
VILLAGE OF LA GRANGE, ILLINOIS
NPDES PERMIT NO. ILM580009



COMBINED SEWER OVERFLOW OPERATIONAL & MAINTENANCE PLAN

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PROGRAM
ILLINOIS ENVIRONMENTAL PROTECTION AGENCY
Division of Water Pollution Control
1021 North Grand East
Springfield, Illinois 62794

FEBRUARY 2009

Prepared by:

HEUER & ASSOCIATES
Consulting Engineers
2315 Enterprise Drive - Suite 102
Westchester, Illinois 60154
708-492-1000

CSO OPERATIONAL PLAN CHECKLIST AND CERTIFICATION

(To be Completed by Permittee)

Facility Name Village of La Grange **NPDES No. IL** M580009

Section I. *The following information should be included in the CSO Operational Plan.*

General Information

Included Administrative
Yes No N/A Acceptance

- Describe the collection system including all outfalls and overflows, control (diversion) structures, treatment facilities, pumping stations, and associated capacities
- Describe the relationship to other collection entities, esp. other CSO collection entities
- Has the Illinois Pollution Control Board issued any orders, currently in effect, regarding any of these outfalls? If yes, include a copy of the Board Order with the Plan.....
- Are any of these outfalls to sensitive areas (designated Outstanding National Resource Waters, National Marine Sanctuaries, bathing beaches, shellfish beds, waters with threatened or endangered species and their habitat, contact recreation, or drinking water intakes)? If yes, explain as indicated at the end of Section II
- Describe efforts undertaken to minimize the discharge of pollutants from all CSO outfalls.....
- Describe efforts undertaken to maximize storage of pollutants in the collection system.....
- Describe the pollution prevention aspects of this Operational Plan
- Describe efforts to monitor CSO impacts and the efficacy of CSO controls.....
- Describe the public notification program for CSO occurrences and impacts.....
- Latitude and longitude information given for each outfall.....

Maintenance

- Schedule for regular street cleaning in combined sewer areas
- Added emphasis for leaf removal
- Schedule for catch basin cleaning
- Schedule for routine cleaning of trunk and interceptor sewers
- Stop planks at highest level practical without causing basement backups or excessive street flooding
- Date system stop planks last adjusted _____ (month) _____ (day) _____ (year)
- Describe your procedures for:
 - Cleaning screening equipment after and, if necessary, during each storm
 - Regulating diversion and bypass valves.....
 - Reducing solids deposition in the combined sewer system.....

Inspections and Monitoring

- Schedule to inspect regulator and diversion structures included
- Routine pump/lift station inspection and preventive maintenance discussed
- Schedule to inspect manholes and sewers (e.g., televise, etc.) included
- Schedule to inspect surface water anti-intrusion devices (e.g., flapgates, etc.).....
- Describe your procedures for finding and eliminating illegal sewer connections
- Describe your procedures for finding and eliminating dry-weather overflows.....

Section II. *Information in the following section should be included in the Plan and kept on file by the permittee. This information will be verified by IEPA during a facility inspection. The submission of the information in Section II to the Agency should only be done when requested. **DO NOT SUBMIT THE INFORMATION REQUESTED IN THE FOLLOWING SECTION WITH THE CSO OPERATIONAL PLAN.***

Maps and Diagrams

Included IEPA Field
Yes No N/A Verification

- Sewer system map included
- Combined sewers and sanitary sewers tributary to combined sewers marked
- Storm sewers using combined sewers as a transport link marked.....
- All major interceptors and trunk sewers marked
- Sewer sizes, slope, and material indicated
- Manholes and catch basins identified
- All CSOs, treatment plant bypasses, outfalls, and their receiving waters identified.....
- All control (diversion) structures, including valves, marked.....
- All pump and lift stations and their capacities marked
- Diagram of CSO Treatment Facilities
- All unit processes and associated capacities identified

CSO OPERATIONAL PLAN CHECKLIST AND CERTIFICATION (CONT'D)

(To be Completed by Permittee)

Section II. (cont'd)

