

Journey Interrupted: A Brief History of the Des Moines Rapids

The Des Moines Rapids are gone and almost forgotten. Submerged under the rising water of Lake Cooper when the Mississippi River was dammed at Keokuk, Iowa, in 1913, the rapids stretched north from Keokuk just over eleven miles to the Nauvoo peninsula. The Des Moines or “Lower” Rapids were one of two major disruptions to navigation on the Mississippi (the other upstream at Rock Island, Illinois). Effectively separating the lower and upper Mississippi, the rapids prevented most commercial navigation on the river north of Keokuk, especially during low water. They disrupted travel and limited access to lead from Galena, Illinois, and lumber from northern forests.

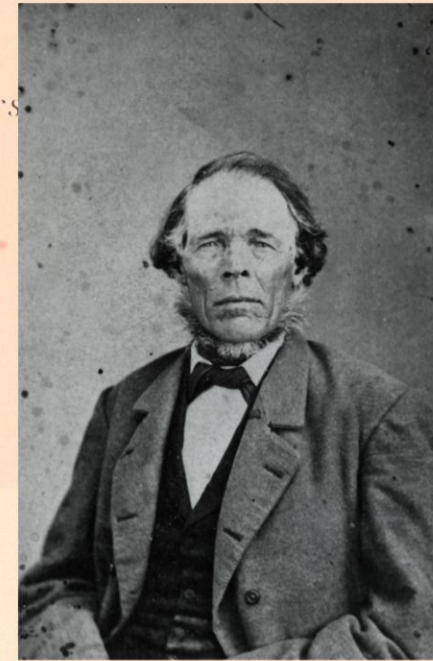
This exhibit explores the impact of the Des Moines Rapids on those whose journeys took them to and through Nauvoo in the 19th and early 20th centuries. Although the rapids disappeared 100 years ago, they continue to impact the lives of those living in the Tri-State area.



First stone house in Nauvoo, built by Captain James White near the Mississippi River in 1827
Courtesy of Community of Christ, Independence, Missouri

Surveyed by Lt. R.E. Lee of the Corps of Engineers,
Assisted by Lt. M.C. Meigs do do
J.S. Morehead & Henry Kayser September 1837

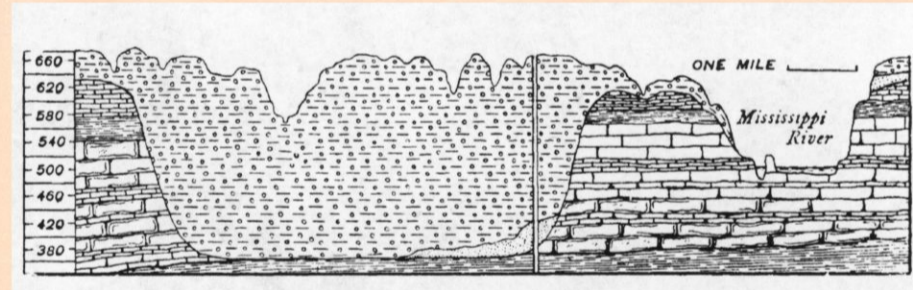
Note: The river was one foot above low water mark when the survey was made to which plane the soundings in feet and inches are referred.
This character signifies no bottom with a ten feet rod



Hugh White, son of Captain James White and a lightering pioneer.
Courtesy of the LDS Church History Library, The Church of Jesus Christ of Latter-day Saints

Rock vs. River: The Geology of the Rapids

Thousands of years ago, the Mississippi flowed west before curving to the south near Argyle, Iowa, and continued south below Keokuk. Ice sheets later covered the area, pushing the river east out of its pre-glacial channel and forcing it to carve a path through limestone, with a much narrower channel and an almost flat stone bottom. Submerged limestone stretched nearly bluff to bluff, resulting in a water depth of just two to three feet and a very strong current as the river raced from Nauvoo to Keokuk. Bluffs, a stone bottom, along with a steep gradient all came together here to create what was known as the Des Moines Rapids.



