# COMBINED SEWER OVERFLOW
# OPERATIONAL AND MAINTENCANCE PLAN

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PROGRAM
ILLINOIS ENVIRONMETAL PROTECTION AGENCY
Division of Water Pollution Control
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VILLAGE OF MORTON GROVE
CSO OPERATIONAL & MAINTENANCE PLAN

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## SECTION 1 – GENERAL INFORMATION

This Operational and Maintenance (O&M) Plan was developed to comply with the requirements of the National Pollutant Discharge Elimination System (NPDES) Combined Sewer Overflow (CSO) General Permit No. ILM580005 issued by the Illinois Environmental Protection Agency to the Village of Morton Grove. The NPDES permit allows the Village of Morton Grove to operate and maintain CSO structures that have been constructed as part of its sewer system.

### 1.1 OBJECTIVES OF THE PLAN

The combined sewer system in the Village of Morton Grove is designed to collect and convey storm water and domestic and industrial wastewater through the same pipe. The combined sewer system transports flow to the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) wastewater reclamation plants where it is treated and discharged to a body of water. During periods of heavy rainfall or snowmelt events, the combined sewer system cannot handle the additional volume of flow resulting in the discharge of combined wastewater and storm water through specific discharge points directly to nearby bodies of water. These overflows are called "Combined Sewer Overflows" (CSO) and discharge of combined flow is permitted by the IEPA to the Village of Morton Grove through the NPDES General Permit No. ILM580005.

As part of the NPDES permit, the Village of Morton Grove must review and revise a "CSO Operational and Maintenance (O&M) Plan" to reflect system changes. In consideration of the risks to the environment presented by combined sewer overflows, the primary objective of this plan is to provide a program for effectively improving the Village's combined sewer overflow management and thereby reducing likelihood for CSO events. These measures taken will help reduce the total loading of pollutants entering the receiving stream and help comply with water quality standards. Moreover, the plan has been prepared to meet the following eight requirements of the NPDES CSO permit for O&M plans:

1. Collection system inspection on a regular scheduled basis;
2. Sewer, catch basin, manhole, and regulator cleaning and maintenance on a regular scheduled basis;
3. Inspect and perform preventative maintenance on all pump/lift stations;
4. Collections system replacement, where necessary, when funds become available;
5. Continue connection of new side street storm sewers to the Capulina Avenue and Lake Street relief sewer, when funds become available;
6. Detection and elimination of illegal connections;
7. Detection, prevention, and elimination of dry weather overflows;
8. Maximize storage capacity of the combined sewer to delay storm water entry into the system.

Additionally, the plan was developed to utilize the nine minimum controls established in NPDES CSO permit as described in the National CSO Control Policy.

1. Implementing and maintaining a proper O&M program for sewer system and CSO outfalls;
2. Making maximum use of the collection system for storage of wet weather flows;
3. Reviewing and modifying pretreatment requirements to ensure that CSO impacts are minimized;
4. Maximizing the volume of polluted waters processed and treated by the Publicly Operated Treatment Works (POTW);
5. Eliminating and preventing the discharge of dry weather flows from CSO structures to water ways;
6. Implementing controls to limit the solids and floatable materials in CSO discharges;
7. Implementing a pollution prevention program to reduce contaminants in CSO discharges;
8. Implementing a public notification program to ensure that the public received adequate notification of CSO event occurrences and impacts; and
9. Monitoring CSO events to effectively characterize CSO impacts and efficacy of CSO controls.

## SECTION 2 – SEWER SYSTEM INFORMATION

The Village Morton Grove is located within the North Branch Chicago River watershed and entirely within the service area of the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC). The Village of Morton Grove owns and operates a wastewater collection system consisting of both combined sewers and separate sanitary sewers, where the length of combined sewers is 22.7 miles. As there is no wastewater treatment plant in the Village, all dry weather flow and large portion of the wet weather flow within the combined sewer area ultimately flows into the MWRDGC owned and maintained interception sewers.

### 2.1 COMBINED SEWER SYSTEM OVERFLOW INVENTORY

The combined sewer service area of Morton Grove represents the northeastern portion of the Village between the Chick Evans Golf Course on the north, Main Street on the south, Edens Expressway on the east, and the North Branch of the Chicago River on the west. The current total length of combined sewers in the Village is 22.7 miles. All wastewater generated in Morton Grove flows through Village owned and maintained sewers to various MWRDGC interceptor and outfall sewers. Village combined sewers and MWRDGC outfall sewers ultimately flow to MWRDGC interceptor sewer (located on Austin Avenue and on Dempster Street in Morton Grove) which transports all wastewater to the MWRDGC's water reclamation plants. The Village has two CSO locations that drain to the North Branch of the Chicago River, as described in Section 2.4.

