IEPA ATTACHMENT NO. M

Metropolitan Water Reclamation District of Greater Chicago
100 East Erie Street Chicago, IL 60611-2803 (312) 751-5600

DESCRIPTION OF THE CHICAGO WATERWAY SYSTEM

USE ATTAINABILITY ANALYSIS STUDY

CONDUCTED BY THE
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
BUREAU OF WATER

IN COOPERATION WITH
METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO

RESEARCH AND DEVELOPMENT
RICHARD LANYON, DIRECTOR

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CHICAGO WATERWAY SYSTEM

The Chicago Waterway System (CWS) consists of 78 miles of canals, which serve the Chicago area for two principal purposes, the drainage of urban storm water runoff and treated municipal wastewater effluent and the support of commercial navigation. Other purposes include recreational boating, fishing, streamside recreation and, where possible, aquatic habitat for wildlife. Approximately 75 percent of the length are man-made canals where no waterway existed previously and the remainder are natural streams that have been deepened, straightened and/or widened to such an extent that reversion to the natural state is not possible. The flow of water in the CWS is artificially controlled by hydraulic structures. See Figure 1.

1.0 System Description

The Lockport Controlling Works is one of two outlet control structures for the CWS. All flow from the CWS 740 square mile watershed discharges from the Chicago Sanitary and Ship Canal (CSSC) to the Des Plaines River north of the City of Joliet. The confluence is 1.1 miles downstream of the Lockport Powerhouse and Lock (LP&L). This reach is the upper end of the Brandon Road navigation pool. The LP&L is the single outlet control for the CWS. It should be noted that on Figure 1, distances on the CWS are measured from the LP&L. The CWS has two river systems, the Calumet River system and the Chicago River system.

The Calumet River system is 23.1 miles in length and includes the Calumet-Sag Channel (CSC) and the Little Calumet River (LCR). The Chicago River system consists of 55.1 miles of waterways and includes the Chicago River, CSSC, North Branch, North Branch Canal (NBC), North Shore Channel (NSC), South Branch and South Fork. The South Fork is commonly known as Bubbly Creek. Each river system will be described separately.

1.1 Chicago River System

The CSSC extends upstream from the confluence with the Des Plaines River for a distance of 31.1 miles to South Damen Avenue in the City of Chicago (Chicago). The waterway then becomes the South Branch, extending upstream for 4.5 miles to the junction of the Chicago River and the North Branch. The South Fork flows into the South Branch and extends upstream for 1.3 miles, ending at 38th Street in Chicago. The Chicago River extends upstream from the junction of the North and South Branches for 1.5 miles and ends at the Chicago River Controlling Works (CRCW). The North Branch extends upstream from the junction of the Chicago River and South Branch for 7.7 miles to the North Branch Dam, located south of Foster Street in Chicago. The NBC is an alternate route around Goose Island between Chicago and North Avenues and is 1.0 miles long. At the North Branch Dam, the waterway becomes the NSC, extending upstream for 7.7 miles, ending at the Wilmette Pumping Station (WPS).

1.2 Calumet River System

The CSC extends upstream from Sag Junction for 16.2 miles to the LCR. At this point, the waterway becomes the LCR and extends upstream 6.9 miles, ending at the O'Brien Lock and Dam (OL&D). It should be noted that the Calumet River extends upstream of the OL&D to Lake Michigan. However, since the Calumet River is directly connected to Lake Michigan, it is not considered part of the CWS. The water level and flow in the Calumet River cannot be controlled the way that the CWS is controlled.

1.3 Tributaries to the CWS

There are several streams that contribute flow to the CWS. These include the Grand Calumet River, LCR above its confluence with the CWS, the North Branch above the North Branch Dam and numerous small watersheds along the CSC and CSSC. In addition, there are numerous small directly contributing areas along the CWS, including areas served by storm sewers, parking lots, street ends, rooftop drains, etc.

2.0 Control and Management of Flow

Flow in the CWS is managed by the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC), but is subject to regulation under U.S. Supreme Court Decree and 33 CFR Parts 207.420 and 207.425. The CFR provides for the maintenance of navigable depths to support commercial navigation. The Chicago River at the CRCW and the LCR at the OL&D must be maintained between –0.5 feet Chicago City Datum (CCD) and –2.0 feet CCD water levels per Code of Federal Regulations during normal conditions." This allows the federal navigation project depths to be maintained throughout the CWS above the LP&L.

