

# Section XIII

## Cost Estimates

**Lake Shelbyville Master Plan**  
SECTION XIII – COST ESTIMATES

13-01. INTRODUCTION

a. General. Preliminary cost estimates for development of proposed new and renovation or replacement actions at Lake Shelbyville have been developed by the project staff and Engineering Division. Cost estimates developed by Engineering Division are highlighted with a double border. The quantities and costs represent a typical Corps of Engineers guide specification level of design and materials. Costs for IDNR proposed items were provided by the State. During actual detailed design of each element, variations in types and quantities of materials, modifications of facilities, inflationary trends, and results from additional engineering tests will undoubtedly occur. Costs are based on 2003 prices received for similar items of work in the St. Louis District. Total for proposed CRR actions does not include contingency, PED, or construction management costs because these are mostly done in-house.

b. Summary of Costs. Preliminary cost estimates for proposed new actions for Corps of Engineers and State facilities are listed in TABLE 21. Proposed CRR actions are listed in TABLE 22.

c. Financial Analysis. A financial analysis of new items is presented in TABLE 23 below. The benefit to cost ratio for sewer and water hookups is presented for a typical campground installation. This is applicable to any campground where sewer and water hookups are proposed.

TABLE 21  
PRELIMINARY COST ESTIMATES FOR PROPOSED NEW ACTIONS

|  | Item or Description   | Qty | Unit | Unit Price | Estimated Amount |
|--|---|-----|------|------------|------------------|
| <b>US Army Corps of Engineers</b>            |   |     |      |            |                  |
| <b>Project Operations</b>                    |   |     |      |            |                  |
| Main Dam OP-1<br>Section 8.04.a.             | Install roadway gates,<br>additional fencing, and security<br>cameras | 1   | LS   | \$153,000  | \$153,000        |
| <b>Recreation Areas</b>                      |   |     |      |            |                  |
| Dam West –<br>Area 1<br>Section 8.05.a.      | Construct Fish Nursery Pond   | 1   | LS   | \$100,000  | \$100,000        |
|  | Install electrical service to<br>overlook berm picnic shelter         | 1   | JB   | \$2,000    | \$2,000          |
| Opossum<br>Creek – Area 2<br>Section 8.05.b. | Install water and sewer<br>campsite hookups.                          | 11  | EA   | \$670      | \$7,370          |
|  | Install 30-amp electrical service<br>to tent-only campsites           | 22  | EA   | \$450      | \$9,900          |
| Coon Creek –<br>Area 3<br>Section 8.05.c.    | Install water and sewer<br>campsite hookups                           | 39  | EA   | \$670      | \$26,130         |

