

## **ROUGH RIVER, KY DAM SAFETY**



September 2016

#### U.S. ARMY CORPS OF ENGINEERS

**BUILDING STRONG®** 

<u>Official Title</u>: Rough River Lake Dam, KY; Dam Safety Major Rehabilitation

<u>Authorization</u>: Flood Control Act (Public Law 761, 75th

Congress, 28 June 1938)

**Project Phase:** Construction

#### Summarized Financial Data:

Estimated Federal Cost
Estimated Non-Federal Cost
Total Estimated Project Cost
Allocation thru FY15
Balance to Complete after FY15
FY16 President's Budget
FY16 Allocation
FY17 President's Budget
FY17 President's Budget

\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$149,800,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,000,000
\$118,0



<u>Project Location</u>: The dam site is located on Rough River, 89.3 miles east of the confluence with the Green River.

<u>Project Description</u>: Repairs are necessary to ensure the dam continues to function as it was designed for another 50 plus years. Through investigations, analyses, and enhanced monitoring the Corps identified compelling evidence to warrant remedial construction. The specific concern with Rough River is the karst features of specific geologic formations that lie beneath the dam. There has been no surface distress observed at the dam related with these features; however, these formations have been identified to have the potential to weaken the dam embankment. Enhanced monitoring throughout the study has indicated that adverse seepage flow may be developing within these features following the 2011 record pool. It is imperative to address these potential concerns before they worsen over time.

<u>Project Status</u>: The Corps completed a Dam Safety Modification Report (DSMR) in July 2012. The DSMR addressed unacceptable risk due to foundation conditions that can be found when a dam is constructed on karst geology (solutioned limestone). The report recommended major rehabilitation to ensure the structure's integrity and lower the project's risk. While the dam is currently operating as intended and there is no emergency or imminent threat, failure of the dam would result in catastrophic effects downstream including potential loss of life and significant economic losses.

**Non-Federal Sponsor**: There is an existing water storage agreement with the City of Leitchfield and there is a water storage agreement with Grayson County under development.

<u>Where We Are Now</u>: The planned two-phased construction project will rehabilitate the foundation to eliminate seepage concerns. The construction involves grouting of the bedrock as an initial phase. Based on the conditions encountered, a decision was made to proceed to Phase 2, which involves a deep concrete cutoff

#### U.S. ARMY CORPS OF ENGINEERS - LOUISVILLE DISTRICT

P.O. Box 59, Louisville, KY 40201-0059

wall through the embankment and into the foundation rock. The first construction contract (Phase 1A) was awarded in March 2014 and completed in September 2015. This contract relocated KY State Hwy 79, which crosses the dam, to the upper slope of the dam. The exploratory drilling and grouting contract (Phase 1B) was awarded in April 2015 to Advanced Construction Techniques, Inc. The Phase 1B base contract is physically complete with 154 rock grouting holes completed on the base contract. However, a modification to add holes to finish the grout lines for cutoff wall slurry control has been awarded and is scheduled for completion in May 2017. Design and preparation of plans and specifications for the cutoff wall have been initiated.

<u>Issues and Other Information</u>: In 2005, USACE began evaluating the risks at Corps operated dams. We developed risk reduction, risk assessment, and risk management procedures for implementing a nationwide evaluation process that prioritizes the funding and allocation of dam safety resources USACE-wide. USACE began an approach to consistently take appropriate actions to address our dam safety issues. Rough River Dam began this process in 2005 with a screening assessment which gave it priority for further investigations and study. This USACE national initiative prioritizes remedial repairs to address our aging infrastructure.

Since Rough River Dam was constructed, the dam safety community has developed a greater appreciation of what impact karstic bedrock features can have. We have seen this at Wolf Creek Dam which resulted in settlement of the earthen embankment.

The proposed work will include filling cracks, fissures and other openings in the bedrock that underlies the earthen dam. This project will have several phases all of which should have minimal impacts to the community. The first phase began with the movement of State Hwy 79 to the lake side of the dam. This phase is necessary to ensure that traffic flow on State Hwy 79 is not interrupted and will allow heavy construction equipment to access the crest of the dam to perform the necessary construction. Injection of grout via bore holes across the dam will then occur. Once this is complete, a concrete cut-off wall will be installed across the dam alignment. After the construction, the surface of the dam will be restored and its appearance will look much as it does currently.