The U.S. Supreme Court Decree governs the quantity of water from Lake Michigan that is diverted out of the Great Lakes Basin into the Mississippi River Basin by the State of Illinois (Illinois). Within Illinois, this quantity is subject to regulation by the Illinois Department of Natural Resources, Division of Water Resources (DWR). The DWR issues allocation orders for annual average quantities of diversion. Most of the diversion is allocated to municipalities for domestic consumption. The MWRDGC has an order that allows it to divert water for improvement of water quality and this is referred to as discretionary diversion. Currently and through 2014, the MWRDGC allocation is for an annual average of 270 cubic feet per second (cfs). In 2015, it is scheduled to be reduced to an annual average of 101 cfs.

An additional annual average of 35 cfs is allocated to the MWRDGC for navigation makeup. This is necessary to restore the CWS to the required water level for navigation following a system draw down for wet-weather operations.

There are two other diversion categories which do not have a specific allocation, but for which the DWR maintains a reserve quantity. An approximate annual average of 100 cfs is the reserve needed for operation of the locks at CRCW and OL&D for passage of navigation

traffic. Another approximate annual average of 50 cfs is reserved for leakage through the walls and structures separating the lake and river. The actual amount of each of these reserves varies with the level of Lake Michigan.

Accounting for the amount of water diverted from Lake Michigan is the responsibility of the DWR and the U.S. Army Corps of Engineers (USACE), Chicago District. The measurement of quantities of diversion and the method of accounting are specified in the U.S. Supreme Court Decree and in a 1996 Memo of Understanding between the U.S. Department of Justice and the several states bordering the Great Lakes.

3.0 Inflow and Outflow

All outflow exits the CWS at the LP&L and Lockport Controlling Works (LCW). However, there are several sources of inflow to the CWS. These include WRP effluent, discretionary diversion, navigation and leakage, tributaries, storm runoff and combined sewer overflows.

3.1 Outflow

The average annual flow leaving the CWS in Water Year (WY) 2001 was 2,710 cfs as measured by the U.S. Geological Survey (USGS) at Romeoville Road. Maximum and minimum daily discharge during WY 2001 was 13,700 and 1,200 cfs, respectively. Since 1986, the maximum and minimum WY annual average discharges have been 4,110 and 2,560 cfs, respectively. The maximum instantaneous discharge was 19,500 cfs on February 21, 1997. There are periods of zero and negative discharge due to operations at the LP&L and the hydraulic peculiarities of the CWS.

3.2 WRP Effluent

Over 70 percent of the annual flow in the system is from the discharge of treated municipal wastewater effluent from the Calumet, Lemont, North Side and Stickney Water Reclamation Plants (WRPs) owned and operated by the MWRDGC. The WRPs are also shown on Figure 1. These WRPs have the following flow characteristics in cfs:

WRP	Average annual flow in 2001	Design average flow	Design maximum flow
Calumet	417.	545.	662.
Lemont	3.4	3.5	6.2
North Side	431.	518.	693.
Stickney	1,200.	1,850.	2220.

3.3 Discretionary Diversion

Discretionary diversion is introduced into the system from Lake Michigan to maintain adequate water quality. This occurs at three locations, WPS, CRCW and OL&D, shown on Figure 1. Discretionary diversion is seasonal and is cheduled such that most flow is during

warm weather months of June through October. Some flow is scheduled throughout the year for the NSC due to more sensitive water quality conditions. Discretionary diversion flows in cfs for calendar year 2001 were as follows:

Inflow facility	Average annual	Monthly maximum and minimum
WPS	21.7	40.2, 0.2
CRCW	133.	479, 0
OL&D	87.5	364, 0

3.4 Navigation and Leakage

This flow consists of discharge to support navigation in the operation of locks and leakage through structures and walls separating the lake and river. There is no navigation traffic at the WPS. It should be noted that navigation flows are seasonal. In addition, the quantity is dependent on the lake level, since flow at CRCW and OL&D is by gravity only. Leakage, formerly a significant quantity at CRCW, has been reduced through repair of gates and construction of new walls. The average annual, monthly maximum and monthly minimum flows at each of these facilities in cfs for calendar year 2001 were as follows:

Facility	Navigation	Lockage	Leakage
WPS	0, 0, 0	0, 0, 0	0, 0, 0
CRCW	20.5, 81.7, 0	10.1, 26.3, 0.1	12.1, 18.8, 9.1
OL&D	29.1, 113., 0	17.4, 36.3, 2.5	6.8, 10.1, 4.4

The average annual discharge for WY 2001 measured by the USGS downstream from the three intake facilities CRCW, OL&D and WPS is 312, 217 and 80 cfs, respectively.

3.5 Tributaries

The major watersheds tributary to the CWS are the LCR, over 210 square miles, and the North Branch, 113 square miles. Other tributaries discharging into the CSC include Crooked Creek, East Stony Creek, Illinois and Michigan Canal, Midlothian Creek, Mill Creek, Navajo Creek, Saganashkee Slough, Tinley Creek and West Stony Creek. Tributaries discharging into the CSSC include the Illinois and Michigan Canal diversion ditches and Summit-Lyons Conduit. Please refer to the CWS Listing of Facilities, Inflows and Monitoring Locations (CWS List).

3.6 Storm Runoff

Numerous storm sewers discharge to the CWS from several municipalities and Illinois Department of Transportation drainage facilities. A complete inventory of these facilities needs to be assembled.

3.7 Combined Sewer Overflow

Several hundred CSOs discharge to the CWS from several municipalities and the MWRDGC. The MWRDGC is currently preparing a comprehensive CSO outfall inventory.

4.0 Physical Description of Waterways

4.1 CSC

A man-made channel, the CSC is 16.2 miles long with a generally trapezoidal shape, 225 feet wide and approximately 10 feet deep. In some sections, the north bank is a vertical wall. The alignment is generally straight with three bends near Crawford, Ridgeland and Western Avenues.

4.2 Chicago River

The Chicago River, 1.5 miles in length, is 200 feet wide west of Michigan Avenue and wider, up to 250 feet, east thereof. It has vertical side walls throughout its length. It is 20 feet deep at the west end and 26 feet deep at the east end. The river alignment is generally straight with three bends near Michigan Avenue and Orleans and State Streets.

4.3 CSSC

This 31.1 mile long man-made channel has many different shapes and sizes. Its alignment is straight throughout its length, except for four bends, near Harlem Avenue, LaGrange and Romeoville Roads and in Lockport. Downstream of the LP&L, a reach of 1.1 miles, the depth is 10 feet and the width is 200 feet. Upstream of the LP&L, the depth varies from 20 to 27 feet. The reach immediately upstream of the LP&L, 2.4 miles in length, varies in width from 160 to 300 feet. The east bank of this reach is a vertical concrete wall. The west back varies from vertical dock wall to a steep rockfill embankment. The next 14.6 miles of the CSSC have vertical concrete or rock walls 160 feet apart. The last 13.0 miles have a trapezoidal shape, 220 feet wide, with steep earth or rock side slopes. There are several areas with vertical dock walls in this last reach.

4.4 LCR

The LCR, 6.9 miles in length, has been deepened and widened from its original natural condition. There are several changes in alignment, with one full 180-degree bend west of Indiana Avenue. Its width varies from 250 to 350 feet and its depth is generally 12 feet in the center part of the channel. It has few vertical dock walls and most of the banks are earthen side slopes.

4.5 North Branch

From the junction of the Chicago River and South Branch to Belmont Avenue, a distance of 5.1 miles, the river follows its original course, has several bends and has been deepened and widened. The width varies from 150 to 300 feet and the depth varies from 10 to 15 feet. In several reaches, vertical dock walls have been constructed and are in varies states of disrepair. From Belmont Avenue to the North Branch Dam, 2.6 miles, the channel has been either straightened or relocated into fairly straight segments with steep earthen side slopes. The width is generally 90 feet and the depth is approximately 10 feet in the center part of the channel.

