EXECUTIVE SUMMARY

The National Environmental Policy Act (NEPA) of 1969 requires Federal agencies to prepare an Environmental Impact Statement (EIS) for any major action they undertake that may have significant impacts on human health and the natural environment. Dallas Area Rapid Transit (DART) has prepared this EIS under its responsibilities as the local lead agency for the project to extend the Light Rail Transit (LRT) System in the Southeast Corridor. This document has been submitted in coordination with the Federal Transit Administration (FTA), which is the sponsoring or lead Federal agency.

For purposes of defining the “Federal Project” for a FTA Section 5309 New Starts submission, DART has combined the Southeast Corridor project and a majority of the Northwest Corridor. This federal project forms a single, federally funded, comprehensive, and cost-effective project to meet the wide range of mobility, community, and financial needs in both the Northwest and Southeast Corridors. A separate EIS is being done for each of the corridors. The 22-mile Minimum Operable Segment (MOS) reflects an LRT line from Farmers Branch (Northwest Corridor) through the Dallas Central Business District (CBD) to Buckner Boulevard (Southeast Corridor) and is shown in Figure S.1. This federal project will link key activity and employment centers in the MOS corridor, including Dallas Love Field Airport, Medical Center District (Parkland, Children’s, Zale Lipsy, St. Paul and University of Texas Southwestern Medical Center), Market Center, Victory American Airlines Center, the Dallas CBD, Baylor Health Care System (HCS), Deep Ellum, and Fair Park with the rest of the regional rail system. If approved, the project is scheduled to be completed and opened for revenue service in staged line segments during the years 2007 and 2008 (working schedule, subject to change). DART’s dedicated local sales tax, as well as long term bond financing, will fund the remainder of the Northwest Corridor LRT line from Farmers Branch to Frankford, also planned to be open for revenue service in 2008 (subject to change).

Given the definition of the Federal Project and the similar revenue service dates for the Northwest and Southeast Corridors, the ridership forecasts and operating plans in each project's EIS document assume both corridors are in place for the Build Alternatives. Each No-Build Alternative assumes neither corridor is in place. This ensures an accurate portrayal of future ridership and operating plans, while addressing the effects of each corridor in separate EIS documents.
Executive Summary

The primary purpose of this EIS is to assess the potential environmental effects of the implementation of the No-Build and Build Alternative. The EIS will also serve as the primary document to facilitate review of the No-Build and Build Alternative by federal, state, and local agencies, decision-makers, and the public. The EIS will document the purpose and need for the project and present a discussion of the alternatives considered. It will address in detail the anticipated transportation and environmental impacts of the project and provide definition for appropriate mitigation measures.

This Executive Summary highlights the most significant findings of this Final EIS under the following headings: Purpose and Need; Alternatives Considered; Affected Environment; Transportation Impacts; Environmental Consequences; Comment and Responses, and the Next Steps.

S 1.0 PURPOSE AND NEED

The Southeast Corridor is identified in both the North Central Texas Council of Government’s (NCTCOG) Mobility 2025 Plan Update (May 2001) and the DART Transit System Plan (January 1995, updated December 1997) as a priority for a transportation investment. The Transit System Plan and Mobility 2025 Plan Update both recommended a light rail line as the appropriate technology in the Southeast Corridor.

DART conducted a Needs Assessment study for the Southeast Corridor in April 1998. This study analyzed travel patterns in the southeast portion of the DART Service Area, identified transportation issues and deficiencies, prepared a preliminary statement of purpose and need, and identified the initial alternatives for a Major Investment Study (MIS). A MIS was completed for the Southeast Corridor in May of 2000 and approved by the DART Board on May 9, 2000. The recommended Locally Preferred Investment Strategy (LPIS) was composed of several projects designed to create a strategy to improve mobility in the corridor. The main component of the LPIS was a new light rail transit (LRT) line that connects the existing DART LRT system from the Dallas CBD with the communities of Deep Ellum, Baylor, Fair Park, South Dallas, Buckner Terrace, and Pleasant Grove. This EIS focuses on the LRT component of the LPIS.

S 1.1 OVERVIEW OF THE STUDY AREA AND CORRIDOR

The study area includes the southeast quadrant of Dallas County and is generally bounded by Interstate Highway (IH) 30 on the north, IH 635/IH 20 to the east and south, and IH 45 to the
west with a small area north of IH 30 (Figure S.2). The study area has three distinct subareas: Baylor/Deep Ellum/Bryan Place, South Dallas/Fair Park, and Pleasant Grove/Buckner Terrace. The City of Dallas is the only jurisdiction in the study area that is a member of the DART Service Area. The City of Dallas also comprises the majority of the study area with small portions under the jurisdiction of Dallas County, Mesquite, Hutchins, and Balch Springs. The study corridor includes the area within one mile of the Build Alternative (LRT) recommended during the MIS.

**S 1.2 EXISTING TRANSPORTATION CONDITIONS**

The transportation system that serves the study area includes roadways, freeways, freight railroads, and bus transit. The primary means of travel to work in the region is by single-occupant vehicles. However, the percentage of people carpooling and using public transportation is higher in the study area than the average for Dallas County.

The transportation system consists of major arterials and local streets supported by the freeway system (Figure S.3). Some arterial streets carry high volumes of traffic and experience recurring congestion. The highest traffic volumes currently occur on South Central Expressway, Martin Luther King Boulevard (MLK), and Robert B. (R.B.) Cullum Boulevard. Congestion is expected to increase in the future along these arterials as well as Military Parkway, Sam Houston Road, Loop 12/Buckner Boulevard, and Prairie Creek Road.

There are two major railroad lines within the study area. The east-west Union Pacific Railroad (UP RR), which is part of Union Pacific’s transcontinental route, provides national coast-to-coast service. This line is a main line, carrying approximately 30 freight train movements per day. The former Southern Pacific Railroad (SP RR) was acquired by DART in April 1988. There was also a former east-west UP RR line from Good-Latimer Expressway to the UP RR. As with the former SP RR, this corridor was acquired by DART in September 1990 and upon acquisition by DART, freight traffic was abandoned in this segment and the tracks removed from Good-Latimer to Parry Avenue.
Figure S.3
Build Alternative (LRT)
The study area is served by a network of more than 18 bus routes which include local, radial, and crosstown bus routes. The strongest ridership is on local routes originating from within the Pleasant Grove and South Dallas neighborhoods that are destined for downtown Dallas and the Northwest Corridor. According to the 1990 Census, 7.6 percent of residents in the study area use public transportation compared to 4.3 percent for the entire county. While the study area comprises ten percent of the DART Service Area, transit bus ridership in the study area accounts for approximately 20 percent of total bus ridership in the entire DART Service Area. DART also offers paratransit services to provide curb-to-curb public transportation to people with disabilities who are unable to use fixed route DART bus or train service.

S 1.3 THE NEED FOR THE ACTION
The problems and issues identified within the Southeast Corridor included:

- Residential growth in the eastern suburban communities (Pleasant Grove, Mesquite and Balch Springs) has resulted in increasing travel demand along corridor major roadways, particularly US 175, IH 45, IH 30 and major arterials such as State Highway (SH) 352 and Loop 12;
- Sustained employment growth in the Dallas CBD, as well as in the Northwest and North Central corridors, is attracting commuter trips from and beyond the study area, particularly from growing residential areas in the southeastern portion of the study area and outside IH 635 and IH 30;
- The study area will continue to be a major exporter of employees. By the Year 2025, residents are expected to outnumber employees over three to one. Access to the employment centers outside of the study area will be difficult because of traffic congestion and limited transit service;
- Persons traveling to employment areas in the Northwest and North Central corridors must pass through or near the congested Dallas CBD;
- Existing and committed roadway improvements have not kept pace with traffic volume increases on the major radial roadways in the study area, resulting in steadily increasing congestion;
- Traffic congestion and incidents affect schedule adherence for bus routes, resulting in inconsistent or unreliable transit service;
- Facilities for non-motorized travel, including pedestrian and bicycle, are limited;
Some major roadways in the study area, such as US 175, are characterized by operational and safety problems due to substandard design for merging and weaving maneuvers;

Visitors to the major attractions within the study area such as Fair Park, Deep Ellum, and the entertainment venues in and near the Dallas CBD have few travel choices; and

The Trinity River and White Rock Creek floodplains act as natural barriers, limiting direct southeast to northwest travel and options for new roadways or guideways.

The transportation needs identified within the Southeast Corridor include:

- Residential areas in southeast Dallas need to have faster, more direct access and additional travel options to major employment centers including the Dallas CBD, Medical/Market Center, and growing employment areas in the North Central and Northwest corridors;
- Additional transportation capacity is needed for travel in the southeast-northwest radial direction in the study area;
- Improved internal circulation is required within the study area, particularly within and between the South Dallas/Fair Park, Buckner Terrace, and Pleasant Grove communities;
- More frequent and expanded service hours for transit service, particularly on crosstown routes, to improve mobility for the transit dependent population and attract new riders;
- The major radial roadways need operational and safety improvements;
- Transportation options are needed that bypass congestion in the Dallas CBD to access employment areas to the north or northwest of the CBD; and
- Improved access to transit service should be provided by all potential access modes, including pedestrian, bicycle, and automobile.

