



with the materials and finishes selected for other station elements during final design, and will be compatible with the adjacent property.

In order to minimize the significant visual impact of the rail alignment and the North Lake College Station on the Archstone Apartments and the Mandalay Place Neighborhood, DART and the City of Irving have agreed that the LRT line will cross Walnut Hill Lane at-grade. This eliminated potential significant visual impacts of an aerial alignment and station directly adjacent to the residential communities.

Within the North Lake College Station area, a 7-foot, solid visual barrier will be placed between the station platform and the apartment complex, and between the station parking and the Mandalay Place Neighborhood. DART will work with the community to determine the optimal placement of these barriers. The barriers will run roughly the length of the platform and the length of the parking area along the north side of the rail line. The barriers will be designed so as to permit pedestrian access to and across the platform from the north in the vicinity of the closed portion of Brangus Drive. Materials and finishes will be consistent with the materials and finishes selected for other station elements during final design, and will be compatible with the adjacent property.

In residential areas along the alignment between MacArthur Boulevard and Walnut Hill Lane, DART will mitigate significant visual intrusions through landscaping. Vegetation will be placed to break up views from the LRT to the residences. Additionally in this area, black vinyl-coated fencing will be used to reduce the visual impact of this feature. These mitigation treatments will reduce impacts to a level less than significant.

DART will also consider applying its Residential Betterments Policy to address concerns that may be raised in this area. This policy provides for enhancements above and beyond the identified mitigation measures for residential properties adjacent to the proposed LRT line.

## 5.7 ECOSYSTEMS

This section describes the potential impacts that could result from implementation of the No-Build or LRT Alternatives. The information used to analyze potential impacts included site surveys and a literature review.

### 5.7.1 Water and Wetland Impacts

All waters of the U.S. were delineated in August and September 2005 and June, 2006 by wetland biologists. Section 12.1.1.1 of the *Existing Conditions Technical Memorandum* (DART, October 2005) identifies the waters of the U.S. present within the project corridor. A summary of this information is presented in Section 3.11 of this Final EIS. The following impact evaluation for these waters of the U.S. is quantified based on the acreage or linear distance of each water feature that could be impacted.

#### No-Build Alternative

The No-Build Alternative would not impact any wetlands or other potentially jurisdictional waters of the U.S. because this alternative would not have any ground disturbance. The waters of the U.S. would remain as described in the *Existing Conditions Technical Memorandum* (DART, October 2005).

#### LRT Alignment

Within the project study area there are 24 bodies of water (including 18 waters and six wetlands); of these, 16 (14 waters and 2 wetlands) could be considered potentially jurisdictional waters of the U.S. Several of these water resources lie adjacent to the proposed construction corridor, but will be avoided. To minimize filling the water resources within this alternative, the preliminary designs indicate that all potential jurisdictional waters of the U.S, except for a minor tributary of Water 16, would be bridged. The tributary of Water 16, an intermittent stream that is a steep channel with no



continuous waterflow will be re-channeled for about 200 feet, and will be crossed with a culvert. The modifications of this tributary will improve both flow and capacity. The main channel of Water 16 and its associated floodplain would be bridged.

Preliminary engineering designs indicate that 11 water bodies would be crossed by the LRT Alignment. Infrastructure for one station (North Las Colinas) would cross one water body but does not impact it (**Table 5-12**). Total impacts to these water bodies would be dependent upon the size and number of support columns placed within the ordinary high water mark for each individual water body. Despite placing support columns into these water bodies, significant impacts are not expected. Given the current design of the project, the permanent impacts appear to be limited to Wetland A and Water 2 where bridge columns will be placed in the water areas. These bridge column impacts for Wetland A will total 435 square feet (0.01 acre) and 9,520 square feet (0.22 acre) for Water 2.

The remaining bodies of water lie adjacent to where the proposed construction is and would not receive any direct impacts. However, indirect impacts could occur via surface water runoff, which may transport sediment into these water bodies. During construction activities, potential erosion from soil disturbance will be reduced by the implementation of standard engineering best management practices, such as silt fences and hay bales around the site perimeter. These construction and mitigation measures will minimize and/or alleviate any potential negative effects resulting from erosion and subsequent sedimentation.