### 2.2 MWRDGC INTERCEPTOR

The MWRDGC interceptor sewer was constructed in the mid 1930's to transport wastewater from Morton Grove to the North Side wastewater treatment plant. Originally, diversion

chambers were built at the two locations where the Village sewers connected to the MWRDGC interceptor. One location is on Dempster Street at the North Branch of the Chicago River and the other is on the extended sewer line west of Church Street in Cook County Forest Preserve property along the river. The chambers allow overflow from the Village sewers to be diverted to the river. Two major drainage areas are served by the combined sewer system and are withing the service area of the MWRDGC. At present the combined sewers of the Village drain to the MWRDGC interceptor sewers which now empty into the Tunnel and Reservoir Plan (TARP) facilities and then to MWRDGC wastewater reclamation plants.

## 2.3 TUNNEL AND RESERVOIR PLAN (TARP)

The Village of Morton Grove is served by the North Branch Chicago River Tunnel, which is a component of the MWRDGC's Tunnel and Reservoir Plan (TARP). TARP is a system of deep, large diameter tunnels and reservoirs designed to reduce flooding and improve water quality in the Chicago area waterways by reducing pollution caused by sewer overflows. According to the MWRDGC, TARP captures, and stores combined sewage and stormwater that would otherwise overflow directly into waterways during periods of heavy rainfall. The intercepted combined sewer flow is conveyed to regional treatment plants for processing before being released to surface waterways. Reference information concerning TARP can be found on the MWRD website at the following location:
https://mwrd.org/tunnel-and-reservoir-plan-tarp

The North Branch Chicago River Tunnel is part of the larger Mainstream Tunnel System, which has a current tunnel length of 40.5 miles, serves a combined sewer area of approximately 220 square miles, and has a 1.2 billion gallon capacity. Since the completion of the North Branch tunnel system in 1998, the MWRDGC controls motorized sluice gates through drop shafts at both the Dempster Street and Church Street CSO Overflow sites accepting flow when the combined sewer system's capacity is exceeded, as described in Section 2.4.

## 2.4 DESCRIPTION OF CSO SYSTEMS

The Village of Morton Grove maintains two CSO outfall structures:

| Outfall No. | LOCATION | LATITUDE | LONGTIDUE | WATERWAY REACH |
|---|---|---|---|---|
| Outfall 001 | Church Street | 42° 02' 52.0" N | 87° 46' 52.0" W | Chicago River North Branch |
| Outfall 002 | Dempster Street | 42° 02' 27.3" N | 87° 47' 15.5" W | Chicago River North Branch |

Table 1. Location and Description of Morton Grove CSO Outfall structures.

