

# Appendix D – Cost

## Mortar Creek, Quitman, AR Section 14 Integrated Draft Detailed Project Report and Environmental Assessment

March 2024



**US Army Corps  
of Engineers**

Little Rock District

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# EXECUTIVE SUMMARY

**LOCATION AND DESCRIPTION:**

Mortar Creek is located in Faulkner County, Quitman, AR. The primary purpose of the Mortar Creek Emergency Streambank Protection study is to develop a plan to protect the bridge over Mortar Creek at Mortar Creek Road southeast of Quitman, AR in Faulkner County, AR from encroaching erosion. The erosion around the abutments seems to be due to the current alignment of Mortar creek and the roadside ditches. The newer bridge appears to be built for a stream with lower flows than what (flows) appear to be currently experienced at the crossing; therefore, the old bridge acts as a constriction in the channel. The goal of this section 14 project is to remove the old bridge abutments and place riprap on the approach of the existing bridge upstream where the old abutments are removed as well as overlay riprap around all four wingwalls of the current bridge.

**COST SUMMARY:**

The costs for Alternate 3 (Protect bank and remove former bridge abutment) and Alternates 5 (Build out and protect bank and remove former bridge abutment), 7 (Remove former bridge abutment, protect bank upstream, and redirective structures downstream), and 8 (Relocate Bridge) are below.

**Table 1 – Final Array of Alternates with costs (alternative stage)**

**Alternate 3 – Protect bank and remove former bridge abutment  
(Measures A and B)**

Alternate 3 Raw (construction) cost (alternative stage)	\$ 81,000
<b>Alternate 3 First total cost (incl. const, RE, PED, CM) (alternative stage)</b>	<b>\$ 274,000</b>

**Alternate 5 – Build out and protect bank and remove former bridge  
abutment (Measures A, B, and C)**

Alternate 5 Raw (construction) cost	\$ 95,000
Alternate 5 First total cost	\$ 293,000

**Alternate 7 – Remove former bridge abutment, protect bank upstream,  
and redirective structures downstream (Measures A, B, and D)**

Alternate 7 Raw (construction) cost	\$ 103,000
Alternate 7 First total cost	\$ 305,000

**Alternate 8 – Relocate Bridge (Measure K)**

Alternate 8 Raw (construction) cost	\$ 961,000
Alternate 8 First total cost	\$ 1,693,000

It should be noted that the only (raw) cost difference between Alternate 3 and Alternates 5 and 7 is the increase in fill removal and added stone riprap, all other costs generally remain the same. The raw costs are for comparison purposes only and do not include contingency, land costs, PED or Construction Oversight (which are included in project first total costs). The listed first costs include contingency, Real Estate (RE), Planning, Engineering, and Design (PED), and construction oversight/management (CM). All scenarios assumed the same contingency rates determined from the ARA for Alternate 3, rough PED and CM rates not yet reviewed by the PDT.

Following the Alternative stage, the costs were further refined to include more project specific assumed means & methods needed to complete the project along with PED and Construction Management costs determined by the PDT.

**Table 2 – Alternate 3 with costs (TSP stage)**

<b>Alternate 3 – Protect bank and remove former bridge abutment (Measures A and B)</b>	
Alternate 3 Raw (construction) cost (TSP stage)	\$ 156,000
<b>Alternate 3 First total cost (incl. const, RE, PED, CM) (TSP stage)</b>	<b>\$ 388,000</b>

## **COST BACKGROUND**

The cost development software tool (MII) cost is developed using October 2023 Price Levels with material costs increased to account for inflation, 2022 labor rates, and 2022 equipment rates, with labor and material rates adjusted for inflation per ENR to current costs. Midpoint dates for the construction contract are developed in conjunction with the PDT. The estimate is prepared in accordance with ER 1110-2-1302 Civil Works Cost Engineering, dated 30 June 2016. The costs are escalated in accordance with the above Engineering Regulation and EM 1110-2-1304 Civil Works Construction Cost Index System (CWCCIS), dated 30 September 2023.

This estimate assumes there are no Hazardous, Toxic, and Radioactive Wastes. The Operation and Maintenance (OM) costs are not included. An Abbreviated Risk Analyses (ARA) was performed.

