



COTTON BELT

Cotton Belt Corridor Regional Rail

Safety and Security Existing Conditions

Technical Memorandum

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1.0 INTRODUCTION

The purpose of this Technical Memorandum is to identify and document existing safety and security practices within the Cotton Belt Corridor and followed by Dallas Area Rapid Transit (DART). This memorandum will address three key areas related to safety and security:

- Police and Public Safety
- Fire and Emergency Medical
- Pedestrian Safety

The 26-mile Cotton Belt Corridor is located between Dallas/Fort Worth International Airport (DFW) and the DART Red Line Light Rail Transit (LRT) corridor in Plano and Richardson, Texas. The Cotton Belt Corridor Regional Rail Project (Cotton Belt Project) would be within Cotton Belt Corridor right-of-way purchased by DART in 1990 and designated as a preserved corridor for future passenger rail service. The Cotton Belt Corridor traverses through eight cities: Grapevine, Coppell, Irving, Dallas, Carrollton, Addison, Richardson, and Plano. The corridor would also provide service to DFW Airport and the University of Texas at Dallas (UTD).

2.0 REGULATORY CONTEXT

Although the Cotton Belt Project is not a federally funded project at this time, data collection and analysis efforts were nonetheless guided by *National Environmental Policy Act (NEPA)* standards. NEPA guidelines require that adverse effects on environmental resources from a proposed federally funded project be identified and avoided or minimized, including potential impacts to the human environment and social interactions.

DART policies also require that the potential impacts of any proposed project (whether federally or locally funded) be assessed, and if adverse effects are found, that these impacts be avoided, or minimized and mitigated. As described in DART's *Environmental Impact Assessment and Mitigation Guidelines for Transit Projects*, project design and operating procedures must comply with all federal, state, county, and municipal statutory requirements and take into account advisory group safety recommendations. Security designs are also addressed in *DART LRT Project Design Criteria Manual, Volume No. 1 (Facilities Design)*.

Pursuant to *Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks*, federal agencies are directed, as appropriate and consistent with the agency's mission, to make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children

The methodology in this section is also in accordance with Section 16 of Appendix A of Federal Aviation Administration (FAA) Order 1050.1E, Policies and Procedures for Considering Environmental Impacts.

This order provides FAA policy and procedures to ensure agency compliance with the requirements set forth in the Council on Environmental Quality (CEQ) regulations for implementing the provisions of the NEPA, 40 Code of Federal Regulations (CFR) parts 1500-1508; Department of Transportation Order DOT 5610.1C, Procedures for Considering Environmental Impacts; and other related statutes and directives.

3.0 METHODOLOGY

Public safety and security facilities described in this section are physically located within the project study area encompassing one-quarter mile on either side of the Cotton Belt Corridor and a half-mile radius around proposed station locations. Facilities were identified through internet research. While it is certainly possible that facilities located just outside the Cotton Belt Corridor may respond to an incident within project study area, only those within the project study area are discussed in this section.

Accident data and crime statistics, as presented in Section 4.2, were obtained from the Federal Bureau of Investigation (FBI) crime database identifying existing safety and security conditions within the study area (FBI, 2011). The physical locations of safety and security service providers were identified and considered in this analysis to assess potential impacts to emergency response routes in local communities. Alternate routes for fire and emergency service vehicles operating near at-grade crossings would be evaluated as part of the final design phase of the proposed project.

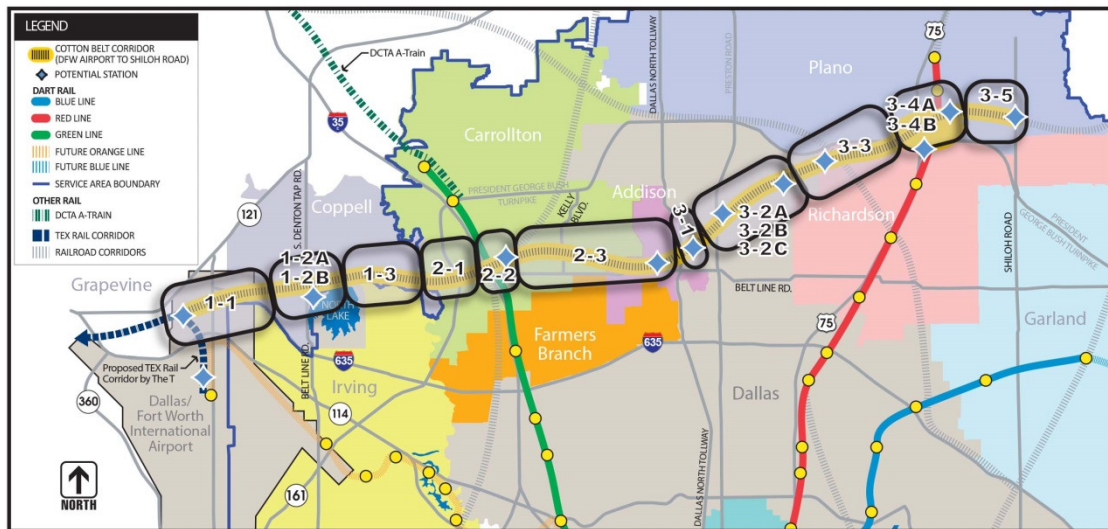
Potential security risks at planned transit stations and onboard trains were measured by assessing existing crime rates and potential vulnerabilities. Similarly, the potential for at-grade crossing accidents, and necessary mitigations, were identified based on expected train speeds at each crossing and observations during alignment surveys, including qualitative assessments of automobile and pedestrian traffic and visibility. Potential impacts to emergency vehicle response times were based on estimates of emergency response delays.