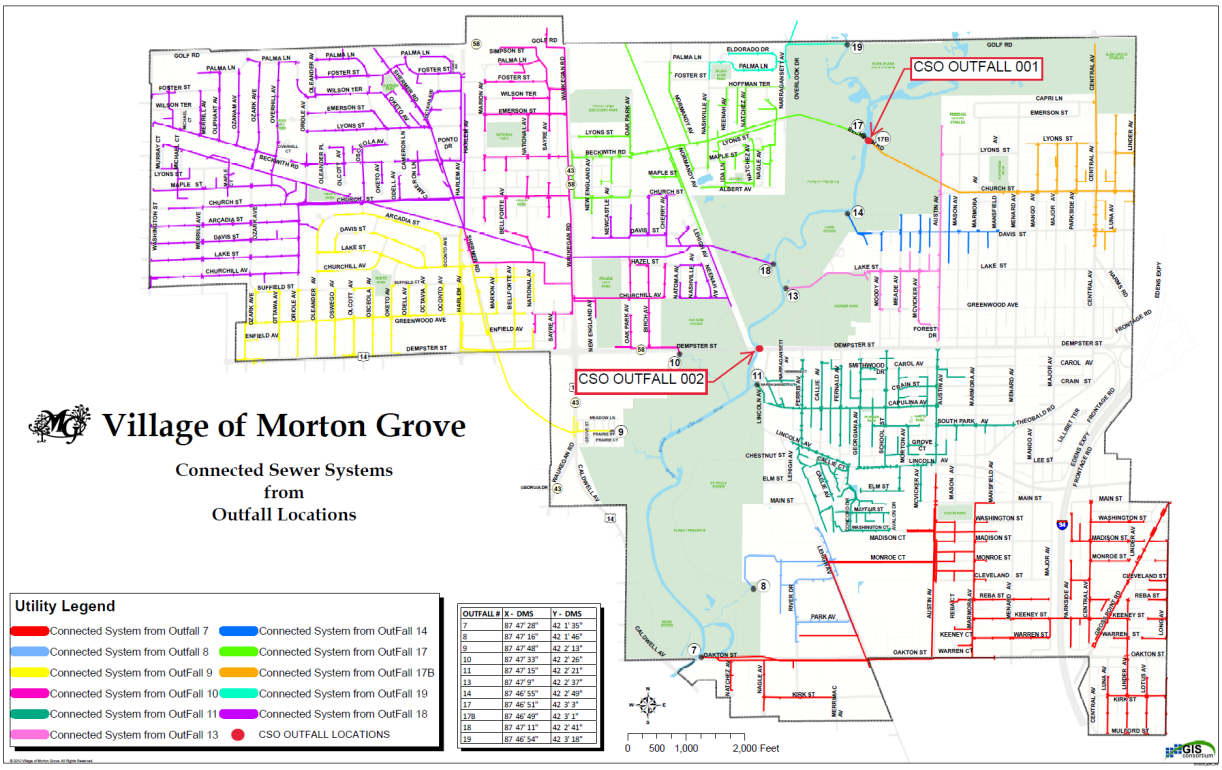


Figure 1. CSO outfall locations.

### 2.4.1 Dempster Street Combined Sewer Service Area

The Dempster Street Combined Sewer Service Area, approximately 235 acres of tributary area, outlets at the 24" MWRDGC interceptor on Dempster Street at the North Branch Chicago River indicated as Outfall 002. This area is served by a major 30" diameter Village owned collector pipe running east-west down Dempster Street.

### 2.4.2 Church Street Combined Sewer Service Area

The Church Street Combined Sewer Service Area, approximately 602 acres of tributary area, outlets at the 6'-9" x 7'-6" MWRDGC interceptor at Church Street and Austin Avenue indicated as Outfall 001. This area is served by two major Village owned collectors; one sewer line ranging in size from 27" to 57" diameter running east-west Church Street and a second line varying in size from 27" to 48" diameter running north-south down Menard Avenue.

## 2.5 RELIEF STORM SEWERS

As early as 1985, the Village of Morton Grove recognized the need for relief storm sewers to take some of the wet weather flow off the combined sewer system. At that time, the Village commissioned a study to develop a Comprehensive Stormwater Management Plan, Village of Morton Grove, Illinois.

The 1985 Comprehensive Stormwater Management Plan was voted on and approved by the Village board and during the ensuing ten years the Village budgeted $4,000,000 to construct the relief storm sewers in the combined sewer areas of the Village. To date the Village has separated approximately 5.9 miles of combined sewers.

## 2.6 DISCHARGE MONITORING & REPORTING OF CSO EVENTS

Effective October 6, 2006, the MWRDGC began monitoring the frequency and duration of discharge from CSO outfalls authorized in the NPDES permit and for all other CSO outfalls connected to TARP, for which the MWRDGC has the ability to monitor through telemetry.

In accordance with Special Conditions (SCs) 10.11 and 14.11 of the North Side and Kirie National Pollutant Discharge Elimination System (NPDES) Permit Nos. IL0028008 (effective March 1, 2002) and IL00047741 (effective August 1, 2004). The following plan is being submitted for monitoring the frequency and duration of the discharge from select, representative CSO outfalls authorized in the permits and for all other CSO outfalls connected to TARP, for which the MWRDGC can monitor through telemetry, using the Remote Terminal Unit systems that communicates to the Stickney, Calumet, and Kirie water reclamation plants. When CSO flow exits to an outfall, it pushes open a tide gate which triggers and alarm that is transmitted to the workstation. Information such as location, open time, close time and duration of alarm are recorded.

In accordance with this authorization, the MWRDGC maintains monitoring equipment at selected CSO outfalls located along the North Branch of the Chicago River, and other principal water ways in Cook County. There are 56 CSO structures monitored along the North Branch of the Chicago River, including CSO #002 – No. N19 utilized by the Village of Morton Grove. This list has also been updated to account for multiple outfalls associated with each TARP structure. This includes CSO #001– No. N20.

