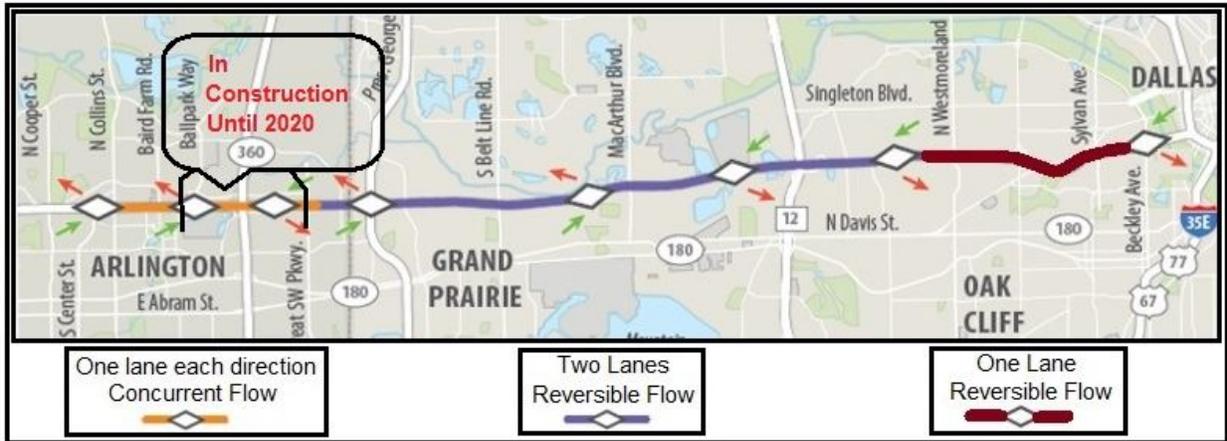
The elements above will be addressed in phases to develop the ConOps. The motivation element is an issue observed by the partners that prompts the initiation. The operational objectives are driven by values and needs, which establish the desired outcome. The approach identifies possible options to achieving the operational objective and culminates in the selection of a particular course of action. The relationships and procedures, physical improvements and resource arrangements translate the approach into more specific, tangible elements that guide coordinated actions including systems, resource allocation, and inter-agency and multi-jurisdictional agreements.

1.2 Study Area

The IH 30 Corridor will be used as a model corridor to develop this framework to apply to other corridors within the region. This corridor is a major east/west facility connecting Dallas and Fort Worth. The corridor from Arlington (Collins Street) to the Dallas Central Business District includes a six-lane facility that has varying managed lane configurations throughout the corridor. Starting from east to west, the section from Hardwick Street to Sylvan Avenue opened in April 2017 and is a one-lane reversible managed lane. The section from Sylvan Avenue to Westmoreland Road also opened in April 2017 and is a two-lane reversible managed lane. The section from Westmoreland Road to Great Southwest Parkway opened in August 2016 and is a two-lane reversible managed lane. Currently, the section between Great Southwest Parkway and Ballpark Way is closed due to the construction of the IH 30 and SH 360 interchange project. This section is expected to reopen in 2020 as a two-lane concurrent managed lane facility. The section from Ballpark Way to AT&T Way has been open since July 2014. This section is a one-lane concurrent managed lane T-ramp that provides direct access to special event venues and a Park-and-Ride

facility. This managed lane is utilized for peak period travel and special events and is a pilot corridor for testing new technologies and operations including autonomous/connected vehicles. Multiple operators and partner agencies traverse the corridor including the Cities of Arlington, Grand Prairie, and Dallas. A map of the corridor is provided as Exhibit 1-1.

EXHIBIT 1-1
STUDY AREA



1.3 Goals and Objectives

The goals and objectives for the ConOps of the IH 30 Corridor are aligned with the overall Mobility 2040: The Metropolitan Transportation Plan for North Central Texas (Mobility 2040) goal themes. Mobility 2040 goals support and advance the development of a transportation system that contributes to the region’s mobility, quality of life, system sustainability, and continued project implementation. The ConOps’ three goals are outlined below:

- **Goal One:** Identify quick-to-implement low-cost strategies and solutions to better operate the transportation system.
- **Goal Two:** More evenly distribute congestion across the entire transportation corridor.
- **Goal Three:** Ensure corridors have options and available alternate routes/modes to relieve daily congestion and during incidents and accidents.

The goals, objectives and measures of effectiveness are detailed in Exhibit 1-2.

**EXHIBIT 1-2:
GOALS, OBJECTIVES AND MEASURES OF EFFECTIVENESS**

GOALS, OBJECTIVES AND PERFORMANCE			
Mobility 2040 Goals	ConOps Goals and Action	Objectives	Performance Measures
<p>Mobility: Support travel efficiency measures and system enhancements targeted at congestion reduction and management.</p> <p>Implementation: Develop cost-effective projects and programs aimed at reducing the costs associated with constructing, operating, and maintaining the regional transportation system.</p>	<p>Goal: Identify quick-to-implement low cost strategies and solutions to better operate the transportation system.</p> <p>Action: Implement quick-to-implement low cost strategies and solutions to better operate the transportation system.</p>	<ul style="list-style-type: none"> • Reduce SOV trips through travel demand management strategies. • Increase usage of park-and-ride lots. • Provide all users with travel alerts and alternate routes in the case of incidents, special events, weather, construction, and severe congestion at choke points. • Increase the number of intersections that are equipped and operating with traffic signals that enable real-time monitoring and management of traffic flows. • Reduce mean roadway clearance time per incident (Defined as the time between awareness of an incident and restoration of lanes to full operational status.) 	<ul style="list-style-type: none"> • Number of users in the region participating on Try Parking It. • Utilization rate of park-and-ride lots in the region. • Percent of routes where traveler alerts and alternate route information is provided in the case of incidents, special events, weather, construction, and severe congestion choking points. • Percent of intersections in the region equipped and operating with traffic signals that enable real-time monitoring and management of traffic flows. • Average roadway clearance times.
<p>Mobility: Improve the availability of transportation options for people and goods.</p> <p>Mobility: Assure all communities are provided access to the regional transportation system and planning process.</p> <p>Quality of Life: Preserve and enhance the natural environment, improve air quality, and promote active lifestyles.</p>	<p>Goal: More evenly distribute congestion across the entire IH 30 corridor.</p> <p>Action: Conduct inventory of corridor system to identify availability of existing options.</p>	<ul style="list-style-type: none"> • Reduce the percentage of facility miles (highway, arterial, rail, etc.) experiencing recurring congestion during the peak period. • Maintain the rate of growth in facility miles experiencing recurring congestion as less than the population growth rate (or employment growth rate.) • Increase the number of HOV/Managed lanes in the region. • Increase alternative (non-SOV) mode share for all trips. • Increase active (bike/ped) mode share. • Increase mode share in transit. • Increase access to transit (within two miles) to specified percentage of the population. 	<ul style="list-style-type: none"> • Percent of lane-miles operating at LOS F or V/C > 1.0. • Population growth rate. • Total number of HOV/Managed lanes in the region. • Share of employees walking, biking, telecommuting, carpooling/vanpooling, riding transit, driving. Track through Try Parking It website. • Share of trips by each mode of travel. • Percent of trips that take transit as a mode of travel. • Percent of population within two miles of a transit station.
<p>System Sustainability: Ensure adequate maintenance and enhance the safety and reliability of the existing transportation system.</p>	<p>Goal: Ensure corridors have options and available alternate routes/modes to relieve daily congestion and during incidents and accidents.</p> <p>Action: Prioritize corridors based on available options and alternate/modes routes.</p>	<ul style="list-style-type: none"> • Reduce buffer index on freeway system during peak and off-peak periods. • Reduce delay associated with incidents on arterials. • Conduct joint training exercises among operators and emergency responders in the region. • Increase the percentage of regional staff with incident management responsibilities that have completed and participated in the regional Freeway Incident Management Training. 	<ul style="list-style-type: none"> • The buffer index (represents the extra time ("buffer") travelers add to their average travel time when planning trips in order to arrive on-time 95 percent of the time.) • Incident response and clearance times. • Number of participants and joint training exercises conducted among operators and emergency responders. • Percent of staff in a corridor that have completed regional Freeway Incident Management Training.

