



US Army Corps of Engineers
Chicago District

Chicago Sanitary & Ship Canal Dispersal Barriers FACT SHEET

Name: Chicago Sanitary and Ship Canal (CSSC) Aquatic Nuisance Species Dispersal Barrier Demonstration Project (Barrier I) and CSSC Aquatic Nuisance Species Dispersal Barrier II (Barrier II)

Location: There currently are two barrier projects in the CSSC. The constructed Barrier I project has been operating since April 2002 and is located at river mile 296.5 in Romeoville, IL. Barrier II is under construction and is located 800 to 1,500 feet downstream of Barrier I.

Environmental Threat: The Chicago Sanitary and Ship Canal (CSSC) is a man-made waterway that provides a hydraulic connection between Lake Michigan and the Mississippi River basin. As non-indigenous aquatic species use the CSSC to move from the Mississippi River to the Great Lakes and vice versa, they prey on native species and compete for food, living space, and spawning areas. Currently the greatest concern is the potential movement of Asian carp into the Great Lakes. Asian carp are present in significant numbers approximately 50 miles downstream of the barriers. The closest verified collection of an Asian carp was approximately 20 miles downstream of the barriers in 2002. The closest verified collection of an Asian carp in 2006 was approximately 30 miles downstream of the barriers.

Barrier I: Barrier I is 100% Federally funded and is formed of steel cables 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. Barrier I was designed and built with materials that were not intended for long-term use, and these materials were expected to be functional for no more than three to five years.

Barrier II: Barrier II will have a similar electric field, but will be able to generate a more powerful electric field over a larger area within the CSSC, have a longer service life, and include design improvements identified during monitoring and testing of Barrier I. The Corps of Engineers is providing 75% of the project cost. The Illinois Department of Natural Resources (IDNR) is the non-Federal sponsor and, with assistance from other Great Lakes States, is providing the remaining 25% of the project cost. The IDNR is responsible for operating and maintaining Barrier II after the project is completed.

Status: Barrier I has been operating for approximately 5 years and remains fully operational, but six of the twelve cable electrodes are showing signs of deterioration. Barrier I was not appropriated funds in FY06 and was not included in the proposed budgets of Congress or the President for FY07. The Emergency Supplemental Appropriations Act of June 2006 included direction to the Corps to reprogram \$400,000 to the Barrier I project. Carryover from this reprogramming is being used to continue operation of the barrier. The Corps will attempt to operate Barrier I until at least one phase of Barrier II is fully operational. Barring major repair expenses, the existing funds should allow continued operation of Barrier I at least into summer 2007. Major repair expenses would reduce the remaining operating time.

Barrier II is being constructed in two phases. Each phase can be operated independently, but the ultimate goal is to operate both at the same time. The first phase (IIA) consists of construction of two underwater electrode arrays and one control house. This control house will be able to operate one of the two arrays. The second phase (IIB) consists of construction of a second control house that will allow both arrays to be operated at the same time.

The Barrier IIA control house has been completed and is fully connected to the southern set of electrode arrays. This configuration is currently undergoing safety testing. The safety testing is being planned and conducted in coordination with the U.S. Coast Guard to address concerns about the safety of the barrier for commercial and recreational navigation. The Coast Guard has already enacted a Regulated Navigation Area (RNA) in the vicinity of the barriers. Barrier IIA will not become fully operational until Corps and Coast Guard approval of the safety testing results.

Initial safety tests indicated that operation of Barrier IIA could lead to sparking between barges in a fleeting (docking) area south of the barrier. The barrier system was then modified by installing a steel mat grounding array and adjusting the operation of the barrier electrodes. A field testing plan has been developed to determine if these modifications have eliminated the sparking potential. This testing will be completed as soon as weather allows.

The U.S. Navy Experimental Dive Unit (NEDU) is conducting a third party review of potential physiologic effects of the barrier on a person immersed in the electrified water. NEDU has assembled a review team including engineers, physiologists, and a medical doctor. The NEDU team is scheduled to report their results by August 2007.

The Corps, Coast Guard, and representatives of the navigation industry have signed a memorandum of agreement that will allow the Corps to operate Barrier IIA if Barrier I has operational problems that render it ineffective before all Barrier II safety testing is completed. However, until all safety testing is completed, Barrier II will only be available as a backup while repairs are made to Barrier I. This approach insures there will always be one active electrical field in the CSSC, but maximizes safety.

Based on the costs to date for Barrier IIA, including safety testing, and the estimated costs for construction of the IIB control house, the cost to construct Barrier IIB will exceed the currently authorized Barrier II project funding of \$9.1 million. Final design of the Barrier IIB control house is on hold. The estimated total project cost for completion of the originally designed Barrier IIA and Barrier IIB is \$16 million.

Authority and Funding: Many stakeholders would like Barrier I to be upgraded to a permanent facility, but the Corps has no authority to do so. Barrier IIB can not be completed unless the Barrier II project funding ceiling is increased or waived. The non-Federal sponsor and many other regional stakeholders believe that the construction, operation, and maintenance of the barrier projects should be a full Federal responsibility. This can occur only if legislation is passed directing that the barriers become a full Federal responsibility. Further authorities have also been proposed by Congress to study reducing impacts of hazards that may reduce the effectiveness of the barriers and to complete a feasibility study of the range of options to prevent the spread of aquatic nuisance species between the Great Lakes and Mississippi River basins.

Carryover funds will be used to continue operation of Barrier I in FY07. Barrier I has an additional FY07 capability of \$500,000. These funds would be used to insure operation throughout the year, perform repairs, resume fish monitoring, and complete safety testing. These tasks do not require additional authorities.

Carryover funds for Barrier II will be used in FY07 to complete safety testing at Barrier IIA and operate Barrier IIA for a limited period in the event that Barrier I fails. If the appropriate authorities are provided, Barrier II would have an additional capability of \$750,000 in FY07 to operate and maintain Barrier IIA and complete final design of Barrier IIB.

The President's proposed budget for FY08 includes \$750,000 for Barrier I and \$6,900,000 for Barrier II. This proposed budget requires continued non-Federal sponsorship to complete Barrier II, new non-Federal sponsorship to make Barrier I permanent, and future non-Federal operation and maintenance of both barriers.

Project Manager: Chuck Shea, 312-846-5568