OMB Control No. 1024-0018
expiration date 03/31/2026

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form.* If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions.

1. Name of Property

Historic name: McAlpine Locks and Dam
Other names/site number: Scowden Lock, Louisville & Portland Canal
Name of related multiple property listing:
N/A
(Enter "N/A" if property is not part of a multiple property listing

2. Location

Street & number: Off of Northwestern Parkway between Shippingport Island and the Louisville shoreline of the Ohio River
City or town: Louisville State: Kentucky County: Jefferson
Not For Publication: ☐ Vicinity: ☐

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,

I hereby certify that this ___ nomination ___ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.

In my opinion, the property ___ meets ___ does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

___national ___statewide ___local

Applicable National Register Criteria:

___A ___B ___C ___D

_____
Signature of certifying official/Title: **Date**
_____
State or Federal agency/bureau or Tribal Government

McAlpine Locks and Dam | Jefferson County, KY
Name of Property | County and State

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

Signature of commenting official: **Date**

Title : **State or Federal agency/bureau or Tribal Government**

4. National Park Service Certification

I hereby certify that this property is:

___ entered in the National Register

___ determined eligible for the National Register

___ determined not eligible for the National Register

___ removed from the National Register

___ other (explain:) _____

Signature of the Keeper Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

Private:	☐
Public – Local	☐
Public – State	☐
Public – Federal	X

McAlpine Locks and Dam | Jefferson County, KY
Name of Property | County and State

Category of Property

(Check only **one** box.)

Building(s)	☐
District	☐
Site	☐
Structure	X
Object	☐

Number of Resources within Property

(Do not include previously listed resources in the count)

Contributing	Noncontributing	
7	18	buildings
		sites
6	3	structures
		objects
13	21	Total

Number of contributing resources previously listed in the National Register 0

---

6. Function or Use

Historic Functions

(Enter categories from instructions.)

GOVERNMENT/public works
INDUSTRY/waterworks, hydroelectric power
TRANSPORTATION/water-related

Current Functions

(Enter categories from instructions.)

GOVERNMENT/public works
INDUSTRY/waterworks, hydroelectric power

_TRANSPORTATION/water-related_____

---

7. Description

Architectural Classification
(Enter categories from instructions.)
_N/A_____
_____
_____
_____
_____

Materials: (enter categories from instructions.)
Principal exterior materials of the property: __CONCRETE; METAL/Steel; STONE____

Narrative Description
(Describe the historic and current physical appearance of the property. Explain contributing and noncontributing resources if necessary. Begin with a summary paragraph that briefly describes the general characteristics of the property, such as its location, setting, size, and significant features.)

Summary Paragraph

The McAlpine Locks and Dam are located between the northeastern shore of Louisville, Kentucky, and Shippingport Island between mile points 604.5 and 606.8 on the Ohio River. The Federal government owns the transportation structure, which is operated by the U.S. Army Corps of Engineers (USACE), Louisville District. The overall size of the McAlpine Locks and Dam system is approximately 507.69 acres. The original Louisville and Portland Canal was designed in the late 1820s and completed in 1830 to bypass the Falls of the Ohio River, which are located between the Indiana shoreline and a lime rock outcropping called Goose Island. Since that time, the canal and the associated locks, chambers, support buildings, and structures have been extensively modified to allow for changes in river transportation. In its current form, the contributing Louisville and Portland Canal is approximately 1.9 miles long and is 500 feet (ft.) wide. There are two 1,200 ft. x 110 ft. side locks and chambers (the 1961 Lock and 2009 Lock) separated by a working platform that is a remnant feature of the previous Auxiliary Lock. The Auxiliary Lock measures 360 ft. x 56 ft and was partially filled with concrete during the 2000-2009 expansion of the facility. The 1961 Lock and its associated buildings and structures were built between 1961 and 1965, are more than 50 years of age, and are contributing resources to the property. These include a gauging station, two gatehouses and emergency lift stations, the 1963 Pumphouse, the 1965 Maintenance Building. The contributing 1965 Surge Basin is on the northeast side of the canal. The basin is adjacent to Shippingport Island. The contributing Lower Tainter Gate Dam is located between Shippingport Island and Goose Island to the northeast. The

original dam was a Boule wicket structure with movable wickets; the current dam has fixed construction with Tainter gates regulating the water levels. The Ohio Falls Station hydroelectric plant, which is owned and operated by Louisville Gas & Electric and Kentucky Utilities, is located on Shippingport Island and situated slightly west/northwest of the Lower Tainter Gate Dam. The second contributing McAlpine Upper Tainter Gate Dam is located at the southeast end of Goose Island and a permanent Fixed Weir Dam runs along the southwest side of Goose Island between the two sets of dam gates. The 2009 Lock, along with its associated machinery buildings and the 2009 Auxiliary Lock, the Visitors Center, and four storage buildings located near the Maintenance Building, were all altered or constructed in the late 1990s and early 2000s and are not historic. While the 2009 Lock is a crucial part of the overall McAlpine Locks and Dam complex, it, along with the other associated non-historic buildings, and the Auxiliary Lock structure, are considered non-contributing to the property due to non-historic alterations or for being less than 50 years old. Other identified non-contributing resources located within the property boundary are either not directly related to the historic development and transportation function of the McAlpine Locks and Dam or are not owned and operated by the Federal government. These include the Louisville Repair Station, the Ohio Falls Station hydroelectric plant, and Shippingport Island Bridge.

Narrative Description
(See Continuation Sheets, Section 7)

8. Statement of Significance

Applicable National Register Criteria
(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- [X] A. Property is associated with events that have made a significant contribution to the broad patterns of our history.
- [ ] B. Property is associated with the lives of persons significant in our past.
- [X] C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- [ ] D. Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations
(Mark “x” in all the boxes that apply.)

- [ ] A. Owned by a religious institution or used for religious purposes
- [ ] B. Removed from its original location
- [ ] C. A birthplace or grave
- [ ] D. A cemetery
- [ ] E. A reconstructed building, object, or structure
- [ ] F. A commemorative property
- [ ] G. Less than 50 years old or achieving significance within the past 50 years

Areas of Significance
(Enter categories from instructions.)

Transportation
Commerce
Engineering

Period of Significance
1830-1965

Significant Dates
1830: original construction
1872, 1921, 1930: lock modifications
1881, 1925-1927: dam built and then modified
1958-1965: canal widened, new lock
2000-2009: construction of south locks

Significant Person
(Complete only if Criterion B is marked above.)

Cultural Affiliation
N/A

Architect/Builder
Louisville and Portland Canal Company
U.S. Army Corps of Engineers, Louisville District
William McAlpine
David Bates
Theodore R. Scowden
Increase Lapham

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

Originally built as the Louisville and Portland Canal in 1830, the McAlpine Locks and Dam system is significant at the national level under Criterion A in the areas of **transportation** and **commerce**, and under Criterion C for **engineering**. The American Society for Civil Engineers designated the Louisville and Portland Canal a National Historic Civil Engineering Landmark in 2003 for "permanently changing navigation on the Ohio River" and "playing an important role in

the settlement and growth of the nation."[1] Completion of the canal and locks in 1830 allowed vessels to successfully navigate the Falls of the Ohio River and established the waterway as a vital transportation corridor for commercial shipping and travel. Early riverboat men passed through the canal en route to New Orleans with goods from Eastern and Midwestern markets such as whiskey, tobacco, and flour. They would later make the return journey with sugar or foreign imports, such as coffee and wine. As time progressed, wooden, flat-bottomed keelboats gave way to mechanical steamboats towing large river barges laden with coal, steel, and salt to supply the growing industrial centers within the region during the late nineteenth and early twentieth centuries. Modified and enlarged four times since its original construction in 1830, the McAlpine Locks and Dam facility was the first major infrastructure improvement within the interior river system of the United States. Designed and built by former Erie Canal engineers David Bates and Increase Lapham, the Louisville and Portland Canal was one of the largest waterway transportation structures of its kind in the world, a distinction it retained over the following century after its enlargement and modifications by Theodore Scowden in the mid-nineteenth century and again as Lock and Dam 41 in the late 1920s. Further, the Scowden locks and William McAlpine's steel reinforced concrete design for Lock 41 served as engineering models for other canal and lock systems along the Mississippi and Ohio Rivers. The period of significance for the McAlpine Locks and Dam is 1830 to 1965. It begins with the completion of the original Louisville and Portland Canal and first generation of locks in 1830. It concludes with the completion of the McAlpine Locks and Dam modernization project in 1965.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

The McAlpine Locks and Dam are eligible under Criterion A at the national level of significance in the areas of **transportation** and **commerce**. In the area of **transportation**, the construction of the Louisville and Portland Canal, now part of the McAlpine Locks and Dam, and its original locks provided a way to circumnavigate the Falls of the Ohio, the only natural obstacle in the Ohio River. As a result, river traffic could easily traverse the length of the Ohio River, from its origin at the convergence of the Alleghany and Monongahela Rivers at Pittsburgh, Pennsylvania to where it empties into the Mississippi River near Cairo, Illinois. Despite the development of the railroad, the automobile, and the interstate highway system, traffic on the Ohio River has continued to grow, and the canal and its system of locks and dams have evolved to accommodate the ever-increasing number of barges passing through and their ever-increasing size. The McAlpine Locks and Dam are now a component of the Ohio River Navigation System, which has been operated by the USACE since 1874 and consists of a system of 53 locks and dams that have canalized the entire Ohio River. Dubbed Lock and Dam 41 in the early 1900s, the Falls navigation system was a vital part of the war effort during World War II, seeing critical shipments of scrap steel, iron, and petroleum passing through Lock 41, multiplying its typical

[1] American Society of Civil Engineers, "Louisville & Portland Canal Locks and Dam," ASCE, 2025, https://www.asce.org/about-civil-engineering/history-and-heritage/historic-landmarks/louisville-and-portland-canal-locks-and-dam/.

traffic.[2] The modernization of the Falls navigation system in the 1960s and another widening and improvement in 2009 speaks to the system's continued significance in transportation on the Ohio River.

In the area of **commerce**, the McAlpine Locks and Dam opened up a vital trade route between the Midwest, the Port of New Orleans, and all points west during the early period of American expansion in the nineteenth century. The Ohio and Mississippi River are the primary route for inland river travel in the United States. The circumnavigation of the Falls of the Ohio was seen by merchants in Pittsburgh, Pennsylvania, Wheeling, West Virginia, and Cincinnati, Ohio as key to efficiently reaching the Port of New Orleans. The construction of the Louisville and Portland Canal and its original locks facilitated trade, initially with keelboats carrying shipments of commodities such as whisky, tobacco, hemp rope, and flour to New Orleans and returning with imported goods such as coffee, sugar, molasses, and wine. Later, as overland transportation routes improved, large, heavy loads of coal, steel, sand, and salt were transported via the Ohio River.[3] The development of the Falls navigation system, in the form of the current McAlpine Locks and Dam, remains vital to the nation's commercial and economic development.

The McAlpine Locks and Dam is also eligible under Criterion C at the national level of significance for its contributions in the area of **engineering** for the construction of river canals, locks, and dams. The Louisville and Portland Canal Company hired former Erie Canal engineers, David S. Bates (1777-1839) and Increase Lapham (1811-1874), to design the original two-mile-long canal and three-part, lift lock system and construction work began in 1826. The two men were tasked with building a canal structure that could accommodate the unique variations of water levels at the Falls of the Ohio and the larger sizes of western river steamboats. When the Louisville and Portland Canal was completed in 1830, the height and width of the structure dwarfed the scale (but not length) of the Erie Canal and other previous eastern systems by providing a "capacity equal to that of 25 common canals" at the time.[4] Beginning in 1860, company executives employed the prominent hydraulic engineer, Theodore R. Scowden (1815-1881) to developed plans for the enlargement and modernization of the canal locks to allow for the passage of larger classes of vessels and heavier traffic volumes. The Civil War and funding disruptions delayed the completion of the work until 1872. Hailed by contemporary engineers as the "largest in the known world, not excepting the Suez Canal," Scowden's locks redesign and extension of the canal consisted of two locks that provided 13 ft. of lift and were built with approximately 52,000 yards of masonry.[5] The Scowden locks also served as a model for other lock designs along the Mississippi River.[6] Subsequent engineering improvements undertaken by

[2] Leland R. Johnson and Charles E. Parrish, *Triumph at the Falls: The Louisville and Portland Canal* (Louisville, Kentucky: U.S. Army Corps of Engineers, Louisville District, 2007), 197, 233–35.
[3] Johnson and Parrish, 11, 226.
[4] Paul B. Trescott, "Louisville and Portland Canal Company," *The Mississippi Valley Historical Review* XLIV, no. 4 (March 1958): 694.
[5] Maurice Joblin, "Theodore R. Scowden," in *Cleveland, Past and Present: Its Representative Men* (Cleveland, Ohio: Fairbanks, Benedict & Co., Printers, 1869), 462.
[6] Johnson and Parrish, *Triumph at the Falls: The Louisville and Portland Canal*, 176.

the USACE, Louisville District in the late nineteenth and early twentieth centuries involved additional widening of the canal, a new concrete lock (Lock 41) to facilitate faster passage times, and construction of dams for improved water level control and the generation of local hydroelectric power at the Falls. Louisville District chief engineer William McAlpine (1868-1956) oversaw the pioneering design of Lock 41. Composed of two-part, lower and upper lockgates with horizontal arch and cantilevered truss framing, it was the largest of its type and later became the design standard for all locks on the lower Ohio River.[7] The USACE's navigation modernization project of the mid-to-late twentieth century resulted in the development of the much larger McAlpine Locks and Dam system that functionally superseded previous versions at the Falls. Built of steel reinforced concrete in 1961 as part of the modernization program, the new McAlpine Locks and Dam design doubled lock capacity (from 600 to 1,200 ft.) and more than doubled the size of the canal, resulting in faster and smoother barge passage transport through the structure, reduced occurrences of lockage within the network, and recreational improvements along the river. The McAlpine Locks and Dam complex is currently one of only three navigation projects in the world with twin 1200-ft. locks (the other two are also on the Ohio River—the Smithland and Olmsted locks).[8]

Developmental history/additional historic context information (if appropriate)

The first European explorations of the Ohio River in the mid-eighteenth century identified the Falls of the Ohio ("the Falls") as a major obstacle to waterborne trade and transport within the interior river network that extended to the west and south from the Pennsylvania River to the Mississippi River. Within a two-mile segment near present day Louisville, Kentucky, the Ohio River falls from 27 to 28 ft., forming strong rapids that greatly impeded travel.[9] To successfully navigate river, early riverboat men had to make landings above or below the Falls and portage their boats and goods around it, or risk dragging their vessels up the rapids and contracting with local pilots to help make the perilous trip back down on return. With the influx of westward expansion into the Northwest and Louisiana Territories after the American Revolution, private, state, and Federal plans to address this problem gained considerable traction in the late eighteenth and early nineteenth centuries.[10]

The most popular plan was to construct a canal that would make the river navigable at all times. Although several attempts were made to identify a suitable location and provide funding for the venture, it was not until the Kentucky legislature issued a charter to establish the Louisville and Portland Canal Company in January 1825 that the canal became a reality.[11] Agreeing with the recommendations made in previous engineering studies, the new company's directors quickly

[7] Johnson and Parrish, 203.