**S 1.4 PURPOSES OF THE PROPOSED ACTION**

Based on the Needs Assessment and the MIS, the purposes for implementing a LRT line in the Southeast Corridor are:

**Improving Mobility and System Linkages**

- Enhancing the quality and reliability of transit service for existing and potential riders by decreasing delay and improving transit facilities and service;
- Providing more travel choices, especially for southeast-northwest radial travel from residential areas to major destinations in central Dallas and beyond;
Executive Summary

• Enhancing travel to major employment centers such as Baylor HCS, downtown Dallas, and the Medical/Market Center; and
• Improving interregional connections to the existing and proposed LRT and commuter rail systems.

Increasing Capacity of the Transportation System
• Providing additional transit capacity in heavily traveled corridors;
• Changing modes of travel and reducing the existing dependence on the automobile thereby helping improve air quality; and
• Reducing travel delay thereby helping improve air quality.

Increasing Economic Development Opportunities
• Creating new opportunities through transit-oriented development; and
• Enhancing travel and accessibility to major entertainment and cultural facilities such as Fair Park, the Latino Cultural Arts Center, and Deep Ellum.

S 1.5 GOALS AND OBJECTIVES
The goals and objectives for the project respond to underlying transportation needs. These goals include the building and operation of an efficient and effective transportation system within the DART Service Area that would provide mobility, improve the quality of life, and stimulate economic development through the implementation of the DART Service Plan.

S 2.0 ALTERNATIVES CONSIDERED
During the MIS, an evaluation process provided the technical framework through which potential transportation improvement alternatives and alignments were comparatively analyzed. The evaluation analysis determined how well each alternative addressed the identified travel needs, goals, and objectives. The comparative evaluation of the alternatives was conducted in two phases.

The build alternatives developed and analyzed during the Phase 1 Conceptual Evaluation phase represented a wide range of alignments and modes to try to meet the mobility needs of the corridor. These included Transportation System Management/Congestion Management System (TSM/CMS), Bus Rapid Transit (BRT), High Occupancy Vehicle (HOV) lanes, and 54 LRT alignment options. During both the Phase 1 and Phase 2 Detailed Evaluation, an extensive list
Executive Summary

of evaluation criteria and measures were applied for a comparative rating of the alternatives, which provided information for the recommendation of the preferred investment strategy decision. All alternatives were compared to each other with the No-Build as a baseline alternative. The alternatives evaluated recommended from Phase 1 and evaluated in Phase 2 were the No-Build Alternative, the TSM/CMS Alternative, and eight selected LRT Alternatives.

The alternative, which rated the highest, was the LRT - Alternative #4, which is a combination of the UP RR, Parry Avenue, and the SP RR. It had the best combination of cost, ridership, and public and agency support. It also had minimal environmental and community impacts because the majority of the alignment uses existing railroad right-of-way. It also provided the best access and had the most economic development potential for both the South Dallas community and Fair Park.

Based on the MIS, the alternatives being considered and evaluated in this DEIS are the No-Build Alternative and the Build Alternative (LRT) (originally Alternative #4 UP/Parry/SP LRT).

No-Build Alternative
The No-Build Alternative assumed no major investments in transportation improvements in the study area beyond those already programmed and funded by the City of Dallas, Dallas County, DART, Texas Department of Transportation (TxDOT), or Federal entities by the Year 2020. No-Build improvements are those projects included in the approved Metropolitan Transportation Plan (MTP) (NCTCOG Mobility 2025 Plan Update, Capital Improvement Plans for the City of Dallas, Dallas County, and the 2002-2004 State Transportation Improvement Program (STIP). The No-Build Alternative included a range of strategies and projects such as the regional CMS which includes 40 intersection and 185 signal improvements.

Build Alternative (LRT)
As shown in Figure S.3, the proposed alignment for the Build Alternative (LRT) follows Bryan Street east from the Pearl Street Station under North Central Expressway to Good-Latimer Expressway. At Good-Latimer, the alignment turns and follows the roadway until just south of Gaston Avenue. It then turns eastward and follow the former UP RR right-of-way to Haskell Avenue where it turns southwest and parallel to Parry Avenue along the west side of Fair Park, passing by the National Women’s Museum and the Music Hall. The alignment then turns southeast to the former SP RR right-of-way parallel to Trunk Avenue until Second Avenue. The
alignment will be within the former SP RR right-of-way to just west of Second Avenue. The alignment uses the former SP RR right-of-way, which parallels Scyene Road, then turns south through the Grover Keeton Golf Course. The alignment crosses Lake June Road and turns southeast roughly parallel to US 175 to Elam Road at Buckner Boulevard.

Good-Latimer Area
Along Good-Latimer Expressway, three options for the LRT alignment have been developed. Currently, Good-Latimer Expressway goes under Gaston Avenue via a 300-foot long tunnel. The tunnel was originally built to accommodate the SP rail yard. As described previously, the proposed LRT alignment would follow Good-Latimer and then would turn onto the former UP RR. Because of the potential engineering issues and social impacts in the area, two options have been developed to transition from Good-Latimer to the former UP RR. Both were analyzed to determine the affects of each. The options are designated Good-Latimer Option A and Good-Latimer Option B. A third alternative in the Good-Latimer area (Option C) is discussed in the Section 4(f) statement in Appendix E of this document as an avoidance option for the Good-Latimer Tunnel. It would have the greatest impacts to the community; therefore, it was not considered a feasible option and not included in the EIS.

The Section 4(f) Statement in Appendix E demonstrates that there is no prudent and feasible alternative to Option A. Option B is included in this EIS to document the comparison of the two alternatives.

**Good-Latimer Alignment Option A**
This LRT alignment option follows the median of Good-Latimer and then would cross the northbound lanes of Good-Latimer (Figure S.4). It will require removing the tunnel and filling in the area to bring the travel lanes of Good-Latimer to the same level as Gaston Avenue and the surrounding properties.
Good-Latimer Alignment Option A

This option would allow the existing tunnel to stay in place by shifting the LRT alignment to the west (Figure S.5). This alignment option would also require the construction of a new one-way street west of the LRT to allow access to adjacent properties and the closing of Swiss Avenue between Good-Latimer and the new one-way street.

Figure S.5  Good-Latimer Alignment Option B
Stations
The Build Alternative (LRT) will include eight stations at Deep Ellum, Baylor, Fair Park, MLK, Hatcher, Lawnview, Lake June, and Buckner. The stations are identified by their relative location within the study area. Stations generally consist of a 300’ low-level platform and include canopies for weather protection and will be either center or side loading.

Maintenance and Storage Facility Requirements
Any additional bus vehicles and equipment can be accommodated at existing DART maintenance and storage facilities. The East Dallas Maintenance and Storage Facility will be able to handle the required additional buses. Additional light rail vehicles and equipment can be accommodated at the existing DART LRT Service and Inspection (S&I) Facility along a portion of the former SP RR right-of-way from Grand Avenue. A non-revenue service connection from the Build Alternative (LRT) to the S&I facility will be built as part of the implementation of the project.

Capital Cost
Capital costs were estimated for the service to be provided within the definition of the Build Alternative (LRT). The estimated cost for the Build Alternative (LRT) is approximately $450 million in Year 2002 dollars. This estimate includes expenses for the development of civil/structural elements, accommodation of known site conditions, purchase and installation of system control components, vehicle acquisition, and LRT stations.

Operations Description
Implementation of the Build Alternative (LRT) will involve operating both bus transit services and an LRT system in the study corridor. Implementation of the Build Alternative (LRT) will require changes to existing bus operations. Some existing bus routes will be restructured or relocated to service and feed the LRT stations and transit centers and three new bus routes would be added. The changes to the existing local bus system will include adding connecting bus service to the CBD East Transit Center and providing connecting bus service at or in the immediate vicinity of all new LRT Stations. The proposed operations of the LRT for the study area will be similar to current DART operations for a double track line.
S 3.0 AFFECTED ENVIRONMENT

This section describes the existing natural and built environmental conditions in the study corridor that will potentially be affected by the alternatives considered. This information discussed in this section provides a baseline against which each alternative is compared for environmental changes and/or effect.

S 3.1 LAND USE

The land uses along the study corridor vary considerably, from industrial, retail, and commercial, to single- and multi-family residential, and floodplain. The land use patterns of the corridor reflect the physical constraints imposed by three creeks and their associated floodplains. Land use patterns within the study corridor are also influenced by the transportation infrastructure, including IH 45, IH 30, and US 175, as well as arterial roadways, local streets, and rail facilities. Major office, commercial, retail, and light industrial land uses are located to take advantage of accessibility provided by IH 45, IH 30, and US 175. Numerous parks and recreational areas have been developed in the study corridor as well.

S 3.2 SOCIAL CHARACTERISTICS AND NEIGHBORHOODS

According to the NCTCOG, the population in the study corridor is expected to increase 36 percent or 27,075 persons by the year 2025. Minority populations comprise approximately 76 percent of the population in the study corridor. The ethnic composition of the study corridor is 52 percent Black, 0.3 percent Native American, two percent Asian, and 0.2 percent Other. Persons of Hispanic Origin account for about 22 percent of the population in the study corridor. The median age of residents within the study corridor is 32 years old with approximately 31 percent of the population under 18 years and eight percent over 64 years. These age groups typically have a greater dependency on transit services. According to the 1990 Census, the median household income in the study corridor was $15,832, with approximately 35 percent of households under the poverty level. The median income in the study corridor is approximately 50 percent less than Dallas County’s median household income of $31,605 in 1990. Approximately 16 percent of households within the study corridor do not have access to an automobile, compared to eight percent for Dallas County.

