



3.13 HYDROLOGY AND WATER QUALITY

3.13.1 Floodplains

Floodplains are lowland areas adjacent to water bodies, which are inundated during floods. Floodplains provide floodwater storage, reduce flood velocity and peaks, collect and filter sediments and pollutants, and recharge groundwater sources. They also provide habitat for a variety of flora and fauna, serving as important travel corridors for migrating birds and urban wildlife. Construction within a floodplain reduces its capacity for floodwater storage and infiltration, as well as its value as habitat.

The Federal Emergency Management Agency (FEMA) requires municipalities that participate in the **National Flood Insurance Program** to adopt floodplain ordinances that prohibit development in the existing 100-year floodplain (FEMA, 2005). The City of Irving and Dallas County are participants. Flood zones have been established by FEMA and are shown on the agency's Flood Insurance Rate Maps (FIRM).

Portions of the study area lie adjacent to or cross the 100-year floodplain of the Elm Fork of the Trinity River and its tributaries. **Table 3-38** summarizes the locations at which the Study Area crosses or abuts the 100-year floodplain. **Figure 3-41** displays the areas of potential flooding along the Study Area as established by FEMA.

TABLE 3-38 FLOODPLAIN CROSSINGS			
Map ID	Associated Water Feature	Location	Extent ¹ (linear feet)
1	South Fork of Hackberry Creek	The northern fork of the route crosses the floodplain at SH 161,	490 feet (cross)
2	Cottonwood Branch	The route crosses this floodplain southeast of the intersection of SH 114 and Northwest Highway.	260 feet (cross)
3	Elm Fork of the Trinity River	The route enters the floodplain after intersecting Rochelle, exiting 630 ft. later, and then continuing south to SH 114. Paralleling SH 114, the route travels southeast, crossing the floodplain again (320 ft.), and continuing until it meets Spur 482, where it turns northeast. Approximately 2/3 of a mile after joining Spur 482, the route enters the floodplain. After 3,650ft., it exits, running adjacent to the floodplain for another 1,920 ft.	4,600 feet (crossed three times by the alignment) 1,920 feet (adjacent)

¹ Linear distance of floodplain crossing and, where relevant, distance of linear encroachment.

Source: FEMA, 1986