On DFW Airport property, the proposed project crosses one potentially jurisdictional U.S. water (Water 16 and its floodplain southeast of SH 161, Bush Turnpike). In an area outside the floodplain, the project will also cross a minor tributary to this water with a culvert, and re-channel it for about 200 feet. The project will bridge over the main channel of Water 16 and its floodplain with some support columns located in it (see Section 5.9.3 Floodplains). Final design of the project will ensure that neither normal flows nor expected high flow (the 1-2 year flood) velocity will increase as a result of the project. During the final design process, DART will coordinate with DFW Airport, USACE, and FEMA to ensure that these conditions are met. There are no wetlands located on airport property in the vicinity of the proposed project.

### **Stations**

There are eight proposed stations that were evaluated, two of which will be deferred. A ¼-mile radius around each station was analyzed, and any potentially jurisdictional waters of the U.S. were identified and labeled. **Table 5-12** identifies the types of waters of the U.S. present and the size of each within the proposed property acquisition for each station. The table lists the stations in order from east to west and includes the potentially jurisdictional waters of the U.S. within the proposed property acquisitions. One potentially jurisdictional water (Water 10) is located within the proposed property acquisition for the North Las Colinas Station.

The proposed project is within ¼-mile of two potentially jurisdictional U.S. waters (Waters 17 and 18 near the Belt Line Station), but will not have any direct impacts of acquisition or construction on these two resources.



<b>TABLE 5-12</b>					
<b>IMPACTS TO WATERS AND WETLANDS</b>					
<b>(INCLUDING POTENTIALLY JURISDICTIONAL WATERS OF THE U.S.)</b>					
<b>Project Area / ID</b>	<b>Classification <sup>1</sup></b>	<b>Crossing Type</b>	<b>Civil Station No.</b>	<b>Crossing Width (ft.)</b>	<b>Impacts (square feet)</b>
<b>RAIL ALIGNMENT</b>					
Water 1	POWHx	B	58 + 00	194	NA
Wetland A	POWHx	B *	55 + 20 to 79 + 80	-	435
Water 2	R2OWH	B	74 + 50	115	9,520
Water 3	POWHx	B *	79 + 00	53	NA
Water 5 (2 loc.)	POWHx	C	168 + 00	11	NA
		C	173 + 00	16	NA
Water 9	LIOWHx	B *	216 + 75	97	NA
Water 10	POWHx	C	228 + 40	141	NA
Water 12	R4SBC	B *	315 + 20	78	NA
Water 13 (3 loc.)	POWHx	B *	335 + 00	93	NA
		B *	340 + 50	151	NA
		B	355 + 50	56	NA
Wetland F	Emergent wetland	Unknown	356 + 50	-	NA
Water 16 (2 loc.)	R4SBC	C *	466 + 00	47	NA
		B *	472 + 75	23	NA
<b>STATIONS</b>					
<b>Loop 12 (Deferred)</b>					
	-	-	-	-	
<b>University of Dallas</b>					
	-	-	-	-	
<b>South Las Colinas (Deferred)</b>					
	-	-	-	-	
<b>Lake Carolyn</b>					
	-	-	-	-	
<b>North Las Colinas</b>					
Water 10	POWHx	B/C	283+ 10	27	NA
<b>Carpenter Ranch</b>					
	-	-	-	-	
<b>North Lake College</b>					
	-	-	-	-	
<b>Belt Line Road</b>					
	-	-	-	-	
<sup>1</sup> Based on the USFWS classification (Cowardin et al. 1979) as modified for National Wetland Inventory Mapping Convention. See <b>Table 3-30</b> in Chapter 3. NA = Currently not available at 10% design; limited to bridge support placement. B = Bridge without columns in crossing (clear span); B * = Bridge crossing with columns placed in the crossing. C = Existing culvert to be crossed, no impacts; C * = Culvert.					

Source: Geo-Marine, 2007

### Water and Wetlands Mitigation

As outlined in Federal regulations, wetland impacts must be avoided, minimized or mitigated. While the proposed alignment evaluated in this document is considered to be the alignment that would best satisfy the need for and purpose of transportation improvements in the corridor, it would nonetheless impact wetlands. Under the No-Build Alternative, wetland impacts would be avoided. However, it is not considered to be a feasible and prudent alternative because it does not meet the purpose and need established for the project





The project planning and development process has sought to utilize every available feasible design technique to minimize or eliminate wetland impacts. However, in the area where wetland impacts occur, the right-of-way necessary to accommodate the proposed project cannot be reduced any further nor can a narrower tract across the Elm Fork of the Trinity River be used to construct the bridge as part of the project. Much like the use of parkland described in Section 6.3 of this FEIS, impacts to wetlands cannot be avoided.