2 CURRENT SYSTEMS AND OPERATIONS

2.1 Corridor Characteristics

The corridor from Arlington (Collins Street) to the Dallas Central Business District includes a six-lane facility that has a two-lane reversible managed lane. The corridor has discontinuous frontage roads with two parallel arterials that run the entire limits of the corridor. These include SH 180 (Division Street) and Abrams/Jefferson Street. There are also parallel arterials that run a partial length of the corridor including N. Carrier Parkway, January Lane, Singleton Blvd./ Margaret Hunt Hill Bridge and West Davis Street. In addition, the corridor has the following infrastructure and attributes:

- Parallel Freeways (within five miles): SH 183 and IH 20
- Shoulders: Full Outside
- Frontage Roads: Discontinuous
- Bike Options: None
- Available Transit: None
- Park and Ride: Lamar at IH 30; AT&T Way at IH 30; Beltline Road at IH 30
- Truck Lane Restrictions: Entire Limits
- Hazardous Materials (HAZMAT) Route: None
- Population within one mile of corridor: 112,592
- Employment within one mile of the corridor: 227,141

2.2 Corridor Technology

The IH 30 Corridor has implemented 16.5 miles of wireless communication along the corridor that work within the environment of the existing regional communication network. Existing technology devices on the IH 30 Corridor include:

- 14 Closed Circuit Television (CCTV) cameras
- 1 Dynamic Message Sign (DMS)
- 18 Traffic Detectors
- 2 Managed Lane Toll Display Signs
- 5 Managed Lane (ML) Toll Gantries
- 56 Traffic Signals
- Wrong Way Driving Technologies
 - IH 30 Exit Fielder WB
 - IH 30 Exit Fielder EB

- IH 30 Exit Lamar WB
 - IH 30 Exit Center Street EB
 - IH 30 Exit Collins EB
 - IH 30 Exit Center Street WB
 - IH 30 Exit Collins WB
 - IH 30 Exit ATT Way EB
 - IH 30 Exit ATT Way WB
 - SH 121 Exit Belknap Street WB
- Managed Lane (Contraflow Control)

Period	Gantry	Location	Direction
Eastbound Operating Hours (9:00 pm to 11:00 am, Mon-Fri)	MLG 1	Between Center St. and Baird Farm Rd.	Eastbound/ Westbound (currently closed)
Westbound Operating Hours (12:00 pm to 8:00 pm, Mon-Fri)	MLG 2	Between SH 161 and Beltline Rd.	Eastbound/ Westbound
Weekend Direction and Operating Hours Vary	MLG 3	Between Beltline Rd. and Loop 12	Eastbound/ Westbound
	MLG 4	Between Loop 12 and Westmoreland Rd.	Eastbound/ Westbound
	MLG 5	Between Westmoreland Rd. and Sylvan Ave.	

The Texas Department of Transportation (TxDOT) owns the CCTV, DMS, traffic detectors, tolling technology, facility gates and wrong-way driver detection technology deployed on the IH 30 Corridor and operates, manages, and maintains the system from the TxDOT DalTrans and TransVision Transportation Management Centers (TMCs). The Cities of Dallas, Grand Prairie and Arlington TMCs manage dynamic lane control signals and traffic signals on the arterial street system. The cities in the corridor also include traffic signal preemption systems for emergency vehicles.

The existing ITS infrastructure along the IH 30 Corridor are shown in Exhibits 2-1, 2-2, and 2-3.

