

# Restoration of Fox locks reaches completion

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**IC WKAUKAUNA** – When a lock tender ceremoniously floods the Kaukauna locks Tuesday, it will signal the completion of a 10-year, \$14.5 million effort to restore 16 of the 17 locks on the Fox River.

The restoration of the Fox locks bears huge economical, historical and recreational implications for the region.

A 1993 study by LDR International determined the Fox River corridor, enhanced by the reopening of the locks and a national heritage designation, could generate an additional \$74 million in annual economic activity. The Fox locks are one of only two hand-operated locks systems in the United States and, within two or three years, will allow boaters to navigate the lower Fox between Lake Winnebago and Lake Michigan.

"This is where Wisconsin started," said Tim Rose, board chairman of the Fox River Navigational System Authority, which is responsible for the operation of the locks. "This is where the northern part of the United States started. (Explorers) Marquette and Joliet went down this river."

The lower Fox River falls 168 feet from Lake Winnebago to Green Bay, comparable to the drop at Niagara Falls. A system of locks, canals and dams was built in the 1840s and 1850s to tame the rapids and make the waterway navigable for transporting goods and people. The U.S. Army Corps of Engineers assumed responsibility of the locks in 1872.

The locks system was key to Wisconsin's shipping and paper industries but was closed in the mid-1980s as those industries declined and maintenance costs grew. The corps transferred ownership of the locks to the state of Wisconsin in 2004, and the state created the Fox River Navigational System Authority to repair and reopen the locks.

The authority has spent the last decade restoring the locks, which are listed on the National Register of Historic Places. The five Kaukauna locks are the last to be finished. The milestone will be celebrated from 2 to 6 p.m. Tuesday at 1008 Augustine St., adjacent to Kaukauna Lock 3.

"We like to think it's probably been the impetus to get a lot of the things that are happening on the river started," Rose said. "Eagle Flats (in Appleton) and all of those kinds of things probably wouldn't have happened had this thing not started."

While the reopening of the Kaukauna locks are cause for commemoration, three obstacles remain before boaters can travel the 39 miles between Lake Winnebago and Green Bay. They are the replacement of the Mill Street lift bridge in Little Chute, the repair of the Veterans Memorial lift bridge in Kaukauna and the construction of an overland boat transfer and cleansing station at the sealed Rapide Croche lock near Wrightstown.

Those improvements, targeted for completion by 2017, would reopen the entire length of the lower Fox River to boaters. Rose said he counted 20 historic sites along the river between Oshkosh and Green Bay. "It could become a major tourist attraction," he said.

## Wonder of workmanship

The locks are a marvel of engineering and workmanship and operate the same way they did 160 years ago.

The system includes 17 locks — Menasha, Appleton (4), Cedars, Little Chute, Combined Locks (2), Kaukauna (5), Rapide Croche, Little Kaukauna and De Pere — that were opened between 1850 and 1856. They were built by laborers using picks, shovels, horses and dynamite. Some of the limestone walls were quarried at High Cliff. Many of the gates are made of huge timbers.

"It was the first public works project that the state of Wisconsin did," Rose said.

The Boldt Co. was hired to restore the Kaukauna locks to heritage standards. The project included repairing the locks' mechanical systems and rebuilding the locks' walls, gates, chambers and guard houses. Workers salvaged what they could and replicated what was beyond repair.

At Kaukauna Lock 3, the new gate doors are made of Douglas fir timbers and weigh about 20,000 pounds each.

The locks measure 35 feet wide and 144 feet long, and the water enters and exits by gravity. The fee to use the locks system costs \$6 a day or \$120 for a season pass.

## Rapide Croche

**State law** requires the Fox River Navigational System Authority to maintain the barrier at the Rapide Croche lock "to prevent sea lampreys and other aquatic nuisance species from moving upstream." The law says that any transport of watercraft around the barrier must include steps to control invasive species that could harm upstream fisheries.

The authority plans to build a \$3.8 million transfer and cleansing station that will lift up a boat, spray off the hull and lower it into a tank of 112-degree water to kill the nuisance species. The boat's systems also will be flushed with hot water before the craft is placed back into the river.

The transfer station will lift boats upstream and downstream, but only boats headed upstream will require cleansing.