As depicted in **Figure 1-1**, the Elm Fork of the Trinity River divides the study area. Any alternative providing rail service to the Las Colinas Urban Center extending from the Northwest Corridor to Carrollton Line would require crossing over the Trinity River and its associated wetlands. The proposed site for the bridge represents an area of narrow constriction across the river, thereby resulting in reduced wetland impacts. Any alternatives on a new location would likely result in greater impact.

In addition to being located at a narrow crossing, the proposed bridge has access advantages over alternative locations. Spur 482 along with some unpaved roads can provide construction access to the site, reducing the need for new construction roads. Any alternatives on a new location would likely require a more extensive construction roadway network with greater wetland impact.

DART will incorporate design features where necessary to reduce or minimize impacts to waters and wetlands – these include: minimizing the number of piers/columns to the greatest extent possible; locating the piers/columns such that they do not conflict with waters and wetlands; the bridge structure will be located as close as permissible to TxDOT Spur 482 and will share TxDOT ROW where possible; and the bridge will be located along a narrow tract along the river to minimize fragmentation of waters and wetlands.

Preliminary engineering designs indicate that the combined direct wetland impact for the project will be 0.23 acres. However, Wetland A is designated as a forested wetland. As such, DART's aerial structure over this wetland could impact the function or value of this wetland. The area affected by the proposed project alignment is approximately 2,100 linear feet by approximately 40 feet wide, for a total area of approximately 84,000 square feet (1.93 acres, which includes the 0.23 acres of direct impact). As currently designed, the LRT alignment is an aerial structure with supporting columns placed 90 feet apart. The height of the LRT bridge above the wetland ranges from 20 to 35 feet. The structure is 3 to 5 feet higher than the parallel Spur 482 highway bridge structure (see Sheets 41-44 of Appendix C, Plan and Profile Drawings). This wetland will see some vegetation removal due to the construction of the LRT bridge (parallel to and north of the much wider Spur 482 bridge) and some additional vegetation may be lost through shading. Wetland A is 16.44 acres in size within the study area and extends well beyond. Despite the presence of the light rail structure, it is expected that the wetland will continue to be classified as a forested wetland.

Given the direct impact of 0.23 acres with potential additional impact of 1.70 acres due to loss of function or value, DART proposes to provide compensatory mitigation of 2.00 acres. DART's preferred method of wetland replacement is wetland banking. This would result in a more ecologically sound mitigation that provides for a higher function and value than what could be created by DART. The banked wetland would also be subject to continuous monitoring and maintenance, resulting in greater long-term success.

During final design DART will continue to investigate reducing both the direct and indirect impacts to wetlands. DART will coordinate with USACE on all water and wetland issues. Any changes developed during final design can be tracked and adjusted through DART's Mitigation Monitoring Program. Consultation with the USACE has been initiated in order to document the expected permits and mitigation needs. The USACE has reviewed and provided comment on the DEIS. These comments have been incorporated into this FEIS. Consultation with the USACE will



continue through final design to establish actions required in this undertaking. Upon completion of the FEIS, DART has agreed to submit a 30% Design package of the Elm Fork of the Trinity River Crossing to the USACE in order to initiate the permitting process. The Northwest Corridor to Irving/DFW project has been assigned Project Number 200400681 by the USACE.

DART and its contractors will follow the guidelines of the USACE Nationwide Permit 14, Linear Transportation Crossings. The guidelines stipulate that mitigation is required for any activity that impacts greater than 0.5 acres of stream channel for any single and complete project. Compensatory mitigation will be required if the project has more than minimal adverse effect to the aquatic environment.

To evaluate whether the proposed project meets the conditions of NWP 14, it is important to understand the definition of a "single and complete project". The following is the definition of a "single and complete project" as defined by 33 CFR 330.2(i):

*...the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. For linear projects, the "single and complete project" (i.e., a single and complete crossing) will apply to each crossing of a separate water of the United States (i.e., a single waterbody) at that location. An exception is for linear projects crossing a single waterbody several times at separate and distant locations: each crossing is considered a single and complete project. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies.*

Additionally, a pre-construction notification must be submitted to the USACE if the loss of waters of the U.S. exceeds 0.1 acres or there is a discharge in a special aquatic site, including wetlands (See terms and conditions of NWP 14 and NWP General Condition 27). Furthermore, a pre-construction notification is also required if listed species or critical habitat might be affected or is in the vicinity of the proposed project (NWP General Condition 17) or if the proposed project may have the potential to cause effects to historic properties (NWP General Condition 18)

Station impacts will follow guidelines of the USACE Nationwide Permit 39, *Commercial and Institutional Developments*, as of March 19, 2007 which require mitigation for any activity that impacts more than 0.5 acres of waters of the U.S. or 300 linear feet of stream bed for a single and complete project. A pre-construction notification must be given to the USACE under General Condition 27 of the permit if an area greater than 0.1 acres is to be impacted or if any open waters, including perennial or intermittent streams (below the ordinary high water mark) will be lost.