[8] Johnson and Parrish, 263.

[9] Leslie S. Wright, "The Origin and History of the Louisville and Portland Canal" (Louisville, Kentucky, University of Louisville, 1939), 2, ThinkIR.

[10] Johnson and Parrish, *Triumph at the Falls: The Louisville and Portland Canal*, V, 19–20.

[11] Trescott, "Louisville and Portland Canal Company," 689.

selected the Kentucky side of the river as the best location for the structure primarily due to the composition of the soils and, perhaps, based on the distance from the Falls.[12]

Construction and Early Operation of the Louisville and Portland Canal

The Louisville and Portland Canal Company hired David S. Bates to serve as chief engineer for the project. A native of New Jersey, "Judge" Bates served as the assistant engineer for the middle division of the Erie Canal under Chief Engineer Benjamin Wright and supervised construction of the structure's aqueduct over the Genessee River and the design of the combined lock system at Lockport, New York.[13] Bates had also prepared a preliminary engineering assessment for a preferred canal route at the Falls on behalf of the estate of Ohio's canal commission in 1823. Judge Bate's team for the Louisville and Portland Canal project also included his son, John Bates, along with John Henry and Increase Lapham, two other design veterans of the Erie Canal, who served as supervising engineers.[14]

David Bates' original plan was to fully build the canal over a two-year span at an estimated cost of $420,000. His design for the Louisville and Portland Canal consisted of three stepped locks measuring 190 ft. x 50 ft., which would provide a lift of eight ft., eight inches in each lock for a total lift of 26 ft. The locks themselves would be 15 times larger than those used on the Erie Canal and both the canal chamber and locks would be lined with cut stone masonry. The canal itself would be 1.9-miles-long and 64-ft.-wide, with a depth of three feet at low water. The project groundbreaking was held in July 1825 with DeWitt Clinton, the former New York governor who shepherded the development of the celebrated Erie Canal, as the guest of honor at the ceremony.[15] The Directors of the Louisville and Portland Canal Company awarded Chapman, Culver, Lathrop, Collins, Perrine & Company the construction contract. The project began in 1826 with work performed by skilled and unskilled white and enslaved African American labor. Due to defaults by private shareholders, the federal government had become the major stockholder in the company over the course of construction, despite opposition to public spending on the project by President Andrew Jackson, who eventually vetoed Federal financing in early 1830. Despite numerous contractor failures, cost overruns, and capitalization problems that delayed the project, the canal finally opened on December 22, 1830.[16]

In the years after completion and prior to the Civil War, an average of 1,300 vessels passed through the canal. Among those who traveled the Ohio River during this period was a young

[12] Leland R. Johnson, *The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army*, vol. 1 (Louisville, Kentucky: U.S. Army Engineer District, 1984), 61.
[13] Memorial of Centennial Celebration of the Turning of the First Shovelful of Earth in the Construction of the Erie Canal, "David S. Bates" (Rome, New York, July 4, 1917), https://www.eriecanal.org/texts/Bates.html.
[14] Johnson, *The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army*, 1:62.
[15] Johnson and Parrish, *Triumph at the Falls: The Louisville and Portland Canal*, 19.
[16] Trescott, "Louisville and Portland Canal Company," 692–93; Johnson, *The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army*, 1:49.

Samuel Clemens (later known by his pen name, Mark Twain), who found himself stranded on the Falls for four days after the steamboat he was on became stuck on the rocks. The harrowing experience was said to have convinced the future author and humorist to later take up a job as a river pilot on the Mississippi.[17]

With Federal aid no longer forthcoming, the Louisville and Portland Canal Company turned to higher toll rates to finance operation and maintenance, which quickly prompted complaints from boatmen navigating the river.[18] By the early 1840s, company directors and Federal authorities realized canal needed to be enlarged to accommodate larger classes of steamboats. A gradual return of Federal involvement (if not direct ownership or funding) that began in the mid-1850s allowed the company to begin planning for enlargement of the canal in the following years.[19]

The Scowden Locks

Company executives hired engineer Theodore R. Scowden to carry out the expansion project. Scowden was born in Pittsburgh, Pennsylvania and received his education in mechanical design from Augusta College in Kentucky. He received his first major commission for the design of the Cincinnatti, Ohio municipal waterworks in 1845. That work led to similar contracts in Cleveland in 1853 and Louisville in 1857, which in turn brought him in contact with directors of the Louisville and Portland Canal Company.[20]

A novice in canal and lock design, Scowden completed his expansion plans for the Louisville and Portland Canal by October 1859 and construction work began the following year. His redesign called for excavation and widening of the canal to 90 ft. and replacing the original three-part locks with a two-flight system measuring 80 ft. x 350 ft. The total lift would remain 26 ft. Scowden's plan also included a metal swing bridge over the locks to provide access to Shippingport Island. Both the canal and locks would be lined with stone masonry walls and a guide wall was built at the head of the canal to channel boats into the system. Although disruptions in funding caused by the Civil War delayed construction, completion of the new system took place in February 1872 under Scowden's successor, General Godfrey Weitzel.[21]

USACE Operations in the Late Nineteenth Century

At the time of their completion, the Scowden locks were the largest navigation lock system in the world. They were also the first to be operated by the USACE after the Federal government finally took full control of the Louisville and Portland Canal in June 1874 under congressional

[17] Johnson and Parrish, *Triumph at the Falls: The Louisville and Portland Canal*, 106.

[18] Johnson, *The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army*, 1:69; Trescott, "Louisville and Portland Canal Company," 695.

[19] Trescott, "Louisville and Portland Canal Company," 700–703.

[20] Joblin, "Theodore R. Scowden," 459–61.

[21] Johnson and Parrish, *Triumph at the Falls: The Louisville and Portland Canal*, 107–8, 133.

authorization provided by the Rivers and Harbors Act of 1872. The USACE immediately reduced tolls from 50 to 10 cents and made additional cuts over the next five years.[22]

To help reduce currents on the river, under Weitzel's leadership, the USACE began building a fixed timber crib dam in 1874 at the crest of the Falls, which was completed in 1881.[23] The USACE transferred operational command of the canal and Falls projects from General Weitzel to Colonel William Merrill in 1882. During Merrill's short, four-year tenure as canal commander, the USACE initiated conversion of the Falls crib dam to a moveable Boulé wicket dam and replacement of the original Scowden lockgates with rolling wooden truss lockgates.[24]

Lock and Dam 41

The USACE formally established the Louisville District in 1893 (although local command of the canal in Louisville effectively began with the appointment of Merrill's successor, Major Amos Stickney, in 1886) and began construction of a concrete weir dam with Boulé gates, and Chanoine wickets 1899. Completion of the mile-long weir dam in 1910 coincided with the start of planning for the third phase of modernization of the Louisville and Portland Canal.[25] In 1910, the Lockwood Board (a USACE advisory panel of district engineers along the Ohio River) recommended full canalization of the river (Ohio River Canalization Project) and designated the locks and dam at the Falls as Lock and Dam 41 in 1914. The board's recommendations included widening of the existing canal to 170 ft. and construction of a reinforced concrete single-lift lock adjacent to the existing Scowden locks.[26]

Louisville District Engineer Major Lytle Brown disagreed with the board's recommended canal width as being too narrow and successfully lobbied for a wider excavation. Brown appointed engineer William H. McAlpine to oversee the design of Lock 41 in 1912. Affectionately known as "Mr. Mac," McAlpine received his degree in engineering from the Massachusetts Institute of Technology. He joined USACE engineering staff in 1902 where he managed the design modernization of the locks and canals along the Kentucky River, which elevated his position to senior engineer by 1906. Under McAlpine's direction, USACE engineers built a 600 ft. x 110ft. single-flight lock and widened the canal to the 200 ft. width favored by Brown. When construction of the modern, steel-reinforced concrete structure was completed in 1921, it essentially replaced the older and smaller nineteenth-century Scowden locks (which were partially filled to expand operational space on Shippingport Island). The new Lock 41 system provided double the lift of other locks on the Ohio River, was the largest in the world at the time,

[22] Trescott, "Louisville and Portland Canal Company," 707.
[23] Johnson and Parrish, *Triumph at the Falls: The Louisville and Portland Canal*, 147, 159.
[24] Johnson and Parrish, 168–69.
[25] Johnson, *The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army*, 1:175.
[26] Johnson and Parrish, *Triumph at the Falls: The Louisville and Portland Canal*, 198, 202–3.

and "set the pattern for twentieth-century waterways engineering" according to USACE historians Leland R. Johnson and Charles E. Parrish.[27]

The USACE's design and construction of the associated Dam 41 project at the Falls began after World War I and in cooperation with the Louisville Gas and Electric Company to provide local hydroelectric power. Although prior studies suggested that a power-generating dam was not feasible, Major General Brown completed his own extensive studies and journal publications that disputed those findings. Brown moved ahead with developing plans for the dam, under McAlpine's design supervision, without direction from Congress. The USACE began construction of the new movable dam and the Ohio Falls Station hydroelectric station in 1925. The plant was completed and opened for power production by October 1927.[28]

The McAlpine Locks and Dam Modernization Project

The fourth major change to the system began in 1958, when the USACE embarked on a sweeping modernization project. Responding to the growth of shipping commerce on the Ohio River, the USACE determined the canal again needed to be widened, and the existing lock needed to be supplemented by a much larger lock.[29] Between 1958 and 1964, the canal was enlarged to its present 500 ft. width, and a new 1200-ft. x 110-ft.lock was constructed next to Shippingport Island. The Traylor Brothers Company and Hardaway Construction Company were awarded the contracts for the excavation and lock building work, respectively. During this same construction phase, a lift bridge was erected over the upriver end of the locks to provide access to Shippingport Island and the USACE dredged a surge basin between the upriver end of the locks and the island. Construction of the 30-acre surge basin had other effects on the island, resulting in the removal of an antebellum drydock, a change in its shape and elevation, and the relocation of the Louisville Repair Station to its current site. While Lock 41 remained in use, it functioned as an auxiliary lock for limited use due to its smaller size.[30] During construction of the lock, Congress renamed the facility the McAlpine Locks and Dam in honor of the former Louisville District senior engineer, William McAlpine, who died in 1956. It was the only major infrastructure project in the U.S. named after a civilian employee of the USACE.[31]

[27] The Courier-Journal, "Engineer Who Supervised Dam 41, Other River Structures, Dies at 88," *The Courier-Journal*, November 3, 1956, 7; Johnson and Parrish, *Triumph at the Falls: The Louisville and Portland Canal*, 203.
[28] Johnson, *The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army*, 1:177–78.
[29] U.S. Army Corps of Engineers, Louisville District, "McAlpine Locks and Dam, Reconstruction and Modernization" (Louisville, Kentucky, 1963), George H. Yater Papers, University of Louisville Archives.
[30] Johnson and Parrish, *Triumph at the Falls: The Louisville and Portland Canal*, 243–48.
[31] The Courier-Journal, "Engineer Who Supervised Dam 41, Other River Structures, Dies at 88"; Leland R. Johnson and Charles E. Parrish, *The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army, 1984-2004*, vol. 3 (Louisville, Kentucky: U.S. Army Corps of Engineers, 2008), 2.

