



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



very high shrink swell potential and low soil strength. As the 100-year and 500-year floodplain of the Trinity River is present along approximately 54% of the proposed alignment, soils in these areas are naturally prone to flooding and wetness. Impacts to the 100-year floodplain would be minimized by bridging these LRT segments or otherwise following all DART criteria to stay above or away from the floodplain area.

Eight stations are proposed for the LRT Line including two which will be deferred; all but one of which are situated on soils described as having a low or very low potential for urban development (USDA, 1980). Limitations to development ascribed to each of the soils present along the proposed line should be considered during Preliminary Engineering and final design.

Direct impacts to soils would include the removal of vegetation, exposure of the soil, mixing of soil horizons, loss of topsoil productivity in areas which are not currently paved, and short-term increased susceptibility to wind and water erosion. These construction activities can lead to an increased potential for erosion and sedimentation during the construction process.

As stated in Section 3.12.2, approximately 22 percent of the study area contains prime farmland soils, consisting of Houston black clay, Burleson clay, Frio silty clay, Silawa fine sandy loam, Trinity clay (occasionally flooded), and Heiden clay. As the study area is located in a developed, urban area with little to no agrarian use, however, the project is not subject to the **Farmland Protection Policy Act** (FPPA), and coordination with NRCS relative to this Act is not required. A copy of the completed Farmland Conversion Impact Rating Form for Corridor Type Projects (CPA-106) is included in Appendix D.

The underlying geology in the region consists primarily of Alluvium floodplain deposits, with smaller areas of Fluvatile terrace deposits. The Eagle Ford group underlies the western portion of the alignment. Proposed below-grade segments of the alignment would occur on Eagle Ford group and Fluvatile terrace deposits. The Eagle Ford group could contain paleontological remains. Care should be taken during trenching activities to protect archeological resources. The presence of sand and gravel deposits along the alignment should be considered in the design process.

Geology and Soils Mitigation

Increased runoff and erosion can be reduced with the establishment of protective vegetation as soon as possible following construction and the use of best management practices (BMPs). Typical BMPs used for erosion control include silt fences, strawbale dikes, diversion ditches, rip-rap channels, water bars, and water spreaders.

Texas Parks and Wildlife has reviewed the project and offered recommendations to help minimize potential impacts to natural resources including soils. These recommendations have been incorporated into mitigation measures. Potential impacts to geological resources are not expected to be significant. Mitigation measures enacted to protect floodplain resources would also protect floodplain soils categorized as having low potential for urban development. Where possible, in order to avoid soil disturbances, machinery and vehicles will utilize existing roadways and bridges when crossing drainages, wetlands, and creeks.

5.9 HYDROLOGY/WATER QUALITY

This section describes several hydrologic and water quality issues that must be addressed prior to construction. These issues include surface water quality impacts, impacts to groundwater resources, and floodplain impacts. The following sections provide information relating to the minimizing of impacts to these resources.

5.9.1 Surface Water Quality

As described in Section 3.3 and shown in **Figure 3-41**, the proposed alignment crosses one major river channel, two smaller streams, and one constructed lake. Because all of the crossings will be