



To reduce the potential for pedestrian accidents near schools, DART would work with school officials to identify appropriate safety features such as fencing and pedestrian crossing gates. Pedestrian “Z” crossings designed using sidewalk and fencing configurations have been installed along other DART light rail transit lines that channel pedestrians toward the track to ensure complete visibility before crossing the tracks.

In addition, in order to accommodate automobile traffic, all crossing approaches would be signed with standard safety and warning signs installed in order to warn drivers of a train’s approach. Crossing gates would be installed at all at-grade crossings such that at the approach of any light rail vehicle the gates would lower and automobile traffic would be stopped until the rail vehicles have cleared the street. Where light rail vehicle speed equals or exceeds 45 miles per hour, the alignment would be fenced to prevent access by pedestrians or automobiles that may be accustomed to “informal” track crossings. Fences can also be provided where speeds are less than 45 miles per hour, depending on adjacent land uses and pedestrian activity.

Should an accident occur, safety features on all LRT vehicles include emergency manual door releases, a public address system inside and outside the car, an automatic feature that stops the train if operators release control, safety mirrors, sight and sound warning systems, impact resistant windows and windshields, “sensitive edges” on passenger doors to detect possible obstructions, and three brake systems per car—dynamic brakes, disc brakes and magnetic track brakes.

Station Area Safety Impacts and Mitigations

Although the addition of light rail service increases the potential for modal conflict in and around station areas, stations have been designed with safety measures such that no impact to station areas is anticipated. DART incorporates a number of safety considerations into the design of LRT stations. These include measures such as limiting pedestrian access across the tracks to dedicated track crossings, providing adequate lighting, and maintaining good visibility and sight lines throughout the station areas. Similarly, where bus service would feed light rail station areas, bus bays are designed to allow boarding and alighting from a common rail and bus platform such that pedestrian activity would be separated from buses and automobiles.

5.12 CONSTRUCTION IMPACTS

Short-term impacts and mitigations associated with constructing the project are documented in the following section. The construction scenario describes the construction process by line segment and by grade; the other sub-sections analyze short-term construction impacts by impact category.

5.12.1 Construction Scenario

It is anticipated that DART would award the construction contract for the Irving/DFW LRT Line as one primary construction contract. DART would likely subdivide the contract into two separate Line Section contracts, enabling DART to effectively manage the construction efforts of the build-out. Construction would progress from southeast to northwest with the second Line Section Contract beginning 6 months after initiation of the first Line Section work. Each contract is expected to last between 2 and 2-1/2 years. An overview of the four construction activity areas (Facilities, Trackwork, Systems, and Landscaping) follows.

Facilities Construction

DART’s implementation plan calls for dividing the corridor into two separate Line Section contracts as follows:

1. Line Section I-1 – Farmers Branch/Carrollton LRT Line to SH 114
2. Line Section I-2 – SH 114 to Belt Line Road

Each Line Section would contain at-grade, aerial and below-grade (open cut) construction components. **Table 5-15** outlines the summary of work for each type of construction by elevation.



**TABLE 5-15
CONSTRUCTION ELEMENTS BY ELEVATION**

Construction Location and Activities	Typical Construction Equipment Used *	
At-Grade LRT Construction		
Clearing and grubbing	1,4,5,6	
Storm water and erosion control	6,10,24	
Utility and street relocation	4,6,10,11,13,16	
Demolition of existing facilities	1,4,5,6,17,26	
Drainage and storm water systems	6,10,11,15	
Excavation, embankment and subgrade preparation	1,4,11,23	
Retaining walls and ballast walls	3,10,22,25	
Lime subgrade	4,11,23	
Subballast	4,11	
Chain link fencing	6,22,24	
At-Grade Stations		
Station platform slab and Special Use Platform	3,5,8,11,22,25	
Structural steel canopies and roofing systems	2,12,14,15,20	
Electrical systems	3,10,11,20	
Mechanical systems	3,10,6,12	
Architectural finishes	3,14,18	
Painting	18,19,20	
Street, Driveway and Parking Lot Construction		
Street pavement and LRT street at-crossing headers	3,4,6,11,13,22	
Permanent street signage and pavement markings	12,18,24,27	
Aerial LRT Construction		
Drilled shaft construction	2,8,21,22	
MSE wall construction at bridge approaches	5,6,11,25	
Bridge pier construction	2,3,22	
Bridge deck and parapet	2,3,9,20,22	
Grounding system	3,6	
Aerial Stations		
Station platform	2,20,9,12	
Open - Cut Below Grade		
Street bridging	2,6,11,15,13	
U-structure and Double box tunnel section	3,5,6,11,12	
Backfill and final grading	4,5,11	
*Construction Equipment		
1 Dozer	10 Ditcher/trencher	19 Paint Sprayers
2 Tracked crane	11 Compaction equipment	20 Man lift
3 Rubber tired crane	12 Air compressor	21 Water pump
4 Motor grader	13 Paving machine	22 Concrete vibrators
5 Dump trucks, haul trucks	14 Welding machine	23 Tiller (lime manipulation)
6 Loader/Backhoe	15 Rubber tired loader	24 Tractor with hole auger
7 Water truck	16 Excavator	25 Bucket grading machine
8 Drilled pier rig	17 Jackhammer, ramjack	26 Concrete saw
9 Concrete pump	18 Sand blaster	27 Street sweeper

