



# Metropolitan Water Reclamation District of Greater Chicago

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12/2/2010	1	Committee of the Whole	Recommended	Pass
12/2/2010	1	Board of Commissioners	Approved	Pass

### TRANSMITTAL LETTER FOR THE BOARD MEETING OF DECEMBER 2, 2010

#### COMMITTEE ON PUBLIC HEALTH AND WELFARE

Honorable Terrence J. O'Brien, President and Members of the Board of Commissioners

Request for Policy Direction on the Studies of Separation of the Great Lakes and Mississippi River Watersheds (*Deferred from the November 18, 2010 Board Meeting*)

Ladies and Gentlemen:

Invasive Species: Concern for the movement of invasive species between the Great Lakes and Mississippi River Watersheds (GLW and MRW, respectively) has prompted discussion about separation of the connection between these two watersheds through the Chicago Area Waterways (CAWS). Far more invasive species have entered the GLW through the connection with the Atlantic Ocean than have entered from the MRW through the CAWS. Historically, the zebra mussel, an invasive species in the Great Lakes, moved through the CAWS, followed by another invasive, the Round Goby. The latter was the impetus for the installation of the electrical barrier in the Chicago Sanitary and Ship Canal (CSSC) near Romeoville, IL, by the U.S. Army Corps of Engineers (USACE).

Although the Round Goby moved through the CAWS before the barrier was operational, the provision of a barrier was fortuitous with the appearance of the Asian carp. Specifically, the Bighead and Silver carp species were known to be moving upstream in the Mississippi River and then the Illinois River. Fish of these two species were not officially identified in the CAWS until recently. In December 2009, one dead Bighead carp was found immediately upstream of the Lockport Lock following the application of Rotenone by the IL DNR while the electrical barrier was shutdown for maintenance. It was reported that thousands of fish in several other species were also killed as a result of this application of Rotenone.

Extensive efforts by the IL DNR and other cooperating agencies to find Bighead and Silver carps in the CAWS during the early part of 2010 proved fruitless. One other application of Rotenone occurred in the Little Calumet

River, again with hundreds of fish of various species involuntarily sacrificing their lives. On June 23, 2010, a Bighead carp was found live in Lake Calumet and the IL DNR has determined that the six-year old fish may have lived in this location nearly all of its entire life. It remains uncertain as to its origin.

As part of federal and state agency cooperation to prevent the movement of Bighead and Silver carp into the GLW, a study was authorized to be performed by the USACE to determine if it is feasible to separate the GLW and MRW. The Great Lakes Mississippi River Interbasin Study (GLMRIS) will examine several potential points of interconnection in three other states besides the CAWS in Illinois. See Attachment 1. A copy of the 113-page draft project plan is available at your request. Approval of the draft plan is expected this month. The USACE will study the economic, environmental and social impacts and suggest alternatives for separation. The CAWS portion of the GLMRIS is scheduled for completion in 2015. Legislation has been introduced in the U.S. Congress to expedite the completion within 18 months.

The Chicago Area Waterway System: The CAWS is a 77-mile network of man-made canals that is artificially controlled by the MWRD and primarily serves to drain the Chicago area, consisting of the city of Chicago and numerous surrounding suburbs. Without this drainage system, the city and suburbs would not have developed in the early part of the 20<sup>th</sup> Century as the topography is flat and poorly drained.

There are three intake controls on the CAWS at the lakefront and a single outlet at Lockport. About two-thirds of the CAWS is part of the Illinois Waterway, a federal navigation project maintained for navigation by the USACE. Navigable traffic on the CAWS is under the control of the U.S. Coast Guard.

In dry weather times, the CAWS is a slack water pool, providing for commercial and recreational navigation. The CAWS is maintained by the MWRD at a water level prescribed by the Code of Federal Regulations. Approximately 70 percent of the flow in the CAWS is treated effluent, discharged primarily from three large MWRD water reclamation plants operating under NPDES permits issued by the Illinois EPA. Other flows are discretionary diversions from Lake Michigan for water quality maintenance and tributary watershed inflows. The latter includes effluents from water reclamation plants in the tributary watersheds, also operating under permits from the Illinois EPA.

In wet weather times, the CAWS is a critical element along with local sewer collection systems, and the MWRD intercepting sewer network, water reclamation plants, and tunnels to remove excess stormwater from the area. On occasion, it is necessary to discharge excess floodwater to Lake Michigan at one or more of the three lakefront control locations, to avoid extensive flood damage in the city of Chicago and several suburbs. Excessive floodwater is infrequently discharged to the lake by opening sluice gates or, when necessary, with the cooperation of the USACE, by opening the navigation lock gates.

Protection of Lake Michigan: The state of Illinois enabled the creation of the MWRD in 1889 for the purpose of protecting Lake Michigan as the source of water supply for the municipalities within the MWRD territorial jurisdiction and the referendum creating the MWRD received overwhelming public support in the same year. Protection of Lake Michigan water quality was accomplished by separating the location, where wastewater was disposed from the location where water supply was obtained, at the time, both being Lake Michigan. Hence, the construction of the CAWS and reversal of the flow of the Calumet and Chicago Rivers accomplished the purpose of the enabling legislation. A secondary purpose of the legislation was the creation of a navigable link between the GLW and MRW.