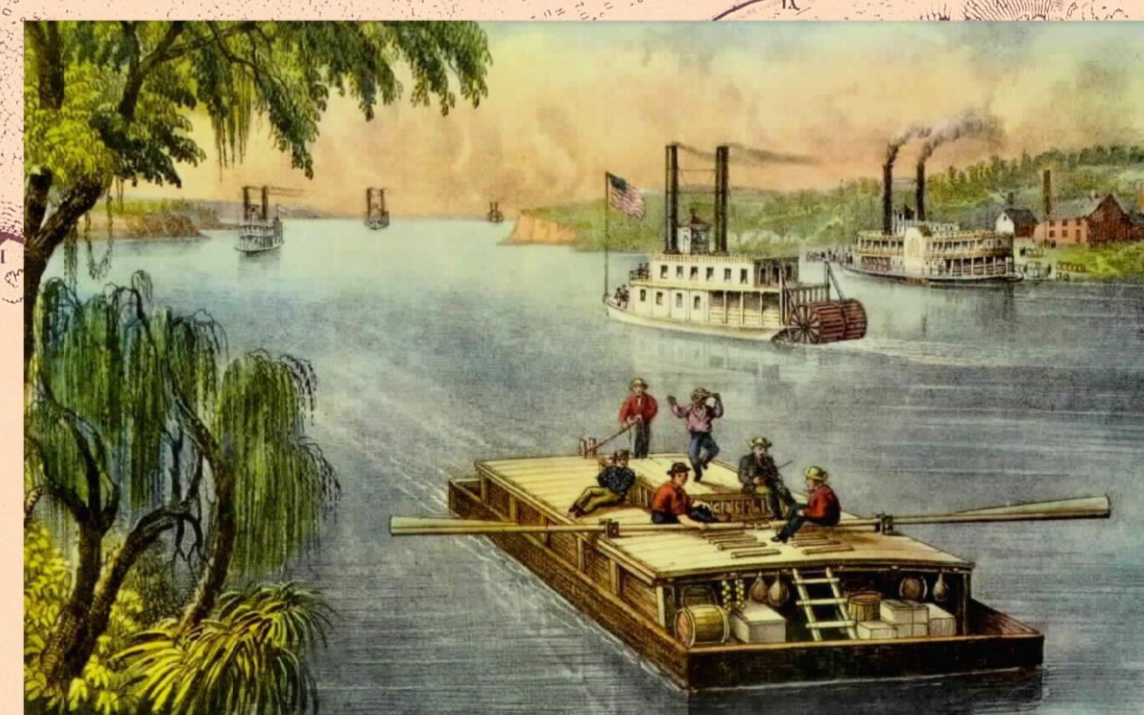
Cross-section from Argyle, Iowa to Sonora, Illinois showing an old and the new channel of the Mississippi River
Courtesy of Iowa Geological Survey



Henry Miller Shreve map of the Des Moines Rapids of the Mississippi River, 1836
Courtesy, Special Collections, The University of Texas Arlington Library, Arlington, Texas

Lightening the Load: Lightering on the Rapids

Sitting low in the water, loaded steamboats were often delayed and sometimes sunk when navigating the rapids. One of Nauvoo’s earliest non-Native American settlers, Captain James White, and his sons, Hugh and Alexander, pioneered the development of the lightering industry to overcome the rapids. Cargo was moved onto small boats called “lighters,” which easily moved downstream with the current. They were towed upstream by draft animals walking along the shore, winched up with ropes tied to trees on the river bank, or pushed upstream by men on deck with long poles. Whichever method was used, lightering upstream over the rapids was grueling work. Lightering also added significantly to the cost of transporting goods.



Flatboat, laden with kegs and other cargo, showing lightering on the Mississippi River
Artist unknown, lithograph published in 1870 by Currier and Ives

Robert E. Lee Wages War on the Rapids

The U.S. Army ordered Lieutenant Robert E. Lee and Second Lieutenant Montgomery C. Meigs to improve navigation through the rapids in 1837. They steamed upriver from St. Louis to conduct a survey and promptly grounded their boat at Keokuk. Their plan to overcome the rapids was to clear a channel 200ft. wide and 5ft. deep. The effort continued, with some success, until they ran out of money in 1839.