Changes to lake operations that would impact normal public use will be minimized as much as possible. The Corps does not anticipate a prolonged drawdown of the reservoir pool and will utilize normal pool levels to schedule construction accordingly. However, at some point during the construction it may be necessary to temporarily hold the lake below the normal recreation pool level (summer pool 495 feet).

The Corps' Louisville District will be responsible for communicating project status with coordination from local, state and federal agencies and other stakeholders. Rough River Lake staff will aid in the future public awareness campaign.



### City of Owensboro, Daviess Co., KY

March 2016

#### U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Official Title: Owensboro, Daviess County, KY, PAS Study

<u>Authorization</u>: Section 22(a) (1) of the Water Resources Development Act of 1974 (Public Law 93-251), as

amended.

**Project Phase:** Planning Assistance to States

**Summarized Financial Data:** 

Estimated Federal Cost	\$110,000
Estimated Non-Federal Cost	\$110,000
Total Estimated Project Cost	\$220,000
Allocation thru FY15	\$110,000
FY16 President's Budget	\$0
FY16 Allocation	\$0
FY17 President's Budget	\$0
Balance to Complete	\$0

<u>Project Location</u>: This study area includes Daviess County, KY; including the City of Owensboro on the southern bank of the Ohio River in western Kentucky. Owensboro is the county seat of Daviess County.

<u>Project Description</u>: In August 2014, the Daviess County Drainage Advisory Committee (DAC) oversaw the preparation of a Storm Water Master Plan to establish goals for flood mitigation within the County, develop flood mitigation alternatives, and estimate the cost associated with these alternatives. The goals of the flood mitigation efforts identified in the Master Plan were to remove 30% of the current land area flooded by primary waterways; and to keep major public road crossings from being flooded. The Phase I Master Plan evaluated a number of flood mitigation



alternatives including levees, channels, roadway modifications, and detention storage. Further evaluation was recommended to better define the effectiveness of the alternatives.

In February 2014, a Letter of Intent was received from the Daviess County Fiscal Court requesting Louisville District assistance with the Phase II Master Plan. Phase II includes: Developing estimates of project benefits to better assess the cost effectiveness of the proposed solutions; refining the desired level of protection; exploring regulatory requirements, and operations and maintenance costs. The focus is on detailed evaluation of flood mitigation alternatives for 12 streams in the County.

<u>Project Status</u>: A Letter Agreement formally initiating the study was executed in June 2015. Nonfederal funds were received in August 2015 and the study is currently underway with an expected completion date of June 2016 using funds received through FY 15.

Non-Federal Sponsor: Daviess County, KY

Where We Are Now: Conducting surveys and reviewing existing models.



### **Olmsted Locks and Dam Project**

February 2016

#### **U.S. ARMY CORPS OF ENGINEERS**

**BUILDING STRONG®** 

Official Title: Locks and Dam 52 and 53 Replacement Project (Olmsted Locks and Dam), IL and KY

**Location:** The project is located in Olmsted, IL near Ohio River Mile 964.4.

<u>Purpose</u>: Construct the new Olmsted Locks and Dam to replace Ohio River Locks and Dams 52 & 53. Demolish Locks and Dams 52 & 53 once Olmsted is operational.

<u>Project Description and Background</u>: The project consists of two 110' X 1200' locks adjacent to the Illinois bank, and a dam comprised of five tainter gates, 1400' of boat-operated wickets and a fixed weir. The proposed replacement structure will eliminate Ohio River Locks & Dams 52 & 53. Locks & Dams 52 & 53 were completed in 1929 and the temporary 1,200' long lock chambers were added in 1969 at Locks & Dam 52 and 1979 at Locks & Dam 53. The antiquated design and age of these structures make it impossible to meet current traffic demands without significant delays. The existing structures have deteriorated structurally and are overstressed during normal operating conditions. The temporary locks at Locks & Dam 52 & 53 have significantly passed their 15-year design life.