4.6 North Branch Canal

This canal was man-made in the 1870s. It forms the east side of Goose Island, has a straight alignment and is one mile in length. The width varies from 80 to 120 feet and the depth from 4 to 8 feet.

4.7 NSC

This man-made channel is 7.7 miles in length and is straight throughout except for four bends in alignment near Devon and Central Avenues and Emerson and Linden Streets. It has steep earthen side slopes and a width of 90 feet. The depth varies from 5 to 10 feet.

4.8 South Branch

This 4.5 mile long segment generally follows its original course and has several bends. A short relocated reach between Roosevelt Road and 18th Street was relocated in 1928 to eliminate a major bend. It has vertical dock walls throughout most of its length. The width varies from 200 to 250 feet and the depth from 15 to 20 feet.

4.9 South Fork

This segment is 1.3 miles in length, varies from 100 to 200 feet in width and from 3 to 13 feet in depth. There are several sections with vertical dock wall, but most of the banks are steeply sloped earth or rock materials.

5.0 Use Classification

5.1 General Use Waters

This use classification has been designated by the IPCB for the 1.6 mile length of the Chicago River and the 4.0 mile reach of the North Shore Channel from the North Side WRP outfall to the WPS. The General Use standards are found at 35 IAC Section 302.200 and are established to protect aquatic life, wildlife, body-contact recreation (swimming), water supply and Secondary Contact uses.

5.2 Secondary Contact Waters

All other portions of the CWS have been designated by the IPCB for this use classification. The Secondary Contact standards are found at 35 IAC Section 302.400 and are established to protect indigenous species, non-contact recreation (boating) and commercial navigation.

6.0 Facility Descriptions

6.1 CRCW

The CRCW controls the flow of water between the lake and Chicago River. This facility was built by the MWRDGC in 1938 and was maintained and operated by them until 1984. In this year, the maintenance and operation responsibilities were transferred to the USACE. It consists of walls separating the river and the lake, a navigation lock, two sets of sluice gates and a pumping station. The lock is 80 feet wide by 600 feet long, with a normal lift of 2.0 feet. The two sets of underwater sluice gates consist of four gates each, each gate being 10 by 10 foot in size. The pumping station has three pumps of 30 cfs each. The pumps can only discharge from the river to the lake and were installed in 2000 for the purpose of returning excess leakage and lockage water to the lake. The pumps have yet to be used for this purpose.

6.2 LCW

The LCW is owned and operated by the MWRDGC. It is an auxiliary facility used during storm operations to discharge flood waters to the Des Plaines River. It is located two miles upstream of the LP&L and is used when discharge above the capacity of the LP&L is needed. It has 7 sluice gates, each being 30 feet wide and 20 feet high. The gate sill is at elevation -15.0 feet, CCD.

6.3 LP&L

The Powerhouse is owned and operated by the MWRDGC. It was built in 1907 and is currently licensed for two hydroelectric generating units with a total capacity of 13,500 kilowatts, 9 submerged sluice gates for the discharge of storm water and one surface sluice gate for flushing debris. The lock is owned and operated by the USACE and was built in 1933. It is 110 feet wide and 600 feet long with a normal lift of 37 feet.

Newly licensed generating units will have combined capacity of 5,000 cfs. Each submerged sluice gate is capable of a maximum discharge of 2,500 cfs. A fill or empty event for the lock during normal water levels causes a discharge of 2,000 cfs over a 20-minute period. During storm operations, the upstream water level lowers and the discharge capacity through the facility is lessened. Also, because of structural concerns, all of the submerged sluice gates at the Powerhouse are not used simultaneously.

6.4 OL&D

This facility was built in 1960 and is owned and operated by the USACE. The lock is 110 feet wide and 1,000 feet long with a normal lift 2.0 feet. Flow regulation is accomplished with 4 submerged sluice gates, each 10 by 10 feet in size. The gate opening for flow regulation is under the direction of the MWRDGC and the actual operation is performed by the USACE.

