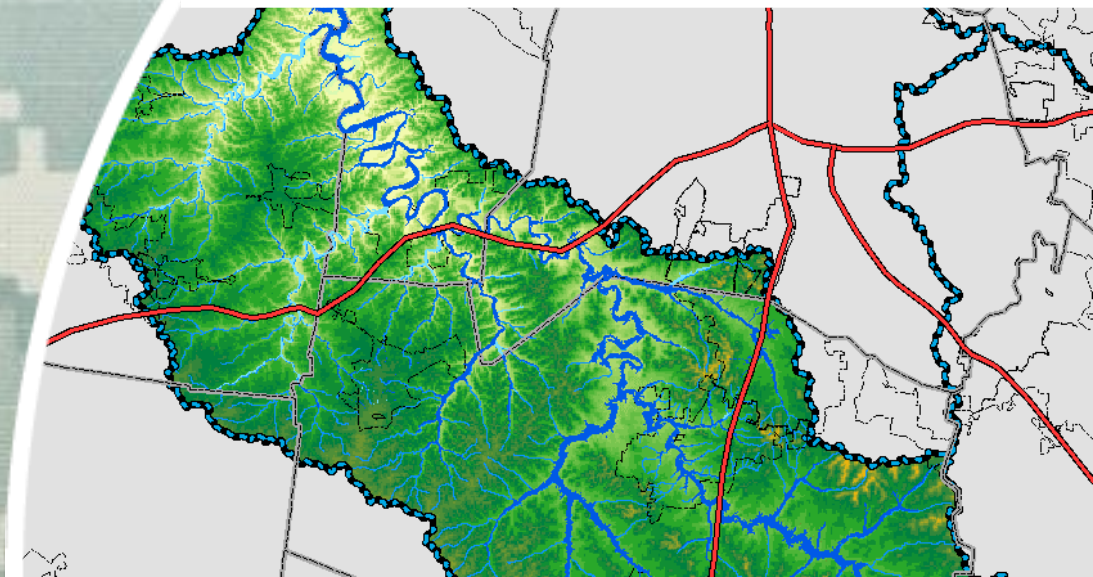
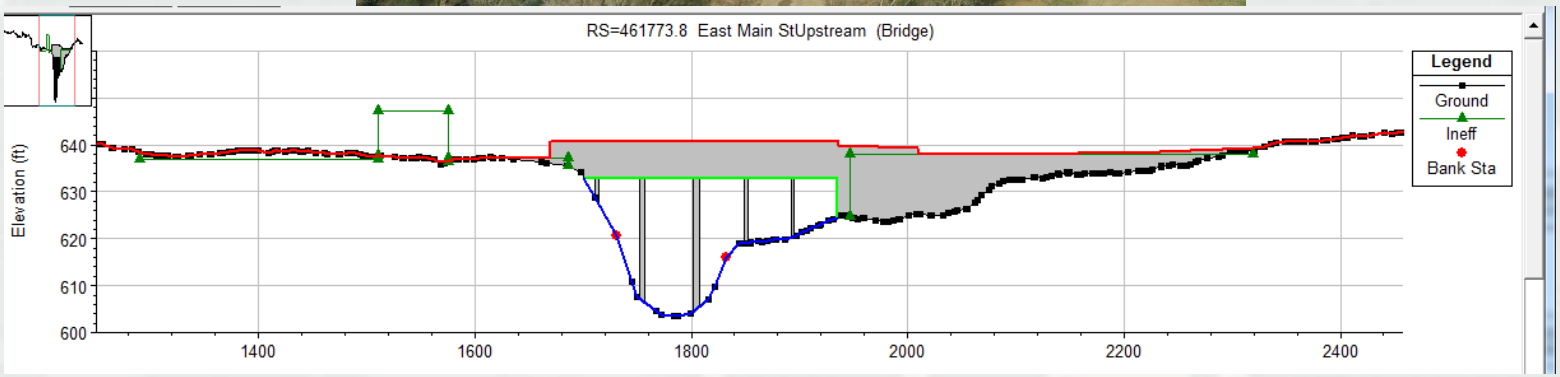
Harpeth River Watershed
Feasibility Study
Recommended Alternatives for the City of Franklin