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|   | Item or Description   | Qty | Unit | Unit Price  | Estimated Amount |
|---|---|-----|------|-------------|------------------|
|   | Construct trail for pedestrian and bike traffic from fee booth area to main shower building   | 1   | JB   | \$15,000    | \$15,000         |
|   | Install additional parking spaces throughout campground   | 20  | EA   | \$500       | \$10,000         |
|   | Install second trailer dump station   | 1   | JB   | \$5,000     | \$5,000          |
| Lone Point – Area 4<br>Section 8.05.d.                        | Install 30-amp electrical service to tent-only campsites  | 7   | EA   | \$450       | \$3,150          |
|   | Install sewer and water campsite hookups  | 15  | EA   | \$670       | \$10,050         |
| Bo Wood – Area 8<br>Section 8.05.h.                           | Install sewer and water campsite hookups  | 33  | EA   | \$670       | \$22,110         |
| Whitley Creek – Area 11<br>Section 8.05.k.                    | Construct high water boat ramp  | 1   | EA   | \$91,940    | \$91,940         |
| Lithia Springs – Area 13<br>Section 8.05.n.                   | Install water and sewer hookups at campsites  | 16  | EA   | \$670       | \$10,720         |
|   | Install sand volleyball court, outdoor shower, and two bench shelters at beach  | 1   | LS   | \$4,000     | \$4,000          |
|   | Install additional parking spaces throughout the campground   | 15  | EA   | \$500       | \$7,500          |
| Dam East – Area 14<br>Section 8.05.o.                         | Install vehicle access to picnic shelter  | 1   | JB   | \$2,000     | \$2,000          |
| Spillway – Area 15<br>Section 8.05.p.                         | Construct parking lot   | 1   | JB   | \$10,000    | \$10,000         |
| <b>Environmentally Sensitive Areas</b>                        |   |     |      |             |                  |
| Lithia Springs Chautauqua ES-C-2<br>Section 8.07.b.           | Install interpretive signage to this area   | 1   | JB   | \$10,000    | \$10,000         |
|   | Install security lighting to this area  | 1   | JB   | \$15,000    | \$15,000         |
| Subtotal: \$514,870   |   |     |      |             |                  |
| Contingency – 30% (New Actions): \$154,461                    |   |     |      |             |                  |
| Planning, Engineering, & Design – 15% (New Actions): \$77,231 |   |     |      |             |                  |
| Construction Management – 10% (New Actions): \$51,487         |   |     |      |             |                  |
| Corps of Engineers Total Project Cost: \$798,049              |   |     |      |             |                  |
| <b>Illinois Department of Natural Resources Facilities</b>    |   |     |      |             |                  |
| IDNR/Eagle Creek – Area 5<br>Section 8.05.e.                  | Install cabins in campground area   | 20  | EA   | \$10,000    | \$200,000        |
|   | Construct storage building  | 1   | JB   | \$80,000    | \$80,000         |
|   | In Resort Area: Construct 50 universally accessible floating courtesy docks with full electric service, walkway to connect resort with lakefront, small | 1   | LS   | \$2,000,000 | \$2,000,000      |

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|  | Item or Description   | Qty | Unit | Unit Price | Estimated Amount |
|--|---|-----|------|------------|------------------|
|  | gazebo, 45' X 100' patio                                      |     |      |            |                  |
|  | Install footbridges to connect tent camping areas             | 1   | LS   | \$3,000    | \$3,000          |
| IDNR/Wolf Creek – Area 12 Section 8.05.l.      | Install cabins in campground area                             | 20  | EA   | \$10,000   | \$200,000        |
|  | Install electricity and dump station at Equestrian Campground | 1   | LS   | \$600,000  | \$600,000        |
|  | Construct shower building in campground                       | 1   | JB   | \$350,000  | \$350,000        |
|  | Install hazardous material storage building                   | 1   | JB   | \$50,000   | \$50,000         |
| IDNR/Wildlife Management Areas Section 8.06.b. | Install hazardous material storage building                   | 1   | JB   | \$50,000   | \$50,000         |
| IDNR Total Project Cost: \$3,533,000           |   |     |      |            |                  |

**TABLE 22  
PRELIMINARY COST ESTIMATES FOR PROPOSED CRR ACTIONS**

|  | Item or Description  | Qty | Unit | Unit Price | Estimated Amount |
|--|--|-----|------|------------|------------------|
| <b>US Army Corps of Engineers Facilities</b>   |  |     |      |            |                  |
| <b>Project Operations Facilities</b>   |  |     |      |            |                  |
| Main Dam OP-1 Section 8.04.a.  | Install maintenance lifts and other needed equipment to deal with confined space issues, renovate electrical system, and replace electrical system concerning roadway lights | 1   | LS   | \$318,000  | \$318,000        |
|  | Replace east and west gallery staircases   | 1   | LS   | \$74,000   | \$74,000         |
|  | Replace piezometers  | 1   | LS   | \$10,000   | \$10,000         |
|  | Re-paint bridge & other metal works  | 1   | LS   | \$306,840  | \$306,840        |
| Administration Complex, Maintenance Complex, and Visitor Center OP-2 Section 8.04.b. | Prepare a study to determine the cost feasibility and design of replacing and consolidating facilities   | 1   | JB   | \$103,000  | \$103,000        |
| Visitor Center OP-2 Section 8.04.b(2)  | Remove amphitheater from Whitley Creek and replace near Visitor Center   | 1   | JB   | \$50,000   | \$50,000         |
|  | Renovate front entrance doors and comfort station to make them universally accessible  | 1   | LS   | \$12,000   | \$12,000         |

