

QUESTIONS AND ANSWERS
RFQ # 13-010-24
BIG CREEK DRAINAGE BASIN WATERSHED STUDY

- 1) The RFP mentions that channel cross-sections will be provided for Tipton County. Will the consultant likely need to perform field survey to collect channel cross-sections in Shelby County?

Most of the cross sections have been determined by the previous studies. However, there may be some need to do updated, closer interval cross section at some of the prior or newly identified prospective project sites.

- 2) Does the County anticipate that the past studies mentioned in the RFP can be leveraged for the Watershed Study, or does the County anticipate that new hydrologic and hydraulic analysis will be required?

Areas that have not had significant land use changes or topographic alteration can use previous data, but areas that have significant upstream changes might need to be restudied.

- 3) Regarding the past studies, can you elaborate on the available information? Specifically, what watershed modeling has been done and roughly how long ago? (i.e., HEC-HMS ~2008).

Big Creek Hydraulic Study above Old Woodstock Cuba Road Bridge 2012 by Barge Waggoner Sumner Cannon Feasibility Study on Big Creek and Tributaries 2006 by Corps of Engineer Memphis Metro Reconnaissance Report 1999 by Corps of Engineers Supplemental Section 905(b) Reconnaissance Study Millington and Vicinity Area 2002 by Corps of Engineers

- 1) The RFP mentions that channel cross-sections will be provided for Tipton County. Will the consultant likely need to perform field survey to collect channel cross-sections in Shelby County?

Yes. Field survey data will be necessary for some channel cross sections in Shelby County.

- 2) Does the County anticipate that the past studies mentioned in the RFP can be leveraged for the Watershed Study, or does the County anticipate that new hydrologic and hydraulic analysis will be required?

Areas that have not had significant land use changes or topographic alteration can use previous data, but areas that have significant upstream changes might need to be restudied.

- 3) Regarding the past studies, can you elaborate on the available information? Specifically, what watershed modeling has been done and roughly how long ago? (i.e., HEC-HMS ~2008).

EXISTING STUDIES

1969-1972 – Wolf and Loosahatchie Rivers and Nonconnah Creek, Tennessee and Mississippi, Study. This study was a general investigation initiated under the authority of a Senate Public Works Committee Resolution dated October 3, 1969.

In summary, there were four congressional resolutions directing study of the area. The last resolution, dated September 29, 1972, authorized a joint investigation by the Department of the Army and the Department of Agriculture. In this study, the Big Creek drainage basin was studied as part of a much larger study, which included the Wolf and Loosahatchie Rivers and Nonconnah Creek. Various alternative plans of improvement were investigated along Big Creek and Casper Creek in this study. Within the Corps' area of responsibility, none of the alternatives considered were determined to be economically feasible except for work that could be implemented by others. These improvements included clearing and snagging of Casper Creek by the U.S. Navy, with the assistance of the Soil Conservation Service, in the vicinity of the Millington Naval Air Station, and the construction of a levee along Big Creek in the vicinity of the naval facilities by the U.S. Navy with the Corps acting as the construction agent.

1973 - Big Creek Section 208 Study. In October 1973, the Memphis District completed a report under the authority of Section 208 of the 1954 Flood Control Act, as amended, at the request of the City of Millington. A clearing and snagging project was recommended along approximately 2.4 miles of Big Creek upstream of U.S. Highway 51. The recommended project was constructed in 1975.

1974 – Flood Plain Information Report, Big Creek and Tributaries, Vicinity of Millington, Tennessee. In August 1974, the Memphis District completed this report at the request of the State of Tennessee and the City of Millington. This report provided data on flood potential and flood hazards that could be used for land use planning and management decisions. The report included a history of flooding in the Millington area and identified those areas that were subject to possible future floods.

1974 – North Fork Creek Section 205 Study. In March 1974, the Memphis District initiated feasibility studies to investigate the flooding problems along North Fork Creek under the authority of Section 205 of the 1948 Flood Control Act, as amended. This study was performed at the request of the City of Millington. In November 1974, Shelby County, Tennessee completed a channel enlargement along North Fork Creek in the reach from its mouth to U.S. Highway 51. Hydraulic and economic analyses conducted in the study indicated that the enlargement had reduced the flood damage potential along North Fork Creek and that any additional improvement would not be economically justified. The study was subsequently terminated.