Construction of the dam began in 1961 and was largely completed by 1964. It replaced the movable dam with two sets of Tainter gates and a fixed concrete weir along Goose Island.[32] Completion of the reinforced concrete locks and dam structure provided three locks of varying sizes to accommodate all types of commercial and recreational river traffic, further cut passage time down to eight minutes, and reduced operations and maintenance costs.[33]

Twenty-First Century Expansion

The USACE, Louisville District began studying the feasibility of the construction of a second lock at the McAlpine Lock and Dam facility in 1989. Representative Romano L. Mazzoli of Kentucky secured an initial $225 million in congressional funding in 1996 for the total $430 million expansion of the existing structure. The decision to move ahead with the new lock was based on projected growth of shipping tonnage on the river in the early twenty-first century from 74 million in 2010 to 91 million by 2030.[34] The proposed expansion project involved the construction of a second set of locks that would double capacity and other necessary infrastructure and environmental improvements to the facility and the river. The USACE, Louisville District began development in 1996 with the construction of a new operations building (now the Visitor's Center) and improvements to the wharf at the locks. Excavation and construction of the new lock began in 2000 and continued through 2009. The second lock measured 1200-ft.x 110-ft. It was built adjacent to the Kentucky shoreline and necessitated the partial infill of Lock 41 and removal of any remnant features of the nineteenth century Scowden locks. The new lock matched the dimension and general design of the 1961 lock except that the gates were controlled electronically rather than vial manual operation. The modern Portland-Shippingport Bridge replaced the previous lift bridge, while a heavy-lift crane was added to the site to facilitate maintenance, repair, and replacement of the gates.[35]

Integrity

The McAlpine Locks and Dam has integrity of **location** as it occupies its historic site of construction between the Kentucky shoreline and Shippingport Island at the Falls of the Ohio River. Although it was modernized and expanded with a second lock in 2009, the 1961-1965 incarnation of the McAlpine Locks and Dam has integrity of its **design** as embodied in the historic dimensions and construction of the 1961 Lock, the canal, and the 1965 Surge Basin, along with the retention of the historic support buildings and structures from that period, including the 1961 Gauging Station and two Lift Stations, the two 1961 Guardhouses, the 1963

[32] Leland R. Johnson, *The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army 1970-1983*, vol. 2 (Louisville, Kentucky: U.S. Army Corps of Engineers, 1984), 31.
[33] U.S. Army Corps of Engineers, Louisville District, "McAlpine Locks and Dam" (Louisville, Kentucky, 1966), George H. Yater Papers, University of Louisville Archives.
[34] Kimberlee Turner, *The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army, 2005-2016*, vol. 4 (Louisville, Kentucky: U.S. Army Corps of Engineers, 2021), 29–30; Chris Kenning, "Crews Prepare to Demolish Old Locks," *The Courier-Journal*, September 7, 2001.
[35] Johnson and Parrish, *Triumph at the Falls: The Louisville and Portland Canal*, 263–64.

Pumphouse, and the 1965 Maintenance Building. Further, the design of the non-contributing 2009 Lock and generally adheres to the design and visual appearance of the contributing 1965 Lock and the designs of the Upper and Lower Tainter Gate Dams and the Weir Dam have not changed. The structure has integrity of **setting** within the waterway transportation corridor of the Ohio River and adjacent to the urban environment of the City of Louisville, Kentucky. Despite the loss of materials due to the successive expansion projects and as a result of routine maintenance and use, the structure's evidence of **workmanship** from the 1960s period of development is still evident. As a result, the McAlpine Locks and Dam complex has integrity of **feeling** as mid-twentieth century waterway transportation structure and it continues to function in that capacity, which contributes to its strong integrity of **association**.

The McAlpine Locks and Dam does not retain integrity of **materials**. All materials associated with the nineteenth century of the structure's development have been removed. Further, the McAlpine Locks and Dam facility has undergone extensive modifications and repairs over the years that have resulted in the removal and replacement of historic steel and concrete materials that date from the mid-twentieth century modernization project. However, these changes have been sympathetic in character and are an expected feature of routine maintenance on a large and active transportation structure.

Contributing and Non-contributing Resources to the McAlpine Locks and Dam

There are multiple buildings and structures within the proposed boundaries of this property. Not all of these buildings and structures are considered contributing resources to the McAlpine Locks and Dam complex either due to age (in terms of the period of significance established for the McAlpine Locks and Dam), ownership, or the nature of operation.

The Louisville and Portland Canal was originally recorded as JFWP-331 in the Kentucky Historic Resources Survey.[36] The following list retains that survey identifier and assigns sub-numbers for all contributing and non-contributing resources to the property. It also provides a categorization and brief description of the resources. More detained descriptions of the resources are provided in the Section 7 Narrative Description Continuation Sheets and maps of all identified contributing and non-contributing resources within the McAlpine Locks and Dam boundary are provided in Figures 2A-C.

A. CONTRIBUTING RESOURCES

JFWP-331: Louisville and Portland Canal—the canal was originally constructed in 1830, and while widened several times, retains integrity of location and function.

JFWP-331A: 1961 Lock—the lock remains and functions as originally designed.

[36] Kentucky Heritage Council, "Kentucky Historic Resources Individual Survey Form JFWP-331" (Frankfort, Kentucky, n.d.).

JFWP-331B and C: 1961 Gatehouses (2)—these are original to the 1961-1965 canal and lock modernization program and retain their original function.

JFWP-331D: 1963 Pump House—this two-story building is part of the 1961 Lock complex and retains its original form and function.

JFWP-331E and F:1961 Emergency Lift stations (2)—these structures are also original to the 1965 expansion of the canal and retain their original function.

JFWP-331H: 1961 Gauging Station—located at one end of the 1961 Lock, this structure is original to the design of the lock and retains its original function and form.

JFWP-331I: 1965 Surge Basin—this basin was constructed as part of the 1961-1965 canal and lock modernization program.

JFWP-331K: 1965 Maintenance Building—the building has a later 1996 addition that is sympathetic in design with the original building. The building retains its function for maintenance of the canal and locks.

JFWP-331L-N: McAlpine Upper and Lower Tainter Gate Dams and Fixed Weir Dam (3)—the construction of the gates were part of the 1961-1965 canal and lock modernization program, while the fixed weir dam dates to the circa 1925 period of construction. They all retain their original form and function.

B. NON-CONTRIBUTING RESOURCES

JFWP-331J: 2009 Auxiliary Lock—partially filled during the 2000-2009 expansion, the Auxiliary Lock is now used for material storage and is not contributing.

JFWP-331O-S: 2009 Lock and operating buildings (5)—the 2009 lock and its four operating buildings have not reached the 50-year old threshold for NRHP eligibility, but the lock is identical to the 1961 Lock and is an integral part of the McAlpine Lock and Dam complex.

JFWP-331T: Shippingport Island Bridge—the bridge is not part of the McAlpine Lock and Dam complex, nor is it controlled or maintained by the USACE, Louisville District.

JFWP-331U-X: Ohio Falls Generating Station (4)— Louisville Gas & Electric and Kentucky Utilities operates the hydroelectric generating station, which was originally built in 1928 and is leased to the City of Louisville. The station contains the hydroelectric plant, an office building, and two small ancillary buildings. It is not a functional part of the locks and dam complex and is not recognized as a contributing resource to the proposed National Register property.

JFWP-331Y-BB: Storage buildings (4)—there are four nondescript storage buildings clustered around the 1965 Maintenance Building. All four were built between 1996 and 2004 and they have no distinctive features or function. As a result, they are considered non-contributing.

JFWP-331CC-GG: Louisville Repair Station (5)—this facility located adjacent to the surge basin on Shippingport Island consists of five buildings, temporary shipping containers, and associated parking and work areas. The station is operated by the USACE but supports the maintenance and repair needs for the entire Great Lakes and Ohio River Division. JFWP-331CC was built in 1960; however, the other four buildings are less than 50 years old and were built between circa 1990 and 1995. None of the buildings embody distinctive architectural or engineering features.

JFWP-331HH: Visitors Center—the Visitors Center on the Louisville side of the canal and locks dates to 2009 and is not part of the lock and canal complex.

9. Major Bibliographical References

(See Continuation Sheets, Section 9).

Previous documentation on file (NPS):

____ preliminary determination of individual listing (36 CFR 67) has been requested
____ previously listed in the National Register
____previously determined eligible by the National Register
____designated a National Historic Landmark
____ recorded by Historic American Buildings Survey #_____
____recorded by Historic American Engineering Record # _____
____ recorded by Historic American Landscape Survey # _____

Primary location of additional data:

_X__ State Historic Preservation Office
____ Other State agency
_X__ Federal agency
____ Local government
___ University
_X_ Other
Name of repository: _The Filson Historical Society__

Historic Resources Survey Number (if assigned): _JFWP331_____

10. Geographical Data

Acreage of Property __507.69 acres

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates
Datum if other than WGS84:_____
(enter coordinates to 6 decimal places)

1. Latitude: 38.278684 Longitude: -85.800002

2. Latitude: 38.280632 Longitude: -85.799483

3. Latitude: 38.283822 Longitude: -85.780605

4. Latitude: 38.270897 Longitude: -85.762394

5. Latitude: 38.261857 Longitude: -85.764127

6. Latitude: 38.25893 Longitude: -85.764577

7. Latitude: 38.274326 Longitude: -85.783599

Verbal Boundary Description (Describe the boundaries of the property.)

The boundary of the proposed NRHP property is an irregularly shaped area that is approximately bounded at the northwest end by Kentucky & Indiana Terminal Bridge (railroad) and approximately bounded at the southeast end by the Pennsylvania Railroad Bridge. The Louisville shoreline runs along the southwest of the boundary, with Shippingport Island on the northeast (Figure 1). The dam is between Shippingport Island and Goose Island, a limerock outcrop on the northeast. Tainter gates for the dam are located at the northwest and southeast ends of Goose Island with a fixed weir running along the southwest side of Goose Island between the gates.

Boundary Justification (Explain why the boundaries were selected.)

The proposed NRHP property encompasses the original Louisville and Portland Canal, which was originally constructed in 1830, and the larger McAlpine Locks and Dam complex. The historic structures and buildings within this boundary include the canal and Surge Basin, the 1961 Lock adjacent to Shippingport Island and its associated operational buildings and structures. The dam between Shippingport and Goose Islands is included along with the two sets of Tainter gates and a fixed weir dam. The proposed boundary also contains 20 resources that do not contribute to the significance of the McAlpine Locks and Dam. The 2009 Lock, which is located between the Auxiliary Lock and the Louisville shoreline to the southwest, is included within the property as it is almost identical to the 1961 Lock and because it is an integral part of the modern operation of the McAlpine Locks and Dam complex. While not contributing due to age, the 2009 Lock would likely become a contributing resource to the property upon reaching 50 years of age and if it retains integrity. The heavily altered 2009 Auxiliary Lock, four non-historic storage buildings near the Maintenance Building, and the Louisville Repair Station, which contains five buildings and is located on Shippingport Island, are located within the boundary of the property, but are considered non-contributing resources due to non-historic alterations or construction. The Ohio Falls Station hydroelectric plant complex, which contains four buildings located on Shippingport Island, is not owned or managed by the USACE, nor is it a functional part of the overall locks and dam site. Finally, the Visitors Center on the Louisville side, is not historic and is also not a contributing resource to the property.

11. Form Prepared By

name/title: Lucy B. Wayne, Ph.D., Summer Ciomek, and Patrick Sullivan
organization: New South Associates, Inc.
street & number: 6150 East Ponce de Leon Avenue
city or town: Stone Mountain state: GA zip code: 30083
e-mail lwayne@newsouthassoc.com
telephone: 770-498-4155
date: May 23, 2025

Additional Documentation

Submit the following items with the completed form:

- **Maps:** USGS Project Location and NRHP Boundary Map (Figure 1), Contributing and Non-contributing Resource Location Maps (Figures 2A-C)
- Photography Keys (Figures 3A-C)
- **Additional items:** Historic Maps and Photographs (Figures 4-20).

Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

Photo Log

Name of Property: McAlpine Locks and Dam

City or Vicinity: Louisville

County: Jefferson State: Kentucky

Photographer: Summer Ciomek

Date Photographed: February 3–4, 2025

Description of Photograph(s) and number, include description of view indicating direction of camera:

Photograph 1of 23: View of the 1961 Gauging Station (contributing), Looking Northwest

Photograph 2 of 23: View of the 1961 Lock and the 2009 Auxiliary Lock (non-contributing) from the Down River End, Looking Southeast

Photograph 3 of 23: View of the 1961 Lock (contributing) from the Down River End, Looking Southeast

Photograph 4 of 23: The 2009 Auxiliary Lock (non-contributing), Looking Southeast

Photograph 5 of 23: 1961 Gatehouse(contributing), Northwest Oblique, Looking Southeast

Photograph 6 of 23: 1961 Gatehouse (contributing), Southeast Oblique, Looking Northwest

Photograph 7 of 23: 2009 Gatehouses (non-contributing) on Down River End, Looking Southwest

Photograph 8 of 23: 1963 Pumphouse (contributing), West Elevation, Looking Southeast

Photograph 9 of 23: 1963 Pumphouse (contributing), North Elevation, Looking Southwest

Photograph 10 of 24: 1963 Pumphouse (contributing), East Elevation, Looking Northwest

Photograph 11 of 24: 2009 Auxiliary Lock (non-contributing), Looking West-Southwest

Photograph 12 of 24: View of the Upriver End of the 2009 Lock and Gatehouse (non-contributing) and the Shippingport Island Bridge (non-contributing), Looking Northeast

Photograph 13 of 23: The 2009 Lock (left; non-contributing), the 2009 Auxiliary Lock (non-contributing) and 2009 Gatehouse (center; non-contributing), the 1963 Pumphouse (center right; contributing), and the 1961 Lock (right; contributing), Looking Northwest

Photograph 14 of 23: View of the Louisville and Portland Canal (contributing) from Shippingport Island Bridge, Looking East-Southeast

Photograph 15 of 23: The 1961 Lock (contributing), Looking Northwest

Photograph 16 of 23: 1965 Maintenance Building (contributing), Southeast Oblique, Looking Northwest

Photograph 17 of 23: 1965 Maintenance Building (contributing), Northeast Oblique, Looking West-Southwest

Photograph 18 of 23: View of McAlpine Lower Tainter Gate Dam (contributing), Looking East-Southeast

Photograph 19 of 23: View of the McAlpine Upper Tainter Gate Dam (contributing) from the Kentucky & Indiana Terminal Railroad Bridge, Looking Northeast

Photograph 20 of 23: View of the Fixed Weir Dam (contributing) from the Kentucky & Indiana Railroad Terminal Bridge, Looking Northwest

Photograph 21 of 23: View of the McAlpine Lower Tainter Gate Dam (contributing) and the Ohio Falls Station Hydroelectric Plant (non-contributing) from the Kentucky & Indiana Railroad Terminal Bridge, Looking Northwest