This strategic reach of the Ohio River provides a connection between the Mississippi River, Tennessee River and Cumberland River. More tonnage passes this point than any other place in America's inland navigation system. In 2011, 91 million tons (Locks & Dam 52), traversed this portion of the Ohio River. 25% of all coal shipped on the inland waterways transits Locks & Dam 52, destined for many of the 50 power plants located on the Ohio River System or the 17 power plants located in eight states on the Upper or Lower Mississippi River.

<u>Project Status</u>: The two 110' X 1200' locks and approach walls are complete. The fixed weir on the Kentucky bank is complete. As of 01 February 2016, all eighteen dam tainter gate shells are set and tainter gate #1 and #2 are erected. In the navigable pass section, eight of twelve paving blocks, the right boat abutment, and six of twelve navigable pass shells have been set in the river. Foundation pile driving operations for the navigable pass are underway. Current schedule is to be dam operational in October 2018 and project complete in March 2022.

#### Summarized Financial Data

2012 PACR	\$3,099,000,000
2014 Total Estimated Project Cost (NWW certified)	\$3,098,573,000
Estimated Federal Cost	\$2,047,852,000
Estimated Inland Waterways Trust Fund Cost	\$1,050,721,000
Allocation thru FY16 including ARRA allocation thru 30 Sept 15	\$2,227,402,000
FY 16 Budget/Capability	\$180,000,000/\$268,000,000
FY 17 Budget	\$225,000,000
Benefit to Cost Ratio (at 7%)	3.4
Non-Federal Sponsor	N/A

The Olmsted Locks & Dam project was authorized by Section 3(a)(6) of the Water Resources Development Act (WRDA) of 1988. The project authorization was increased on 17 October 2013 as part of a Continuing Appropriations Act, 2014 for \$2,918,000,000. The project was cost shared 50/50 with the Inland Waterways Trust Fund (IWTF) through FY2013. The FY2014 Omnibus Appropriation Act changed the split of IWTF and federal cost share to 25/75 for FY2014 only. Water Resources Reform and Development Act of 2014 changed the IWTF and federal cost share to 15/85 beginning 1 October 2014.

As of 01 February 2016, \$2,123,787,491 has been expended on the project. The annual average benefits from the Olmsted project are approximately \$640M.

<u>Upcoming Actions</u>: The Government and navigation industry stakeholders are exposed to significant increased economic risk given the failing condition of Locks & Dams 52 & 53. Accordingly, efficient completion of the Olmsted project construction is the only sustainable mitigation measure available. Continued capability funding is required to meet a dam operational date of October 2018. Without annual capability level funding in place, the dam operational date will likely slip one or more years reverting to the less than optimum operational timeframe of September 2020 contemplated in the PACR forgoing approximately \$1.28B in benefits.



Tainter Gates #1 and #2

# DAM SAFETY, KENTUCKY



February 2016

#### U.S. ARMY CORPS OF ENGINEERS

**BUILDING STRONG®** 

<u>Official Title</u>: Corps of Engineers Dam Safety Program; Kentucky Dams - Dam Safety Portfolio Risk Management

Project Phase: Routine Dam Safety Inspection and Assessment / Risk Studies

<u>Summarized Financial Data</u>: The Dam Safety Risk Studies are part of a national program with funds distributed by the Corps of Engineers (COE) Headquarters Dam Safety Office on a priority basis

<u>Project Location</u>: Barren Lake Dam, Buckhorn Lake Dam, Carr Creek Lake Dam, Cave Run Lake Dam, Green River Lake Dam, Nolin Lake Dam, Rough River Lake Dam, and Taylorsville Lake Dam (See next pages for site specific information)

Non-Federal Sponsor: N/A

<u>Study and Program Information</u>: During normal operations, these dams are routinely inspected daily, weekly, and monthly by COE operations staff and annually by Louisville District dam safety staff. The dam also receives a comprehensive inspection every five years by a multi-discipline team of Louisville District engineers.