EXHIBIT 2-1
EXISTING ITS INFRASTRUCTURE

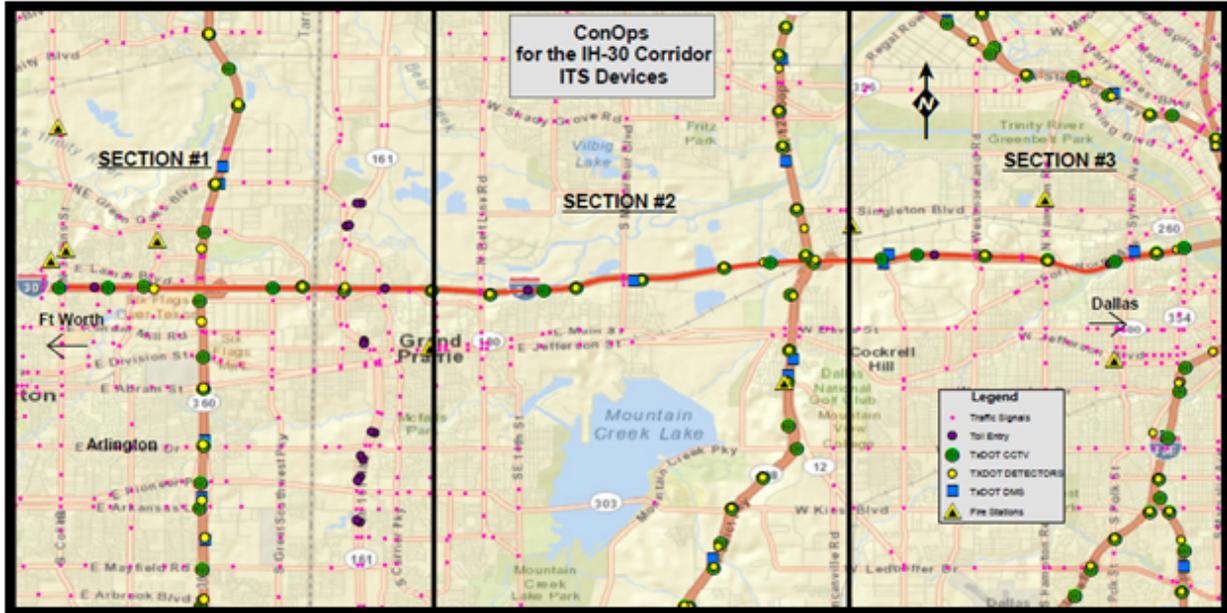


EXHIBIT 2-2
ITS DEVICES SECTION #1 ENHANCED

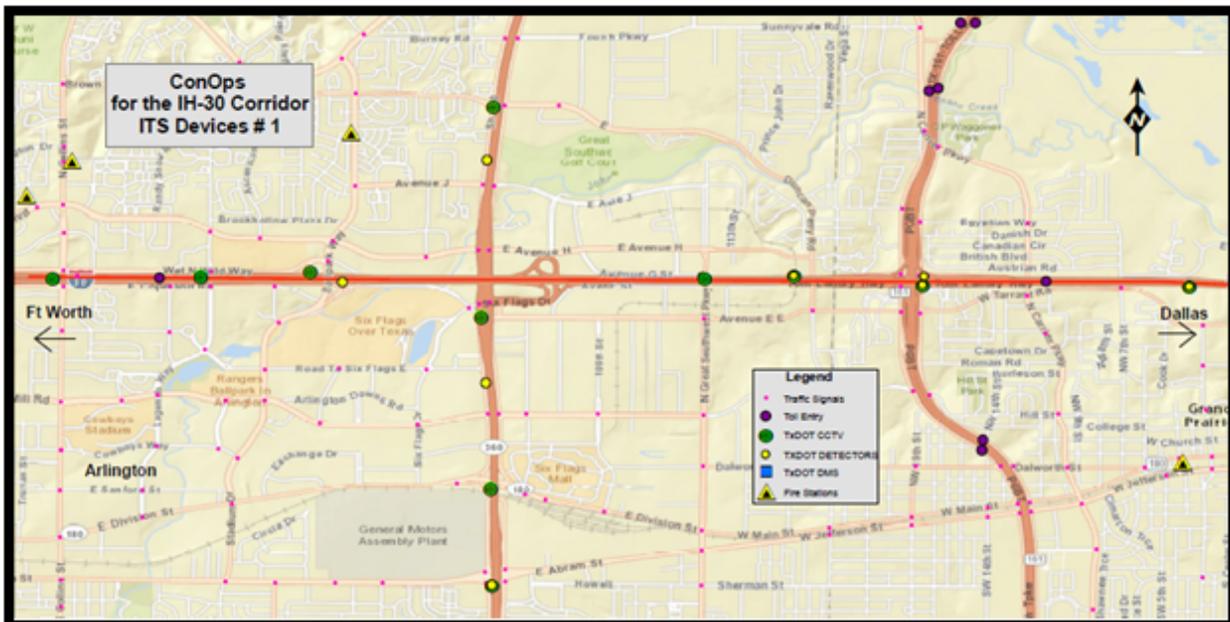


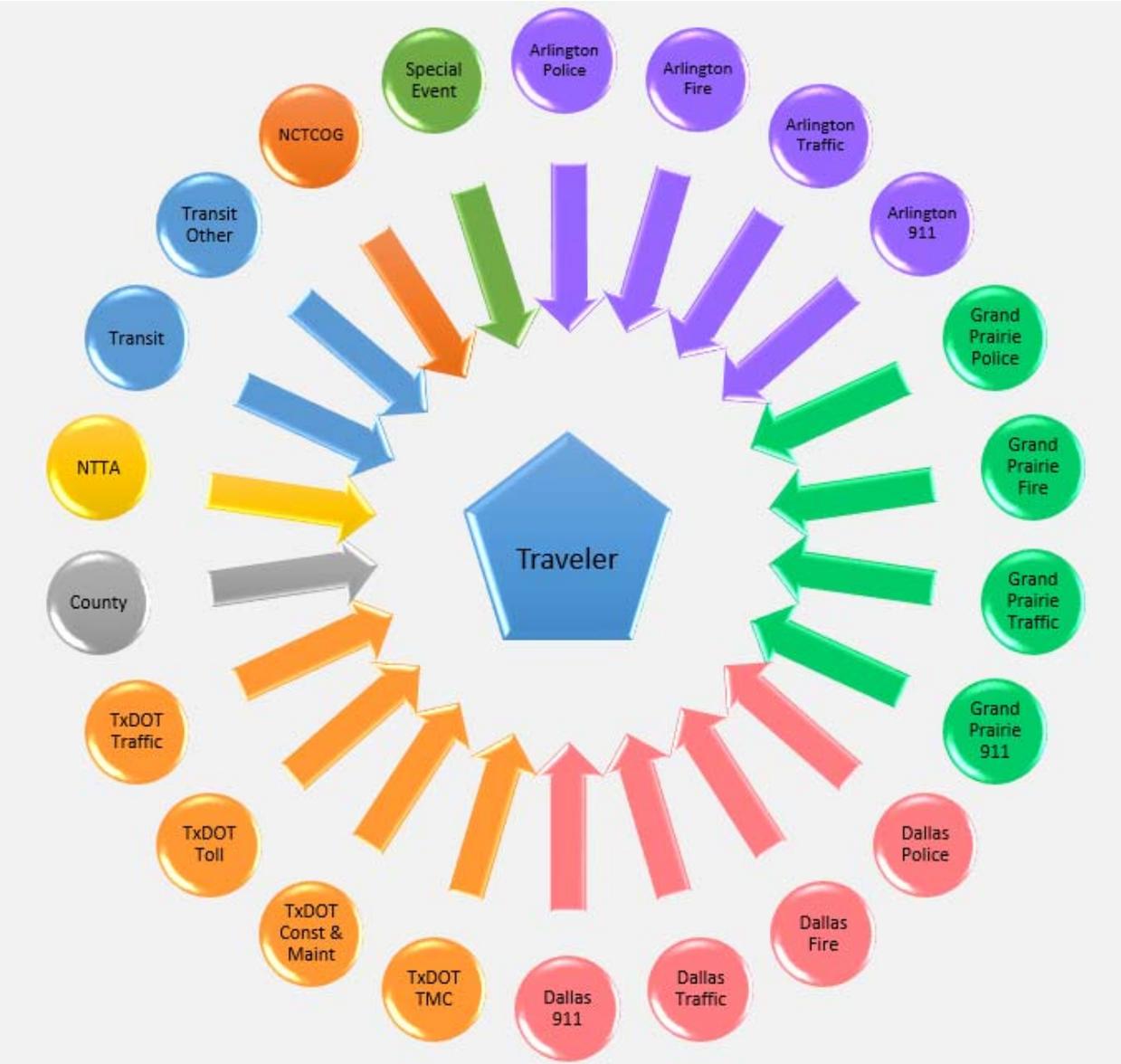
EXHIBIT 2-3
ITS DEVICES SECTION #2 ENHANCED



2.3 Corridor Operators

Several stakeholders are involved in various aspects of the operation of the IH 30 corridor. Exhibit 2-4 demonstrates how all the agencies work together to provide a safe and efficient system for the traveling public. Tables on the following pages outline all stakeholders by individual agency as well as identify operational items including key functions or departments by agency, hours of operation for lanes and services as well as other relevant information.

EXHIBIT 2-4
AGENCY STAKEHOLDERS



City of Arlington

Department	Comments
911	24/7 Operation
Fire	24/7 Operation
Police	24/7 Operation
Transportation	<p>Transportation Management Center Hours of Operation 6:00 am – 5:30 pm</p> <p>Park and Ride Facilities Hours of Operation IH 30 at Lamar – 24/7 operation IH 30 at AT&T Way – 6:30 am to 7:30 pm M – F</p>

City of Dallas

Department	Comments
911	24/7 Operation
Fire	24/7 Operation
Police	24/7 Operation
Transportation	<p>Transportation Management Center Hours of Operation M – F 6:00 am – 7:00 pm (Later if special event) Receives video feed, traffic data and map information from TxDOT Dallas.</p>

City of Grand Prairie

Department	Comments
911	24/7 Operation
Fire	24/7 Operation
Police	24/7 Operation
Transportation	<p>Transportation Management Center Hours of Operation 6:00 am – 5:30 pm</p> <p>Park and Ride Facilities Hours of Operation IH 30 at Beltline Road – 24/7 Operation</p>

North Central Texas Council of Governments

Department	Comments
Transportation	M – F 7:00 am – 5:00 pm
Emergency Preparedness	M – F 7:00 am – 5:00 pm

Texas Department of Transportation

Department / Division / District	Comments												
TxDOT – Dallas	DalTrans Hours of Operation 24/7												
TxDOT – Fort Worth	TransVision Hours of Operation 24/7												
IH 30 Reversible Managed Lane (ML)	<p>Hours of Operation</p> <table> <tr> <td>EB</td> <td>9:00 pm</td> <td>11:00 am</td> </tr> <tr> <td>Closed</td> <td>11:00 am</td> <td>12:00 pm</td> </tr> <tr> <td>WB</td> <td>12:00 pm</td> <td>8:00 pm</td> </tr> <tr> <td>Closed</td> <td>8:00 pm</td> <td>9:00 pm</td> </tr> </table> <p>Weekend EB 9:00 pm Friday to 11:00 am Monday (may vary for special events)</p>	EB	9:00 pm	11:00 am	Closed	11:00 am	12:00 pm	WB	12:00 pm	8:00 pm	Closed	8:00 pm	9:00 pm
EB	9:00 pm	11:00 am											
Closed	11:00 am	12:00 pm											
WB	12:00 pm	8:00 pm											
Closed	8:00 pm	9:00 pm											
Toll Operations	Tolls collected based on ML hrs. of operation												

Dallas County Sheriff’s Office

Department	Comments
Patrol Officers	24/7 Operation
Mobility Assistance Patrol	Hours of Operation 5:00 am – 9:30 pm M – F Weekend: Sat – Sun 11:00 am – 7:30 pm

Special Event Venues

Venues	Comments
Dallas Cowboys	Special events and NFL Season Schedule
Texas Rangers	MLB Season Schedule
Six Flags Over Texas	Daily Memorial Day to Labor Day; Weekends Labor Day to New Years; Daily for Spring Break; Weekends Spring Break to Memorial Day
Lone Star Park	Special events schedule
Verizon Theater	Special events schedule

Tow and Recovery

Agency	City of Operation
McKnight Wrecker Services	City of Arlington
Dave’s Highway Wrecker Services	City of Grand Prairie
United Road Towing	City of Dallas / Dallas County

2.4 Stakeholder Roles and Responsibilities

The stakeholders and their roles and responsibilities are outlined in Exhibit 2-5.

EXHIBIT 2-5 STAKEHOLDER ROLES AND RESPONSIBILITIES

Stakeholders	Operations Roles and Responsibilities	Management Roles and Responsibilities	Lead Agency
Local Cities	<ul style="list-style-type: none"> • Receive alerts for lane closures that have been activated by TxDOT • Coordination of operations during construction after-hours • Support function from TxDOT with respect to signal coordination • Traffic signal malfunctions should be repaired as soon as possible • Lanes closures and accident that occur in TxDOT Facilities. • Operate and Maintain traffic Signal along corridors 	<ul style="list-style-type: none"> • Participate in receiving and sharing education on ATMS management and operations • Records should be kept on all traffic signal maintenance or repair • All maintenance work performed at signal locations should comply with the requirements of the Texas Manual on Uniform Traffic Control Devices (TMUTCD) and the Traffic Engineering Standard Sheets • Update traveler information for dissemination through 511DFW system • Technical support • Statewide guidelines on Active Traffic Management • Statewide regulations on use of lane closures • Statewide data sharing program • Statewide DMS guidelines and policies 	<p style="text-align: center;">Arlington TMC 817.459.6777</p> <p style="text-align: center;">Grand Prairie TMC 972-237-8790</p>
Local Police	<ul style="list-style-type: none"> • Receive alerts from TMCs regarding maintenance activities that may impact incident management and response • Request lane closures from TMC due to incident or blockages in general purpose lanes • Enforcement of lane closure regulations, along with other traffic laws • Management of Incident scenes 	<ul style="list-style-type: none"> • Partner in developing ATMS operational procedures, particularly for coroner involvement in fatal incidents • Partner with TxDOT in developing operational procedures and enforcing lane closures, and other traffic laws • Attend and participate in the Regional Traffic Incident Management Training. 	<p style="text-align: center;">Arlington PD 817.459.6777</p> <p style="text-align: center;">Grand Prairie PD 972-237-8790</p>
Local Fire	<ul style="list-style-type: none"> • Receive alerts from TMCs regarding maintenance activities that may impact incident management and response. • Request lane closures from TMC due to incident or blockages in general purpose lanes. • Enforcement of lane closure regulations, along with other traffic laws • Management of Incident scenes • Incident scene management 	<ul style="list-style-type: none"> • Partner in developing ATMS operational procedures, particularly for coroner involvement in fatal incidents • Partner with TxDOT in developing operational procedures and enforcing lane closures, and other traffic laws • Attend and participate in the Regional Traffic Incident Management Training • Update HAZMAT agreement to include new provisions related to project limits. 	<p style="text-align: center;">Arlington FD Admin Office 817.459.5500</p> <p style="text-align: center;">Grand Prairie FD Admin Office 972.237.8300</p>
Local 911	<ul style="list-style-type: none"> • Provide dispatch support for Incident Response Vehicles 	<ul style="list-style-type: none"> • Partners with cellular telephone companies to continue to provide location information for 911 calls 	DIAL 911
TxDOT – Dallas and Fort Worth (Construction and Maintenance)	<ul style="list-style-type: none"> • Post work zone information on TxDOT web page in advance of scheduled construction phasing • Highway signs should be kept in proper position, plumb, clean and legible • Replace or repair other damaged or missing signs as soon as practice 	<ul style="list-style-type: none"> • Interface with entities seeking information on corridor • Assist Mobility Assistance Patrol (MAP) for highway corridors as requested • Implement safety mitigation • Public relations 	<p>MAP (Non-Emergency) Tarrant County 817-884-1213 Dallas County 214.320.4444</p>