Lee sold his equipment at auction in 1840, including the steamboat *Des Moines*. Mormons purchased the boat for \$4,866, and their prophet Joseph Smith, Jr., guaranteed payment. Soon after the boat was renamed *Nauvoo*, it was accidentally sunk.

Years later during the Civil War, Lee served as a Confederate general. Meigs served on the opposite side as Quartermaster General for the Union. To punish Lee for defecting, Meigs recommended taking Lee’s Virginia home and burying Union officers and thousands of unknown soldiers in his wife’s rose garden. Today, the property is known as Arlington National Cemetery.



Robert E. Lee in his Lieutenant Engineer's uniform, 1840, painted by Benjamin West
Courtesy of Washington & Lee Special Collections, Lehigh University, Lehigh, VA

Putting Water to Work: Industrialization Attempts in Nauvoo

The river fell about 22 feet in the eleven miles between Nauvoo and Keokuk. Falling water meant power for saw, grist, carding, and textile mills. In the early 1840s, the first of thousands of Mormon converts from the United Kingdom, many of them the “industrial poor,” began to gather to Nauvoo. They needed jobs, and Nauvoo needed industry. A Main Street canal, running north and south across the Nauvoo peninsula, was planned with water wheels to harness the Mississippi’s power and put people to work. Builders hit limestone, and it became clear that the canal was impractical, but the stone could be used to build the temple.

Attention turned to the river itself, and the Nauvoo Water Power Company’s “Great Dam” was the focus of attention in 1845. Running along the south bank of the Nauvoo peninsula and cutting across the river to an island near the Iowa shore, the Great Dam was intended to backup three feet of water to power fifty water wheels. Increasing tension with neighbors led to the abandonment of the Mormons’ Great Dam project by 1846.

Railroads: Real and Imagined

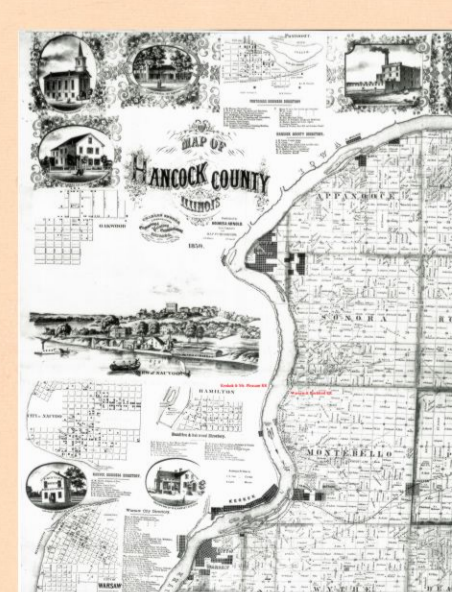
The slow pace of Lee’s work caused locals to explore other options to defeat the rapids. The Des Moines Rapids Railroad was chartered by the state of Illinois in February of 1839. This rail line would run from what is now Nauvoo to Warsaw, Illinois, and connect with a line going east to the Indiana border. The arrival of the Mormons a few months later gave this plan a much-needed boost, but lack of funding, combined with growing tension between Nauvoo and Warsaw, led to the failure of the project.

The effort was later revived in 1853, with Nauvoo residents voting to issue bonds to pay for construction. The Warsaw and Rockford Railroad also failed, resulting in disgruntled investors and a string of lawsuits.

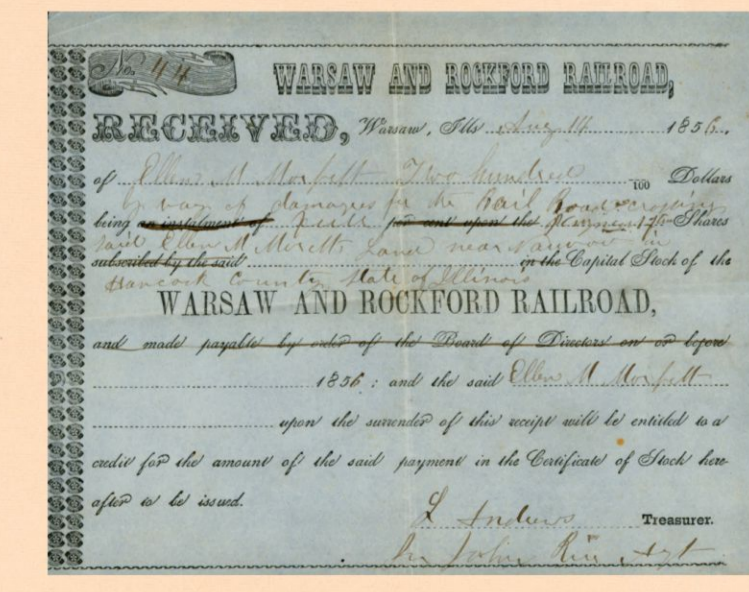
The citizens of Lee County, Iowa, were racing against the Illinois effort to bypass the rapids. Like Nauvoo, they voted in support of a bond issue in 1853; but, unlike Nauvoo, they actually installed track, linking Keokuk to Montrose in 1856 and Ft. Madison in 1857.



