

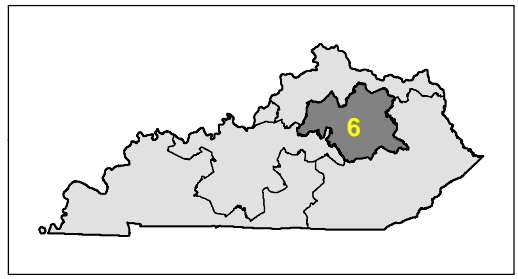
Congressional District: KY 06

KY River Lock & Dam 1-4
Disposition Study

Licking River, KY Initial
Watershed Assessment

Dam Safety Program
(All COE KY Dams)

Olmsted Locks & Dam



Location Map

Legend

- Project Name
- Locks & Dams
- Levees / Floodwalls
- Interstate Highways
- Major Streams
- COE Reservoirs
- Watershed
- Major Cities
- County Boundary
- Louisville District Civil Works Boundary







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.

Purpose: 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.

Project Description and Background: 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.

Project Status: 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.

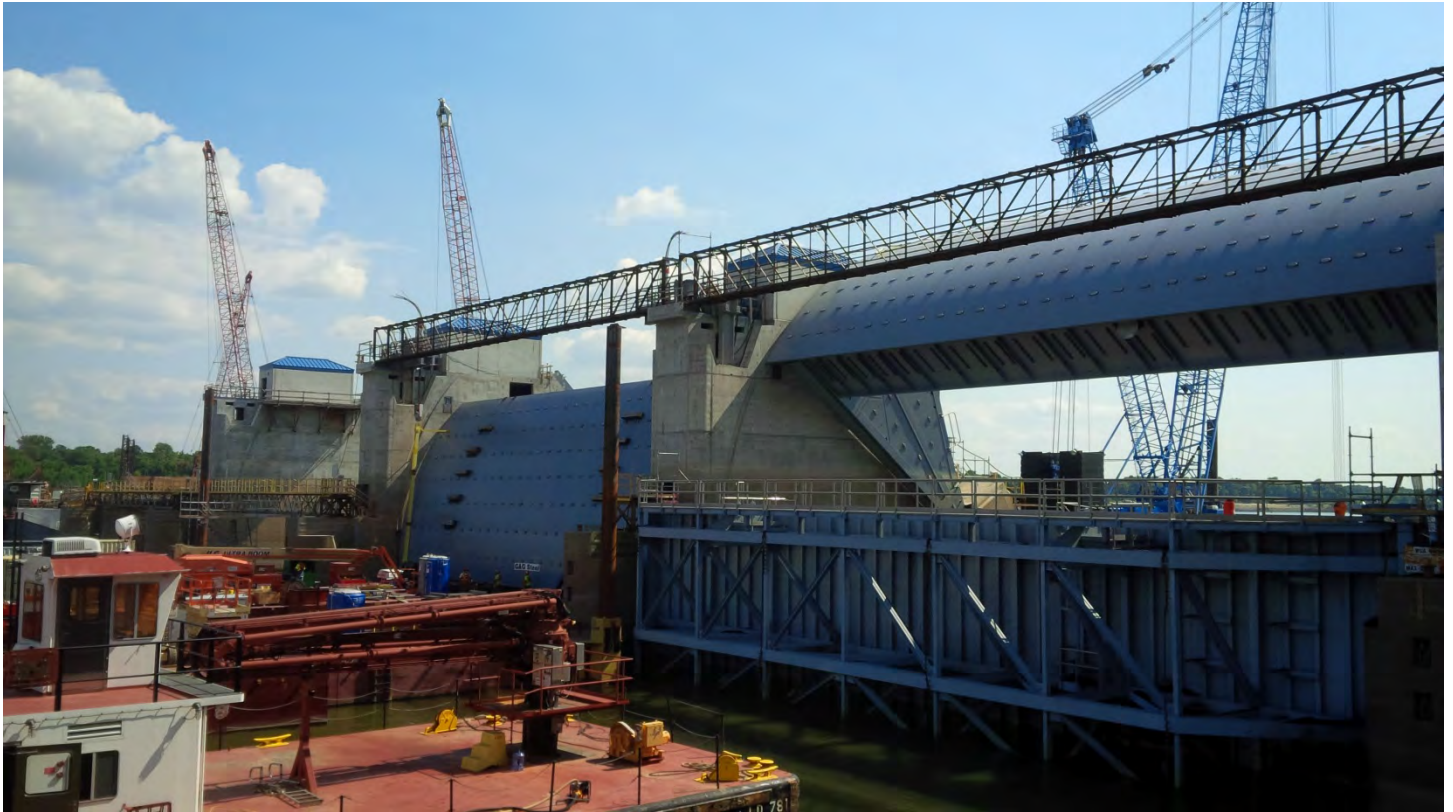
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As of 01 February 2016, \$2,123,787,491 has been expended on the project. The annual average benefits from the Olmsted project are approximately \$640M.