It can be concluded that the enabling legislation was a statement of Illinois public policy prohibiting the discharge of wastewater to Lake Michigan and the economic need for a navigable link between the GLW and MRW. The reversal of the flow of the two rivers and the U.S. Supreme Court Decree granting Illinois the right to divert 3,200 cubic feet per second from the GLW has benefited the southern end of Lake Michigan by creating an outflow for the treated wastewater and stormwater discharged to this closed basin by other municipalities and states. Without this continual withdrawal, the quality of water in the southern end of Lake Michigan might be significantly less desirable than what it is today. Attachment 2 is a discussion of the

MWRD's legal obligations in protecting the quality of Lake Michigan.

The CAWS was constructed by the MWRD between 1892 and 1922 and control structures at the lakefront and Lockport were constructed between 1898 and 1938. The USACE constructed the O'Brien Lock and Dam (OL&D) and it became operational in 1965, replacing an earlier control structure on the Calumet-Sag Channel constructed by the MWRD. In 1984, the operation and maintenance of the navigation lock included at the Chicago River Controlling Works (CRCW) was turned over to the USACE. In 2000, the state of Illinois constructed a new south basin wall in the Chicago Inner Harbor, replacing the south sluice gates originally constructed by the MWRD as part of the CRCW.

Separation of the Watersheds: More than one organization has used the Asian carp issue to offer their own view of ways to separate the GLW and MRW. Recently, the Great Lakes Commission (GLC) and the Great Lakes and St. Lawrence Cities Initiative (GL&SLCI) has launched a project titled *Envisioning a Chicago Waterway System for the 21<sup>st</sup> Century*. This project appears to duplicate the GLMRIS. However, as explained in Attachments 3 and 4, this study "will provide a detailed evaluation of potential scenarios for ecological separation, including their costs, benefits and impacts."

There are two major issues of concern in regard to the issue of separation. First, is how to handle the continuity of commercial and recreational navigation. These two uses present the challenge of either moving the watercraft across the point(s) of separation or replacing the current modes with alternative modes of transportation. Either way will require careful economic, environmental and social analysis because the potential for disruption is great. The second issue is where to locate the point(s) of separation. The selection of points of separation will require careful economic and environmental analysis to mitigate the potential for harm to the Chicago metropolitan area.

The location of the points of separation may give rise to different impacts such as:

- Polluting Lake Michigan by allowing flows to frequently enter Lake Michigan that convey unregulated or unmonitored contaminants. These flows may include:
  - dry weather effluents not meeting Lake Michigan standards,
  - combined sewer overflows,
  - industrial effluents,
  - stormwater, and
  - re-suspended bottom sediments.
- Increasing flood damages and basement backup by introducing cyclical lake levels and seiches in the CAWS lake-ward of the point(s) of separation. This will cause river level fluctuation, risking navigation impediments at high and low water levels and restricting the outflow from city of Chicago, MWRD and suburban municipality combined and storm sewers at high water levels. Experience in the last decade shows that these high levels can be as much as 3.5 feet above the normal water level in the CAWS, eliminating needed storage in the CAWS lake-ward of the points of separation. Since the 1980s, the lake has been as high as 7.0 feet above normal water level. Even without the affects of storm activity, these levels can cause flooding of CAWS riparian structures.
- Threatening the stability of dock walls and riparian structures by subjecting them to lower water levels. These low levels can be as much as 2.0 feet below the normal water level in the CAWS.
- Creating reaches of stagnant and offensive waters in the severed reaches of the CAWS, including the exposing of bottom sediments.

MWRD Position on Separation: While it is not known what these studies will eventually find and conclude, it appears that some plan will be advanced for the separation of the GLW and MRW in the CAWS. Whether or not separation will be found to be economical, feasible, practical, scientifically justifiable or socially acceptable is yet to be determined. Whatever the outcome, it is important that the MWRD have a position to guide our

involvement in these studies. The following position statements are recommended:

1. Illinois public policy and statutory authority to protect the quality of Lake Michigan water should be sustained.
2. The day-to-day discharge of the Calumet and Chicago Rivers to Lake Michigan should not be allowed.
3. The infrequent opportunity to discharge excessive floodwaters to Lake Michigan should not be restricted.
4. The U.S. Supreme Court Decree allowing Illinois to divert 3,200 cubic feet per second from Lake Michigan should not be challenged.
5. The city of Chicago, suburban municipalities and the MWRD must be made whole by the federal or state governments for any changes to the CAWS, resulting damages and attendant costs of compliance with federal, state and local environmental and legal requirements.

Requested, Richard Lanyon, RL:dl

Respectfully Submitted, Patricia Horton, Chairman Committee on Public Health and Welfare

Disposition of this agenda item will be documented in the official Regular Board Meeting Minutes of the Board of Commissioners for November 18, 2010

Attachments