S 3.3 EMPLOYMENT

Within the study corridor, there are currently 30 companies with more than 100 employees. Employment growth within the study corridor is forecasted to increase at a lower rate than Dallas
County. Between the years of 1990 and 2025 employment in the City of Dallas is forecasted to increase by approximately 48 percent, Dallas County by 62 percent, and the study corridor by 39 percent.

S 3.4 TRANSPORTATION
The existing transportation network and services in the study area includes transit, streets, highways, railroads, parking, freight, bicycle, and pedestrians.

Streets and Highways
A system of major arterials and local streets support the freeway system in the study area. The Pleasant Grove area contains a comprehensive roadway grid system but the Trinity River and White Rock Creek floodplains act as natural barriers to travel from the southeast portion of Dallas County to other parts of the region. The study area is bounded by several access-controlled roadways: IH 45, US 75, IH 30, and US 175.

Existing Transit Infrastructure, Operations, and Ridership
The study corridor is served by a network of 18 DART bus routes. There are 12 local-radial, three limited-express, and three cross-town routes. There are no circulator routes; the bus network in the study area is generally oriented in the north-south direction, radiating from the CBD. DART also offers paratransit services within the study area to provide curb-to-curb public transportation to people with disabilities who are unable to use fixed route DART bus or train services. Headways for the routes which service the study corridor range between ten to 35 minutes during peak periods and 20 to 120 minutes during off-peak periods. The strongest ridership is on local routes destined for downtown Dallas and northwest Dallas County that originate within the Pleasant Grove and South Dallas neighborhoods.

Existing Railroads and Operations
There are two major railroad corridors within the study area. The UP RR is located approximately 1.25 miles south of IH 30 and generally parallels the freeway alignment. It extends beyond Mesquite to the east and continues through the mid-cities to Fort Worth to the west. The UP RR also owns and operates the north-south railroad through the corridor, west of White Rock Creek and Parkdale Lake, which links the UP RR and SP RR (DART) corridors.
The UP RR and the Dallas, Garland and Northeastern Railroad (DGNO) currently operate trains in both the UP RR and SP RR (DART) corridors. The UP RR main track carries over 30 freight trains a day. The section of the former UP RR corridor, now owned by DART, serves customers north of Haskell Avenue and special events to the Age of Steam Train Museum at Fair Park.

Until recently the UP RR provided local freight service to one industry along the SPRR (DART) corridor between Elam Road and Buckner Boulevard. The DGNO took this service in September 2002. This industry generally receives three deliveries a week. Currently, Amtrak passenger service, the Texas Eagle, operates through Dallas on the existing UP RR mainline tracks in the corridor. Amtrak operates one train in each direction daily over this line.

Parking

The study corridor is currently served by one park-and-ride facility, the Lake June Transit Center which is located at Lake June Road and the Build Alternative (LRT). Local bus route 161 operates to downtown Dallas from this facility. One future transit center is planned in the study corridor. The MLK Transit Center is in the design stages and should begin construction in early 2003. The Lake June facility is adjacent to the LRT alignment and will also function as an LRT station.

Bicycle and Pedestrian Facilities

The City of Dallas has an official bicycle thoroughfare plan called the City of Dallas Bike Plan Map. There are nine signed bicycle routes in the study corridor. Routes 89, 170, and 190 are within a block of the proposed transit centers in this corridor. According to the 1990 Census, 0.16 percent of residents in the study area bicycle to work and 2.28 percent walk to work.

S 3.5 AIR QUALITY

The Dallas-Fort Worth area is currently in attainment of all major pollutants, except ozone. The Environmental Protection Agency (EPA) has classified Collin, Dallas, Denton, and Tarrant counties as serious nonattainment areas for one-hour ozone. In the Dallas-Fort Worth area, on-road transportation related mobile sources contribute 34 percent of hydrocarbons and volatile organic compounds, 53 percent of nitrogen oxides, and 62 percent of carbon monoxide to air pollution levels. The Mobility 2025 Plan Update and 2002-2004 Transportation Improvement Program, both meet the conformity-related requirements of the State Implementation Plan (SIP), the Clean Air Act, and the final conformity rule.
S 3.6 NOISE AND VIBRATION
Noise impact criteria and descriptors for human annoyance were identified based on land use and were designated as one of three categories specified by the FTA guidance criteria. Category 1 includes tracts of land where quiet is an essential element in their intended purpose, such as outdoor concert pavilions or National Historic Landmarks. Category 2 includes residences and buildings where people sleep. Category 3 includes institutional land uses with daytime and evening use. Noise-sensitive land uses along the project corridor were identified based on preliminary alignment drawings, aerial photographs, visual surveys, and land use information. Existing ambient noise levels were measured at selected sites to help determine the thresholds for noise impact.

There are no significant sources of existing ground-borne vibration within the study corridor. Vibration measurements focused on characterizing the vibration propagation characteristics of the soil at representative locations. Ground-borne vibration propagation tests were also conducted. The resulting information can be combined with the known characteristics of the DART light rail vehicle to predict future vibration levels at locations along the project corridor.

S 3.7 VISUAL AND AESTHETIC RESOURCES
Visual and aesthetic resources within the study corridor were identified through a review of planning reports and a field study. Generally, significant visual and aesthetic resources within the study corridor include historic structures, parklands, and undeveloped open space/natural areas. In addition, sensitive visual areas or users affected by changes in the visual and aesthetic character of the study corridor were identified. The sensitive receptors of primary concern are residential areas adjacent to the proposed Build Alternative (LRT) alignment and the users of the adjacent parks and golf course.

S 3.8 CULTURAL RESOURCES
Cultural resources may include archeological, historical, architectural sites, and places of particular significance to traditional cultures. The Area of Potential Effects (APE) for architectural and historical resources includes the parcels adjacent to the Build Alternative (LRT). Properties were identified through records research, consultation with interest groups, and a field survey. The results identified five properties listed in the National Register of Historic Places (NRHP) and 13 properties were found eligible for listing in the NRHP. Historic properties
include the Good-Latimer tunnel, the Fair Park National Historic Landmark District, and the Comanche Storytelling Place.

S 3.9 PARKLANDS
Fourteen public parks, school grounds, and recreation lands and one proposed park were identified within the study corridor. No wildlife or waterfowl refuges that are protected under the regulating legislation were identified in the study corridor.

One of the largest parks in the study area is Fair Park. Fair Park is not only a park, but is listed as a National Historic Register District, National Register Landmark, and local landmark. There are four neighborhood parks, two community parks, two regional parks, one municipal golf course, and a designated open space/greenbelt in the study corridor. The parks provide a variety of recreational facilities including baseball, soccer, tennis courts, football fields, playground equipment, and open space. In addition, the State of Texas is in the process of developing the proposed Great Trinity Forest Park which would extend south from Scyene Road along the west side of the Grover Keeton Golf Course and would continue south of the city along the Trinity River.

S 3.10 ECOSYSTEMS
Fourteen jurisdictional waters, White Rock Creek, Elam Creek, and 12 unnamed tributaries were observed along the proposed Build Alternative (LRT) alignment during surveys conducted by biologists. A site investigation was conducted to determine the type and composition of plant communities. The site investigation was also conducted to survey the corridor for the presence or absence of rare plants. No rare plant species or plant communities were observed within the corridor. Existing vegetation within the corridor varied from mowed urban grasses to wooded areas. In the areas just outside of the SP RR (DART) right-of-way near Grover Keeton Park and Gateway Park, there are areas of large mature trees and the Great Trinity Forest covers much of the floodplain area south of the SP RR (DART). During site investigations by biologists, no listed animal (or plant) species were identified along the corridor. Most of the wildlife habitat along the corridor is within or near Grover Keeton and Gateway parks. The Audubon Society has recognized Grover Keeton as a cooperative bird sanctuary.
S 3.11 HYDROLOGY/WATER QUALITY
Surface water resources consist primarily of the streams located in Segment 0820 (Lake Ray Hubbard) of the Trinity River Basin. These water bodies are classified as “Water Quality Limited” and designated water uses include: contact recreation, high aquatic life, and public water supply. The primary source of groundwater for the upper Trinity River Basin is supplied by the Trinity Group, a major aquifer composed of several formations. The water quality of the Trinity Group is acceptable for most municipal and industrial purposes. Generally, water supplied to the area comes from surface reservoirs built in the Trinity River watershed. A minor aquifer, the Woodbine Aquifer, is also present within the study corridor.

The Federal Emergency Management Agency (FEMA) regulates alterations to, or development within, floodplains as mapped on FEMA Flood Insurance Rate Maps (FIRM). In addition, the City of Dallas has its own floodplain ordinance. Four mapped floodplain areas occur within the study corridor.

S 3.12 GEOLOGY
According to the Geologic Atlas of Texas, the study corridor is underlain by Alluvium, Fluviatile terrace deposits, and Austin Chalk formations. There are 11 soil types in the project corridor.

S 3.13 HAZARDOUS/REGULATED MATERIALS
A database of hazardous/regulated materials was obtained through coordination with the EPA and the Texas Commission on Environmental Quality (TCEQ) (formerly known as the Texas Natural Resource Conservation Commission/TNRCC), as well as information obtained from current and historical aerial photographs. The database search identified 201 sites in the project area.