EXHIBIT 2-5 (continued)

Stakeholders	Operations Roles and Responsibilities	Management Roles and Responsibilities	Lead Agency
DalTrans and TransVISION TMC	<ul style="list-style-type: none"> Develop and manage operational policy for TMCs Operate and manage traffic management system ATMS components Monitor corridor for congestion and incidents Provide traffic video to general public and the media (included in 511) Manage regional traffic control efforts and assist in coordinating traffic across boundaries. 	<ul style="list-style-type: none"> Integrate and operate the ATMS Develop and refine ATMS operational strategies with participation from partner agencies Maintenance of ITS technologies on freeway system Traffic management planning during construction Dedicated dispatch at the TMC Partner in developing ATMS operational procedures Maintains portable DMS stations for special event Update traveler information for dissemination through 511DFW system Technical support Statewide guidelines on Active Traffic Management Statewide regulations on use of lane closures Statewide data sharing program Statewide DMS guidelines and policies 	<p>TxDOT – Dallas District TMC (214) 319-3601</p> <p>TxDOT – Ft Worth District TMC (817) 370-3661</p>
TxDOT Traffic Division	<ul style="list-style-type: none"> Update Lonestar software Update agreements Safety Management 	<ul style="list-style-type: none"> Implement and manage software for ATMS Funding support for TMC operations and management of ATMS Review performance measures Technical support Statewide guidelines on Active Traffic Management Statewide regulations on use of lane closures Statewide data sharing program Statewide DMS guidelines and policies 	HQ Phone (512) 463-8588
TxDOT Toll Division	<ul style="list-style-type: none"> Budget preparation Rate setting Review of fees and discounts Pay by Mail differential Financial forecasting 	<ul style="list-style-type: none"> Identification of cost savings related to project delays Identification of best practices and documentation required for project management within the Toll Division 	...
County	<ul style="list-style-type: none"> Provides dispatch support for Mobility Assistance Patrol Provide HOV Enforcement 	<ul style="list-style-type: none"> Participate in receiving and sharing education on ATMS management and operations 	Dallas Sheriff Dept Dispatch 24/7, Non-Emergency 214.749.8641
Stakeholders	Operations Roles and Responsibilities	Management Roles and Responsibilities	Lead Agency
NTTA	<ul style="list-style-type: none"> Post work zone information on 511DFW web page in advance of scheduled construction phasing Operate and manage traffic management system ATMS components Coordinate with Department of Public Safety 	<ul style="list-style-type: none"> Dedicated dispatch at the TMC Partner in developing ATMS operational procedures Update traveler information for dissemination through 511DFW system Review and maintain performance measures Provides Mobility Assistance Patrol (MAP) for toll corridor Technical support Statewide guidelines on Active Traffic Management Statewide regulations on use of lane closures Statewide data sharing program Statewide DMS guidelines and policies 	NTTA TMC (214) 224-2203
Towing and Recovery	<ul style="list-style-type: none"> Provide support for incident scenes 	<ul style="list-style-type: none"> Operational procedures for removing vehicles or debris from the roadway or right-of-way Attend and participate in the Regional Traffic Incident Management Training 	McKnight Wrecker Services (817) 265-1336 Dave's Highway Wrecker Services (972) 262-2000
Traveler	<ul style="list-style-type: none"> Travel through corridor Use and apply knowledge of travel information 	<ul style="list-style-type: none"> Participate in receiving and sharing education on ATMS management and operations 	...
Special Events Venues	<ul style="list-style-type: none"> Planned event that leads to higher than normal demands on the transportation infrastructure 	<ul style="list-style-type: none"> Develop and maintain performance measures Traffic management planning during special events 	...
Transit	<ul style="list-style-type: none"> Guarantee Transit Service 	<ul style="list-style-type: none"> Provide transit services to corridor Monitor transit service performance 	...
NCTCOG	<ul style="list-style-type: none"> Develop performance measures 511DFW Program Provide traffic video to general public and the media (included in 511) Driverless Vehicle Permanent Test Quarters Traffic Incident Management / Photogrammetry Training 	<ul style="list-style-type: none"> Update traveler information for dissemination through 511DFW system Support TxDOT/Cities software for ATM system management Funding support for TMC operations and management of ATMS Review performance measures Develop and maintain performance measures Public relations Technical support Regional data sharing program C2C Plug-in 	Natalie Bettger 817-695-9280 Senior Program Manager Congestion Management and System Operation

3 OPERATIONAL SCENARIOS

3.1 Introduction

Incident response is the activation of a planned strategy for the safe and rapid deployment of the appropriate personnel and equipment to the incident scene. Preplanning is required to ensure that adequate communication, coordination and cooperation exist among all response agencies. The key outcome of developing and reviewing operational scenarios as part of the project was to discuss the actions taken by each agency when various types of incidents or crashes occur within the IH 30 corridor. It is important to establish good working relationships among the incident response entities. By working together, traffic signal timing can be adjusted, Mobility Assistance Patrol (MAP) vehicles and tow trucks can respond faster, providing safer and more efficient travel overall for drivers within the corridor. The IH 30 corridor is challenged by the number of agencies responsible within the corridor required to coordinate when crashes or incidents occur. The ConOps scenarios workshop allowed partners to discuss actions that would be taken and to identify stakeholders that would be involved to accomplish those actions.



Scenarios were developed to increase awareness for stakeholders and identify gaps on how the corridor should operate during emergency situations. Each scenario was discussed to engage first responders and operational staff responsible for identifying, responding, managing and clearing incidents and crashes along the corridor. The examples provided an understanding of the corridor management processes under a variety of conditions. Operational scenarios that were developed are listed below.

- a) Free Flow Operations
- b) Crash in Managed Lane; Managed Lane Closed (with and without congestion)
- c) Crash in General Purpose Lane; One General Purpose Lane Closed; Two General Purpose Lanes Closed; All General Purpose Lanes Closed (with and without congestion)
- d) Crash on Frontage Road; Frontage Road Closed (with and without congestion)
- e) Planned Closures (with and without congestion)

- f) Large Debris Removal (on travel lane and on shoulder); including abandoned vehicles
- g) HAZMAT Crash in Managed Lane; in General Purpose Lanes
- h) Crash with Fire in Managed Lane; in General Purpose Lanes
- i) Fatality Crash in Managed Lane; in General Purpose Lanes

For each scenario a series of questions was identified to discuss during a tabletop exercise. These questions allowed feedback from all agencies and provided insight into the complexity of the corridor operations. Every stakeholder has a role and responsibility to respond and operate particular functions within the corridor; when these roles are carried out in coordination the corridor operates at maximum efficiency.

1. Who controls and operates managed lane? Any adjustments made to operations based on scenario?
2. Who controls and adjusts toll rate? Any adjustments made to toll rates based on scenario?
3. Who controls and operates general purpose lanes? Any adjustments made to operations of general purpose lane based on scenario?
4. Who controls and operates frontage roads? Any adjustments made to operations of frontage road traffic signals or other field devices based on scenario?
5. Who provides mobility assistance? Any adjustments made in assistance provided based on scenario?
6. Who provides enforcement on managed lanes? General purpose lanes? Frontage roads and other arterials? Any adjustments made in enforcement based on scenario?
7. Who provides incident response on managed lanes? General purpose lanes? Frontage roads and other arterials? Any adjustments made in incident response based on scenario?
8. Who provides data to public? Any adjustments made to provide data to the public based on scenario?
9. Who provides HAZMAT clean up if needed on managed lanes? General purpose lanes? Frontage roads or other arterials? Any adjustments made to provide HAZMAT clean up based on scenario?
10. Who provides wrecker service, if needed? Any adjustment made to provide wrecker service based on scenario?

For the purposes of these scenarios, all three design typical sections along the corridor were included. A plot was created for each typical section that included the main lanes as well as the design for the management of each lane section configuration (one lane each direction

(concurrent flow); two lanes reversible flow; and one lane reversible flow). A map of the corridor is provided below in Exhibit 3-1 and the layouts used for each typical section are provided in Exhibits 3-2, 3-3, and 3-4.