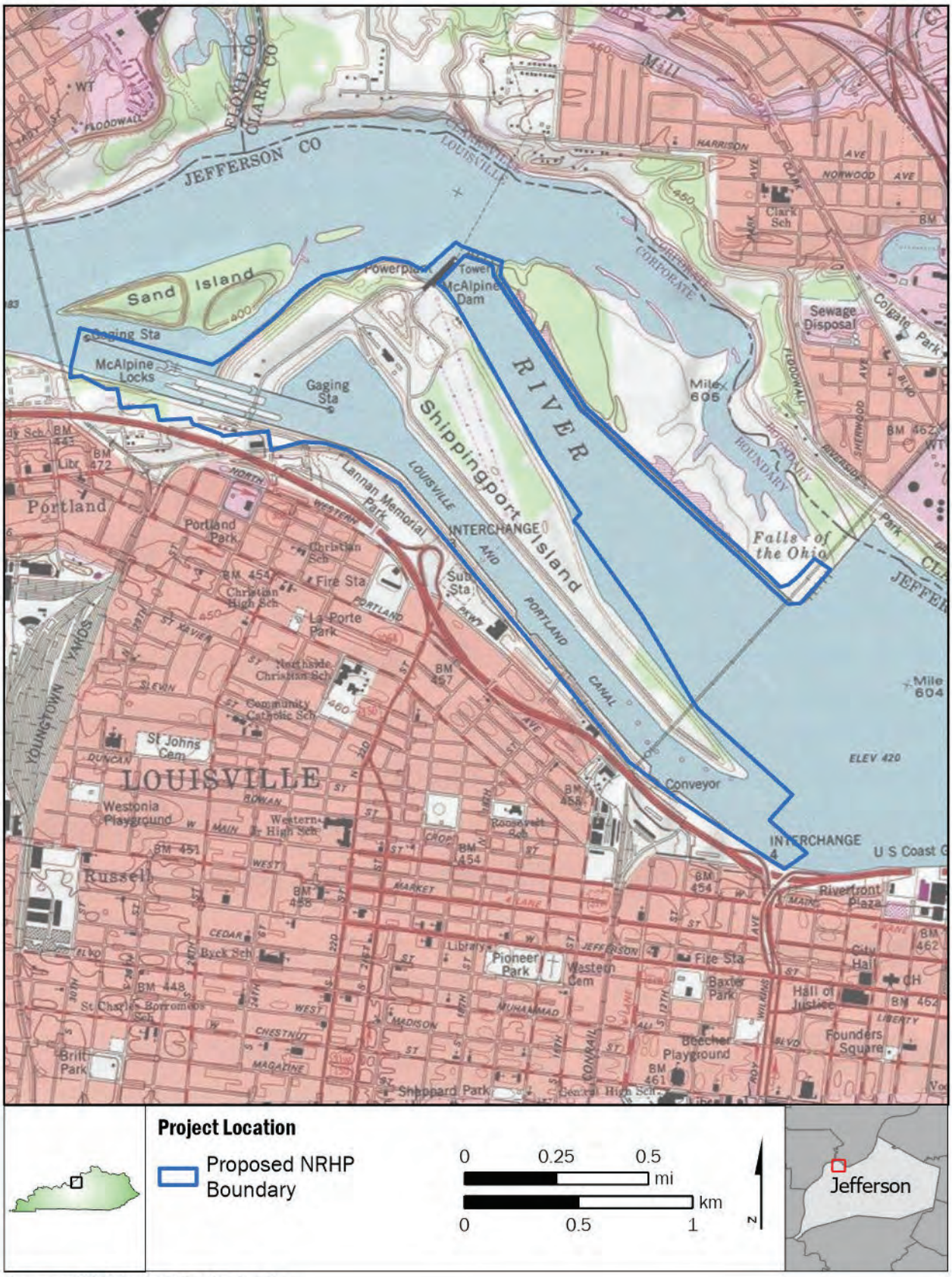
Photograph 22 of 23: View of the Kentucky & Indiana Railroad Terminal Bridge (non-contributing) and the McAlpine Upper Tainter Gate Dam (contributing) from the Southeastern Tip of Shippingport Island, Looking Northeast

Photograph 23 of 23: View of the McAlpine Upper Tainter Gate Dam (contributing) and Weir Dam (contributing) from Riverfront Park, Looking Northwest

McAlpine Locks and Dam | Jefferson County, KY
Name of Property | County and State

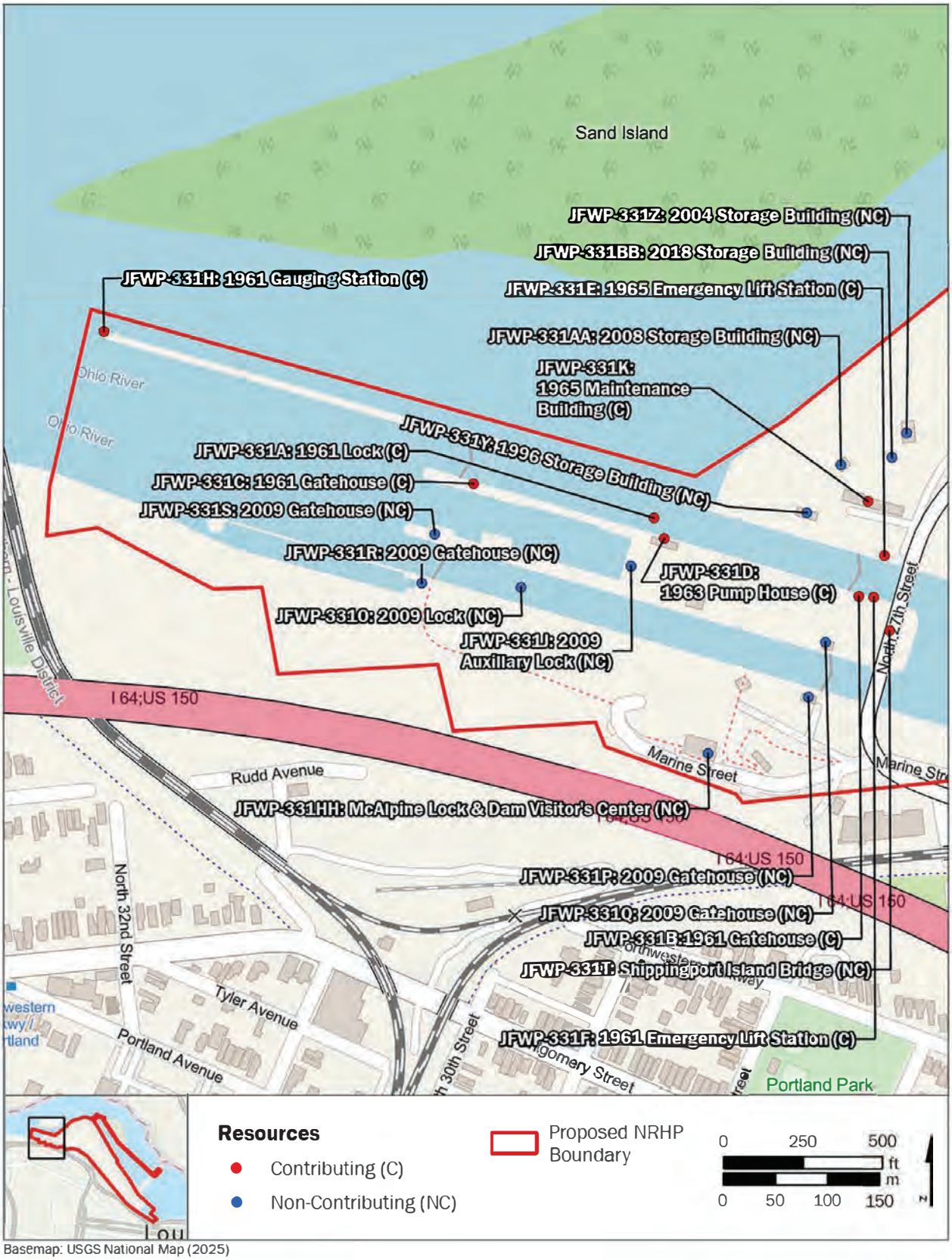
The above estimates include time for reviewing instructions, gathering and maintaining data, and preparing and transmitting nominations. Send comments regarding these estimates or any other aspect of the requirement(s) to the Service Information Collection Clearance Officer, National Park Service, 1201 Oakridge Drive Fort Collins, CO 80525.

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 1. Property Location and NRHP Boundary



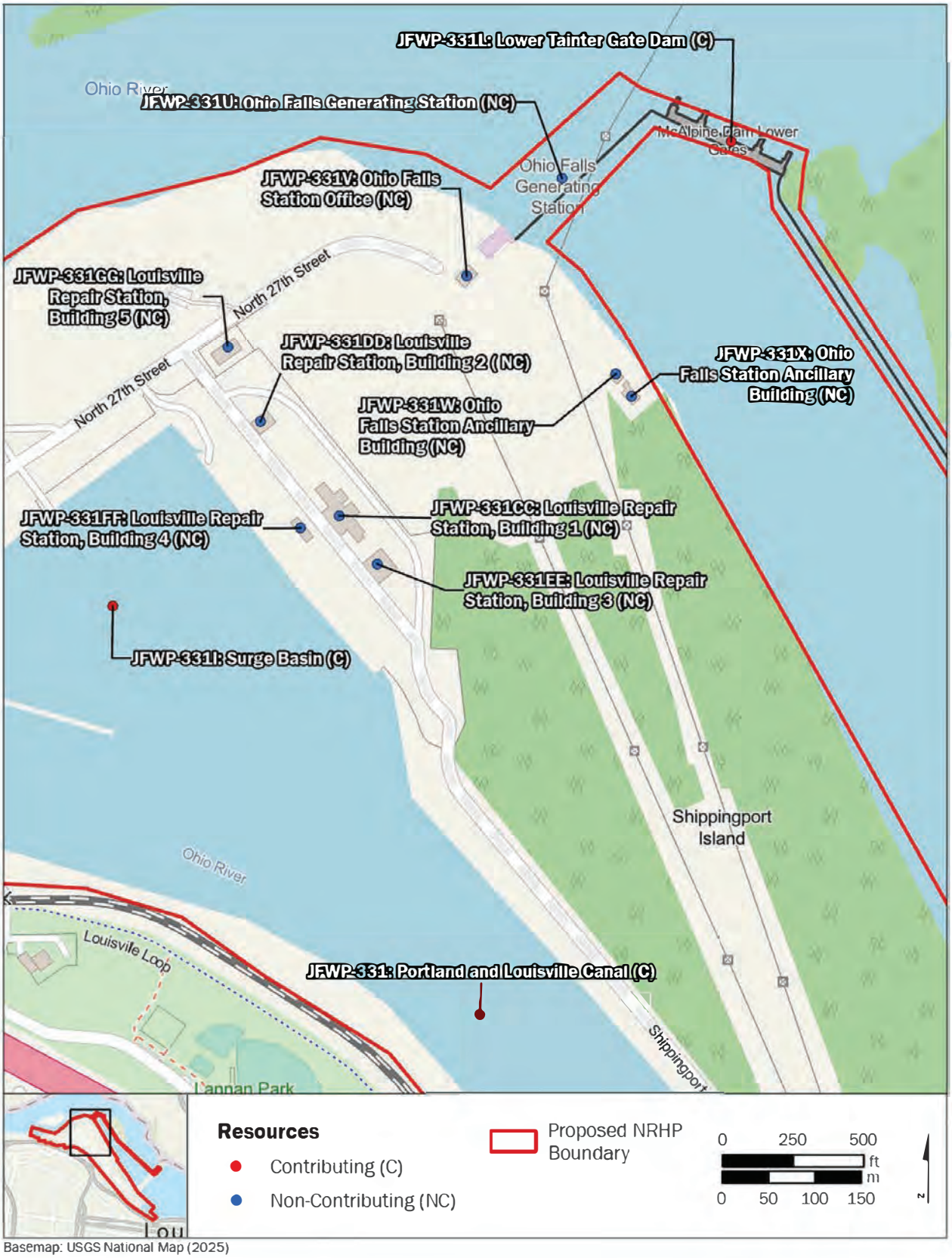
Basemap: USGS Topographic Quadrangle

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 2A. Resource Location Map



Basemap: USGS National Map (2025)

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 2B. Resource Location Map



Basemap: USGS National Map (2025)

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 2C. Resource Location Map

Basemap: USGS National Map (2025)

