

Appendix H
Cost

DRAFT

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Appendix H. Cost

1 COST ESTIMATE SUMMARY

1.1 GENERAL

The scope of this study is to complete a general reevaluation of the University City portion of the authorized project for the River Des Peres river system in University City, Missouri. It is a single-purpose study for flood risk reduction. This reevaluation will result in a report that will either update and confirm the authorized project or make a new recommendation. The study will evaluate and compare the benefits, costs, and impacts (positive or negative) of alternatives including the No Action Alternative. The study will identify whether an economically justified plan exists to reduce economic damages and life safety risk due to flooding. This report also incorporates the requirements of the National Environmental Policy Act (NEPA) to evaluate the proposed alternatives.

USACE proposes to address problems related to life-safety risks and economic damages associated with flood events generated from the River Des Peres river system in University City. The main life-safety risks include direct life loss, flooding of critical infrastructure, flooding of evacuation routes, and health concerns with flooded structures. Economic damages addressed include direct structure inundation (structure, content and vehicles), traffic disruption, and other associate emergency costs.

The following objectives have been developed for this GRR: 1) reduce life-safety risk due to flooding (including inundation of structures & public infrastructure) in University City over the 50-year period of analysis, 2) reduce economic damage due to flooding in University City over the period of analysis, and 3) increase recreational opportunities associated with flood-risk management (FRM) features over the period of analysis.

The structural alternatives that were evaluated for cost purposes were a combination of these three features:

- Detention Basin 3
- Detention Basin 4
- Levee/Floodwall 2a

The tentatively selected plan is a non-structural alternative which was developed by economics.

1.2 BASIS OF COST ESTIMATE

The cost estimate has been prepared based on current concept designs and site specific information available to date.

Quantities were developed based on a conceptual model and provided directly from MVS Engineering and Construction Branch. There is a possibility quantities may increase during construction but cost impacts would be considered minimal and is captured in the abbreviated risk analysis as a possible risk with moderate impacts.

Cost estimate was developed using MCACES. Disposal quote was received from 370 Crossing Clean Landfill in Bridgeton, MO. The wage rates were developed using Davis Bacon, Heavy & Highway construction for St. Louis County, MO MO20210001 02/12/2021.

1.3 CONTINGENCIES

The Abbreviated Risk Analysis process indicated an approximate 32% construction contingency based on associated project risks.

1.4 PLANNING, ENGINEERING, AND DESIGN (PED)

Planning, engineering and design costs are based on historical data of similar projects in the St. Louis District. Recommended percentages by the cost MCX were taken into consideration as well.

1.5 CONSTRUCTION MANAGEMENT

Construction Management costs are based on historical data of similar projects in the St. Louis District. Recommended percentages by the cost MCX were taken into consideration as well.

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River Des Peres

4/6/2021

Detention Basin 3

**Excludes Real Estate Costs

ITEM	ESTIMATED AMOUNT
Mobilization and Demobilization	\$650,000
Demolition	
Building Demolition	\$3,650,000
Site Demolition	\$1,100,000
Building/Pavement Disposal Fee	\$170,448
Excavation	\$6,438,080
Soil Disposal Fee	\$1,402,610
Containment Levee	\$16,000
Weir Control Structure	
Concrete Wing Walls	\$30,500
Concrete Swale	\$12,800
Rip Rap	\$25,550
Bedding Stone	\$10,625
Concrete Weir	\$115,000
Culvert	\$58,300
Establishment of Turf	\$58,500
SUBTOTAL:	\$13,738,413
E & D :	\$2,470,000 18%
S & A :	\$1,370,000 10%
Contingency:	\$5,625,000 32%
TOTAL COST:	\$23,203,413

River Des Peres

4/6/2021

Detention Basin 4

**Excludes Real Estate Costs

ITEM	ESTIMATED AMOUNT	
Mobilization and Demobilization	\$190,000	
Demolition		
Building Demolition	\$28,600	
Site Demolition	\$238,000	
Building/Pavement Disposal Fee	\$13,568	
Excavation	\$2,620,640	
Soil Disposal Fee	\$527,332	
Containment Levee	\$198,750	
Weir Control Structure		
Concrete Wing Walls	\$61,000	
Concrete Swale	\$28,000	
Rip Rap	\$23,100	
Bedding Stone	\$14,450	
Concrete Weir	\$161,000	
Culvert	\$60,950	
Establishment of Turf	\$35,100	
SUBTOTAL:	\$4,200,490	
E & D :	\$756,000	18%
S & A :	\$420,000	10%
Contingency:	\$1,720,000	32%
TOTAL COST:	\$7,096,490	

River Des Peres

4/21/2021

Levee/Floodwall 2A

**Excludes Real Estate Costs

ITEM	ESTIMATED AMOUNT	
Mobilization and Demobilization	\$840,000	
Levee	\$98,175	
Automatic Flood Gates	\$4,380,000	
Floodwall		
Structural Excavation	\$620,800	
Structural Backfill	\$831,480	
Concrete	\$1,627,920	
Reinforcing Steel	\$1,120,800	
Concrete Formwork	\$2,230,800	
Sheet Piles	\$5,337,200	
Waterstop	\$249,000	
Joint Filler	\$109,200	
Pavement & Sidewalks	\$290,000	
SUBTOTAL:	\$17,735,375	
E & D :	\$3,192,000	18%
S & A :	\$1,774,000	10%
Contingency:	\$7,264,000	32%
TOTAL COST	\$29,965,375	