

City of Chicago Department of Water Management



DRAFT Nine Minimum Controls Enhancement Plan

NPDES Permit No. IL0045012

September 5, 2025

1. Overview

Combined sewer outfalls (CSOs) from the City of Chicago's (City) combined sewer system (CSS) are currently permitted under the National Pollution Discharge Elimination System (NPDES) Permit No. IL0045012, issued by the Illinois Environmental Protection Agency (IEPA). This permit was reissued with an effective date of April 1, 2024, and will expire on February 28, 2029.

The Nine Minimum Controls (NMCs) are a key component of the U.S. EPA's CSO Control Policy.¹ The purpose of the NMCs are to reduce the impact of CSOs on receiving waters. The controls can be implemented relatively quickly and without significant costs, engineering studies, or major construction ahead of time and cost intensive major long-term control capital projects. NMC are not distinct, and measures taken to meet one control may also fulfill others.

1.1 History of Chicago's CSO Management

Like many older cities, Chicago's sewer system was originally designed in the late 1800s to drain both sanitary and stormwater flows into the river. Wastewater treatment was unavailable at the time, leading to negative environmental and public health impacts. Growing awareness of the negative impacts led to a federal law enacted by congress in 1972 known as the Clean Water Act and the development of the U.S Environmental Protection Agency (USEPA). The Act established the National Pollutant Discharge Elimination System, requiring permits for any discharges into navigable waters and setting water quality standards.

However, even before the passage of the Clean Water Act, the City of Chicago and MWRDGC, along with state and other local officials, recognized the urgent need to address flooding and water pollution caused by CSOs. In 1967, officials from the City of Chicago, MWRDGC, Cook County, and the State of Illinois formed the Flood Control Coordinating Committee to develop a long-term solution to environmental issues. This effort laid the foundation for what became TARP, a large-scale infrastructure project aimed at capturing and treating excess stormwater and wastewater, preventing direct discharges into waterways.

To begin preparations for TARP, beginning in the 1970s, the City of Chicago and MWRDGC worked to construct diversion chambers at all of Chicago's combined sewer outfalls, redirecting flow into MWRDGC's interceptor system to be sent for treatment. Over time, the implementation of TARP reservoirs and diversion structures ensured that all 184 of Chicago's outfalls for sanitary-only flows were no longer discharged directly into the Chicago River.

2. Minimum Control No. 1: Proper Operation and Regular Maintenance Programs

2.1 Key Agencies, Departments, and Their Roles

Chicago Department of Water Management (CDWM) - Owns, operates, and maintains the local sewer collection system that feeds into the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) intercepting sewers.

Chicago Department of Transportation (CDOT) – Provides a review mechanism for CDWM to ensure coordination of construction projects through the Office of Underground Coordination (OUC) to protect existing sewer infrastructure. Manages roadway resurfacing projects, working with CDWM to ensure sewer structures are maintained or upgraded during street reconstruction.

Department of Streets and Sanitation (DSS) - Conducts street sweeping and leaf removal to prevent debris from entering storm drains and contributing to sewer blockages. Manages waste collection and disposal programs, ensuring proper handling of street debris that could impact sewer performance.

Department of Buildings (DOB) - Reviews and enforces stormwater management regulations for new developments to ensure compliance with stormwater ordinances. Issues sewer permits approving connections or adjustments to the sewer.

Office of Emergency Management and Communications (OEMC) - Operates the 311 system, receiving and dispatching sewer-related complaints to CDWM for inspection and response.

Department of Environment (DOE) – Works and coordinates with non-governmental agencies and city entities. Coordinating development of updated green stormwater infrastructure plan per NPDES permit requirements.

Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) – Outside agency that owns and operates the intercepting sewers, drop shafts, and tunnels that transport CSO flows for treatment and storage. Manages the Long-Term Control Plan - Tunnel and Reservoir Plan (TARP) to capture and store CSOs, preventing untreated discharges into local waterways. Monitors and reports CSO occurrences and their impacts. Collaborates with CDWM to ensure compliance with the CSO permit requirements and stormwater management initiatives.

2.2 Chicago Department of Water Management Overview

Within CDWM, the Bureau of Engineering Services (BES) and the Bureau of Operations and Distribution (BOD) maintain the collection system through regulations and operations. CDWM also provides funding and staffing for stormwater reviews and sewer permitting efforts with DOB. Below is a further breakdown of CDWM organization:

- BES Sewer Engineering Section is responsible for regulatory compliance and sewer design and construction and is comprised of the following groups:
 - Design
 - Construction
 - Records and Planning
- BOD is responsible for collection system cleaning and sewer system inspections and is comprised of the following groups:
 - Field Engineering and Survey Services (FESS)
 - Sewer Mason Inspectors
 - Operations Group
 - In-house Repair and Cleaning Crew
- (Not CDWM) Sewer Personnel at DOB:
 - Sewer Permit section
 - Stormwater reviewers

2.3 Budget

2.3.1 2024-2028 Capital Improvement Plan

According to the 2024-2028 Capital Improvement Plan (CIP)², \$1.6 billion has been allocated to CDWM's Sewer System Program, which consists of:

- Sewer Lining, \$395,825,666 (25%)
- Sewer Rehabilitation, \$337,382,000 (21%)
- Sewer Replacement and Construction, \$864,156,060 (54%)

2.3.2 Combined Sewer System Budget

CDWM has allocated funds to the following categories for Year 1 of the CSO Permit:

- Operating, non-personnel, \$27.9 million
- Operating, personnel, \$62.2 million
- Capital \$186.9 million

2.4 Critical Facilities

The City of Chicago owns and operates approximately 4,500 miles of sewers, 225,000 collection structures, and 146,000 manholes. The function of the City's sewers is to convey dry and wet flows to the MWRDGC diversion structures, and to convey any overflow from the structures into TARP before overflowing into a receiving water body.

2.4.1 Jurisdictions

- Upper collection and conveyance: CDWM
- Treatment conveyance (interceptors): MWRDGC
- Treatment: MWRDGC

- 184 City outfalls: CDWM
- Monitoring outfall flows: CDWM spot monitors outfalls monthly. MWRDGC monitors the control structures (tide gates) on the majority of City outfalls. MWRDGC also performs monitoring for the Chicago Area Waterway System (CAWS), including the City of Chicago. Details on the CAWS can be found on the IEPA website regarding the Use Attainment Assessment. A “letter of agreement” between MWRDGC and CDWM has been formulated to confirm mutual cooperation and collaboration.
- Eight MWRDGC CSO outfalls within Chicago limits: (MWRDGC outfall numbers: 4, 107, 142, 132, 133, 151, 152 and 153).
- Diversion Chambers and Tide Gates: MWRDGC
- Pumping Stations: MWRDGC
- House drains: Privately owned, but CDWM makes repairs to the house drain in public right-of-way (ROW).
- Out of Town inflows: Bedford Park, Blue Island, Calumet Park, Cicero, Evanston, Evergreen Park, Forest View, Garden Homes, Harwood Heights, Hometown, Lincolnwood, Marionette Park, Niles, Norridge, Norwood Park, Oak Park, River Grove, Riverdale, Skokie and Stickney, Unincorporated Cook County

2.5 Periodic Review of O&M Plans

CDWM’s O&M Plan describes, in detail, the operations and maintenance of the Combined Sewer System. In accordance with Paragraph No. 27 of the NPDES Permit No. IL0045012, CDWM will review O&M Plan annually and update the plan to reflect any changes within the collection system. Any written responses to comments from IEPA will be posted on CDWM’s CSO webpage.