6.5 WPS

The WPS is located beneath and is integral with the Sheridan Road Bridge and controls the flow of water between Lake Michigan and the NSC. It was built in 1910 and is owned and

operated by the MWRDGC. Lake water is brought into the channel for augmenting low flows for water quality maintenance. The station has four horizontal screw pumps rated at 250 cfs at a lift of 3.0 feet. The pump propellers are 9.0 feet in diameter and located in tunnels that run under the floor of the station from the Wilmette Harbor to the channel. Pumping is necessary when lake levels are low.

Adjacent to the south side of the pumping station is a concrete channel and sluice gate to allow for the passage of water by gravity when pumping is not necessary. The channel is 30 feet wide and 11 feet deep. During storm operations, when the channel surcharges and the water level nears 5.0 feet, CCD, the sluice gate can be opened to relieve the channel to the lake.

Five temporary pumps with an aggregate capacity of 50 cfs, were installed in 2000 due to non-operation of the large original pumps. In 2002, one of the original pumps is being rehabilitated for use since the five temporary have insufficient capacity for water quality maintenance.

7.0 Operation Plan

7.1 Dry Weather Conditions

Normal dry weather discharge is released from the CWS through hydroelectric generating units and the navigation lock at the LP&L. The water level in the Chicago River at the CRCW and in the LCR at the OL&D is maintained at -2.0 feet, CCD. Discretionary diversion is brought into the CWS at the CRCW, OL&D and WPS per the planned schedule.

7.2 Wet-Weather Conditions

When weather forecasts indicate that rainfall is likely to occur, the CWS is readied for wet-weather operations. Discretionary diversion, if in progress, is curtailed and discharge at the LP&L is increased. This lowers the water level in the lower reaches of the CWS to provide storage for incoming storm flow and increases the hydraulic gradient to move more water through and out of the CWS. If no or very light rainfall occurs, the operations are returned to the dry weather mode. Light rainfall, less than 0.33 inches, normally causes little disruption in operations.

If rainfall is moderate, 0.33 to 0.67 inches, most CSO is initially contained in TARP and only reaches the CWS through increased discharge from the WRPs. Direct inflow of other storm runoff is generally not significant or problematic. Additional discharge at the LP&L is achieved by increasing the discharge through the LP&L generating units to their maximum capacity. Discharge needed beyond the maximum discharge of the generating units is put through sluice gates at the LP&L and, if necessary, the LCW. Water levels in the upper part of the CWS will rise due to storm inflow and increased WRP discharge. After the peak water level is reached, the water levels begin to subside. Discharge at the LP&L is gradually reduced as the CWS returns to dry weather conditions. When -2.0 feet, CCD, is reached at the CRCW and/or OL&D, discretionary diversion is resumed, if appropriate.

If rainfall is heavy, 0.67 to 1.5 inches, TARP will fill and excess CSO will be discharged to the CWS from pumping stations and combined sewer outfalls. Other storm runoff from tributary watersheds and storm sewers is significant and imposes an additional hydraulic load on the CWS. The operation of the CWS will be similar to the above description, with the exception that increased discharges at the LP&L are initiated more rapidly.

Excessive rainfall, 1.5 inches or greater, especially if preceded by antecedent rainfall, will most likely cause extreme water levels in the upper part of the CWS. If water levels reach 3.5 feet, CCD, and are rising, it will be necessary to relieve the CWS by discharging excess flood water to Lake Michigan at the CRCW, OL&D and/or WPS. The decision to provide for such relief at each facility is made based on the potential for continued area rainfall and on the water level conditions at each facility.

8.0 Measurement of Discharge and Water Level

8.1 United States Geological Survey

The USGS maintains discharge measurement stations at several location in the CWS and its tributaries. These are summarized in the following table. Water level is also available at these locations.

River	Location	Number
Chicago River	Columbus Drive	05536123
CSSC	Romeoville Road	05536995
Grand Calumet River (T)	Hohman Avenue	05536357 (Indiana)
LCR	OL&D	05536357
LCR (T)	Cottage Grove Avenue	05536290
Midlothian Creek (T)	Kilbourn Avenue	05536340
North Branch (T)	Albany Avenue	05536105
NSC	Maple Street	05536101
Tinley Creek (T)	135th Street	05536500

All locations in Illinois, except as indicated. Tributary streams are designated (T).

8.2 MWRDGC

The MWRDGC maintains a network of rain gages in the watershed and nine water level measurement stations on the CWS. See the CWS List for water level measurement locations.