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 3A. Photography Key

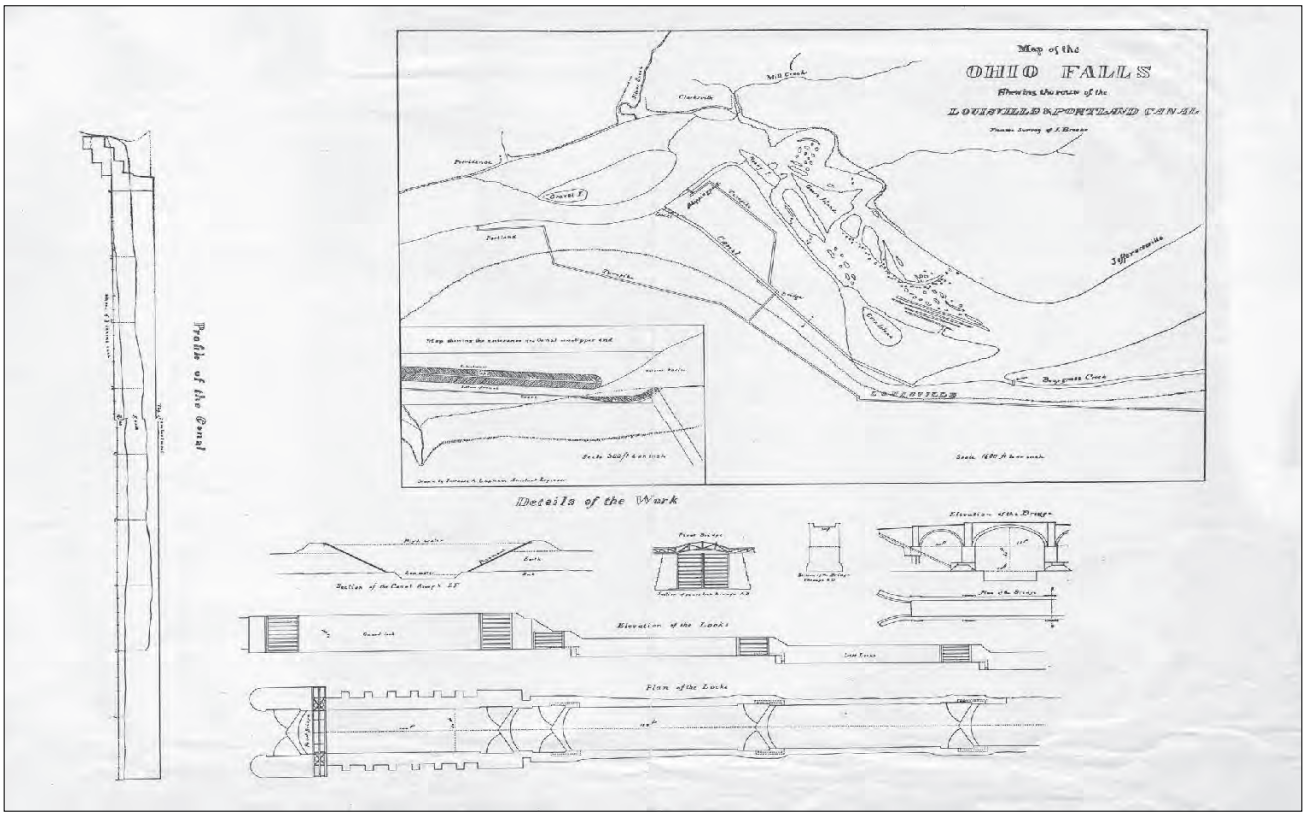
McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 3B. Photography Key

Basemap: ESRI Hybrid Layer (2025)

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 3C. Photography Key

Basemap: ESRI Hybrid Layer (2025)

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 4.

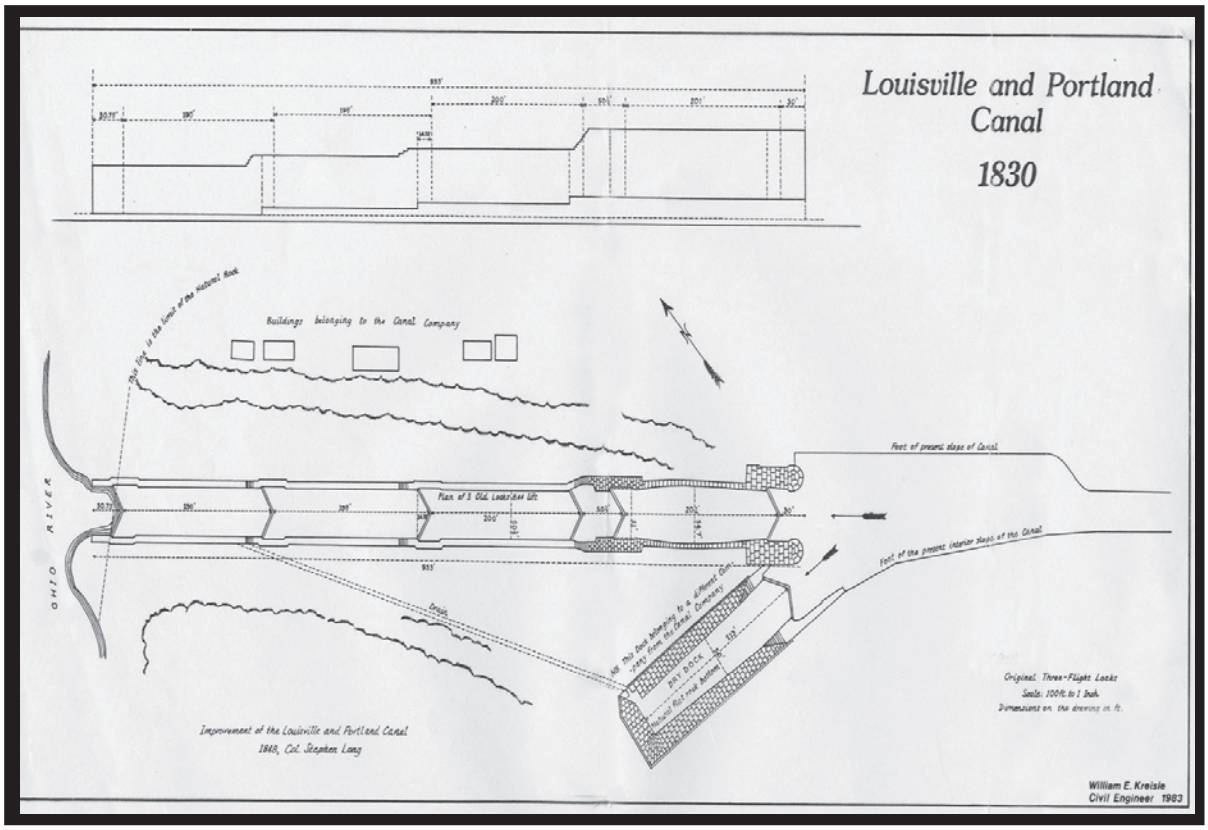


Increase Lapham's 1828 Plans for the Louisville and Portland Canal based on David S. Bates' Design (Source: Wisconsin Historical Society Archives). Image taken from *Triumph at the Falls: The Louisville and Portland Canal*, Johnson and Parrish, 2007.

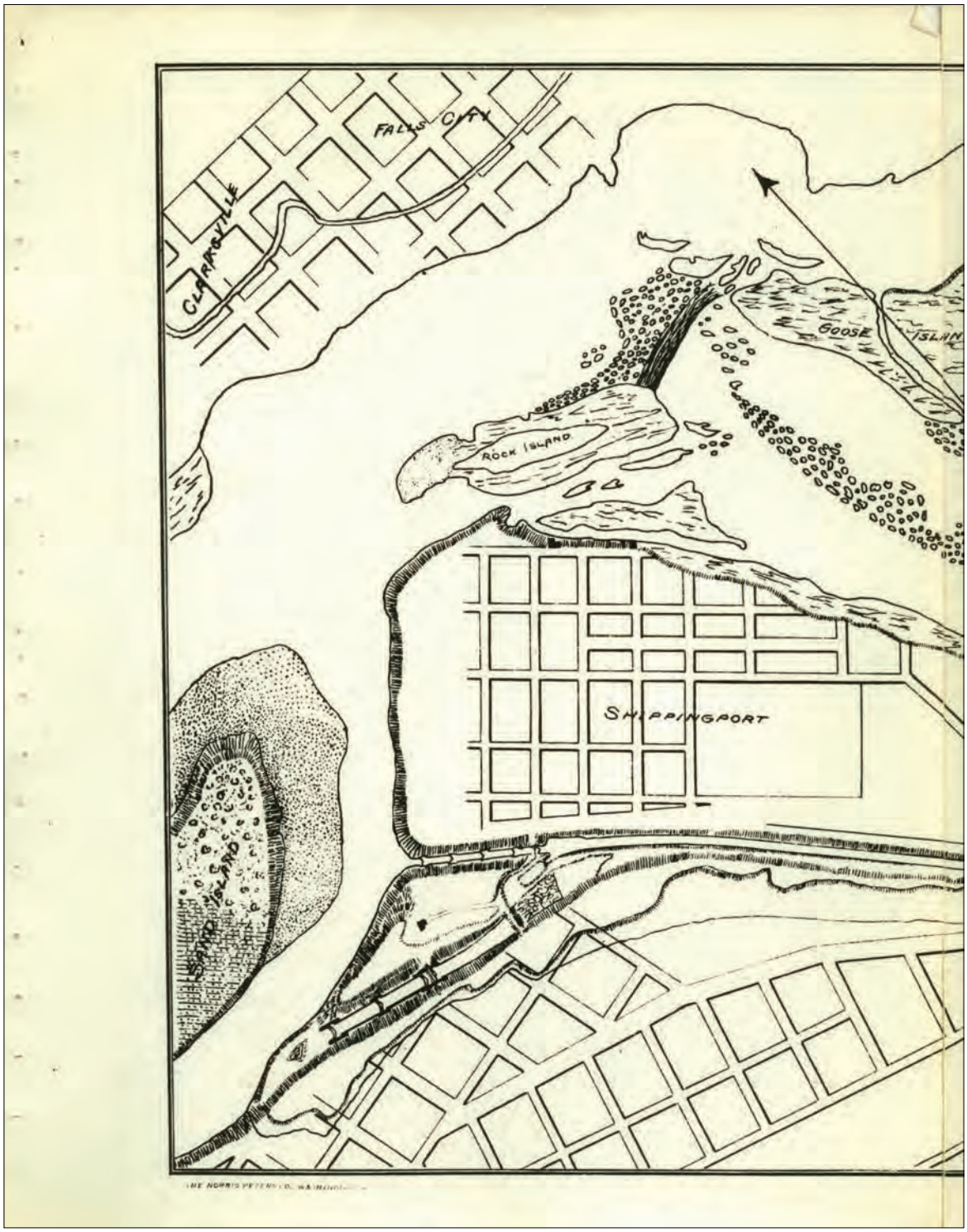
McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 5.

Photograph of the Original Louisville and Portland Canal and Lock System (Glenn Drummond Postcard Collection, date unknown). Image taken from *Triumph at the Falls: The Louisville and Portland Canal*, Johnson and Parrish, 2007.

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 6.



Plan of the Original Louisville and Portland Canal (Source: Col. Stephen Long, 1848; Redrawn by William E. Kreisie, 1983). Image taken from *Triumph at the Falls: The Louisville and Portland Canal*, Johnson and Parrish, 2007.

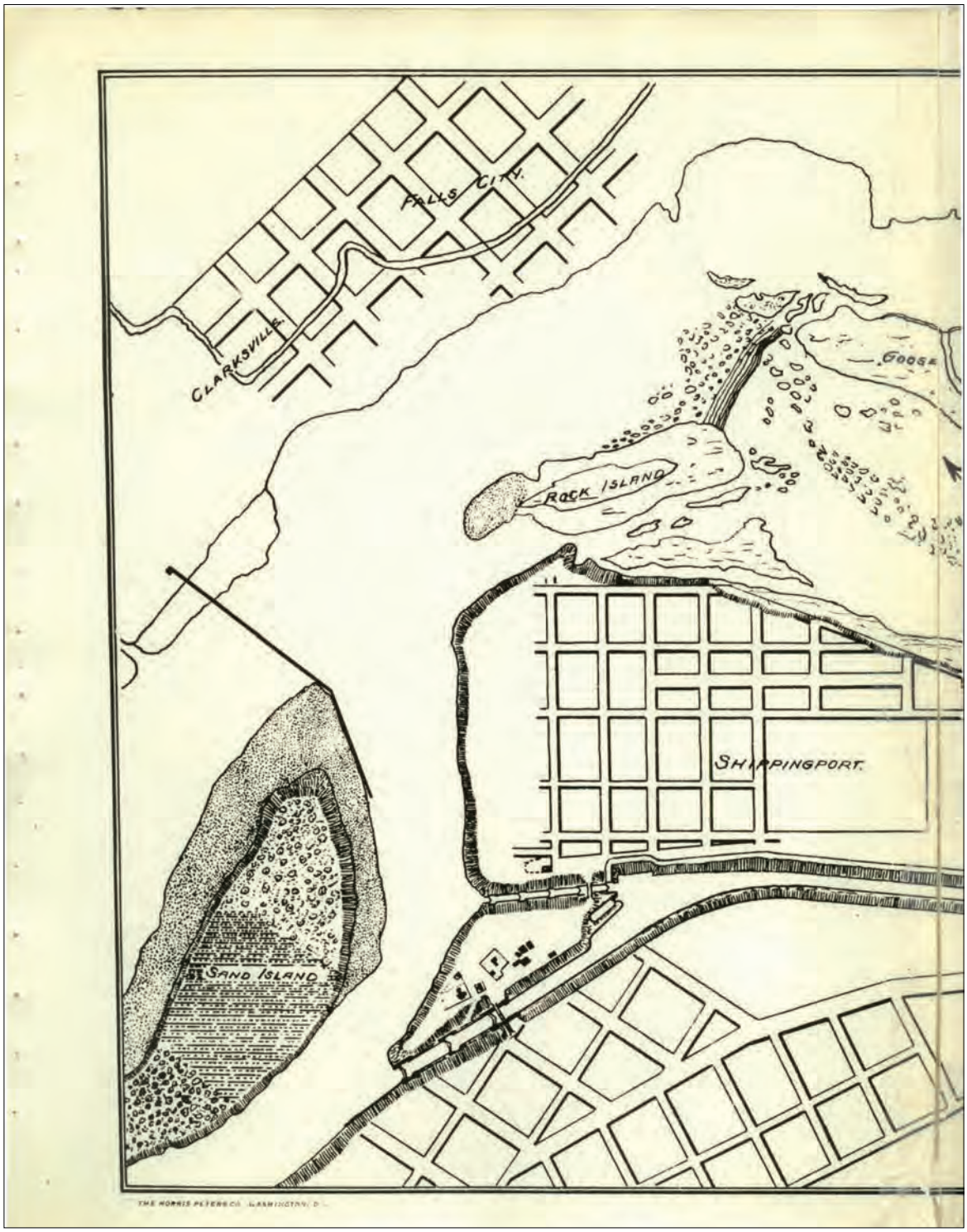


1867 *Outline Sketch of the Louisville and Portland Canal and Falls of the Ohio River*
(Source: Wright 1939)