George A. Rorer family - From a Nauvoo lawyer that dealt with the railroad lawsuit.
Courtesy of Mary Logan, Nauvoo, Illinois



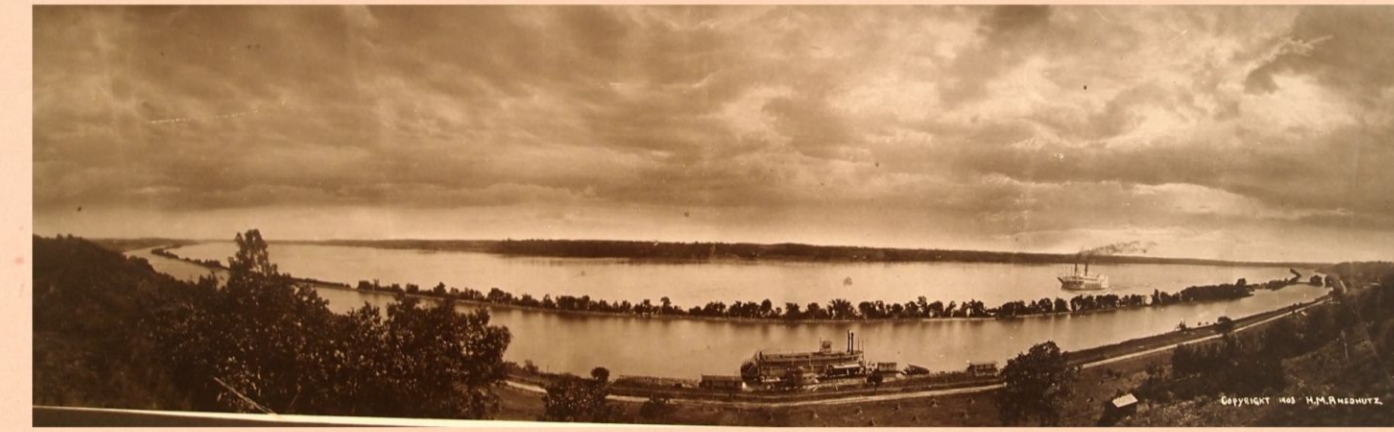
1839 Map of Hancock County, featuring the railroad on the Iowa side and the proposed railroad on the Illinois side.
Courtesy of Illinois State Library, Springfield, Illinois



Warsaw and Rockford Railroad receipt for damages to Ellen Moffitt's (Moffitt) land in 1856
Courtesy of Jim and Hannelore Moffitt, Nauvoo, Illinois

