Metropolitan Water Reclamation District of Greater Chicago

MONITORING AND RESEARCH DEPARTMENT

REPORT NO. 18-09

SENSITIVE AREA CONSIDERATIONS FOR OUTFALLS DESIGNATED IN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT NUMBER IL0028088 FOR THE TERRENCE J. O'BRIEN WATER RECLAMATION PLANT

June 2018

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

CECIL LUE-HING RESEARCH AND DEVELOPMENT COMPLEX
6001 WEST PERSHING ROAD CICERO, ILLINOIS 60804-4112

Edward W. Podczerwinski, P.E.
Acting Director of Monitoring and Research

June 26, 2018

Ms. Amy Dragovich
Illinois Environmental Protection Agency
Bureau of Water
DWPC Permit Section #15
1021 North Grand Avenue East
P.O. Box 19276
Springfield, Illinois 62794-9276

Dear Ms. Dragovich:

Subject: National Pollutant Discharge Elimination System Permit No. IL0028088 – Terrence J. O'Brien Water Reclamation Plant; Special Condition 8.9, Sensitive Area Considerations

In accordance with Special Condition (SC) 8.9 of National Pollutant Discharge Elimination System (NPDES) Permit No. IL0028088 for the Metropolitan Water Reclamation District of Greater Chicago (District) Terrence J. O'Brien Water Reclamation Plant, the District is required to submit two copies of documentation indicating which of the outfalls listed in the SC do not discharge to sensitive areas. The SC states that this documentation is expected within six months of the completion of Stage 1 of the McCook Reservoir. Two copies of the subject report are enclosed to satisfy the requirements of SC 8.9 of NPDES Permit No. IL0028088.

If you have any questions, please feel free to call Ms. Jennifer Wasik at 708-588-4063.

Very truly yours,

Edward W. Podczerwinski, P.E.
Director
Monitoring and Research

EWP:HZ:TM:lf
Enclosure
cc: Zhang/B. Garelli
S. Morakalis/J. Wasik
By certified mail

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SENSITIVE AREA CONSIDERATIONS FOR OUTFALLS DESIGNATED IN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT NUMBER IL0028088 FOR THE TERRENCE J. O'BRIEN WATER RECLAMATION PLANT

By

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June 2018

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LIST OF ABBREVIATIONS

District	Metropolitan Water Reclamation District of Greater Chicago
FPDCC	Forest Preserve District of Cook County
IAC	Illinois Administrative Code
IDNR	Illinois Department of Natural Resources
IEPA	Illinois Environmental Protection Agency
ISWS	Illinois State Water Survey
NPDES	National Pollutant Discharge Elimination System
O'Brien	Terrence J. O'Brien
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
WRP	Water Reclamation Plant

ACKNOWLEDGMENTS

The authors wish to acknowledge Mr. Kevin Fitzpatrick from the Engineering Department and Ms. Fay Costa from the Monitoring and Operations Department for providing information regarding combined sewer overflow outfalls, discharges, and outfall diagrams.

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Our gratitude is also extended to Dr. Albert Cox, Environmental Monitoring and Research Manager, and Dr. Heng Zhang, Assistant Director of Monitoring and Research, Environmental Monitoring and Research Division, for their review of the draft report.

Many thanks to Ms. Laura Franklin, Administrative Specialist, for her assistance in formatting and organizing this report.

DISCLAIMER

Mention of proprietary equipment and chemicals in this report does not constitute endorsement by the Metropolitan Water Reclamation District of Greater Chicago.

SUMMARY AND CONCLUSIONS

Special Condition 8 Part 9 of the National Pollutant Discharge Elimination System (NPDES) Permit No. IL0028088 for the Metropolitan Water Reclamation District of Greater Chicago's (District's) Terrence J. O'Brien (O'Brien) Water Reclamation Plant (WRP) requires the submittal of documentation to demonstrate which of the listed combined sewer overflow (CSO) outfalls do not discharge to sensitive areas. Under the Federal CSO Control Policy of 1994, sensitive areas are any water likely to be impacted by a CSO discharge which meet one or more of the following criteria: (1) designated as an Outstanding National Resource Water; (2) designated as a National Marine Sanctuary; (3) found to contain shellfish beds; (4) found to contain threatened or endangered aquatic species or their habitat; (5) used for primary contact recreation; or (6) within the protection area for a drinking water intake structure. This requirement for sensitive area considerations states that "within six months from the completion of Stage 1 of the McCook Reservoir, the permittee shall submit two copies of documentation indicating which of the outfalls listed in this Special Condition do not discharge to sensitive areas." The Special Condition also states that "such documentation shall include information regarding the use of the receiving water for primary contact activities (swimming, water skiing, etc.)." The Illinois Environmental Protection Agency (IEPA) identified nine outfalls under the Special Condition that discharge either to a General Use Water, a Primary Contact Recreation Water, or an Incidental Contact Recreation Water as designated by the Illinois Pollution Control Board (IPCB). General Use and Primary Contact Waters have water quality standards established by the IPCB to protect for primary contact recreation activities, and Incidental Contact Recreation Waters are designated to protect recreational activities where human contact is incidental. According to the permit, the IEPA will make a determination if the outfall discharges to a sensitive area based on the information submitted by the District.

The most recent Sensitive Area Consideration Report for the O'Brien WRP was submitted in February 2003 and was used as a template for this report. In response to this permit requirement, the District sent requests to several federal, state, and local authorities to gather information and conducted field surveys of the aquatic and riparian habitat, as well as assessments of suitability for primary contact recreation, for the receiving waters in proximity of each outfall. The available information and field data were reviewed with respect to the federal definition of sensitive areas and the District's interpretation of the IEPA's justifications as to why primary contact recreation is not possible. As a result, it was found that:

- None of the nine outfalls discharge to a receiving water that falls within any of the following protected classes of waters: Outstanding National Resource Waters, National Marine Sanctuaries, shellfish beds, or public drinking water intakes or their designated protection areas.

- None of the nine outfalls discharge to receiving waters with federally threatened or endangered species and their habitat. The Illinois Department of Natural Resources (IDNR) Division of Fisheries reported that the state-threatened banded killifish is present in the North Shore Channel and North Branch Chicago River, and the District's fish collection data corroborates this. Collections of banded killifish increased starting around 2001. Banded killifish have expanded their territory despite the fact that CSOs have occurred in these

reaches for decades. Thus, a sensitive area designation for the receiving waters is not warranted.

- None of the responding agencies or municipalities provided information that primary contact recreation activities were occurring near any of the nine outfall discharge locations.

- Five of the nine outfalls discharge to a waterway that is designated for Incidental Contact Recreation (Discharges 101, 102, 103, 104, and 110).

- One of the outfalls discharges to a receiving water where swimming is prohibited by ordinance of the Forest Preserve District of Cook County (FPDCC) (Discharge 109).

- Eight of the nine outfalls discharge to receiving waters that are considered to be excessively deep and therefore present a drowning hazard for swimmers and waders.

- None of the nine outfalls discharge to a receiving water that is controlled by a proper authority for swimming which provides appropriate life-safety personnel and equipment for swimmer protection.

- None of the nine outfalls discharge to receiving waters with adequate conditions for water skiing.

- Each of the nine outfalls discharges to a receiving water where the bank access is restricted by at least one of the following: urban commercial or industrial land use, fences, steel or concrete channel walls, bridges, riprap banks, or steep forested or densely vegetated banks.

- Each of the nine outfalls are expected to have future discharges significantly reduced due to the completion of the McCook Reservoir.

It is concluded that none of the nine NPDES permit listed outfalls currently discharge to a receiving water that meets the federal definition of a sensitive area, according to the information gathered for the assessment of sensitive area considerations.

INTRODUCTION

Sensitive areas are defined by the United States Environmental Protection Agency (USEPA) in the 1994 CSO Policy, found in the *Federal Register*, Volume 59, Number 75, Tuesday, April 19, 1994, page 18692. Sensitive areas include:

1. Designated Outstanding National Resource Waters.

2. National Marine Sanctuaries.

3. Waters with threatened or endangered species and their habitat.

4. Shellfish beds.

5. Waters with primary contact recreation.

6. Public drinking water intakes or their designated protection areas.

The CSO Policy sets forth control measures for CSO discharges to sensitive areas, which include a prohibition on new or additional overflows, elimination or relocation of the outfall, or treatment of overflows to meet water quality standards. These additional requirements can be foregone if it can be shown that the overflow does not discharge to a sensitive area.

Special Condition 8 Part 9 of NPDES Permit Number IL0028088 for the District's O'Brien WRP requires submittal of documentation to demonstrate that certain outfalls do not discharge to sensitive areas. According to the permit issued by the IEPA, the submittal is to be made within six months of the completion of Stage 1 of the McCook Reservoir. For operational purposes, the completion date is considered December 31, 2017.

The discharge number, location, and receiving water for the nine outfalls included in the permit are shown in Table 1 and Figure 1.

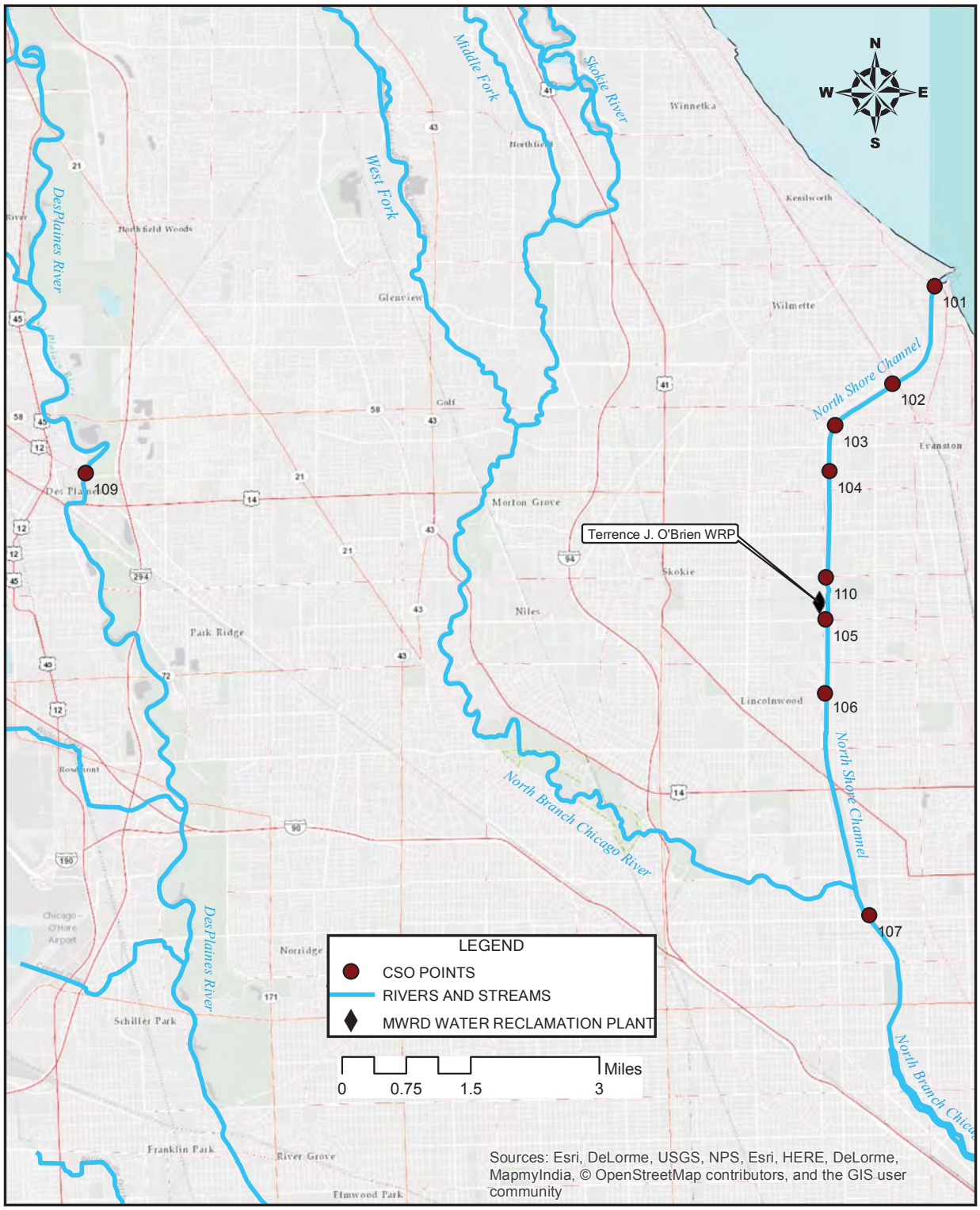
These selected outfalls discharge either to a General Use Water (Discharge 109), a Primary Contact Recreation Water (Discharges 105, 106, and 107), or an Incidental Contact Recreation Water (Discharges 101, 102, 103, 104, and 110), as designated by the IPCB. General Use and Primary Contact Waters have water quality standards established by the IPCB to protect primary contact recreation activities, defined in Illinois Administrative Code (IAC) Part 301.323 as "any recreational activity in which human contact consists of full body contact with the waters, such as swimming, diving or jumping, and includes all Incidental Contact Recreation." Incidental Contact Recreation, defined in IAC Part 301.282 means "any recreational activity in which human contact is incidental and in which the probability of ingesting appreciable quantities of water is minimal, such as fishing; commercial boating; small craft recreational boating; and any limited contact associated with shoreline activity such as wading."

The permit requires documentation "regarding the use of the receiving water for primary contact activities (swimming, water skiing, etc.)." The permit also requires adequate justification of why primary contact recreation is not possible, which may include, but is not limited to, "(1) inadequate water depth; (2) presence of physical obstacles sufficient to prevent access to or for

TABLE 1: COMBINED SEWER OVERFLOWS LISTED IN THE TERRENCE J. O'BRIEN WATER RECLAMATION PLANT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

Discharge Number	Location	Receiving Water
101	Sheridan Road	North Shore Channel
102	Green Bay Road	North Shore Channel
103	Emerson Street	North Shore Channel
104	Lake Street	North Shore Channel
105	Howard Street	North Shore Channel
106	Morse Avenue	North Shore Channel
107	North Branch Pumping Station	North Branch Chicago River
109	Rand Road	Des Plaines River
110	Niles Center Outlet Sewer – Oakton Street	North Shore Channel

FIGURE 1: LOCATION OF COMBINED SEWER OVERFLOWS IN THE TERRENCE J. O'BRIEN WATER RECLAMATION PLANT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT



primary contact recreation; and (3) uses of adjacent land sufficient to discourage primary contact activities." Using the information submitted by the District, the permit indicates that the IEPA will make a determination if the outfall discharges to a sensitive area.

METHODOLOGY

Since sensitive areas are described broadly and could result from meeting various USEPA and IEPA criteria, the District sought to meet this permit requirement using two approaches. First, letters were sent on May 26, 2017, to several federal, state, and local governmental organizations seeking information that might identify the discharge locations as sensitive areas. A typical letter and attached survey form requesting such information are shown in Appendix A. The organizations and addressee names to whom the letters were sent are shown in Table 2. Follow-up emails were sent on October 19, 2017, to the organizations that did not respond to the initial letter.

The second information-gathering effort consisted of a field survey of the receiving stream in the vicinity of the outfall. Surveys occurred on three days in October and November 2017. The survey was intended to gather the information identified in Title 35 IAC Part 375.203, Phase II, Preliminary Stream Inspection. Conditions were observed within a 200-foot reach downstream of each outfall. Water depth and sediment composition were assessed within three feet from each bank and in the center of the waterway at locations 50 and 200 feet downstream of the outfall. Channel width was measured 50 feet downstream of the outfall. All measurements were recorded on the respective field survey sheets.

All of the information collected was used to assess whether any of the listed outfalls discharge to a sensitive area. The approach used by the District for this Sensitive Area Considerations Report is the same as previous reports dated February 2003 (O'Brien, Calumet, and Stickney WRPs) and June 2016 (Calumet WRP). The average seven-day low flow that occurs once in 10 years (7Q10) was obtained from the Illinois State Water Survey website at <http://www .isws.illinois.edu/docs/maps/lowflow/images/maps/map2.gif>.

TABLE 2: SENSITIVE AREA INQUIRY CONTACT LIST

Organization	Contact
United States Environmental Protection Agency, Region 5	Mr. Christopher Korleski
United States Fish and Wildlife Service	Dr. Louise Clemency
Illinois Department of Natural Resources, Impact Assessment Section	Mr. Keith Shank
Illinois Department of Natural Resources, Fisheries Division	Mr. Dan Stephenson
Illinois State Water Survey	Dr. Kevin O'Brien
Illinois Department of Public Health	Dr. Ken McCann
Illinois Environmental Protection Agency	Mr. Sanjay Sofat
Chicago Department of Water Management	Mr. Randy Conner
Chicago Park District	Mr. Michael P. Kelly
Forest Preserve District of Cook County	Mr. Arnold Randall
Village of Wilmette	Mr. Bob Bielinski
City of Evanston	Mr. Stephen H. Hagerty
Village of Skokie	Mr. George Van Dusen
Village of Lincolnwood	Mr. Barry Bass
City of Des Plaines	Mr. Matthew Bogusz

RESULTS

Sensitive Area Inquiry Letters

Responses received from the sensitive area inquiry letters and follow up emails are contained in Appendix B. There were nine respondents: the United States Fish and Wildlife Service (USFWS), the IDNR Division of Fisheries, the Illinois State Water Survey (ISWS), the Chicago Department of Water Management, the Chicago Park District, the FPDCC, the Village of Wilmette, the Village of Lincolnwood, and the City of Des Plaines. Responses are summarized below and further addressed in the Discussion section of this report.

The USFWS responded via email on July 24, 2017, on the sensitive area response form regarding Category 3, "waters with threatened or endangered species and their habitat." They noted that their records show no Federally Listed Species are present in the discharge areas for the nine outfalls.

The IDNR responded via email on October 23, 2017, on the sensitive area response form that Discharge Numbers 101 through 107 and 110 do fall within sensitive areas, "waters with threatened or endangered species and their habitat." They noted that the IDNR has collected the state-threatened banded killifish in the North Shore Channel and North Branch Chicago River near the discharges identified in NPDES permit IL0028088. Locations and a map of the areas where the fish was collected was attached to the response.

The ISWS responded via email on October 30, 2017, and stated that they had received the letter from the District and had no comments.

The Chicago Department of Water Management responded via letter dated November 24, 2017. They acknowledged receipt of the original letter dated May 26, 2017, requesting information or comments regarding sensitive areas in the North Branch Chicago River and North Shore Channel. They stated that they had reviewed the information and had no comments or additional information.

The Chicago Park District responded via email on October 25, 2017, and stated that they were not aware of any sensitive areas in the proximity of NPDES Discharge Numbers 101 through 110.

The FPDCC responded via email dated June 13, 2017, on the sensitive area response form that none of the discharges fall within one of the categories defined as sensitive areas.

The Village of Wilmette responded via letter received in November, 2017, on the sensitive area response form that Discharge Number 101 does not discharge into a sensitive area.