The COE has instituted a "risk informed" dam safety program. The initial step was conducting a Screening Portfolio Risk Assessment (SPRA). A team of engineers conducted a screening level review of the dam's construction, performance history, and instrumentation to evaluate current dam behavior, as well as economic consequences and the population at risk of potential dam failure. After the initial screening, the risk is reevaluated every ten years as part of a routine Periodic Assessment (PA) in conjunction with the 5 year comprehensive site inspection. The findings are reviewed by the Dam Senior Oversight Group (DSOG) and a Dam Safety Action Classification (DSAC) rating is assigned based upon confirmed or unconfirmed dam safety issues and the combination of life or economic consequences should failure occur. The DSAC ratings are used to prioritize further study to confirm the proposed dam safety issues. If the DSAC rating is 1 through 3, an Interim Risk Reduction Measures (IRRM) Plan is established while further investigations are conducted and/or remedial actions are implemented as necessary.

The first study phase is an Issue Evaluation Study (IES) which confirms the dam safety issue. Should more information be necessary to confirm the issues, an IES Phase 2 study may be undertaken to gather the necessary data to reduce the uncertainty. The results of these studies are presented to the COE Risk Management Center (RMC) and the DSOG. The results may indicate the need to progress to the next phase of study or reduce the DSAC rating for the dam. If the case is made that the dam is in need of remedial construction then the project moves to the Dam Safety Modification Report (DSMR). The DSMR report analyzes potential remedial construction elements to determine the best "fix" to reduce the overall project risk. These studies and remedial construction are prioritized based upon the relative risk estimates at each stage to best make use of the available funding and resources.

**Project Location:** Barren Lake Dam, KY



#### **Project Status:**

- \* SPRA (Screening for Portfolio Risk Analysis): 2007
- \* DSAC (Dam Safety Action Classification) Rating: Class 3
- \* IRRMP (Interim Risk Reduction Measures Plan): Completed 6 April 2009
- \* IES (Issue Evaluation Study): In the queue for study. The IES Report will address concerns with unacceptable foundation conditions and associated seepage in order to remove uncertainty and lower project risk. This will determine if the work needs to continue to complete a full Dam Safety Modification Report (DSMR).

**Project Location:** Buckhorn Lake Dam, KY



#### **Project Status:**

- \* SPRA (Screening for Portfolio Risk Analysis): 2008
- \* DSAC (Dam Safety Action Classification) Rating: Class 3
- \* IRRMP (Interim Risk Reduction Measures Plan): Completed 15 April 2009
- \* IES (Issue Evaluation Study): In the queue for study. The IES Report will address concerns with unacceptable foundation conditions and associated seepage in order to remove uncertainty and lower project risk. This will determine if the work needs to continue to complete a full Dam Safety Modification Report (DSMR).

**Project Location:** Carr Creek Lake Dam, KY



#### **Project Status:**

- \* SPRA (Screening for Portfolio Risk Analysis): 2008
- \* DSAC (Dam Safety Action Classification) Rating: Class 4
  \* IRRMP (Interim Risk Reduction Measures Plan): N/A since it is DSAC 4
- \* IES (Issue Evaluation Study): Not required since it is a DSAC 4

**Project Location:** Cave Run Lake Dam, KY



#### **Project Status:**

- \* SPRA (Screening for Portfolio Risk Analysis): 2009
- \* DSAC (Dam Safety Action Classification) Rating: Class 3
- \* IRRMP (Interim Risk Reduction Measures Plan): Completed 27 July 2010
- \* IES (Issue Evaluation Study): In the queue for study. The IES Report will address concerns with unacceptable foundation conditions and associated seepage in order to remove uncertainty and lower project risk. This will determine if the work needs to continue to complete a full Dam Safety Modification Report (DSMR).

Project Location: Green River Lake Dam, KY



#### **Project Status:**

- \* SPRA (Screening for Portfolio Risk Analysis): 2006
- \* DSAC (Dam Safety Action Classification) Rating: Class 3
- \* IRRMP (Interim Risk Reduction Measures Plan): Completed 9 April 2008
- \* The findings of the Phase 2 Issue Evaluation Study (IES) risk analysis were presented to the Risk Management Center (RMC) in November 2011 and to the Dam Senior Oversight Group (DSOG) in February 2012. The RMC and DSOG agreed with the report recommendation that the project be reclassified to a DSAC 3 based on the results of the risk analysis. Other recommendations were to install additional instrumentation on the right abutment of dike and to update the current IRRMs.