The MWRDGC documents the frequency and duration of CSO events and the associated depth and duration for each rainfall event. The MWRDGC continues to always monitor the CSO outfalls, unless the telemetry is out of service due to malfunction or routine maintenance. The results of the monitoring is submitted to the IEPA on a quarterly basis, and typically scheduled to be transmitted on February 15, May 15, August 15, and November 15 of each year.

Pursuant to the NDES CSO Permit requirements, the Village is responsible for the reporting of all wet and dry weather overflow discharges. However, since the MWRDGC has installed telemetry equipment on the Village's CSO #002 – N19 along with CSO #001 – N20 and is reporting monitoring data, detailing any overflows, directly to the IEPA on the Village's behalf, the Village believes that the monitoring requirements of the NPDES permit have been satisfied. Despite this conclusion, the Village continues to inspect and document daily status of its CSOs to ensure proper operations are maintained.

## 2.7 PUBLIC NOTIFICATION PROGRAM

### 2.7.1 PUBLIC NOTIFICATION PLAN

Pursuant to the NPDES CSO Permit Requirements, the Village is responsible for developing a program for notifying the public of any discharges. In order to avoid a redundancy of efforts, the MWRDGC has invited TARP municipalities, including Morton Grove, to use the MWRDGC's Combined Sewer Overflow Public Notification Plan for their public notification compliance. The MWRDGC has developed an opt-in public notification system where

members of the public are able to sign up to receive e-mail and or text notification of CSO events by accessing the MWRDGC website. The alert also contains a link to the District's CSO website where CSO discharges are shown on an interactive map. A link to the MWRDGC's CSO Notification System can be viewed on the Village's web site: https://www.mortongroveil.org/public-works/storm-water-management/

The Village's plan, in conjunction with the MWRDGC's plan, involves the installation of signage at all CSO outfall structures to warn residents of the dangers posed by outfalls and information on who to call for assistance.

The MWRDGC maintains a network of flow monitoring devices throughout the Chicago area to detect and automatically report the occurrence of combined sewer overflows. Reference materials concerning the CSO monitoring program can be found on the MWRDGC's website using the following link: https://geohub.mwrd.org/pages/cso The current status of overflow activity within the region can be found on the MWRDGC website at the following location: https://gispub.mwrd.org/csomaps/

## 2.8 MAXIMIZE STORAGE OF POLLUTANTS IN COMBINED SEWER SYSTEM

The following is a summary of many of the Village's efforts to maximize the storage of waste water pollutants in the combined sewer system, or to minimize the flow of storm water into the combined sewer system, and thereby minimize the likelihood of CSO events:

1. Prohibit the connection of roof drainage and sump pumps drainage systems directly to the combined sewer system. The disconnection of existing downspout from the combined sewer has been implemented where feasible.
2. Correct structural deficiencies in the combined sewer system (sewer mains, catch basins, manholes, etc.) and groundwater infiltration by reconstruction or through sewer lining projects.
3. The manhole and drainage structure replacement has been implemented as part of the capital projects or as part of system maintenance project to improve deteriorating manholes and minimize the flow of groundwater into structures.
4. The Village continues a regular program to clean and inspect the combined sewer system, including sewer mains and catch basin, so that their capacity is undiminished by debris and roots which can impede the flow in the sewers.
5. Storm water management practice guidelines are being developed for public distribution in order to reduce the amount of storm water drainage entering the sewer system, to improve sediment control, and to improve the quality of storm water runoff in the most cost effective manner.

## 2.9 POLLUTION PREVENTION PLAN

Pursuant to the NPDES CSO Permit Requirements, the Village is responsible for creating a Pollution Prevention Plan. The Pollution Prevention Plan compliments this Operational and Maintenance (O&M) Plan and provides more details about the Village's efforts to prevent contaminants from entering the combined sewer system.

Listed below are activities and/or services the Village provides in order to collect and remove various solid waste materials in order to keep pollutants and other debris form entering the Village's combined sewer system with the potential of discharging into the North Branch of the Chicago River watershed via CSO outfall structures.

1. Street sweeping/cleaning
2. Catch basin/drainage structure cleaning
3. Solid waste collection and disposal (refuse, recyclables, yard waste, bulk items)
4. Control of product use
5. Illegal dumping
6. Hazardous waste collection
7. Leaf collection and disposal
8. Commercial/industrial pollution prevention

Refer to the Village of Morton Grove's CSO Pollution Prevention Plan for more details.

## 2.10 ILLINOIS POLLUTION CONTROL BOARD

The Illinois Pollution Control Board has not issued any orders or violations regarding either of the two CSO outfall structures.