The Village of Lincolnwood responded via letter received on October 26, 2017, on the sensitive area response form that Discharge Number 106 does not discharge into a sensitive area. They noted that they were not aware of any endangered fish species or shellfish beds and were aware that individuals boat in the North Shore Channel, but, based on the definition provided, this does not qualify as primary contact recreation.

The City of Des Plaines responded via letter dated June 19, 2017, and completed a sensitive area response form regarding Discharge Number 109. They replied that they did not have any information that would suggest that the discharge area meets the USEPA definition of a sensitive area. They also noted that with regard to Category 5, "waters with primary contact recreation," the only observed use of the river in this area is occasional canoeing and kayaking and there is no recollection of individuals using the area for swimming. Additionally, they commented that the river is shallow and the urbanized nature of the area and the river surroundings and banks are not suggestive of a location for swimming.

Field Surveys

The field data sheets and narrative observation summaries generated from the surveys conducted in the permitted outfall areas are included in Appendix C. Table 3 provides the 7Q10 (2003 revision) for each outfall location.

The permitted discharges, the physical conditions of their receiving waters, and assessments of suitability for primary contact recreation are described in the following sections.

Discharge Number 101 to the North Shore Channel. This outfall provides relief of excessive combined storm runoff and sewage flows in North Shore Intercepting Sewer 1 into the North Shore Channel in the vicinity of Sheridan Road and the West Bank of the Channel (Figure 2). The frequency, duration, and estimated volume and loading of discharges at this location during March through November 2017 are provided in Table 4.

The report and field data sheet from the survey conducted on October 27, 2017, are included in Appendix CI. Based on the survey, primary contact recreation in the proximity of the outfall is not possible due to the surrounding urban commercial/industrial and forested land use, fences blocking bank access, vertical sheet pile and concrete bank walls, excessive water depth, and the presence of the Wilmette Pumping Station. The depths ranged 1.5–8 feet along the river walls to a maximum nine feet deep in the center of the river. Soft sediments were found with a maximum depth of fines of three feet. Water skiing near this location would be hazardous because of the narrowness, obstructed views, and blind bends in the channel. Any swimming would be hazardous because of the excessive water depth, soft sediments, and physical obstacles preventing safe access to the water.

Discharge Number 102 to the North Shore Channel. This outfall provides relief of excessive combined storm runoff and sewage flows in North Shore Intercepting Sewer 6 into the North Shore Channel in the vicinity of Green Bay Road and the West Bank of the Channel (Figure 3). According to the District's operation records, there were no discharges at this monitored outfall location during March through November 2017.

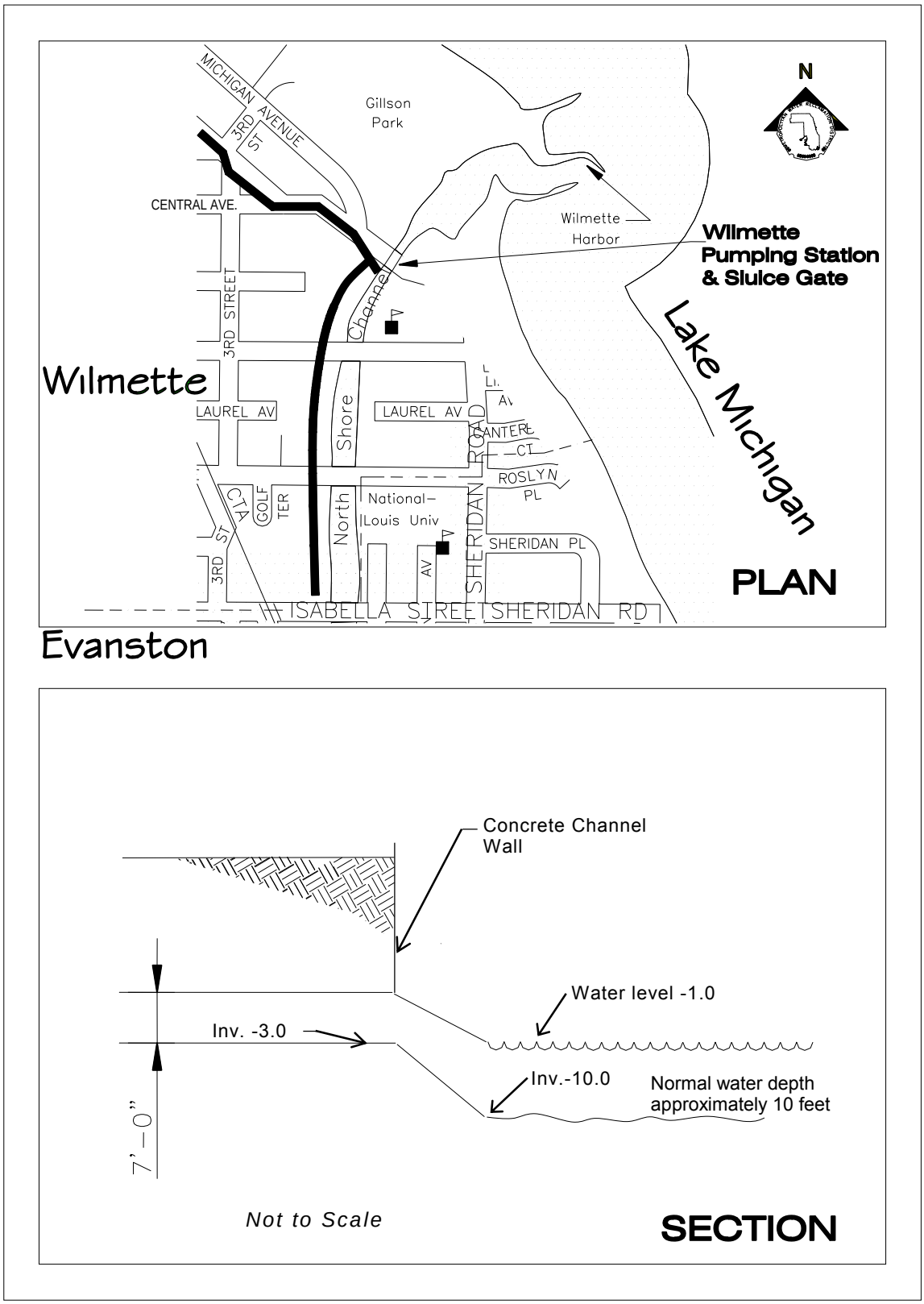
The report and field data sheet from the survey conducted on October 27, 2017, are included in Appendix CII. Based on the survey, primary contact recreation in the proximity of the outfall is not possible due to the surrounding forested land use, moderately eroded steep banks, fences blocking access, and excessive water depth. The maximum water depth was 5.2 feet deep

TABLE 3: SEVEN-DAY TEN-YEAR LOW FLOW RATES IN THE RECEIVING WATERS OF THE TERRENCE J. O'BRIEN WATER RECLAMATION PLANT COMBINED SEWER OVERFLOW OUTFALLS LISTED IN THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

Discharge Number(s)	Receiving Water	7Q10 Flow Rate (cfs)[1]
101, 102, 103, 104, and 110	North Shore Channel	0.0
105 and 106	North Shore Channel	265
107	North Branch Chicago River	279
109	Des Plaines River	48.4

[1]cfs = Cubic feet per second.

FIGURE 2: DISCHARGE NUMBER 101



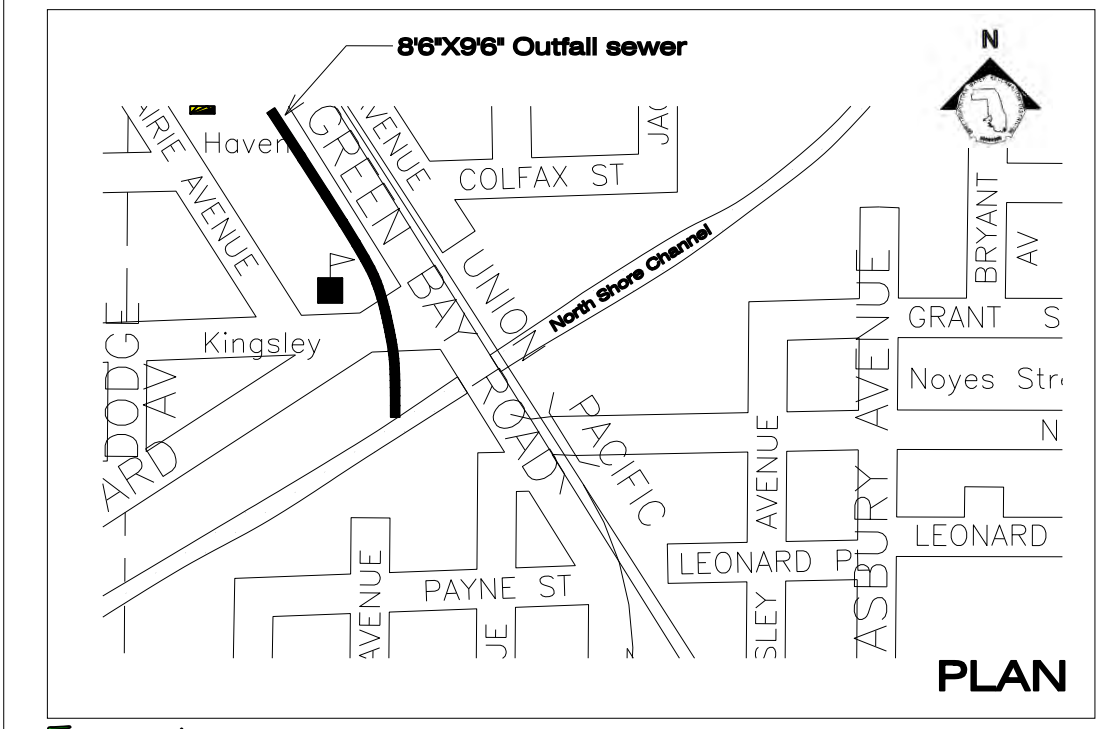
New Trier Township, Cook County, Illinois, T42N, R13E, Section 35

TABLE 4: INFORMATION FOR DISCHARGE NUMBER 101 COMBINED SEWER OVERFLOWS DURING MARCH THROUGH NOVEMBER 2017

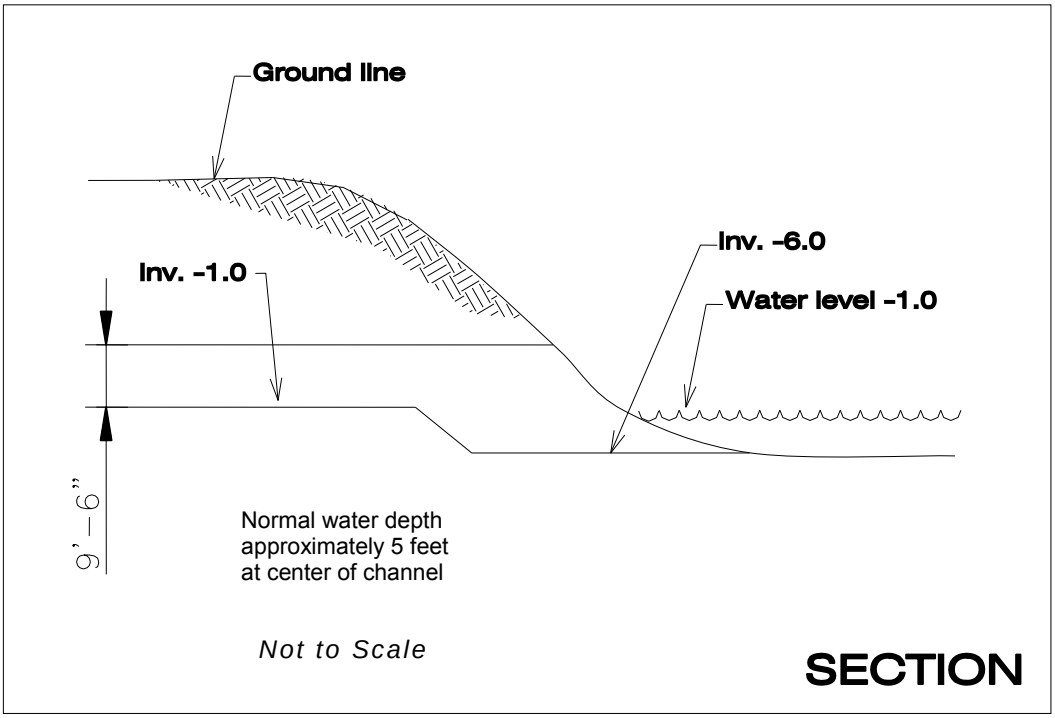
Month	Start Date(s)	Duration (Hours)	Volume (Million Gallons)[1]	BOD Load (Pounds)[1,2]	SS Load (Pounds)[1,3]
March	30	4.3	5.3	2,971	17,737
April	6, 10, 29, 30	11.7	13.0	7,261	43,360
May	None	0	0	0	0
June	14, 29	2.1	1.4	807	4,818
July	12, 20, 22	5.1	7.1	3,987	23,809
August	None	0	0	0	0
September	None	0	0	0	0
October	14, 15, 24	20.3	29.5	16,470	98,338
November	None	0	0	0	0

[1]Estimated.
[2]BOD = Five-day biochemical oxygen demand.
[3]SS = Suspended solids.

FIGURE 3: DISCHARGE NUMBER 102



Evanston



Evanston Township, Cook County, Illinois, T41N, R13E, Section 12

in the center of the river and soft sediments were found with a maximum depth of fines of 4.8 feet. Water skiing near this location would be hazardous because of the narrowness, obstructed views, and blind bends in the channel. Any swimming would be hazardous because of the excessive water depth, soft sediments, and physical obstacles preventing safe access to the water.

Discharge Number 103 to the North Shore Channel. This outfall provides relief of excessive combined storm runoff and sewage flows in the Emerson Outfall Sewer into the North Shore Channel in the vicinity of Emerson Street and the East Bank of the Channel (Figure 4). This discharge location is not monitored. There is no information regarding potential discharges at this outfall during March through November 2017.

The report and field data sheet from the survey conducted on October 27, 2017, is included in Appendix CIII. Based on the survey, primary contact recreation in the proximity of the outfall is not possible due to the surrounding forested land use, moderately eroded steep banks, fences blocking access, and excessive water depth. The maximum water depth was 5.3 feet deep in the center of the river, and soft sediments were found with a maximum depth of fines of 6.0 feet. Water skiing near this location would be hazardous because of the narrowness, obstructed views, and blind bends in the channel. Any swimming would be hazardous because of the excessive water depth, soft sediments, and physical obstacles preventing safe access to the water.

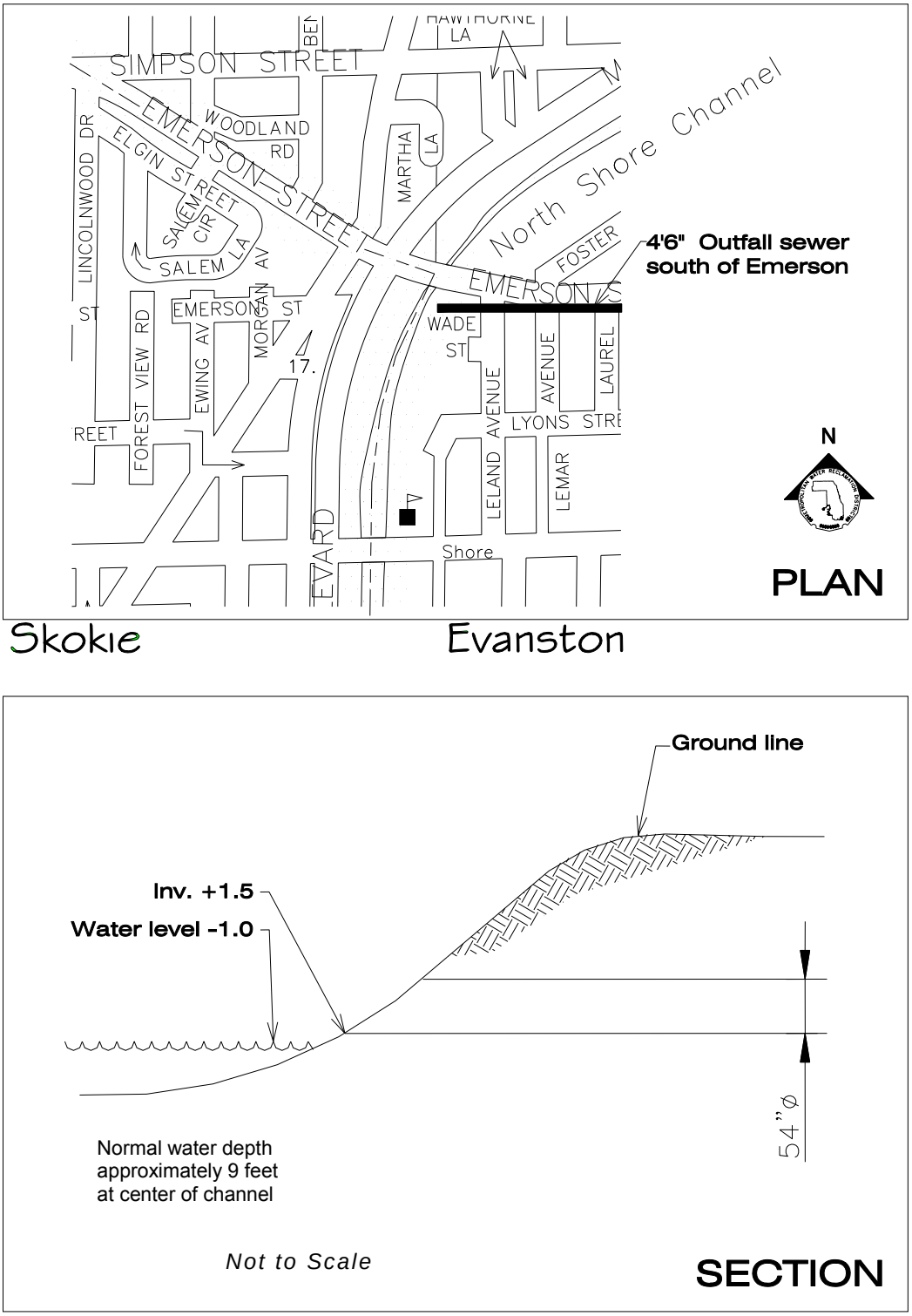
Discharge Number 104 to the North Shore Channel. This outfall provides relief of excessive combined storm runoff and sewage flows in the Evanston Intercepting Sewer into the North Shore Channel in the vicinity of Lake Street and the East Bank of the Channel (Figure 5). According to the District's operation records, there were no discharges at this monitored outfall location during March through November 2017.

The report and field data sheet from the survey conducted on October 27, 2017, are included in Appendix CIV. Based on the survey, primary contact recreation in the proximity of the outfall is not possible due to the surrounding forested land use, moderately eroded steep banks, fences blocking access, and excessive water depth. The maximum water depth was 6.0 feet deep in the center of the river and soft sediments were found with a maximum depth of fines of 4.5 feet. Water skiing near this location would be hazardous because of the narrowness and obstructed views in the channel. Any swimming would be hazardous because of the excessive water depth, soft sediments, and physical obstacles preventing safe access to the water.

