

Appendix G

Cost

Draft Feasibility Report with Integrated Environmental Assessment
Oakwood Bottoms HREP

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1 INTRODUCTION

Part of the USFS national forest portfolio is the Shawnee National Forest, which includes approximately 280,000 acres of upland and bottomland forest in southern Illinois. The Oakwood Bottoms, consisting of approximately 13,500 acres bottomland forest and wetlands, is located within the Shawnee National forest in the Mississippi River Floodplain on the left descending bank of the Mississippi River between River Miles 73-84 in Jackson County, IL. The Oakwood Bottoms Habitat Rehabilitation and Enhancement Project (HREP) focuses on the 4,700 acre Green Tree Reservoir portion of Oakwood Bottoms.

2 GENERAL

Costs were developed in MCACES using a combination of the 2016 Costbook, 2018 Region 5 equipment book, Jackson County Labor rates and historic costs. Features of work include Mobilization and Demobilization, Clear and Grubbing, Stripping, Establishment of Turf, Excavation and Degrade, Embankment, Pipe Bedding, Water Control Structures, Demolition, Pump Station, Well Pumps, Reforestation, Timber Standing Improvements and Wetland Excavation.

It is assumed that this project will be delivered in 4 contracts. Contract 1 includes all features of work in zones 5f thru F-X minus the pump station, reforestation and timber standing improvements. Contract 2 includes all features of work in zones 1 through 4 minus the pump station, reforestation and timber standing improvements. Contract 3 includes the only the pump station. Contract 4 includes reforestation and timber standing improvements and is assumed to be the last contract to be awarded.

Mobilization and Demobilization costs are assumed be 5% of construction costs.

Clearing and Grubbing costs are based on the assumption that 50% of the trees will be between 24" – 30" diameter while the other 50% will be smaller in diameter. All trees are assumed to be cut and chipped.

Selective clearing and grubbing costs assumed for select area where the trees are 9" diameter or smaller.

Stripping costs are based on a 6" depth and 300 HP dozer stockpiling the material and replacing the material after the repair work has been completed.

Excavation and degrade is based on a 10 CY scraper with an avg 5000' haul distance for berm degrades and berm raises, however excavation for the ditching is based on a 2 CY excavator that will stock pile material nearby and a dozer will spread out the material near where the excavation takes place.

Embankment costs are based on compaction of 6" loose lifts with 4 passes of a sheepsfoot roller.

Crushed stone is assumed to be haul from Anna Quarry which is roughly 45 minutes away from Oakwood Bottoms. Crushed stone is to be used for road construction and repair.

Water Supply Wells are based on costs provided by the Fish and Wildlife services.

Demolition costs are from the 2016 Costbook and are for the removal of various gates on culverts.

Establishment of Turf costs are based on a rye seed mix and includes fertilizer, straw and watering.

Pump Station costs are based on historic costs and escalated up to current time.

Reforestation costs are based on previous contract rates from the River Project Office Service IDIQ.

Timber Standing Improvements are based previous contract rates from the USDA.

A construction schedule was developed in Primavera and assumes a start date of April 2022 and a completion date of April 2028 with Adaptive Management starting in April 2028 and ending in May 2038.

3 CONSTRUCTION CONTINGENCY

A contingency of 29.8% was applied to Construction, 31.2% was applied to Pre-construction Engineering and Design, and 25.5% was applied to Construction Management based on the output of the Abbreviated Cost Risk Analysis.

4 ESCALATION

An escalation rate of 3% was applied to the costs to reach the budget year of 2022.

5 Engineering and Design

A percentage of 17.7% is used for engineering and design based on the breakout listed below . Adaptive Management is applied only in contract 4 because it is assumed that it will start after all 4 contracts are completed.

Program Management:	1.00%
Planning & Environmental Compliance:	1.00%
Engineering & Design:	10.00%
Reviews, ATRs, IEPRs, VE:	1.00%
Life Cycle Updates (cost, schedule, risks):	1.00%
Contracting & Reprographics:	1.00%
Engineering During Construction:	2.20%
Planning During Construction	0.50%
Adaptive Mgmt & Monitoring:	0.00%
Project Operations	0.00%

6 Construction Management

A percentage of 9.5% was applied to the estimate base on the breakout below.

Supervision & Assurance:	8.00%
Project Operation:	0.50%
Program Management:	1.00%

7 Operation and Maintenance

Details for the O&M cost be found in the Engineering Appendix.

8 Adaptive Management

Costs for adaptive management were supplied by the PDT and includes monitoring, inspections, analysis, and rework of failed designs for a total amount of 4.7% of total construction costs. Adaptive management will begin after all construction contracts are completed and will last 10 years. Further details can be found in the Appendix H - *Monitoring and Adaptive Management Plan*.

9 Mitigation

There are no Cultural mitigation or Fish and Wildlife mitigation costs associated with this project.

10 Real Estate

There are no real estate costs for any of the alternatives. Please refer to the Real Estate Appendix D for additional information.

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Table A (Costs are in Thousands)	
Real Estate	NA
Construction	\$15,761
AM & Monitoring	\$1,192
PED	\$2,790
Construction Management	\$1,497
Contingency	\$6,321
Escalation	\$867
Total First Costs	\$28,428

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REFERENCES

- 1) Costbook 2016
- 2) 2018_EP1110-1-8_Mii_Library_Region_05_R1
- 3) https://beta.sam.gov/wage-determination/IL20200016/16?index=wd&keywords=&is_active=true&sort=-modifiedDate&date_filter_index=0&date_rad_selection=date&wdType=dbra&construction_type=Highway&state=IL&county=15746&page=1
- 4) US Fish and Wildlife
- 5) EC-DM Mechanical Section
- 6) EC-DM Electrical Section
- 7) EC-DC Civil