



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 all aquatic habitats would be bridged. Despite placing support beams into these aquatic habitats, no substantial impacts to these aquatic habitats are expected.

Coordination with Texas Parks and Wildlife and US Fish and Wildlife Service has been initiated, and will continue through the Preliminary Engineering phase. Findings and recommendations will be incorporated into the design and Final Environmental Impact Statement.

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).

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 Fluvial 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 Fluvial 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.

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.

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 on new location, project construction has the potential to cause both short-term and long-term impacts to these water bodies, due to runoff from grading activities, removal or additions of fill materials, and incidental/accidental spills of mechanical fluids. Best management practices for erosion control, sedimentation control, and control of total suspended solids would be incorporated into the project design, in order to minimize impacts to water quality.

Operation of LRT on the proposed rail line would result in minimal impacts to surface water quality. Potential impacts to water quality could result from the impervious surfaces of station platforms and parking areas associated with the project, if not adequately addressed. Storm water run-off from platforms could contribute to erosion and sedimentation problems adjacent to station sites. Run-off from parking areas could contain anti-freeze, lubricating fluids, gasoline and other petroleum hydrocarbons associated with automobiles. Mitigation of these potential impacts is addressed below.

The amount of non-point source contaminants that automobiles contribute to the surface water in the project area should be reduced, since implementation of the proposed project would reduce the number of automobiles on area roadways. Water quality and runoff during construction is discussed in more detail in Section 5.12.

Mitigation of Surface Water Quality Impacts

Prior to construction, coordination with the USACE will be initiated to allow the USACE to evaluate potential channel impacts and mitigation options. Additionally, DART will be required to obtain the necessary permits to proceed with construction. The issuance of storm water discharge permits under the Texas Pollutant Discharge Elimination System (TPDES) is administered by the Texas Commission on Environmental Quality (TCEQ). Under TPDES' General Permits for Storm Water Discharges from Construction Activities, the TCEQ requires the development and implementation of a Storm Water Pollution Prevention Plan (SW3P). The plan is designed to reduce pollution at the source before it can bring about environmental problems. A SW3P will be prepared by DART prior to final design submittal.

Consultation with the USACE will also be necessary to evaluate permitting and mitigation needs under Section 404 of the **Clean Water Act**. If a Section 404 permit is required, the project would