Bypassing the Rapids: The Des Moines Canal

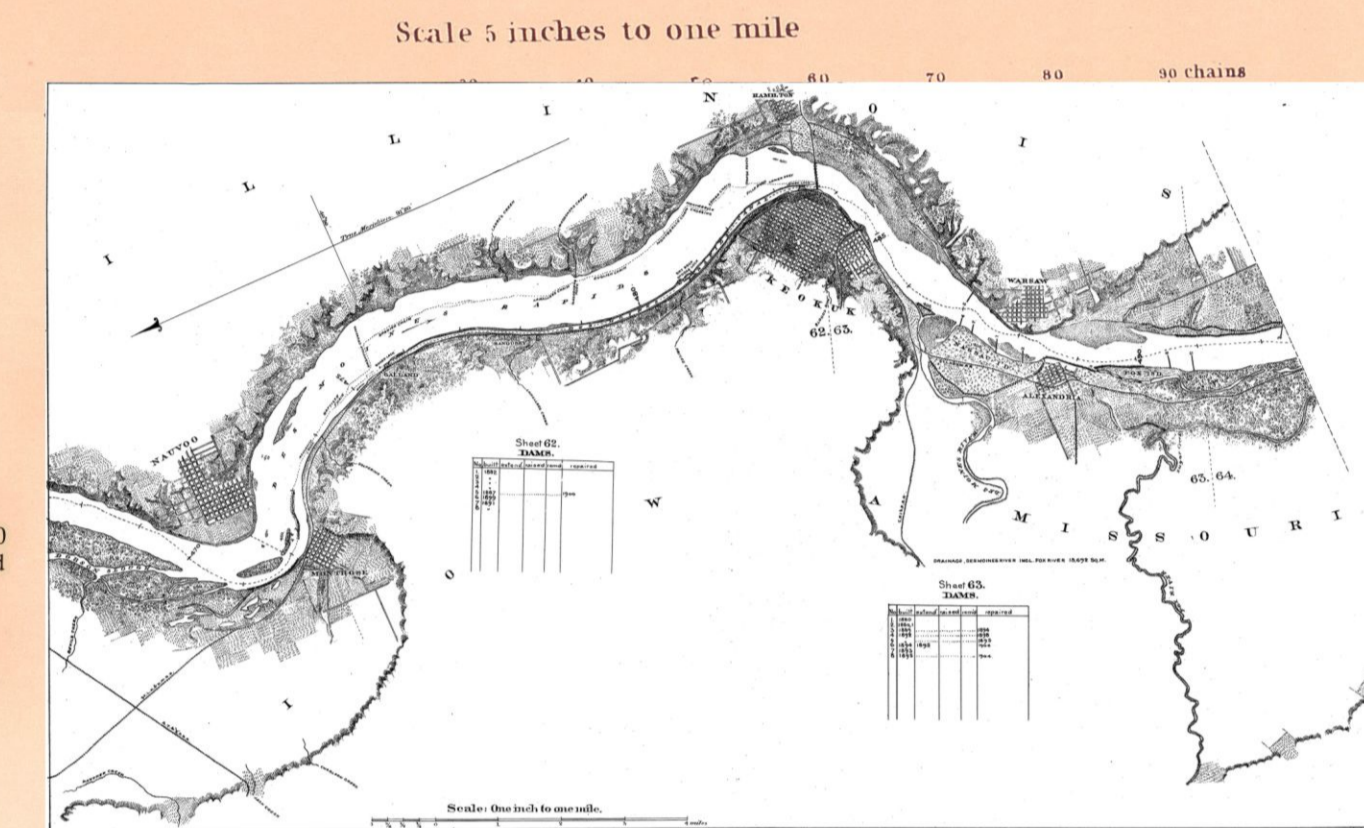
It was cheaper to ship by water than rail, and shippers spent hundreds of thousands of dollars every year to load and unload boats at the rail bypass of the rapids. Talk of improvements on the river was revived, and construction began on the “Government” or Des Moines Rapids Canal in 1867. Like the rail line, the canal went in on the Iowa side. It stretched about eight miles from Keokuk to Galland (then called Nashville) with three locks. The canal was created by building a wall that ran parallel to the shoreline. The wall ended at Galland, but a five-foot deep channel was blasted through the rapids further north to Montrose. Built at a cost of \$4,155,000, the canal opened in 1877 and operated for thirty-six years.