Source: Chiang, Patel and Yerby, March 2006.

The typical construction scenario would start with utility and storm sewer relocations, followed by construction of permanent and temporary facilities to support rerouting of vehicular and rail traffic. Once the utilities are cleared and the permanent / temporary facilities constructed, the contractors would build long duration construction items such as below-grade (open cut) and bridge sections. For bridge structures, the contractors would first construct the substructure / foundations, bridge piers and abutments. Once these items are complete, the contractor would place beams, pour the bridge deck and install parapet railing. Retained earth embankments can be constructed concurrently with the bridges. At-grade guideway construction can proceed concurrent with tunnel and bridge construction, but would be phased so as not to impede progress on the tunnel and



bridge work. In several areas, construction activities would have to be coordinated with on-going commuter and freight rail operations.

All station construction would commence with subsurface utility / drainage and foundation work. This would be followed by platform, canopy and ancillary construction including architectural finishes. Subsurface stations would be constructed in a similar fashion, but would be phased with tunnel construction. Parking lots can be constructed at any time during the contract, but they usually follow the LRT station construction.

Trackwork Installation

Trackwork installation would follow substantial completion of the Line Sections. It would include the installation of the fixed guideway elements: ballast, ties, rail, concrete plinths on direct fixated bridges, and special trackwork. DART would provide the rails and ties to the Trackwork Installation contractor. These items would be strategically placed throughout the corridor to minimize haul distances and facilitate construction. It is anticipated that track installation would last approximately one year for each Line Section and overlap the Facilities and Systems construction.

Systems Construction

Systems construction would follow substantial completion of Trackwork installation. This would provide for the installation of traction electrification, wayside signals, communication, and fare collection elements. Systems construction and testing is anticipated to last one year for each of the two Line Section contracts and would commence after substantial completion of the Facilities and Trackwork elements

Landscape Installation

The Landscaping activities would include installing planting materials and irrigation systems at all the station sites and at other selected locations in the corridor. This work would be performed concurrent with the Trackwork and Systems contracts.

Construction Staging Areas

Several staging areas would be required for the storage of equipment and materials used for the construction of the project. Some preliminary staging areas are identified adjacent to stations. Their final size and location will be determined as the project's design progresses.

Construction Staging Areas Impacts

If exposed to the weather, some construction equipment and materials have the potential to release chemicals during storm events. The storage of construction equipment and materials on the ground also has the potential to disturb the soil and kill or prevent the growth of groundcover, which causes the soil to be susceptible to wind and water erosion. Construction equipment has the potential to leak oil and grease, hydraulic fluid, brake fluid and other petroleum hydrocarbons. There is also the possibility of spillage during fueling operations.

Construction Staging Areas Mitigation

The DART General Provisions, General Requirements and Standard Specifications for Construction Projects, Section 01560 (Part 1.3 C-6 and G, Construction Facilities and Staging Areas), states that the contractor must store equipment and materials in conformance with applicable local regulations. Unnecessary materials and equipment are not allowed to be stored at the job site. No structure is allowed to be loaded with a weight that would endanger its structural integrity or the safety of persons. Materials are not allowed to be stored on private property without written authorization of the owners of the property. Staging areas cannot be located on any property listed or eligible to be listed in The National Register of Historic Places without prior approval of the DART Contracting Officer.