Under General Condition 27 of Nationwide Permits 14 and 39, a pre-construction notification would be given to the USACE for all bridged crossings and stations impacting stream channels that are intermittent, perennial, or ephemeral in nature. The notification will include a compensatory mitigation proposal to offset permanent losses of waters of the U.S. to ensure that those losses result only in minimal adverse effects to the aquatic environment and a statement describing how temporary losses of waters of the U.S. will be minimized to the maximum extent practicable. Additionally, based on the final design, any necessary mitigation plan and permit pursuant to USACE waters of the U.S. regulations will be implemented.

The USACE requires that all mitigation efforts be conducted at a minimum ratio of 1:1 (USACE 2000) to ensure that there is no net loss of functions and values. Mitigation efforts that could be implemented include stream channel/wetland enhancement and implementation of native vegetation buffers along the fringe of the water resource. Other mitigation efforts may include reducing the size of the project, establishing an upland vegetated buffer, and replacing losses of aquatic resource functions and values by creating, restoring, enhancing, or preserving similar functions and values, preferably in the same watershed. Other mitigation options include the in lieu fees program and mitigation banking. DART will coordinate mitigation efforts with the USACE



and prescribed measures will be incorporated into the design and the Mitigation Program. FAA guidance on federal actions as it relates to evaluating environmental impacts can be found in FAA Order 1050.1E, CHG 1, ***Environmental Impacts: Policy and Procedures*** and FAA Order 5050.4B, the ***National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions***. These FAA Orders and their provisions will be followed for those portions of the project located on Dallas-Fort Worth International Airport property. This includes required coordination with USACE during the environmental process to address any anticipated impacts to potential jurisdictional waters of the U.S. Water 16 is the only identified water body located on airport property that may be impacted by the project.

Filling and grading activities will be in compliance with the Texas Pollution Discharge Elimination System (TPDES) General Permit for Construction Activities. The TPDES prescribes a series of measures or best management practices (BMPs) that will serve to minimize impacts to waters of the U.S. as a result of construction in adjacent uplands. BMPs can include limiting the amount of disturbed earth so that potential for excessive erosion is minimized and sedimentation outside of the right-of-way is avoided, preserving existing vegetation wherever possible. Temporary erosion and sedimentation control measures such as silt fences, rock berms, and/or soil retention blankets will be implemented as needed prior to the initiation of construction. Permanent soil erosion control features will be constructed as soon as feasible during the early stages of the contract through proper sodding and/or seeding techniques. Disturbed areas will be restored and stabilized as soon as the construction schedule permits, and temporary sodding will be considered where large areas of disturbed ground will be left bare for a considerable length of time. These erosion control measures will be coordinated with the permanent soil erosion control features which are to be a part of the completed project to ensure effective and continuous erosion control throughout the construction and post-construction periods.

Executive Order (EO) 11990 – Protection of Wetlands pertains to federal actions as they regard wetlands. The purpose of EO 11990 is to "minimize the destruction, loss or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands". To meet these objectives, the EO requires federal agencies, in planning their actions, to consider alternatives to wetland sites and limit potential damage if an activity affecting a wetland cannot be avoided. The basic requirement of EO 11990 is that a Federal agency avoid construction or management practices that would adversely affect wetlands unless that agency finds that

- (1) There is no practicable alternative, and
- (2) The proposed action includes all practicable measures to minimize harm to the wetlands.

To demonstrate compliance with the Executive Order, the agency must address the two provisos above, provide opportunity for early public review by those who may be affected, and include its findings in its environmental or other appropriate decision documents.