## 2.11 SENSITIVE AREAS

The two CSO outfall structure do not discharge into sensitive areas such as wetlands or beaches. The North Branch of Chicago River does not provide drinking water to Morton Grove. No boating activity or other primary contact activities occur in the Chicago River in Morton Grove due to inadequate water depth, physical obstacles such as logs and bridge piers, and as the entire length of the Chicago River in Morton Grove is adjacent to Cook County Forest Preserve with no beaches, swimming areas, or boat landings. It is to be noted that the North Branch of the Chicago River is listed on the EPA's 303d list of impaired waters.

# SECTION 3 – COMBINED SEWER OPERATION

The goal of this CSO O&M Plan is to establish continuous and preventative procedures for the proper operation and maintenance of the Village's combined sewer system during dry and wet weather flows. This program aims to ensure a proper, satisfactory and safe state of repair for the city's combined sewer system. The purpose of the maintenance is to reduce excessive inflow and/or infiltration in the system, to prevent basement sewer backups, adverse surcharging of the manholes, reduction of solids during "first flush" conditions and discharge at overflows/outfalls.

## 3.1 INVENTORY

The Village has made significant process in compiling all of its sewer system records into a geographical information system (GIS). The Public Works Engineering Department continues to update and revise the GIS Sewer Atlas and Outfall Storm Sewer Maps and the latest version

will be available on the Village's computer network for use by Village staff. Since 2018, sewers were updated to include current material, size of pipe and flow direction. This information is obtained through completion of private sector inspections, meter replacements, televising, repairs and improvements or new development construction.

Field personnel will have paper copies of the map to mark any necessary changes based upon their field observations. In addition, updated paper copies will be distributed to field personnel twice a year. GIS mapping is also used to track tasks such as smoke testing, sewer lining, basin cleaning, retention/detention tracking, B-box locations, water main breaks, lead/copper inventory, water meters, basement backups, and many others.

### 3.2 INSPECTION

Any special appurtenances in the sewer system, such as lift stations, Village-owned junction chambers, combined sewer overflows, flap gates, etc., will be inspected periodically on a schedule established by the Director of Public Works.

**Manholes:** All manholes will be inspected on a five-year cycle. Every manhole will be inspected for the following, and the results of the inspection will be noted for the necessary repair work, if any. As far as practicable, the inspections should be scheduled in the periods of high ground water.

1. **Inflow through the lid:** Whether the manhole is located where storm runoff could accumulate around and over the lid, and enter the manhole through pick/vent holes, or through the space between the lid and the frame. This could be remedied by installation of a gasket seal cover or solid watertight cover with concealed pick holes.

2. **Frame Seal:** The manhole frame should be sealed watertight with the cone or adjustment rings. If signs of water leakage are noted, the frame should be removed and resealed.

3. **Adjustment Rings:** The existing adjustment rings between the frame and cone will be inspected for water tightness. If a leak(s) is observed, the frame and the rings should be removed and resealed. Any brick/block adjustment rings should be removed and replaced with pre-cast concrete rings.

4. **Manhole Walls:** To be inspected for signs of leaks. Leaking walls may be repaired by chemical grout sealing. Poured-in-place concrete liners or guniting may be considered for brick/block manholes with multiple defects.

5. **Manhole Base and Pipe Invert(s):** To be inspected for signs of leaks. Chemical grouting is the most likely repair method.

6. **Bench:** To be inspected for erosion of the bench. Eroded benches should be repaired by an appropriate method, ranging from application of mortar of an appropriate type to re-pour of the bench.

7. **Steps:** To be inspected for leaks at the holes the steps are grouted into, and the condition of the step itself. Possible repair methods include re-grouting and/or replacement of the step.

**Sewers:** All sewer opening(s) in a manhole shall be visually inspected using a high intensity lamp and a mirror, to the extent visible from the manhole for the signs of obstructions, roots, sediment deposits and other defects.

Sewer pipe sections are televised in conjunction with ongoing paving and water main improvements. The DVD's and electronic files of televised sewers are retained by the village.

**Detention Pond Inspection:** Detention ponds shall be inspected annually and cleaned or repaired as necessary by the individual homeowners associations or individual businesses.

**Outfall Structures:** All outfall structures shall be inspected twice annually and be cleaned or repaired as necessary.

**Flow Monitoring:** If visual or other inspections indicate possible excess flow problems in certain subsystems, flow monitoring should be performed at key manholes. Smoke testing, dye testing and excavations may be required in some subsystems where complaints or backup causes are difficult to locate.