S 4.0 TRANSPORTATION IMPACTS
This section describes the anticipated transportation impacts of the No-Build and Build Alternative (LRT). The alternatives are evaluated based upon the anticipated travel demand, transportation capacity, transportation performance measures, and impacts to the road network, parking, and freight delivery.

S 4.1 IMPACTS OF TRANSIT SERVICE AND RIDERSHIP
It was determined that the Build Alternative (LRT) will increase the reliability of transit service, particularly for commuters to the Dallas CBD and Medical/Market Center. The Build Alternative
Executive Summary

(LRT) will provide an exclusive guideway that would connect to the existing DART LRT system to provide increased mobility to origins and destinations throughout the DART service area. The DART transit system will experience increased ridership, increased passenger miles, and increased passenger hours with the Build Alternative (LRT) compared to the No-Build Alternative.

Hours and Frequency of Service

The Build Alternative (LRT) will have a peak-hour headway of ten minutes and an off-peak headway of 20 minutes. The LRT vehicles will be capable of a maximum operating speed of 65 miles per hour; however, average speeds will be much lower. The operating hours for the Build Alternative (LRT) will be from 5:30 a.m. until 12:30 a.m., seven days a week. Peak hour service will be provided between 6:00 a.m. and 9:00 a.m. Monday through Friday, and afternoon peak hour service will be from 3:00 p.m. to 6:00 p.m. This schedule is the same as DART’s LRT services in other corridors.

The fare structure for service provided within the definition of the Build Alternative (LRT) will follow the adopted DART policy of matching LRT fares to local bus fares. On November 26, 2002 the DART Board voted to increase transit fares by 25 percent. This fare increase will go into effect on March 1, 2003. Regular one-way bus and train fares will be $1.25 and transfers to a second bus or rail route will require a $2.50 Day Pass. Station parking will be free and no fare zone boundary will be in effect within the Southeast Corridor. A variety of options including monthly passes, multiple ride tickets, and day passes are available for use on the DART LRT system, DART and Fort Worth Transportation Authority buses, and the Trinity Railway Express.

Special Event Operations

Fair Park hosts numerous cultural, entertainment, and athletic events. The total estimated attendance at Fair Park in 2000 was 7.4 million people. According to the Master Plan for Fair Park, annual visitation should exceed eight million in the future. Persons attending events at Fair Park could use LRT to arrive at the Fair Park or MLK stations. Changes to the LRT and bus schedules will be made to accommodate major special events; feeder buses and extended LRT schedules will be made available.
Executive Summary

Travel Times
The Build Alternative (LRT) will provide reduced travel times along the study corridor to the Dallas CBD. For transit riders destined to or from the Dallas CBD, the Build Alternative (LRT) will save 8.73 minutes from the MLK Station, 16.59 minutes from the Lawnview Station, and 18.7 minutes from the Buckner Station over the No-Build Alternative. The Build Alternative (LRT) will account for 1,793,549 hours annually in travel time savings.

Transfers
The No-Build and Build Alternative (LRT) both will use the DART bus network to transfer riders to and from the LRT system. With the No-Build Alternative, transit patrons will use the DART bus system for trips within the corridor. For trips outside the corridor, patrons will transfer to other DART bus routes at the Lake June, MLK, downtown transit centers or transfer to LRT at the downtown transit mall, Ledbetter Station (Blue Line), or to the Trinity Railway Express at Union Station. With the Build Alternative (LRT), many transit riders will use the feeder bus network to the eight proposed LRT stations. For the Build Alternative (LRT), there will be a slight increase in transfers over the No-Build Alternative because the feeder bus network will supply a large number of the transit riders to the expanded LRT system. Many of those riders may also transfer between LRT lines to reach other destinations.

Reliability and Comfort
The No-Build Alternative will use the DART bus transit system on the existing corridor roadways under mixed-traffic travel conditions. Therefore, the bus system in the No-Build Alternative will be subjected to similar travel speeds and delays resulting from peak hour congestion on the roadways in the study area. The Build Alternative (LRT) will operate on an exclusive guideway and will not be subjected to traffic and signal delays. The LRT vehicles will be coordinated with the traffic signals at all grade crossings to ensure few, if any, delays. The Build Alternative (LRT) will provide transit riders with a significantly more reliable transit service than the No-Build Alternative.

The proposed Build Alternative (LRT) will also provide enhanced comfort and convenience for transit riders on the DART system as compared to the No-Build Alternative. The LRT system will provide transit service to passengers with conveniently located stations and air-conditioned light rail vehicles. The Build Alternative (LRT) will be fully accessible for mobility-impaired patrons and will enhance regional mobility for transit-dependent populations. Additionally, the Build...
Alternative (LRT) will operate within an exclusive guideway on continuously welded rail with fewer of the stop-and-go movements associated with conventional bus transit service.

Total Transit Riders and Ridership
To determine the total system-wide transit ridership for each alternative, the forecast of unlinked transit trips in 2025 was developed using the NCTCOG travel demand model. An unlinked passenger trip is defined as the number of passengers who board public transportation vehicles. A passenger is counted each time he/she boards a vehicle even though he/she may be on the same journey from origin to destination. The total daily unlinked transit trips ranges from 290,900 for the No-Build Alternative to 323,800 for the Build Alternative (LRT). This represents an increase of 32,900 unlinked transit trips system-wide by 2025 from the Build Alternative (LRT). The forecast of ridership for the Build Alternative (LRT) includes passengers who will access the LRT system at stations from automobiles, walking, and from bus transfers. The resulting ridership forecast for 2025 linked trips indicates that the system-wide LRT ridership will increase from 187,900 with the No-Build Alternative to 198,900 for the Build Alternative (LRT). This shows that approximately 11,000 new daily passengers will use DART due to the implementation of the Southeast Corridor LRT system in 2025.

Station Volumes
The stations proposed for the Build Alternative (LRT) were selected due to their proximity to population and employment centers, existing and planned major transportation facilities, and ease of access by bus, car, or by walking. The stations outside the Dallas CBD are anticipated to have the greatest passenger volumes are Lake June and Buckner. However, it is anticipated that several stations such as the Deep Ellum, Baylor, Fair Park, and MLK will experience significant passenger volumes that are not in the travel model because it does not attempt to capture sporadic or infrequent special generator trips. The addition of LRT service can change the nature of these special generators, changing infrequent trips into more frequent and regular activity-based trips to new economic markets.

S 4.2 HIGHWAY AND ROADWAY IMPACTS
The Build Alternative (LRT) is anticipated to have beneficial impacts to the regional transportation system by helping to reduce vehicle miles of travel (VMT), particularly compared to the No-Build Alternative. The Build Alternative (LRT) is anticipated to reduce VMT by
3,039,100 miles annually in 2025. Some localized areas may experience limited increases in traffic congestion because of the introduction of gates at LRT grade crossings. The gates will create brief interruptions to the flow of traffic to allow for the safe crossing of LRT vehicles.

The Build Alternative (LRT), park-and-ride lots, and feeder bus network would provide incentives for commuters to use transit and, therefore, decrease auto travel on US 175 to the Dallas CBD. Congestion delays can be expected on many of the arterials in the study corridor by 2025, even with the implementation of the Build Alternative (LRT). While the Build Alternative (LRT) will have minor benefits to arterial road average daily traffic (ADT), there will be no significant ADT increases on these arterials, some of which serve as primary access roads to the LRT stations and park-and-ride lots. The Build Alternative (LRT) will generally improve arterial traffic conditions in the study area compared to the No-Build Alternative.

At-Grade Crossings and Intersection Impacts
The Build Alternative (LRT) will use an existing railroad alignment and will cross several roadways in the corridor. IH 45, IH 30, Bruton Road, and Lake June Road are already grade separated with the railroad right-of-way. These roadways range in size from two-lane local streets to six-lane major arterials. The LRT will cross 53 roads at-grade. However, eighteen streets would be closed as a result of the Build Alternative (LRT): Walton Street, Race Street, East Side Avenue N., Willow Lane, Hill Avenue, Washington Avenue, Fourth Street, Gunter Avenue, Elihu Street, Trunk Street, South Boulevard, Peabody Street, Birmingham Avenue, Rutledge Street, Reed Lane, Carpenter Avenue, Bertrand Avenue and York Avenue. Bryan Street, Routh Street, Live Oak, Florence, Swiss, and Gaston will include traffic signals and lights only and will not be gated. The light rail vehicles will create delays at the at-grade crossings because the railroad crossing gates will interrupt traffic flow, particularly during peak traffic periods.

The analysis indicated the majority of crossings are not expected to experience operational difficulties with the Build Alternative (LRT) under 2025 traffic conditions at the majority of intersections. Intersection improvements are recommended at Hall, Parry, Second, Hatcher, and Dixon to eliminate operational problems that might occur. Live Oak, Florence, Swiss, Main, and Pennsylvania (p.m. only) will have a Level-of-Service (LOS) F in 2025 under the No-Build and Build Alternative (LRT). The Build Alternative (LRT) will not cause the poor LOS at the intersections. The LOS for Malcolm X, Hall, and Pennsylvania (a.m. only) are reduced by one
level during at least one of the peak periods. This is a result of the Build Alternative (LRT) due to the interruption of the flow of traffic by lowering of the crossing gates to permit the safe crossing of the LRT vehicles. While this is a drop in LOS, it was determined that there will be no safety hazard or queuing problems at these grade crossings and the nearby intersections.