9.0 Monitoring of Water Quality

9.1 IEPA

IEPA operates an Ambient Water Quality Monitoring (AWQM) program throughout Illinois with over 200 monitoring locations. Two of these are located on the CWS, on the CSC at Route 83 and on the CSSC at Lockport.

9.2 MWRDGC

MWRDGC also operates an AWQM program and has 20 locations on the CWS. In addition, MWRDGC performs monitoring for biological conditions, physical habitat and sediment quality at all these locations. At some locations, the monitoring is performed annually and at

others, once in four years. In addition, there are 30 locations in the CWS where dissolved oxygen and temperature are measured hourly with continuous in-situ monitors. See the CWS List.

9.3 USEPA

USEPA performs no regular monitoring, but has conducted surveys of sediment quality for some reaches of the CWS.

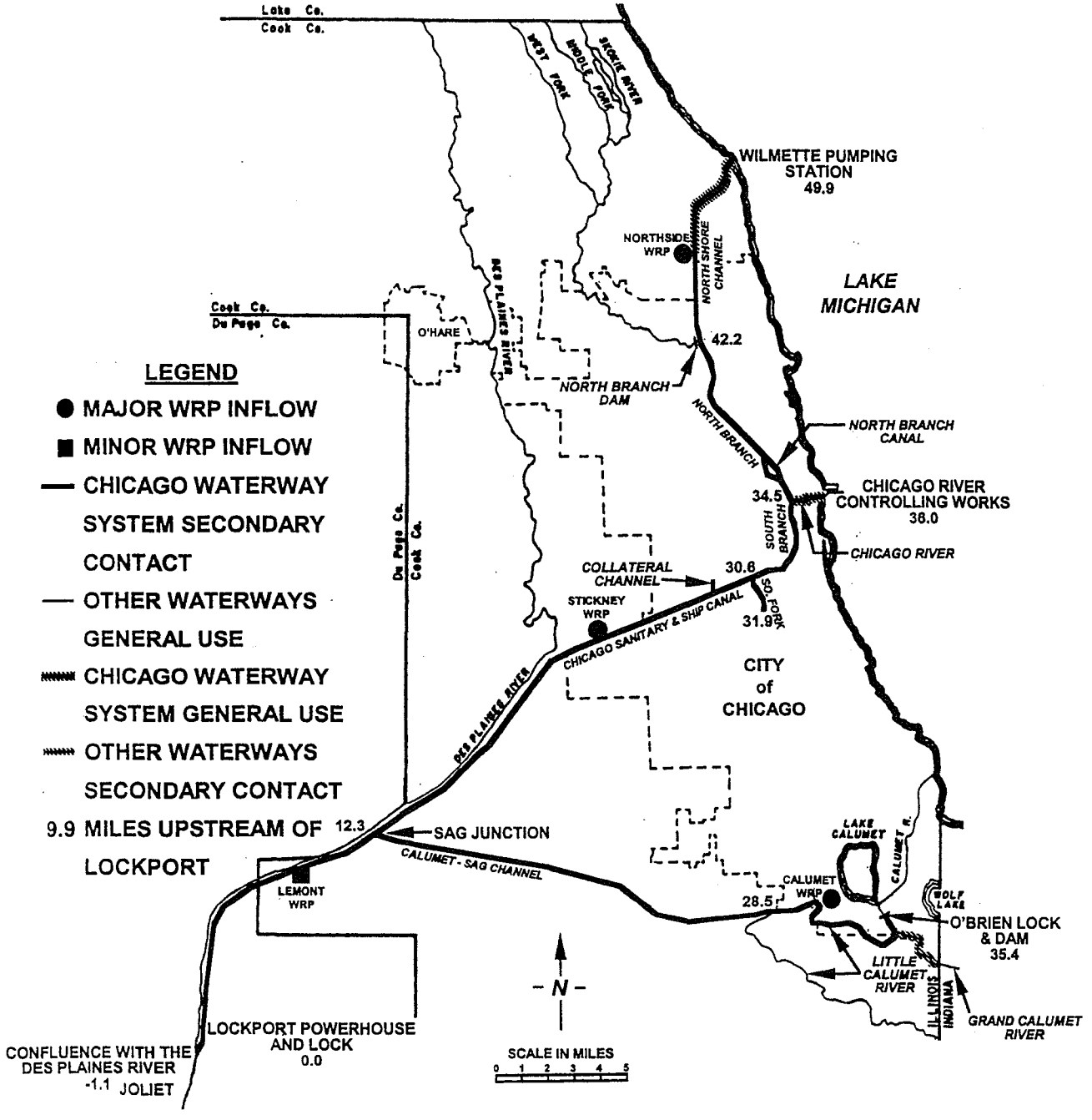
10.0 Acronym List

AWQM	Ambient Water Quality Monitoring
CCD	Chicago City Datum
CFR	Code of Federal Regulations
cfs	cubic feet per second
CRCW	Chicago River Controlling Works
CSC	Calumet-Sag Channel
CSSC	Chicago Sanitary and Ship Canal
CWS	Chicago Waterway System
DWR	Illinois Department of Natural Resources, Division of Water Resources
IAC	Illinois Administrative Code
IEPA	Illinois Environmental Protection Agency
IPCB	Illinois Pollution Control Board
MWRDGC	Metropolitan Water Reclamation District of Greater Chicago
LCR	Little Calumet River
LCW	Lockport Controlling Works
LP&L	Lockport Powerhouse and Lock
NBC	North Branch Canal
NSC	North Shore Channel
OL&D	O'Brien Lock and Dam
USACE	United States Army, Corps of Engineers
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
WPS	Wilmette Pumping Station
WRP	Water Reclamation Plant
WY	Water Year (October 1 through September 30)

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

FIGURE 1

CHICAGO WATERWAY SYSTEM



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CHICAGO WATERWAY SYSTEM
LISTING OF FACILITY, INFLOW AND MONITORING LOCATIONS

Location	USGS River Mile	Distance U/S of Lockport	Comments