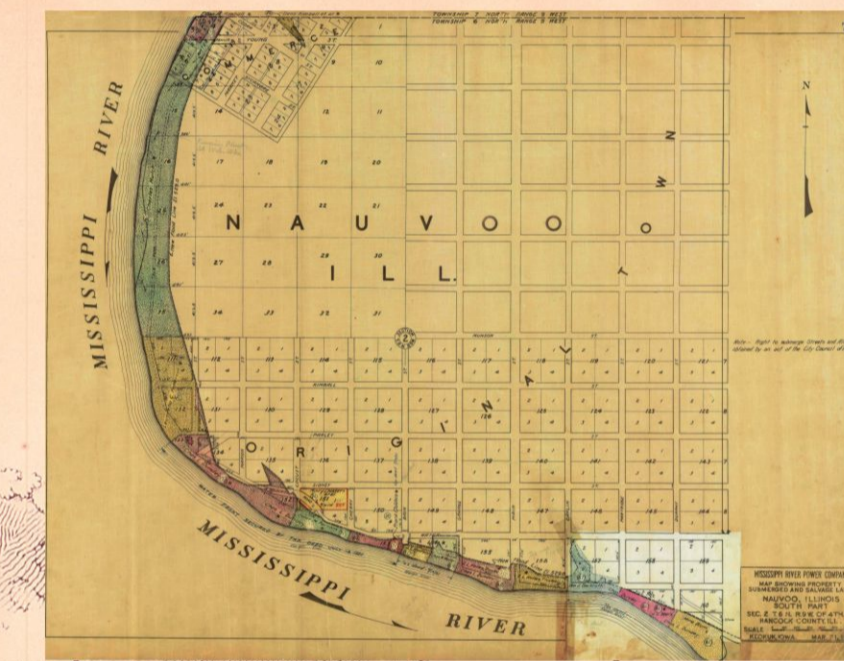
1903 view of the Des Moines Rapids Canal by H. M. Anschutz – note the steamboat on the right added by Anschutz
Courtesy of Tom and Betsy Gardner, Keokuk, Iowa



A view of workers on the Des Moines Rapids Canal, Keokuk, Iowa, ca. 1870
Courtesy of NYPL, Digital Collection, Photography Collection, Miriam and Ira D. Wallach Division of Art, Prints and Photographs



1903 map of the Des Moines Rapids Canal
Courtesy of the Rock Island District of US Army Corp of Engineers



1914 map showing the impact of dam construction on the shoreline of Nauvoo
Courtesy of Nauvoo Restoration, Inc.

The Rapids Are No More: The Rise of Lake Cooper

The rapids were flooded and the canal was put out of business by the Keokuk-Hamilton dam, the oldest and highest on the Mississippi. Built between 1910 and 1913 and celebrating a centennial in 2013, the dam was designed to take advantage of the 22 foot elevation drop between Nauvoo and Keokuk to generate electricity. It would also decrease the cost of shipping by replacing three locks with one. The water behind the dam became known as Lake Cooper in honor of Hugh L. Cooper, chief engineer of the project.

The rising water submerged several islands near Nauvoo and flooded about one-half block of the town along the south bank of the peninsula and about a block (400 feet) on the west. Captain James White’s stone house, one of Nauvoo’s earliest and most durable landmarks, was consumed by the rising water. The Mormons’ Nauvoo House hotel was threatened by the flooding, which also inspired the successful search for the unmarked graves of Joseph and Hyrum Smith.