EXHIBIT 3-1
CORRIDOR MAP WITH TYPICAL SECTION DESIGN



EXHIBIT 3-2
TYPICAL SECTION PLOTS FOR WORKSHOP SCENARIO 1

IH 30 Cross Section Between Great Southwest Parkway and Ballpark Way

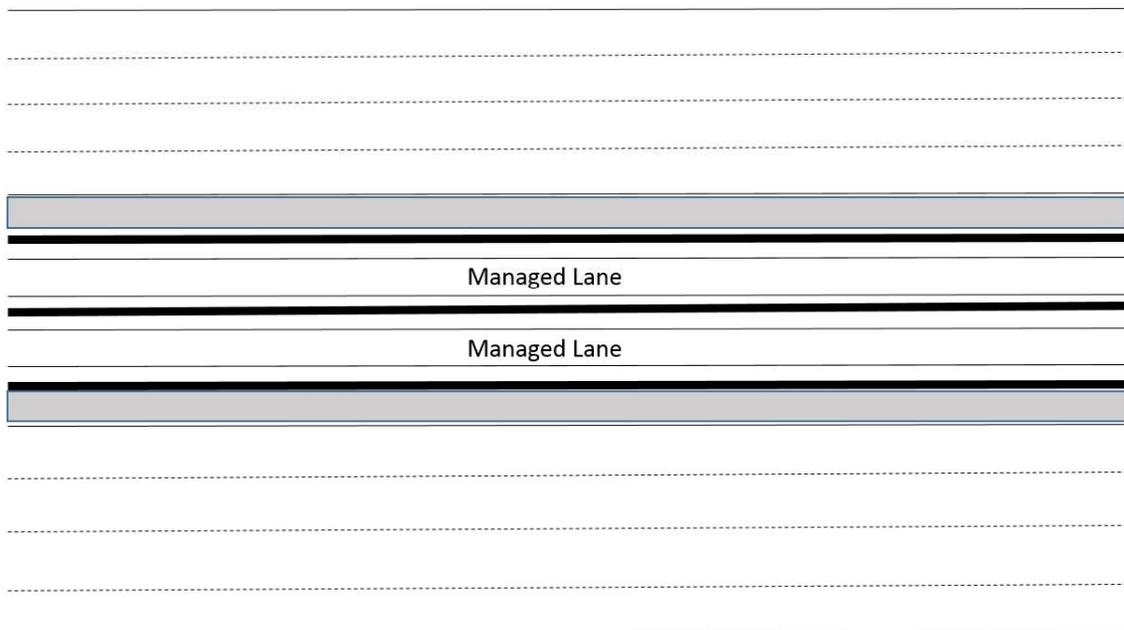


EXHIBIT 3-3

TYPICAL SECTION PLOTS FOR WORKSHOP SCENARIO 2

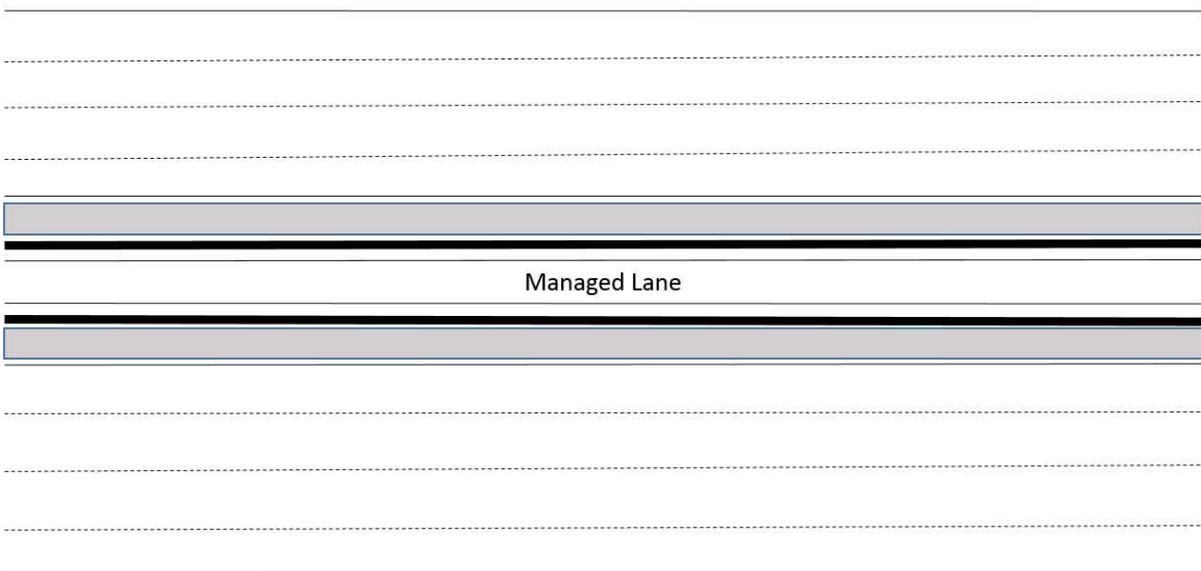
IH 30 Cross Section Between Westmoreland and Great Southwest Parkway



EXHIBIT 3-4

TYPICAL SECTION PLOTS FOR WORKSHOP SCENARIO 3

IH 30 Cross Section Between Sylvan and Westmoreland



Throughout the workshop, discussion focused on how to improve operations and coordination. What first responders and transportation operators did 20 years ago might still work, but can it be improved? The operators of the transportation system need to consider what can be changed without compromising the safety of first responders in the field while providing relief to the public traveling within the corridor. Managing the transportation system in the Dallas-Fort Worth region is a challenge faced every day by first responders and transportation operators. Understanding the overall goal of better operating the regional transportation system through implementation of strategies and enhancements to coordination will improve safety and reliability of corridors. Ask our partners and ourselves what can we do to improve and how can we all work better together? The remaining sections of this chapter focus on specific scenarios discussed during the operational scenarios workshop.

3.2 Crash in the Managed Lanes

When a crash occurs in the managed lane, the following action items occur. Local 911 dispatch will receive a call from the public or TxDOT notifying them of a crash. Local police will respond depending on the location of the crash. The Cities of Arlington and Grand Prairie provide response within their jurisdictions; within the City of Dallas' jurisdiction, Dallas County Sheriff's Office will respond. The Cities of Dallas' and Grand Prairie's Fire and Rescue have worked out an agreement that Grand Prairie Fire and



Rescue will respond to all crashes that are eastbound from President George Bush Turnpike (PGBT) to Beckley Avenue and Dallas Fire and Rescue will respond to all crashes westbound from Beckley Avenue to PGBT. This agreement was developed since Grand Prairie Fire and Rescue does not have an access point westbound to get into the managed lane to work a crash. The Memorandum of Understanding between these agencies is provided in Appendix A. If a crash occurs within the City of Arlington, Arlington Fire and Rescue will respond.

The portion of the managed lane that is a single lane is not wide enough for vehicles to turn around. Based on this, there might be instances when first responders have to back their vehicles up the lane or work the accident from outside the concrete barrier. Working the crash with response equipment outside the barrier will have an impact on the general purpose lane traffic as well.

Once TxDOT confirms the crash has occurred via CCTV cameras, the toll rate on the managed lane will be adjusted appropriately; managed lane entrances could be closed upstream to reduce the number of vehicles stuck in the queue; dynamic message boards will notify motorists; and 511DFW will provide information about the crash. The managed lanes operate Monday through Friday, eastbound from 9:00 pm to 11:00 am and westbound from 12:00 pm to 8:00 pm; weekend hours are eastbound from 9:00 pm Friday to 11:00 am Monday; schedule may vary for special events. TxDOT will also notify DBI, their managed lane contractor, and the MAP to assist first responders in the field. Based on this scenario, no adjustments will be made to general purpose lane operations. Once the local TMC is notified by TxDOT, 511DFW or 911 dispatch, the TMC will determine if traffic signal timing plans need to be adjusted. The TxDOT TMCs are operational 24 hours a day, seven days a week. The Cities of Arlington and Grand Prairie operate their TMCs Monday through Friday, 6:00 am to 5:30 pm. The City of Dallas operates their TMC Monday through Friday, 6:00 am to 7:00 pm. All local TMC hours of operation vary for special events. The City of Arlington is part of the WAZE Connected Citizens Program and can report crashes in WAZE for travelers to receive information. NCTCOG is also part of the WAZE Connected Citizens Program and is working to share 511DFW data with WAZE and vice versa.

Shortcomings identified as part of this scenario involved the hours of operation for the MAP to assist with incident management as well as hours of operation for local TMCs. In addition, TxDOT mentioned that sometimes they do not know a crash has occurred until 15-20 minutes after the crash. There is a need to investigate integrating Computer-Aided Dispatch software into the TMC software for earlier notification. Better communication to the traveling public of the upstream queuing of vehicles to reduce secondary crashes was also identified as an operational need. TxDOT currently has one DMS along the IH 30 corridor at Cockrell Hill Road; it was identified that additional DMS along this corridor to communicate with the motorist would be helpful. Regarding traveler information, there needs to be a way for travelers to get this information without looking at their smartphones. The region is interested in voice alerts to warn drivers as they are approaching a queue; 511DFW provides Interactive Voice Recognition and some GPS

applications also provide voice directions. Enhancements to the 511DFW traveler information system are in development. Lastly, first responders and operations staff should be involved in the roadway design phase to ensure access points are provided at critical locations to ensure first responders can get into and out of barrier separated facilities.