Discharge Number 105 to the North Shore Channel. This outfall provides relief of excessive combined storm runoff and sewage flows in the Howard Street Intercepting Sewer 1 into the North Shore Channel in the vicinity of Howard Street and the West Bank of the Channel (Figure 6). According to the District's operation records, there were no discharges at this monitored outfall location during March through November 2017.

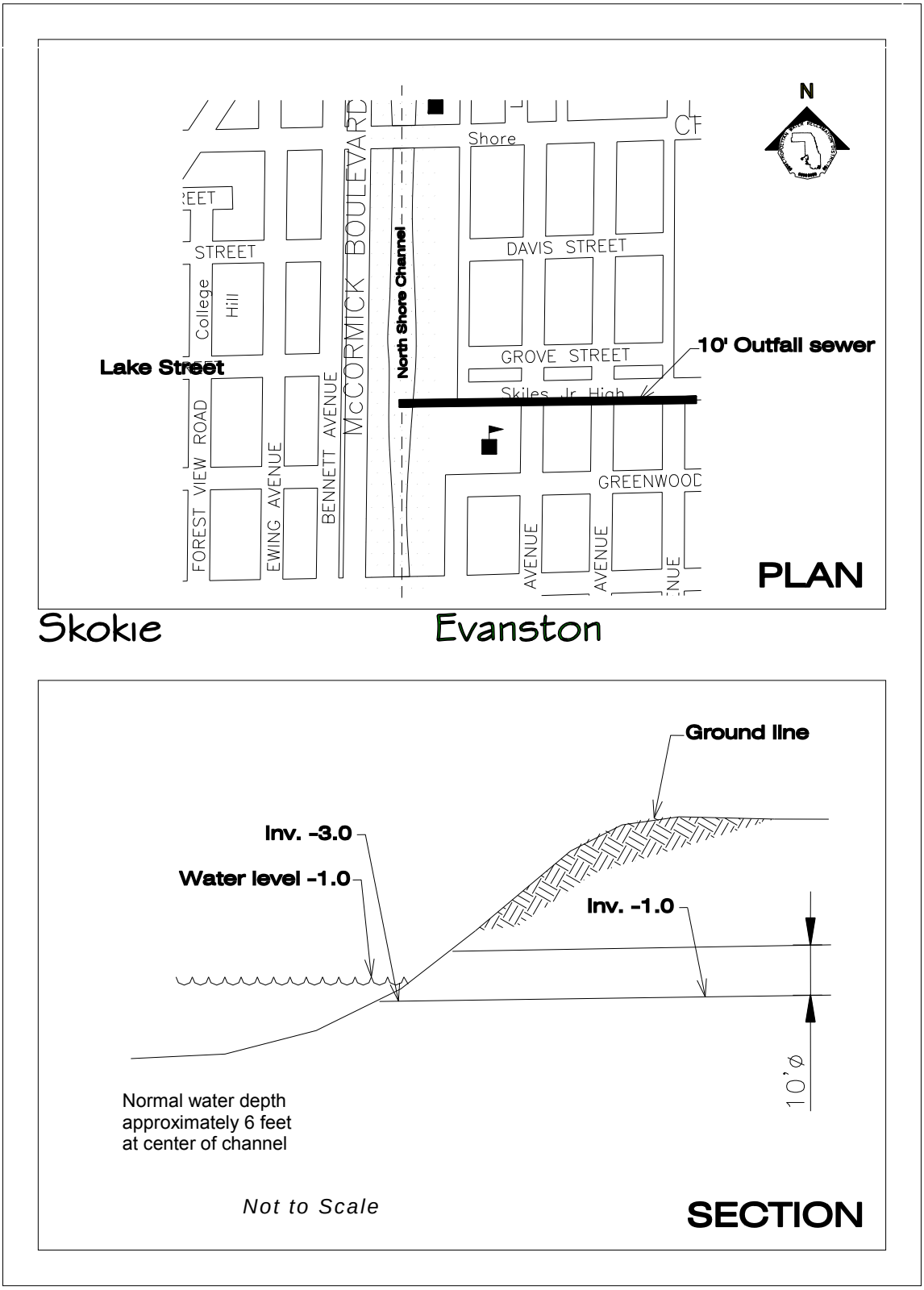
The report and field data sheet from the survey conducted on November 13, 2017, are included in Appendix CV. Based on the survey, primary contact recreation in the proximity of the outfall is not possible due to the surrounding forested land use, moderately eroded steep banks, fences blocking access, bridge, and excessive water depth. The maximum water depth was 8.7 feet

FIGURE 4: DISCHARGE NUMBER 103



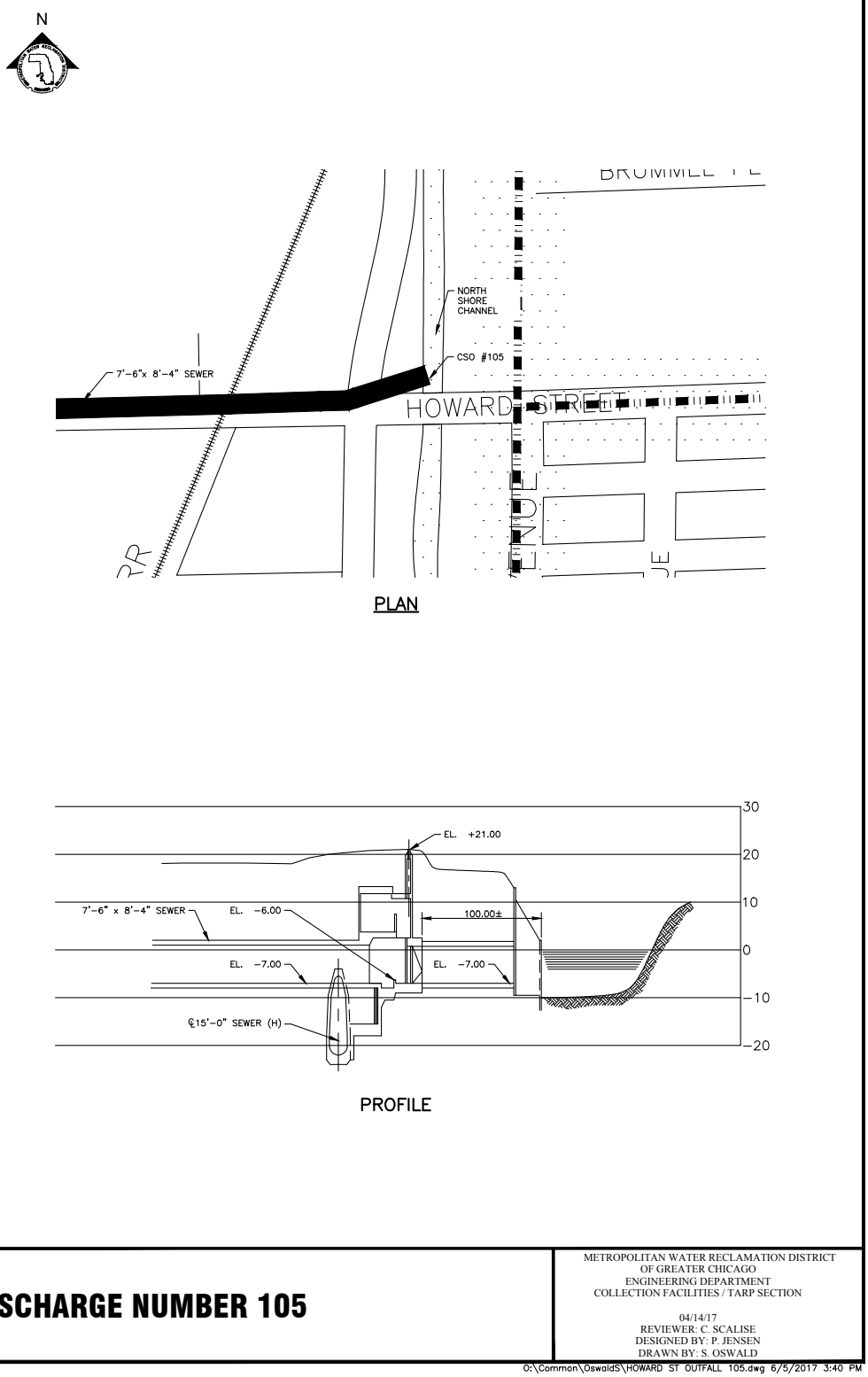
Evanston Township, Cook County, Illinois, T41N, R13E, Section 13

FIGURE 5: DISCHARGE NUMBER 104



Evanston Township, Cook County, Illinois, T41N, R13E, Section 13

FIGURE 6: DISCHARGE NUMBER 105



DISCHARGE NUMBER 105

METROPOLITAN WATER RECLAMATION DISTRICT
OF GREATER CHICAGO
ENGINEERING DEPARTMENT
COLLECTION FACILITIES / TARP SECTION

04/14/17
REVIEWER: C. SCALISE
DESIGNED BY: P. JENSEN
DRAWN BY: S. OSWALD

O:\Common\OswaldS\HOWARD ST OUTFALL 105.dwg 6/5/2017 3:40 PM

deep in the center of the river, and the sediment composition was mostly gravel throughout with some larger cobble on the sides. Water skiing near this location would be hazardous because of the narrowness, obstructed views, and blind bends in the channel. Any swimming would be hazardous because of the excessive water depth, rocky substrates, and physical obstacles preventing safe access to the water.

Discharge Number 106 to the North Shore Channel. This outfall provides relief of excessive combined storm runoff and sewage flows in the Lincolnwood Outfall Sewer into the North Shore Channel in the vicinity of Morse Ave and the West Bank of the Channel (Figure 7). This discharge location is not monitored. There is no information regarding potential discharges at this outfall during March through November 2017.

The report and field data sheet from the survey conducted on November 13, 2017, are included in Appendix CVI. Based on the survey, primary contact recreation in the proximity of the outfall is not possible due to the surrounding forested land use, moderately eroded steep banks, fences blocking access, and excessive water depth. The maximum water depth was 8.0 feet deep in the center of the river, and the sediment composition was mostly gravel on the channel sides. Water skiing near this location would be hazardous because of the narrowness and obstructed views in the channel. Any swimming would be hazardous because of the excessive water depth and physical obstacles preventing safe access to the water.

Discharge Number 107 to the North Branch Chicago River. This outfall provides relief of excessive combined storm runoff and sewage flows in North Side Intercepting Sewers 5 and 8 via the North Branch Pumping Station into the North Branch Chicago River in the vicinity of Lawrence Avenue and the East Bank of the Channel (Figure 8). The frequency, duration, and estimated volume and loading of discharges at this location during March through November 2017 are provided in Table 5.

The report and field data sheet from the survey conducted on November 13, 2017, are included in Appendix CVII. Based on the survey, primary contact recreation in the proximity of the outfall is not possible due to the surrounding forested, urban commercial/industrial, and urban residential land use, moderately eroded steep banks, fences blocking access, bridge, North Branch Pumping Station, and excessive water depth. The maximum water depth was 9.1 feet deep in the center of the river, and the sediment composition was mostly gravel and cobble on the channel sides. A “no-wake” sign is posted on both banks. Water skiing near this location would be hazardous because of the narrowness, obstructed views, and blind bends in the channel. Any swimming would be hazardous because of the excessive water depth, rocky substrates, and physical obstacles preventing safe access to the water.

Discharge Number 109 to the Des Plaines River. This outfall provides relief of excessive combined storm runoff and sewage flows in Howard Street Intercepting Sewer 6 into the Des Plaines River in the vicinity of Rand Road and the East Bank of the River (Figure 9). This discharge location is not monitored. There is no information regarding potential discharges at this outfall during March through November 2017.