Local and Residential Streets
Eighteen local or residential streets will require modification for the Build Alternative (LRT). Walton Street will be closed south of the Build Alternative. Race Street will be closed on the west and east sides adjacent to the track with metal beam guard fences as a barrier. East Side Avenue N. will be closed on the west side of the track with a metal beam guard fence. The east side of the track will be closed at Washington Avenue. Willow Lane will be closed on the west side of the track with a metal beam guard fence, and eastside at Washington Avenue.

Hill Avenue will be closed on the north side with a metal beam guard fence and south side will closed at Parry Avenue. Washington Avenue will be closed on the east side of the Build Alternative. Fourth Street will be closed on the west and east side of the Build Alternative.

Gunter Street from 4th Street to the SP RR (DART) will be closed on the west side at Fourth Avenue, east side at Malta Street. At the end of Elihu Street, a cul-de-sac will be constructed. Trunk Street will be closed at Grand. At South Boulevard, a new roadway will be constructed to connect South Street to Trezevant on the west side of the tracks. Peabody Street will be closed at Trunk Avenue. Birmingham will be closed south of the Build Alternative. Rutledge Street will be closed on the west side at Trunk Avenue. Reed Lane will be closed on the west side with a metal beam guard fence. Carpenter Avenue will be closed on the west side with a metal beam guard fence. Bertrand Avenue will be closed on the west side with a metal beam guard fence. York Avenue currently terminates west of the LRT alignment and will be closed using a metal beam guard fence which will separate the street from the LRT right-of-way.

Transit Station/Park-and-Ride Lot Access
Several Build Alternative (LRT) stations will include park-and-ride facilities. These stations include the MLK Transit Center with 208 parking spaces, 356 spaces will be available at the Lawnview Station, 474 spaces at the Lake June Transit Center, and 536 spaces at the Buckner Station with the room to add 105 more spaces, if needed. In addition to generating automobile traffic related to park-and-ride facilities, most stations will have bus traffic resulting from feeder
bus service. The LRT stations and park-and-ride lots are not anticipated to have significant impacts to traffic flow on the roadways which will provide access for the feeder bus and automobile traffic to the Build Alternative (LRT).

Safety Impacts
The Build Alternative (LRT) will improve safety in the study corridor primarily by improving pedestrian access to transit. The high transit ridership in the corridor remains underserved by pedestrian infrastructure. Pedestrian enhancements at LRT stations will include signalized crosswalks, signage, lighting, and sidewalks. All new facilities will be accessible in accordance with the Americans with Disabilities Act of 1990 (ADA).

Parking Impacts
Existing parking on DART-owned railroad right-of-way will be removed. DART leases approximately 500 spaces to property to two adjacent property owners for parking. Additionally, any illegal parking on DART right-of-way will also be eliminated. Several other areas currently used for parking will be acquired for the alignment or a station. The majority of parking areas to be acquired are associated with a business or residence that will also be acquired for the project; thereby, eliminating the purpose of the parking. At Fair Park, the parking lot entrance near the National Women’s Museum will be closed and relocated to Haskell Avenue.

Parking will be supplied at park-and-ride lots proposed at several transit stations. DART’s policy of providing free parking should encourage transit patrons to use the DART park-and-ride lots rather than parking on local streets or utilizing nearby accessory use parking. The Build Alternative (LRT) will reduce the available parking in the study corridor near the Deep Ellum area and Dal-Tile. However, the majority of the parking being eliminated is within property owned by DART and leased to others for parking or persons illegally parking on DART owned property. The lease agreements DART established included language notifying the leasee of the use was temporary and the land could possibly be used for an LRT alignment.

S 4.3 IMPACTS ON MOVEMENT OF FREIGHT
The Build Alternative (LRT) will operate on an exclusive right-of-way, therefore, the impacts to freight movements will be minor. The existing DGNO shortline freight service to Dal-Tile will be maintained in the corridor. Trucking and delivery movements through the Southeast Corridor
would not be impacted by construction or operation of the Build Alternative (LRT). Several industries in the corridor receive large commodities by rail. Truck shipments generally access these industries from IH 30, IH 45, or US 175 and therefore, will not cross the LRT tracks.

**S 4.4 IMPACTS ON NON-MOTORIZED CIRCULATION**

The Build Alternative (LRT) will include provisions for perimeter sidewalks and internal walkways at each station, complimenting any existing sidewalks and providing direct pedestrian access to each station. Walkways will be provided within the DART LRT station sites. All of the bikeway crossings are associated with streets and will be given the same crossing warning devices as those streets. Where appropriate, DART will provide bicycle racks or lockers at LRT stations. To accommodate access between and into Grover Keeton and Gateway Park, three LRT crossings will be included to provide recreational and maintenance access.

**S 5.0 ENVIRONMENTAL CONSEQUENCES**

This section presents a summary of the potential environmental consequences of the transportation alternatives being considered for the Southeast Corridor. Only the area within one mile of the Build Alternative (LRT) has been defined as the study corridor for this evaluation. The extent to which each alternative enhances transportation availability, efficiency, and capacity would in part determine the type, nature, and magnitude of its land use impacts.

**S 5.1 LAND USE**

The No-Build Alternative will have no effect on regional land use and development. This alternative will not support policies for sustainable development developed by NCTCOG. Existing land development patterns, dominated by suburban development would continue. The Build Alternative (LRT) may shift some types of new development and redevelopment from outlying areas to transit station areas, but is not expected to have a major impact on regional development, as a whole. Several companies have located major corporate offices in Dallas, citing the availability of light rail as one of many factors influencing these decisions. Investment in real estate and property values around existing LRT stations have increased, indicating greater demand for transit-oriented development where transit facilities exist. Expansion of the light rail system should improve quality of life and mobility for residents, allowing the region to be attractive to companies considering locating within the region. The Build Alternative (LRT) supports the policies for sustainable development as outlined by NCTCOG.
Corridor-Level Land Use and Development Impacts
With the No-Build Alternative, current land use trends in the study area will most likely continue. This will mean limited opportunities for dense, urban development in the existing pattern of low-density suburban development that dominates the corridor. The No-Build Alternative will not include the transportation infrastructure needed to focus development into more transportation-efficient patterns that include high densities and mixed uses. The No-Build Alternative will not increase demand for in-fill development in the corridor. With the Build Alternative (LRT), the presence of a major and highly accessible transit service would have long-term impacts on the distribution and density of land uses in the area. The land use effects of the Build Alternative (LRT) will attract new development, employment, and residents into the corridor. This anticipated development might otherwise locate to a corridor where land development patterns do not support transit, resulting in increased traffic congestion in the region. The Build Alternative (LRT) will introduce facilities and services that will stimulate and attract development that depend on long-term, stable transportation services.

Consistency with Land Use Plans
The No-Build Alternative will not be consistent with the City of Dallas’ Growth Policy Plan because it will not support the recommended increased development potential of the corridor. The Build Alternative (LRT) will be consistent with the City of Dallas’ Growth Policy Plan because it will capitalize on the development potential stimulated by LRT stations. The Growth Policy Plan acknowledges that increased density and height is appropriate near many stations but may be inappropriate for others, such as those in residential areas. Areas of higher development intensity, or “growth nodes,” include mid- and high-density residential and/or commercial and industrial development. DART encourages the development of transit supported land uses around LRT stations.

S 5.2 IMPACTS ON NEIGHBORHOOD INTEGRITY AND COMMUNITY COHESION
Transportation impacts on neighborhoods focus on the physical integrity of the neighborhood and community cohesion. The No-Build Alternative will impose no additional barriers to social interaction or community functions. However, the No-Build Alternative will not increase mobility or decrease traffic congestion, especially near Fair Park during major events, thereby reducing the quality of life of the nearby neighborhoods. The Build Alternative (LRT) will serve all of the neighborhoods to varying degrees. Because the alignment will use former railroad rights-of-way through residential areas, it will not introduce a new boundary between neighborhoods, but
reinforces an existing boundary that pre-dates the development of the adjacent neighborhoods. While the operational characteristics of the alignment will change with the introduction of LRT service, the alignment already forms a defined rail corridor separating adjacent neighborhoods.

Community Cohesion
Community cohesion generally refers to the perceived unity of an area, which often is based on the day-to-day interaction of the area’s residents. The No-Build Alternative represents a “status quo” position with respect to the overall social, economic, and environmental setting of the neighborhoods in the study corridor. The Build Alternative (LRT) will concentrate travel along the alignment. The LRT stations will become focal points of transit travel in the study corridor. The increased accessibility of the station areas will introduce a new activity center to the surrounding communities, but it will not impede the existing day-to-day interactions of study area residents.

Station Vicinity Impacts on Land Use
The No-Build Alternative represents a “status quo” position in terms of land use; however, with the implementation of the Build Alternative (LRT), both direct and indirect effects to land use near the stations would occur. Direct effects will occur in relation to acquisitions and displacements resulting from the construction of LRT stations and related access facilities (i.e., bus bays, park-and-ride lots). Indirect effects will occur as land development or redevelopment actions take place in response to the presence and availability of LRT service. Direct effects on land use are readily identified with the station location. In most cases, the Build Alternative (LRT) will support the existing land use or land use changes currently going on or planned.