Steamboat Navigating the Louisville and Portland Canal and Locks, circa 1871
(Source: Louisville & Portland Canal Collection, Filson Historical Society)

Photograph of the Scowden Locks at the Louisville and Portland Canal, circa 1871
(Source: Louisville & Portland Canal Collection, Filson Historical Society)

View of Construction of the Scowden Locks at the Louisville and Portland Canal, circa 1871 (Source: Louisville & Portland Canal Collection, Filson Historical Society)



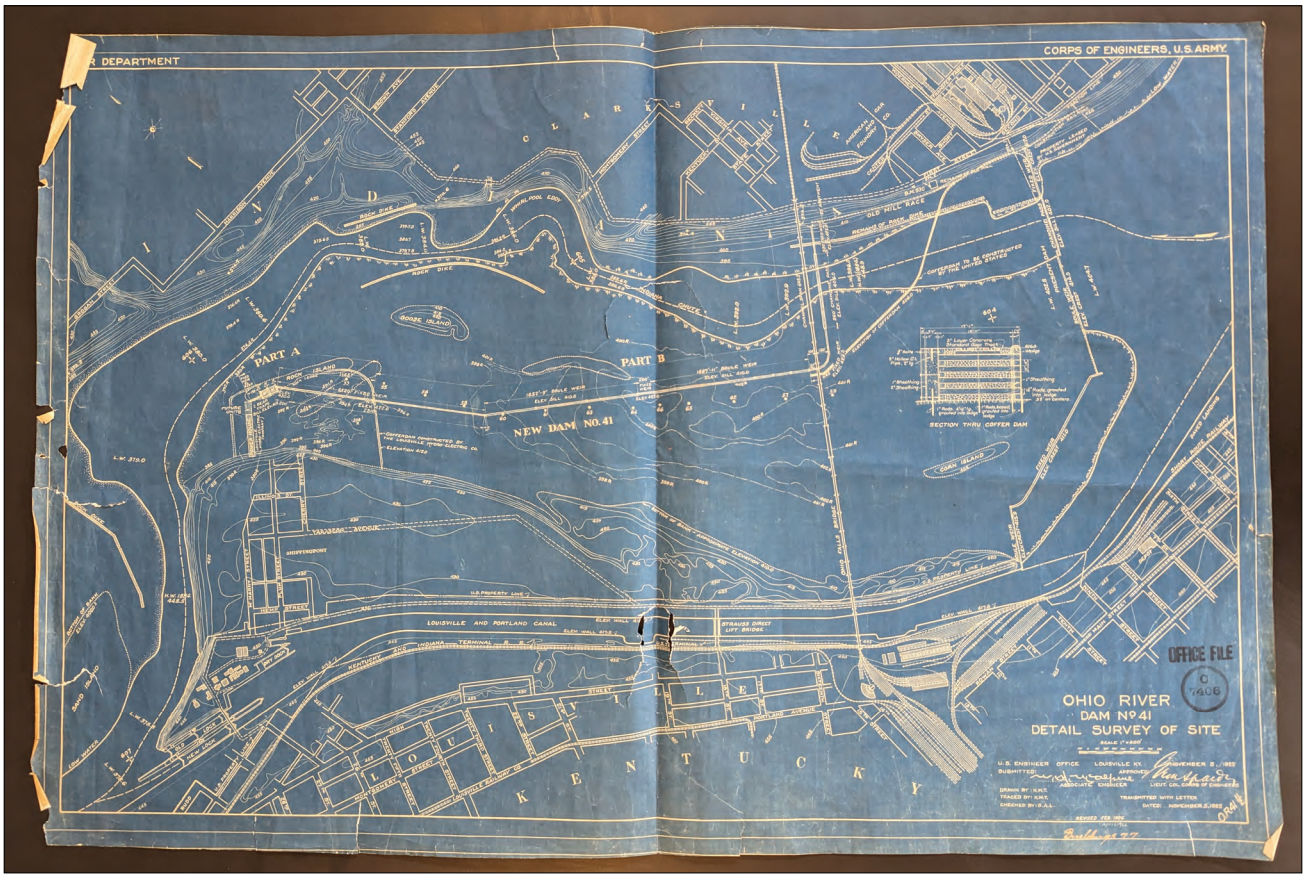
1878 *Outline Sketch of the Louisville and Portland Canal and Falls of Ohio River*
(Source: Wright 1939)

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 12.

1914 Site Plan for Lock 41 Improvements at the Louisville and Portland Canal (Source: USACE Engineer Office, Louisville District. Filson Historical Society)

Louisville and Portland Canal Widening in 1915 (Source: USACE Engineer Office, Louisville District. Filson Historical Society)

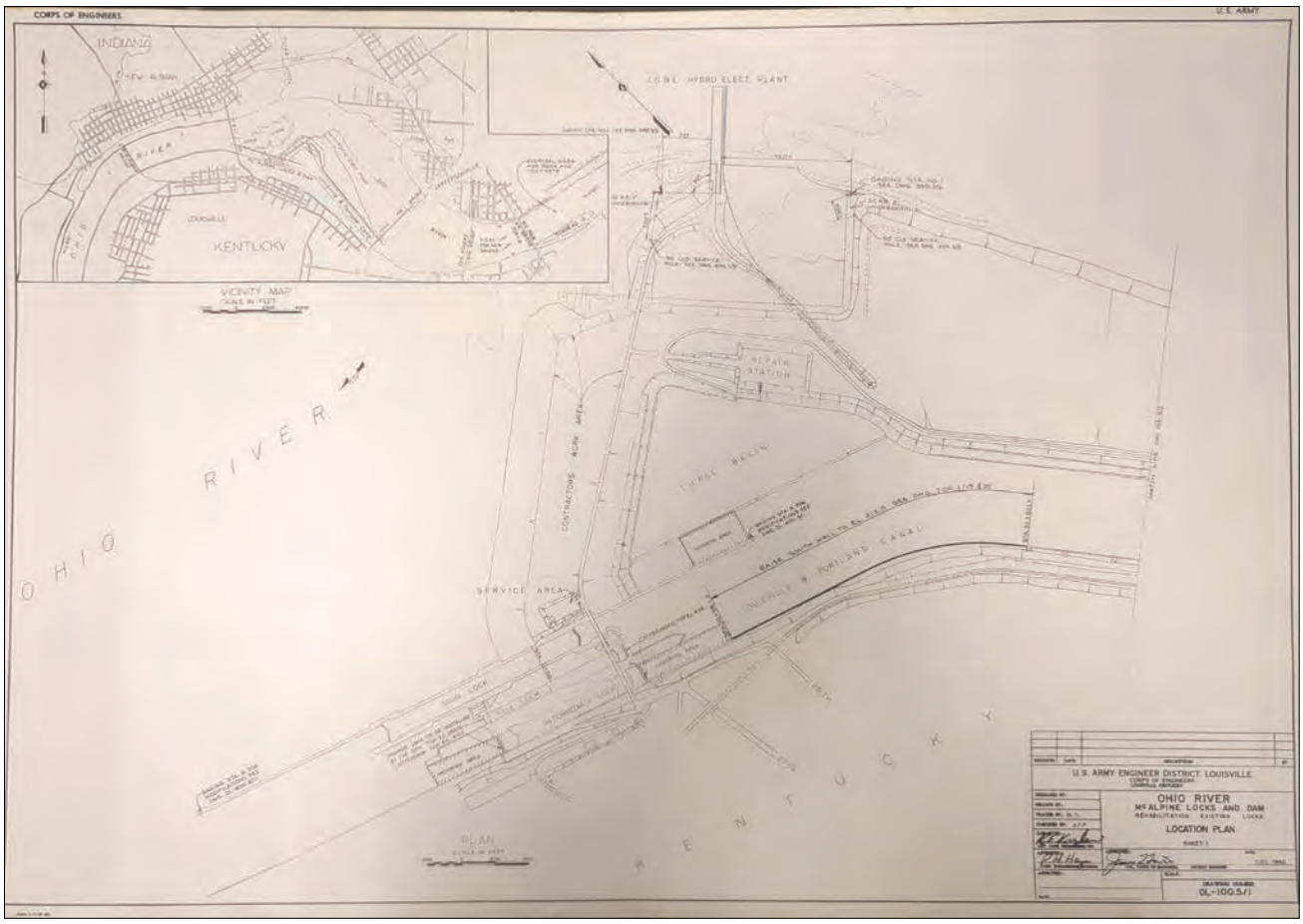
McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 14.



1925 Survey for Dam No. 41, Ohio River (Source: USACE Engineer Office, Louisville District. Filson Historical Society)

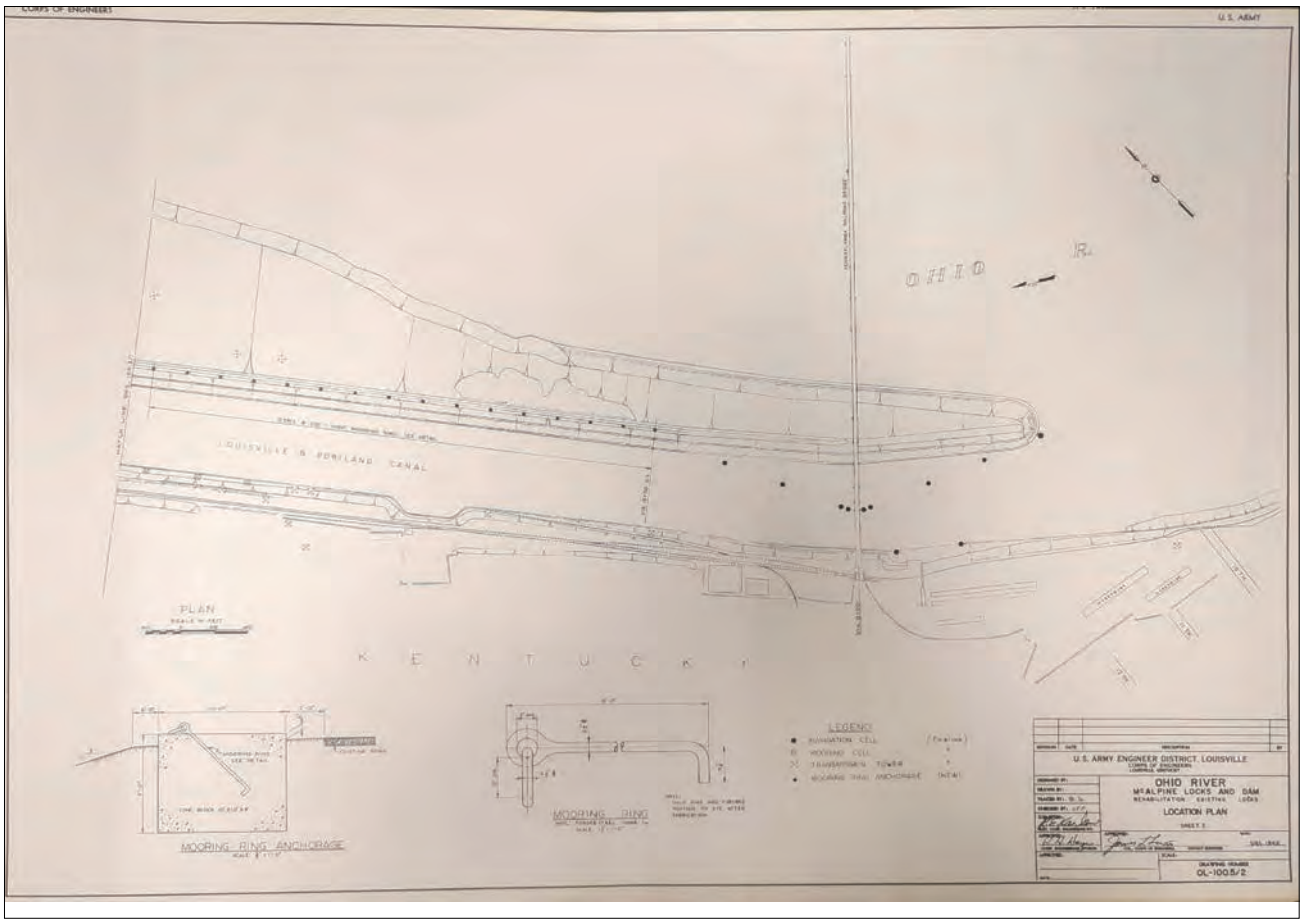
1939 Aerial Photograph Looking Upstream and Lock and Dam No. 41 (Source: USACE Engineer Office, Louisville District. Filson Historical Society)

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 16A.



1942 Lock Rehabilitation Plan, Louisville and Portland Canal (Source: USACE, Louisville District).

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 16B.