FIGURE 7: DISCHARGE NUMBER 106

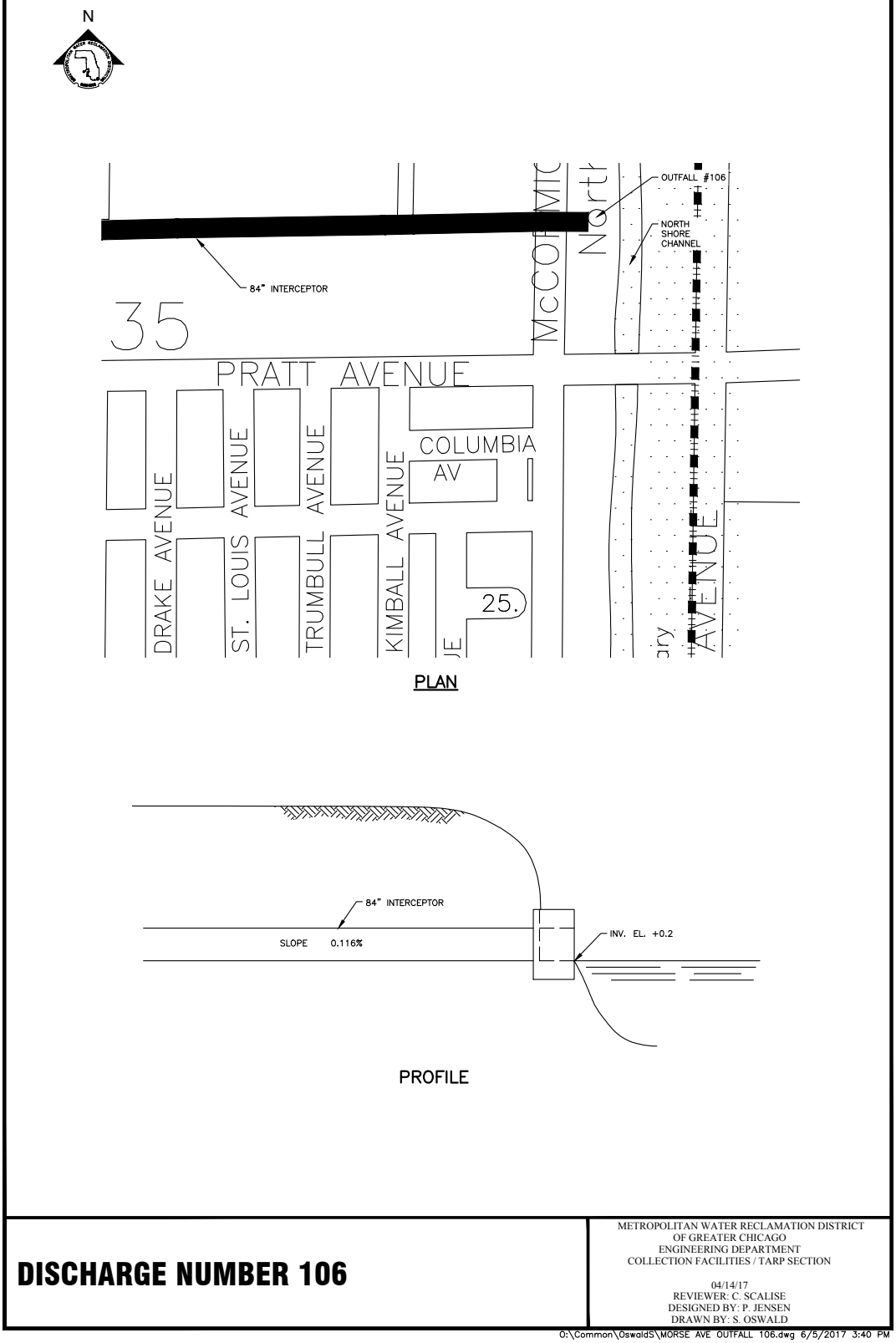


FIGURE 8: DISCHARGE NUMBER 107

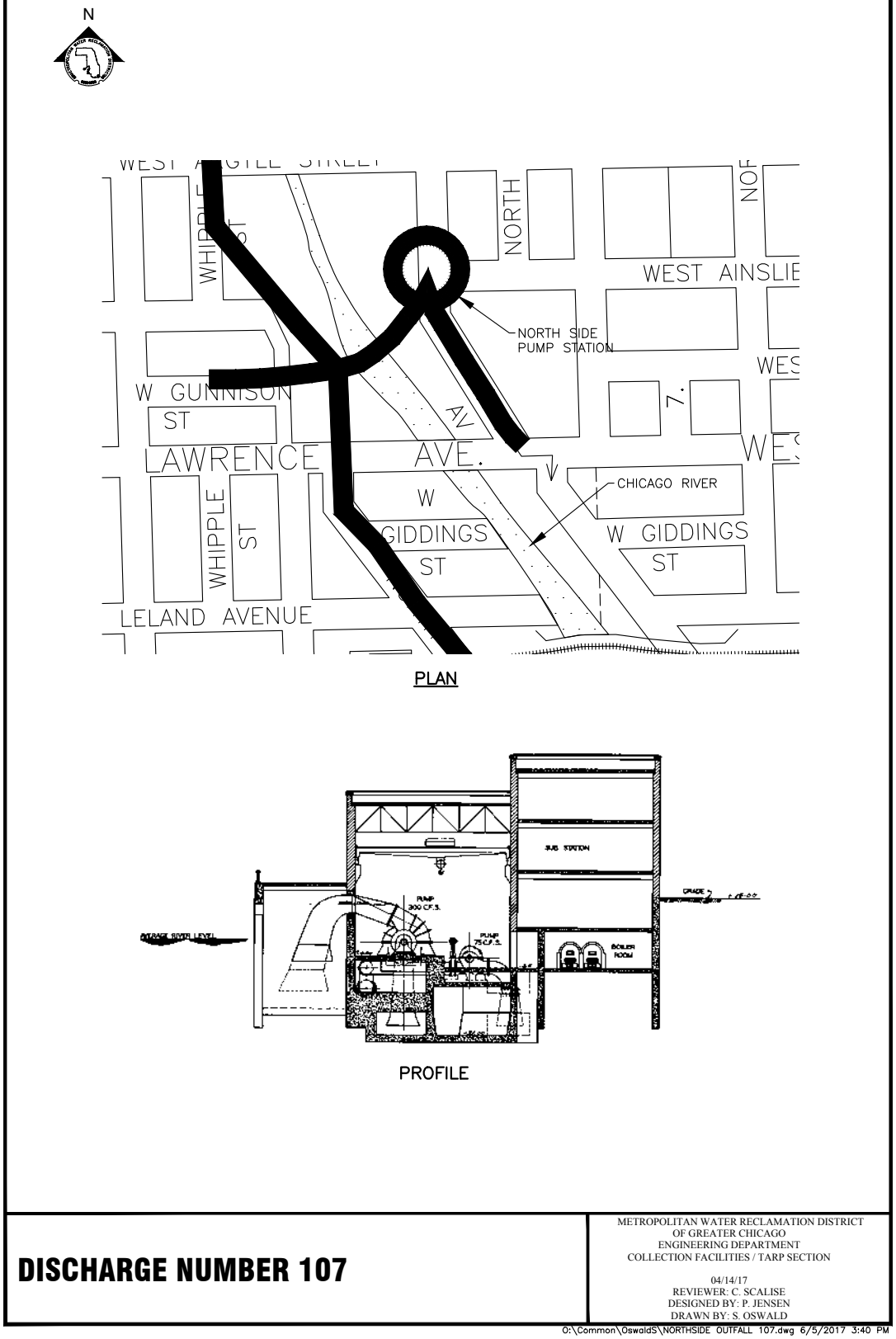
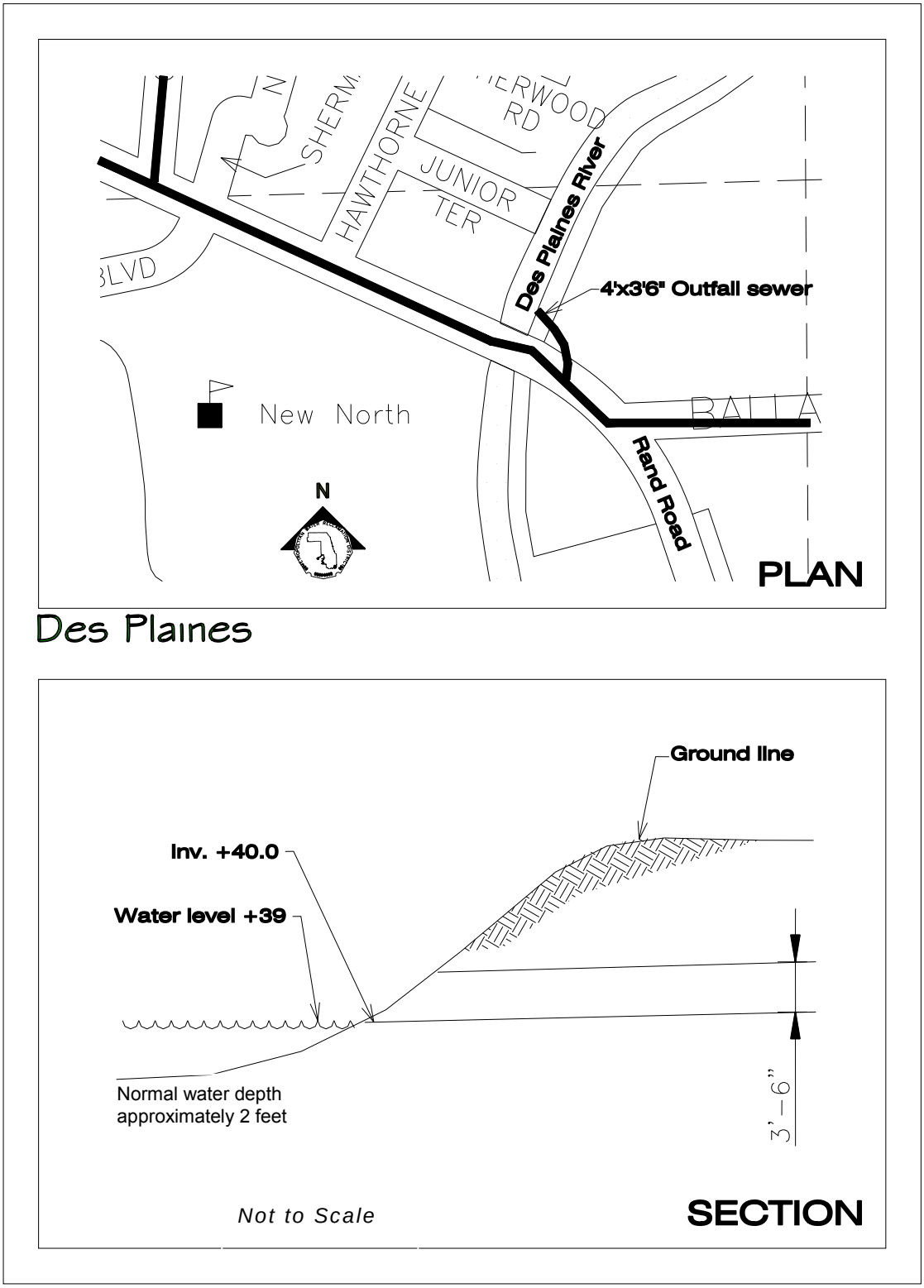


TABLE 5: INFORMATION FOR DISCHARGE NUMBER 107 COMBINED SEWER OVERFLOWS DURING MARCH THROUGH NOVEMBER 2017

Month	Start Date(s)	Duration (Hours)	Volume (Million Gallons) [1]	BOD Load (Pounds)[1,2]	SS Load (Pounds)[1,3]
March	30	20.4	3.9	202,525	1,191,538
April	5, 10, 16, 29, 30	50.5	6.7	359,170	2,121,396
May	10	17.9	3.8	200,860	1,186,922
June	14, 17, 29	31.1	1.2	66,189	394,553
July	12, 20, 21	25.6	4.4	237,499	1,410,275
August	None	0	0	0	0
September	None	0	0	0	0
October	11, 14, 23, 24	63.5	1,320.0	658,275	3,824,142
November	None	0	0	0	0

[1]Estimated.
[2]BOD = Five-day biochemical oxygen demand.
[3]SS = Suspended solids.

FIGURE 9: DISCHARGE NUMBER 109



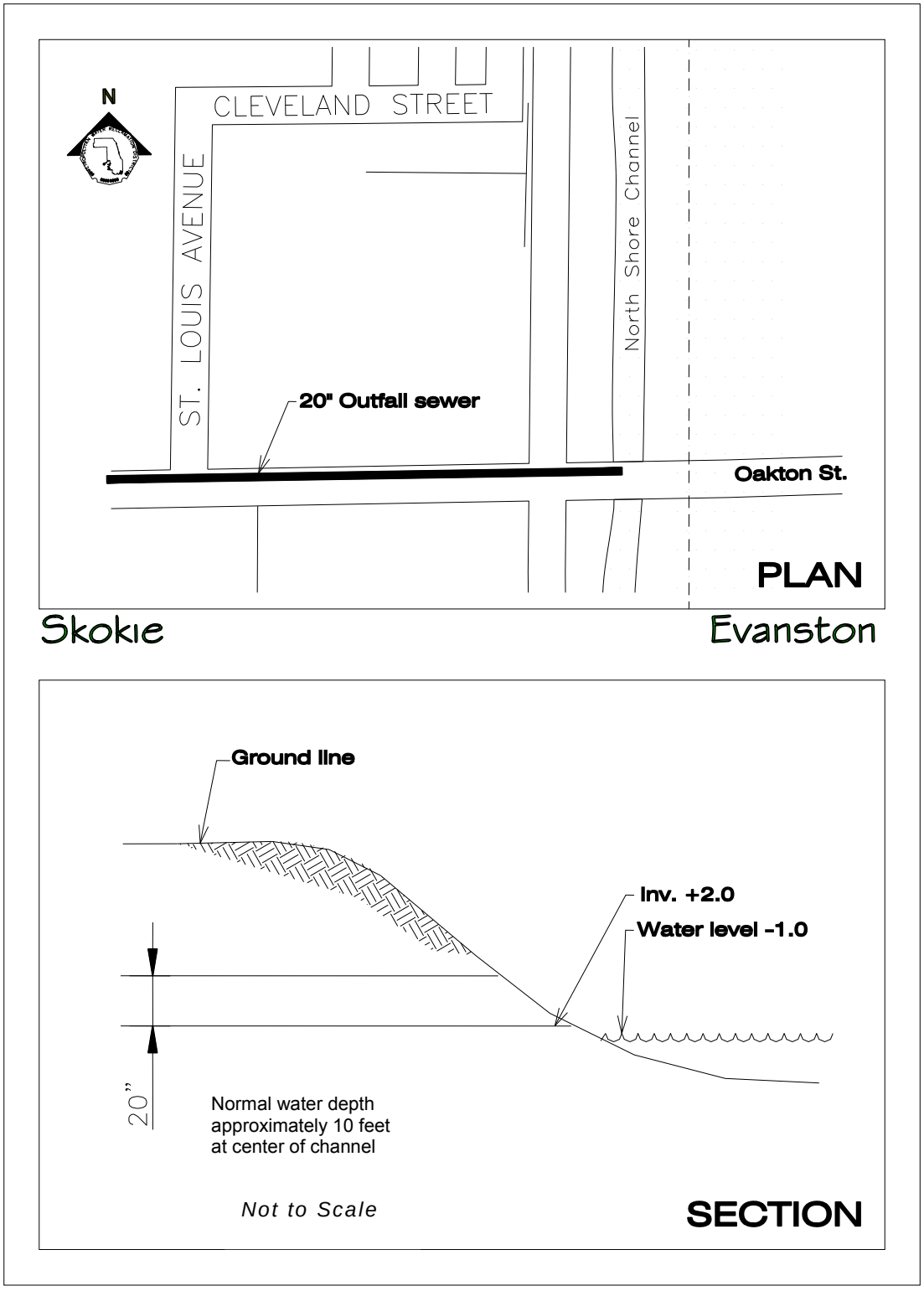
Maine Township, Cook County, Illinois, T41N, R12E, Section 16

The report and field data sheet from the survey conducted on November 28, 2017, are included in Appendix CVIII. Based on the survey, primary contact recreation in the proximity of the outfall is not possible due to the urban commercial/industrial and forested land use, steep riprap bank, log jam, bridge, and shallow water depths at most measured locations. The maximum water depth was 3.4 feet in the center of the river. Soft sediments were found with a maximum depth of fines of 0.6 feet. Water skiing near this location would be hazardous because of the shallow water, narrowness, obstructed views, and blind bends in the channel. Any swimming would be hazardous because of the physical obstacles preventing safe access to the water. The land adjacent to the east bank is FPDCC property in which swimming is prohibited by ordinance of the FPDCC. The ordinance can be found at <https://library.municode.com/il/cook_county /codes/forest_preserve?nodeId=TIT2FOPRLAPR_CH4REFOPR_2-4-4SW>.

Discharge Number 110 to the North Shore Channel. This outfall provides relief of excessive combined storm runoff and sewage flows in the Niles Center Outlet Sewer into the North Shore Channel in the vicinity of Oakton Street and the West Bank of the Channel (Figure 10). This discharge location is not monitored. There is no information on potential discharges at this outfall during March through November 2017.

The report and field data sheet from the survey conducted on November 13, 2017, are included in Appendix CIX. Based on the survey, primary contact recreation in the proximity of the outfall is not possible due to the surrounding forested land use, moderately eroded steep banks, fences blocking access, bridge, and excessive water depth. The maximum water depth was 5.4 feet deep in the center of the river, and soft sediments were found with a maximum depth of fines of 5.0 feet. Water skiing near this location would be hazardous because of the narrowness, obstructed views, and blind bends in the channel. Any swimming would be hazardous because of the excessive water depth, soft sediments, and physical obstacles preventing safe access to the water.

FIGURE 10: DISCHARGE NUMBER 110



Niles Township, Cook County, Illinois, T41N, R13E, Section 23

DISCUSSION

Sensitive areas are defined by the USEPA using one or more of six categories. As a result of the sensitive area inquiry letters and field surveys, the District believes that none of the outfalls discharge to a sensitive area that fits any of the following five categories: Designated National Resource Water, National Marine Sanctuary, waters with federally threatened or endangered species and their habitat, shellfish beds, or public drinking water intakes or designated protection areas. The IDNR Division of Fisheries acknowledged in their response that the Illinois state-threatened banded killifish has been collected in the North Branch Chicago River and North Shore Channel; however, this fish species is now fairly common in the northeast part of Illinois and the District's fish monitoring data corroborate this. Banded killifish have expanded their territory despite the fact that CSOs have occurred in these reaches for decades. Thus, a sensitive area designation for the receiving waters is not warranted. A recent research publication suggests that the rapid expansion of the banded killifish appears to be due to an invasion of an Eastern subspecies and the subsequent hybridization with the native Western subspecies (Willink et al., 2018).

There has been minimal alteration of the physical conditions in the vicinity of permitted discharges since the previous sensitive area consideration report for the O'Brien WRP (then known as the North Side WRP) was submitted to the IEPA in February 2003. It is important to note that although the designated recreational uses for the North Shore Channel and North Branch Chicago River have changed as a result of the Chicago Area Waterway System use attainability analysis, the management of CSOs in this service area has not changed up to the issue date of the most recent O'Brien WRP NPDES permit, and the full impact of Stage 1 of the McCook Reservoir is yet to be determined. The year 2018 is defined as an operational verification period for the maximum effectiveness of the reservoir. Future CSO discharges will be further reduced following the completion of Stage 2 of the McCook Reservoir.

The response from the Village of Lincolnwood noted that boating does occur on the North Shore Channel in the vicinity of Discharge 106, and the City of Des Plaines noted in their response that canoeing and kayaking occur in the vicinity of Discharge 109. Neither believes that these activities fit the definition of primary contact recreation. The Chicago Park District operates several rowing centers along these waterways, and the District's patrol boat operators and water sampling crews often observe sculling teams practicing and competing in the North Shore Channel and observe recreational paddlers in the North Branch Chicago River. These activities meet the definition of Incidental Contact Recreation.

The IEPA states under Special Condition 8 Part 9 of NPDES Permit No. IL0028088 that adequate justification of why primary contact recreation is not possible shall be submitted, and that adequate justification may include but is not limited to:

1. Inadequate water depth.

2. Presence of physical obstacles sufficient to prevent access to or for primary contact recreation.

3. Uses of adjacent land sufficient to discourage primary contact activities.

The definition of "Primary Contact" adopted by the IPCB in Section 301.355 specifically mentions swimming and water skiing, so these activities were considered in the determination of whether a receiving water is suitable for primary contact recreation. With respect to swimming, water depths could be too shallow for full body immersion or too deep, posing a drowning hazard if lifeguards and life-safety equipment are not available. For purposes of this discussion, a depth of less than two feet was considered inadequate and a depth more than five feet was considered excessive. All of the assessed areas downstream of the discharges on the North Shore Channel and North Branch Chicago River have some shallow littoral zones. The widths of these shallow areas are relatively narrow and irregular and unexpected drop-offs can be just a few steps away, leading to deeper water. It should be recognized that there exists potential drowning hazard and that adequate life-safety personnel and equipment for primary contact activities are lacking, and municipalities would otherwise incur significant and burdensome liability if primary contact activities by the public are not adequately controlled and protected. It is also essential that swimming in a receiving water be permissible by local laws and regulations.

Water skiing requires adequate water depth and lack of obstacles, submerged objects, and shoals for the safe operation of motor-powered watercraft. Adequate channel widths are also required for maneuverability. With respect to primary contact recreation, adequate conditions for water skiing were assumed to include depths greater than four feet, channel widths of at least 200 feet, and straight channel reaches. Safe water skiing should also be done where traffic conditions in the channel are controlled.

The receiving water in the proximity of the outfall for each discharge number is assessed for the above considerations and shown in Table 6. None of the receiving waters at these locations meet the criteria for a sensitive area with respect to primary contact recreation. The field surveys collected sufficient evidence to show that none of the outfalls discharge to areas suitable and safe for primary contact recreation, and none of the sensitive area inquiry letters received provided evidence that primary contact recreation was occurring.

TABLE 6: ASSESSMENT OF SUITABILITY FOR PRIMARY CONTACT RECREATION

	Swimming			Water Skiing					Land Use	
	Water Depth*		Swimming	Water Depth**		Channel Properties			Bank Access	
Discharge Number	Shallow <2 feet	Deep >5 feet	Prohibited by Ordinance	Shallow <4 feet	Adequate >4 feet	Narrow <200 feet	Straight	Commercial Navigation	Unrestricted	Restricted
101		X			X	X				X
102		X			X	X				X
103		X		X		X				X
104		X		X		X	X			X
105		X			X	X				X
106		X			X	X	X			X
107		X			X	X				X
109			X	X		X				X
110		X			X	X				X

*Maximum depth recorded from all six measured locations.
**Minimum depth recorded from both center channel measured locations.

REFERENCES

Willink, P.W., Widloe, T.A., Santucci, V.J., Makauskas, D., Tiemann, J.S., Hertel, S.D., Lamer, J.T., Sherwood, J.L. 2017. Rapid Expansion of Banded Killifish *Fundulus diaphanus* across Northern Illinois: Dramatic Recovery or Invasive Species? American Midland Naturalist. In review.

APPENDIX A

TYPICAL LETTER AND ATTACHED SURVEY FORM SEEKING INFORMATION ON SENSITIVE AREAS

Protecting Our Water Environment

Metropolitan Water Reclamation District of Greater Chicago

CECIL LUE-HING RESEARCH AND DEVELOPMENT COMPLEX
6001 WEST PERSHING ROAD CICERO, ILLINOIS 60804-4112

Edward W. Podczerwinski, P.E.
Acting Director of Monitoring and Research

May 26, 2017

Mr. Sanjay Sofat
Chief, Bureau of Water
Illinois Environmental Protection Agency
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

Dear Mr. Sofat:

Subject: Sensitive Area Considerations for National Pollutant Discharge Elimination System Permit Number IL0028088, Discharge Numbers, 101, 102, 103, 104, 105, 106, 107, 109, and 110

The Metropolitan Water Reclamation District of Greater Chicago is obligated by the subject permit issued by the Illinois Environmental Protection Agency (IEPA) to submit documentation to indicate whether certain outfalls discharge to a sensitive area. We are writing this letter to you to request any information that you have which may be pertinent to this issue. Please respond to this letter within 30 days of receipt thereof.

Attached are a table and map to identify the locations covered in the subject permit.

Sensitive areas are defined by the United States Environmental Protection Agency (USEPA) in the 1994 Combined Sewer Overflow Control Policy, found in the *Federal Register*, Volume 59, Number 75, Tuesday, April 19, 1994, page 18692. Sensitive areas include:

1. Designated Outstanding National Resource Waters.
2. National Marine Sanctuaries.
3. Waters with threatened or endangered species and their habitat.
4. Shellfish beds.
5. Waters with primary contact recreation.
6. Public drinking water intakes or their designated protection areas.

It is believed that the first four categories above are the subject of regulations administered by federal agencies, such as the USEPA or the United States Fish and Wildlife Service (USF&WS). These may also be subject to State of Illinois regulations administered by comparable state agencies. The latter two categories are the subject of Rules adopted by the Illinois Pollution Control Board and administered by the IEPA. Therefore, we are sending this inquiry to the USEPA, USF&WS, Illinois Department of

Subject: Sensitive Area Considerations for National Pollutant Discharge Elimination System Permit Number IL0028088, Discharge Numbers, 101, 102, 103, 104, 105, 106, 107, 109, and 110

Natural Resources, and IEPA. Inquiries are also being sent to local government organizations that may have additional information.

We understand that there are no Designated Outstanding National Resource Waters (No. 1 above) or National Marine Sanctuaries (No. 2 above) in Illinois. Further, the only public drinking water intakes (No. 6 above) located in the Chicago area are in Lake Michigan. Therefore, in responding to this inquiry, you may disregard these three categories unless you have information contrary to these statements.