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|   | Item or Description   | Qty | Unit | Unit Price | Estimated Amount |
|---|---|-----|------|------------|------------------|
| <b>Recreation Areas</b>                   |   |     |      |            |                  |
| Dam West – Area 1<br>Section 8.05.a.      | Replace overlook and comfort station with a picnic shelter with an attached comfort station   | 1   | LS   | \$150,000  | \$150,000        |
|   | Remove Opossum Creek boat ramp and replace within this area that will service the large group picnic shelter and fish tournament area               | 1   | JB   | \$93,640   | \$93,640         |
|   | Renovate vending area, which will include removing and replacing the Dam West Beach picnic shelter  | 1   | LS   | \$30,000   | \$30,000         |
|   | Upgrade electric service in area  | 1   | LS   | \$50,000   | \$50,000         |
|   | Replace all water lines   | 1   | LS   | \$30,000   | \$30,000         |
| Opossum Creek – Area 2<br>Section 8.05.b. | Day Use Comfort Station #1 has been removed, remove Add-on shower house #1, consolidate and replace facilities with a main shower building          | 1   | LS   | \$259,077  | \$259,077        |
|   | Renovate high water boat ramp so that it can be used year round   | 1   | JB   | \$250,000  | \$250,000        |
|   | Renovate Add-on shower house #2 to remove the shower portion of the building  | 1   | EA   | \$1,000    | \$1,000          |
|   | '79 YCC Camp Camfield amphitheater has been removed and will be replace in this area  | 1   | EA   | \$7,000    | \$7,000          |
|   | Replace all water lines   | 1   | LS   | \$30,000   | \$30,000         |
| Coon Creek – Area 3<br>Section 8.05.c.    | Remove Comfort station #8, one comfort station on A or B leg, and add-on shower houses on A & E legs and consolidate into two mini-shower buildings | 2   | JB   | \$211,344  | \$422,688        |
|   | Remove comfort station #5 and add-on shower house on H leg and consolidate into a mini-shower building  | 1   | JB   | \$211,344  | \$211,344        |
|   | Remove and replace campsites primarily pull-off sites   | 26  | EA   | \$1,000    | \$26,000         |
|   | Remove Comfort Station near campsite 176 and consolidate facilities with mini-shower buildings  | 1   | JB   | \$5,000    | \$5,000          |
|   | Replace water lines   | 1   | LS   | \$50,000   | \$50,000         |
| Lone Point – Area 4<br>Section 8.05.d.    | Replace main shower building  | 1   | LS   | \$259,077  | \$259,077        |

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|   | Item or Description  | Qty | Unit | Unit Price  | Estimated Amount |
|---|--|-----|------|-------------|------------------|
|   | Comfort station #3 has been removed and will be replaced with a mini-shower building within the Walleye Group Camp   | 1   | LS   | \$211,344   | \$211,344        |
|   | Remove the amphitheater and replace in a centralized area within the campground  | 1   | JB   | \$30,000    | \$30,000         |
|   | Close secondary campground exit and add a roadway section to connect the road from campsite 79 to the main campground road   | 1   | LS   | \$50,000    | \$50,000         |
|   | Replace fee booth  | 1   | EA   | \$20,000    | \$20,000         |
|   | Replace water lines  | 1   | LS   | \$30,000    | \$30,000         |
|   | Remove and replace campsites # 29 and 30   | 2   | EA   | \$1,000     | \$2,000          |
| Findlay Marina – Area 6<br>Section 8.05.f.  | Connect to Shelbyville or Findlay Sewer System   | 1   | LS   | \$150,000   | \$150,000        |
| Wilborn Creek – Area 7<br>Section 8.05.g.   | Day use comfort station #1 and picnic shelter have been removed, remove Group Camp comfort station and consolidate with Okaw Bluff Frame House facilities and replace with multi-purpose group shelter, five mini-shelters, and mini-shower building | 1   | LS   | \$251,344   | \$251,344        |
|   | Renovate non-electric campsites into impact area campsites with 50-amp electrical service  | 15  | EA   | \$1,000     | \$15,000         |
|   | Replace sewer and water lines  | 1   | LS   | \$20,000    | \$20,000         |
|   | Replace fish cleaning station  | 1   | JB   | \$11,550    | \$11,550         |
|   | Replace boat ramp comfort station  | 1   | LS   | \$104,878   | \$104,878        |
| Bo Wood – Area 8<br>Section 8.05.h.<br>Whitley Creek – Area 11<br>Section 8.05.k. | Remove and consolidate campground facilities   | 1   | LS   | \$1,143,000 | \$1,143,000      |
| Bo Wood – Area 8<br>Section 8.05.h.   | Renovate existing campsites (47-55) into a group camp area   | 1   | LS   | \$20,000    | \$20,000         |
|   | Replace comfort station in proposed group camp with a mini-shower building   | 1   | LS   | \$211,344   | \$211,344        |
|   | Remove day use picnic shelter from Lone Point Recreation Area and replace within the proposed group camp area  | 1   | JB   | \$20,000    | \$20,000         |
|   | Renovate entrance road   | 1   | JB   | \$87,000    | \$87,000         |
|   | Replace fish cleaning station  | 1   | JB   | \$11,550    | \$11,550         |