Included IEPA Field
Yes No N/A Verification

Sewer System Characterization

Drainage area and population tributary to each overflow indicated.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sewer capacity immediately upstream and downstream of each overflow indicated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Description of structural and physical condition of sewer system	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Age of system included	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bottlenecks in the system included	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Average dry weather flow rate through sewer at each overflow (diversion structure).....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Year last monitored.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land use and zoning classification in the vicinity of each overflow indicated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Projected growth tributary to each overflow indicated	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
List of non-residential sewer users tributary to each overflow	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dischargers of toxics indicated.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dischargers of high strength wastewater indicated.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High-volume dischargers indicated.....	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Percent pervious area developed and kept current for each sewerage basin	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Record Keeping

Logs should be maintained on the following subjects:

Collapsed and blocked sewers.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Basement backups, street flooding, and other collection system complaints	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Regulator and diversion structure inspections.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
CSO and excess flow retention basin levels	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Explain all 'No' and 'N/A' (and 'Yes' for the question on sensitive areas) on a separate sheet and attach.

I attest that this form has been completed by me or by others under my direct supervision and that the information contained herein is, to the best of my knowledge, true and complete.

Director of Public Works

(Signature)

(Title)

(Date)

NOTE: Signature should be authorized according to 35 Ill. Adm. Code 309.103(e).

Contact Person: Ryan C. Gillingham, P.E. Title: Director of Public Works

Address: 53 South La Grange Road Phone: (708) 579-2328

La Grange, Illinois 60525

-----SPACE BELOW RESERVED FOR IEPA USE ONLY-----

ADMINISTRATIVE REVIEW

FIELD VERIFICATION

(Signature)

(Date)

(Signature)

(Date)

VILLAGE OF LA GRANGE
CSO OPERATIONAL & MAINTENANCE PLAN

TABLE OF CONTENTS

Page

OPERATIONAL & MAINTENANCE PLAN CHECKLIST AND CERTIFICATION..... 1
TABLE OF CONTENTS. 3

SECTION 1 - GENERAL INFORMATION

1.1 OBJECTIVES OF THE PLAN..... 4

SECTION 2 - SEWER SYSTEM INFORMATION

2.1 WATERSHED AND DRAINAGE CHARACTERISTICS..... 5
2.2 SEWER SYSTEM DESCRIPTION..... 5
2.3 COMBINED RELIEF SEWER SYSTEM..... 6
2.4 WASTE WATER TREATMENT..... 7
2.5 CSO OUTFALL STRUCTURES..... 8
2.6 MONITORING AND REPORTING OF CSO EVENTS..... 9
2.7 PUBLIC NOTIFICATION PROGRAM..... 10
2.8 MAXIMIZING STORAGE OF POLLUTANTS IN COMBINED SEWER SYSTEM..... 11
2.9 POLLUTION PREVENTION..... 11
2.10 ILLINOIS POLLUTION CONTROL BOARD..... 12
2.11 SENSITIVE AREA CONSIDERATIONS..... 12

SECTION 3 - MAINTENANCE

3.1 MAINTENANCE OBJECTIVES 13
3.2 STREET SWEEPING, LEAF COLLECTION AND BRUSH PICKUP..... 13
3.3 CATCH BASIN CLEANING..... 13
3.4 SEWER CLEANING..... 13
3.5 ROOT CUTTING..... 14
3.6 SEWER REHABILITATION..... 14
3.7 MANHOLE REHABILITATION..... 14

SECTION 4 - INSPECTIONS & MONITORING

4.1 MANHOLE INSPECTIONS..... 15
4.2 SEWER INSPECTIONS 15
4.3 OUTFALL STRUCTURES AND SIPHON CHAMBERS..... 15
4.4 FLOW MONITORING..... 15
4.5 BUILDING INSPECTIONS..... 15
4.6 REHABILITATION AND MAINTENANCE WORK..... 16
4.7 ELIMINATION OF DRY WEATHER OVERFLOWS..... 16

SECTION 5 - OTHER CSO PERMIT EFFORTS

5.1 RECORD KEEPING..... 17
5.2 SEWER SYSTEM MAPPING 17
5.3 PROCEDURES FOR LAND DEVELOPMENTS..... 17

SECTION 1 - GENERAL INFORMATION

This Operational and Maintenance (O&M) Plan was developed to conform to the requirements of NPDES General Permit No. ILM580009 issued by the Illinois Environmental Protection Agency to the Village of La Grange. The NPDES permit allows the Village of La Grange to operate and maintain combined sewer overflow (CSO) structures that have been constructed as part of its sewer system.