**Building Inspections:** If other inspections indicate that the increased flow may be a source of inflow/infiltration (1/1) located on private property, an inspection of such property, including any building(s) on it, will be conducted. Maintenance staff, meter readers, and building inspectors will be familiarized with the sewer use ordinance so that unauthorized connections to the sewer can be identified and disconnected. Also, they will ensure that these connections are not reconnected later.

**Rehabilitation and Maintenance Work:** The rehabilitation work determined necessary to be done, as a result of the inspections described above, will be scheduled as soon as possible. Contemporary and modern methods suitable for such repairs will be used. When necessary, an outside contractor will be used to make the appropriate repairs.

## 3.3 ELIMINATION OF DRY WEATHER OVERFLOWS

The CSO system is configured such that dry weather flow conveyed by the outlet sewer is intercepted by the 84 inch diameter dry weather interceptor to the TARP System located just before the N19 and N20 outfalls maintained by the MWRDGC. Flow conveyed by the outlet sewer drops into a deep flow channel and routed into the interceptor. Functioning as a leaping weir device, flows must exceed the capacity of the intercepting sewer structure before reaching and passing through the outfall flood gates. This will only occur if the interceptor system capacity is exceeded and unable to receive additional flow from the outlet sewer. Such circumstances of dry weather discharge are not known to occur.

The flow monitoring devices, such as activation of tide gate alarms, installed by the MWRDGC are designed to identify such flows. In the unlikely event that a dry weather overflow occurs, the District will alert the Village when the flow metering equipment records the overflow condition. In the event a dry weather overflow is documented and observed by the Village staff, the Village will notify the IEPA and implement corrective actions. The Village has installed signs at each CSO outfall structure alerting the public to call the 24 hour Municipal Hotline if a discharge or overflow event is observed during dry weather and to warn of the dangers of CSOs. Also, the Sewer Maintenance Unit personnel of the MWRDGC is available 24 hours per day, 7 days per week to investigate reports of dry weather overflows. The public can call the MWRDGC telephone hotline number (1.800.332.DUMP) if a CSO is observed.

### 3.4 ELIMINATION OF ILLEGAL CONNECTIONS

Illegal connections to the combined sewer system can lead to sewer overflows as the excess inflow can exceed the capacity of combined sewer pipes, especially during periods of heavy rainfall. Illegal connections can be detected by visual inspections, manhole observations, dye testing, smoke testing and underground televising. Upon detention of an illegal connection, the Village will provide the responsible party with information about the connection, its environmental consequences, the applicable regulations/municipal codes and how to disconnect the illegal connection for voluntary compliance. If voluntary compliance is not achieved, a Notice of Sewer Violation is served. Additionally, proper construction, maintenance and inspection of sewer pipes and manholes can help prevent illicit inflow.

## SECTION 4 - MAINTENANCE

The Village performs or contracts preventative maintenance programs of the combined sewer system to ensure proper operation during dry and wet weather flows. Proper and regular maintenance of the combined sewer system will effectively reduce excessive inflow and/or infiltration into the system, prevent basement sewer backups, prevent adverse surcharging of the manholes, and prevent reduction of solids during "first flush" conditions and discharge at overflows/outfalls.

### 4.1 CATCH BASIN CLEANING

The Village of Morton Grove, operates, and maintains a vactor-type sewer truck/machine that will be used to clean catch basins and other drainage structures. The operation occurs on a five-year cycle between March 15$^{th}$ and November 1$^{st}$, or more often as necessary. The material removed during the cleaning process is disposed of as “landscape” waste.

Procedure for Catch Basin Cleaning:
1. Arrive at location with vactor truck. Remove cover of basin and position the suction tube to proper angle.
2. Hook up suction tube to hose.
3. Lower tube, suck out debris and mud. High pressure water nozzle is used to loosen debris.
4. After cleaning, inspect structure and sewer for any needed repairs.

## 4.2 SEWER CLEANING AND FLUSHING

Jetting and/or root cutting is performed on all sewers once every five years. Sewers with a history of problems are serviced more frequently as necessary.

Procedure for Root Cutting:
1. Arrive at location with jet truck.
2. Attach proper size root cutter to jet hose, i.e. for a 10" sewer line use 10" root cutter.
3. Root cutting proceeds from manhole to manhole. Maximum length of 600'.
4. Debris and roots are pulled backed to the point of entry manhole. This removed material is disposed of as "landscape" waste.
5. After completion of process, inspect structure and sewer for any repairs that may be necessary.