2.6 Procedures for Routine and Non-Routine Maintenance, and Emergency Situations (O&M Activities)

2.6.1 CHI311 Service and Work Orders

The City of Chicago uses the CHI311 Service Request System, which provides access to information and services for Chicago residents, businesses, and visitors. Various types of service requests can be made on the 311.chicago.gov page or by dialing 3-1-1. The 311 Call Center operates 24 hours a day, 7 days a week, 365 days a year. Once a request has been received, it is directed to the appropriate City department. Both emergency and non-emergency work orders are tracked here.

2.6.2 Sewer Main and Catch Basin Televising and Inspections

CDWM uses sewer televising to inspect the residential sewer system, trunk sewers, and related infrastructure through routine assessments, emergency responses, and 311 service requests. Sewer televising is performed by in-house crews, FESS group and supplemented by contractor televising operations. The sewer televising is done by either robotic systems or push cameras.

The televised sewer inspections are performed by a certified operator and meets the coding and reporting industry standards and guidelines. All report annotations, pipe conditions and pipe defects are identified and severity ratings are calculated.

For videos, the sewer televising camera passes through the sewer at a uniform rate of travel not to exceed 30-feet per minute. All inspections show the top and sides of sewer pipes, manholes, junctions, house connections, obstructions, or other conditions, which reveal the sewers architecture and physical condition.

Measurements for location references within the sewer are referenced to above ground locations by means of a metering device. Location references begin at the centerline of manholes or access point. All distance measurements are narrated and electronically displayed on screen during the video inspections.

2.6.3 Sewer Main and Catch Basin Cleaning

CDWM conducts annual routine sewer cleaning across the residential sewer system and trunk sewer system to maintain proper flow, prevent accumulation of sediments and debris, and remove leaves, yard waste and pollutants from the sewer and catch basins. Sewer cleaning is performed by in-house crews, supplemented by contractor cleaning

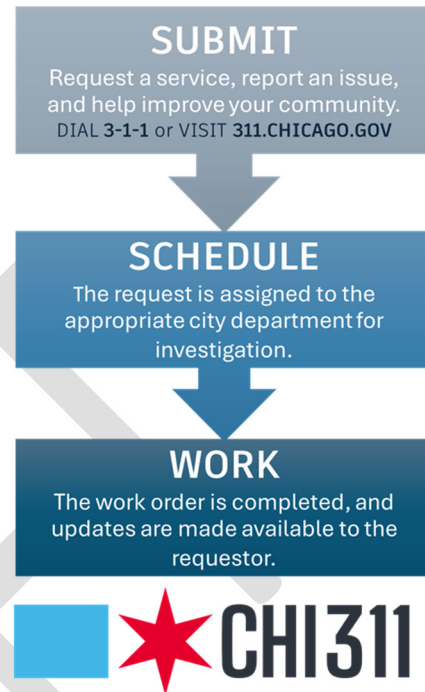


Figure 1: Non-Routine Maintenance Process

operations, and serves as an important auxiliary component part of various infrastructure and construction programs throughout the city. Sewer cleaning is either done by Vactor trucks or orange peels.

2.6.4 Sewer Cleaning Procedures

CDWM follows a structured cleaning approach, which includes:

- Televising sewers to assess cleaning needs.
- Light cleaning of Catch Basins using an Orange Peel to remove minor debris.
- Jetting and rodding the Catch Basin Outlet
- Heavy cleaning with Vactor trucks with jetting and vacuuming.
- Root removal and chemical treatment to prevent future intrusion.
- Repair, lining or replacement of damaged sewer sections as necessary to facilitate the cleaning

2.6.5 Cleaning and Repair Crews

Sewer cleaning contracts are administered by the FESS group. The contracts cover five designated areas across the city and operate under multi-year public bid service contracts. The contractors are responsible for specialized televising and trunk sewer cleaning to supplement CDWM's in-house efforts.

In-house Sewer Cleaning is managed by BOD and operates within three districts—North, Central, and South. Cleaning follows a grid-based system and provides 311-based responses for routine maintenance. When necessary, crews respond to emergency cleaning requests, such as those caused by sewer collapses or blockages. Each district is equipped with a number of personnel, crews, and equipment to provide in-house repairs, investigation and cleaning response.

2.6.6 Priority Active Outfall Cleaning Area

CDWM has identified multiple outfalls listed in NPDES permit IL0045012 Paragraph 20 as the most active based on recent overflow history and location known as the Priority Active Outfalls. Hydraulic modelers performed analysis and determined the area tributary to each outfall. CDWM, through in-house or contractor crews, will prioritize all sewers for cleaning within the tributary area of the Priority Active Outfalls.

The goal of the program is to perform catch basin cleaning, sewer cleaning and restrictor inspections annually, ensuring comprehensive cleaning of the main sewers which lead to priority active outfalls. The work would include cleaning and televising of the 42" to 90" sewers, catch basins, and the outfall outlet itself which CDWM has identified as the main trunk to the outfall.

Schedule:

- Annual inspection and cleaning sewer mains and catch basins
- Annual inspection and cleaning of outfall outlet
- 5-year cycle for inspection and cleaning of main trunk of outfall

Priority Active Outfalls include the following:

- 024 Forest Glen Ave (S) CSO to the North Branch Chicago River
- 057 Berteau Ave CSO to the North Branch Chicago River
- 063 Roscoe St CSO to the North Branch Chicago River
- 067 Leavitt St CSO to the North Branch Chicago River
- 084 Blackhawk St CSO to the North Branch Chicago River
- 156 Union Ave CSO to the South Branch Chicago River
- 172 Oakley Ave CSO to the Sanitary and Ship Canal
- 178 Albany Ave (N) CSO to the Collateral Canal
- 194 35th Street CSO to the Bubbly Creek
- 226 Wilson Ave CSO to the Des Plaines River

2.6.7 BES-Construction Programs Auxiliary Cleaning

In addition to routine maintenance performed by the In-house cleaning crews, the BES Sewer Construction group conducts routine maintenance and cleaning as part of several I/I reduction and maintenance programs, including:

Sewer Structure Rehabilitation Program

- Yearly target to clean and rehabilitate 5,000 structures a year

Restrictor Replacement Program

- Yearly target to clean, inspect and replace restrictors for 5,000 structures a year

Sewer Lining Program

- Yearly target to clean and line with Cured-In Place 42 miles of sewer main a year

When storm events occur it can result in excessive I/I in older sewers which can result in exceeding sewer capacities that cause stormwater overflows and loss of conveyance capacity. Lining can reduce or eliminate I/I issues, thereby reducing dry and wet weather flow.