<u>Where We Are Now</u>: Remedial construction is not warranted at this time and the dam was re-classified to a DSAC 3. This structure has been reprioritized in the risk study queue.

Project Location: Nolin Lake Dam, KY



#### **Project Status**:

- \* SPRA (Screening for Portfolio Risk Analysis): 2006
- \* DSAC (Dam Safety Action Classification) Rating: Class 3
- \* IRRMP (Interim Risk Reduction Measures Plan): Completed 8 April 2008
- \* The findings of the Phase 2 Issue Evaluation Study (IES) risk analysis were presented to the Risk Management Center (RMC) in November 2011 and to the Dam Senior Oversight Group (DSOG) in February 2012. The RMC and DSOG agreed with the report recommendation that the project be reclassified to a DSAC 3 based on the results of the risk analysis. Other recommendations were to install additional instrumentation in right and left abutments, and to update the current IRRMs.

<u>Where We Are Now</u>: Remedial construction is not warranted at this time and the dam was re-classified to a DSAC 3. This structure has been reprioritized in the risk study queue.

#### Project Location: Rough River Lake Dam, KY (See detailed Fact Sheet for additional information)



#### **Project Status:**

- \* DSAC (Dam Safety Action Classification) Rating: Class 2
- \* IRRMP (Interim Risk Reduction Measures Plan): Completed 15 April 2008
- \* A Dam Safety Modification Report (DSMR) was completed in July 2012. The DSMR addressed unacceptable foundation conditions and associated seepage and identified a need for major rehabilitation in order to remove uncertainty and lower project risk.
- \* There is no emergency or imminent threat. However, failure of this dam from seepage/piping would result in catastrophic effects downstream including loss of life and significant economic losses.

#### Where We Are Now?

FY 2014: The first construction contract (Phase 1A) was awarded in March 2014 and completed in September 2015. This contract relocated KY State Hwy 79, which crosses the dam, to the upper slope of the dam.

FY 2015: The second construction contract (Phase 1B) was awarded in May 2015 and consists of exploratory drilling and grouting.

FY 2016: Construction work continues with exploratory drilling and grouting with a scheduled completion date of June 2016. Depending on the results of the grouting, a decision will be made on whether to construct a full depth concrete cutoff wall.

**Project Location:** Taylorsville Lake Dam, KY



#### **Project Status:**

- \* SPRA (Screening for Portfolio Risk Analysis): 2009
- \* DSAC (Dam Safety Action Classification) Rating: Class 4
- \* IRRMP (Interim Risk Reduction Measures Plan): N/A since it is DSAC 4
- \* IES (Issue Evaluation Study): Not required since it is a DSAC 4



# **Green River Watershed, KY**

March 2016

#### U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Official Title: Green River Section 729 Watershed Assessment

<u>Authorization</u>: This study is authorized by Section 729 of the Water Resources Development Act (WRDA) 1986, as amended by WRDA 2000.

Project Phase: Final Watershed Assessment

<u>Juninanzea i manciai bata</u> .	
Estimated Federal Cost	\$220,000
Estimated Non-Federal Cost	\$40,000
Total Estimated Project Cost	\$260,000
Allocation thru FY15	\$220,000
FY16 President's Budget	\$0
FY16 Allocation	\$0
FY17 President's Budget	\$0
Balance to Complete	\$0



<u>Project Location</u>: The Green River Watershed, with a drainage area of 9,230 square miles, is located in west-central Kentucky with a small portion in north-central Tennessee. The Green River is one of the most significant freshwater aquatic ecosystems in North America.

<u>Project Description</u>: The District prepared a Section 729 Initial Watershed Assessment (IWA) for the Green River Watershed in 2011. The conclusion of the IWA recommended the development of a Final Watershed Assessment (FWA) for the Green River Watershed. In 2012, LRL executed a cost share agreement with The Nature Conservancy to complete the FWA. The FWA documents the problems identified by stakeholders within the watershed, including existing conditions, possible causes and potential solutions which may be implemented by local decision makers, watershed groups, state resource agencies and federal agencies. Utilization of this FWA should inform comprehensive action for managing land and water resources within the watershed via a holistic process which reflects the interdependency of land owners and water users, competing demands on water resources and the desires of the stakeholders.