CHICAGO SANITARY AND SHIP CANAL			
Des Plaines River Confluence	290.0	-1.1	
Lockport Powerhouse and Lock	291.1	0.0	Flow MWRD WL, WQ, DO
Lockport Controlling Works	293.2	2.1	MWRD WL
Will County Power Plant, Cooling Water	296.0	4.9	OU, IN
Romeoville Road	296.2	5.1	USGS DM
Citgo Petroleum Corporation	298.0	6.9	
Stephens Street	300.5	9.4	MWRD WQ
Lemont Water Reclamation Plant	300.6	9.5	IN
Argonne Laboratory	302.3	11.2	MWRD DO, OU, IN
Illinois and Michigan Canal Connector Ditch	303.0	11.9	IN
Sag Junction	303.4	12.3	Confluence
Highway 83	304.1	13.0	MWRD WQ, DO
Baltimore and Ohio Railroad	312.3	21.2	MWRD DO
Summit-Lyons Conduit Inflow	313.3	22.2	IN
Harlem Avenue	314.0	22.9	MWRD WQ
Stickney Water Reclamation Plant	315.5	24.4	IN
Cicero Avenue	317.3	26.2	MWRD WQ, DO
Crawford Power Plant, Cooling Water	318.5	27.4	OU, IN
Western Avenue	320.6	29.5	MWRD WL (1)
SOUTH BRANCH			
Damen Avenue	321.1	30.0	MWRD WQ (1)
South Fork	321.7	30.6	Confluence
Loomis Street	321.9	30.8	MWRD DO, WQ
Fisk Power Plant, Cooling Water	322.0	30.9	OU, IN
Jackson Boulevard	325.0	33.9	MWRD DO
Madison Street	325.3	34.2	MWRD WQ
North Branch and Chicago River Junction	325.6	34.5	Confluence
NORTH BRANCH			
Kinzie Street	325.8	34.7	MWRD DO
Grand Avenue	326.0	34.9	MWRD WQ
Division Street	327.3	36.2	MWRD DO
Webster Avenue Instream Aeration Station	328.9	37.8	SA
Fullerton Avenue	329.4	38.3	MWRD DO
Diversey Parkway	330.1	39.0	MWRD WQ
Addison Street	331.3	40.2	MWRD DO
Wilson Avenue	332.6	41.5	MWRD WQ
Lawrence Avenue	332.9	41.8	MWRD DO, WL
North Branch Pump Station	333.1	42.0	CSO
North Branch Dam	333.3	42.2	Tributary IN
NORTH SHORE CHANNEL			
Foster Avenue	333.5	42.4	MWRD WQ
Devon Avenue Instream Aeration Station	335.0	43.9	SA
Devon Avenue	335.0	43.9	MWRD DO
Touhy Avenue	336.0	44.9	MWRD WQ
North Side Water Reclamation Plant	336.9	45.8	IN
Oakton Street	337.0	45.9	MWRD WQ
Main Street	337.5	46.4	MWRD DO
Simpson Street	339.5	48.4	MWRD DO
Central Street	340.2	49.1	MWRD WQ
Maple Avenue	340.6	49.5	USGS DM
Linden Street	340.8	49.7	MWRD DO
Sheridan Road (Wilmette Pumping Station)	341.0	49.9	MWRD WL, IN