The Sewer Lining Program divides the city into five areas: Far North, North, Central, South, and Far South. The program uses a technique known as Cured in Place Pipe (CIPP) which is a process that forms a permanent resin liner within the existing sewer to extend the life of that sewer and reduce I/I. This process does not require street excavation and the construction period is about two days of labor per block. Sewer lining is less expensive to implement on both a long-term and short-term basis.

As of 2025, the Sewer Lining Program operates on an annual basis and lines and rehabilitates upwards of 40+ miles of sewer main a year. The considerations for lining include, but are not limited to:

- Existing sewer age
- Existing sewer capacity to convey combined sewer flow
- Future CIP plans for the existing sewer

- Existing sewer pipe materials
- FESS videoing and inspection request if observing cracks and excessive infiltration

The Sewer Structure Rehabilitation Program is divided into three different areas across the city: North, Central, and South. The program includes a manhole lining process that involves placing a cement mortar lining to stabilize the structure. In addition, brick catch basins are strengthened with liner. The structure rehabilitation helps to reduce groundwater infiltration.

As of 2025, the city lines upwards of 5000+ structures per year. Considerations for rehabilitation include, but are not limited to:

- Existing structure materials
- FESS videoing and inspection request if observing cracks and excessive infiltration
- Existing structure age
- Frequency and location of annual city Water in Basement complaints occurring in the previous year

2.6.8 CSO Inspections

The CDWM Mason Inspector group performs inspections of the combined sewers outfalls via boat and foot. The inspection ensures detection of illicit dry weather flows and records any maintenance issues. The following sections outline the inspection and maintenance process for CSO outfalls, including those along the North Branch, South Branch, and Calumet River.

Monthly inspections are conducted on unmonitored CSO outfalls. Yearly inspections are conducted on all monitored CSO outfalls, ideally between May and June.

Boat inspections are conducted for CSO outfalls located along waterways that are difficult to access by land. These inspections allow for thorough examination of the outfalls and surrounding infrastructure, ensuring they are in good condition. The inspection procedure is outlined below:

1. Mason inspectors will assess the outfall for structural damage, blockages, or deterioration using tools such as tablets, cameras, and inspection forms.
2. Mason inspectors will check for any signs of illicit discharges into the outfalls, ensuring compliance with regulations and environmental standards.
3. Mason inspectors will follow a predetermined route to visit each CSO outfall, considering boat launch access and waterway conditions.
4. Mason inspectors will ensure signs are legible, free of graffiti, QR codes are functional for incident reporting, while noting any signs that require replacement or need to be installed.

5. Mason inspectors enter the data regarding the outfall into tablets with information regarding the condition. Inspectors include photos.
6. Results will be reviewed by relevant sewer groups, with follow-up actions for repair or investigation if necessary.

2.6.9 CSO Inspection Tool and Dashboard

In order to perform the standard monthly and yearly inspections of CSO outfalls and their signs, CDWM has incorporated a CSO Inspection Tool and Dashboard. This tool contains digital inspection forms to be completed by an inspector, maps of outfall locations, and a color-coded indication of outfalls requiring inspection.

The inspection results are stored in the Outfall Inspections Program Reporting Dashboard, which provides real-time updates on outfall information, inspection status and photos. Summary reports can be extracted from the dashboard by date. The dashboard is accessible to departments and agencies involved in the inspection process.

The outfall inspections are conducted by boat or by foot depending on accessibility. Route maps are created based on time of departure and task in hand. Inspections can begin on the northern or southernmost part of the river. The northernmost area, accessible by boat, is Howard Street which reaches the beginning of the North Branch of the Chicago River. The southernmost area, accessible by boat, is Harlem Avenue which reaches the end of the South Branch of the Chicago River.

If any of the following conditions are selected on the inspection form, a SOI ticket is automatically generated, alerting City personnel:

- Evidence of Dry Weather Overflow = “Yes”
- Evidence of Previous Flow = “Yes – Non-Storm flow”
- Odor = “Yes”
- Solids ≠ “None”
- Color ≠ “Clear”
- Foam = “Yes”
- Oil Sheen = “Yes”

SOI Tickets will have an associated work order number, service request number, status, and priority level. The tickets are automatically forwarded to the CHI 311 app. The ticket information includes the date, address, and work order number. The work order activity timeline can be used to track progress of the investigation.

Once a SOI Ticket is generated, a notification is sent to BES staff. If a potential issue is identified and confirmed, the ticket is assigned to an inspector for field investigation. The inspector investigates the issue using a combination of office research and fieldwork. Methods may include:

- Dye testing
- Chlorine testing
- CCTV inspection
- Zoom camera
- Other applicable inspection techniques

Investigation Outcomes:

- No Problem Found
 - No issue was identified at the outfall and no further action is required.
- Issue Resolved On-Site
 - The source of the issue was identified and resolved in the field.
 - If dry weather flow or a water quality issue occurred, DWM immediately notifies IEPA, followed by notification of the corrective actions taken.
- DWM Repair Required
 - The outfall is confirmed to be DWM-owned and requires repair.
 - Mason Inspectors coordinate with **BES** to develop corrective measures, such as:
 - Installing a bulkhead
 - Sewer rerouting
 - Implementing flow control devices
 - Repairs are performed by in-house DWM crews or private contractors, depending on the nature of the issue.
 - IEPA is notified immediately of any dry weather or water quality violations and later of corrective actions.
- Private Repair Required
 - Outfall is DWM-owned, but the issue lies on private property.
 - DWM coordinates with the private property owner to ensure repairs are made.
 - Support may be provided to help implement appropriate solutions.
 - IEPA is notified if applicable.
- Non-DWM Issue
 - Outfall is privately owned.
 - DWM notifies and coordinates with the private owner to resolve the issue.

2.7 Training

Mason inspectors are trained to inspect the condition of outfalls, signs, and surrounding waterways to identify any potential issues that require a report and investigation.

3. Minimum Control No. 2: Maximization of Storage in the Collection System

3.1 Post TARP In-System Storage: Planned Offline Storage Projects

CDWM has developed a sewer improvement program focused on the installation of subsurface storm detention facilities to enhance stormwater management. These facilities are strategically placed within public ROW areas where existing sewer infrastructure is absent and underground utility conflicts are minimal. By selecting locations with limited utility obstructions, CDWM can install RCP pipe up to 108 in. diameter, or 12' x 12' precast concrete storage structures, maximizing the combined storage capacity to 1.5M gallons of stormwater within the congested urban environment.

These detention facilities are designed to attenuate peak flows by temporarily storing excess stormwater when the local conveyance system reaches capacity during significant storm events. Stormwater from the local sewer network is directed into the storage vaults, where it is held and gradually released back into the sewer system through a rate-controlled outlet. This controlled discharge ensures that stored flows are returned for treatment at MWRDGC facilities once storm intensity decreases and sufficient system capacity becomes available, reducing the risk of flooding and CSOs.

The projects, as shown in Figure 2, are currently in design and are making way through the permitting process.