Be advised that the Illinois Pollution Control Board has defined primary contact as "Any recreational or other water use in which there is prolonged and intimate contact with the water involving considerable risk of ingesting water in quantities sufficient to pose a significant health hazard, such as swimming and water skiing." (35 IAC Section 301.355)

For your convenience, a response form is also attached. Please complete this form and return it, together with all supporting documentation, to the following address:

Mr. Edward W. Podczerwinski, P.E.
c/o Ms. Jennifer Wasik
Lue-Hing R&D Complex
6001 W. Pershing Road
Cicero, IL 60804-4112

If you have any questions, you may contact Jennifer Wasik, Supervising Aquatic Biologist, at (708) 588-4063.

Thank you for your assistance in this matter.

Very truly yours,

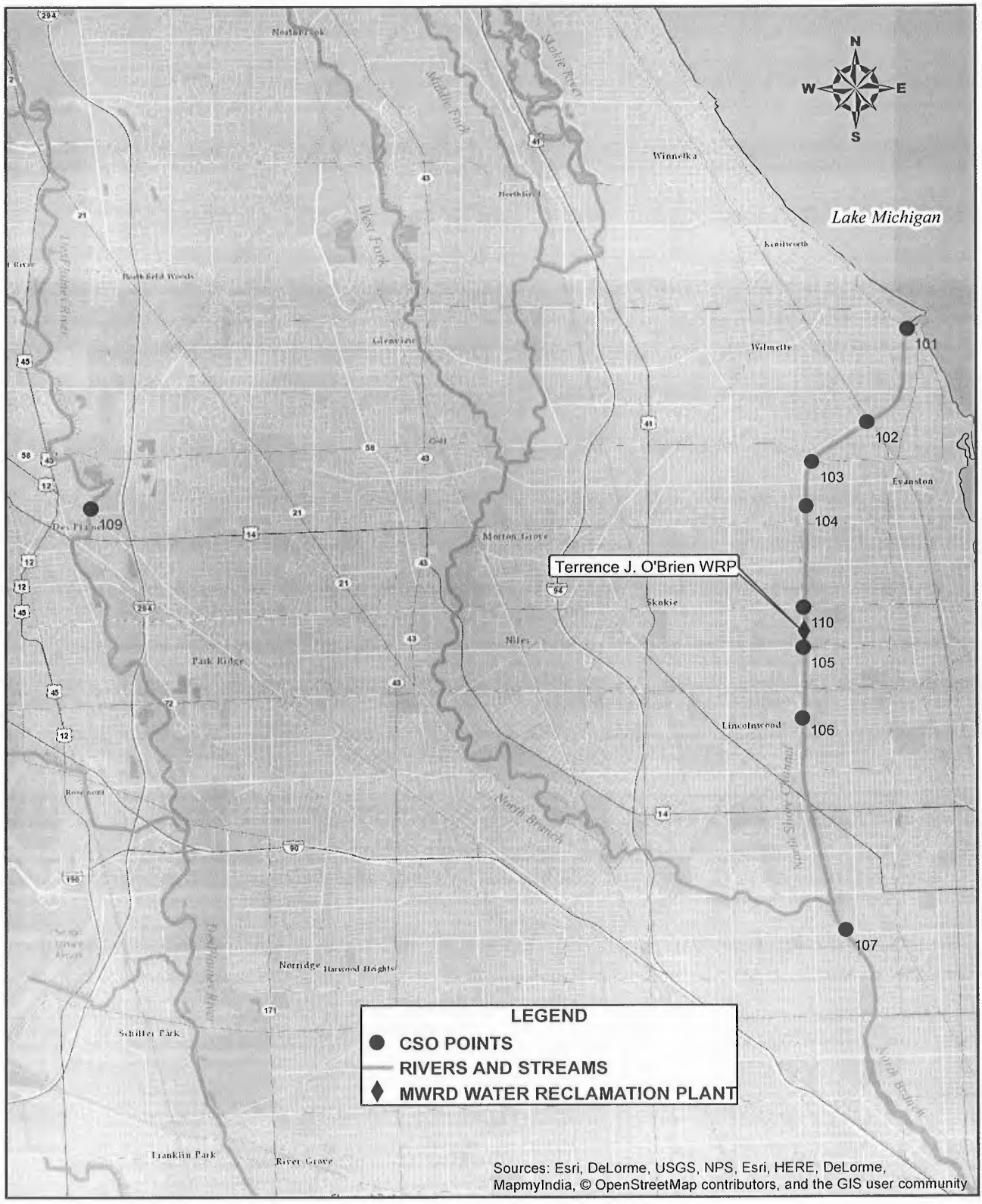
Edward W. Podczerwinski, P.E.
Acting Director
Monitoring and Research

EWP:HZ:JW:lf
Attachment
cc: J. P. Murray

TABLE 1: COMBINED SEWER OVERFLOWS LISTED IN THE O'BRIEN WATER RECLAMATION PLANT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT NUMBER IL0028088

Discharge Number	Location	Receiving Water
101	Sheridan Road	North Shore Channel
102	Greenbay Road	North Shore Channel
103	Emerson Street	North Shore Channel
104	Lake Street	North Shore Channel
105	Howard Street	North Shore Channel
106	Morse Avenue	North Shore Channel
107	North Branch Pumping Station	North Branch Chicago River
109	Rand Road	Des Plaines River
110	Niles Center Outlet Sewer – Oakton Street	North Shore Channel

O'Brien Water Reclamation Plant
Permitted Combined Sewer Overflows



METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

Sensitive Area Response Form

Name of Responding Organization: _____

Name of Person Responding: _____

Address: _____

_____

_____

_____

Telephone Number: _____

Signature of Respondent: _____

Subject: NPDES Permit Number IL0028088

Discharge Number(s) _____

We have examined our records and determined that the subject discharges do_____/ do not_____ fall within one or more of the following categories of sensitive areas:

(Circle all that apply)

1. Designated Outstanding National Resource Waters.
2. National Marine Sanctuaries
3. Waters with threatened or endangered species and their habitat.
4. Shellfish beds.
5. Waters with primary contact recreation.
6. Public drinking water intakes or designated protection areas.

Our determination is based on the attached documentation:

(Supply supporting documentation for each category and reference the source in the space provided below)

_____

_____

_____

_____

_____

_____

_____

APPENDIX B

RESPONSES RECEIVED FROM SENSITIVE AREA INQUIRY LETTERS

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO
Sensitive Area Response Form

Name of Responding Organization: U.S. Fish & Wildlife Service

Name of Person Responding: Shawn Cirton

Address: 230 S. Dearborn St., Ste 2938
Chicago, IL 60604

Telephone Number: 312-216-4720

Signature of Respondent:

Subject: NPDES Permit Number IL0028088

Discharge Number(s) 101-107, 109 and 110

We have examined our records and determined that the subject discharges do____/ do not ✓ fall within one or more of the following categories of sensitive areas:

(Circle all that apply)
1. Designated Outstanding National Resource Waters.
2. National Marine Sanctuaries
3. Waters with threatened or endangered species and their habitat.
4. Shellfish beds.
5. Waters with primary contact recreation.
6. Public drinking water intakes or designated protection areas.

Our determination is based on the attached documentation:

(Supply supporting documentation for each category and reference the source in the space provided below)

Our records show that no Federally listed species are present in the above discharge areas.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO
Sensitive Area Response Form

Name of Responding Organization: Illinois Department of Natural Resources

Name of Person Responding: Dan Stephenson

Address: One Natural Resources Way
Springfield, IL 62702

Telephone Number: 217-524-4111

Signature of Respondent: _____

Subject: NPDES Permit Number IL0028088

Discharge Number(s) 101, 102, 103, 104, 105, 106, 107, 110

We have examined our records and determined that the subject discharges do ✓ / do not _____ fall within one or more of the following categories of sensitive areas:

(Circle all that apply)

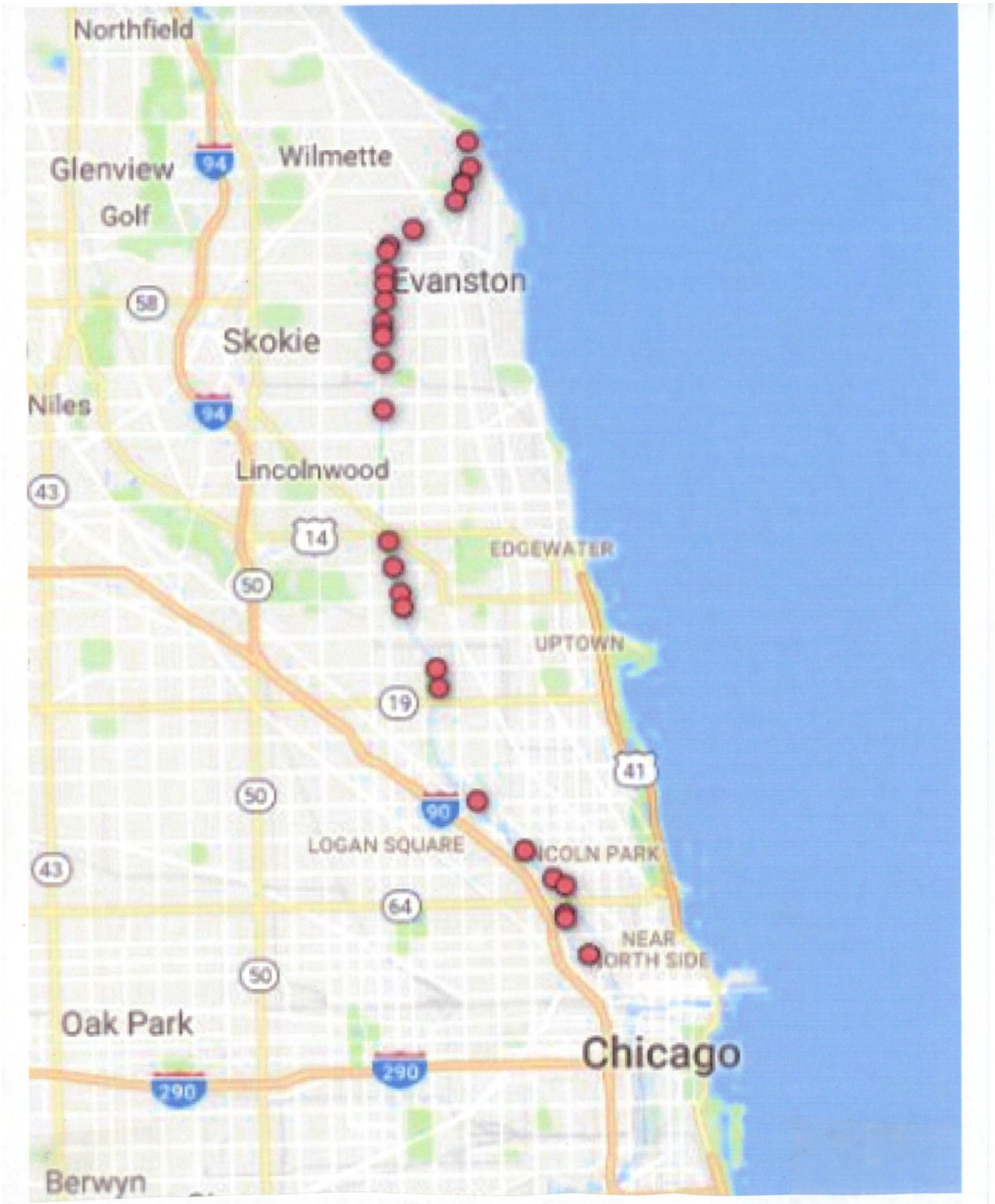
1. Designated Outstanding National Resource Waters.
2. National Marine Sanctuaries
3. Waters with threatened or endangered species and their habitat.
4. Shellfish beds.
5. Waters with primary contact recreation.
6. Public drinking water intakes or designated protection areas.

Our determination is based on the attached documentation:

(Supply supporting documentation for each category and reference the source in the space provided below)

IL DNR has collected the state Threatened Banded Killifish in the North Shore Channel and North Branch of the Chicago River near the Discharge Numbers listed above. Please see attached list of sampling locations and map where Banded Killifish were collected.

Project Code	Gear Code	Meaning	N/S Coord	E/W Coorc	Start Date	Barcode	Pool Code	Site Alias	Banded Killifish
E-003	D	Fixed Site 4 - North Br. Chi. River & North Shore Channel	41.9836	-87.7071	9/24/2013	617D	4	FS4 RUN 2	1
E-004	D	Fixed Site 4 - North Br. Chi. River & North Shore Channel	41.9074	-87.6578	6/21/2017	2.01706E+15	4	NBRANCH RS14	3
E-004	D	Fixed Site 4 - North Br. Chi. River & North Shore Channel	41.9082	-87.6578	6/16/2017	2.01706E+15	4	NBRANCH RS11	1
E-004	D	Fixed Site 4 - North Br. Chi. River & North Shore Channel	41.9223	-87.6696	6/24/2016	2.01606E+15	4	NORTH BRANCH RS13	1
E-004	D	Fixed Site 4 - North Br. Chi. River & North Shore Channel	41.9573	-87.6943	9/28/2016	2.0161E+15	4	North Branch RR5	1
E-004	D	Fixed Site 4 - North Br. Chi. River & North Shore Channel	41.9616	-87.6948	9/28/2016	2.0161E+15	4	North Branch RR4	1
E-004	D	Fixed Site 4 - North Br. Chi. River & North Shore Channel	41.9143	-87.6581	9/16/2015	439HM	4	NORTH BRANCH RS36	1
E-004	D	Fixed Site 4 - North Br. Chi. River & North Shore Channel	41.9161	-87.6615	9/24/2014	935X	4	NORTHBRANCH	1
E-003	D	Fixed Site 5 - North Shore Channel	42.0699	-87.6846	9/24/2013	678D	5	FS5 RUN 2	1
E-004	D	Fixed Site 5 - North Shore Channel	41.8997	-87.6513	6/24/2016	2.01606E+15	5	NORTHSHORE RS14	1
E-004	D	Fixed Site 5 - North Shore Channel	41.975	-87.7045	6/14/2017	2.01706E+15	5	North Shore FS5 RS3	1
E-004	D	Fixed Site 5 - North Shore Channel	41.9777	-87.7052	9/27/2016	2.0161E+15	5	North Shore RR2	1
E-004	D	Fixed Site 5 - North Shore Channel	42.0336	-87.7099	6/14/2017	2.01706E+15	5	North Shore FS5 RS2	1
E-004	D	Fixed Site 5 - North Shore Channel	42.0343	-87.7099	9/27/2016	2.0161E+15	5	North Shore RR12	1
E-004	D	Fixed Site 5 - North Shore Channel	42.0518	-87.7088	9/27/2016	2.0161E+15	5	North Shore RR8	1
E-004	D	Fixed Site 5 - North Shore Channel	41.9892	-87.7087	9/23/2014	926X	5	NORTHSHORE	1
E-004	D	Fixed Site 5 - North Shore Channel	42.0178	-87.7103	9/22/2015	546HM	5	northshore as10	1
E-004	D	Fixed Site 5 - North Shore Channel	42.0364	-87.71	10/29/2013	625D	5	North End R7	1
E-004	D	Fixed Site 5 - North Shore Channel	42.0446	-87.7097	10/29/2013	624D	5	North End Run 6	1
E-004	D	Fixed Site 5 - North Shore Channel	42.0659	-87.6866	10/29/2013	620D	5	North end R2	1
E-004	D	Fixed Site 5 - North Shore Channel	42.0751	-87.6854	10/29/2013	619D	5	Wilmette Pump	1
E-003	D	Random Area 4 - North Br. Chi. River & North Shore Channel	42.0471	-87.7096	11/20/2012	319A	9	NSC Randoms	1
E-004	D	Random Area 4 - North Br. Chi. River & North Shore Channel	41.9086	-87.6578	9/29/2016	2.0161E+15	9	North Branch RR1	1
E-004	D	Random Area 4 - North Br. Chi. River & North Shore Channel	41.933	-87.6835	9/26/2016	2.0161E+15	9	NBCREF RS47	1
E-004	D	Random Area 4 - North Br. Chi. River & North Shore Channel	42.0412	-87.7096	6/11/2014	380X	9	RA4 RS21	2
E-004	D	Fixed Site 5 - North Shore Channel	42.0665	-87.6864	9/17/2014	904X	5	NORTHSHORE FS2	1
E-004	D	Fixed Site 5 - North Shore Channel	42.0623	-87.6888	9/22/2014	813X	5	NORTHSHORE	1
E-004	D	Fixed Site 5 - North Shore Channel	42.0563	-87.7009	9/17/2014	906X	5	NORTHSHORE FS4	1
E-004	D	Fixed Site 5 - North Shore Channel	42.0526	-87.7081	6/18/2014	421X	5	FS5 RUN4	2
E-004	D	Fixed Site 5 - North Shore Channel	42.0278	-87.7101	6/10/2015	150EF	5	NORTHSHORE RS12	1



Locations of Illinois Department of Natural Resources Banded Killifish Records on the North Shore Channel and North Branch of the Chicago River 2012 to 2017.

From: Hill, Patti <pattih@illinois.edu>
Sent: Monday, October 30, 2017 4:01 PM
To: Minarik, Thomas
Subject: RE: Sensitive Area Considerations for National Pollutant Discharge Elimination System Permit Number IL0028088

Dear Mr. Minarik,
Please accept our apologies for not responding to your request earlier. Our Interim Director, Dr. Kevin O'Brien, never received the original letter so when your email was received it was sent to our Section Heads and staff to make sure there were no concerns about this area. We confirm that we have received the letter and have no comments.
Thank you,

Patti
Patti Hill
Assistant to the Director
Illinois State Water Survey
Prairie Research Institute, University of Illinois
2204 Griffith Dr.
Champaign, IL 61820
Phone: 217-244-5459
http://www.isws.illinois.edu/

From: Minarik, Thomas [mailto:MinarikT@mwrd.org]
Sent: Thursday, October 19, 2017 2:52 PM
To: Hill, Patti
Subject: Sensitive Area Considerations for National Pollutant Discharge Elimination System Permit Number IL0028088

Hello Mr. O'Brien,

The Metropolitan Water Reclamation District of Greater Chicago sent the attached letter dated May 26, 2017 requesting any information or comment you may have regarding sensitive areas in the Des Plaines River, North Branch Chicago River, and North Shore Channel near the District's combined sewer outfalls. If you wouldn't mind, could you please confirm that you received the letter and have no comments? We are still accepting comments if you choose. Please respond by November 30, 2017.

Thank you.