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|   | Item or Description  | Qty | Unit | Unit Price | Estimated Amount |
|---|--|-----|------|------------|------------------|
| Okaw Bluff – Area 10<br>Section 8.05.j.                 | Remove Stone House and Frame House facilities.<br>Replace Stone House with a multi-purpose group shelter, six mini-shelters, and mini-shower building. | 1   | LS   | \$201,330  | \$201,330        |
| Okaw Bluff/Sullivan Beach – Area 10<br>Section 8.05.j.  | Replace water lines  | 1   | LS   | \$30,000   | \$30,000         |
| Sullivan Beach – Area 10<br>Section 8.05.j.             | Replace picnic shelter   | 1   | LS   | \$30,000   | \$30,000         |
| Lithia Springs – Area 13<br>Section 8.05.n.             | Remove south comfort station on B-leg and add-on shower houses #1 & #2 and consolidate into 2 mini-shower buildings                                    | 2   | EA   | \$211,344  | \$422,688        |
|   | Remove and replace amphitheater to a centralized area within the campground  | 1   | JB   | \$20,000   | \$20,000         |
|   | Remove Whitley Creek playground set and replace it within this area  | 1   | JB   | \$2,000    | \$2,000          |
|   | Replace all water lines  | 1   | LS   | \$50,000   | \$50,000         |
|   | Renovate and expand boat ramp parking lot  | 1   | JB   | \$100,000  | \$100,000        |
|   | Replace fish cleaning station  | 1   | JB   | \$11,550   | \$11,550         |
|   | Renovate and widen D leg entrance parking lot within the campground  | 1   | JB   | \$10,000   | \$10,000         |
|   | Remove day use comfort station and replace it near the fish cleaning station   | 1   | LS   | \$104,878  | \$104,878        |
| Lithia Springs Marina – Area 13<br>Section 8.05.n.      | Renovate main parking area   | 1   | JB   | \$165,750  | \$165,750        |
| Dam East – Area 14<br>Section 8.05.o.                   | Comfort Station #2 has been removed and will be consolidated with Comfort Station #1 into a modern designed comfort station                            | 1   | LS   | \$104,878  | \$104,878        |
| Spillway – Area 15<br>Section 8.05.p.                   | Replace Comfort Station #2 and make it universally accessible  | 1   | JB   | \$104,878  | \$104,878        |
|   | Remove Spillway fish cleaning stations and consolidate into a universally accessible fish cleaning station within Spillway East Area                   | 1   | LS   | \$6,000    | \$6,000          |
| Coon Creek, Lone Point, Lithia Springs Recreation Areas | Shoreline Erosion Feasibility Study  | 1   | LS   | \$15,000   | \$15,000         |