Upcoming Actions: 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



Licking River, KY IWA

March 2016

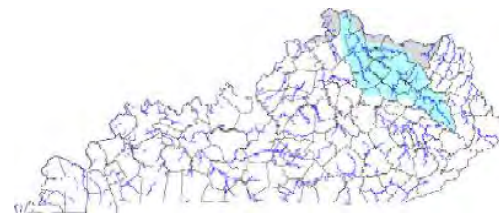
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Official Title: Licking River, KY, Initial Watershed Assessment

Authorization: Section 729 WRDA 1986, as amended by WRDA 2000.

Project Phase: Initial Watershed Assessment (IWA)



Summarized Financial Data:

Estimated Federal Cost	\$100,000
Estimated Non-Federal Cost	\$29,300
Total Estimated Project Cost	\$129,300
Allocation thru FY15	\$100,000
FY16 President's Budget	\$0
FY16 Allocation	\$0
FY17 President's Budget	\$0
Balance to Complete	\$0

Project Location: The Licking River watershed is within the Commonwealth of Kentucky, and includes parts of Kentucky's 4th, 5th, and 6th Congressional Districts. The watershed is identified with the 8-digit hydrological unit code (HUC) 05100101. The main stem of the river flows north northwest 320 miles from its headwaters to its confluence with the Ohio River near Cincinnati, OH. It drains an area of roughly 3,600 square miles.

Project Description: The purpose of the Initial Watershed Assessment is to engage stakeholders in the identification of problems, needs and opportunities in the watershed and to prioritize those into a draft comprehensive watershed master plan.

Project Status: Active.

Non-Federal Sponsor: The non-federal sponsor for completion of the IWA is the KY Division of Water. The ability to continue beyond the IWA into a Final Watershed Assessment (FWA) is dependent on the identification of a non-federal cost share sponsor. Discussions are underway with potential sponsors for preparation of the Final Watershed Assessment.

Where We Are Now: A GIS inventory of existing data has been assembled, and outreach meetings held to identify water resources priorities within the watershed. Additional stakeholder meetings will be conducted to complete the watershed assessment.

Issues and Other Information: A cost share sponsor is required to initiate and complete the Final Watershed Assessment. With the passage of the Water Resources and Reform Development Act (WRRDA) of 2014, there is no longer 100% federal funding for Initial Watershed Assessments prior to initiating a Final Watershed Assessment. A cost share sponsor is required from the onset of the FWA.



KY RIVER LOCKS 1-4

July 2016

U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

Official Title: Kentucky River Locks 1-4, KY, Disposition Study

Authorization: Section 216 of the Flood Control Act (FCA) of 1970, Public Law 91-611

Project Phase: Feasibility Study

Project Location: Kentucky River Locks 1-4 are located on the Kentucky River between its confluence with the Ohio River (545.9 miles below Pittsburgh, Pennsylvania) and KY River Mile 65.0 at Frankfort, Kentucky.

Project Description: The feasibility study would document and evaluate potential alternatives for the disposal of the existing inland navigation facilities.

Summarized Financial Data:

Estimated Federal Cost	\$700,000
Estimated Non-Federal Cost	\$0
Total Estimated Project Cost	\$700,000
Allocation thru FY15	\$0
FY 16 President's Budget	\$0
FY 16 Allocation	\$400,000
FY 17 President's Budget	TBD
Balance to Complete Project	\$300,000

Team where all parties will either recommend continuing with a disposition study, changing to a General Investigation Study, or terminating future work.

Issues and Other Information: Commercial navigation on the Kentucky River has been a Corps mission responsibility since the late 19th century, involving 14 lock & dam facilities. Navigation on the Kentucky River began a steadily decline in the mid 20th century until it was determined in the mid-1970's that a Federal interest in continued operation of Locks and Dams 6-14 no longer existed. In WRDA 1986 Congress authorized the disposition of Locks and Dams 5-14. During the period 1996 - 2006, Locks and Dams 5-14 were transferred by Quitclaim deed to the Kentucky River Authority. Locks 1-4 are currently operated by the Kentucky River Authority under a lease agreement with the Corps.

In 1988 the Corps completed the Lower Kentucky River Navigation Modernization Feasibility Study, concluding that modernization of the navigation system on the Lower Kentucky River (Locks and Dams 1-4) would not be economically justifiable, and does not warrant further study. Navigation data through Locks and Dams 1-4 has not been collected or monitored by the Corps since 2002.



KY River Lock & Dam #4

Project Status: The existing navigation facilities no longer perform their authorized Federal navigation purpose, and it is highly unlikely that this condition will ever improve.

Non-Federal Sponsor: N/A

Where We Are Now: Acting upon interim guidance from HQ USACE, the study team is collecting existing information to prepare a decision meeting with the Vertical

DAM SAFETY, KENTUCKY

February 2016



U.S. ARMY CORPS OF ENGINEERS

BUILDING STRONG®

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

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

Summarized Financial Data: 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

Project Location: 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

Study and Program Information: 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 re-evaluated 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.

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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).

Where We Are Now: Routine O&M surveillance and monitoring program.

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).

Where We Are Now: Routine O&M surveillance and monitoring program.

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

Where We Are Now: Routine O&M surveillance and monitoring program.

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).

Where We Are Now: Routine O&M surveillance and monitoring program.

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.

Where We Are Now: 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.

Where We Are Now: 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

Where We Are Now: Routine O&M surveillance and monitoring program.