Thomas Minarik Jr.
Senior Aquatic Biologist
Metropolitan Water Reclamation District of Greater Chicago
6001 West Pershing Rd.
Cicero, IL 60804-4112
(708) 588-4223
MinarikT@mwrd.org

DEPARTMENT OF WATER MANAGEMENT

CITY OF CHICAGO

November 24, 2017

Edward Podczerwinski
Metropolitan Water Reclamation District of Greater Chicago
6001 West Pershing Road
Chicago, Illinois 60804-4112

Re: Sensitive Area Considerations for NPDES Permit No. IL0028088, Discharge Numbers 101, 102, 103, 104, 105, 106, 107, 109, and 110

Dear Mr. Podczerwinski:

We are in receipt of your letter, dated May 26, 2017, requesting information or comments regarding the sensitive areas in the North Branch of the Chicago River and North Shore Channel.

Thank you for extending the review period until November 30, 2017. We have reviewed the information and have no comments or additional information at this time.

You may contact Department of Water Management Commissioner's Office at (312) 744-7001 if you have any questions.

Sincerely,

Randy Conner
Commissioner

CC: William Cheaks – DWM
Burt Rezko – DWM
Bulent Agar – DWM
Sid Osakada – DWM
Brendan Schreiber – DWM
Cory Windland – CTR
Javier Briz – CTR

From: Breitenbach, Cathy <cathy.breitenbach@chicagoparkdistrict.com>
Sent: Wednesday, October 25, 2017 10:39 AM
To: Minarik, Thomas
Cc: Sullivan, Michelle
Subject: Sensitive area considerations for NPDES permit

Mr. Minarik,

Your email regarding the comment period for sensitive area considerations for NPDES permit number IL 0028088 was forwarded to me.

The Chicago Park District is not aware of any sensitive areas in the proximity of NPDES Discharge Numbers 101 through 110. If you need any further documentation from us, please let me know.

Thank you,

Cathy

Cathy Breitenbach, LEED AP
Director of Cultural & Natural Resources| Chicago Park District
312-742-4946
cathy.breitenbach@chicagoparkdistrict.com
www.chicagoparkdistrict.com

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO
Sensitive Area Response Form

Name of Responding Organization: Forest Preserves of Cook County
Name of Person Responding: Charles O'Leary
Address: 536 N. Harlem Ave
River Forest, IL 60305

Telephone Number: 7087711008
Signature of Respondent:

Subject: NPDES Permit Number IL0028088

Discharge Number(s) 101-107; 109-110

We have examined our records and determined that the subject discharges do ____/ do not X fall within one or more of the following categories of sensitive areas:

(Circle all that apply)
1. Designated Outstanding National Resource Waters.
2. National Marine Sanctuaries
3. Waters with threatened or endangered species and their habitat.
4. Shellfish beds.
5. Waters with primary contact recreation.
6. Public drinking water intakes or designated protection areas.

Our determination is based on the attached documentation:

(Supply supporting documentation for each category and reference the source in the space provided below)

The Forest Preserves Henry De Tonty Woods has low woods adjacent to the CSSC near Willow Springs IL. However we are not aware of any of the six categories being present at that site.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO

Sensitive Area Response Form

Name of Responding Organization: Village of Wilmette

Name of Person Responding: Brigitte Burger-Raish

Address: 1200 Wilmette Ave
Wilmette, IL 60091

Telephone Number: 847·853·7627

Signature of Respondent:

Subject: NPDES Permit Number IL0028088

Discharge Number(s) 101

We have examined our records and determined that the subject discharges do____/ do not X fall within one or more of the following categories of sensitive areas:

(Circle all that apply)

1. Designated Outstanding National Resource Waters.
2. National Marine Sanctuaries
3. Waters with threatened or endangered species and their habitat.
4. Shellfish beds.
5. Waters with primary contact recreation.
6. Public drinking water intakes or designated protection areas.

Our determination is based on the attached documentation:

(Supply supporting documentation for each category and reference the source in the space provided below)

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO
Sensitive Area Response Form

Name of Responding Organization: Village of Lincolnwood

Name of Person Responding: Andrew Letson

Address: 6900 N. Lincoln Ave

Lincolnwood, IL 60712

Telephone Number: 847-675-0888

Signature of Respondent:

Subject: NPDES Permit Number IL0028088

Discharge Number(s) 106

We have examined our records and determined that the subject discharges do ____ / do not X fall within one or more of the following categories of sensitive areas:

(Circle all that apply)

1. Designated Outstanding National Resource Waters.
2. National Marine Sanctuaries
3. Waters with threatened or endangered species and their habitat.
4. Shellfish beds.
5. Waters with primary contact recreation.
6. Public drinking water intakes or designated protection areas.

Our determination is based on the attached documentation:

(Supply supporting documentation for each category and reference the source in the space provided below)

We are not aware of any endangered species or shellfish beds.

We are aware that individuals boat in the North shore channel, but based on the definition provided, this does not qualify as primary contact recreation.

DES PLAINES
ILLINOIS

PUBLIC WORKS AND
ENGINEERING DEPARTMENT
1420 Miner Street
Des Plaines, IL 60016
Tel: 847-391-5390
www.desplaines.org

6.22.2017

Date: June 19, 2017

To: Mr. Edward W. Podczerwinski, P.E.
c/o Ms. Jennifer Wasik
Lue-Hing R&D Complex
6001 W. Pershing Road
Cicero, IL 60804-4112

From: Derek Peebles, P.E.
847-391-5389
dpeebles@desplaines.org

Re: NPDES Sensitive Area Consideration

Request for the following action:

- ☐ For your Records
- ☑ Per your Request
- ☐ Signature Required
- ☐ For your Comments
- ☐ For your Review
- ☐ For your Approval

Message

Please find attached, the completed Sensitive Area Response form, for Discharge Number 109, Rand Road, Des Plaines River. A copy of the original requesting letter is also attached for reference.

Please feel free to contact me if you have any questions.

METROPOLITAN WATER RECLAMATION DISTRICT OF GREATER CHICAGO
Sensitive Area Response Form

Name of Responding Organization: City of Des Plaines

Name of Person Responding: Derek Peebles, P.E.

Address: City of Des Plaines
1420 Miner St
Des Plaines, IL 60016

Telephone Number: 847-391-5390

Signature of Respond.....

Subject: NPDES Permit Number IL0028088

Discharge Number(s) 109 Rand Road Des Plaines River

We have examined our records and determined that the subject discharges do____/ do not X fall within one or more of the following categories of sensitive areas:

(Circle all that apply)
1. Designated Outstanding National Resource Waters.
2. National Marine Sanctuaries
3. Waters with threatened or endangered species and their habitat.
4. Shellfish beds.
5. Waters with primary contact recreation.
6. Public drinking water intakes or designated protection areas.

Our determination is based on the attached documentation:

(Supply supporting documentation for each category and reference the source in the space provided below)

We have reviewed the MWRD letter dated May 26, 2017 and do not have any information that would suggest that the discharge area meets the USEPA definition of a sensitive area. With regard to category 5, the only observed use of the river in this area is occasional canoeing or kayaking. In institutional memory there is no recollection of individuals using the river for swimming. And the urbanized nature of the area and the river surroundings and banks are not suggestive of a location intended for swimming. Also the river is generally shallow, except in flood times when no rational individual would mistake it as suitable for swimming.

APPENDIX C

FIELD DATA SHEETS AND NARRATIVE OBSERVATION SUMMARIES FOR EACH ASSESSED OUTFALL

NORTH SHORE CHANNEL
DISCHARGE NUMBER 101

On October 27, 2017, a sensitive area assessment survey was conducted in the North Shore Channel along a 200 foot reach downstream from Discharge No. 101. The left and right banks were inspected visually for various aquatic and riparian habitat features, and observations of odors were noted. At 50 and 200 foot locations downstream of the outfall, the water depth was measured across transects and the sediment composition was assessed.

The average seven-day, ten-year low flow below Discharge No. 101 in the North Shore Channel is 0.0 cfs. The channel width of the study reach is 99 feet. Side depths ranged from 1.5 to 8.0 feet, while the center depth ranged from 4.0 to 9.0 feet. The channel morphology is classified as a run and the banks are channelized. The riparian land use is 100 percent urban commercial or industrial on the right bank and 50 percent forest and 50 percent urban commercial or industrial on the left bank. This outfall is located at the upstream end of the channel where the Wilmette Pumping Station allows diversion of Lake Michigan water into the channel via gates and pumps on an as needed basis. Direct access to the channel from the banks is limited due to the vertical concrete walls, a sheet pile wall, and fences. Access to the water from boats is possible. There was no boat ramp visible and no log jams or debris build-up was observed. Aquatic vegetation was abundant at the 200 foot location and appeared to be predominantly made up of invasive Eurasian watermilfoil. There was no sanitary odor in the water or sanitary debris on the banks. There was a Village of Wilmette outfall sign posted on the left bank.

The sediment composition at the 50 foot location in the center of the waterway was mostly silt with some clay and plant debris, on the left side it was mostly clay with some gravel and sand, and on the right side it was mostly gravel with some cobble. The sediment composition at the 200 foot location in the center of the waterway was mostly plant debris with some silt, on the left side it was mostly plant debris with some silt, and on the right side it was mostly silt with some plant debris, cobble and gravel. There was no oil in any of the samples. Sediment odors were observed in 4 of the 6 samples and the types of odors included musty, septic, and organic. The sediment colors were a grayish/black. The sediment deposition at the 50 foot location was 0.4 feet on the left side, 3.0 feet in the center, and 0.2 feet on the right side. The sediment deposition at the 200 foot location was 0.2 feet on the left side, 1.0 feet in the center, and 0.3 feet on the right side.

Note: Left-right orientation is upstream, assuming that the dominant direction of flow in the waterway is away from Lake Michigan.

Metropolitan Water Reclamation District of Greater Chicago
Sensitive Area Assessment

Date 10 / 27 / 17 **Time** 10 : 14

Observer TM, DG, PBL **Waterbody** North Shore Channel

CSO Number 101 **Reach Length Downstream of CSO** 200 feet

Morphology ( ) POOL (×) RUN ( ) RIFFLE **Channel Width (ft)** 99

Water Depth at (50 ft) Left 5.1 Center 9.0 Right 8.0

Water Depth at (200 ft) Left 1.5 Center 4.0 Right 1.5

Channelization (×) YES ( ) NO

Water Level ( ) LOW (×) NORMAL ( ) HIGH ( ) FLOODED

LEFT BANK (observations)

Man-made Structures ( ) DAM ( ) RIPRAP ( ) BRIDGE ( ) LEVEE ( ) ROCK GABIONS ( ) SHEET PILINGS (×) OTHER pump station, concrete wall, old wood pilings

Bank Erosion (×) SLIGHT ( ) MODERATE ( ) SEVERE

Logjam or Debris Build-up ( ) YES (×) NO

Physical Obstacle Blocking Access (×) YES ( ) NO description: fence

Signs Posted (×) YES ( ) NO description: Wilmette city outfall

Boat Ramp/Access Point Visible ( ) YES (×) NO description

Aquatic Vegetation ( ) NO (×) YES if yes → ( ) FLOATING (×) ATTACHED

Sanitary Waste Odor in Water ( ) YES (×) NO

Sanitary Debris on Banks ( ) YES (×) NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	50 %
URBAN COMMERCIAL/INDUSTRIAL	50 %	ROW CROPS	%
OTHER (Specify)	%		

RIGHT BANK (observations)

Man-made Structures ( ) DAM (×) RIPRAP ( ) BRIDGE ( ) LEVEE ( ) ROCK GABIONS (×) SHEET PILINGS (×) OTHER pump station, concrete wall, new sheet pile wall with rip rap

Bank Erosion ( ) SLIGHT ( ) MODERATE ( ) SEVERE

Logjam or Debris Build-up ( ) YES (×) NO

Physical Obstacle Blocking Access (×) YES ( ) NO description: fence

Signs Posted ( ) YES (×) NO description

Boat Ramp/Access Point Visible ( ) YES (×) NO description

Aquatic Vegetation ( ) NO (×) YES if yes → ( ) FLOATING (×) ATTACHED

Sanitary Waste Odor in Water ( ) YES (×) NO

Sanitary Debris on Banks ( ) YES (×) NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	%
URBAN COMMERCIAL/INDUSTRIAL	100 %	ROW CROPS	%
OTHER (Specify)	%		

SEDIMENT COMPOSITION (observations)

	50 ft			200 ft		
	Left	Center	Right	Left	Center	Right
% Plant Debris		30		60	60	20
% Clay	70	30				
% Silt		40		40	40	50
% Sludge						
% Sand	10					
% Gravel	20		60			10
% Cobble			40			20
% Boulder						
% Bedrock/Concrete						
% nails & screws	<1					
% quagga mussels	<1					
Sediment Color	gray/brown	black/gray	gray/balck	gray/black	gray/black	gray/black
Sediment Odor	none	musty	none	septic	organic	organic
Depth of Fines, ft.	0.4	3.0	0.2	0.2	1.0	0.3

Oil in Sediment [×] NONE [ ] LIGHT [ ] MODERATE [ ] HEAVY

Additional Remarks

Abundant invasive eurasion milfoil at 200 foot location.

mark X in [ ]

Sand (<2mm diameter)
Gravel (2mm to <16mm diameter)
Cobble (16mm to <256mm diameter)
Boulder (>256mm diameter)

NORTH SHORE CHANNEL
DISCHARGE NUMBER 102

On October 27, 2017, a sensitive area assessment survey was conducted in the North Shore Channel along a 200 foot reach downstream from Discharge No. 102. The left and right banks were inspected visually for various aquatic and riparian habitat features, and observations of odors were noted. At 50 and 200 foot locations downstream of the outfall, the water depth was measured across transects and the sediment composition was assessed.

The average seven-day, ten-year low flow below Discharge No. 102 in the North Shore Channel is 0.0 cfs. The channel width of the study reach is 84 feet. Side depths ranged from 1.1 to 1.5 feet, while the center depth ranged from 5.0 to 5.2 feet. The channel morphology is classified as a run and the banks are channelized. The riparian land use is 100 percent forest on both the right and left banks. This outfall is located on the left ascending bank just downstream of Green Bay Road. Direct access to the channel from the banks is limited due to the moderately eroded, steep, wooded banks, and fences. Access to the water from boats is possible. There was no boat ramp visible and no log jams or debris build-up was observed. Aquatic vegetation was observed and there was no sanitary odor in the water or sanitary debris on the banks. There was a District outfall sign posted on the left bank and a District caution sign posted on the right bank.

The sediment composition at the 50 foot location in the center of the waterway was mostly silt and sludge with some plant debris, on the left side it was mostly silt and sludge with some plant debris, and on the right side it was mostly clay with some silt and sand. The sediment composition at the 200 foot location in the center of the waterway was mostly silt and sludge with a little plant debris, sand, and gravel, on the left side it was mostly sludge and silt with some plant debris and sand, and on the right side it was mostly silt and sludge with some clay and plant debris. There was a light amount of oil observed in the samples. Sediment odors were observed in all 6 samples and the type of odor was sludge. The sediment colors were a blackish/gray, black, or gray. The sediment deposition at the 50 foot location was 0.4 feet on the left side, 2.0 feet in the center, and 1.4 feet on the right side. The sediment deposition at the 200 foot location was 0.4 feet on the left side, 4.8 feet in the center, and 0.9 feet on the right side.

Note: Left-right orientation is upstream, assuming that the dominant direction of flow in the waterway is away from Lake Michigan.

Metropolitan Water Reclamation District of Greater Chicago
Sensitive Area Assessment

Date 10 / 27 / 17 **Time** 11 : 03

Observer TM, DG, PBL **Waterbody** North Shore Channel

CSO Number 102 **Reach Length Downstream of CSO** 200 feet

Morphology ( ) POOL (×) RUN ( ) RIFFLE **Channel Width (ft)** 84

Water Depth at (50 ft) Left 1.5 Center 5.0 Right 1.1

Water Depth at (200 ft) Left 1.4 Center 5.2 Right 1.5

Channelization (×) YES ( ) NO

Water Level ( ) LOW (×) NORMAL ( ) HIGH ( ) FLOODED

LEFT BANK (observations)

Man-made Structures ( ) DAM ( ) RIPRAP ( ) BRIDGE ( ) LEVEE ( ) ROCK GABIONS ( ) SHEET PILINGS (×) OTHER outfall at 200 ft and 0 ft

Bank Erosion ( ) SLIGHT (×) MODERATE ( ) SEVERE

Logjam or Debris Build-up ( ) YES (×) NO

Physical Obstacle Blocking Access (×) YES ( ) NO description: fence

Signs Posted (×) YES ( ) NO description: MWRD outfall

Boat Ramp/Access Point Visible ( ) YES (×) NO description

Aquatic Vegetation ( ) NO (×) YES if yes → ( ) FLOATING (×) ATTACHED

Sanitary Waste Odor in Water ( ) YES (×) NO

Sanitary Debris on Banks ( ) YES (×) NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	100 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

RIGHT BANK (observations)

Man-made Structures ( ) DAM ( ) RIPRAP ( ) BRIDGE ( ) LEVEE ( ) ROCK GABIONS ( ) SHEET PILINGS ( ) OTHER

Bank Erosion ( ) SLIGHT (×) MODERATE ( ) SEVERE

Logjam or Debris Build-up ( ) YES (×) NO

Physical Obstacle Blocking Access (×) YES ( ) NO description: fence

Signs Posted (×) YES ( ) NO description: MWRD caution sign

Boat Ramp/Access Point Visible ( ) YES (×) NO description

Aquatic Vegetation ( ) NO (×) YES if yes → ( ) FLOATING (×) ATTACHED

Sanitary Waste Odor in Water ( ) YES (×) NO

Sanitary Debris on Banks ( ) YES (×) NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	100 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

SEDIMENT COMPOSITION (observations)

	50 ft			200 ft		
	Left	Center	Right	Left	Center	Right
% Plant Debris	10	10		10	10	10
% Clay			70		20	
% Silt	60	50	20	30	40	40
% Sludge	30	40		50	30	30
% Sand			10	10		10
% Gravel						10
% Cobble						
% Boulder						
% Bedrock/Concrete						
%_____						
%_____						
Sediment Color	Black/Gray	Black	Gray	Gray/Black	Black/Gray	Black/Gray
Sediment Odor	sludge	sludge	sludge	sludge	sludge	sludge
Depth of Fines, ft.	0.4	2.0	1.4	0.4	4.8	0.9

Oil in Sediment ☐ NONE ☒ LIGHT ☐ MODERATE ☐ HEAVY

Additional Remarks _____

mark X in ☐

Sand (<2mm diameter)
Gravel (2mm to <16mm diameter)
Cobble (16mm to <256mm diameter)
Boulder (>256mm diameter)

NORTH SHORE CHANNEL
DISCHARGE NUMBER 103

On October 27, 2017, a sensitive area assessment survey was conducted in the North Shore Channel along a 200 foot reach downstream from Discharge No. 103. The left and right banks were inspected visually for various aquatic and riparian habitat features, and observations of odors were noted. At 50 and 200 foot locations downstream of the outfall, the water depth was measured across transects and the sediment composition was assessed.