1.1 OBJECTIVES OF THE PLAN

It is widely recognized that pollutants conveyed by surface runoff and other drainage sources can degrade the quality of surface waters making them unsafe for drinking, fishing, swimming, and other purposes. In recognition of this situation the United States Environmental Protection Agency (USEPA) under the authority granted by the Clean Water Act, created a permit program entitled the National Pollutant Discharge Elimination System (NPDES) to identify and regulate such discharges. The Federal NPDES permit program is locally administered in the State of Illinois by the Illinois Environmental Protection Agency (IEPA). The permit program is intended to control water pollution and improve water quality by regulating the discharge of pollutants from point sources into surface waters. Point sources include sewer pipe, culvert, and open ditch conveyance systems that route polluted drainage into water ways. NPDES permits are required for all industrial, municipal, and other regulated facilities.

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. The plan has been prepared to generally comply with the nine minimum control requirements of the NPDES permit by:

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 Publically 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 receives 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

2.1 WATERSHED AND DRAINAGE CHARACTERISTICS

Although the Village of La Grange is located entirely within the Des Plaines River watershed, there are no open waterways or tributaries within the corporate limits of the Village of La Grange. All drainage is conveyed by enclosed drainage systems to either a regional waterway located outside of the Village boundary, or to special deep tunnel structures connected to the MWRD Deep Tunnel system. Surface drainage generated by the 1,620 acre land area encompassed by the Village of La Grange, is collected by combination sewers and storm sewers. The majority of the Village land area, comprising about 1,240 acres (78%), is served by combination sewers that are tributary to either CSO structures or the deep tunnel system structures. The remaining 360 acres (22%) of area is served by storm sewers that route surface drainage to regional waterways or to the deep tunnel system structures.

The Village of La Grange is considered to be a fully developed residential community, with impervious land surface averaging about 55% of the total land area. The majority of the land area is comprised of residential properties and rights-of-way. The division of land use based upon zoning classification, is shown in the adjoining **Land Use Area** table. Land development within the community generally involves the redevelopment of existing developed properties.

Land Use Area by Zoning Classification			
Class	Description	Land Area	
		(acres)	(%)
R-1	Single Family Residential	14.31	0.9%
R-2	Single Family Residential	72.61	4.5%
R-3	Single Family Residential	172.99	10.7%
R-4	Single Family Residential	484.62	29.9%
R-5	Single Family Residential	52.48	3.2%
R-6	Two Family Residential	38.91	2.4%
R-7	Multiple Family Residential	3.71	0.2%
R-8	Multiple Family Residential	36.35	2.2%
C-1	Central Commercial	21.69	1.3%
C-2	Limited Service Commercial	8.55	0.5%
C-3	General Service Commercial	17.15	1.1%
C-4	Convenience Commercial	9.58	0.6%
O-1	General Office	3.66	0.2%
I-1	Light Industrial	43.84	2.7%
OS	Open Space	71.43	4.4%
IB	Institutional Building Uses	113.19	7.0%
RW	Rights-of-way (Street& Railroad)	455.06	28.1%
TOTAL VILLAGE AREA		1,620.12	100.0%

2.2 SEWER SYSTEM DESCRIPTION

The Village is served by a system of gravity sewers that provide storm water and waste water collection and disposal. The majority of the Village is served by a combination sewer system that was constructed in stages between in 1880 and 1950, in general progression with the needs of the Village and various land development concerns. After 1950, as mandated by regional code and environmental policy, sewer construction has consisted of separated sanitary and storm sewers. Sanitary sewers were constructed to discharge either to the existing combination sewer system or to separate outlets connected to the regional intercepting sewer and treatment system operated by the Metropolitan Water Reclamation District of Greater Chicago (MWRD).

All waste water generated by the properties located within the Village of La Grange is collected by either combination sewers, sanitary sewers tributary to combination sewers, or separate sanitary sewers. An inventory of the sewer system displaying the approximate length and size for each type of sewer is shown in the adjoining table. The combination sewers and the sanitary sewer segments tributary to the combined sewer system are owned and maintained by the Village of La Grange. About 10% of the area of the Village, located primarily along the southern limits, is served by separate sanitary sewer systems owned and operated by the South Lyons Township Sanitary District and the La Grange Highlands Sanitary District. The sanitary district sewer systems convey waste water to the MWRD regional intercepting sewer (Southwest Contract No.16) located south of the Village. A service area approximating about 5% of the total Village land area, located in the northwest part of the community, is served by a sanitary sewer system maintained by the Village. The wastewater collected from this small service area is conveyed to the MWRD regional intercepting sewer (Salt Creek Contract No. 3) located about 2,400 feet north of the northern Village limits.