Procedure for Sewer Flushing:
1. Arrive at location with jet truck.
2. Attach proper jetting head to jet hose.
3. Insert jet hose into sewer.
4. Jet sewer using water under high pressure to remove any blockages and clean line.
5. Inspect structure and sewer for any repairs that may be necessary.

## 4.3 STREET SWEEPING AND LEAF COLLECTION

The Village of Morton Grove owns, operates, and maintains two street sweepers for the purpose of sweeping litter and other debris from streets and curbs every week from March to December. During leaf collection season, leaf pick-up operations are conducted once a week throughout the fall months of October and December. Leaf collection service is provided to all residents and the Village encourages the public to keep leaves away from all curb drains and piles approximately 1 foot out from the curb. Leaves are stored in the Village's Public Works yard and then hauled by a contracted waste disposal company.

## 4.4 SEWER REHABILITATION

Sewer rehabilitation involves the replacement or lining of existing sewers based upon findings of a televised inspection. The replacement methodology is used to correct sewer segments with structural deficiencies or leakage problems. The lining methodology is applied where feasible to minimize surface disruption while improving function capacity. Sewer lining preserves the structural integrity, reduces maintenance requirements, and improves flow capacity by eliminating root intrusion through joints and reducing friction losses along pipe walls due to its extremely smooth surface. Through the lining process a resin-saturated, polyester felt tube is inverted or pulled a designated segment of sewer. Hot water or steam is then pumped into the tube to cure the resin and form a tight-fitting, jointless, and corrosion resistant replacement pipe. Service laterals connections are reinstated by internally cutting openings at the catalogued service locations. The sewer is then inspected by a sewer televising system to verify that the lining was successful and that all services are restored.

## 4.5 MANHOLE REHABILITATION

Manhole rehabilitation involves the replacement, repair, or lining of existing manholes. Replacement involves the excavation and removal of the defective manhole structure and the installation of a new precast concrete manhole meeting current standards of fabrication. Repair involves the removal or improvement of only a portion of the manhole structure such as grade rings, cast iron frame and lid, and steps. Manhole lining extends the life of those brick and block structures that are still structurally sound but are exhibiting sings of distress that could eventually fail and require complete removal and replacement. Many manholes exhibit distress within the top 24 inches of the structure as a result of the climatic conditions associated with repetitive freeze-thaw cycles and as a result of traffic loads. If a manhole exhibits distress at a depth greater than 24 inches, but is still structurally functional, then the full depth of the manhole is lines using either a cement or polyurea coating system. Manholes that are severely distressed or are within the boundary of a sewer replacement project are typically replaced.

## 4.6 RECORD KEEPING

The Director will maintain the dated records for a minimum of five years. Records shall be kept regarding collapsed and blocked sewers, basement backups, street flooding, collection system complaints, inspection logs, and excess flow levels at combined sewer overflows. Said records will be in such a form that can be easily accessed for reference or review. The data collected will form the basis for projecting a sequence of future maintenance work. Any sanitary backups are tracked and logged, and any main line backups are reported to the IEPA within 24 hours and forms are submitted within 5 days.

# SECTION 5 – COMBINED SEWER IMPROVEMENTS

## 5.1 CAPITAL IMPROVEMENTS

As early as 1985, the Village of Morton Grove recognized the need for relief storm sewers to take some of the wet weather flow off the combined sewer system. At that time, the Village commissioned a study to develop a Comprehensive Stormwater Management Plan for relieving flooding conditions in the east central portion of the Village. The results of this study are contained in the 1985 report titled “Comprehensive Stormwater Management Plan, Village of Morton Grove, Illinois”.

Since 1985 over 5.9 miles of combined sewers have been separated in the combined sewer areas. Additionally, as part of the Village’s Capital Improvement Plan and Infiltration/Inflow Control Program, the Village allocates over $250,000 per year for the Annual Sewer Lining Program to decrease the amount of I/I that enters the system. Future projects within the combined sewer areas will be incorporated as funds become available.

## 5.2 MUNICIPAL CODE REVISIONS

In 2020, the Village’s sewer regulations were updated to meet minimum requirements imposed by MWRDGC. The updated regulations include language that prohibit introduction of new inflow sources to the sanitary sewer system, requirements for new developments, prohibited

actions, among others. Refer to the Village website where current sewer regulations are described in Chapter 7-5.
https://forms.mortongroveil.org/code/

## SECTION 6 – ADMINISTRATIVE PROCEDURES FOR NEW DEVELOPMENT

### 6.1 WATERSHED MANAGEMENT ORDINANCE

The Village of Morton Grove will not issue a building permit until approval is granted by the MWRDGC for compliance with its Watershed Management Ordinance (WMO) permit. The WMO establishes regulations and permitting related to land development and redevelopment, such as sewer construction that discharge directly or indirectly into MWRDGC collection and treatment facilities. The WMO also requires stormwater management facilities to be installed for new development and redevelopments that exceed a certain acreage limit.