3.3 Crash in the General Purpose Lanes

When a crash occurs in the general purpose lanes, the following actions occur. Local 911 dispatch will receive a call from the public or TxDOT notifying them of a crash. Local police will respond depending on the location of the crash. The Cities of Arlington and Grand Prairie provide response within their respective jurisdictions. Within the City of Dallas' jurisdiction, Dallas County Sheriff's Office will respond. The Cities of Arlington, Dallas and Grand Prairie's Fire and Rescue will respond within their respective jurisdictional boundaries. If helicopters are needed, the Emergency Medical Services or Fire and Rescue will request them. In NCTCOG's Traffic Incident Management classes, instructors discourage the landing of helicopters on the roadway. They suggest helicopters land in other areas near the highway to keep traffic moving and to try to avoid a full closure of the roadway.



Once TxDOT confirms via CCTV that the crash has occurred, the toll rate on the managed lane will be adjusted appropriately to accommodate the general purpose lane traffic. If traffic from the general purpose lanes is forced onto the managed lane by local police, TxDOT will set the toll rate to zero (\$0). The toll DMS will show a toll price, but it will be refunded. If the managed lane is open in the opposite direction, TxDOT could also work

with their contractor, DBI, to reverse the managed lane if the clearance time of the crash is expected to last for an extended period of time. The managed lanes operate Monday through Friday, eastbound from 9:00 pm to 11:00 am and westbound from 12:00 pm to 8:00 pm; weekends hours are eastbound from 9:00 pm Friday to 11:00 am Monday; schedule may vary for special events. TxDOT will also utilize dynamic message boards to notify motorists and 511DFW will show the crash. TxDOT will also notify the MAP to assist first responders in the field. Once the local TMC is notified via TxDOT, 511DFW or dispatch, the TMC will determine if traffic signal

timing plans on the frontage roads need to be adjusted. TxDOT TMC is operational 24 hours a day, seven days a week. The Cities of Arlington and Grand Prairie operate their TMCs from Monday through Friday, 6:00 am to 5:30 pm. The City of Dallas operates their TMC Monday through Friday, 6:00 am to 7:00 pm. All local TMC hours of operation vary for special events. The City of Arlington is part of the WAZE Connected Citizens Program and can report crashes in WAZE for travelers to receive. NCTCOG is also part of the WAZE Connected Citizens Program and is working to share 511DFW data with WAZE and vice versa.

Shortcomings identified as part of this scenario are similar to the gaps and needs identified in the above scenario. This includes expanding the hours of operation for the MAP and local TMCs, integrating Computer-Aided Dispatch into the TMC software, deployment of additional DMS along this corridor, implementing non-distracting verbal alerts to drivers as they are approaching a queue, and engaging first responders during the roadway design meetings to discuss access points and address responder concerns.

3.4 Crash on Frontage Roads

Crashes on the frontage roads follow similar procedures as crashes on the managed and general purpose lanes. Local 911 dispatch will receive a call from the public or TxDOT notifying them of a crash. Local police will respond depending on the location of the crash. The Cities of Arlington and Grand Prairie provide response within their jurisdictions. Within the City of Dallas' jurisdiction, Dallas County Sheriff's Office will respond. The Cities of Arlington, Dallas and Grand Prairie's Fire and Rescue will respond within their jurisdictional boundaries. When a crash occurs on the frontage road, there are no changes in operations of the managed or general purpose lanes. The police can close ramps that are affected by the crash if needed to work the crash scene.

Shortcomings in this area include expanding local TMC hours of operation to adjust timing plans during off-peak hours; integrating Computer-Aided Dispatch into the TMC software; and ensuring communications between local TMC and field devices to adjust operations.

3.5 HAZMAT Spill in Managed or General Purpose Lanes

A crash involving hazardous materials (HAZMAT) will follow the same approach and notification outlined in the crash in the managed lanes and general purpose lanes, but will have a few

additional steps. If HAZMAT clean up is needed for the crash, the local first responders can contact TxDOT and TxDOT will call out their HAZMAT contractor to clean up. TxDOT's standard HAZMAT (including biohazard) procedures are outlined below:

1. The responsible party is initially responsible; however if they are not identified, TxDOT will contact the contractor.
2. District standard operating procedure for emergency spill response (*ROW Spills*) – **TxDOT Dallas District SOP No. 15-04**



- No. 15-04** spells out the responsibilities. (*For more information about TxDOT's hazardous material cleanup policy, refer to TxDOT's Occupational Safety Manual, Chapter 5, Section 3.*)
3. Per TxDOT Safety Procedures, TxDOT **"CAN NOT"** clean up spills greater than 25 gallons **and/or** involve hazardous materials; if greater than 25 gallons they "must" contact a contractor.
 - a) TxDOT can, in some cases, provide traffic control for the safety of the traveling public and cleanup crews.
 - b) TxDOT can provide materials to Department of Public Safety or Fire Department so spills don't migrate or contaminate any further.
 - i. Contract – TxDOT Dallas has a contract with the HAZMAT contractor that **requires that they respond within two hours of notice to proceed with the cleanup.**
 - The generator (owner of the vessel from which the spill is discharged) is required by federal law to clean up the spill. If they do not have a contractor, they can contract directly with the HAZMAT company on scene.
 - The responsible party is also encouraged to check the yellow pages, utilize internet search engines, and/or ask their insurance company for recommendations.
 4. Local Authorities or Governmental Entities should report all incidents to TxDOT via DalTrans. Through this dispatch number, the information will be sent to the appropriate entities who have current authority over roadway operations. Reporting

entities need to be clear about the exact location, responsible party information, and resources required, and should always provide an on-scene contact number.

In cases where TxDOT does the cleanup but later finds the responsible party, TxDOT will send them the bill.

3.6 Large Debris Removal in Managed and General Purpose Lanes

The removal of large debris in the managed lanes is currently covered under DBI, TxDOT's contractor. DBI is contracted to open, close and reverse the IH 30 managed lane. When DBI opens and closes the lane to reverse directions, they ensure all debris is removed from the roadway. TxDOT has the ability to monitor the managed lane with CCTV cameras if debris happens to get in the lane after the lanes have been opened. If TxDOT identifies debris, they would contact DBI to go into the lane and remove the debris. The managed lanes operate Monday through Friday, eastbound from 9:00 pm to 11:00 am and westbound from 12:00 pm to 8:00 pm; weekends hours are eastbound from 9:00 pm Friday to 11:00 am Monday; schedule may vary for special events. DBI is on call 24 hours a day, seven days a week to provide debris removal as well as general operations.

For the removal of large debris in the general purpose lanes, TxDOT utilizes MAP along the corridor to remove debris. The MAP can be dispatched to a location to pick up the debris or could find the debris as they drive along the corridor. The MAP hours of operation are Monday through Friday from 5:00 am to 9:30 pm and Saturday through Sunday 11:00 am to 7:30 pm. Based on these hours, the MAP is not available 24 hours a day, seven days a



week to remove large debris. This gap in service is identified in Chapter 4 as a possible need to provide service 24 hours a day, seven days a week or identify another entity that can help with large debris removal when the MAP is not operating.

3.7 Planned Events

When planned closures or special events occur along the IH 30 corridor various agencies take the lead. For planned road closures, TxDOT will lead the coordination and communication efforts with partner agencies and for public outreach. For special events, the respective local jurisdictions will lead the coordination and communication efforts with partner agencies and for public outreach. Information regarding the closures or special events are shared with partner agencies including TxDOT, North Texas Tollway Authority, local TMCs, local fire and local police. Communication regarding these events is shared with the public via 511DFW, WAZE, highway and arterial DMS as well as other traditional communications.

3.8 Conclusion

A high-level overview of roles and responsibilities for stakeholders along the IH 30 corridor was outlined in this chapter. The goal of the scenarios was to increase awareness of stakeholders and identify gaps or needs. The information outlined will provide guidance and procedures for agencies involved in jointly operating and maintaining the IH 30 corridor. The workshop focused on answering the questions below as well as others.

- What procedures exist, what procedures or relationships need to be created or enhanced?
- How do we most efficiently and effectively utilize the resources available (staff and technology) to provide a safe and reliable transportation system?
- How do we ensure we are not duplicating efforts?
- What additional resources (staff and technology) are needed?
- What are the sources and uses of funding, staff and equipment?

Overall, the scenarios provided all stakeholders with a better understanding of the general operations and identified next steps. The issues or next steps were outlined at the end of each scenario providing an action for going forward. The next Chapter will outline the issues and begin to identify possible solutions to fill the issues and needs within the IH 30 corridor.