As part of the NEPA process, and in compliance with this EO, the Draft EIS for the proposed project investigated a number of alignments to serve the corridor. Based on an assessment of a variety of factors described in the Alternatives Analysis (AA), the alignment presented in this Final EIS was selected as the preferred Build Alternative. The Final EIS presents the preferred Build Alternative and a No-Build Alternative for comparison. A final alternative was selected following the circulation of the Draft EIS and receipt of comments from the public and agencies, including the USACE. As directed by the EO, impacts to all wetlands located within the proposed project corridor have been identified and measures have been proposed to minimize impacts (e.g. by bridging or avoiding the wetland areas). These impacts have been presented to the public during the EIS preparation and review process.

In January 2001, the U.S. Supreme Court decision, *Solid Waste Agency of Northern Cook County (SWANCC) v. USACE*, changed the direction of the federal regulation of isolated wetlands under



the CWA. Previously, the USACE assumed jurisdiction over isolated waters of the US based on its 1986 preamble stating that migratory birds used these habitats. The "Migratory Bird Rule" provided the nexus to interstate commerce and thus protection under the CWA.

The USACE has established guidance for determining between isolated and adjacent wetlands. Wetlands that are bordering, contiguous, or neighboring another water of the US (specifically one that flows into navigable water) is considered adjacent. Additionally, wetlands that are within the 100-year floodplain of another water of the US are also considered adjacent. All other wetlands would be considered isolated and not jurisdictional under the CWA.

### **5.7.2 Long-Term Vegetation Impacts**

The vegetation varies greatly throughout the entire project corridor. The vegetation types include grassland, woodland, shrub land, riparian, and urban areas. Potential impacts to vegetation are estimated based on the number of acres of vegetation to be permanently replaced by structures.

Both the City of Dallas and the City of Irving have landscape requirements for development projects that include the number of trees needed to be included per area of development. These requirements will be followed in the station and parking areas of the project. DART will discuss mitigation requirements for the trees removed along the corridor line with the Dallas and Irving City Arborists once the plans are finalized. The City of Irving requires a tree removal permit and a site plan showing the locations of trees in and within 5 feet of the right-of-way and/or road work.

#### **No-Build Alternative**

Implementation of the No-Build Alternative would result in no direct or indirect impacts to the vegetation. The plant communities would remain as described in Section 12.1.1.2 of the **Existing Conditions Technical Memorandum** (DART, October 2005). A summary of this information is presented in Section 3.11 of this Final EIS.

#### **LRT Alternative**

During field surveys, there were five distinct plant communities delineated throughout the project area. The primary direct effect of implementing the LRT Alternative would be the loss of vegetation and subsequent wildlife habitat.

#### **Vegetation Mitigation**

Texas Parks and Wildlife Department (TPWD) has reviewed the project and offered recommendations to help minimize potential impacts to natural resources including vegetation. Site planning and construction techniques will be designed to avoid and preserve existing mature native trees and shrubs. To enhance the value of the proposed project to both wildlife and passengers and to aid in water conservation, native vegetation beneficial to fish and wildlife has been proposed by DART. To avoid soil disturbances, machinery and other vehicles will utilize nearby roadways and bridges when crossing drainages, wetlands, and creeks.

Construction activities would temporarily disturb vegetated areas and animals' habitat; however, long-term impacts would be mitigated through re-vegetation. Existing vegetation or habitat would be replanted along the disturbed project area. Replacement vegetation will utilize native species that are generally useful to wildlife. The replacement vegetation can provide habitat for numerous wildlife species. Areas of re-vegetation will be monitored to ensure that plantings are established to original condition.

The amount of vegetation removed, trampled or disturbed will be minimized to the greatest extent possible. The Cities of Dallas and Irving tree ordinances would be followed. A survey would be conducted during the final design phase to determine whether the felling of any protected trees is necessary. Based on this survey and the final design, any necessary mitigation plan and permit



pursuant to the tree regulations would be implemented. After final grading, all plant communities would be restored to the original condition.

These measures are included in DART's construction specifications and will be applied during and after construction of the project.

### **5.7.3 Wildlife Impacts**

Potential impacts to biological resources are estimated based on the amount and type of wildlife habitat disturbed.

#### **No-Build Alternative**

Implementation of the No-Build Alternative would result in no ground disturbance and therefore no alteration/disturbance of the landscape. As a result, wildlife and their associated habitat in the area would not be affected.

#### **LRT Alternative**

Coordination with TPWD and US Fish and Wildlife Service has been initiated. TPWD has reviewed the project and found minimal impact on fish and wildlife resources, including rare, threatened and endangered species.

#### **Wildlife Mitigation**

Most of the animals present within the project area are already subject to an environment that is regularly disturbed. Due to the animals' mobile nature, they would relocate in the event of habitat disturbance. Construction activities would temporarily disturb these animals' habitat; however, long-term impacts would be mitigated through re-vegetation.