Title VI and Environmental Justice
Residents and households in the Southeast Corridor include higher proportions of minority and lower income households than found in the City of Dallas or Dallas County. Moreover, the Southeast Corridor includes fewer jobs per resident than found in the city or county and fewer households have automobiles available.

The No-Build Alternative will not significantly increase transit service. The major impact of the No-Build Alternative is to maintain the “status quo,” with limited efficient access to employment opportunities and regional destinations for residents in the corridor. The No-Build Alternative will not result in any displacements. However, less investment in transportation in the Southeast
Corridor will disproportionately affect minority and low-income populations in the region. There are more minority and lower income households in this corridor than in others. Moreover, unemployment rates are higher and employment opportunities are fewer in this corridor than in most other DART corridors. Failure to invest major capital in transit infrastructure and transit service may therefore disproportionately impact residents of the Southeast Corridor, in comparison to other corridors in the DART service area. Furthermore, the No-Build Alternative will not provide the same type of transit service as other corridors. The Build Alternative (LRT) will add a major transit investment and implement new transit service in a corridor with higher percentages of transit dependent, minority population, and lower household incomes than found in the region, the county, or the city as a whole. The introduction of light rail will improve the means of transportation to many people who rely on public transportation. The Build Alternative (LRT) represents an opportunity for residents of the study corridor to improve their overall quality of life. The LRT will require acquisition and displacement of a limited number of vacant lots, residences, and businesses but will not disproportionately or adversely impact minority or low-income populations or businesses. Overall, the Build Alternative (LRT) will not adversely or disproportionately impact any minority or low-income populations, this alternative will benefit these populations.

**Employment**

The No-Build Alternative will not significantly increase access to employment opportunities or encourage the creation of jobs in the area. The positive impacts of the Build Alternative (LRT) include greater access to regional employment opportunities and other regional destinations. Lower household incomes in the corridor result in a greater percentage of household incomes spent on transportation. The Build Alternative (LRT) represents an opportunity for residents in the corridor to improve mobility with an affordable transportation option that gives residents an opportunity to reduce household transportation costs. The Build Alternative (LRT) represents an opportunity for residents of the study corridor to improve their overall quality of life. It will also provide the same type of transit service as other corridors served by DART.

**Health and Safety Impacts to Children**

In some areas, the Build Alternative (LRT) is adjacent to schools and parks which are prime locations for children. Appropriate safety measures will be taken in these areas. No disproportionate environmental health and safety impacts to children will be anticipated as a result of the implementation of the Build Alternative (LRT).
Accessible to Disadvantaged Persons
The entire DART system is accessible to the mobility-impaired, another group of transportation-disadvantaged persons. The Build Alternative (LRT) will extend their access alternatives through its interconnections with the balance of the DART system.

S 5.3 ACQUISITIONS AND DISPLACEMENT/RELOCATION IMPACTS
The Build Alternative (LRT) will minimize acquisition and displacement of homes and businesses by constructing LRT facilities primarily within the former railroad rights-of-way. However, the Build Alternative (LRT) will require acquisition and displacement of a number of vacant lots, residences, and businesses. The LRT alignment will require the purchase of 4.88 acres of land. For the eight station areas, a total of 21 parcels and 25.6 acres will be acquired and displace twelve businesses, three residences, and one cell tower. For the construction staging and noise mitigation areas, a total of three vacant parcels and seven residences will be acquired. For traction power substations, 4 additional parcels will be acquired.

Property owners will be paid fair market value for property acquired. Relocation procedures for displaced persons and businesses will be guided by the Uniform Relocation Assistance and Real Property Acquisitions Act of 1970 (49CFR Part 24), as amended. The addition of light rail service has been designed to minimize acquisition of occupied residences and businesses. Since the LRT will be operated largely within former railroad rights-of-way, construction and operation of LRT service will take place primarily within those rights-of-way.

S 5.4 ECONOMIC IMPACTS
The alternatives under consideration will have varying economic impacts in the study corridor. The No-Build Alternative will have little or no change to current economic conditions and trends. The Southeast Corridor is characterized by households with lower incomes and fewer automobiles available, fewer employment opportunities within the corridor, higher unemployment than the region, and larger minority populations than the other parts of the region. This is significant in that the No-Build Alternative will maintain these conditions, potentially depriving this community of convenient access to new jobs within the corridor and in the region. These factors combined and considering LRT investments in other corridors may result in a perception of unequal access to transit and economic opportunities in the Southeast Corridor.
The potential economic impacts of the Build Alternative (LRT) are related to the degree to which mobility and accessibility are enhanced and the degree to which new transit infrastructure within the corridor encourages new development. The Build Alternative (LRT) will provide residents of the study area greatly enhanced access to employment opportunities through DART’s extensive LRT and commuter rail network that would be in place by 2010. In addition to the mobility enhancements, DART stations are generally viewed as community and neighborhood assets. Stations are attractive and include public art projects designed to complement individual neighborhoods. Direct economic impacts will also have a multiplier effect in the local economy.

DART staff develops and maintains long-range strategies to encourage and enhance economic development opportunities adjacent to and around DART transit facilities. DART will continue to work with the City of Dallas and the development community to facilitate the development of appropriate transit supportive projects.

S 5.5 TRANSPORTATION IMPACTS
The No-Build Alternative will not impact transit or traffic operations and thus travel conditions would not improve as a result of this alternative. The Build Alternative (LRT) will provide a seamless connection to the existing DART LRT system, providing increased mobility to residents in the corridor with service to origins and destinations throughout the DART service area. The LRT will allow Southeast Corridor transit riders to save 18.7 minutes traveling from Buckner to the Dallas CBD. This significant improvement in transit service will allow the DART transit system to capture 11,000 new weekday transit riders by the year 2025.

S 5.5.1 Rail Freight Impacts
The No-Build Alternative will maintain existing freight mobility in the corridor and no impacts to existing or future rail freight traffic are expected. The Build Alternative (LRT) will maintain existing rail freight mobility in the study corridor. A grade separation will be constructed for the Build Alternative (LRT) over the UP RR main line freight tracks and no impact to existing or future rail freight traffic is anticipated. The existing DART-owned freight railroad will continue short-line operations to the one existing freight rail customer along the route. Freight traffic will continue to operate on dedicated tracks within the LRT right-of-way but not shared by LRT vehicles. There will be no crossing between LRT and freight rail tracks; therefore, no impact to short-line operations is anticipated.
S 5.6  AIR QUALITY IMPACTS

The No-Build Alternative will not help improve air quality. It will not be in compliance with the SIP for the Dallas-Fort Worth area and other Transportation Control Measure (TCM) measures will have to be included in the SIP if LRT is not built.

The Build Alternative (LRT) is included in the revised SIP as a TCM. The revised SIP for the Dallas-Fort Worth area was adopted by the TNRCC on April 19, 2000. The revised plan included an evaluation of a wide range of TCM commitments such as a high occupancy vehicle lanes, corridor management, park-and-ride lots, bicycle/pedestrian, commuter rail, light rail, intersection improvements, and signal improvements. The LRT will be a significant element in the fulfillment of the SIP attainment requirements. LRT in the Southeast Corridor has also been identified in both the NCTCOG Mobility 2025 Plan Update and the DART Transit System Plan as a priority for a transportation investment. Both plans recommended light rail as the appropriate technology for the Southeast Corridor. The implementation of the LRT is not expected to cause or contribute to new air quality violations, increase the frequency or severity of existing violations, or delay timely attainment of the National Ambient Air Quality Standards (NAAQS), but will result in a slight decrease in the emission of criteria pollutants.

S 5.7  NOISE AND VIBRATION

The No-Build Alternative is not expected to result in any change in noise levels or noise impacts. For the Build Alternative (LRT), detailed comparisons of the existing and future noise levels were conducted for the Category 2 receptors along the alignment with both daytime and nighttime sensitivity to noise (e.g. residences, hotels, and hospitals) and for all Category 3 receptors along the alignment, consisting of institutional sites that are not sensitive to noise at night (e.g. schools, places of worship, parks, and medical offices). The comparison results for the Category 2 noise impact totaled 275 residences, 18 with severe impact, and 257 with impact. The results for Category 3 receptors predict only marginal impact at the first hole green at the Grover C. Keeton Golf Course.

Based on the results of the noise assessment, mitigation measures have been identified. The primary mitigation measure will be the construction of sound barrier walls to shield areas where impact is projected. Street closures will eliminate the need of sound insulation in areas where noise due to audible warning devices typically would otherwise warrant sound mitigation. Other measures to be considered include sound insulation or speed reductions in some areas.
Mitigation for the Build Alternative (LRT) will include the construction of 4600 feet of noise barrier mitigation and eight structures will require sound insulation.

Vibration-sensitive locations along the alignment were analyzed. Potential impacts were identified at 104 residences. Ground-borne vibration mitigation will be in the form of LRT speed reductions in sensitive areas, ballast mats, floating slabs, property acquisitions, or easements.

S 5.8 VISUAL AND AESTHETIC IMPACTS
The No-Build Alternative will have no effect on visual and aesthetic quality of the area.