1942 Lock Rehabilitation Plan, Louisville and Portland Canal (Source: USACE, Louisville District).

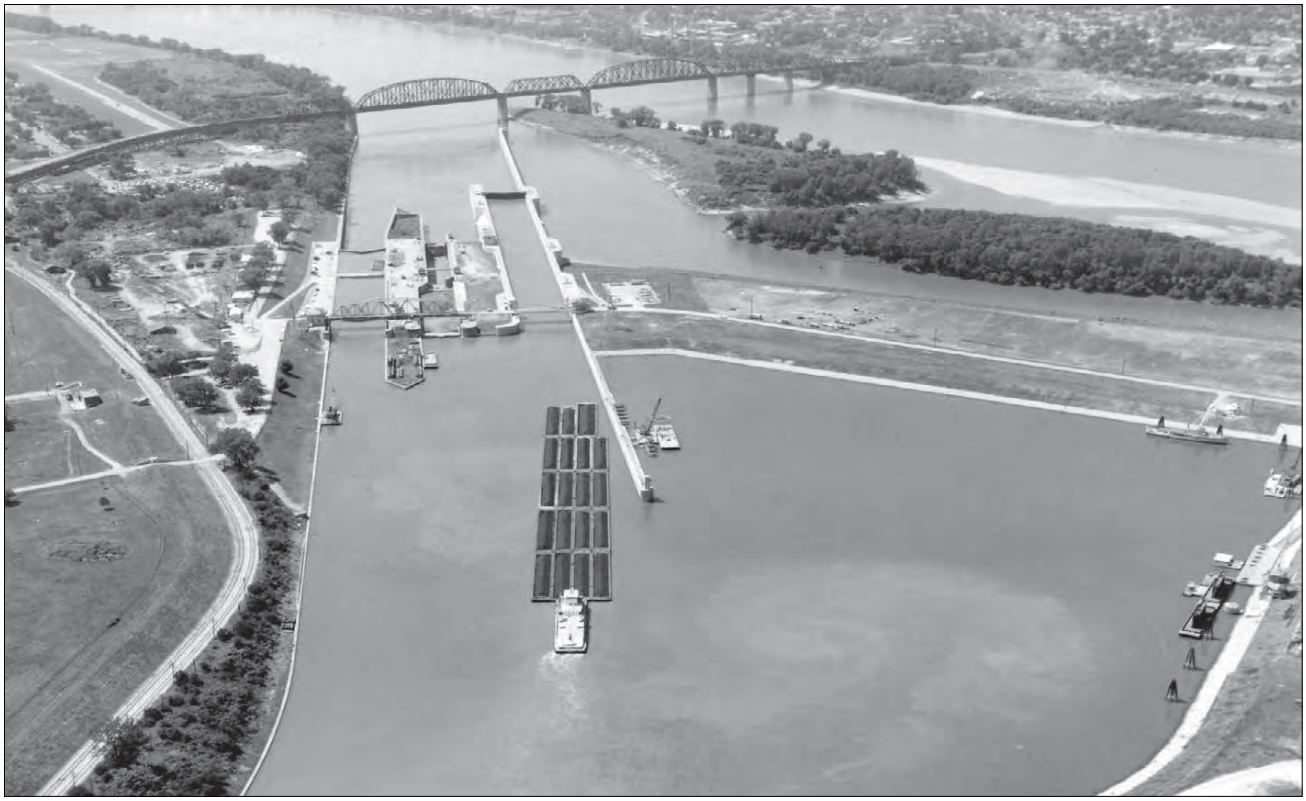
McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 17.

Construction of New Lock, Louisville and Portland Canal in 1960 (Source: USACE, Louisville District). Image taken from *Triumph at the Falls: The Louisville and Portland Canal*, Johnson and Parrish, 2007.

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 18.

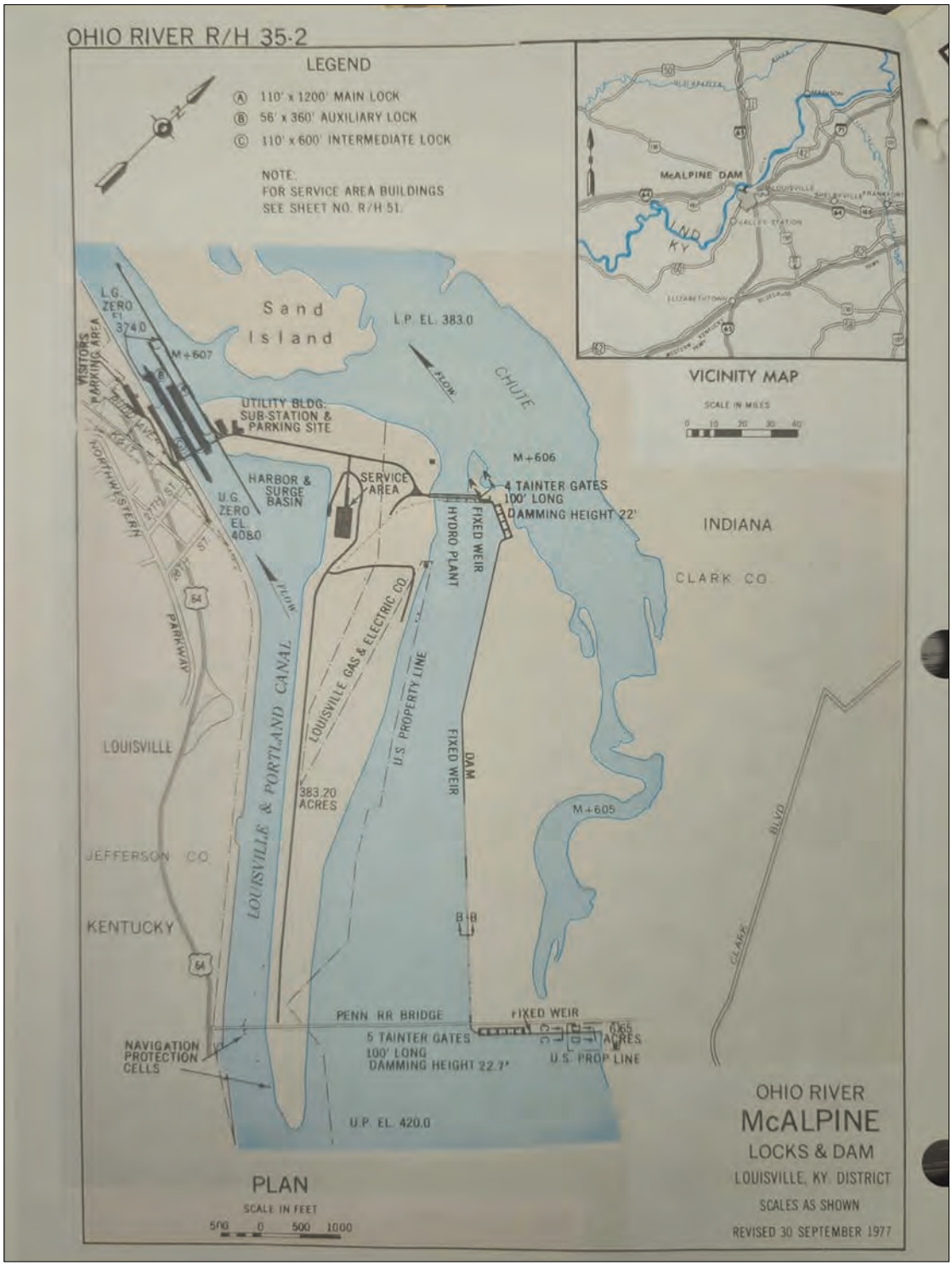
1961 Widening of Louisville and Portland Canal (Source: USACE, Louisville Distict). Image taken from *Triumph at the Falls: The Louisville and Portland Canal*, Johnson and Parrish, 2007.

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 19.



Completion of the McAlpine Lock in 1961 (Source: USACE, Louisville District). Image taken from *Triumph at the Falls: The Louisville and Portland Canal*, Johnson and Parrish, 2007.

McAlpine Locks and Dam
Jefferson County, Kentucky
Figure 20.



1977 McAlpine Lock Plan, Louisville and Portland Canal (Source:USACE, Louisville District. Congressman Romano L. Mazzoli Papers, University of Louisville Archives and Special Collections)

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 1 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 2 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 3 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 4 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 5 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 6 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 7 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 8 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 9 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 10 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 11 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 12 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 13 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 14 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 15 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 16 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 17 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 18 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 19 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 20 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 21 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 22 of 23

McAlpine Locks and Dam
Jefferson County, Kentucky
Photograph 23 of 23

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

McAlpine Locks and Dam
Name of Property
Jefferson County, Kentucky
County and State
N/A
Name of multiple listing (if applicable)

Section number 7 Page 1

Narrative Description

The McAlpine Locks and Dam complex consists of:

- Louisville and Portland Canal (1830)
- 1961 Lock
- Two Gatehouses (1961)
- Pump House (1963)
- Two Emergency Lift Stations (1961)
- Gauging Station (1961)
- Surge Basin (1965)
- Auxiliary Lock (2009)
- Maintenance Building (1965) and four associated storage buildings (1996-2018)
- Upper and Lower Tainter Gate Dams (1961-1964)
- Fixed Weir Dam (circa 1925)
- 2009 Lock and Four Gatehouses (2009)
- Shippingport Island Bridge (2006)
- McAlpine Locks and Dam Visitors Center (1996-2009)

The Louisville Repair Station and the Ohio Falls Generating Station, which is owned and operated by the Louisville Gas and Electric Company, are also located with the McAlpine Locks and Dam complex. While these facilities share a developmental history, the generating station and repair station are operated by separate entities and are not considered as part of the McAlpine Locks and Dam. The Ohio Falls Generating Station facility contains four buildings including the generator plant and the Louisville Repair Station contains six buildings dating from 1960 to 2012.

JFWP-331: Louisville and Portland Canal (1830, Contributing)

As originally constructed, the canal was 1.9 miles long and 64 ft. wide, with its system of locks approximately 52 ft. wide. The canal has been widened over the ensuing decades to accommodate the ever-growing size of barges and tows. Between 1958 and 1964, the USACE began a modernization project that included enlarging the canal to its present width of 500 ft. As it exists today, the south side of the canal is faced with locally-quarried limestone block capped with concrete. The north side of the canal is sloped soil with a layer of rip rap rock to prevent erosion. When necessary, sections of the canal's south walls are repaired or replaced with prefabricated concrete blocks that are vertically post-tensioned with wire rope after placement.

JFWP-331A: 1961 Lock (Contributing)

The modernization project that occurred between 1958 and 1964 also constructed a new, larger lock. Completed in 1961 and constructed primarily of reinforced concrete, the lock is on the north, or Shippingport Island, side of the canal and measures 1,200-ft. x 110-ft. The gates at either end of the lock

are steel swing gates with each leaf measuring 70 ft. in height by 60 ft. in width and weighing approximately 300 tons. The ends of the lock walls are rounded and covered with protective material to deter boat damage.

JFWP-331B and JFWP-331C: Gatehouses (1961, Contributing)

The 1961 lock has a gatehouse at each end. The downriver gatehouse is a one-story square building of poured concrete with rounded corners. The concrete walls have an incised band below the windows. The pyramidal roof had standing seam metal roofing. The entry door on the southeast facade has a single light in the upper half and a red front gable awning. The northeast elevation has a large single light window flanked by narrow single light windows, with a red shed roof awning. A window air conditioning unit is located below the window. The northwest and southeast elevations have two-light sliding windows. The upriver gatehouse is a small one-story square poured concrete building with a standing seam metal roof and beveled corners. It is located northwest of the northeast emergency lift station. The gatehouse has bands of windows on each side, single windows on the corners, and a shed roofed red awning over the northwest entry.

JFWP-331D: Pumphouse (1963, Contributing)

The 1963 pumphouse is a two-story, rectangular, poured-concrete building with a side-gable standing-seam metal roof. The four corners of the building are stepped out to give the appearance of columns. The canal side of the pumphouse has “McAlpine” in raised letters centered above the second-story windows, with the USACE seal between the two floors, and “1963” on the ground floor. The ground floor door on the northwest façade is a double metal door with a red shed roof awning and a single light in the upper half of the left door. A plate glass window, the width of the doors, is located on the second floor above this entry. The southeast elevation also has a double door on the ground floor with an awning. Both halves of the door have single lights in the upper halves. There is a second double door in the second story with a steel-railed deck and a safety stair leading to the roof. These doors have narrow slot lights adjacent to the central opening. The gable ends have louvered vents separated by vertical dividers. The long elevations of the pumphouse have four windows on each floor. The southern window on the second floor of the canal side of the pumphouse is a bay window. The second-floor windows are two-light vertical panels. There is a louvered vent off center adjacent to one of the windows. The lower floor has one-over-two vertical light windows with steel gratings covering the windows. The pump house contains four electric pumps and storage and office spaces.

JFWP-331E and JFWP-331F: Emergency Lift Stations (1961, Contributing)

The two upriver Emergency Gate lifting buildings, while similar size in their footprints and construction, differ somewhat in appearance. Both are poured concrete construction with the ground floor consisting of three full-width column supports with rounded corners. The second story of each building is also poured concrete with rounded corners. This story is surrounded by a cantilevered balcony with metal railings. Two one-over-one horizontal light windows are located on each side of the second story. The northeast building has a third story consisting of a metal building inset from the second story. There are

four large windows on each side of this building. The southwest building lacks a third story. The emergency lift stations contain machinery to lift a gate that lies on the river bottom in cases when the lock's gates fail to open or close or need to be replaced, repaired, or inspected.

JFWP-331H: Gauging Station (1961, Contributing)

A gauging station is located at the southeast end of the 1961 lock north wall. The building is a square concrete tower with navigation lights mounted on the flat roof. There is a metal entry door on the upriver side and a metal balcony at the top level.

JFWP-331I: Surge Basin (1965, Contributing)

As part of its modernization upgrades in the late 1950s and early 1960s, the USACE dredged a surge basin by removing a 30-acre section of Shippingport Island near the locks. The surge basin was needed because when the new 1200-ft. lock filled, it caused the canal's water level to drop as much as 1.7 feet, which affected passing boats (Johnson and Parrish 2007:244). The basin would also provide water storage for filling the locks and anchorage for USACE workboats at the Louisville Repair Station on Shippingport Island (Johnson and Parrish 2007:244). Construction of the 30-acre surge basin had additional effects to the island, necessitating the removal of an antebellum drydock on the island, changing the island's shape and elevation, and relocating the Louisville Repair Station to its current site.