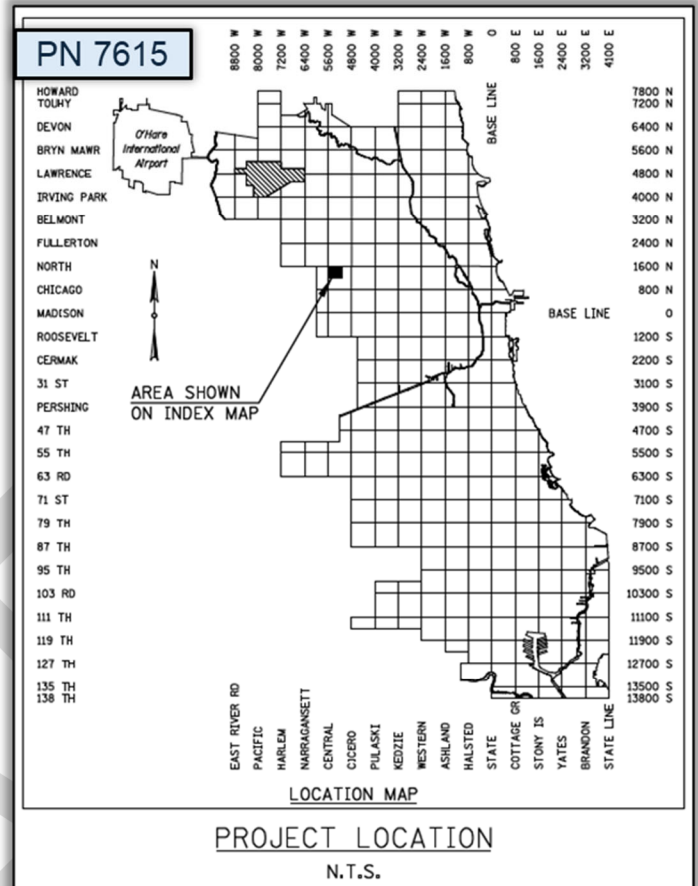
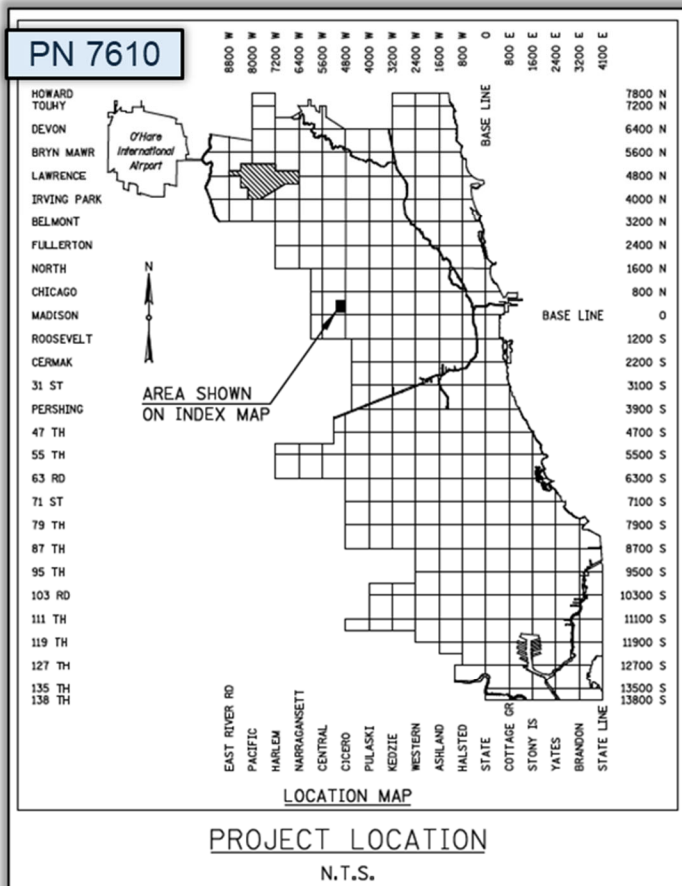


Figure 2: Planned Offline Storage Projects

4. Minimum Control No. 3: Review and Modification of Pretreatment Requirements

4.1 MWRDGC Pretreatment Program

Because MWRDGC is responsible for treatment, the District also implements the pretreatment program in the Greater Chicago area. The City does not have a pretreatment program. The MWRDGC pretreatment program includes monitoring industrial pretreatment programs (significant industrial users).³

5. Minimum Control No. 4: Maximization of Flow to the POTW for Treatment

5.1 Chicago and MWRDGC System Operations

Chicago's sanitary wastewater is conveyed entirely into the MWRDGC interceptor system for treatment. During storm events, when rainfall causes wet weather to exceed the interceptor system's capacity, excess flow is diverted into TARP. This system provides temporary storage until flows can be gradually directed to MWRDGC's wastewater treatment plants for proper treatment. Figure 3 depicts the operation of the system.

The McCook and Thornton Reservoirs serve as the primary large-scale overflow storage facilities for Chicago under TARP. Both the reservoirs and the deep tunnel can hold upwards of 17.5 billion gallons of water. The Thornton Reservoir was completed in 2015. Stage 1 of the McCook Reservoir was completed in 2017 and Stage 2 is planned for 2029 completion which would mark the fulfillment of the LTCP requirements.

MWRDGC actively monitors the City's CSO discharges, ensuring that overflows into the Chicago River and other waterways only occur when the system capacity—including local Chicago sewers, MWRDGC interceptor sewers, and MWRDGC reservoirs—is completely exceeded. This two-stage system, consisting of the interceptor network and TARP storage, ensures that untreated discharges occur only as a last resort when no further capacity remains during storm events only.