4.0 AFFECTED ENVIRONMENT

This section characterizes existing safety and security conditions for pedestrians, motorists, and the surrounding community along the Cotton Belt Corridor. It forms the basis for the impact evaluation section, which identifies potential safety and security impacts that could occur due to transit improvements along the project corridor. Potential safety issues include station accidents, boarding and alighting accidents, right-of-way accidents, fires, major structural failures, or substantially limiting the delivery of community safety services, such as police, fire, or emergency services. Security impacts include the potential for adverse security conditions, such as incidents and crimes.

The project study area has been divided into three primary sections, as shown in **Figure 4-1**. Section 1 begins at DFW Airport, extends through Coppell, and ends at the Elm Fork Branch of the Trinity River. Section 2 begins at the Elm Fork Branch and extends through downtown Carrollton and the Town of Addison and ends just east of the Dallas North Tollway (DNT) at the southbound frontage road. Section 3 begins at DNT southbound frontage road and terminates near Shiloh Road in Plano, just east of US 75.

Figure 4-1
Cotton Belt Corridor Regional Rail Sections



Source: GPC 5 Team, 2010.

4.1 Emergency Services

Each of the eight cities along the corridor has their own police and fire departments. In all eight cities the fire departments provide both fire and emergency medical services. In addition to local police departments, DFW Airport has a police department responsible for maintaining security at the airport in conjunction with the Transportation Security Administration (TSA). Additionally, UTD has an internal police department.

The DART police department is an independent police department with responsibilities for ensuring security and safety on DART property and vehicles. “DART police officers are vested with all the rights, privileges, obligations, and duties of peace officers in the state of Texas...”¹ DART police work in coordination with local law enforcement agencies in investigations and ensuring a safe transit system.

Police stations with jurisdictions inside the study area are listed below in **Table 4-1**. These facilities represent the primary police response capabilities along the corridor. Only the stations in Addison, Dallas, and Plano are physically located inside the project study area, and are shown in Figure 4-2A and Figure 4-2B in Section 4.1 of the *Socioeconomic Characteristics Existing Conditions Technical Memorandum*. Police facilities and patrols located outside of the project study area could respond to a large incident within the project study area if additional support were necessary. These facilities do not have a Map ID and are not shown in Figure 4-2A and Figure 4-2B in Section 4.1 of the *Socioeconomic Characteristics Existing Conditions Technical Memorandum*.

Table 4-1			
Police Stations with Jurisdiction Inside the Study Area			
Name	Address	City	Map ID*
Section 1			
Police Headquarters	130 Town Center	Coppell	N/A
North Station	5992 Riverside Boulevard	Irving	N/A
Section 2			
Police Headquarters	2025 East Jackson Road	Carrollton	N/A
Police Headquarters	4799 Airport Parkway	Addison	27
Section 3			
North Central Patrol Station	6969 McCallum Boulevard	Dallas	30
Police Headquarters	140 North Greenville Avenue	Richardson	N/A
Police Headquarters	909 East 14 th Street	Plano	N/A

Source: URS, 2013.

*Note: “N/A” is used for facilities that fall outside the study area and thus are not included on Figure 4-1.

There are a total of 12 fire stations with jurisdiction inside the project study area, as shown in **Table 4-2**, and illustrated in Figure 4-2A and Figure 4-2B in Section 4.1 of the *Socioeconomic Characteristics Existing Conditions Technical Memorandum*. Only the stations in Coppell (520 Southwestern Blvd), Carrollton, Addison (4798 Airport Parkway), and Dallas (6010 Davenport Road) are physically located in the project study area and have a Map ID. There are also three major hospitals close to the project study area, as listed in **Table 4-3**. The listed hospitals represent the locations where emergency medical services could be provided to residents or workers in the study area and vehicles could deliver patients. None of the hospitals are within the study area, so they are not mapped and do not contain a Map ID.