JFWP-331J: Auxiliary Lock (2009, Noncontributing)

After the completion of the 1961 lock, McAlpine locks and dam had three locks in operation: the 1200-ft. McAlpine lock, the 600-ft. Lock 41, and the 360-ft. auxiliary lock located between the two larger locks (Johnson and Parrish 2007:250). The small auxiliary lock was constructed on the lower chamber of the Scowden lock and, although rehabilitated in 1963, could only accommodate one towboat and barge at a time (Johnson and Parrish 2007:250). The auxiliary lock failed in 1970 and a permanent bulkhead was constructed across its entrance (Johnson and Parrish 2007:250). The auxiliary lock and Lock 41 were demolished by 2003, completely removing the Scowden lock and Lock 41. The current auxiliary lock was constructed in 2009 and has never functioned as a lock. The space is used for the storage of decommissioned miter gates.

JFWP-331K: Maintenance Building (1965, Contributing) and JFWP-331Y-JFWP-331BB: Associated Storage Buildings (1996-2018, Noncontributing)

The maintenance building is a single-story, flat-roofed rectangular building with a red brick exterior and a poured concrete foundation. An addition was constructed on the northwest end of the building in 1996. The building has a parapet around the roof on the façade and both ends; the parapet has a concrete band top. The façade has a central entry which contains a single-light door flanked by single light windows. A set of three vertical windows is located to the left of the door and both are protected by a shed-roofed awning. Four additional entrances are located on the façade, both single solid doors or a set of double doors; each of the entrances are within a gable-roofed awning. Vehicle bays occupy the northwest and

southeast ends of the building. Two-light windows with concrete sills are present throughout the building, including the rear elevation. The exceptions are the two sets of three vertical windows on the façade that appear to be in enclosed vehicle bays.

There are four storage buildings in the vicinity of the maintenance building. The first building was added in 1996 and the last in 2018. The 1996 building (JFWP-331Y) is a prefabricated metal building with a gable roof and metal sheathing. The 2004 building (JFWP-331Z) is a prefabricated metal building with a gable roof, a vehicle bay on each gable end, and metal sheathing. A shed roof wing spans the side elevations. The 2008 building (JFWP-331AA) is a one-and-a-half-story garage with a shed roof and metal sheathing. Two shipping containers (JFWP-331BB) were placed behind the maintenance building in 2018 and are used for storage.

JFWP-331L and JFWP-331N: Lower and Upper Tainter Gate Dams (1961-1964, Contributing)

The Lower and Upper Tainter Gate Dams were constructed during the USACE's modernization project that began in the late 1950s. The Upper Tainter Gate Dam consists of a concrete dam located parallel to the Louisville-Indiana Railroad bridge. The upper dam (JFWP-331N) is oriented northeast-southwest and its six concrete piers contain five steel Tainter gates measuring 100-ft. wide by 22-ft. high. Steel shelters on top of the piers contain the controls to raise or lower the gates. The Lower Tainter Gate Dam (JFWP-331L) is almost identical to the upper dam except it consists of five concrete piers and four Tainter gates. The lower dam is located next to the Ohio Falls Generating Station and is accessed by a foot bridge between the generating station and the lower dam.

JFWP-331M: Fixed Weir Dam (circa 1925, Contributing)

A fixed weir dam extends between the Upper and Lower Tainter Gate Dams. Constructed circa 1925 as part of the USACE's Ohio River Navigation System improvements, the fixed weir dam as it is today consists of a former Boule weir dam and what was originally a fixed weir dam. The former Boule weir dam was modified into a fixed weir dam by closing the shutters and trestles and encasing them in poured concrete. The modified section spans northwest from the Upper Tainter Gate Dam to approximately where there is a slight bend in the dam, where the concrete fixed weir dam begins, continuing northwest to the Lower Tainter Gate Dam. The fixed weir dam is approximately 6,400-ft. long.

JFWP-331O: 2009 Lock (Noncontributing) and JFWP-331P-JFWP-331S: Four Gatehouses (2009, Noncontributing)

Beginning in 1999, the McAlpine Locks and Dam facility was once again upgraded to have the capacity for the increased river traffic. The Scowden lock and Lock 41 were removed and replaced with a new, larger lock. Completed in 2009, the lock is on the south, or Kentucky, side of the canal. The design of the 2009 lock is similar to the 1961 lock in that it is also constructed primarily of reinforced concrete and measures 1,200-ft. x 110-ft. The gates at either end of the lock are steel swing gates with each leaf measuring 70 ft. in height by 60 ft. in width and weighing approximately 300 tons. The ends of the lock walls are rounded and covered with protective material to deter boat damage.

While the 2009 lock is virtually identical to the 1961 lock, the control systems and buildings differ in the way they function and operate. Although the 1961 lock gates are manually controlled, those of the new lock are electronically controlled. The four buildings at this lock – two on the upriver end and two on the downriver end – house generators, air compressors, hydraulic pumps, and other equipment needed to operate the locks. The downriver buildings (JFWP-331R and JFWP-331S) are identical three-story, poured concrete buildings with standing seam metal gable roofs with clipped lower corners to match the beveled corners of the building. The stories are separated by a contrasting concrete band. The top story has a band of windows on each side, with single windows in the beveled corners. There are no windows on the ground floor. Small windows on the second floor are recessed within the walls. The third floor has a pair of two-light windows on each of the long sides, a single two-light window at each end, single-light windows in the beveled corners, and louvered vents in the gable ends. Access to the upper floor is on the canal side of each building. On the upriver end of the lock, one of the two buildings (JFWP-331P) is identical to the two gable-roof buildings on the downriver end. The other building (JFWP-331Q)is a square four-story poured concrete building with beveled corners and a standing seam metal hip roof. The northwest façade has a two-story gable-roofed ell. Access to the building is through the gable end of this ell via double doors under a hip roof. There are louvered vents in the gable end. The third story of the main building has paired windows on each of the sides except the ell, and narrow single windows in the beveled corners. The third story has a band of windows all the way around the building.

JFWP-331T: Shippingport Island Bridge (2006, Noncontributing)

The Shippingport Island Bridge is a concrete stringer bridge that carries the two-lane Marine Street/North 27th Street over the locks. The bridge has 20 spans, each approximately 132.2 ft. long for a total bridge length of 1,757 ft.

JFWP-331U-JFWP-331X: The Ohio Falls Generating Station (1927-2018, Noncontributing)

The Ohio Falls Generating Station facility contains four buildings: the generating plant (1927), a brick two-story building (circa 1930), an office building (2012), and a prefabricated metal ancillary building (2018).

Constructed in 1927 by the USACE in conjunction with the Louisville Gas and Electric Company, the generating plant (JFWP-331U) is a five-story, rectangular building of reinforced concrete construction that extends into the Ohio River, whose current turns the plant's turbines to generate electricity. The building's symmetrical northwest and southeast elevations feature classical elements such as full-height pilasters and pediment-like parapets. Multi-light, steel-sash industrial windows are present across the fifth story. The building contains eight generating units that generate 110 megawatts of power.

A circa 1930, two-story brick building (JFWP-331W) is located southeast of the generating plant on the bank of the Ohio River. The building has a brick exterior with stucco or concrete panels on the northwest and southeast elevations. The shed roof is covered in metal sheathing, and it appears that most of the windows have been partially or completely enclosed.

A one-story office building (JFWP-331V) was constructed on-site in 2012 and is located immediately adjacent to the generating plant. The building mimics the generating station's architectural details with symmetrical front and rear elevations and a pediment-like parapet.

A prefabricated metal ancillary building (JFWP-331X) is located next to the circa 1930 brick building. The building has a shed roof, metal sheathing, and two vehicle bays on its southwest elevation.

JFWP-331CC-JFWP-331GG: The Louisville Repair Station (1960-1995, Noncontributing)

The Louisville Repair Station was relocated to its current location circa 1960 when the surge basin was dredged. The repair station currently has five buildings. The first building (JFWP-331CC) dates to 1960 and is a T-shaped building comprising a long, one-story rectangular massing on the northeast half of the building and a two-with a flat roof and a shorter, two-story massing on the southwest half. Two small gable-roof additions were constructed on the northeast elevation circa 1995.

Two buildings date to 1990. The first (JFWP-331DD) is on the northwest end of the repair station and is a two-story building with a metal front-gable roof and metal sheathing. Vehicle bays are present on the gable ends. The second building (JFWP-331EE) is on the southeast end of the repair station and is also a two-story building with a metal front-gable roof and metal sheathing. A vehicle bay is present on the southwest and northwest elevations.

In 1995, two additional storage buildings were added to the facility. The first (JFWP-331FF) is a two-story pole barn that has a side-gable roof and metal sheathing on three of its four elevations. The second (JFWP-331GG) is at the entrance into the facility and is a two-story building with a metal front-gable roof and metal sheathing. Vehicle bays are present on the gable ends.

JFWP-331HH: McAlpine Locks and Dam Visitors Center (1996-2009, Noncontributing)

The McAlpine Locks and Dam Visitors Center building was constructed in 1996 as office space for the engineering and construction teams prior to work beginning on the McAlpine Locks and Dam upgrades in 1999. The building was converted to a visitors' center after construction was completed. The one-story building has a metal front-gable roof and a light-colored brick veneer. A round plaque with the USACE castle logo is in the parapet gable end and the primary entrance is under a metal shed-roof awning. Banks of full-height, plate glass windows are located on the building's north elevation and provide a clear view of the locks.

Completed in 2001, the visitors' center park sits below grade from the parking lot and visitors' center building. Accessed by stairs made from stone salvaged from the demolition of the Scowden lock, the paved concrete park displays historic navigational markers, plaques salvaged from the demolition of the Scowden lock and Lock 41, and the National Historic Civil Engineering landmark plaque awarded by the American Society of Civil Engineers in 2003. The towboat Whitewater, built in 1939, is also on display. The observation deck leads from the visitor center building out to the edge of the 2009 lock.

The bridge to the observation deck is lined with interpretive panels outlining the history and development of the Louisville and Portland Canal and its associated locks and dams. The deck is partially covered by a modern diamond-shaped awning partially clad in metal sheathing and supported by concrete piers.

Bibliography

American Society of Civil Engineers.

"Louisville & Portland Canal Locks and Dam." *ASCE*, 2025. https://www.asce.org/about-civil-engineering/history-and-heritage/historic-landmarks/louisville-and-portland-canal-locks-and-dam/.

Joblin, Maurice.

"Theodore R. Scowden." In *Cleveland, Past and Present: Its Representative Men*. Cleveland, Ohio: Fairbanks, Benedict & Co., Printers, 1869.

Johnson, Leland R.

The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army. Vol. 1. 4 vols. Louisville, Kentucky: U.S. Army Engineer District, 1984.

The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army 1970-1983. Vol. 2. 4 vols. Louisville, Kentucky: U.S. Army Corps of Engineers, 1984.

Johnson, Leland R., and Charles E. Parrish.

The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army, 1984-2004. Vol. 3. 4 vols. Louisville, Kentucky: U.S. Army Corps of Engineers, 2008.

Triumph at the Falls: The Louisville and Portland Canal. Louisville, Kentucky: U.S. Army Corps of Engineers, Louisville District, 2007.

Kenning, Chris.

"Crews Prepare to Demolish Old Locks." *The Courier-Journal*, September 7, 2001, Louisville, Kentucky.

Kentucky Heritage Council

Kentucky Historic Resources Individual Survey Form, JFWP 331, Scowden Lock, Louisville and Portland Canal, n.d. Frankfort, Kentucky.

Memorial of Centennial Celebration of the Turning of the First Shovelful of Earth in the Construction of

the Erie Canal.

"David S. Bates." Rome, New York, July 4, 1917. https://www.eriecanal.org/texts/Bates.html.

The Courier-Journal

"Engineer Who Supervised Dam 41, Other River Structures, Dies at 88." November 3, 1956. Louisville, Kentucky.

Trescott, Paul B.

"Louisville and Portland Canal Company." *The Mississippi Valley Historical Review* XLIV, no. 4 (March 1958).

Turner, Kimberlee.

The Falls City Engineers: A History of the Louisville District Corps of Engineers United States Army, 2005-2016. Vol. 4. 4 vols. Louisville, Kentucky: U.S. Army Corps of Engineers, 2021.

U.S. Army Corps of Engineers, Louisville District.

Louisville Chart, Ohio River, Pittsburgh, PA to Mouth, 1911-1914.Yater Files, University of Louisville Archives, Louisville, Kentucky.

Collection of drawings and plans from 1830 to 1958, Louisville and Portland Canal, 1958. McAlpine Locks and Dam. Louisville, Kentucky.

"McAlpine Locks and Dam, Reconstruction and Modernization." Louisville, Kentucky, 1963. George H. Yater Papers. University of Louisville Archives.

"McAlpine Locks and Dam." Louisville, Kentucky, 1966. George H. Yater Papers. University of Louisville Archives.

Bibliography (continued)

Wright, Leslie S.

"The Origin and History of the Louisville and Portland Canal." University of Louisville, 1939. ThinkIR.

Turner, Kimberlee

2021 *The Falls City Engineers: A History of the Louisville District Corps of Engineers, United States Army, 2005-2016.* Volume 4. Louisville District Corps of Engineers, Louisville, Kentucky.

U.S. Army Corps of Engineers, Louisville District

1960 McAlpine Locks and Dam Reconstruction and Modernization. Information pamphlet. Louisville, Kentucky.

1962 Ohio River McAlpine Locks and Dam drawings. Louisville, Kentucky.

1963 McAlpine Locks and Dam Reconstruction and Modernization. Information pamphlet. Louisville, Kentucky.

1966 McAlpine Locks and Dam, Information pamphlet. Louisville, Kentucky.

1977 Ohio River, McAlpine Locks & Dam Map. Louisville, Kentucky.

Wright, Leslie R.

1939 *The Origin and History of the Louisville and Portland Canal.* Ph.D. Dissertation, Department of History, University of Louisville, Kentucky.