DART Construction Guidelines Specifications Section 01560 Part 1.4B, Storm Water Pollution Prevention Plan, states that a Storm Water Pollution Prevention Plan (SW3P) should be developed for the Build Alternative. It should state that the construction contractor will be required to use best management practices to prevent storm water runoff from construction materials and equipment by covering such materials and equipment with awnings, roofs, or tarps; storing materials on asphalt or concrete pads; surrounding material stockpiling areas with diversion dikes or curbs; and using secondary containment measures such as dikes or beams around fueling areas. The contractor should also be required to mulch and reseed disturbed areas to prevent air and water erosion on the site after termination of construction operations.

Coordination with Other Scheduled Construction Projects

The construction of the proposed project would be coordinated with Dallas County, the City of Dallas, the City of Irving, Texas Department of Transportation (TxDOT), North Texas Tollway Authority (NTTA), and DFW Airport. **Table 5-16** summarizes on-going projects that would influence the design and construction of the light rail project. During Preliminary Engineering, DART has communicated with these entities in order to minimize construction-related impacts to residents, property owners and corridor users.

TABLE 5-16 CONSTRUCTION COORDINATION		
Related Project or Study	Area of Impact	Issue
IH 35E widening	SH 183 to IH 635	Timing and coordination of DART design and construction with ultimate freeway cross-section.
SH 114 improvements	SH 183 to Tarrant County line	Timing and coordination of DART design and construction with ultimate freeway cross-section.
Teleport Avenue	Irving – future South Las Colinas Station	Requires street relocation due to conflicts with proposed DART LRT improvements
Station Vicinity street improvements	Irving	Streets must be designed around DART infrastructure
Northwest Highway (Spur 348) improvements (TxDOT)	O'Connor Boulevard to SH 114	Streets must be designed around DART infrastructure
Las Colinas Boulevard extension	O'Connor Boulevard to Northwest Highway (Spur 348)	Final designs must be coordinated
SH 114 improvements	SH 183 to IH 635	Coordinate design and construction activities
Brangus Drive extension	MacArthur Boulevard to Walnut Hill Lane	Coordination with City of Irving for construction timing and future street.

Source: Chiang, Patel and Yerby; March 2006

5.12.2 Construction Noise Impacts

Construction of the tracks, stations, substations, maintenance facility and the associated parking facilities would result in the generation of noise from construction equipment. Construction noise varies greatly depending on the construction process, type and condition of equipment used and the layout of the construction site. Many of these factors are traditionally left to the contractor's discretion, which makes it difficult to accurately estimate levels of construction noise.

Table 5-17 summarizes available data on noise emissions of construction equipment that may be used for this project. Impacts from construction noise depend on the sensitivity of the noise receptor, the magnitude of noise during each construction phase, the duration of the noise, the time of day the noise occurs and the distance from the construction activities.



TABLE 5-17 TYPICAL NOISE LEVELS OF CONSTRUCTION EQUIPMENT	
Equipment Type	Typical Sound Level at 50 ft (dBA)
Backhoe	80
Bulldozer	85
Compactor	82
Compressor	81
Concrete Mixer	85
Concrete Pump	82
Crane, Derrick	88
Crane, Mobile	83
Loader	85
Pavement Breaker	88
Paver	89
Pile Driver, Impact	101
Pump	76
Roller	74
Truck	88

Source: Federal Transit Administration, April 1995

No-Build Alternative

Impacts of the No-Build Alternative would be confined to already active and congested highway areas where residents and businesses have already adjusted to highway-related noise. No construction-related noise impacts are expected.

LRT Alternative

Using the typical sound emission characteristics given in **Table 5-17**, along with information on the equipment to be used and the utilization factors or duty cycles of the equipment, it is possible to estimate construction noise exposure in the community. Although no standardized criteria have been developed for assessing construction noise impact, guidelines are provided in the FTA Noise and Vibration Impact Assessment guidance document. These guidelines, summarized in **Table 5-18**, are based on land use and time of day and are given in terms of Leq for an 8-hour work shift.

TABLE 5-18 FTA CONSTRUCTION NOISE GUIDELINES		
Land Use	Noise Limit, 8-hour Leq (dBA)	
	Daytime	Nighttime
Residential	80	70
Commercial	85	85
Industrial	90	90

Source: Federal Transit Administration, April 1995

The potential for construction noise impact varies by location and land use. Commercial and industrial land uses, which adjoin the majority of the alignment, should not be impacted by construction noise. At residential land use, the potential for temporary noise impact from daytime construction would be limited to locations directly adjacent to the alignment. However, noise impact from nighttime construction would be much more extensive, which emphasizes the importance of avoiding nighttime construction near residential areas.