"We believe the Rapide Croche Boat Transfer and Cleansing Station can serve as a national model for the protection of a river system from aquatic invasive species," said Bob Stark, the authority's chief executive officer.

The authority estimates the operation and maintenance of the station will cost \$80,000 annually. Expenses will be offset by fees collected from boaters using the station.

"The goal is to make that self-sustaining," Stark said. "It will be \$25 to \$50, depending upon the size of the boat, for the cleansing part of it."

The fee for boats traveling downstream might be less, given that they wouldn't be required to go through the hot-water bath.

### **Appleton visitors center**

The authority proposes building a \$1.7 million visitors center in 2017 to showcase the history of the locks system. The two-story center would be located next to Appleton Lock 3 at the northeast corner of South Lawe and East Newberry streets. It could be coupled with a private condominium development and the reuse of a nearby lock tender house as part of the revitalization of the Appleton industrial flats.

Plans call for the upper level of the visitors center to house interpretive exhibits that would explain the importance of the locks system. The lower level would include a meeting space for classroom visits and public restrooms that would be accessible year-round by paddlers, boaters, pedestrians and bicyclists.

The Fox Cities Convention & Visitors Bureau awarded a \$100,000 tourism development grant to the authority for the construction of the visitors center.

"It has the potential to really turn into something," Rose said.

### **Lock tender houses**

The authority acquired nine lock tender houses as part of the locks system.

The exteriors of eight of the houses were renovated — one house was razed — and the authority is studying ways to use the houses and generate income for the operation of the locks system.

The [De Pere lock tender house](#) has been leased to 3 Dam Guys, a group of businessmen. The first floor is home to a small cafe operated by Kavarna, and the upper floor is used as an office suite.

The [Little Chute house](#) has been leased to the Fox-Wisconsin Heritage Parkway for use as a hostel that can be rented by boaters or kayakers. It's being restored to the 1930s era and will be ready for use next year.

"Their goal is to make it like the lock tender is living there," Stark said. "You're a guest in the lock tender's house. It will be furnished and set up that way."

The Appleton lock tender house could be reopened as a bed-and-breakfast.

"It's all public land, and the public ought to be able to use it," Rose said.

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### **Fox River Navigational System Authority**

The authority was created to oversee the management of the Fox River locks after the U.S. Army Corps of Engineers transferred responsibility for the system to Wisconsin in 2004. Its primary mission is to repair, rehabilitate, operate and maintain the locks system.

The initial funding for the authority totaled \$23 million and came from the corps (\$11.8 million), local fundraising (\$2.8 million), matching state money (\$2.8 million) and matching federal money (\$5.6 million). Investment income and grants have supplemented its holdings. The authority doesn't have taxing powers.

A nine-member board of directors governs the authority. The board consists of two members each from Brown, Outagamie and Winnebago counties; a representative of the Department of Natural Resources; a representative of the Department of Transportation; and a representative of the Wisconsin Historical Society.

To learn more, visit [foxlocks.org](http://foxlocks.org).

### **Authority milestones**

**2005:** Stabilization of the Little Chute and Kaukauna locks

**2006:** Restoration of Appleton locks 1-4

**2007:** Restoration of the Cedars Lock in Little Chute

**2008:** Reconstruction of the Little Chute canal levee

**2009:** Restoration of the Little Chute and Combined Locks locks

**2010:** Exterior restoration of eight lock keeper houses

**2011:** Restoration of Kaukauna Lock 4

**2014-15:** Restoration of Kaukauna locks 1, 2, 3 and 5

**Planned 2017:** Construction of a boat transfer and cleansing station at the Rapide Croche Lock near Wrightstown. The lock was permanently sealed in the mid-1980s as a barrier to sea lamprey and other invasive species in Green Bay.

**Planned 2017:** Construction of the Fox River Locks Visitors Center in Appleton.

### **Other milestones**

**Planned 2016:** Replacement of the Mill Street lift bridge in Little Chute. The \$2 million project, funded by a combination of federal and local money, began earlier this month.

**Future:** Repair of the Veterans Memorial lift bridge in Kaukauna. The U.S. Coast Guard has ordered Kaukauna to repair the lift bridge by April 15, 2017, but the city has no money budgeted for the \$1.1 million project. "We would obviously ask for an extension," said John Sundelius, Kaukauna's director of public works.