Village of La Grange - Sewer System Inventory			
Nominal Diameter (in)	Sewer Length (feet)		
	Combined	Sanitary	Storm
8		23,985	
9		869	
10		200	6,995
12	96,110	2,545	5,911
15	20,104		3,928
18	13,008		1,460
20	2,492		
21	2,782		1,175
24	8,870		6,210
27	668		6,277
30	3,828		285
32	2,780		
33	1,298		
36	1,086		665
39	670		
42	9,358		3,291
45	2,653		628
48	1,254		5,826
54	1,622		2,375
60	1,520		
66	1,443		
72	7,973		
Sewer	179,519	27,599	45,026
Manholes	948	80	150

2.3 COMBINED RELIEF SEWER SYSTEM

The Village's combined sewer system is supplemented by local and regional relief sewer systems that accept flow at those times when the combined sewer system's capacity is exceeded. The relief systems are comprised of the regional deep tunnel system constructed and operated by the MWRD, and relatively short local relief sewer segments that route drainage from the local combination sewer system to the tunnel system.

The deep tunnel system serving the Village of La Grange is part of the Tunnel and Reservoir Plan (TARP) that has been under construction since around 1972. The Village is served by the deep tunnel segments constructed under MWRD Contract Southwest 13A and Contract Southwest 13A-EXT. Drop shaft connection structures were constructed by the MWRD as part of these contracts to intercept wet weather flow conveyed by existing combination sewers and to provide for future connection of relief sewers by the local municipalities. The 13.83 foot diameter Contract 13A tunnel was completed around 1974 as one of the early prototype tunnel systems, and included the construction of drop shaft structure (DS1) which intercepted the Village's existing 66 inch diameter combination sewer in the vicinity of the Cossitt Avenue and East Avenue intersection. This construction significantly reduced the volume of wet weather flow conveyed through the outfall sewer extending to the Village's CSO#001. A second drop

shaft structure (DS2) constructed as part of Contract 13A, located at 47th Street and East Avenue, was not placed into operation until around 1984 when the Village of La Grange reconfigured the combination sewer at 49th Street and East Avenue to eliminate the combined sewer overflow (CSO#002) to the McCook Ditch waterway. The construction of the 10 foot diameter 13A-EXT tunnel system was completed around 1986. The tunnel intercepted combined sewer system outfalls discharging to Salt Creek, from the Village of La Grange, the Village of La Grange Park, and the Village of Western Springs. This construction included the elimination of the small 12 inch diameter combination sewer outfall (CSO#002) extending from Drexel Avenue and Ogden Avenue in the Village of La Grange.

Discharges from the Village of La Grange combined sewer systems into the deep tunnel system are regulated by either fixed or adjustable weir structures. There is no powered gate controlled system limiting the discharge from the combination sewer systems into the MWRD drop shaft connections to the deep tunnel at these locations. Under circumstances where the tunnel capacity is exceeded, excess flow is released through MWRD control structures into the Chicago Ship and Sanitary Canal, the Des Plaines River, or the Salt Creek waterways. The waterway receiving the discharge is based upon the configuration of the tunnel system and the location of the drop shaft control structure. Drainage collected by the 13A deep tunnel system is designed to discharge to the Chicago Ship and Sanitary Canal when the tunnel capacity is exceeded. Under similar circumstances the overflows from the Des Plaines River tunnel segment outlets into the Des Plaines River.

In those areas served by separate sanitary sewers, storm water drainage is collected and routed either north to the deep tunnel system at Ogden Avenue or east to the McCook ditch surface drainage outlet. The sewer system discharging to the McCook ditch outlet is routed through a collector storm sewer that extends through the Village along 51st Street and discharges to a storm sewer outlet in East Avenue operated by the Illinois Department of Transportation (IDOT). The 51st Street storm sewer conveys surface drainage from unincorporated areas located southwest of the Village limits, and from storm sewer segments serving those portions of the Village served by separate sanitary sewers. The IDOT storm sewer eventually discharges to the McCook Ditch urban waterway that extends through a portion of the Village of McCook, and eventually discharges to the Des Plaines River.