August 2016

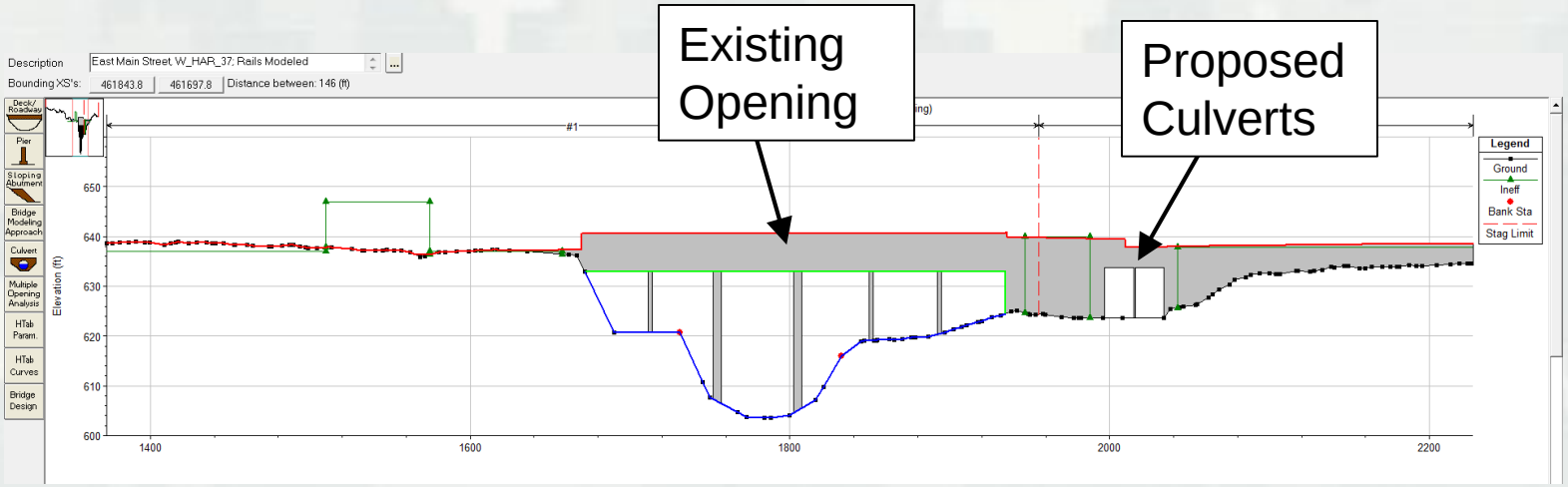


US Army Corps of Engineers
BUILDING STRONG®

Franklin Road Bridge Existing Conditions

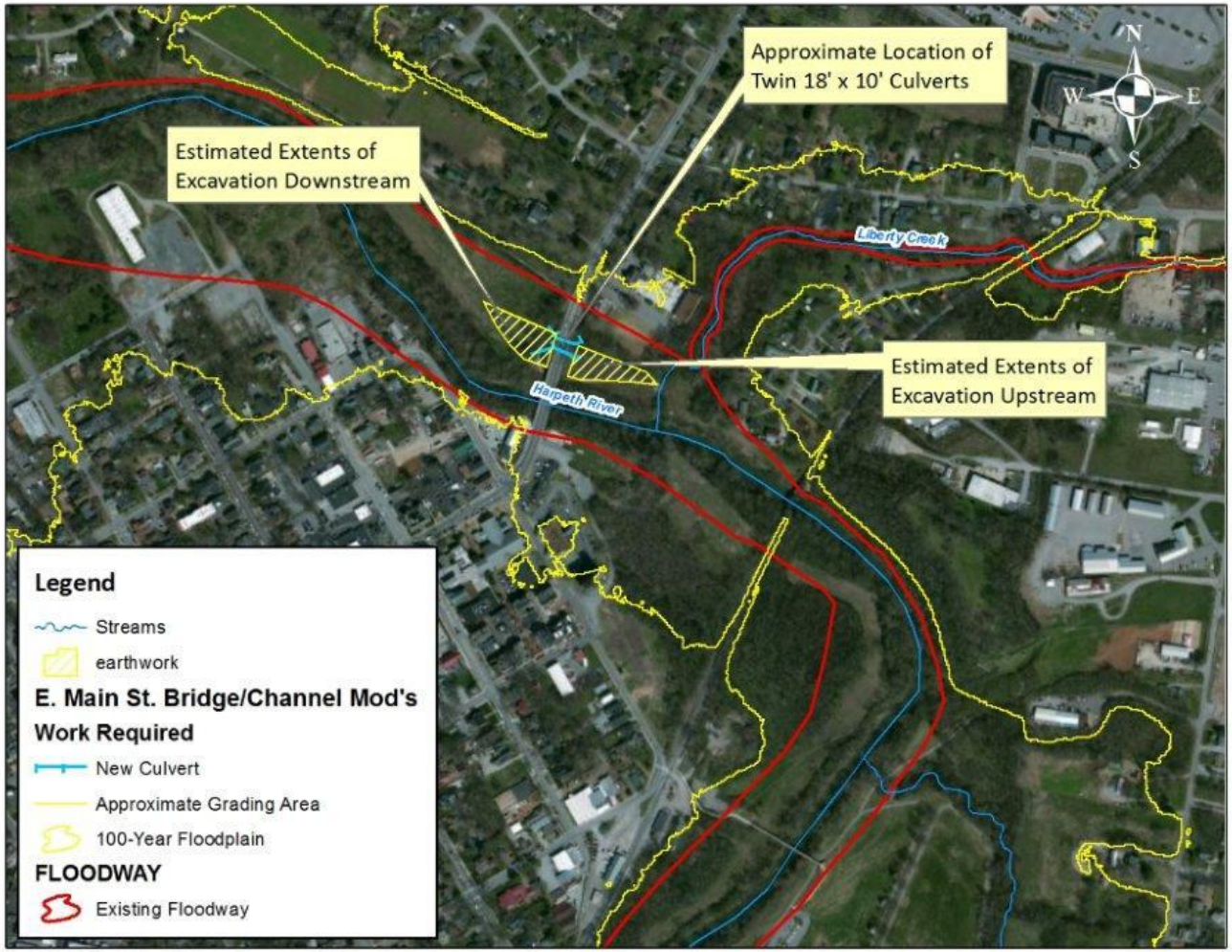


Franklin Road Bridge Channel Modification



- Construction of two 10’ x 18’ culverts on the right overbank for additional high-flow capacity.
- 52’ length
- Excavation needed upstream and downstream of Franklin Road to allow floodwaters to flow through the culverts.

Franklin Road Bridge Channel Modification



Franklin Road Bridge Channel Modification

- Project prevents 30 homes (6 in Reach F-3 and 24 in Reach F-4) from receiving damages at the 100-year return period, plus lowers the flood elevation for numerous other structures.

- Total project cost is **approximately** $1M. Cost to the City of Franklin is $350,000.

- Benefit-to-Cost Ratio of 2.97

Franklin Road Bridge Channel Modification

Feet of Flood Reduction with Constructed Project			
Location	**10-yr Return Period**	**25-yr Return Period**	**100-yr Return Period**
Upstream of East Main St Bridge	1.06	1.31	2.06
USGS Gage: Harpeth River at Franklin, TN	0.68	0.93	1.17
Near Carnton Lane	0.59	0.81	1.02
Mack Hatcher Memorial Parkway	0.34	0.47	0.65

Takeaways

- Structural project provides the following benefits:
  - •Removes 30 homes from the 100-yr floodplain.
  - •Reduces 100-year flood stages by 1-2 feet for much of the City's affected population.
  - •Reduces Franklin's overall average annual damages by 16%. Reach F-4's annual damages are reduced by 30%.

- Total Estimated Project Cost of $1M, Franklin's share is 35% actual cost.

- No environmental impacts anticipated.