1981 – Millington, Tennessee Section 22 Flood Damage Potential Study. In March 1981, the Memphis District completed this report at the request of the State of Tennessee, Department of Health and Environment, Division of Water Treatment. This report presents a summary of the investigation and findings regarding the flood damage potential in the City of Millington.

1981 – Flood Insurance Studies (FIS) for the City of Millington and Shelby County, Tennessee. These studies, published by the Federal Emergency Management Agency (FEMA), provided the results of an investigation of the existence and severity of flood hazards in the City of Millington and in the unincorporated areas of Shelby County. These studies aid in the administration of the National Flood Insurance Act of 1968 and the Flood Disaster Act of 1973. The effective dates of the FIS studies for Millington and Shelby County are March 1981 and December 1982, respectively.

1989 – Big Creek Section 205 Study. In 1989, the Corps of Engineers conducted a study in response to the December 1987 flooding along Big Creek under the authority of Section 205 of the 1948 Flood Control Act, as amended. The recommended project was an earthen levee extending along the right (north) bank of Big Creek approximately 5,300 linear feet, just south of the City of Millington. Construction of approximately 5,600 linear feet of a levee along the right bank of Big Creek was completed in September 1991. The levee extends from just upstream of Highway 51 (Mile 8.28) to just downstream of the IC Railroad (Mile 9.37). Modifications to the levee construction were required to address problems with the culvert outlets and were completed in June 1995. Continental Engineering, a local engineering firm, noted in their 2001 report that this levee provides a level of protection against a 100-year frequency event, but would not totally prevent the damaging affects of the event of 1987.

1994 – Comprehensive Drainage Plan. With assistance from the Corps of Engineers, the City of Millington, the Chickasaw Basin Authority (CBA), and the Shelby County Government, developed a comprehensive drainage plan to address drainage issues facing the City of Millington. The plan recommended the construction of a number of earthen dams on the contributing tributaries to Big Creek. One of these structures, Chickasaw Basin Authority Site #5 (CBA #5), was constructed on North Fork Creek in the summer of 1994. CBA #5 is a dry basin type structure that does not impound permanent water, other than the pond created in front of the dam due to the excavation of borrow material. None of the other sites that were proposed in the CBA study have been constructed.

1996-1999 – Memphis Metro Area, Tennessee and Mississippi Reconnaissance Study. This study was a general investigation initiated under the authority of a U.S. House of Representatives Committee on Transportation and Infrastructure resolution, adopted March 7, 1996. Under this study, the Big Creek drainage basin was studied as a small part of a much larger overall study area that encompassed approximately 2,600 square miles. The Congressional study resolution tasked the Corps of Engineers to evaluate the effectiveness of existing improvements and to determine the need for additional improvements to prevent flooding from storm water, to restore environmental resources and to improve the quality of water entering the Mississippi River and its tributaries. Because local interests primarily reported problems pertaining to increased runoff, higher water surface elevations, and changes in floodplain and floodway, the primary focus of the study was flood damage reduction, with consideration for urban drainage and environmental restoration. Because of the vast study area and myriad of problems, only five (5) streams initially were selected for detailed analysis. While Big Creek is located within the study area, it was not one of the streams analyzed in detail because it had not experienced significant flood damages within a few years prior to the reconnaissance study phase, mainly because Big Creek has enlarged itself in some places. The reconnaissance report for the Memphis Metro Area, Tennessee and Mississippi study was completed in March 1999 and certified in April 2001, after a local sponsor was identified for feasibility-level studies.

1999 - Memphis Metro Reconnaissance Report by Corps of Engineers

2001 - Flood Control Structure Feasibility Report for Chickasaw Basin Authority Sites #2 and #4. Continental Engineering, working as consultants for the City of Millington and the Chickasaw Basin Authority, investigated two other sites identified in the CBA study report, dated August 2001. The sites investigated were CBA #2, located on Royster Creek just south of the Tipton County/Shelby County line, and CBA #4, located on Big Creek upstream of the confluence with Crooked Creek. The study used year 2020 land use projections, which were revised to reflect the dramatically increasing urbanization

occurring in the drainage areas investigated, areas that are currently primarily agricultural. This study, looking at only flooding issues, determined that the benefit/cost ratios for constructing CBA Sites #2 and #4 are 1.1 and 1.3, respectively.