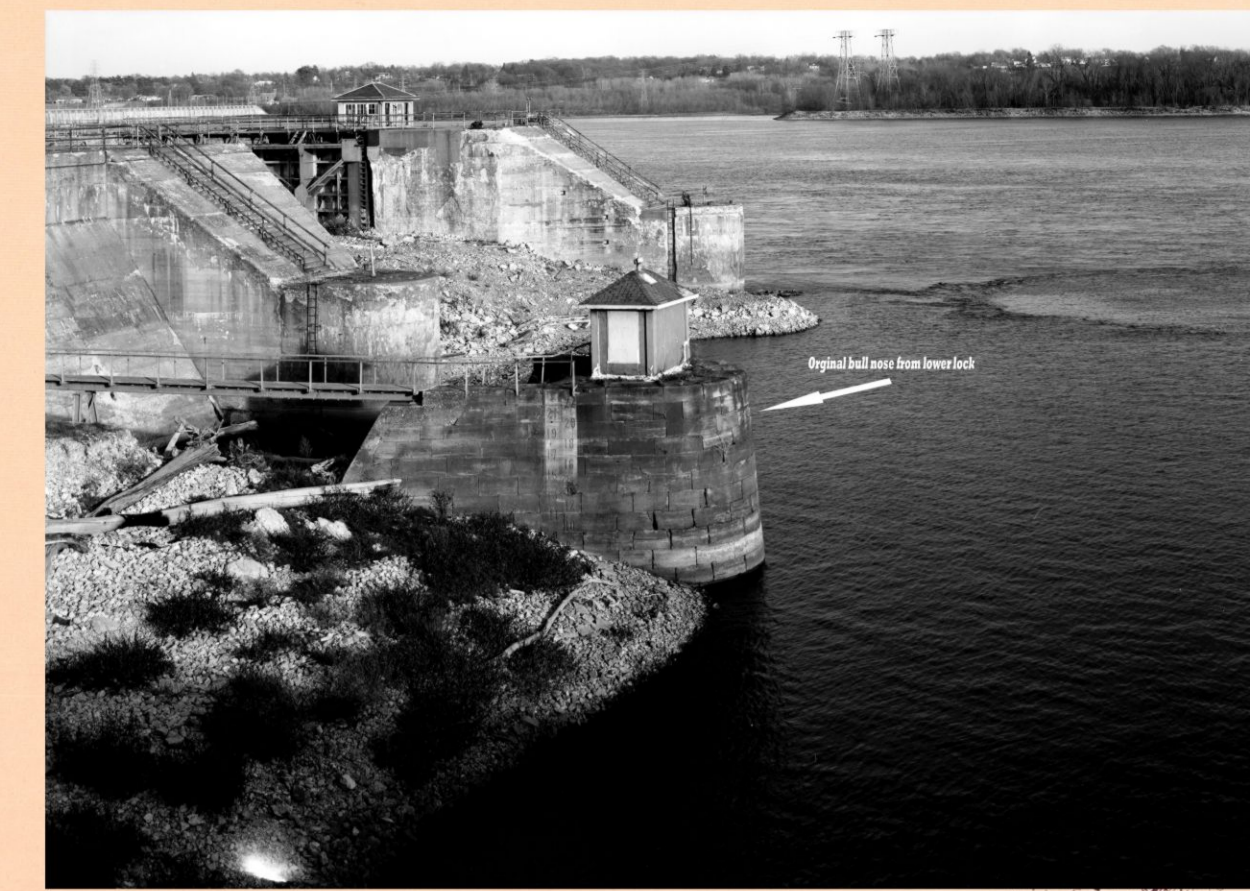
Lake Cooper meant enhanced recreational boating and fishing opportunities during most of the 20th century. Being true to its nature, the river is constantly changing and is once again forming its wetlands and islands. As of 2012, over 70% of the capacity of Lake Cooper has been lost due to siltation.



A flooded Captain James White's house, ca. 1928 – due to the construction of the Keokuk, Iowa dam
Courtesy of Community of Christ, Independence, Missouri



Water of the Mississippi approaches the Nauvoo House, ca. 1928
Courtesy of Community of Christ, Independence, Missouri



Last remnants of the 1877 Des Moines Rapids Canal at Lock & Dam 19, Keokuk, Iowa
Courtesy of Library of Congress Prints and Photographs Division, WDC



Keokuk-Hamilton Dam under construction
Courtesy of Keokuk Public Library, Keokuk, Iowa

Why Should You Care?

Remember the race to bypass the rapids with a railroad? Illinois lost to Iowa because of a shortage of funding, mismanagement and the inability of the citizens of Nauvoo and Warsaw in the 1840s to work together for the common good. Illinois residents are still paying the price for that defeat. The railroad in Iowa meant jobs which would attract more people who needed services which would create more jobs. When the canal was built, it was on the Iowa side. The Keokuk dam powerhouse and lock are in Iowa. Cities and towns are now scattered up and down the Iowa shore. Next time you hear a train whistle floating across the water or drive to Iowa to buy groceries, go to work, eat out, or check into a hotel, think of the rapids and the race for a railroad. The story of the Des Moines Rapids is a wonderful reminder that the decisions we make and the actions we take can have a profound impact on future generations.

Background image of 1837 map, a survey of the Des Moines Rapids completed by Robert E. Lee
Courtesy of Tom and Betsy Gardner of Keokuk, Iowa