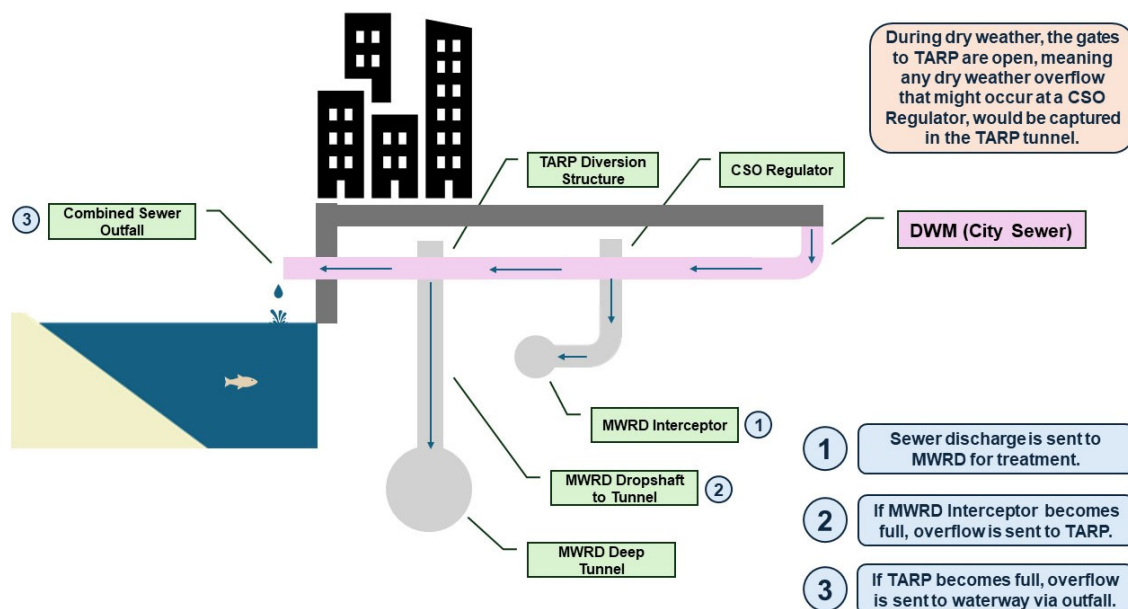
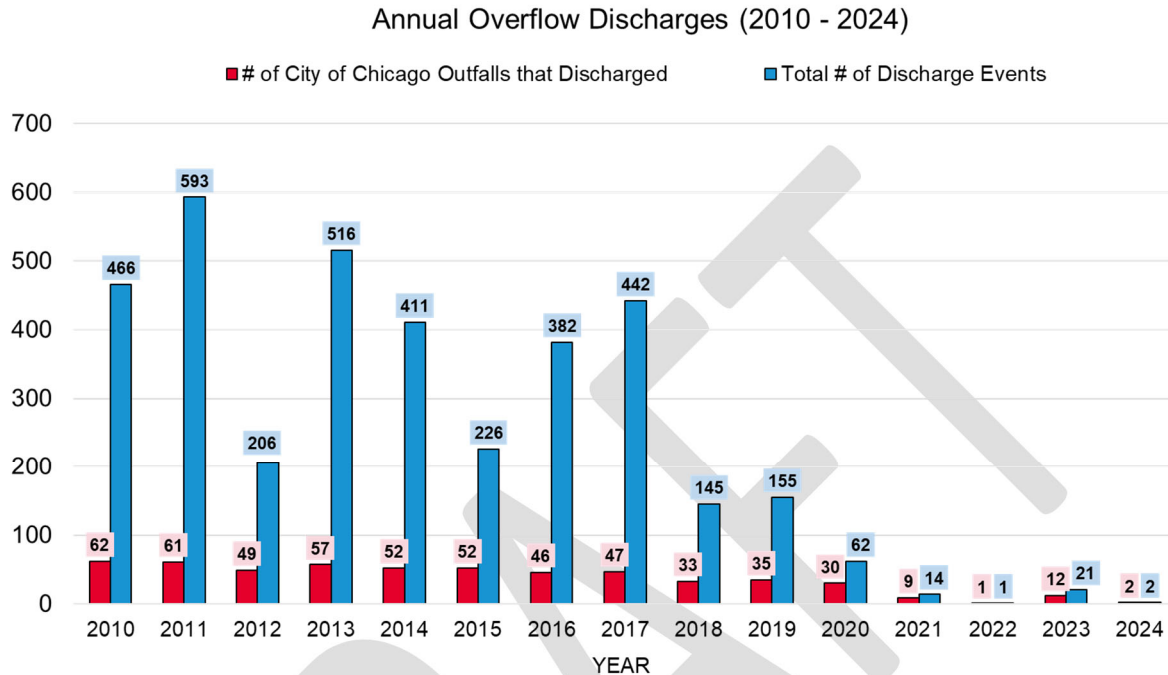


Figure 3: Diagram of the Chicago Sewer System

Since the Thornton Reservoir and Stage 1 of the McCook Reservoir became operational, the frequency and volume of CSOs have significantly decreased, further showing the

effectiveness of TARP as Chicago's LTCP for CSO reduction and compliance with the NPDES permit. See Annual Overflow Discharges (2010-2024) chart for the number of CSOs that discharged compared to the number of discharge events over the span of 14 years.



5.2 TARP System Storage

The McCook and Thornton Reservoir are the two storage reservoirs utilized for the Chicago area, along with the Deep Tunnel. Statistics on the TARP system are below:

Total TARP Storage Capacity (expected completion in 2029): 17.5 billion gallons

Deep Tunnel System (completed in 2006):

- 109 miles of tunnels

- 2.3 billion gallons of storage

Major Reservoirs:

- McCook Reservoir (planned 10 billion gallons total)

- Stage 1 (completed in 2017): 3.5 billion gallons

- Stage 2 (expected completion in 2029): 6.5 billion gallons

- Thornton Reservoir (operational since 2015): 4.8 billion gallons

- Majewski Reservoir (operational since 1998): 350 million gallons

5.3 Pilot Downspout Disconnection Program

Currently, stormwater from residential roofs enters the sewer system unrestricted, contributing significant runoff during storms. This rapid inflow can exceed sewer capacity, leading to CSOs that discharge untreated wastewater into waterways. Additionally, roof runoff carries leaves and debris into sewers, causing blockages that further increase the risk of backups and overflows.

CDWM is exploring a program to help residents disconnect their downspouts as a strategy to reduce CSOs and ease the burden on the sewer system. Disconnecting downspouts would slow the rate at which stormwater from residential roofs enters the sewer system. Rate control is a key component of Chicago's CSO reduction strategy.

CDWM is also evaluating ways to assist residents with downspout disconnections by providing educational resources, guidance, and potential incentives, including the provision of rain barrels to capture runoff. Future efforts may include public assistance programs to help homeowners complete disconnections and better manage stormwater on their properties.

6. Minimum Control No. 5: Prohibition of CSOs During Dry Weather

6.1 Response to DWO

When CDWM is notified of a potential dry weather discharge from a CSO, the following process is followed to investigate and address the issue:

1. Notification and 311 Ticket Creation

- A 311 Sewer Outfall Investigation ticket is created when:
 - A CDWM inspector identifies dry weather flow during a routine outfall inspection.
 - In-house crews report an issue to BES during routine operations.
 - Residents report an issue through 311 via phone or online.
- Signs posted at outfalls provide public notification on how to report dry weather discharges.

2. Investigation Process

- The 311 ticket is assigned to the CDWM consultant PMO group which receives the notification. An initial audit is performed to ensure that the outfall ticket wasn't erroneously entered.
- If the ticket is escalated, it is sent to BES and the Mason Inspectors group for review and an inspector is dispatched to the field. The PMO group creates a summary map, which provides a clear visual overview of an individual outfall

investigation/DWF, including the outfall location, parcel information, and critical infrastructure components. Summary maps are a collaborative input of records which include construction drawings, atlas/tile pages and field investigation reports. Additionally crucial email communications of interdisciplinary agreements are also included in the summary. These visuals are vital for effective communication, planning, and coordination among departments and agencies.

- The inspector conducts an assessment, provides updates for the corresponding summary map, and coordinates different groups to investigate, which includes the following procedure:
 - A visual field inspection to determine if the discharge is active or shows signs of previous discharge. Records, plats, and atlases are reviewed to determine possible sources of discharge.
 - Once a potential source is identified, a dye test occurs to confirm the sources. A sewer televising and inspection crew examines the sewer and determines the source of discharge.

