



**US Army Corps
of Engineers**

Chicago Sanitary & Ship Canal Fish Barrier System

Location and Purpose: The fish barriers are located in the Chicago Sanitary and Ship Canal (CSSC), which is a man-made waterway that provides a hydraulic connection between Lake Michigan and the Mississippi River basin. The fish barrier project was developed to prevent the spread of aquatic nuisance species between these watersheds.

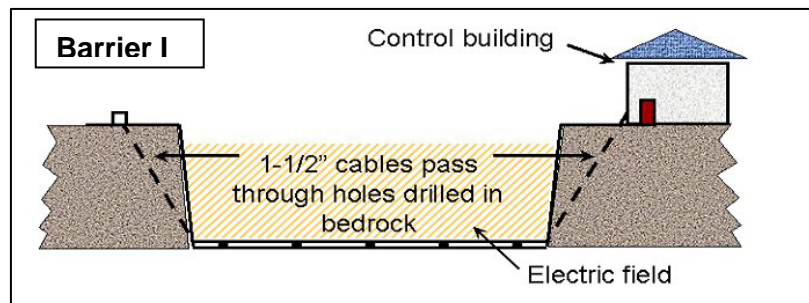
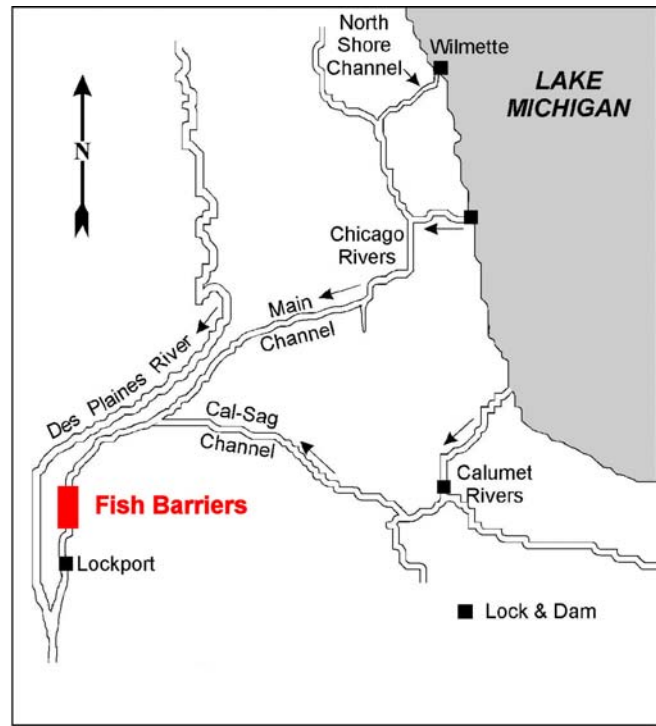
Project History: In April 2002, the Corps of Engineers began operation of the first barrier (Barrier I) as a demonstration of a new technology for preventing the spread of aquatic nuisance species.

Barrier I, which is located at river mile 296.5 in Romeoville, IL, is formed of steel cables (see diagram below right) that are secured to the bottom of the canal. A low-voltage, pulsing DC current is sent through the cables, creating an electric field in the water. The electric field is uncomfortable for fish and they do not swim across it. Since Barrier I was originally built as a demonstration, it was not intended to be operated for more than a few years.

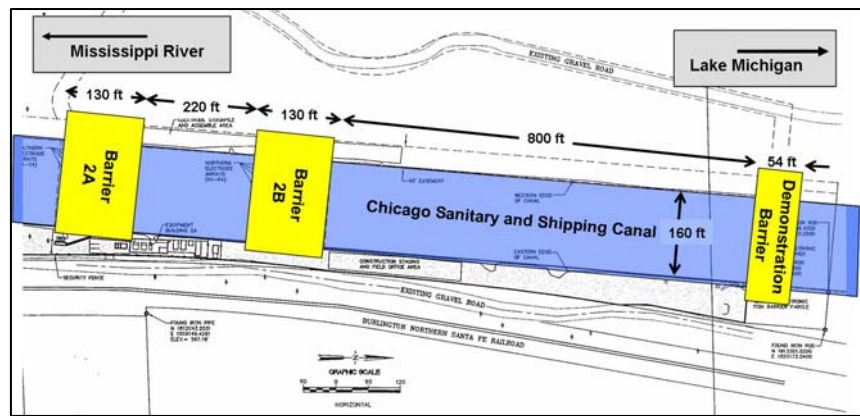
In 2004, the Corps initiated construction of a permanent barrier (Barrier II) to prevent the migration of fish, including Asian carp, between the watersheds. Barrier II, which is located 800 to 1,300 feet downstream of Barrier I, uses an electric field, but includes several design improvements identified during monitoring and testing of Barrier I.

Barrier II will be able to generate a more powerful electric field over a larger area and consists of two sets of electrical arrays and control houses, known as Barriers IIA and IIB. Each control house and set of arrays can be operated independently, but the ultimate goal is to operate both at the same time.

In 2007, Congress authorized the Corps to complete Barrier II, to upgrade Barrier I and make it permanent, and to operate the barrier system at full federal cost.



Status: Barrier I is operating continuously. Barrier IIA has been fully constructed and Barrier IIB is partially constructed. In the Fall of 2008, the steel cables of Barrier I were replaced to allow it to remain in service for several more years until Barriers IIA and IIB are completed and fully functional.



Testing has been conducted in coordination with the U.S. Coast Guard to address concerns about the safety of the barriers for commercial and recreational navigation. The Coast Guard has enacted a Regulated Navigation Area (RNA) in the vicinity of the barriers, which includes safety requirements for all vessels passing through the RNA.



A recent study indicated the barrier's electric field could cause serious injury or death for a person immersed in the electrified water. The Corps and Coast Guard have an ongoing public education campaign to inform boaters how to safely transit the barriers. Barrier II will not be operated continuously until the Coast Guard and Corps have reviewed the results of all safety testing. Once Barrier II is fully operational, Barrier I will be taken off line and replaced with a more permanent facility.

Asian carp are present in significant numbers approximately 50 miles downstream of the barriers. The closest verified capture of an Asian carp has been approximately 15 miles downstream of the barriers.

Studies: Two studies related to the CSSC Barriers were authorized by Congress in 2007. The first is an investigation of hazards that might compromise the effectiveness of the barriers, including potential bypassing of the barriers through the Des Plaines River or other waterways during flood flows. The hazards study is part of the ongoing barriers project and will be initiated in 2009. The second study is a comprehensive investigation of the feasibility of other approaches to prevent the inter-basin transfer of aquatic nuisance species between the Great Lakes and Mississippi River basins. The feasibility study is a separate project and will not be initiated until specific Federal appropriations are received.



Funding: The House and Senate bills for FY 2009 Energy & Water Appropriations both include \$6.25 million to continue operation of Barrier I and construction of Barrier II. The optimal funding for FY 2010 would be \$5.0 million to operate Barrier I, complete construction of Barrier II, and prepare designs for making Barrier I permanent. An additional \$2.275 million could be used to credit the states that provided non-federal funding for Barrier II.

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www.lrc.usace.army.mil/projects/fish_barrier/