4 ISSUES AND NEEDS FOR IH 30 CORRIDOR

4.1 Introduction

The transportation stakeholders operating and managing the IH 30 corridor have recognized that issues and needs exist with respect to the full potential of getting the maximum mobility and safety benefit for the corridor. The current limitations along the corridor vary from the lack of system integration to the need for additional training for first responders. The goal of this section is to identify issues and needs of day-to-day operations and management of the transportation system to work together to solve operational problems, improve system performance, and communicate successfully with one another. The items identified provide a plan for successful implementation, operation and maintenance of the corridor. During the operational scenarios workshop the stakeholders identified the issues and needs. These were then separated into three categories: Technology, Resource, and Policy.

Technology issues and needs focused on facilities, equipment, software, and systems. Resource issues and needs identified sources and uses of funding, as well as staffing needs. Policy issues and needs examined institutional arrangements, Memorandums of Understanding, and protocols. These issues and needs are provided in the following tables by category.

4.2 Technology Issues and Needs

Technology issues and needs focused on facilities, equipment, software, and systems. The technology issues and needs are listed in the table below.

Issue/Deficiency:	Need/Mitigation:
Lack of information sharing between 911 Computer-Aided Dispatch software and TMC software. TxDOT sometimes is not made aware of a crash until 15-20 minutes after the crash has occurred.	Sharing information allows for earlier notification and can help first responders share data with TMCs when requesting secondary assistance and communicating crash information to traveling public.
Dynamic Message Signs (DMS) are not spaced optimally along the IH 30 corridor.	Place additional DMS along this corridor to provide better communication with the traveling public. Use other methods such as 511DFW to increase communications.

Issue/Deficiency:	Need/Mitigation:
First responders are limited by the data available to route emergency vehicles to the crash scene.	Determine what technology can be utilized to provide 'best route' information available for emergency service agencies, in order to reduce emergency response time.
No process to notify the public they are approaching the end of a queue of a primary crash to help prevent secondary crashes.	Develop an automated process to notify the public they are approaching the end of a primary crash queue. The region is interested in voice alerts to drivers as they are approaching a queue. 511DFW provides Interactive Voice Recognition and some GPS applications also provide voice directions.
TxDOT's Wrong-Way-Drivers (WWD) identification system currently does not connect to 911.	Provide a feed from TxDOT's WWD system to Arlington Police Department and/or other police departments that have systems.
Performance measurements are currently collected on a limited basis only on the IH30 Corridor.	Develop software to track and archive existing data. Performance measures allow agencies to track successes and identify areas where improvements can be made. The following performance measures were recommended to be collected as part of this project: response time, incident clearance times, roadway clearance times, secondary crashes, recovery time, speeds, toll rates, and traffic volume.
Information exchange is mostly facilitated through voice and manual means, resulting in insufficient information sharing among different transportation systems.	Develop a consistent, reliable and automated means of sharing information to ensure that the corridor can be managed in an interactive and dynamic way. Possibly integrate through EcoTrafIX.

4.3 Resource Issues and Needs

Resource issues and needs identified sources and uses of funding as well as staffing shortages as listed in the table below.

Issue/Deficiency:	Need/Mitigation:
More 911 Dispatch Operators are needed to respond to the number of calls received.	Provide more personnel in 911 Dispatch.
TxDOT's TMCs are understaffed; unable to perform general functions and manage the managed lane at current staffing level.	TxDOT hiring freeze lifted September 1, 2017 and they can hire more staff. In addition, the TxDOT Districts could look into sharing operational responsibilities between Districts.
MAP hours of operation are limited to Monday through Friday, 5:00 am to 9:30 pm and Saturday and Sunday 11:00 am to 7:30 pm. If services are needed outside this time, they are unavailable to assist.	Extend MAP hours of operation to 24/7.
TMC hours of operation vary by city and time of day. The Cities of Arlington and Grand Prairie operate their TMCs Monday through Friday, 6:00 am to 5:30 pm. The City of Dallas operates its TMC Monday through Friday, 6:00 am to 7:00 pm. All local TMC hours of operation vary for special events. If crashes or unplanned events happen outside of these hours, city staff can remotely access the system to make adjustments.	Extend hours of operation to 24/7 or allow TxDOT to operate city devices outside of these times through the DalTrans and TransVision TMC.
Sources of funding need to be increased. Currently, funding sources include Congestion Mitigation and Air Quality Improvement Program, and Surface Transportation Block Grant Program funds. State and local funds are also available to fund management and operations.	Work to identify other sources and grants. Ensure all projects and programs are included in the Metropolitan Transportation Plan and allow them to be eligible for federal funding.
The process to receive federal funding takes nine months (six months to add to the Transportation Improvement Program and three months to execute a contract). The ability for stakeholders to apply and receive funding in the near-term depends on the flexibility of the planning organization to allocate funding for management and operations projects.	Possibly identify pots of funds that are more readily available when needed for operational and management implementation.

Issue/Deficiency:	Need/Mitigation:
Traffic speeds exceed 80 mph along the IH 30 Corridor.	There is no single best method for enforcing speeds. Each jurisdiction needs to customize a combination of technologies and tactical methods to enforce speeds that work best for the corridor. More officers are needed to enforce speeding.

4.4 Policy Issues and Needs

Policy issues and needs examined institutional arrangements, Memorandums of Understanding (MOU), and protocols as listed in the table below.

Issue/Deficiency:	Need/Mitigation:
Multiple agencies respond to incidents, potentially creating confusion as to who takes the lead on the incident.	Develop a more consistent and coordinated response protocol. First responders should attend regional Traffic Incident Management training course. This course is designed to initiate a common, coordinated response to traffic incidents that will build partnerships, enhance safety for emergency personnel, reduce upstream traffic accidents, improve the efficiency of the transportation system, and improve air quality in the Dallas-Fort Worth region.
No policy or procedure exists regarding quick removal of abandoned vehicles. The current practice allows abandoned vehicles to stay on the shoulder for up to 48 hours prior to towing.	Pursue development of a protocol or procedure to remove abandoned vehicles immediately since they present a safety hazard.
MOU Agreement for Automatic Assistance between stakeholder Fire Departments	Outline the process for implementing an Automatic Assistance response between stakeholders in a managed lane corridor with limited access.
Lack of entrance gates to the barrier-separated managed lane prohibits access to first responders.	Develop a process in which first responders and operations staff are part of the roadway design phase to ensure access points are provided at critical locations, which would allow first responders to easily gain entrance to and exit from barrier-separated facilities.

Issue/Deficiency:	Need/Mitigation:
Information needs to be shared between WAZE and other data source providers.	NCTCOG joined the WAZE Connected Citizens Program. This allows NCTCOG to also receive information WAZE receives from users, and share 511DFW data provided by local agencies with WAZE. Determine what other agreements are needed for other providers.
Require agreements to share data between TxDOT and local agencies.	Identify and execute needed agreements.
Need a better understanding of individual policies and procedures across agencies and departments.	Sharing agencies' and departments' policies and procedures as related to crashes and operations of the corridor.

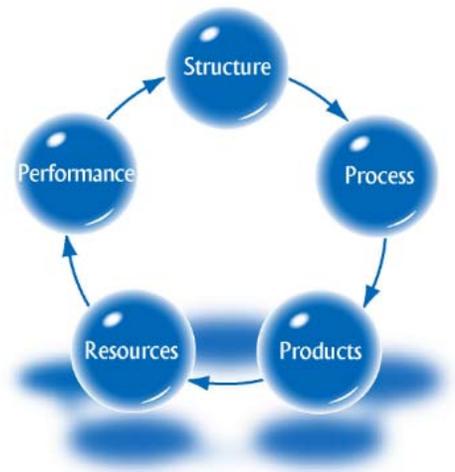
4.5 Conclusion

Through the transportation planning process, NCTCOG offers benefits to stakeholders who are interested in advancing cost effective strategies to improve regional transportation system performance through multi-agency, coordinated efforts. The IH30 Corridor ConOps is one opportunity among several projects to link transportation planning and investment decision making to transportation systems management and operations funding. The issues and needs identified in this chapter can be viewed as action items to continue to improve the management and operations of the corridor. The next steps would be to identify a timeline and champion for each item to ensure these items are accomplished, as well as identify additional items as more discussion occurs between the management and operation stakeholders.

5 REGIONAL FRAMEWORK

This chapter outlines the approach used to develop the IH 30 ConOps, providing a guide for implementation on other corridors within the Dallas-Fort Worth region. The framework outlines the process used to develop the IH 30 ConOps and necessary items that apply. The ConOps focused on the identification of the study area, goals and objectives, current systems and operations, operational scenarios, and issues and needs.

The five major elements shown in this diagram provide a framework on which managers with day-to-day responsibilities for transportation and public safety services can build sustained relationships and create strategies to improve transportation system performance. The intent of the framework is to help institutionalize working together as a way of doing business among transportation agencies, public safety officials, and other public and private sector interests within the IH 30 Corridor. The framework is important because in most regions, institutional barriers exist that make collaboration difficult. These barriers include resource constraints, internal stovepipes in large agencies, and the often narrow jurisdictional perspective of governing boards. The framework is intended to guide operators in overcoming these institutional barriers.