3. Determination of Issue and Next Steps

- No Problem Found:
 - Investigation confirms no issue at the outfall, and the 311 ticket is closed.
- CDWM Repair Required:
 - A discharge is determined to have occurred, and the issue is determined to be within a CDWM-owned outfall. The Mason Inspectors coordinate with BES to develop corrective actions.
 - Possible solutions include:
 - Installing a bulkhead to prevent unauthorized discharge.
 - Rerouting sewers to eliminate the issue.
 - Implementing sewer flow control devices to manage discharge.
 - Lining the sewer.
- Non-CDWM Issue:
 - If the outfall is privately owned, CDWM notifies the owner and ensures that the issue is addressed.

4. Compliance and Reporting

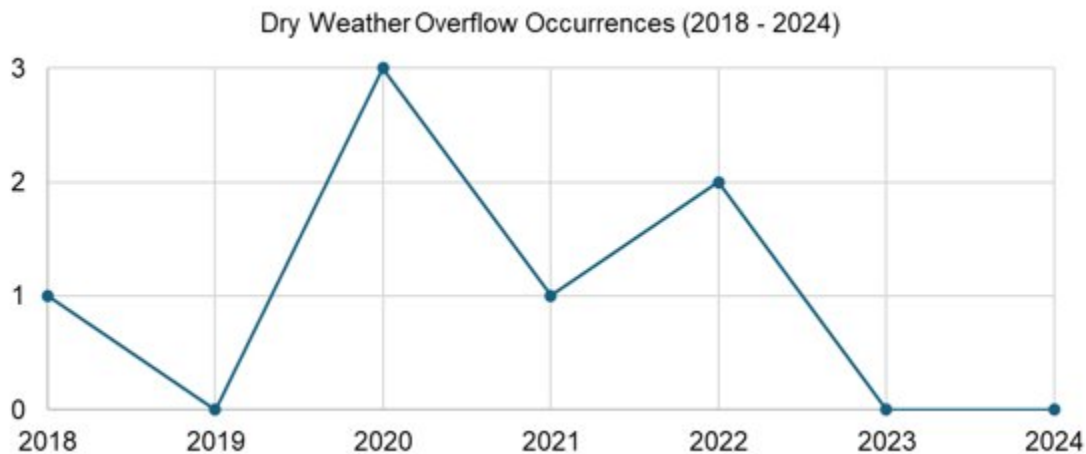
- If a dry weather discharge or water quality issue is confirmed, CDWM immediately notifies the IEPA. This notification may include a summary map as documentation.
- Corrective actions are documented and reported to the appropriate agencies.

The 311 ticket is updated and closed once the issue is resolved.

The CSO Inspection Application is being developed and improved so that inspections are performed thoroughly and efficiently. The application works to trigger an investigation if there is a suspected dry weather event. This application improves response times to DWFs, ensuring a proper investigation is conducted in a timely manner.

6.2 TARP Reduces DWO Occurrences

As mentioned in Section 5.1, with the implementation of TARP came a significant decrease in discharge occurrences. TARP also decreased the number of dry weather overflow occurrences in recent years, as shown in the chart below.



7. Minimum Control No. 6: Control of Solid and Floatable Materials in CSO Discharges

CDWM is currently conducting a study of the solids and floatables in CSO discharges that impact the Chicago River. This comprehensive study reviews the operations and maintenance performed by various City departments such as DSS, MWRDGC, 2FM, and DOE. These can include street sweeping, alley sweeping, debris collection, catch basin cleaning, sewer cleaning, etc. The purpose of this study is to identify any gaps in these operations that may lead to increases in solid and floatable materials in the river. A plan to address these gaps is in development and will provide recommendations for improvement.

7.1 Narrow Slot Lids

CDWM's narrow slot lids work to prevent pollution and debris from entering the sewer system. This activity has been found to meet the best national practices.

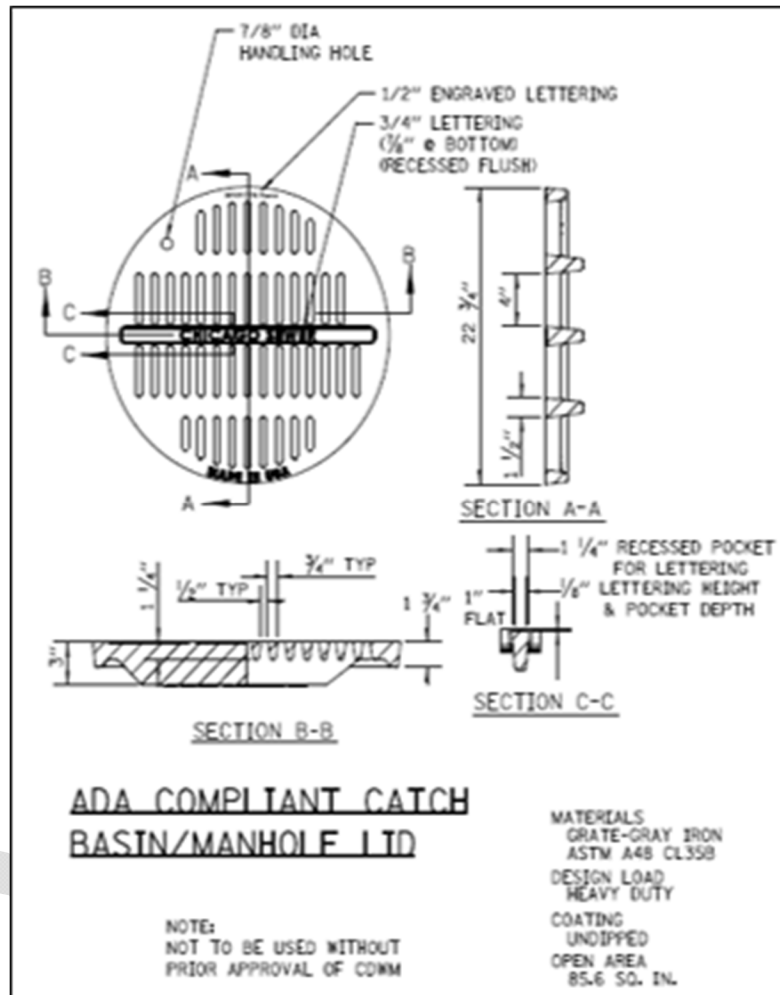


Figure 4: Narrow Slot Lid

7.2 Work Boats

CDWM is currently working to procure two work boats to operate on the Chicago River to remove solids and floatables.

8. Minimum Control No. 7: Pollution Prevention Programs to Reduce Contaminants in CSOs

The City of Chicago's combined sewer system serves over 2.746 million residents and 92,373 acres of CSO tributary area, conveying both sanitary and stormwater flows into the MWRDGC interceptor sewers and TARP for treatment and storage. The City of Chicago system consists of a network of storm-only sewers, residential combined

sewers, trunk sewers and storm detention storage vaults, ensuring efficient wastewater management and flood mitigation.

The City of Chicago is dedicated to meeting NPDES Permit No. IL0045012 requirements of the combined sewer system by implementing regulatory enforcement, infrastructure improvements, and maintenance programs. These efforts are designed to maximize pollutant retention for treatment at MWRDGC and minimize pollutant overflows into the Chicago River, ensuring sustainable combined sanitary stormwater management and improved water quality.