Construction Noise Mitigation

Construction activities would be carried out in compliance with all applicable local noise regulations. DART Construction Guidelines Specifications Section 01560 Part 1.9 A-G states that construction activities must comply with the noise and vibration maximum limits set out in Tables 01560 1-3. The guidelines also specify appropriate techniques to minimize and mitigate noise and



vibration near sensitive land uses. In addition, specific residential property line noise limits would 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. This approach allows the contractor flexibility to meet the noise limits in the most efficient and cost-effective manner. Noise control measures that would be applied as needed to meet the noise limits include the following:

- Avoiding nighttime construction in residential neighborhoods;
- Using specially quieted equipment with enclosed engines and/or high performance mufflers;
- Locating stationary construction equipment as far as possible from noise sensitive sites;
- Constructing noise barriers, such as temporary walls or piles of excavated material between noisy activities and noise-sensitive receivers;
- Re-routing construction-related truck traffic along roadways which will cause the least disturbance to residents; and
- Avoiding impact pile driving near noise-sensitive areas, where possible. Drilled piles or the use of other non-impact piling methods are quieter alternatives where the geological conditions permit their use. If impact pile drivers must be used, their use will be limited to periods between 8:00 a.m. and 5:00 p.m. on weekdays.

5.12.3 Construction Vibration Impacts

The most significant source of construction vibration is pile driving. Pile driving would occur in the elevated sections of the alignment, which are primarily located in existing railroad, street, and highway rights-of-way. Other construction activities that could cause intrusive vibration include vibratory compaction, jack hammering and the use of tracked vehicles, such as bulldozers.

Construction Vibration Mitigation

Vibration impacts during construction would be avoided through numeric limits and monitoring requirements that would be developed during final design and included in the construction specifications for the project (DART Construction Guidelines Specifications Section 01560 Part 1.9 A-G, Construction Noise and Vibration Control). Measures that would be considered as requirements to meet the vibration limits include the use of alternative equipment or processes, such as the use of drilled piles in place of impact pile driving and avoiding the use of vibratory compactors near vibration-sensitive areas. Construction activities would be closely coordinated and developed with DFW Airport. Appropriate measures would be taken to avoid vibration impacts to sensitive airport equipment and facilities. During final design, DART will coordinate with FAA to examine potential vibration impacts associated with construction practices so as to limit any impacts to airport facilities.

5.12.4 Disruption of Utilities

The various utilities within the project right-of-way include electric, natural gas, telephone, water and sanitary sewer. Utility line disruptions would likely occur during the grading, excavation and construction activities of most major roadway and rail projects.

No-Build Alternative

No utility disruptions would be anticipated under the No-Build Alternative.

LRT Alternative

The construction of the project would cause short-term impacts to area utilities due to line disruptions, relocations and general improvements. U.S. Department of Transportation guidelines for roadway construction recommend utility disruptions should occur for a period not to exceed 24 hours for residential properties. Alternatives to utility disruptions include construction around existing utility lines and disallowing excavations, removal of fill and grading during construction.



However, in order for construction contractors to build around existing utility lines, cost-prohibitive excavations and grading would have to occur.

The locations of the utility lines that would need to be relocated cannot be known until the project progresses to a higher level of design. During final design, DART staff would confirm utilities within the project corridor, and list them by line types, locations, proposed mitigation and the estimated duration of the disruption.

Disruption of Utilities Mitigation

Contractors would be directed to consider the following items in their construction specifications for mitigation of utilities:

- Prior to construction, all area utility companies and utility agencies will be contacted and requested to provide line location measures and approval of the proposed alteration of utility lines;
- Businesses and residences affected by utility disruptions should be notified of the disruptions at least two weeks in advance;
- Down periods for businesses should occur during off-business hours and never exceed a 24 hour period;
- Businesses such as restaurants, grocery stores or food preparation/manufacturing facilities should be accommodated in order to protect food preparation and storage mechanisms;
- Should utilities be identified during construction that are not identified prior to construction, work will be discontinued and appropriate utility companies and agencies will be contacted to identify the line(s). The newly identified line will not be disrupted until businesses and residences are notified and the utility owner/operator has approved the proposed alteration.