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|  | Item or Description   | Qty | Unit | Unit Price  | Estimated Amount |
|--|---|-----|------|-------------|------------------|
| Project Wide – Northern Area                               | Connect to Sullivan Force Main (Wilborn Creek, Bo Wood, Sullivan Beach, Okaw Bluff Group Camp, Sullivan Marina and Campground, and Whitley Creek) | 1   | LS   | \$600,000   | \$600,000        |
| Project Wide – Southern Area                               | Connect to Shelbyville Force Main (Lithia Springs, Opossum Creek, Coon Creek, and Lone Point)   | 1   | LS   | \$1,900,000 | \$1,900,000      |
| Project Wide   | Renovate existing trails to accommodate multi-purpose use   | 1   | LS   | \$35,000    | \$35,000         |
| Project Wide   | Renovate primary boat ramps to accommodate courtesy docks   | 8   | EA   | \$22,000    | \$176,000        |
| <b>Low Density Recreation Areas</b>                        |   |     |      |             |                  |
| Camp Camfield LD-4 Section 8.06.a.(4)                      | Remove and replace trail footbridges with culverts  | 1   | LS   | \$2,000     | \$2,000          |
| Woods Lake LD-8 Section 8.06.a.(8)                         | Remove Vault Comfort Station from Lithia Springs and replace it within this area  | 1   | JB   | \$30,000    | \$30,000         |
| <b>Environmentally Sensitive Areas</b>                     |   |     |      |             |                  |
| Lithia Springs Chautauqua ES-C-2 Section 8.07.b.           | Remove shelter from Lithia Springs Recreation Area and replace it within this area.   | 1   | JB   | \$20,000    | \$20,000         |
|  | Replace wooden bridge   | 1   | JB   | \$2,000     | \$2,000          |
|  | Remove vault comfort station from Whitley Creek and replace it within this area   | 1   | JB   | \$30,000    | \$30,000         |
| Corps of Engineers Total Project Cost: \$9,650,472         |   |     |      |             |                  |
|  | Item or Description   | Qty | Unit | Unit Price  | Estimated Amount |
| <b>Illinois Department of Natural Resources Facilities</b> |   |     |      |             |                  |
| IDNR/Eagle Creek   | Expand golf course and storm shelter at the Resort  | 1   | LS   | \$750,000   | \$750,000        |
| IDNR/Eagle Creek   | Renovate roads, which includes widening them  | 1   | LS   | \$1,700,000 | \$1,700,000      |
| IDNR/Eagle Creek   | Renovate Breakwater   | 1   | JB   | \$500,000   | \$500,000        |
| IDNR/Eagle Creek   | Upgrade sewer line that runs from this park to Wolf Creek State Park  | 1   | LS   | \$500,000   | \$500,000        |
| IDNR/Eagle Creek   | Renovate campground electrical system   | 1   | LS   | \$200,000   | \$200,000        |
| IDNR Total Project Cost: \$3,650,000                       |   |     |      |             |                  |



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**TABLE 23  
FINANCIAL COST ANALYSIS FOR NEW FACILITIES**

| <b>Typical Campground Water &amp; Sewer Hookups Analysis</b> |      |                |                     |                       |                |                     |                      |              |
|--|------|----------------|---------------------|-----------------------|----------------|---------------------|----------------------|--------------|
| <b>Benefits</b>  | Days | Occupancy Rate | Total Days Occupied | Daily Increase in Fee | Annual         | Number of Campsites | Total Annual Revenue | Initial Cost |
| Increased fee collection - \$2.00/campsite/hookup            | 150  | 0.45           | 67.5                | \$4                   | \$270          | 77                  | \$20,790             |              |
| Increased fee collection - \$2.00/campsite/hookup            | 30   | 0.4            | 12                  | \$4                   | \$48           | 77                  | \$3,696              |              |
| <b>Total Additional Annual Revenue</b>                       |      |                |                     |                       |                |                     | <b>\$24,486</b>      |              |
| <b>Costs</b>   |      |                |                     |                       |                |                     |                      |              |
| Increased O&M annual expenses                                |      |                |                     |                       | \$100          |                     |                      |              |
| Annualized Construction Cost                                 |      |                |                     |                       | \$6,181        |                     |                      | \$51,590     |
| <b>Total Annual Costs</b>                                    |      |                |                     |                       | <b>\$6,281</b> |                     |                      |              |
| <b>Benefit/Cost Ratio</b>                                    |      |                |                     |                       | <b>3.90</b>    |                     |                      |              |