CHICAGO WATERWAY SYSTEM
LISTING OF FACILITY, INFLOW AND MONITORING LOCATIONS

Location	USGS River Mile	Distance U/S of Lockport	Comments
CHICAGO RIVER			
North and South Branch Junction	325.6	34.5	
Wells Street	325.8	34.7	MWRD WQ
Clark Street	325.9	34.8	MWRD DO
Michigan Avenue	326.4	35.3	MWRD DO
Columbus Drive	326.6	35.5	USGS DM, WL
Lake Shore Drive	326.9	35.8	MWRD WQ
Chicago River Controlling Works	327.1	36.0	MWRD DO, WL
South Fork			
South Branch Junction	321.7	30.6	Confluence
Archer Avenue	322.1	31.0	MWRD DO, WQ
Racine Avenue Pumping Station	323.0	31.9	CSO
CALUMET SAG CHANNEL			
Sag Junction	303.4	12.3	Confluence
SEPA Station No. 5 at Junction	303.4	12.3	SA
Illinois and Michigan Canal	303.7	12.6	IN
Highway 83	304.3	13.2	MWRD WQ, DO
104th Street	307.5	16.4	MWRD DO
Crooked Creek	308.1	17.0	IN
Mill Creek	309.0	17.9	IN
Stony Creek (West)	309.4	18.3	IN
Southwest Highway	310.7	19.6	MWRD DO, WL
SEPA Station No. 4	311.7	20.6	SA
Harlem Avenue	311.7	20.6	MWRD DO
Navajo Creek	312.6	21.5	IN
Tinley Creek	314.1	23.0	IN
Cicero Avenue	315.0	23.9	MWRD WQ, DO
Midlothian Creek	317.1	26.0	IN
Kedzie Avenue	317.1	26.0	MWRD DO
Stony Creek (East)	317.9	26.8	IN
SEPA Station No. 3	318.0	26.9	SA
Division Street	318.6	27.5	MWRD DO
Ashland Avenue	319.1	28.0	MWRD WQ
Little Calumet River Junction	319.6	28.5	Tributary IN
LITTLE CALUMET RIVER			
Halsted Street	320.1	29.0	MWRD WQ, DO
SEPA Station No. 2	321.3	30.2	SA
Calumet Water Reclamation Plant	321.4	30.3	IN
125th Street Pump Station	321.4	30.3	CSO
Indiana Avenue	322.4	31.3	MWRD WQ
C & WI Railroad	322.6	31.5	MWRD DO
Conrail Railroad	325.4	34.3	MWRD DO
Grand Calumet River	325.7	34.6	IN
O'Brien Lock and Dam	326.5	35.4	USGS DM MWRD WL

WL = water level measurement
WQ = water quality sampling location
DM = discharge measurement location
OU = outflow
IN = inflow
CSO = combined sewer overflow pumped inflow during storms
DO = continuous dissolved oxygen monitoring location
SA = supplemental aeration
MWRD = Metropolitan Water Reclamation District of Greater Chicago
USGS = U.S. Geological Survey
(1) The Damen Avenue Bridge is being replaced. Samples taken at Western Avenue.