5.12.5 Access and Distribution of Traffic

During the construction of any roadway or rail line project, road and traffic disruption is expected on minor and major roadways. The following sections address traffic impacts due to construction of the project and mitigation measures to alleviate these problems.

No-Build Alternative

The current railroad and associated right-of-way would remain largely as it is today if the No-Build Alternative is selected. Therefore, no roadway disruptions or closures would be anticipated due to rail construction.

LRT Alternative

Construction of the LRT Alternative would affect numerous major and minor roadways in the Cities of Dallas and Irving. When roadway or lane closures are required during construction of the LRT Alternative, DART and its contractors would coordinate with the traffic control divisions of the Cities of Dallas and Irving to maintain reasonable and safe traffic operations at affected crossings. **Table 5-19** illustrates how crossings and adjacent roadways in the corridor would be impacted by project construction. The streets are listed from southeast to northwest.

Traffic Mitigation

The Cities of Dallas and Irving require notification of all construction activities within city rights-of-way. The construction contractors should identify the appropriate regulations and incorporate mitigation measures in the construction specifications (DART Construction Guidelines Specifications Section 01570, Maintenance and Control of Traffic). **Table 5-20** provides applicable local and state regulation guides for the proposed construction.



**TABLE 5-19
CONSTRUCTION-RELATED TRAFFIC IMPACTS**

Street	LRT Location	Lanes Blocked	Alternate routes available
Jamison Circle	Over; street closed	X	Local street to be cul-de-sac'ed at NW Hwy.; access maintained to adjacent properties
Harry Hines Blvd.	Over	X	Northwest Highway, Denton Drive, IH 5E
Storey Lane (Spur 482)	Over	X	IH 35E, Northwest Hwy, Harry Hines Blvd.
IH 35 E (Stemmons Fwy.)Main lanes & FR	Over		N/A
Justice Way/ Clifford Dr.	Over		N/A
Century Boulevard	Over		N/A
Future street over SH 114	Under		Future street; N/A
Loop 12 main lanes & FR	Under		N/A
Tom Braniff Parkway	Under		N/A
Cistercian Rd./Namur Ln.	Over		N/A
SH 114 WB FR	Over		N/A
Teleport Avenue (NB Lanes)	street modified	X	SH 114, Rochelle Boulevard
Riverside Drive	At-grade	X	E. Las Colinas Blvd., El Lago Blvd., Teleport Ave.
E. Las Colinas Boulevard	At-grade	X	Riverside Drive, El Lago Blvd., Teleport Ave.
Lake Carolyn Parkway (Riverside to O'Connor)	At-grade, median	X	Inside lanes only blocked; one lane open in both directions
California Crossing	At-grade	X	Restricted lanes open
O'Connor Boulevard	At-grade	X	Restricted lanes open; Las Colinas Boulevard, SH 114, Riverside Drive, Hidden Ridge
Lake Carolyn Parkway (N. of O'Connor – NB only)	At-grade, NB only	N/A	Future street serving vacant land. Northwest Highway (Spur 348) offers alternate route and access.
SH 114	Over		N/A
Green Park Drive	At-grade	X	Walnut Hill Ln., SH 114 SB FR, MacArthur Blvd., Hidden Ridge, Whitehall St., Walnut Ridge Dr., Meadow Creek Dr.
Hidden Ridge	At-grade	X	Green Park Dr., MacArthur Blvd., Walnut Hill Ln.
MacArthur Boulevard	Over	X	Green Park Dr., Walnut Hill Ln., Hidden Ridge
Brangus Drive	At-grade	X	Closed south of station; access via Hidden Ridge, Walnut Hill, and MacArthur. New public E-W street to be built from MacArthur to Walnut Hill
Walnut Hill Lane	At-grade	X	MacArthur Bl., Brangus Dr., Hidden Ridge, Hurd Dr.
Hurd Drive	At-grade	X	MacArthur Bl., Brangus Dr., Hidden Ridge, Walnut Hill Lane
SH 190 & FR	Over		N/A
Valley View Lane	At-grade	X	SB SH 190 PGB Turnpike, Belt Line Road