The average seven-day, ten-year low flow below Discharge No. 103 in the North Shore Channel is 0.0 cfs. The channel width of the study reach is 105 feet. Side depths ranged from 1.0 to 1.6 feet, while the center depth ranged from 3.7 to 5.3 feet. The channel morphology is classified as a run and the banks are channelized. The riparian land use is 100 percent forest on both the right and left banks. This outfall is located on the right ascending bank just downstream of Emerson Street. Direct access to the channel from the banks is limited due to the moderately eroded, steep, wooded banks, and fences. Access to the water from boats is possible. There was no boat ramp visible and no log jams or debris build-up was observed. Aquatic vegetation was observed and there was no sanitary odor in the water or sanitary debris on the banks. There was a District outfall sign posted on the right bank and a City of Chicago outfall sign posted on the left bank.

The sediment composition at the 50 foot location in the center of the waterway was mostly silt and sludge with some plant debris, on the left side it was mostly gravel and cobble with some sand, and on the right side it was mostly sludge with some silt, sand, and plant debris. The sediment composition at the 200 foot location in the center of the waterway was mostly silt and plant debris, with a little sludge, on the left side it was mostly silt with some plant debris and sand, and on the right side it was mostly silt with some sand, sludge, and plant debris. There was a light amount of oil observed in the samples. Sediment odors were observed in 5 of 6 samples and the type of odors were organic, septic, and sludge. The sediment colors were a blackish/gray, black, or gray. The sediment deposition at the 50 foot location was <0.1 feet on the left side, 5.5 feet in the center, and 0.5 feet on the right side. The sediment deposition at the 200 foot location was 0.8 feet on the left side, 6.0 feet in the center, and <0.1 feet on the right side.

Note: Left-right orientation is upstream, assuming that the dominant direction of flow in the waterway is away from Lake Michigan.

Metropolitan Water Reclamation District of Greater Chicago
Sensitive Area Assessment

Date 10 / 27 / 17 **Time** 11 : 50

Observer TM, DG, PBL **Waterbody** North Shore Channel

CSO Number 103 **Reach Length Downstream of CSO** 200 feet

Morphology ( ) POOL (×) RUN ( ) RIFFLE **Channel Width (ft)** 105

Water Depth at (50 ft) Left 1.0 Center 5.3 Right 1.6

Water Depth at (200 ft) Left 1.0 Center 3.7 Right 1.3

Channelization (×) YES ( ) NO

Water Level ( ) LOW (×) NORMAL ( ) HIGH ( ) FLOODED

LEFT BANK (observations)

Man-made Structures ( ) DAM (×) RIPRAP ( ) BRIDGE ( ) LEVEE ( ) ROCK GABIONS ( ) SHEET PILINGS (×) OTHER outfall

Bank Erosion ( ) SLIGHT (×) MODERATE ( ) SEVERE

Logjam or Debris Build-up ( ) YES (×) NO

Physical Obstacle Blocking Access (×) YES ( ) NO description: fence

Signs Posted (×) YES ( ) NO description: City of Chicago outfall

Boat Ramp/Access Point Visible ( ) YES (×) NO description

Aquatic Vegetation ( ) NO (×) YES if yes → ( ) FLOATING (×) ATTACHED

Sanitary Waste Odor in Water ( ) YES (×) NO

Sanitary Debris on Banks ( ) YES (×) NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	100 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

RIGHT BANK (observations)

Man-made Structures ( ) DAM ( ) RIPRAP ( ) BRIDGE ( ) LEVEE ( ) ROCK GABIONS ( ) SHEET PILINGS (×) OTHER outfall

Bank Erosion ( ) SLIGHT (×) MODERATE ( ) SEVERE

Logjam or Debris Build-up ( ) YES (×) NO

Physical Obstacle Blocking Access (×) YES ( ) NO description: fence

Signs Posted (×) YES ( ) NO description: MWRD outfall

Boat Ramp/Access Point Visible ( ) YES (×) NO description

Aquatic Vegetation (×) NO ( ) YES if yes → ( ) FLOATING ( ) ATTACHED

Sanitary Waste Odor in Water ( ) YES (×) NO

Sanitary Debris on Banks ( ) YES (×) NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	100 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

SEDIMENT COMPOSITION (observations)

	50 ft			200 ft		
	Left	Center	Right	Left	Center	Right
% Plant Debris		20	10	20	30	10
% Clay						
% Silt		60	20	70	60	60
% Sludge		20	60		10	10
% Sand	10		10	10		20
% Gravel	80					
% Cobble	10					
% Boulder						
% Bedrock/Concrete						
%_____						
%_____						
Sediment Color	Gray	Black	Gray/Black	Gray/Black	Black	Gray/Black
Sediment Odor	none	organic	septic	organic	organic	sludge
Depth of Fines, ft.	<0.1	5.5	0.5	0.8	6.0	<0.1

Oil in Sediment ☐ NONE ☒ LIGHT ☐ MODERATE ☐ HEAVY

Additional Remarks _____

mark X in ☐

Sand (<2mm diameter)
Gravel (2mm to <16mm diameter)
Cobble (16mm to <256mm diameter)
Boulder (>256mm diameter)

NORTH SHORE CHANNEL
DISCHARGE NUMBER 104

On October 27, 2017, a sensitive area assessment survey was conducted in the North Shore Channel along a 200 foot reach downstream from Discharge No. 104. The left and right banks were inspected visually for various aquatic and riparian habitat features, and observations of odors were noted. At 50 and 200 foot locations downstream of the outfall, the water depth was measured across transects and the sediment composition was assessed.

The average seven-day, ten-year low flow below Discharge No. 104 in the North Shore Channel is 0.0 cfs. The channel width of the study reach is 96 feet. Side depths ranged from 1.0 to 10.0 feet, while the center depth ranged from 3.5 to 6.0 feet. The channel morphology is classified as a run and the banks are channelized. The riparian land use is 100 percent forest on both the right and left banks. This outfall is located on the right ascending bank north of Dempster Street. Direct access to the channel from the banks is limited due to the moderately eroded, steep, wooded banks, and fences. Access to the water from boats is possible. There was no boat ramp visible and no log jams or debris build-up was observed. Aquatic vegetation was observed and there was no sanitary odor in the water or sanitary debris on the banks. The apron to the concrete outfall was covered by riprap stone and there was another City of Chicago outfall downstream of it. There was a District and City of Chicago outfall sign posted on the right bank.

The sediment composition at the 50 foot location in the center of the waterway was mostly silt and plant debris with some sand and sanitary debris, on the left side it was mostly silt with plant debris and sand, and on the right side it was 100 percent bedrock and the ponar was not used. The sediment composition at the 200 foot location in the center of the waterway was mostly silt with some sand and sludge, on the left side it was mostly silt with sludge, plant debris, and sand, and on the right side it was mostly silt with some sand, sludge, and plant debris. There was a light amount of oil observed in the samples. Sediment odors were observed in 5 samples and the type of odors were organic and sludge. The sediment colors were a grayish/black. The sediment deposition at the 50 foot location was 1.4 feet on the left side, 4.5 feet in the center, and 0.0 feet on the right side. The sediment deposition at the 200 foot location was 1.2 feet on the left side, 2.7 feet in the center, and 1.5 feet on the right side.

Note: Left-right orientation is upstream, assuming that the dominant direction of flow in the waterway is away from Lake Michigan.

Metropolitan Water Reclamation District of Greater Chicago
Sensitive Area Assessment

Date 10 / 27 / 17 **Time** 12 : 28

Observer TM, DG, PBL **Waterbody** North Shore Channel

CSO Number 104 **Reach Length Downstream of CSO** 200 feet

Morphology ( ) POOL (×) RUN ( ) RIFFLE **Channel Width (ft)** 96

Water Depth at (50 ft) Left 1.2 Center 6.0 Right 10.0

Water Depth at (200 ft) Left 1.2 Center 3.5 Right 1.0

Channelization (×) YES ( ) NO

Water Level ( ) LOW (×) NORMAL ( ) HIGH ( ) FLOODED

LEFT BANK (observations)

Man-made Structures ( ) DAM ( ) RIPRAP ( ) BRIDGE ( ) LEVEE ( ) ROCK GABIONS ( ) SHEET PILINGS ( ) OTHER

Bank Erosion ( ) SLIGHT (×) MODERATE ( ) SEVERE

Logjam or Debris Build-up ( ) YES (×) NO

Physical Obstacle Blocking Access (×) YES ( ) NO description: fence

Signs Posted ( ) YES (×) NO description

Boat Ramp/Access Point Visible ( ) YES (×) NO description

Aquatic Vegetation ( ) NO (×) YES if yes → ( ) FLOATING (×) ATTACHED

Sanitary Waste Odor in Water ( ) YES (×) NO

Sanitary Debris on Banks ( ) YES (×) NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	100 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

RIGHT BANK (observations)

Man-made Structures ( ) DAM (×) RIPRAP ( ) BRIDGE ( ) LEVEE ( ) ROCK GABIONS ( ) SHEET PILINGS (×) OTHER outfall

Bank Erosion ( ) SLIGHT (×) MODERATE ( ) SEVERE

Logjam or Debris Build-up ( ) YES (×) NO

Physical Obstacle Blocking Access (×) YES ( ) NO description: fence

Signs Posted (×) YES ( ) NO description: MWRD and City of Chicago outfall

Boat Ramp/Access Point Visible ( ) YES (×) NO description

Aquatic Vegetation (×) NO ( ) YES if yes → ( ) FLOATING ( ) ATTACHED

Sanitary Waste Odor in Water ( ) YES (×) NO

Sanitary Debris on Banks ( ) YES (×) NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	100 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

SEDIMENT COMPOSITION (observations)

	50 ft			200 ft		
	Left	Center	Right	Left	Center	Right
% Plant Debris	20	30		10		10
% Clay						
% Silt	60	50		60	70	60
% Sludge				20	10	10
% Sand	20	10		10	20	20
% Gravel						
% Cobble						
% Boulder						
% Bedrock/Concrete			100			
% sanitary debris		10				
%_____						
Sediment Color	Gray/Black	Gray/Black		Gray/Black	Gray/Black	Gray/Black
Sediment Odor	organic	organic		sludge	organic	organic
Depth of Fines, ft.	1.4	4.5	0.0	1.2	2.7	1.5

Oil in Sediment ☐ NONE ☒ LIGHT ☐ MODERATE ☐ HEAVY

Additional Remarks

Unable to use ponar at 50 foot right location.

mark X in ☐

Sand (<2mm diameter)
Gravel (2mm to <16mm diameter)
Cobble (16mm to <256mm diameter)
Boulder (>256mm diameter)

NORTH SHORE CHANNEL
DISCHARGE NUMBER 105

On November 13, 2017, a sensitive area assessment survey was conducted in the North Shore Channel along a 200 foot reach downstream from Discharge No. 105. The left and right banks were inspected visually for various aquatic and riparian habitat features, and observations of odors were noted. At 50 and 200 foot locations downstream of the outfall, the water depth was measured across transects and the sediment composition was assessed.

The average seven-day, ten-year low flow below Discharge No. 105 in the North Shore Channel is 265 cfs. The channel width of the study reach is 81 feet. Side depths ranged from 0.2 to 2.0 feet, while the center depth ranged from 8.0 to 8.7 feet. The channel morphology is classified as a run and the banks are channelized. The riparian land use is 100 percent forest on both the right and left banks. This outfall is located on the left ascending bank north of Howard Street. Direct access to the channel from the banks is limited due to the moderately eroded, steep, wooded banks, and fences. Access to the water from boats is possible. There was no boat ramp visible and no log jams or debris build-up was observed. Aquatic vegetation was observed and there was a sanitary waste odor in the water on the left bank as well as sanitary debris on the left bank. There was a District outfall sign on the left bank and a District caution sign posted on the right bank.

The sediment composition at the 50 foot location in the center of the waterway was mostly gravel and some sand, on the left side it was mostly gravel with sand and cobble, and on the right side it was mostly gravel with sand and cobble. The sediment composition at the 200 foot location in the center of the waterway was mostly gravel with some sand, on the left side it was mostly gravel with sand and cobble, and on the right side it was mostly gravel with some sand and cobble. The ponar sampler was unable to be used for the 50 and 200 foot side locations. There was no oil observed in the samples and sediment odors were not observed. The sediment colors were a tan/gray. The sediment deposition at the 50 foot location was 0.4 feet on the left side, 0.3 feet in the center, and 0.3 feet on the right side. The sediment deposition at the 200 foot location was <0.1 feet on the left side, 0.3 feet in the center, and 0.2 feet on the right side.

Note: Left-right orientation is upstream, assuming that the dominant direction of flow in the waterway is away from Lake Michigan.

Metropolitan Water Reclamation District of Greater Chicago
Sensitive Area Assessment

Date 11 / 13 / 17 **Time** 11 : 21

Observer TM, DG **Waterbody** North Shore Channel

CSO Number 105 **Reach Length Downstream of CSO** 200 feet

Morphology ( ) POOL (×) RUN ( ) RIFFLE **Channel Width (ft)** 81

Water Depth at (50 ft) Left 0.6 Center 8.0 Right 0.7

Water Depth at (200 ft) Left 2.0 Center 8.7 Right 0.2

Channelization (×) YES ( ) NO

Water Level ( ) LOW (×) NORMAL ( ) HIGH ( ) FLOODED

LEFT BANK (observations)

Man-made Structures ( ) DAM ( ) RIPRAP (×) BRIDGE ( ) LEVEE ( ) ROCK GABIONS ( ) SHEET PILINGS (×) OTHER concrete outfall

Bank Erosion ( ) SLIGHT (×) MODERATE ( ) SEVERE

Logjam or Debris Build-up ( ) YES (×) NO

Physical Obstacle Blocking Access (×) YES ( ) NO description: fence

Signs Posted (×) YES ( ) NO description: MWRD outfall

Boat Ramp/Access Point Visible ( ) YES (×) NO description

Aquatic Vegetation ( ) NO (×) YES if yes → ( ) FLOATING (×) ATTACHED

Sanitary Waste Odor in Water (×) YES ( ) NO

Sanitary Debris on Banks (×) YES ( ) NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	100 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

RIGHT BANK (observations)

Man-made Structures ( ) DAM ( ) RIPRAP (×) BRIDGE ( ) LEVEE ( ) ROCK GABIONS ( ) SHEET PILINGS ( ) OTHER

Bank Erosion ( ) SLIGHT (×) MODERATE ( ) SEVERE

Logjam or Debris Build-up ( ) YES (×) NO

Physical Obstacle Blocking Access (×) YES ( ) NO description: fence

Signs Posted (×) YES ( ) NO description: MWRD caution

Boat Ramp/Access Point Visible ( ) YES (×) NO description

Aquatic Vegetation ( ) NO (×) YES if yes → ( ) FLOATING (×) ATTACHED

Sanitary Waste Odor in Water ( ) YES (×) NO

Sanitary Debris on Banks ( ) YES (×) NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	100 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

SEDIMENT COMPOSITION (observations)

	50 ft			200 ft		
	Left	Center	Right	Left	Center	Right
% Plant Debris						
% Clay						
% Silt						
% Sludge						
% Sand	30	20	30	30	10	30
% Gravel	60	80	60	60	80	60
% Cobble	10		10	10		10
% Boulder						
% Bedrock/Concrete						
%_____						
%_____						
Sediment Color		tan/gray			tan/gray	
Sediment Odor		none			none	
Depth of Fines, ft.	0.4	0.3	0.3	<0.1	0.3	0.2

Oil in Sediment [×] NONE [ ] LIGHT [ ] MODERATE [ ] HEAVY

Additional Remarks

Unable to use ponar at 50 foot and 200 foot left and right bank locations.

mark X in [ ]

Sand (<2mm diameter)
Gravel (2mm to <16mm diameter)
Cobble (16mm to <256mm diameter)
Boulder (>256mm diameter)

NORTH SHORE CHANNEL
DISCHARGE NUMBER 106

On November 13, 2017, a sensitive area assessment survey was conducted in the North Shore Channel along a 200 foot reach downstream from Discharge No. 106. The left and right banks were inspected visually for various aquatic and riparian habitat features, and observations of odors were noted. At 50 and 200 foot locations downstream of the outfall, the water depth was measured across transects and the sediment composition was assessed.

The average seven-day, ten-year low flow below Discharge No. 106 in the North Shore Channel is 265 cfs. The channel width of the study reach is 87 feet. Side depths ranged from 1.6 to 3.3 feet, while the center depth ranged from 7.9 to 8.0 feet. The channel morphology is classified as a run and the banks are channelized. The riparian land use is 100 percent forest on both the right and left banks. This outfall is located on the left ascending bank south of Touhy Avenue. Direct access to the channel from the banks is limited due to the moderately eroded, steep, wooded banks, and fences. Access to the water from boats is possible. There was no boat ramp visible and no log jams or debris build-up was observed. Aquatic vegetation was not observed and there was a sanitary waste odor in the water on the left and right banks as well as sanitary debris on the left bank. There was a District outfall sign on the left bank.

The sediment composition at the 50 foot location in the center of the waterway was gravel and plant debris, on the left side it was mostly gravel with sand, and on the right side it was mostly gravel with sand and plant debris. The sediment composition at the 200 foot location in the center of the waterway was mostly sand with some silt, on the left side it was mostly gravel with sand and plant debris, and on the right side it was mostly gravel with some sand and cobble. The ponar sampler was unable to be used for the 50 foot left side location. There was no oil observed in the samples and a musty sediment odor was observed at the 50 foot center location. The sediment colors were a black/brown, black/gray, and gray/brown. The sediment deposition at the 50 foot location was <0.1 feet on the left side, 0.2 feet in the center, and 0.6 feet on the right side. The sediment deposition at the 200 foot location was 0.2 feet on the left side, 0.2 feet in the center, and 1.2 feet on the right side.

Note: Left-right orientation is upstream, assuming that the dominant direction of flow in the waterway is away from Lake Michigan.