The framework creates structures through which processes occur that result in products. It implies a commitment of resources needed to initiate and sustain regional collaboration and coordination and for implementing agreed upon solutions and procedures. The collaborative spirit is motivated by a desire for measurable improvement in regional transportation system performance. The five elements of the framework are interactive and evolving. A brief description of each element follows.

The **structure** that supports collaboration and coordination within the IH 30 Corridor is the set of relationships, institutions, and policy arrangements that shape the activity. It provides the roles and responsibility table (R&RT) (Exhibit 2-5) at which operators and service providers sit with public safety and other key transportation constituencies. This R&RT may range from an ad hoc

loose confederation to a formal entity with legal standing and well-defined responsibilities and authorities. It may be facilitated by or emerge from existing entities or be newly formed.



Processes are the formal and informal activities performed in accordance with written or unwritten, but collaboratively developed and accepted, policies involving multiple agencies and jurisdictions in the corridor. Processes describe how the R&RT (Exhibit 2-5) works to achieve its objectives.

The structure begins by identifying the study area / corridor. The corridor limits should be determined based on similar characteristics including facility design, operational functions and available decision points. Once the corridor and limits are determined, general goals and objectives should be identified to outline the focus of the ConOps and its functions. For the IH 30 corridor, the goals and objectives aligned with the overall Mobility 2040: The Metropolitan Transportation Plan for North Central Texas. These focused on quick-to-implement, low-cost strategies and solutions to better operate the transportation system, more evenly distribute congestion across the entire transportation corridor, and ensure corridors have options and available alternate routes and modes. These items are outlined in Chapter 1.

In Chapter 2, the current systems and operations are identified and inventoried along the IH 30 corridor. This includes general corridor characteristics including parallel arterials and freeways, shoulders, frontage roads, modal options (bike facilities, transit routes, park-and-rides), and population and employment along the corridor. In addition, an inventory of existing technology along the corridor including Intelligent Transportation Systems, managed lane gates, toll gantries, traffic signals, and wrong-way driving technologies should be collected. Once the physical and technology infrastructure has been identified, stakeholders that operate the infrastructure were outlined as well as their role regarding the operation of the corridor. Exhibit 2-5 outlines the roles, responsibilities and contacts developed to document the stakeholders and functions.

The third element of a framework are the **products**. The products of collaboration and coordination are the result of processes. They include the baseline performance data, current performance information, and operating plans and procedures that inform regional entities (public

and private sector) about how the corridor transportation system must operate over time (including planned improvements).

Resources govern what is available within the corridor for sustaining and implementing the operations plans on an ongoing basis, not just plans for special events, issue resolutions, or the completion of specific projects. The resources include staff, equipment, and dollars.

The **performance** element includes how performance will be measured, and individual and collective responsibilities for monitoring and improving regional transportation system performance. The corridor performance objectives, which are established collaboratively, most commonly address public safety, mobility, security, economic development, and environment.



The products, resources, and performance framework elements outlined above were the focus of Chapters 2 and 3. To ensure that the stakeholder roles and responsibilities were defined properly, a tabletop exercise workshop was held, as described in Chapter 3. This workshop focused on operational scenarios to discuss actions taken by each agency when various types of incidents or crashes occur within the corridor. The workshop was moderated to set up a series of operational scenarios and ask questions to allow feedback from all agencies. This allowed every stakeholder to outline their response and operational functions within the corridor to maximize the operational efficiency. This also allowed the stakeholders to identify any issues or gaps.

In Chapter 4, issues or deficiencies and recommended solutions to mitigate these were identified. The issues and needs identified can be viewed as action items to continue to improve the management and operations of the corridor. The next steps would be to identify a timeline and champion for each item to ensure these items are accomplished, as well as identify additional items as more discussion occurs between the management and operation stakeholders.

This document summarized the elements that shape collaboration and coordination operations in a regional context with a better understanding of what already exists and can be built upon, and what is needed to move forward.

APPENDIX

**MEMORANDUM OF UNDERSTANDING
AGREEMENT FOR AUTOMATIC ASSISTANCE BETWEEN THE
DALLAS FIRE DEPARTMENT AND THE GRAND PRAIRIE FIRE DEPARTMENT**

This Memorandum of Understanding is authorized by the City Manager of the City of Grand Prairie and the City Manager of the City of Dallas in an agreement dated 10-20-16.

The purpose of this Memorandum of Understanding is to outline the procedures for implementing an Automatic Assistance response between the City of Grand Prairie, hereinafter referred to as "Grand Prairie" and the City of Dallas Fire Department, hereinafter referred to as "Dallas". This Memorandum is a guide for routine operations and is not intended to replace or adjust the agreement for Mutual Aid and Disaster Assistance currently in effect.

Amount and Type of Assistance

This Agreement is for the exchange of fire and/or EMS service in specified response areas. Fire apparatus will respond on first alarm structural fire incidents and non-structural fire incidents, if designated, in the stipulated response areas. Paramedic units will respond to medical emergencies, if designated, in the stipulated response areas.

Companies required in addition to first alarm assignment must be requested in accordance with procedures established in the Agreement for Mutual Aid and Disaster Assistance.

Response Areas

Fire Response

- A. Grand Prairie will provide the following to Dallas:
 - 1) Engine -Structure fires at Northrup Grumman and Naval Air Station Dallas and miscellaneous calls at Northrup Grumman as requested.
 - 2) Engine – Structure fires west of Mountain Creek Lake, area deemed City of Dallas (Mapsco page: 51A grids: K, P, Q, and U)*
 - 3) Fire Response and Blocking Response to Interstate 30 TEXpress East bound from President George Bush to Beckley Ave.
 - 4) Grand Prairie Fire Dive team will be added to DFR resource response list.

- B. Dallas will provide the following to Grand Prairie:
 - 1) Engine - Miscellaneous runs and structure fires at Trinity River Authority facility.
 - 2) Truck - Structure fires at Trinity River Authority facility (Mapsco 41B and 42)*
 - 3) Fire Response and Blocking Response to Interstate 30 TEXpress West bound from Beckley Ave to President George Bush Turnpike.

***(Please see attached Mapsco documents) Emergency Medical Service Response**

Hospital destination will be in accordance with the policy of the jurisdiction where the run is made, when the run is provided by an EMS unit in a jurisdiction other than its own. Medical control and protocol will be in accordance with the policy of the EMS unit making the run.

Collection of patient transportation fees shall be the responsibility of the department providing the transportation.

A. Grand Prairie will provide the following to Dallas:

- 1) Ambulance west of Mountain Creek Lake, area deemed City of Dallas (Mapsco page: 51A grids: K, P, Q, and U)*
- 2) Ambulance for medical calls to Naval Air Station Dallas and Northrup Grumman.
- 3) Ambulance to Interstate 30 TEXpress East bound from President George Bush Turnpike to Beckley Ave.

B. Dallas will provide the following to Grand Prairie:

- 1) Ambulance at Trinity River Authority facility (Mapsco 41B and 42).*
- 2) Ambulance to Interstate 30 TEXpress West bound Beckley Ave to President George Bush Turnpike.

***(Please see attached Mapsco documents)**

Limitations

If the agreed upon response from either department is not available or is temporarily depleted, the assisting department need not respond. However, if a fill-in company is in quarters at a fire station which is part of the Agreement, that company will respond. If the response is not available, the other party will be notified immediately.

Communications

Communication between dispatch centers will be via Inter-City radio frequency utilizing a four digit DTMF encoding format and telephone as a backup.

Communications from dispatch center to mobile units will be on the Inter-City frequency. In order to facilitate incident communications, Dallas will provide portable radios to Grand Prairie.

Radios necessary for communications will be provided by the receiving department. Portable radios will be provided with the necessary extra battery and charger. Maintenance, training and replacement of radios will be the responsibility of the department that owns the radios.

Dispatch to Emergencies

Upon receipt of an alarm in any of the designated response areas, the dispatch center receiving the alarm will dispatch the proper assignment and immediately notify the other dispatch center via inter-city radio frequency and request the agreed upon assistance. Should the agreed upon assistance not be available, the requesting department will be so notified.

Incident Command

The officer on the first arriving company will take command of the incident until relieved by the appropriate authority. Overall command of the incident will be assumed by the jurisdictional department upon arrival at the scene, or by mutual agreement.

Fire Incident Reporting

Each department will be responsible for obtaining needed information to complete fire and emergency medical reports for incidents within their respective jurisdictions. Assisting units shall cooperate with the jurisdictional units to provide necessary information.

Revisions

This Memorandum of Understanding may be revised or amended at any time by mutual agreement of the Fire Chief of the City of Grand Prairie and the Fire Chief of the City of Dallas.

Date

10-20-16

Date

David Coatney, Fire Chief
City of Dallas



Robert Fite, Fire Chief
City of Grand Prairie