Source: Parsons Transportation Group; March 2006

**TABLE 5-20
ORDINANCES APPLICABLE TO PROJECT
CONSTRUCTION IN CITY RIGHTS-OF-WAY**

City	Applicable Publications
Dallas	NCTCOG- <i>Standard Specifications for Public Works Construction</i> ; TxDOT- <i>Texas Manual on Uniform Traffic Control Devices</i>
Irving	TxDOT- <i>Texas Manual on Uniform Traffic Control Devices</i>

Source: Parsons, Cities of Dallas and Irving; 2006

All construction specifications, traffic control plans, and mitigation measures must be approved by local traffic engineering authorities prior to initiation of construction. Barricading and flag staff should be used when appropriate. Private business parking areas and driveways should not be used for equipment maneuvering or parking. Construction specifications should include provisions for a maximum number of lanes blocked during peak traffic hours, maintenance and removal of traffic control devices, efficient traffic rerouting measures, and scheduling of construction activities within the roadways for times other than during peak traffic periods.



In order to minimize impacts to traffic and circulation, DART will sequence the relocation/reconstruction of Brangus Road project to occur prior to construction of the rail line in the vicinity of North Lake College.

5.12.6 Air Quality Impacts

No-Build Alternative

The No-Build Alternative would indirectly cause construction-related air quality impacts from future roadway construction and expansion due to the failure of this alternative to reduce future automobile traffic on area roadways.

LRT Alternative

During the construction phase, there would be short term impacts on air quality. Construction activities associated with excavations, grading and filling, and other operations disturb the soil, generate dust, and remove groundcover which causes the soil to be susceptible to wind and water erosion. The proposed project would also include a short-term increase in exhaust emissions from construction vehicles.

Mitigation of Air Quality Impacts

There are no federal, state, or local regulations concerning the generation of dust from construction activities except as a nuisance complaint; however, the DART General Provisions, General Requirements and Standard Specifications for Construction Projects, Section 01560 (Part 1.8, Dust Control) provides dust control measures for construction activities.

The regulations state that the contractor will be required to have sufficient equipment at the site to implement dust control measures. The measures should be implemented at all areas of construction at all times including non-working hours, weekends and holidays.

The control of exhaust emissions emanating from various construction equipment should be in accordance with EPA guidelines. To minimize exhaust emissions, contractors would be required to use emission control devices and limit the unnecessary idling of construction vehicles.

5.12.7 Disruption of Business/Academic Activities

Several businesses and schools within the project corridor would be impacted during construction due to temporary disruption and blocking of nearby roadways.

No-Build Alternative

No business disruptions, displacements or inconveniences to patrons would be anticipated under the No-Build Alternative.

LRT Alternative

In most cases, construction of the project would cause a short-term impact to area businesses due to access restrictions, general inconveniences to patrons and temporary blocking of adjoining roadway intersections. The closure/relocation of Brangus Road and its effect on access to North Lake College may pose the greatest potential to inconvenience Business/Academic activity.

Mitigation for Disruption of Business/Academic Activities

In most cases, due to availability of alternative routes and the temporary duration of construction periods, the short-term roadway disruptions would cause only minimal disruptions to the businesses/schools along the project corridor. Provisions in project specification plans would require the construction contractors to make every reasonable effort to minimize construction activities within the roadways during peak traffic periods. Abatement measures such as work hour controls and weekend construction would be included in project contracts. Private business parking areas and driveways should not be used for equipment maneuvering or parking. In



addition, all possible measures should be taken to avoid blockages and disruption of business/school access driveways. As a courtesy, notification of roadway disruptions should be provided to neighboring property owners/operators. In cases of roadway blockages, neighboring property owners/operators should be notified and provided with descriptions of alternative routes.

At North Lake College, DART will sequence the relocation/reconstruction of Brangus Road project to occur prior to construction of the rail line in this area. This will limit the potential for reduced school access and community service. DART will work closely with North Lake College to minimize disruptions providing sufficient notifications for disruptions. DART will coordinate the dissemination of information with North Lake College throughout the construction stage of the project.

5.12.8 Water Quality and Runoff

Local, state and federal governments monitor and enforce water quality standards. Water quality and runoff issues would be addressed for the construction of the proposed project through the development of a comprehensive Storm Water Pollution Prevention Plan (SW3P). Such a plan must meet the requirements of the Texas Pollutant Discharge Elimination System (TPDES) Storm Water General Permit, as specified in DART Construction Guidelines Specifications Section 01560 1.4 A, B, and C, Storm Water Pollution Prevention.