### 6.1.1 INFILTRATION/INFLOW CONTROL PROGRAM

Watershed Management Ordinance requires compliance with the Infiltration/Inflow Control Program. Groundwater infiltration and stormwater inflow (I/I) can enter a sanitary sewer system through pipe defects, such as pipe cracks, off-set joints, pipe-structure connection, etc. Illegal connections, which can include downspouts, sump pumps, drains, can allow stormwater inflow into the system. During intense rainfall events, excessive I/I can overload sewers and can lead to sewer overflows and even damage private property and increase wastewater conveyance and treatment costs. Section 3.4 describes the Village's process to detect and disconnect illegal connects to decrease inflow. As part of the Village's program to reduce I/I from entering its sanitary system, large rehabilitation projects are performed as capital projects under contract to outside sources. These rehabilitation projects include, sewer lining and replacement, manhole rehabilitation, and many others. Additionally, the Village's Water and Sewer Division also performs televising, cleaning and jetting, point repairs under 10 feet, manhole cover replacement, and manages contractual work such as infiltration testing.

### 6.2 BUILDING CODE

In addition, the Village is in the process of updating its Building Code to include the following four requirements of the NPDES CSO general permit:

1. Prohibit introduction of new inflow sources to a sanitary sewer
2. Require that new construction tributary to the combined sewer system be designed to minimize and/or delay inflow contribution to the combined sewer system.
3. Require that inflow sources on the combined sewer system be connected to a storm sewer, within a reasonable period of time, if a storm sewer becomes available
4. Provide that any new building domestic waste connection shall be distinct from the building inflow connection, to facilitate disconnection if a storm sewer becomes available.

## SECTION 7 - OTHER CSO PERMIT EFFORTS

### 7.1 RECORD KEEPING

The Village Department of Public Works maintains the records of work orders routinely issued in the process of repairing collapsed and blocked sewers, basement backups, street flooding, collection system complaints, and excess flow levels at combined sewer overflows. The records and data collected will form the basis for projecting a sequence of future maintenance work.

### 7.2 SEWER SYSTEM MAPPING

The Village maintains an electronic GIS mapping and printed map record of its sewer system, detailing the configuration of the combined sewer, sanitary sewer, and storm sewer systems. The sewer system map record generally displays the inventory of the entire sewer system, showing a record of measured elevations and pipe lengths and sizes. The map record is updated on a period basis to reflect changes to the sewer system caused by sewer system improvements and to add content, as new information becomes available; more information on GIS sewer mapping can be found in Section 3.1 Printed copies of the latest version of the map are distributed to Village Staff as determined to be required to support maintenance operations.

### 7.3 PROCEDURES FOR NEW DEVELOPMENTS

The Village of Morton Grove will issue building permits for applicable projects after approval is granted by the MWRDGC for compliance with its Watershed Management Ordinance, or as otherwise determined to be appropriate by local code and standards. The Village Department of Community Development sets all standards and requirements for local land developments.

### 7.4 PUBLIC EDUCATION AND OUTREACH

It is imperative for members of the community to gain a clear and broad understanding of the dynamics between stormwater, wastewater, and water pollution, and to increase awareness of the direct links between land activities, rainfall runoff, drain connections and local water resources. Outreach materials are provided on the Village website and are also distributed through multiple avenues in the community. The Village encourages the use of electronic means of communications. Online tools, such as emails and social media strategies have become essential to reach various audiences and decrease in-person contact. The Village website also provides various educational videos, zoom meetings, discussions and training sessions on relevant topics at no cost to the public.

In consideration of residents that do not have access to online resources, facts sheets and informational pamphlets are posted at locations that are readily available for residents to read and see. Contact information is also made available for anyone who has additional questions. “The Morton Grove Exchange” is the Village’s local newsletter which is mailed to residents four times per year or more. Articles on topics such as combined sewers, pollution prevention methods, green infrastructure, etc. are included. The Village also has a collaboration with the

Solid Waste Agency of Northern Cook County (SWANCC) to provide information that focuses on recycling, reduction, reuse, and proper disposal of various materials. Messages are included on water bills as another outreach avenues; such topics include reducing pollutants in waterways, water conservation and upcoming events like recycling days.