Metropolitan Water Reclamation District of Greater Chicago
Sensitive Area Assessment

Date 11 / 13 / 17 **Time** 12 : 00

Observer TM, DG **Waterbody** North Shore Channel

CSO Number 106 **Reach Length Downstream of CSO** 200 feet

Morphology ( ) POOL (×) RUN ( ) RIFFLE **Channel Width (ft)** 87

Water Depth at (50 ft) Left 1.6 Center 7.9 Right 3.3

Water Depth at (200 ft) Left 3.0 Center 8.0 Right 2.0

Channelization (×) YES ( ) NO

Water Level ( ) LOW (×) NORMAL ( ) HIGH ( ) FLOODED

LEFT BANK (observations)

Man-made Structures ( ) DAM ( ) RIPRAP ( ) BRIDGE ( ) LEVEE ( ) ROCK GABIONS ( ) SHEET PILINGS (×) OTHER concrete outfall

Bank Erosion ( ) SLIGHT (×) MODERATE ( ) SEVERE

Logjam or Debris Build-up ( ) YES (×) NO

Physical Obstacle Blocking Access (×) YES ( ) NO description: fence

Signs Posted (×) YES ( ) NO description: MWRD outfall

Boat Ramp/Access Point Visible ( ) YES (×) NO description

Aquatic Vegetation (×) NO ( ) YES if yes → ( ) FLOATING ( ) ATTACHED

Sanitary Waste Odor in Water (×) YES ( ) NO

Sanitary Debris on Banks (×) YES ( ) NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	100 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

RIGHT BANK (observations)

Man-made Structures ( ) DAM ( ) RIPRAP ( ) BRIDGE ( ) LEVEE ( ) ROCK GABIONS ( ) SHEET PILINGS ( ) OTHER

Bank Erosion ( ) SLIGHT (×) MODERATE ( ) SEVERE

Logjam or Debris Build-up ( ) YES (×) NO

Physical Obstacle Blocking Access (×) YES ( ) NO description: fence

Signs Posted ( ) YES (×) NO description

Boat Ramp/Access Point Visible ( ) YES (×) NO description

Aquatic Vegetation (×) NO ( ) YES if yes → ( ) FLOATING ( ) ATTACHED

Sanitary Waste Odor in Water (×) YES ( ) NO

Sanitary Debris on Banks ( ) YES (×) NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	100 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

SEDIMENT COMPOSITION (observations)

	50 ft			200 ft		
	Left	Center	Right	Left	Center	Right
% Plant Debris		50	10	10		
% Clay						
% Silt					10	
% Sludge						
% Sand	30		10	20	90	20
% Gravel	70	50	80	70		70
% Cobble						10
% Boulder						
% Bedrock/Concrete						
%_____						
%_____						
Sediment Color		black/brown	black/gray	black/brown	gray/brown	black/brown
Sediment Odor		musty	none	none	none	none
Depth of Fines, ft.	<0.1	0.2	0.6	0.2	0.2	1.2

Oil in Sediment [×] NONE [ ] LIGHT [ ] MODERATE [ ] HEAVY

Additional Remarks

Unable to use ponar at 50 foot left bank location.

mark X in [ ]

Sand (<2mm diameter)
Gravel (2mm to <16mm diameter)
Cobble (16mm to <256mm diameter)
Boulder (>256mm diameter)

NORTH BRANCH CHICAGO RIVER
DISCHARGE NUMBER 107

On November 13, 2017, a sensitive area assessment survey was conducted in the North Branch Chicago River along a 200 foot reach downstream from Discharge No. 107. The left and right banks were inspected visually for various aquatic and riparian habitat features, and observations of odors were noted. At 50 and 200 foot locations downstream of the outfall, the water depth was measured across transects and the sediment composition was assessed.

The average seven-day, ten-year low flow below Discharge No. 107 in the North Branch Chicago River is 279 cfs. The channel width of the study reach is 72 feet. Side depths ranged from 0.9 to 6.5 feet, while the center depth ranged from 7.2 to 9.1 feet. The channel morphology is classified as a run and the banks are channelized. The riparian land use is 50 percent forest on both the right and left banks, 50 percent urban commercial/industrial on the left bank, and 50 percent urban residential on the right bank. This outfall is located on the left ascending bank north of Lawrence Avenue. Direct access to the channel from the banks is limited due to the moderately eroded, steep, wooded banks, buildings, and fences. Access to the water from boats is possible. There was no boat ramp visible and no log jams or debris build-up was observed. Aquatic vegetation was observed and there was no sanitary waste odor in the water. Sanitary debris was observed on the left and right banks. There was a District outfall sign on the right bank and a no-wake sign on both banks.

The sediment composition at the 50 foot location in the center of the waterway was sand and gravel, on the left side it was gravel and cobble, and on the right side it was mostly gravel with cobble and sand. The sediment composition at the 200 foot location in the center of the waterway was mostly plant debris with some sand, on the left side it was mostly gravel with cobble, and on the right side it was mostly gravel with some cobble. The ponar sampler was unable to be used for the 50 and 200 foot left and right side locations. There was no oil observed in the samples and a musty sediment odor was observed at the 200 foot center location. The sediment colors were a brown/tan and gray/black. The sediment deposition at the 50 foot location was 0.2 feet on the left side, <0.1 feet in the center, and <0.1 feet on the right side. The sediment deposition at the 200 foot location was 0.3 feet on the left side, 0.1 feet in the center, and <0.1 feet on the right side.

Note: Left-right orientation is upstream, assuming that the dominant direction of flow in the waterway is away from Lake Michigan.

Metropolitan Water Reclamation District of Greater Chicago
Sensitive Area Assessment

Date 11 / 13 / 17 **Time** 12 : 41

Observer TM, DG **Waterbody** North Branch Chicago River

CSO Number 107 **Reach Length Downstream of CSO** 200 feet

Morphology ☐ POOL ☒ RUN ☐ RIFFLE **Channel Width (ft)** 72

Water Depth at (50 ft) Left 6.5 Center 7.2 Right 0.9

Water Depth at (200 ft) Left 1.0 Center 9.1 Right 1.0

Channelization ☒ YES ☐ NO

Water Level ☐ LOW ☒ NORMAL ☐ HIGH ☐ FLOODED

LEFT BANK (observations)

Man-made Structures ☐ DAM ☐ RIPRAP ☒ BRIDGE ☐ LEVEE ☐ ROCK GABIONS ☐ SHEET PILINGS ☒ OTHER concrete outfall

Bank Erosion ☐ SLIGHT ☒ MODERATE ☐ SEVERE

Logjam or Debris Build-up ☐ YES ☒ NO

Physical Obstacle Blocking Access ☒ YES ☐ NO description: fence, building

Signs Posted ☒ YES ☐ NO description: MWRD outfall, no-wake

Boat Ramp/Access Point Visible ☐ YES ☒ NO description

Aquatic Vegetation ☒ NO ☐ YES if yes → ☐ FLOATING ☐ ATTACHED

Sanitary Waste Odor in Water ☐ YES ☒ NO

Sanitary Debris on Banks ☒ YES ☐ NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	50 %
URBAN COMMERCIAL/INDUSTRIAL	50 %	ROW CROPS	%
OTHER (Specify)	%		

RIGHT BANK (observations)

Man-made Structures ☐ DAM ☒ RIPRAP ☐ BRIDGE ☐ LEVEE ☐ ROCK GABIONS ☐ SHEET PILINGS ☒ OTHER pump station

Bank Erosion ☐ SLIGHT ☒ MODERATE ☐ SEVERE

Logjam or Debris Build-up ☐ YES ☒ NO

Physical Obstacle Blocking Access ☒ YES ☐ NO description: fence

Signs Posted ☒ YES ☐ NO description: no-wake

Boat Ramp/Access Point Visible ☐ YES ☒ NO description

Aquatic Vegetation ☐ NO ☒ YES if yes → ☐ FLOATING ☒ ATTACHED

Sanitary Waste Odor in Water ☐ YES ☒ NO

Sanitary Debris on Banks ☒ YES ☐ NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	50 %	FOREST	50 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

SEDIMENT COMPOSITION (observations)

	50 ft			200 ft		
	Left	Center	Right	Left	Center	Right
% Plant Debris					60	
% Clay						
% Silt						
% Sludge						
% Sand		70	10		40	
% Gravel	80	30	60	80		70
% Cobble	20		30	20		30
% Boulder						
% Bedrock/Concrete						
%_____						
%_____						
Sediment Color		brown / tan			gray / black	
Sediment Odor		none			musty	
Depth of Fines, ft.	0.2	<0.1	<0.1	0.3	0.1	<0.1

Oil in Sediment [×] NONE [ ] LIGHT [ ] MODERATE [ ] HEAVY

Additional Remarks

Unable to use ponar at 50 foot and 200 foot left and right banks.

mark X in [ ]

Sand (<2mm diameter)
Gravel (2mm to <16mm diameter)
Cobble (16mm to <256mm diameter)
Boulder (>256mm diameter)

DES PLAINES RIVER
DISCHARGE NUMBER 109

On November 28, 2017, a sensitive area assessment survey was conducted in the Des Plaines River along a 200 foot reach downstream from Discharge No. 109. The left and right banks were inspected visually for various aquatic and riparian habitat features, and observations of odors were noted. At 50 and 200 foot locations downstream of the outfall, the water depth was measured across transects and the sediment composition was assessed.

The average seven-day, ten-year low flow below Discharge No. 109 in the Des Plaines River is 48.4 cfs. The channel width of the study reach is 93 feet. Side depths ranged from 0.5 to 3.3 feet, while the center depth ranged from 1.8 to 3.4 feet. The channel morphology is classified as a riffle and the banks are channelized. The riparian land use is 100 percent urban commercial/industrial on the left bank, and 50 percent forest and 50 percent urban commercial/industrial on the right bank. This outfall is located on the right ascending bank north of Rand Road. Direct access to the channel from the banks is limited due to the steep, riprap bank on the left, and log jam on the right bank. Access to the water from shallow draft boats is possible. There were two private dock points visible upstream on the left bank possibly for canoe portage, and a log jam on the right bank was observed. Aquatic vegetation was not observed and there was no sanitary waste odor in the water. Sanitary debris was observed on the left and right banks. There was a District outfall sign on the right bank.

The sediment composition at the 50 foot location in the center of the waterway was mostly sand with some gravel and mollusk shells, on the left side it was mostly sand with some gravel and mollusk shells, and on the right side it was mostly gravel with some cobble and sand. The sediment composition at the 200 foot location in the center of the waterway was mostly sand with some gravel and mollusk shells, on the left side it was mostly sand with some gravel and mollusk shells, and on the right side it was mostly plant debris with some sand, gravel, and mollusk shells. The ponar sampler was unable to be used for the 50 foot right side location. There was no oil observed in the samples and an organic sediment odor was observed at the 200 foot right location only. The sediment colors were brownish. The sediment deposition at the 50 foot location was 0.3 feet on the left side, 0.5 feet in the center, and <0.1 feet on the right side. The sediment deposition at the 200 foot location was 0.1 feet on the left side, <0.1 feet in the center, and 0.6 feet on the right side.

Note: Left-right orientation is facing upstream.

Metropolitan Water Reclamation District of Greater Chicago
Sensitive Area Assessment

Date 11 / 28 / 17 **Time** 9 : 25

Observer TM, DG, JV **Waterbody** Des Plaines River

CSO Number 109 **Reach Length Downstream of CSO** 200 feet

Morphology ☐ POOL ☐ RUN ☒ RIFFLE **Channel Width (ft)** 93

Water Depth at (50 ft) Left 1.7 Center 1.8 Right 0.5

Water Depth at (200 ft) Left 3.3 Center 3.4 Right 2.8

Channelization ☒ YES ☐ NO

Water Level ☐ LOW ☒ NORMAL ☐ HIGH ☐ FLOODED

LEFT BANK (observations)

Man-made Structures ☐ DAM ☒ RIPRAP ☒ BRIDGE ☐ LEVEE ☐ ROCK GABIONS ☐ SHEET PILINGS ☐ OTHER

Bank Erosion ☒ SLIGHT ☐ MODERATE ☐ SEVERE

Logjam or Debris Build-up ☒ YES ☐ NO

Physical Obstacle Blocking Access ☒ YES ☐ NO description: steep riprap bank

Signs Posted ☐ YES ☒ NO description

Boat Ramp/Access Point Visible ☒ YES ☐ NO description: two private dock points upstream

Aquatic Vegetation ☒ NO ☐ YES if yes → ☐ FLOATING ☐ ATTACHED

Sanitary Waste Odor in Water ☐ YES ☒ NO

Sanitary Debris on Banks ☒ YES ☐ NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	%
URBAN COMMERCIAL/INDUSTRIAL	100 %	ROW CROPS	%
OTHER (Specify)	%		

RIGHT BANK (observations)

Man-made Structures ☐ DAM ☐ RIPRAP ☒ BRIDGE ☐ LEVEE ☐ ROCK GABIONS ☐ SHEET PILINGS ☒ OTHER concrete outfall

Bank Erosion ☐ SLIGHT ☐ MODERATE ☒ SEVERE

Logjam or Debris Build-up ☒ YES ☐ NO

Physical Obstacle Blocking Access ☒ YES ☐ NO description: log jam

Signs Posted ☒ YES ☐ NO description: MWRD outfall

Boat Ramp/Access Point Visible ☐ YES ☒ NO description

Aquatic Vegetation ☒ NO ☐ YES if yes → ☐ FLOATING ☐ ATTACHED

Sanitary Waste Odor in Water ☐ YES ☒ NO

Sanitary Debris on Banks ☒ YES ☐ NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	50 %
URBAN COMMERCIAL/INDUSTRIAL	50 %	ROW CROPS	%
OTHER (Specify)	%		

SEDIMENT COMPOSITION (observations)

	50 ft			200 ft		
	Left	Center	Right	Left	Center	Right
% Plant Debris						60
% Clay						
% Silt						
% Sludge						
% Sand	70	70	20	70	70	20
% Gravel	20	20	60	20	20	15
% Cobble			20			
% Boulder						
% Bedrock/Concrete						
% Corbicula / Snails	10	10		10	10	5
%_____						
Sediment Color	brownish	brownish		brownish	brownish	brownish
Sediment Odor	none	none		none	none	organic
Depth of Fines, ft.	0.3	0.5	<0.1	0.1	<0.1	0.6

Oil in Sediment [×] NONE [ ] LIGHT [ ] MODERATE [ ] HEAVY

Additional Remarks

Unable to use ponar at 50 foot right bank location.

mark X in [ ]

Sand (<2mm diameter)
Gravel (2mm to <16mm diameter)
Cobble (16mm to <256mm diameter)
Boulder (>256mm diameter)

NORTH SHORE CHANNEL
DISCHARGE NUMBER 110

On November 13, 2017, a sensitive area assessment survey was conducted in the North Shore Channel along a 200 foot reach downstream from Discharge No. 110. The left and right banks were inspected visually for various aquatic and riparian habitat features, and observations of odors were noted. At 50 and 200 foot locations downstream of the outfall, the water depth was measured across transects and the sediment composition was assessed.

The average seven-day, ten-year low flow below Discharge No. 110 in the North Shore Channel is 0.0 cfs. The channel width of the study reach is 102 feet. Side depths ranged from 1.0 to 1.5 feet, while the center depth ranged from 5.0 to 5.4 feet. The channel morphology is classified as a run and the banks are channelized. The riparian land use is 100 percent forest on both banks. This outfall is located on the left ascending bank south of Oakton Street. Direct access to the channel from the banks is limited due to the steep, wooded banks, and fences. Access to the water from boats is possible. There were no boat ramps or log jams observed. Aquatic vegetation was not observed and there was no sanitary waste odor in the water. Sanitary debris was not observed on either bank. There was a District outfall sign on the left bank and a District caution sign on the left and right banks.

The sediment composition at the 50 foot location in the center of the waterway was mostly plant debris with some silt, sand, and mollusk shells, on the left side it was mostly plant debris with some silt and sand, and on the right side it was mostly clay with some gravel. The sediment composition at the 200 foot location in the center of the waterway was mostly sludge with some silt and plant debris, on the left side it was mostly plant debris with some silt and sand, and on the right side it was mostly plant debris with some sand, gravel, and silt. There was moderate oil observed in the samples and an organic or sludge odor was observed in five out of the six samples. The sediment colors were brown/black and gray/black. The sediment deposition at the 50 foot location was 2.0 feet on the left side, 5.0 feet in the center, and 0.3 feet on the right side. The sediment deposition at the 200 foot location was 5.0 feet on the left side, 4.8 feet in the center, and 2.0 feet on the right side.

Note: Left-right orientation is upstream, assuming that the dominant direction of flow in the waterway is away from Lake Michigan.

Metropolitan Water Reclamation District of Greater Chicago
Sensitive Area Assessment

Date 11 / 13 / 17 **Time** 10 : 32

Observer TM, DG **Waterbody** North Shore Channel

CSO Number 110 **Reach Length Downstream of CSO** 200 feet

Morphology ☐ POOL ☒ RUN ☐ RIFFLE **Channel Width (ft)** 102

Water Depth at (50 ft) Left 1.5 Center 5.0 Right 1.0

Water Depth at (200 ft) Left 1.4 Center 5.4 Right 1.5

Channelization ☒ YES ☐ NO

Water Level ☐ LOW ☒ NORMAL ☐ HIGH ☐ FLOODED

LEFT BANK (observations)

Man-made Structures ☐ DAM ☐ RIPRAP ☐ BRIDGE ☐ LEVEE ☐ ROCK GABIONS ☐ SHEET PILINGS ☒ OTHER concrete block wall, outfall gate

Bank Erosion ☐ SLIGHT ☒ MODERATE ☐ SEVERE

Logjam or Debris Build-up ☐ YES ☒ NO

Physical Obstacle Blocking Access ☒ YES ☐ NO description: fence

Signs Posted ☒ YES ☐ NO description: MWRD outfall and caution

Boat Ramp/Access Point Visible ☐ YES ☒ NO description

Aquatic Vegetation ☒ NO ☐ YES if yes → ☐ FLOATING ☐ ATTACHED

Sanitary Waste Odor in Water ☐ YES ☒ NO

Sanitary Debris on Banks ☐ YES ☒ NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	100 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

RIGHT BANK (observations)

Man-made Structures ☐ DAM ☐ RIPRAP ☐ BRIDGE ☐ LEVEE ☐ ROCK GABIONS ☐ SHEET PILINGS ☐ OTHER

Bank Erosion ☐ SLIGHT ☒ MODERATE ☐ SEVERE

Logjam or Debris Build-up ☐ YES ☒ NO

Physical Obstacle Blocking Access ☒ YES ☐ NO description: fence

Signs Posted ☒ YES ☐ NO description: MWRD caution

Boat Ramp/Access Point Visible ☐ YES ☒ NO description

Aquatic Vegetation ☒ NO ☐ YES if yes → ☐ FLOATING ☐ ATTACHED

Sanitary Waste Odor in Water ☐ YES ☒ NO

Sanitary Debris on Banks ☐ YES ☒ NO

Riparian Land Use (Visual Observation)

GRASSLAND	%	WETLAND	%
URBAN RESIDENTIAL	%	FOREST	100 %
URBAN COMMERCIAL/INDUSTRIAL	%	ROW CROPS	%
OTHER (Specify)	%		

SEDIMENT COMPOSITION (observations)

	50 ft			200 ft		
	Left	Center	Right	Left	Center	Right
% Plant Debris	70	70		60	20	60
% Clay			75			
% Silt	20	20		20	20	10
% Sludge					60	
% Sand	10	5		20		20
% Gravel			25			10
% Cobble						
% Boulder						
% Bedrock/Concrete						
% corbicula		5				5
%_____						
Sediment Color	brown/black	brown/black	gray/black	brown/black	black/gray	brown/black
Sediment Odor	organic	organic	none	organic	sludge	organic
Depth of Fines, ft.	2.0	5.0	0.3	5.0	4.8	2.0

Oil in Sediment ☐ NONE ☐ LIGHT ☒ MODERATE ☐ HEAVY

Additional Remarks _____

mark X in ☐

Sand (<2mm diameter)
Gravel (2mm to <16mm diameter)
Cobble (16mm to <256mm diameter)
Boulder (>256mm diameter)