No-Build Alternative

Water quality and surface runoff are currently impacted by rail line maintenance, operations and ground keeping activities, which cause minor overall impacts. Similar impacts are expected to continue under the No-Build Alternative.

LRT Alternative

Construction of the rail lines, stations and associated parking facilities could result in the generation of a short term impact to water quality and sediment runoff if not adequately addressed. The construction staging areas could also cause short-term impacts; however, impacts would be greatest in areas that are affected by grading and filling. Mitigation of these potential impacts is addressed below.

Mitigation of Water Quality and Runoff

In conformance with the TPDES General Permit, mitigation to protect area water quality would include measures to provide erosion controls and minimization of the introduction of sediments, wastewater and chemicals to surface and subsurface waters. According to the EPA regulations, cities with populations of 100,000 or greater must maintain and enforce the Municipal Separate Storm Sewer System (MS4) permitting program. The Cities of Dallas and Irving participate in this program and regulate storm water discharges with regard to various construction projects. This ordinance is enforced by the Storm Water Quality Department. In accordance with the ordinance, project specifications must be reviewed by the Storm Water Quality Department prior to initiation of construction.

Once issued, the TPDES General Permit would provide the following mitigation measures:

- Limit the areas of disruption;
- Temporarily stabilize and protect areas disturbed by construction to minimize erosion;
- Filter or impound sediment laden water from storm water runoff, soil boring/excavation operations, trenching, etc., to remove sediment prior to release of runoff;
- Provide structural erosion control methods where required to treat sediment-laden runoff;
- Provide general housekeeping measures to prevent and contain spills of chemicals, including petroleum hydrocarbons, associated with construction;
- Implement waste management techniques to cover waste materials and minimize ground contacts; and



- Reduce wind blow waste and off-site tracking by vehicles from the construction sites.

DART should perform inspections at least once every seven days and within 24 hours of a storm event that produces ½ inch or a greater amount of rainfall to help ensure each construction contractor's compliance with the approved SW3P.

5.12.9 Excavations, Fill Material, Debris and Spoil

No-Build Alternative

The current railroad and associated right-of-way would remain developed and active if the No-Build Alternative were retained. Therefore, no construction-related excavations fill material or the generation of debris and spoil would be required.

LRT Alternative

Construction of the project would require grading, excavations and fill material that would result in the generation of debris and spoil. Much of the spoil generated from grading activities and excavations would be used as fill material along the project corridor to bring the rail line to above and below grade; however, additional fill material would probably be required. Debris and spoil would also be generated by the demolition of buildings that are acquired for station area development.

Mitigation of Excavations, Fill Material, Debris and Spoil

The DART General Provisions, General Requirements and Standard Specifications for Construction Projects, Section 01560 (Part 1.5 A, B and C), provides measures concerning disposal of debris and spoil. The regulations state that excess "clean" fill material can be disposed of on the site. Waste would be placed in containers, transferred off site and disposed of in a manner that complies with state and local requirements. No waste material would be burned on-site. The disposal transport areas would be left clean on completion of the project.

Debris and spoil generated during construction of the project within the City of Dallas could be disposed of at the McCommas Landfill. There are no regulations concerning the type of debris and spoil that could be disposed of at this landfill except that hazardous waste is not accepted. No hauling permits are required by the City of Dallas. Debris and spoil generated within the City of Irving could be disposed of at other designated landfills.

5.13 CULTURAL RESOURCES

Following the procedures set forth in 36 CFR 800.4, Identification of Historic Properties, no historic properties were identified through field survey and archival research within in the proposed project Area of Potential Effects (APE), which included 500 feet to either side of the proposed alignment. "Historic properties" means properties included in or eligible for inclusion in the National Register of Historic Places (National Register). These findings were transmitted to the State Historic Preservation Office (SHPO) on April 7, 2006. In a letter dated May 1, 2006 the SHPO requested supplemental information and photographs. This information was provided to the SHPO on May 18, 2006 and the SHPO concurred with these findings in a correspondence dated May 31, 2006.

5.13.1 Application of the Criteria of Adverse Effect

In order to comply with Section 106 of the National Historic Preservation Act of 1966, as amended (August 5, 2004), any effects of the proposed undertaking on historic properties listed in or determined eligible for listing in the National Register must be analyzed by applying the Criteria of Adverse Effect [36 CFR 800..5(a)], as follows:

- (1) An adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design,