¹ Dallas Area Rapid Transit, 2011. DART Police Department History.
<http://www.dart.org/about/dartpolice/dartpolicehistory.asp>

These fire stations and hospitals represent the initial responders for a fire or medical emergency along the rail corridor. Local fire and emergency medical responders, respond to emergencies occurring at DART facilities and on DART vehicles. Fire stations outside of the project study area, not shown in Figure 4-2A and Figure 4-2B in Section 4.1 of the *Socioeconomic Characteristics Existing Condition Technical Memorandum*, may also respond if additional resources were needed during a large incident.

Table 4.2			
Fire Stations with Jurisdiction Inside the Study Area			
Name	Address	City	Map ID*
Section 1			
Fire Station #121	520 Southwestern Boulevard	Coppell	1
Fire Station #122	366 S. MacArthur Boulevard	Coppell	N/A
Fire Station #10	315 Cimarron Trail	Irving	N/A
Section 2			
Fire Station #1	1623 E Belt Line Road	Carrollton	17
Fire Station #1	4798 Airport Parkway	Addison	26
Fire Station #2	3950 Beltway Drive	Addison	N/A
Section 3			
Fire Station #7	6010 Davenport Road	Dallas	28
Fire Station #13	6902 Frankford Road	Dallas	N/A
Fire Station #3	2519 Custer Parkway	Richardson	N/A
Fire Station #5	2001 E. Renner Road	Richardson	N/A
Fire Station #1	1901 Avenue K	Plano	N/A
Fire Station #3	3520 Sherrye Drive	Plano	N/A

Source: URS, 2013.

Note: "N/A" is used for facilities that fall outside the study area and thus are not included on Figure 4-2.

Table 4-3			
Hospitals within Study Area			
Name	Address	City	Map ID*
Section 1			
Irving Coppell Surgical Hospital	400 West I-635	Irving	N/A
Section 3			
Baylor Regional Medical Center at Plano	4700 Alliance Boulevard	Plano	N/A
Plano Children's Medical Clinic	1407 14 th St.	Plano	N/A

Source: URS, 2013.

Note: "N/A" is used for facilities that fall outside the study area and thus are not included on Figure 4-2.

4.2 Crime Statistics

The FBI crime rates for the cities within the project study area are presented in **Tables 4-4** and **4-5**. National, state, and metropolitan crime rates are also included for comparison. **Table 4-4**

presents the actual reported population and crimes for the cities within the study area. In 2011, the more serious crimes of murder, rape, and robbery occurred primarily in Dallas. Two cities, Addison and Richardson, reported zero murders. Carrollton, Irving, and Plano reported higher incidents of burglary and larceny theft.

Location (Population)	Murder	Rape	Robbery	Aggravated Assault	Burglary	Larceny Theft	Vehicle Theft
Addison (13,331)	0	10	18	50	117	676	105
Carrollton (121,603)	3	4	93	106	896	2,152	274
Coppell (39,472)	1	5	3	24	134	483	27
Dallas (1,223,021)	133	428	4,066	3,703	18,727	35,148	7,984
Grapevine (47,309)	6	12	18	55	175	1,208	106
Irving (220,841)	8	25	151	330	1,603	4,590	601
Plano (265,309)	5	40	142	242	1,193	5,182	389
Richardson (101,311)	0	9	76	88	680	1,934	194
*Dallas-Fort Worth-Arlington (6,505,848)	294	1,753	8,090	13,179	60,036	148,365	19,209
Texas (25,674,681)	1,126	7,439	28,395	67,913	215,223	612,938	63,338
National (311,591,917)	14,612	83,425	354,396	751,131	2,188,005	6,159,795	715,373

*Metro Statistical Area
Source: FBI UCR, 2011.

Table 4-5 presents crime data as a frequency of occurrence per 100,000 residents. Using a rate allows geographic areas of varying population sizes to be compared. This table shows raw numbers of crimes, so in the case of murder in Grapevine, for instance, it may not be evident by looking at **Table 4-4** that the Grapevine actually has the highest rate of murder of the cities in the study area. Among the more serious crimes, Dallas and Grapevine had the highest murder and rape rates. Relative to the cities other than Dallas, Addison reported high rates of burglary and larceny theft, as well as the highest vehicle theft rate.