The Build Alternative (LRT) will introduce new visual elements within a modern urban setting. New visual elements include fencing, catenary poles, catenary wires, TPSS and station structures. These new elements are predominantly located along Good-Latimer and in a railroad right-of-way, a portion of which is abandoned (Good-Latimer to Hatcher), a portion of which is active (Hatcher to Buckner). Both Option A and B along Good-Latimer will have visual impacts to the area; however Option B would include an elevated structure. A small section of the LRT alignment passes the main entrance to Fair Park, a national historic landmark. This area had extensive streetcar/interurban service in the 1930’s. The proposed LRT system reintroduces elements that were part of Fair Park’s original setting.

Two scenic overlooks in parklands adjacent to the alignment were identified during the public comment period. The view from these overlooks is generally out and over the treetops. In general no adverse effects to any population or resources are anticipated. In some areas along the LRT alignment, the introduction of light rail could improve the aesthetics of the current conditions.

Where appropriate, mitigation for the introduction of new visual elements includes: vegetative screening, and black vinyl coated fencing, minimizing the removal of trees, and judicious pole placement. Mitigation for Option A will include a new gateway which will provide a new visual asset. Vertical elements at the Fair Park Station will be minimal and complementary to existing and past design elements of the park.

Mitigation treatments other than landscaping will be developed during final design through discussions with affected property owners as well as to respond to other issues such as noise and to coordinate improvements with construction activities. If noise wall barriers are selected
as the appropriate mitigation treatments in areas of both noise and visual impact, this barrier could also serve as an effective visual screening treatment.

Based on a maximum exposure time of two seconds, vegetation or visual screening is recommended to be placed every 130 to 190 feet (depending on speed) to break up views from the LRT in areas where existing screening is sparse, particularly where the vertical distance of the rail alignment is higher than the residences. The type of mitigation for visual impacts, either vegetation or screening walls, depends on the surrounding areas. These mitigation treatments will reduce impacts to a level less than significant. Short-term impacts may result as vegetation matures. These mitigation treatments can be implemented in conjunction with any potential landscaped noise walls, where there are both noise and visual impacts, to alleviate more than one impact with only one mitigation treatment.

S 5.9 CULTURAL RESOURCES, HISTORIC PRESERVATION, ARCHAEOLOGICAL PRESERVATION

The No-Build Alternative will have no effect on cultural resources in the study area. Within the APE of the Build Alternative (LRT), 18 historic properties have been identified. The LRT project will have an adverse effect on only one of these historic properties, the Good-Latimer Tunnel. DART has demonstrated that there is no prudent or feasible alternative to the physical destruction of this historic structure. The adverse effect of physical destruction of the Good-Latimer Tunnel in Option A of the Build Alternative (LRT) will be mitigated through documentation.

The Build Alternative (LRT) will pass through the edge of Fair Park National Historic Landmark and National Register-Listed District. Any potential adverse effect to the Fair Park National Historic Landmark District will be mitigated through a sensitive design that minimizes vertical station elements and captures design elements of the 1936 park entrance. On-going coordination with the SHPO will ensure that the design of the LRT alignment will avoid adverse effect to the property.

The Build Alternative (LRT) passes adjacent to the Comanche Storytelling Place but will not have a direct impact on the site within Devon-Anderson Park. Coordination with the Comanche Nation is on-going and potential effects from the introduction of new visual elements will be mitigated through sensitive design.
The proposed project would require direct use of approximately 0.84 acres of the Fair Park HD/NHL, which is also a State Archeological Landmark. The area that is subject to construction for the placement of new facilities has been previously disturbed and thus the potential to encounter unanticipated resources is very low. However, because under the Antiquities Code historic buildings and other structures are considered to be archeological landmarks, construction of the proposed LRT station and other system elements would require a permit from the Texas Historical Commission. There are no feasible and prudent alternatives to the direct use of the Fair Park State Archeological Landmark and a process to incorporate all possible planning to minimize harm has been established.

Construction for the LRT line across White Rock Creek would occur in an area that has been previously disturbed and that also has a low potential to encounter unanticipated resources. The areas adjacent to and within the corridor have been highly affected by railroad construction, maintenance, and urban development over the past century, and shovel testing of the least disturbed areas yielded no artifacts. The only cultural find was a single historic locality, which appears to represent a construction materials dumping area. In addition to the backhoe trenching at White Rock Creek, visual assessments were made of the flood plains of the other five drainages in the project area. All were found to be either highly disturbed or to be steep-sided drainages with no flood plain or terrace surfaces suitable for occupation.

In accordance with 36 CFR 800.6, DART, FTA, and the SHPO have executed a Memorandum of Agreement that will provide for the continued coordination between these agencies. This agreement addresses the appropriate mitigation for the adverse effect of the project on the Good-Latimer Tunnel. Additionally, the agreement ensures that the LRT project will not result in an adverse effect on the remaining identified Southeast Corridor historic properties including the Fair Park National Historic Landmark District.

S 5.10 PARKLANDS [SECTION 4(f) AND 6(f) OF THE DEPARTMENT OF TRANSPORTATION ACT OF 1966]
The No-Build Alternative will have no direct or indirect impacts on any parklands. Of the 14 existing public parks, school grounds, and recreation lands in the study area, only one will be subject to direct impact. Parkland property at Fair Park will need to be used for installation of portions of the LRT line and portions of the proposed station adjacent to the ceremonial entrance of Fair Park at Parry Avenue.
Potential indirect impacts to parklands include noise and altered access. The LRT system will alter, without diminishing, access to historic Fair Park. Three crossings will be provided to Grover Keeton Park. To limit the noise impact from gate signals adjacent to parks, the lowest possible audible settings will be employed.

S 5.11 ECOSYSTEMS

Impacts to waters of the U.S. include both direct impacts and indirect impacts. The current railroad will remain operational under the No-Build Alternative. Currently, waters of the U.S. are impacted by stormwater runoff from the existing rail line. This runoff likely contains minor amounts of creosote, petroleum products (oil and grease), and other chemicals associated with rail activities.

The Build Alternative (LRT) will require impacts to the stream crossings at existing bridges, a crossing for the existing tracks was accomplished over culverts, and new tracks placed over culverts. Eight streams or tributaries will be crossed with bridge structures. The bridge crossings will result in negligible impacts to waters of the U.S. The station locations will not result in impacts to waters of the U.S. Short-term impacts to waters of the U.S. could also result from runoff during construction activities such as grading.

Mitigation for Impacts to Waters of the U.S.

The No-Build Alternative will not require mitigation for impacts to waters of the U.S. The Build Alternative (LRT) will potentially impact 13 waters of the U.S. All impacts associated with stream crossings will be covered under Nationwide Permit 14, which allows fill of up to 0.50 acre at each stream crossing, provided that pre-construction notification is provided to the U.S. Army Corps of Engineers (USACE) for impacts of more than 0.10 acre. Filling and grading activities should be in compliance with the Texas Pollution Discharge Elimination System (TPDES) General Permit for Construction Activities.

S 5.11.1 Vegetation Impacts

No additional impacts to vegetation (i.e., clearing) will result from the No-Build Alternative. However, the vegetation along the existing rail line will continue to be maintained by mowing and pruning to allow safe operation of the rail line. Vegetation along the project corridor will be directly impacted by the expansion associated with the implementation of the Build Alternative.
Executive Summary

(LRT) within the existing railroad rights-of-way. Approximately 70 acres of vegetation will be impacted by the Build Alternative (LRT): 30 acres of woods and 40 acres of maintained grassy areas. The majority of impacts to vegetation will occur between White Rock Creek and Lake June Road. Only trees and vegetation within the right-of-way will be disturbed. Vegetation outside of the right-of-way will not be disturbed. Operation of the rail line should not result in any additional impacts to vegetation in the area, with the exception of the mowing or pruning activities. DART will work with an arborist to identify quality trees within its right-of-way and make efforts to preserve them. Additionally, DART has committed to replacing trees of exceptional size and quality within the right-of-way. Outside of DART-owned right-of-way (station areas, etc.), DART is subject to the Tree Regulations.

Prior to construction, the construction contractor will provide information to the City of Dallas Building Inspection Department, Arborist Division regarding potentially impacted trees. Mitigation will consist of removal of only the amount of vegetation required for construction and implementation of the measures designed to control erosion and reduce the discharge of pollutants in stormwater runoff from construction sites as required in the NPDES General Permit. When vegetation is impacted, the disturbed areas will be reconstructed in accordance with the guidelines of the appropriate agencies.

S 5.11.2 Wildlife Impacts

Under the No-Build Alternative, the existing rail line will remain in use and no additional direct impacts to wildlife or wildlife habitat will be expected to occur. Effects to wildlife from the existing use of the track will continue. The Build Alternative (LRT) will result in minor impacts to wildlife and habitat in the project corridor. However, these impacts will be limited to a corridor that has already been heavily disturbed by past activities. Construction activities will result in indirect impacts to wildlife from destruction of habitat along the right-of-way, noise, and human activity/presence. After construction, the operation of the LRT will have impacts on wildlife in the immediate vicinity of the right-of-way. However, impacts to wildlife are expected to be minor. The areas with the most undisturbed habitats have an existing active rail line and wildlife in these areas are likely already conditioned to the presence of trains that are larger and louder than the LRT vehicles and safety fencing will be placed where speeds are greater than 45 miles per hour. The bottom of the safety fencing will raised four inches above ground level to allow the passage of virtually all small to medium sized vertebrates, which make up the majority of the
forest fauna. Additionally, the developed nature of the corridor and surrounding area has already resulted in the displacement of all but the most adaptable animal species from the project corridor.

