



Recommendation for: Overbank Reach Lengths

Goal: To determine the appropriateness of allowing left and right overbank reach lengths to equal the value for channel reach lengths.

Recommended Procedure: Overbank reach lengths must be calculated independently of channel reach lengths. Overbank reaches vary as channels meander and will not equal channel reach lengths in the vicinity of a bend or meander. A rule of thumb in determining the overbank reach length is to calculate the length of the overbank flow along a path connecting points located one third of the distance from the high bank to the SFHA Zone AE limit.

Assumptions: No assumptions are made regarding this information.

Testing Procedure: Overbank reach lengths for Greens Bayou (P100-00-00) were set equal to channel reach lengths in the X1 records of the effective FIS model (HEC-2).

Test Results: Figure 1 shows the differences between the calculated water surface elevations during the occurrence of the 1-% flood for the effective and "equal overbank" model. In the lower reaches of Greens Bayou, this difference approaches a maximum of one foot and is above 0.1 feet for approximately eight miles.

It may be expected that there would be approximately the same number and magnitude of positive and negative values. If a channel centerline and overbanks have the same sinuosity and most of the conveyance is within the channel banks, then the overall reach lengths would tend to be equal along the entire drainage course. During the occurrence of the Base Flood Event on watersheds in Harris County, the overbanks contribute significantly to the overall conveyance. The flow paths in the overbanks do not follow the meanders of the channel but follow a more direct and linear path. This is represented appropriately in the Effective FIS for Harris County where both LOB and ROB reach lengths are shorter than the channel reach lengths.

Final Notes: No additional notes.

Figure 1: Comparison of Computed Water Surface Elevations during the Occurrence of the Base Flood Event for Overbank Reach Lengths Equal to Channel Reach Lengths Greens Bayou (P100-00-00)