8.1 CDWM Public Education

The City operates extensive public education programs beginning in the Mayor's Office and extending downward through various City departments. Among these, CDWM and DOE maintain ongoing public education programs that specifically address issues related to pollution prevention. These programs utilize educational aids such as social media, public presentations, and printed brochures. As part of its Phase II NPDES Storm Water Permit Application, the City has committed to continuing these efforts with particular attention on pollution prevention efforts aimed at protecting water quality.

The City develops educational materials that describe the hazards and impacts of pollution and illegal dumping and promotes the City's existing hotline for reporting illegal dumping or discharges. Educational material is developed in conjunction with other City departments, public information, and education best management practices (BMPs).

CDWM provides Alders with newsletters on stormwater management tips, as well as information about stormwater-related initiatives aimed at citizen engagement such as residential stormwater runoff controls, water conservation, and Overflow Action Days. Stormwater management tips and information can be found on various posts on social media. CDWM's website includes a webpage dedicated to CSOs, including a brief description of the City's sewer system and outfalls.⁴ The site also includes a link to the MWRDGC website that lists CSO events. It also allows the public to sign up for CSO email notifications and ask any CSO-related questions.⁵

8.2 Inlet Restrictor Program

The City of Chicago was the first major metropolitan area in the country to successfully implement an inlet control system to relieve basement flooding. The system works by installing restrictors to slow the flow of stormwater into the sewer system. Stormwater is detained on city streets for brief periods before flowing back into the sewer system. This measure helps relieve the burden on the sewer system and reduce the frequency of basement flooding and combined sewer overflows into waterways.⁶

8.3 Sanitation

8.3.1 Garbage Collection

Residential garbage and recyclable materials are collected by DSS from Chicago homeowners weekly and bi-weekly, respectively. Nearly one million tons of garbage and recyclables are collected annually, where they then are delivered to waste and recycling processing facilities.

8.3.2 Street Sweeping

DSS is responsible for cleaning streets within the City. DSS deploys mechanical street sweepers in each of the 50 wards of Chicago, which operate every working day during the sweeping season which occurs between April and November. Over 200,000 miles of streets and over 2,000 alleys are swept each year. Collected debris from the street sweeping efforts is disposed of per standardized waste disposal procedures. Street sweeping requests should be made to the city's request line at 311. For effective curb-to-curb street cleaning, temporary parking restrictions are posted a day prior to commencing scheduled work. Some arterial streets have permanently posted signs that specify a once-per-week period when parking is prohibited for street sweeping. Maps, schedules, and more information for each ward can be found on the City of Chicago website.⁷

8.4 Recycling Efforts

8.4.1 Blue Cart and Residential Recycling

The Blue Cart Program provides bi-weekly recycling services to approximately 625,000 residential units consisting of single-family homes and multi-unit buildings with four or fewer units, as well as city facilities. By participating in the program and recycling regularly, residents can help reduce the need for landfills, lower disposal costs, reduce pollution, and conserve natural resources such as timber, water, and minerals. If a high-density building (5+ units) is not providing a recycling program, residents should contact their landlord or request a Recycling Inspection using the 311 system, as the property manager must contract with a private waste hauler to provide recycling service per the Chicago Recycling Ordinance. Chicago's Blue Cart program is the City's largest effort for residential recycling.

The Blue Cart program divides the city into six service areas based on geography and number of households. In June 2021, DSS partnered with Lakeshore Recycling Systems (LRS) to service the majority of the city's residential recycling. DSS' Bureau of Sanitation now maintains service in zones 2 and 4, while LRS collects recyclables from the remaining four zones.

The DSS crews empty the Blue Carts along their routes and take the recyclable material to a service yard called a transfer station. Recyclable materials are consolidated into larger vehicles and transported to an LRS material recovery facility (MRF) in Forest View, Northbrook or the Chicago Stockyards to be processed.

In February 2023, LRS opened a new state-of-the-art MRF in the Chicago Stockyards. This new facility processes 25 tons per hour. As of March 2023, 90% of Chicago's Blue Cart material is processed at this site.

8.4.2 Residential Recycling Drop-Off Centers

In addition to the Blue Cart curbside collection program, DSS maintains two Residential Recycling Drop-off Centers to recycle the same full range of materials accepted in the Blue Cart program, including paper, plastics, glass and cardboard. They are accessible anytime during daylight hours, 7 days a week to drop off the recyclables collected from homes. The drop-off center locations are: Far North Side (6441 N. Ravenswood) Near South (1758 S. Clark St.) The drop-off centers are picked up on a regular schedule. If a drop-off center is full or overflowing, residents can call the Recycling and Materials Management office line at (312) 744-2413 to report the location of the center and the date it was full.

8.5 Household Hazardous Waste Disposal

The City maintains the Household Chemicals & Computer Recycling Facility (HCCRF) to provide residents with a central location to dispose of potentially hazardous household chemicals and computer equipment. The chemicals from a single home might seem insignificant, but with over a million homes in Chicago, the proper disposal of toxic household chemicals plays an important role in the protection of our water supplies and the environment. Hazardous chemicals should not be poured down the drain, on the ground, into storm sewers, or put in the trash. In 2012, the State of Illinois passed a law banning computer equipment from landfills. It is thus important to recycle electronic waste, with the recycling of obsolete electronics keeping toxins like lead, mercury, and polychlorobiphenyls (PCBs) out of our environment. Recycling electronics also recovers precious resources like gold, silver, copper, and palladium which can be reused, reducing our need for additional mining.

9. Minimum Control No. 8: Public Notification

9.1 Public Notification Pilot Program

CDWM is collaborating with DOE to launch the Public Notification Pilot Program. Elements from the current system will be included in the updated program such as signage and MWRDGC's CSO Alerts. The updated program will include a dynamic on-site light system which will first be incorporated at four different locations along the Chicago River including:

1. River Park (5100 N. Francisco Dr., Ravenswood)
2. Clark Park (3400 N. Rockwell St., Roscoe Village)
3. Ping Tom Park (1700 S. Wentworth Ave., Chinatown)
4. Park 571 (2754 S. Eleanor St., Bridgeport)

9.2 Upkeep of DWM and MWRDGC CSO Webpages

CDWM and MWRDGC have dedicated webpages for CSO information. CDWM provides an overview for its visitors and a link to MWRDGC's CSO page. MWRDGC provides more information about CSO locations, events, and a way to sign up for CSO discharge notifications. The City will maintain its webpage and collaborate with MWRDGC to maintain its webpage as well. The newly added QR code on the updated CSO signs will direct users to the CDWM CSO webpage.

9.3 CSO Email/Text Notifications

MWRDGC's webpage has an option to register for MWRD CSO Notifications. This notification system was updated on June 17, 2025 and will require current subscribers to re-register to continue receiving CSO notifications.

9.4 CSO Sign Updates, Installation, and Inspection

In accordance with Special Condition 3, Paragraph 28e, the City has updated its CSO Signs, which incorporated stakeholder feedback, to include a QR code for reporting purposes. These updated signs will be installed on an ongoing basis as needed for replacement. CSO signs are regularly inspected to ensure they are not missing or illegible. If signs are missing or illegible, CDWM carpenters will reinstall during inspection.