S 5.12 HYDROLOGY/WATER QUALITY
The project corridor crosses 13 water bodies (i.e., stream channels). The No-Build Alternative will continue to affect surface water quality through stormwater runoff, which likely contains small amounts of creosote, petroleum products, and other chemicals associated with railroad operation. The implementation of the Build Alternative (LRT) has the potential to cause minor impacts to these water bodies during construction. Long-term impacts to surface water quality will be less for the Build Alternative (LRT). Overall impacts to these resources will be minimal due to the limited number of resources identified in the area and the developed nature of the corridor. Filling and grading activities should be in compliance with the TPDES General Permit for Construction Activities.

Groundwater Quality Impacts
The No-Build Alternative will not likely impact groundwater quality. Minor impacts have potentially occurred due to stormwater runoff, etc. The No-Build Alternative is not expected to have a measurable impact to groundwater quality. The Build Alternative (LRT) could have short-term impacts due to construction activities. However, the groundwater within the project corridor has already been impacted by decades of runoff from nearby commercial and residential developments, streets, and the existing railroad. Long-term impacts to shallow groundwater quality will likely be reduced by the Build Alternative (LRT) due to decreases in vehicular traffic associated with use of the LRT.

Floodplain Impacts
The study area includes areas within the 100-year floodplain. The No-Build Alternative will involve no additional construction activities and will, therefore, not result in any impacts to floodplains. The Build Alternative (LRT) will involve the crossing of four floodplain areas. These floodplain areas could be impacted by the placement of fill below the base floodplain elevation in order to raise a rail bed for the two new tracks. Prior to construction activities that may affect floodplains, coordination will occur between DART, the City of Dallas, USACE, and FEMA with respect to placement of fill or any other activities within floodplains.
S 5.13 GEOLOGY AND SOILS
The No-Build Alternative will involve no additional construction activities and will not impact geology or soils. The Build Alternative (LRT) will not involve any subsurface work or deep excavation, with the exception of some boring at the bridged stream crossings. Therefore, it is not likely that geologic resources would be significantly affected by the Build Alternative (LRT).

S 5.14 HAZARDOUS/REGULATED MATERIALS
The results of the database searches, historical aerial photograph review, and field survey of hazardous materials in the project area indicated there are 33 sites that have the potential to be of high risk for right-of-way acquisition and/or construction of the project. Although a site is known or suspected to be contaminated, implementation of the LRT alternative does not necessarily mean that the proposed LRT corridor project will affect the site. More detailed information regarding project design, to be developed during the final design phase of this project, will be used to make such assessments.

S 5.15 CONSTRUCTION IMPACTS
The temporary impacts due to construction were assessed.

Access and Circulation of Traffic
Construction of the Build Alternative (LRT) will affect numerous major and minor roadways in the City of Dallas. A traffic management plan will be developed and agreed upon by the City of Dallas and TxDOT. The plan will include ways to maintain traffic, bus service, and pedestrian activities while allowing for the delineation of the construction areas. Separation of work areas will result in more stable traffic patterns, minimizing the number of times motorists will need to adjust to the change in the construction zones. The City of Dallas and TxDOT will review contract specifications and traffic management plans prior to initiation of construction.

During final design, a construction sequencing plan will be developed to schedule lane closures and use of temporary traffic control. Temporary lanes, sidewalks, driveways, and bus stops will be used. Detours will be kept to a minimum. The phasing of construction will be scheduled to minimize construction near Fair Park during the State Fair of Texas.
Disruption of Businesses and Residences
In most cases, the construction of the project will cause a short-term impact to areas due to access restrictions, general inconveniences to patrons, and temporary blocking of adjoining roadway intersections. The City of Dallas requires notification of all construction activities that will disrupt or block traffic flow. The mitigation measures required by the city for roadway access and traffic control also apply to disruption of area businesses. As a courtesy, notification of roadway disruptions should be provided to neighboring property owners/operators. In cases of roadway blockages, neighboring property owners/operators will be notified and provided with descriptions of alternative routes. If proper permitting and appropriate mitigation measures are used during construction, construction impacts would not be significant.

Disruption of Utilities
The potential to impact utilities exists throughout the corridor. The majority of the Build Alternative (LRT) is located within previous railroad rights-of-way which helps minimizes impacts to utilities. No major utility relocations will be required. All utility work is expected to be within the norms for light rail construction, with the exception of the Texas Utilities 345kV power transmission line along Trunk Street and Scyene Road. This line is within an easement along the DART owned right-of-way. Discussions will be held with affected utility operators to determine specific measures to minimize disruptions and maintain system integrity and on City of Dallas underground storm sewer box culvert along Trunk Avenue.

Construction Air Quality Impacts
During the construction phase, there will be short-term impacts on air quality. Construction activities associated with excavations, grading, filling, and other operations disturb the soil, generate dust, and remove groundcover which causes the soil to be susceptible to wind and water erosion. Areas disturbed by construction activities will be covered or treated with dust suppressors. To minimize exhaust emissions, contractors will be required to use emission control devices and limit the unnecessary idling of construction vehicles. Construction of the project will not violate any federal, state, or local laws concerning air quality. Therefore, air quality impacts from construction activities will not be significant.

Construction Noise Impacts
Construction activities will be carried out in compliance with all applicable local noise regulations. In addition, specific residential property line noise limits will be developed during final design
and included in the construction specifications for the project, and noise monitoring would be performed during construction to verify compliance with the limits. With the incorporation of appropriate noise mitigation measures, impacts from construction-generated noise should not be significant. To provide added assurance, a complaint resolution procedure will also be put in place to rapidly address any noise problems that may develop during construction.

Construction Vibration Impacts
The most significant sources of construction vibration will be pile driving. Other construction activities that could cause an intrusive vibration include vibratory compaction, jack hammering and the use of trackbed vehicles, such as bulldozers. Vibration impacts during construction will be avoided through numeric limits and monitoring requirements that will be developed during final design and included in the construction specifications for the project.

Construction Visual Impacts
Potential construction-related visual impacts may occur due to the placement of construction staging areas and equipment/materials storage in viewable areas from sensitive uses. In addition, potentially significant long-term adverse impacts could result from the construction phase removal of existing vegetation that provides visual screening from the rail right-of-way for adjacent land uses. The DART contractor will attempt to minimize the removal of existing vegetation and would restore areas to their pre-construction appearance. During final design, DART will work closely with affected residents to assess the need for additional vegetation/screening to mitigate potentially significant privacy impacts so that improvements can be coordinated with construction activities.

Construction Staging Areas
The project is expected to be constructed in two sections. Section 1 will begin at Pearl Street Station and continue to just west of the UP RR. Section 2 will begin just west of the UP RR and continue to Buckner Boulevard. Three staging areas will be required for the storage of equipment and materials used for the construction of the project. One of the construction staging areas will be between Jaguar, 4th Street, Elihu, and the former SP RR. The other construction of staging areas will be just east of the Lawnview station and on the excess property at the Lake June Transit Center.
Construction Water Quality Impacts
The contractor will use best management practices to prevent stormwater runoff of construction materials and equipment. The contractor will also mulch and reseed disturbed areas to prevent air and water erosion on the site after termination of construction operations.

S 5.16 PERMITS
Several permits and approvals will be required to implement the Build Alternative (LRT). These include: Section 404 Nationwide permit, TPDES, General Permit for storm water discharges associated with construction activities, development permit to perform construction activities in a flood zone, storm water management, sewer modification, Section 4(f), and Section 106 (Historic).

S 5.17 SAFETY AND SECURITY
Safety fencing will be placed along the right-of-way boundary where trains are expected to travel at speeds of 45 miles per hour and greater, where the train operator will have limited sight distance, or in areas needed to minimize safety risk to children such as near schools and parks. In addition, safety fencing (3' tall cable & bollard type) is proposed along the Fair Park Station area and alignment along Parry Avenue to help direct pedestrian movements and prevent pedestrians from crossing the LRT tracks at unauthorized locations.

S 6.0 COMMENTS AND RESPONSES
The DEIS was circulated for 45-days, beginning February 22, 2002 and concluding April 8, 2002. During this comment period, DART conducted three public hearings (March 12, 13, and 14), which were attended by 84 people. The public comment period resulted in 148 substantive comments in the areas of alternatives and alignment; Good-Latimer area; acquisition and displacements; neighborhood, community, social and environmental justice; businesses, employers and economics; transportation, traffic and parking; service and ridership; air quality; noise and vibration; visual aesthetics; cultural resources and historical properties; parks and recreation areas; ecosystems and wildlife; floodplains and water quality; safety and security; stations; and other.
S 7.0 NEXT STEPS

The completion of the preliminary engineering, environmental studies, and a mitigation program have led to the publication of this FEIS. This document reflects the attention given to the comments received during the evaluation of the alternatives, the selection of the preferred alternative, and the circulation of the DEIS. Completion of the environmental review and impact documentation process of the Final EIS, followed by the signed Record of Decision (ROD) by the FTA, will permit the project to be advanced to the final design and construction phases.
This Page Intentionally Left Blank.