Project Status: Active.

<u>Non-Federal Sponsor</u>: The Kentucky Chapter of The Nature Conservancy is the Non-Federal Sponsor for the cost shared phase of the Watershed Assessment.

<u>Where We Are Now</u>: The Final Watershed Assessment was approved by USACE HQS in October 2015 and is currently under review by OASA (CW) office.



## **Green River Dam Modification, KY**

March 2016

BUILDING STRONG®

#### U.S. ARMY CORPS OF ENGINEERS

Official Title: Green River Lake Dam Outlet Modification

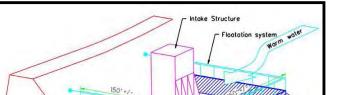
Study

<u>Authorization</u>: Section 1135 of the Water Resources Development Act of 1986 (P.L. 99-662), as amended

**Project Phase:** Design & Implementation

#### **Summarized Financial Data**

Carrinarizoa i manoiai Bata	
Estimated Federal Cost	\$1,034,810
Estimated Non-Federal Cost	\$344,937
Total Estimated Project Cost	\$1,379,747
Allocation thru FY15	\$125,000
FY16 President's Budget	\$0
FY16 Allocation	\$70,000
FY17 President's Budget	\$0
Balance to Complete	\$964,810



<u>Project Description</u>: The upper Green River is rated the fourth highest stream in aquatic biodiversity in the United States. The most critical stretch is about 114 stream miles long between Lock and Dam 6 in Mammoth Cave National Park on the lower end and Green River Lake Dam on the upper end. The continued enhancement and preservation of this critical stretch of the Green River is a high priority for conservation professionals. The proposed project includes the modification of the Green River Lake Dam with the installation of a flexible curtain as a submerged weir. This modification would allow for the Corps of Engineers to meet temperature targets for water releases from Green River Lake 80 to 90% of the year, which will benefit reproduction of aquatic species downstream of Green River Lake.

<u>Project Location</u>: The Green River Lake Dam is located in Taylor County, Kentucky approximately 10 miles from the City of Campbellsville.

**Project Status:** Active

Non-Federal Sponsor: TBD

<u>Where We Are Now</u>: The feasibility report was approved in September 2015. USACE is currently identifying non-federal sponsors to execute a Project Partnership Agreement and initiate the design phase of the project.



### **GREEN & BARREN RIVERS DISPOSITION**

March 2016

#### U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Official Title: Green & Barren Rivers, KY Locks and Dams Disposition Study

**<u>Authorization</u>**: Section 216 of the Flood Control Act

of 1970 (P.L. 91-611)

**Project Phase:** Feasibility Study

Summarized	<b>Financial</b>	Data:
------------	------------------	-------

Estimated Federal Cost	\$338,000
Estimated Non-Federal Cost	\$0
Total Estimated Project Cost	\$338,000
Allocation through FY15	\$338,000
FY16 President's Budget	\$0
FY16 Allocation	\$0
FY17 President's Budget	\$0
Balance to Complete	\$0



The Feasibility phase is complete. Upon receipt of funding, the Preconstruction, Engineering and Design phase of the project will be initiated.

<u>Project Location</u>: The Green River enters the Ohio River just upstream of Henderson, Kentucky. Major tributaries include the Barren River, Rough River, and the Nolin River. The area specifically involved in the study is the Green River between Lock and Dam 3 at River Mile 108.5 upstream to the furthest extent of the pool above Lock and Dam 6 at River Mile 181.7, and the Barren River from its confluence with the Green River upstream to the furthest extent of the pool above Lock and Dam 1, at River Mile 15.0.