2002 – Section 905(b) Analysis, Expedited Reconnaissance Report. This was a supplemental reconnaissance report prepared by the U.S. Army Corps of Engineers, Memphis District specifically for the Millington and Vicinity (Big Creek Drainage Basin) area under the authority of the Memphis Metro Area, Tennessee and Mississippi study. One feasible alternative plan was determined to address problems due to erosion along Big Creek in the vicinity of the Highway 51 bridge. The report was completed in October 2002 and approved in December 2002.

2002 - Supplemental Section 905(b) Reconnaissance Study Millington and Vicinity Area by Corps of Engineers

2004 – Section 205, Flood Damage Reduction Study, Munford, Tennessee, Milestone Report. This report was prepared by the U.S. Army Corps of Engineers, Memphis District in response to a request by the City of Munford to investigate possible solutions to repeated flooding problems in the area. The milestone report was completed in September 2004 and approved in December 2004. At least one feasible alternative was determined to proceed into developing a Project Management Plan and executing a feasibility cost share agreement. No local sponsor has been identified to cost share the study. Local interests are seeking separate authorization for the design and construction of flood control improvements in the area.

Existing Projects

1966 – Soil Conservation Service Reservoir. The Soil Conservation Service constructed a reservoir in the headwater area of Casper Creek that provides limited flood storage capacity.

Prior to 1969 – Local interests straightened and dredged the Big Creek Drainage Canal over most of its length at various times.

1974 – North Fork Creek Channel Enlargement. Shelby County completed approximately 2.4 miles of channel enlargement along North Fork Creek from its mouth to Highway 51.

1975 – Channel Clearing and Snagging. The Corps of Engineers completed approximately 2.4 miles of channel clearing and snagging along Big Creek under the authority of Section 208 of the 1954 Flood Control Act, as amended. The limits of this improvement are between Highway 51 (stream mile 8.47) and stream mile 10.87.

1980 – Channel Clearing and Snagging. The Soil Conservation Service and the Chickasaw Basin Authority completed about 6.5 miles of vegetative clearing along Big Creek. The limits of this improvement are between Raleigh-Millington Road and approximately 0.2 miles upstream of Millington-Arlington Road.

1983 - Channel Clearing and Snagging. The Soil Conservation Service and the Chickasaw Basin Authority completed about 1.2 miles of vegetative clearing along Casper Creek. The limits of this improvement are between the mouth of Casper Creek and Navy Road.

1983 - Channel Clearing and Snagging. The Soil Conservation Service and the Chickasaw Basin Authority completed about 6.2 miles of vegetative clearing along Crooked Creek. The limits of this improvement are between the mouth of Crooked Creek and Mudville Road.

1984 – Big Creek Levee Construction. The Corps of Engineers, acting as a construction agent for the U.S. Navy, constructed a levee along the right (north) bank of Big Creek to protect the Naval Air Station from flooding. The levee extends in an east-west direction along Big Creek from stream mile 10.2 to 11.8 and ties into an existing levee that extends in a north-south direction.

1991 – Big Creek Levee Construction. The Corps of Engineers constructed approximately 5,600 linear feet of a levee along the right bank of Big Creek, adjacent to the City of Millington. The levee was completed in September 1991.

1994 – Chickasaw Basin Authority Site #5. Chickasaw Basin Authority Site #5 (CBA #5), an earthen dam, was constructed on North Fork Creek in the summer of 1994. CBA #5 is a dry basin type structure that does not impound permanent water other than the pond created in front of the dam due to the excavation of borrow material.

1995 – Big Creek Levee Modifications. Modifications to the 1991 levee construction were required to address problems with the culvert closures. The modifications were completed in June 1995.

- 4) What is the County's main concern regarding water quality in the Big Creek Basin?

Bank stabilization for sediment reduction

However, we need some clarification on dates and documents needed. Per the application form it states the deadline as November 15, but your website shows November 20. Also, on reading the documentation it is not clear if we are required to have the EOC certification for this specific project or not.

The RFQ was originally due on November 15, 2012 but was extended to November 20, 2012, to give bidders more time to submit a response. You do not need an EOC number to submit a response but you need one to be awarded a contract.

NOTE: Questions are in black and answers are in red.