TPWD has offered recommendations to help minimize potential impacts to natural resources. Site planning and construction techniques will be designed to avoid and preserve existing mature native trees and shrubs. The amount of vegetation removed, trampled or disturbed will be minimized to the greatest extent possible. To enhance the value of the proposed project to both wildlife and passengers and to aid in water conservation, native vegetation beneficial to fish and wildlife has been proposed by DART. To avoid soil disturbances, machinery and other vehicles will utilize nearby roadways and bridges when crossing drainages, wetlands, and creeks.

Existing vegetation or habitat would be replanted along the disturbed project area. Replacement vegetation will utilize native species that are generally useful to wildlife. The replacement vegetation can provide habitat for numerous wildlife species. Areas of re-vegetation will be monitored to ensure that plantings are established to original condition. On DFW Airport property, use of vegetation that is attractive to birds is discouraged since birds represent a safety risk to aircraft. In riparian areas, bridge spans will allow usable vertical and horizontal space for local terrestrial wildlife to cross under.

These measures are included in DART's construction specifications and will be applied during and after construction of the project.

### **5.7.4 Protected Species**

Eight species have a low to moderate potential of occurring within the project areas – Arctic peregrine falcon, interior least tern, migrant loggerhead shrike, whooping crane, wood stork, Texas garter snake, Texas horned lizard, and timber rattlesnake.

#### **No-Build Alternative**

The No-Build Alternative would not result in any ground disturbance or alterations to the potential habitat. Therefore, the No-Build Alternative would not have any impacts on protected species.



### **LRT Alternative**

Texas Parks and Wildlife has reviewed the project and found minimal impact on rare, threatened and endangered species.

The protected bird species are all migratory species. Some of the species (interior least turn, whooping crane, and woodstork) are believed to utilize the Trinity River and its tributaries, which lies within the project corridor, as a nesting or migratory route.

### **Protected Species Mitigation**

TPWD has offered recommendations to help minimize potential impacts to natural resources. Site planning and construction techniques will be designed to avoid and preserve existing mature native trees and shrubs. To enhance the value of the proposed project to both wildlife and passengers and to aid in water conservation, native vegetation beneficial to fish and wildlife has been proposed by DART. To avoid soil disturbances, machinery and other vehicles will utilize nearby roadways and bridges when crossing drainages, wetlands, and creeks.

Construction would temporarily disturb the animals' habitat; however, impacts will be mitigated through re-vegetation. Existing vegetation or habitat will be replanted along the disturbed project areas. Replacement vegetation will utilize native species that are generally useful to wildlife. The replacement vegetation can provide habitat for numerous wildlife species. Areas of re-vegetation will be monitored to ensure that plantings are established to original condition.

Additionally, through coordination during final design, preventative and/or mitigative measures in "sensitive areas" will be incorporated. These measures are included in DART's construction specifications and will be applied during and after construction of the project.

### **5.7.5 Aquatic Habitat Impacts**

The acreage or linear distance of surface water features quantifies the potential impacts to aquatic habitat. The area of potentially affected aquatic habitats is presented below.

### **No-Build Alternative**

The No-Build Alternative would not result in any disturbance to aquatic habitats.

### **LRT Alternative**

The preliminary designs indicate that all aquatic habitats would be bridged, with the exception of a tributary of Water 16 where the watercourse will be re-channeled for about 200 feet, and will be crossed with a culvert. Despite placing support beams into and re-channeling these aquatic habitats, no substantial impacts to these aquatic habitats are anticipated.

### **Aquatic Habitat Mitigation**

Potential aquatic habitat may be indirectly impacted as a result of construction-related surface water and soil runoff. Construction mitigation measures and use of best management practices will minimize and/or alleviate any potential negative effects to the aquatic habitat resulting from erosion and subsequent sedimentation (See Section 5.12.8).

Late coordination with Texas Parks and Wildlife Department (TPWD) requested that DART consider that the reconstructed channel of Water 16 consist of natural material and be planted with native vegetation rather than concrete lined or riprap lined and that the planting scheme should encourage wooded riparian development.

## **5.8 GEOLOGY AND SOILS**

A small percentage of soils along the proposed alignment (approximately 17%) have a high to moderate potential for urban development. The remaining soils (approximately 83%) have a low or very low potential for urban development, primarily due to hazards such as flooding, erosion, a