**Project Description:** Green River Locks and Dams 3 through 6 and Barren River Lock and Dam 1 were authorized by Congress for navigation, but are no longer in use. The facilities and the pools are no longer operated for navigation purposes; however, USACE still has administrative accountability of the properties, and periodically inspects the facilities. The study provided recommendations regarding the deauthorization and disposition of the facilities and reassessed the condition and safety of the structures. The recommended plan is to deauthorize commercial navigation at Green River Locks and Dams 3, 4, 5 and 6 and Barren River Lock and Dam 1. Following deauthorization, a logical next step would be to seek disposal of these properties and facilities through the established USACE and GSA procedures as outlined in the Federal Property and Administrative Services Act of 1949 and Army regulations.

**Project Status:** Active

Non-Federal Sponsor: N/A

<u>Where We Are Now</u>: The Chief of Engineer's report was signed in April 2015 and the 120 day review by the ASA(CW) was completed in June 2015. Currently, the Chief of Engineers report package is under review by OMB.



## **Barren River Lake, KY Water Supply**

March 2016

#### U.S. ARMY CORPS OF ENGINEERS

**BUILDING STRONG®** 

Official Title: Barren River Lake, KY Water Supply Reallocation Investigation

Authorization: Section 216, 1970 Flood Control Act (P.L.

91-611)

**Project Phase:** Feasibility

Summarized Financial Data	
Estimated Federal Cost	\$121,500
Estimated Non-Federal Cost	\$121,500
Total Estimated Project Cost	\$243,000
Allocation thru FY15	\$0
FY16 President's Budget	\$0
FY16 Allocation	\$0
FY17 President's Budget	\$0
Balance to Complete Feasibility	\$121,500



<u>Project Description</u>: Bowling Green Municipal Utilities (BGMU) serves over 90,000 people in Warren County, Kentucky with drinking water. In the next 50 years, the City of Bowling Green is facing a critical water shortage, especially if the region continues with its present rate of growth.

The Louisville District executed a contributed funds agreement with the City of Bowling Green on July 3, 2014 to investigate the impact of providing additional release from Barren River Lake during certain drought periods. During most periods, Barren River's flow at Bowling Green provides ample volume to meet the needs of BGMU. It is only during periods of drought that flow augmentation from Barren River Lake would be required. The initial water supply analysis was completed in October 2015 and determined that there is sufficient storage available to proceed into a full feasibility study.

<u>Project Location</u>: The Barren River Lake project is located in south central Kentucky, approximately 23 miles southwest of Bowling Green, Kentucky. The dam site is on Barren River, 79.2 miles above its confluence with the Green River.

**Project Status:** Awaiting Federal funding to initiate the Feasibility Study.

Local Sponsor: City of Bowling Green, KY.

<u>Where We Are Now</u>: Bowling Green Municipal Utilities submitted a Letter of Intent to initiate the Feasibility Study on May 15, 2015.



# **Green River Erosion, KY**

#### U.S. ARMY CORPS OF ENGINEERS

July 2016
BUILDING STRONG®

Official Title: Green River Erosion, Kentucky

**Authorization**: Section 1135 of the Water

Resources Development Act of 1986 (P.L. 99-662),

as amended

**Project Phase:** Feasibility

<u>Project Location</u>: Approximately 40 miles downstream of Green River Lake, a USACE Flood Risk Management (FRM) reservoir. The Study is located in Kentucky's 2nd Congressional District.

**Project Description:** The feasibility phase of this study will address ecosystem restoration to provide aquatic, wetland and riparian habitat. The project involves restoration of wetlands and riparian



woodlands along the Green River. While a general area is under consideration exact acreage to be restored has not yet been determined.

#### **Summarized Financial Data:**

Estimated Federal Cost	TBD
Estimated Non-Federal Cost	TBD
Total Estimated Project Cost	TBD
Allocation thru FY15	\$50,000
Balance to Complete	TBD
FY16 President's Budget	\$0
FY16 Allocation	\$0
FY17 President's Budget	\$0

**Project Status:** A Federal Interest Determination (FID) was submitted to LRD on 30 Jun, 2016.

Non-Federal Sponsor: TBD

<u>Where We Are Now</u>: A Federal Interest Determination (FID) was submitted to LRD on 30 Jun, 2016. Once approved work can begin on developing a Project Management Plan and a Feasibility Cost Sharing Agreement (FCSA) with a non-Federal Sponsor.