Location (Population)	Murder	Rape	Robbery	Aggravated Assault	Burglary	Larceny Theft	Vehicle Theft
Addison (13,331)	0.0	75.0	135.0	375.1	877.7	5,070.9	787.6

Location (Population)	Murder	Rape	Robbery	Aggravated Assault	Burglary	Larceny Theft	Vehicle Theft
Carrollton (121,603)	2.5	3.3	76.5	87.2	736.8	1,769.7	225.3
Coppell (39,472)	2.5	12.7	7.6	60.8	339.5	1,223.7	68.4
Dallas (1,223,021)	10.9	35.0	332.5	302.8	1,531.2	2,873.9	652.8
Grapevine (47,309)	12.7	25.4	38.0	116.3	369.9	2,553.4	224.1
Irving (220,841)	3.6	11.3	68.4	149.4	725.9	2,078.4	272.1
Plano (265,309)	1.9	15.1	53.5	91.2	449.7	1,953.2	146.6
Richardson (101,311)	0.0	8.9	75.0	86.9	671.2	1,909.0	191.5
*Dallas-Fort Worth- Arlington (6,505,848)	4.5	26.9	124.3	202.6	922.8	2,280.5	295.3
Texas (25,674,681)	4.4	29.0	110.6	264.5	838.3	2,387.3	246.7
National (311,591,917)	4.7	26.8	113.7	241.1	702.2	1,976.9	229.6

*Metro Statistical Area

Source: FBI UCR, 2011.

4.3 Vehicular and Pedestrian Rail Crossing Activity

The addition of passenger rail operations would introduce new conflicts for vehicles and pedestrians where the alignment crosses streets at-grade, and in areas where corridor residents use informal crossings as short-cuts to access neighborhood facilities. The potential for conflict at these informal crossings requires special attention to identify possible hazards.

Six trails in the study area intersect the Cotton Belt Corridor. These trails are briefly described and also shown in **Table 4-6**.

Trail	City	At-Grade Crossing Status
Elm Fork Trail (Future)	Carrollton	No existing crossing Bridge at future crossing
Crosby Trail (Future)	Carrollton	No existing crossing
Renner Trail	Richardson	Lights, bells, gates
Bike Trail (B)	Richardson	Lights, bells, gates
Preston Ridge Trail	Dallas	Lights, bells, gates
Spring Creek Trail	Richardson	No existing crossing

Source: URS, 2013.

In addition, there is a planned Cotton Belt Trail that would begin north of DFW Airport and follow along the Corridor. It crosses many at-grade crossings. All but one public at-grade crossings are protected by lights, bells, and gates. The at-grade crossing at Dickerson Street in Dallas is only protected by railroad crossing signage.

Future Elm Fork Trail intersects the alignment along Belt Line Road at the border between Coppell and Carrollton. There is no existing at-grade crossing at this intersection. Future Crosby Trail intersects the alignment and Cotton Belt Trail viaduct near the Downtown Carrollton Station at North Broadway Street. An at-grade crossing does not exist. Renner Trail intersects the alignment and Cotton Belt Trail viaduct at the West Renner Road at-grade crossing. This crossing has lights, bells, and gates to warn vehicles and pedestrians of approaching trains.

Bike Trail (B) in Richardson intersects the alignment and Cotton Belt Trail viaduct at the Alma Drive at-grade crossing. Preston Ridge Trail in Dallas intersects the alignment and future Cotton Belt Trail viaduct. The trail runs adjacent to Meandering Way and intersects the alignment at an at-grade crossing with bells, lights, and gates. Spring Creek Trail in Richardson intersects the Red Line Interface South Alternative. Future Central Trail in Richardson would run adjacent to the Red Line Interface South Alternative.

4.3.1 Safety Risks to School Children

Executive Order 13045, Protection of Children from Environmental Health and Safety Risks mandates that federal agencies identify and assess environmental safety risks that may disproportionately affect children as a result of implementation of federal policies, programs, activities, and standards. Although the proposed project is not currently federally funded, DART makes every effort to maintain high standards for all transit projects by adhering to federal guidance whenever possible.

The first step in identifying and assessing the safety risks to children potentially imposed by the project is to identify where in the corridor there are concentrations of children, (e.g. schools and parks). Section 4.4 of the *Socioeconomic Characteristics Existing Conditions Technical Memorandum* reflects the areas where there is the potential for school children to interact with the Cotton Belt Corridor along their route to and from school.



Alliance Transportation Group
Arredondo, Zepeda & Brunz
Bowman Engineering
Connetics Transportation Group
Cox|McLain Environmental Consulting
CP&Y
Criado & Associates
Dunbar Transportation Consulting
HMMH
KAI Texas
K Strategies Group
Legacy Resource Group
Mas-Tek Engineering & Associates
Nathan D. Maier Consulting Engineers
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