The following markups are included:

1. The following contingencies are included and based on the ARA unless otherwise noted:
  - a. Construction: 34%
  - b. Lands & Damages (per Real Estate): 10.7%
  - c. PED: 21%
  - d. Construction Management: 12%
2. 60% productivity rate (due to limited work area and remote location)
3. Sales Tax: 9.5%

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## **COST FIGURES AND TABLES**



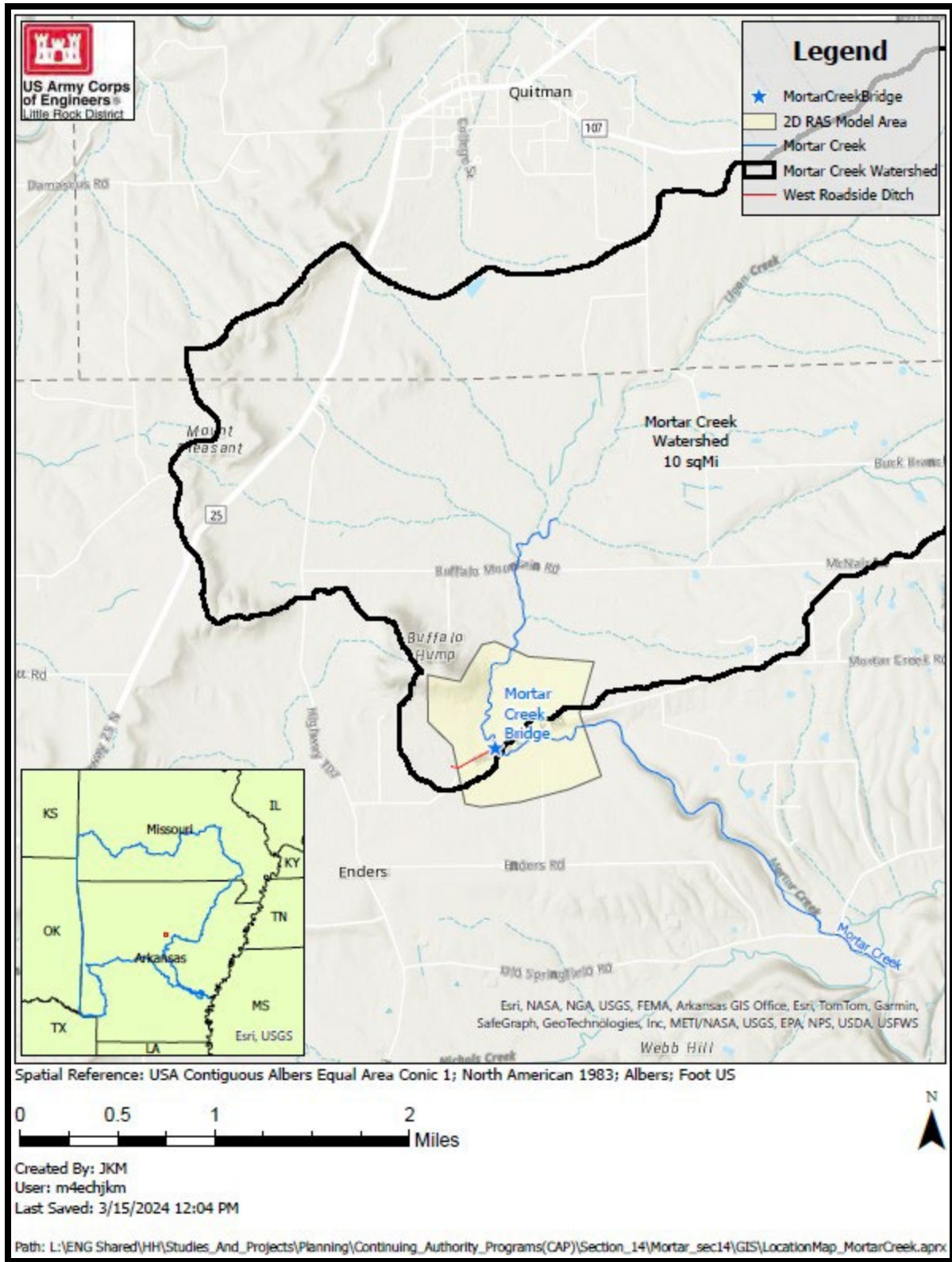
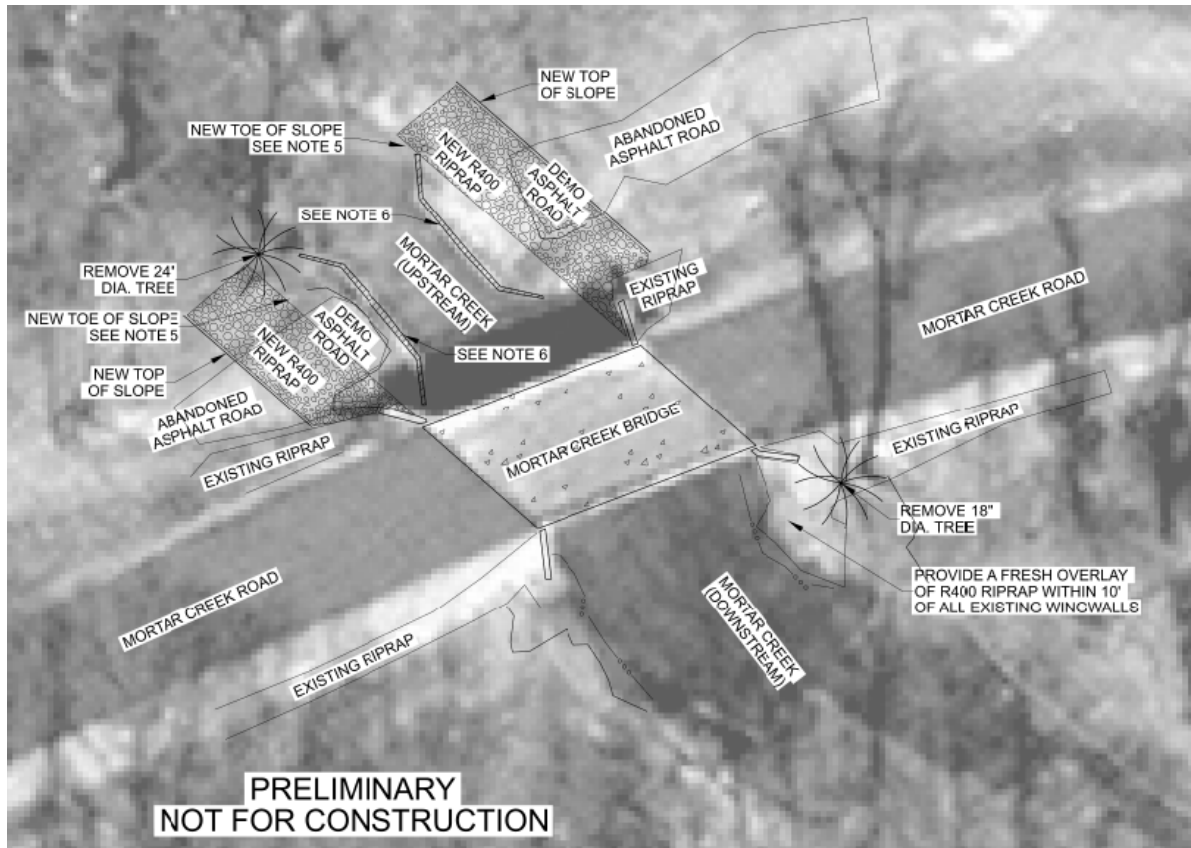


Figure 1 – Mortar Creek Location Map



**Figure 2 – Alternative 3 – Protect Bank and Remove Bridge Abutment Plan**

**ADDITIONAL COST NOTES:**

The following cost components should be noted:

1. The listed costs assume work is done by contractor and/or sub-contractor.
2. If the City chooses to use city personnel (e.g. maintenance crews) for labor in accomplishing this project, the costs may be significantly reduced for all components.
3. The most significant costs of any alternative (3, 5 or 7) are the bridge abutment demolition and the Class B Stone Riprap.
4. It should be noted that none of the raw costs listed include real estate costs. Those are included separately.