

Florida International University
Department of Civil and Environmental Engineering
CGN5930: Unsteady Flows in Rivers and Pipe Networks
Instructor: Arturo S. Leon, PhD, PE, D.WRE

Mini Project 3, Spring 2019

Name of Student: _____ **Due Date:** 03/27/2019

1. **Mini-project:** For this Mini-project, you will use the 2D unsteady HEC-RAS model and the inflow hydrographs of HW2/MP2 (1D Unsteady HEC-RAS model).
 - (a) Assuming that there is a waterfall at the downstream end of Lower Reach, **provide recommendations** to mitigate floods in the urban area adjacent to the Baxter River shown in Fig. 1 (e.g., provide locations and heights of levees to avoid/minimize flooding).
 - (b) Assuming that the first 10 km river stretch downstream of Lower Reach has a near-constant cross-section and longitudinal slope, provide recommendations to mitigate floods in the urban area adjacent to the Baxter River shown in Fig. 1 (e.g., provide locations and heights of levees to avoid/minimize flooding). The average longitudinal slope of this 10 km river stretch is 0.0001.
 - (c) Compare your results with the 1D steady (HW1/MP1) and 1D unsteady HEC-RAS (HW2/MP2) results and discuss the similarities and differences.
- The data for the Baxter River can be downloaded from http://web.eng.fiu.edu/arleon/Teaching_unsteady_rivers.html
Please make sure you state your assumptions.

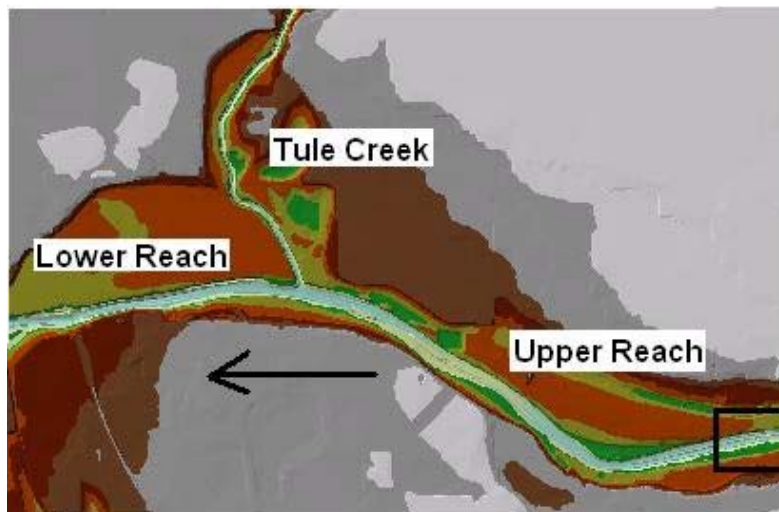


Figure 1: Plan view of Baxter River