Figure 5: CDWM CSO Sign

9.5 CHI311 Service

The Chicago 311 system is a resident service request platform that allows residents to report various concerns to the City of Chicago. The system provides an avenue of communication between residents and city departments, including CDWM. CDWM regularly inspects, repairs and cleans the sewer main, alley sewers, and catch basins based on 311 service requests.

Residents can dial 311, submit an online request, or use a mobile application to place service requests. CDWM responds to reports from residents regarding pollution, water in basements, sewer overflows, and a list of other service request types as part of CDWM's maintenance and inspection routine. The 311 system sends a request to CDWM for CDWM to initiate a work order to resolve the issue. Once any orders from 311 are completed, the reports and details of the work are logged, the 311 task is closed, and the public is notified of the results.

10. Minimum Control No. 9: Monitoring to Characterize CSO Impacts and Efficacy of CSO Controls

10.1 MWRDGC CSO Monitoring for Chicago

The City of Chicago relies on its partnership with MWRDGC to monitor, track, and report CSOs. While Chicago does not operate its own CSO monitoring and alert system, the City works closely with MWRDGC to ensure compliance with state and federal regulations and to keep residents informed of overflow events.

MWRDGC operates a network of flow sensors and monitoring stations throughout the sewer system to track discharges in real time. All the information can be found on MWRDGC's GeoHub website. 73 outfalls within the City are equipped with the MWRDGC telemetric tide gate monitors. The list of monitored outfalls can be found in NPDES Permit IL0045012. The monitoring system is installed in outfalls and is tied to tide gate openings which are triggered by stormwater flows. The monitors determine when overflows occur and provide a source of data collection to document CSO occurrences. The IEPA allows local municipalities such as Chicago, served by TARP, to use MWRDGC's monitoring and reporting data to fulfill the requirements of their respective NPDES permits. More information on CSO monitoring can be found in MWRDGC's CSO Manual⁸.

As part of its NPDES Permit No. IL0045012 compliance, the City of Chicago is responsible for reporting CSO events to IEPA. Since Chicago does not conduct independent CSO monitoring, the City relies on data provided by MWRDGC, which includes:

- The frequency, duration, and estimated volume of CSO discharges
- Water quality impacts and precipitation data
- Operational actions taken to mitigate overflows

This data is submitted by Chicago to the IEPA through the NetDMR system, a federal electronic reporting tool required for NPDES permit compliance. Through NetDMR, Chicago ensures accurate and timely reporting of all CSO events based on MWRDGC's monitoring data, fulfilling regulatory obligations while working to improve CSO management and environmental protection.

Updated NPDES permitting requires Chicago to increase its water sampling from 2 CSOs to 11 CSOs whenever a discharge occurs at the CSOs. CDWM employs a contractor to obtain samples and testing for 9 of the 11 CSOs while MWRDGC performs the testing at 2 CSOs per previous agreements.

10.2 Combined Sewer Overflow Testing and Sampling

Per the new NPDES Permit, CDWM has expanded its testing from two locations to 11 locations. Sampling and testing occur at the outfalls as listed in the Effluent Limitations, Monitoring, and Reporting paragraph of the NPDES permit.

CDWM employs a contractor to collect samples for testing at 9 of the 11 listed outfalls in compliance with the NPDES Permit. The MWRDGC performs sampling for two of the 11 outfalls per the updated agreement between CDWM and MWRDGC.

The services provided by the contractor include storm monitoring, emergency response to combined sewer discharges, sample retrieval of sewer discharge at multiple locations across the city from the sewer system, testing and reporting of sewer discharge.

10.2.1 Testing Locations

Below is the list of CSO testing locations where the contractor is dispatched.

1. 024 Forest Glen Ave (S) CSO to the North Branch Chicago River
2. 057 Berteau Ave CSO to the North Branch Chicago River
3. 063 Roscoe St CSO to the North Branch Chicago River
4. 067 Leavitt St CSO to the North Branch Chicago River
5. 074 Fullerton Ave CSO to the North Branch Chicago River
6. 084 Blackhawk St CSO to the North Branch Chicago River
7. 156 Union Ave CSO to the South Branch Chicago River
8. 172 Oakley Ave CSO to the Sanitary and Ship Canal
9. 178 Albany Ave (N) CSO to the Collateral Canal
10. 194 35th Street CSO to the Bubbly Creek
11. 226 Wilson Ave CSO to the Des Plaines River

10.2.2 Sampling Parameters

The Contractor employed by the city obtains grab samples and tests for the following sampling parameters.

Parameter	Sample Frequency	Sample Type
Total Flow (MG)*	Daily	Continuous
BOD ₅	Daily when Discharging	Grab
Suspended Solids	Daily when Discharging	Grab
pH	Daily when Discharging	Grab
Fecal Coliform	Daily when Discharging	Grab
Total Phosphorus (as P)	Daily when Discharging	Grab
Total Nitrogen (as N)	Daily when Discharging	Grab
Chloride	Daily when Discharging	Grab
Dissolved oxygen	Daily when Discharging	Grab

10.2.3 Grab Sample Procedures

- Upon notification of a CSO discharge through the MWRDGC notification system Contractor personnel will mobilize to the appropriate location.
- A grab sample will be obtained using 1L sample jars and lowering them down to collect water from the CSO. A sampling dipper may also be utilized to assist with sample collection if practical.
- Photos will be taken to document field observations of the manway.
- The pH and Dissolved oxygen will be measured on site
- Sample containers will be filled leaving minimal headspace just below the lid. Ensure the mouth of the bottle does not come into contact with anything other than the sample volume.
- Samples will be placed inside of a cooler and kept on ice until transported to the Lab for testing

Sampling Point: Albany (#178, Albany at 31st Street)								
Sample	31ST	31ST	31ST	31ST	31ST	31ST	31ST	31ST
Date	BOD5	SS	pH	Fecal Coliform	Total Phosphorus	Total Nitrogen	Chloride	Dissolved Oxygen
	mg/L	mg/L	Units	Units	Units	Units	Units	Units
5-Jul-23		333	7.1					
MDL	2	4						
Observation	0	1	1					
Minimum		333	7.1					
Mean		333	7.1					
Maximum		333	7.1					

Figure 6: Testing Results Template

11. Conclusion

Through collaboration with City departments, and the use of the TARP system, CDWM has many programs and activities in place, and in development, that meet the NMC guidelines to minimize CSO impacts on receiving waters.

¹ <https://www.epa.gov/npdes/npdes-cso-control-policy>

² https://www.chicago.gov/content/dam/city/depts/obm/supp_info/CIP/CIP%202024-2028.pdf

³ <https://mwr.org/doing-business/pretreatment-and-cost-recovery/pretreatment-program>

⁴ https://www.chicago.gov/city/en/depts/water/provdrs/engineer/svcs/Combined_Sewer_Overflows.html

⁵ <https://geohub.mwr.org/pages/cso>

⁶ https://www.chicago.gov/city/en/depts/water/supp_info/conservation/downspout_disconnection.html

⁷ https://www.chicago.gov/city/en/depts/streets/provdrs/streets_san/svcs/street_sweeping2024.html

⁸ https://mwr.org/sites/default/files/2025-03/Collection_System_OM_Manual_2025.pdf