2.4 WASTE WATER TREATMENT

The Village of La Grange is within the service area of the Metropolitan Water Reclamation District of Greater Chicago (MWRD). All dry weather flow collected and conveyed by the combined and separate sanitary sewers within the Village of La Grange is received by a regional system of intercepting sewers operated and maintained by the MWRD. The waste water flow conveyed by the intercepting sewer system is processed at the West Southwest Treatment Plant (WSWTP) operated by the MWRD in Stickney, Illinois. The treated effluent from this plant is discharged into the Chicago Ship and Sanitary Canal as it crosses through the Village of Stickney. The WSWTP also processes the polluted wet weather flows conveyed by the MWRD Deep Tunnel system. Given this conveyance and process configuration, all dry weather flow and most wet weather flow generated by the Village of La Grange receives treatment before being released into a surface waterway.

2.5 CSO OUTFALL STRUCTURES

The Village of La Grange combination sewer system was originally constructed with three (3) CSO outfall structures. With the construction of the MWRD 13A deep tunnel system, two of the CSO outfall structures have been eliminated. Detailed in the following table is current operating status of the three original outfall structures.

CURRENT PERMITTED CSO FACILITIES - VILLAGE OF LA GRANGE				
CSO No.	Size	Location	Receiving Stream	Operating Status
001	72"	Konrad Avenue, Lyons	Salt Creek (Des Plaines River)	Functional
002	12"	Drexel Avenue, La Grange	Salt Creek (Des Plaines River)	Eliminated, 1985
003	42"	East Avenue, La Grange	McCook Ditch (DesPlaines River)	Eliminated, 1984

As indicated in the preceding only Outfall #001 should be identified as a permitted CSO facility. The other CSO designations are to be removed from the permit. The following details the location and background as to the function and history associated with each original CSO.

Outfall #001 (41°49'09"N, 87°50'16"W) is located in the Village of Lyons near the intersection of Konrad Avenue and Patricia Drive. This location is situated about 1600 feet upstream of the confluence with the Des Plaines River. This outfall is part of the original drainage system serving the Village of La Grange and portions of the Village of Brookfield. In its original form, the outfall was an intermittent stream conveying drainage some 6,500 feet from the eastern border of the Village of La Grange to Salt Creek. The waterway also conveyed drainage from other naturally tributary areas encompassed by portions of the Village of Brookfield and the Village of Lyons. As the regional population grew, creating conflicts with adjoining land uses, the open waterway was enclosed by segments of wood box sewer and culverts. Ultimately in 1911 the drainage outfall was replaced by the Village of La Grange with a 78 inch diameter concrete sewer. Due to physical deterioration and certain structural and operational problems, in 1983 the outlet sewer was replaced and the internal diameter reduced to 72 inches to correct utility and surface conflicts. The sewer discharges all dry weather flow to the MWRD interceptor sewer system. As part of its regional wastewater treatment initiative, the interceptor sewer system (Salt Creek Contract No. 2) was extended by the MWRD around 1928, to intercept the dry weather discharges to Salt Creek.

Outfall #002 (41°49'32"N, 87°53'11"W) is located in the Village of La Grange Park about 2,400 feet north of the Village of La Grange, as defined by the intersection of Drexel Avenue and Ogden Avenue. The 12 inch diameter Drexel Avenue outfall sewer was constructed around 1930 as part of a project intended to convey wastewater from an existing residential area of the Village to the new intercepting sewer (Salt Creek Contract No. 3) that had been constructed by the MWRD along Salt Creek. The 12 inch gravity sewer permitted the abandonment of an existing sewage pump station located at Drexel Avenue and its gravity overflow system that discharged to a nearby intermittent stream. This natural waterway collected surface runoff from the tributary residential area adjoining the south side of Ogden Avenue as well as the properties located north of Ogden Avenue that were owned and occupied by the Sisters of St. Joseph convent and school. The open stream was later filled and replaced with a 24 inch diameter storm sewer to accommodate development within the convent property. The 12 inch outfall to Salt Creek was eliminated in 1986 at the time that the MWRD completed the extension of the 13A deep

tunnel system. The overflow outlet was plugged and abandoned, and sewer segments constructed to redirect all flow to the deep tunnel system.

Outfall #003 (41°47'57"N, 87°50'48"W) located in the Village of McCook, was constructed around 1926 as part of a combination sewer system installed by the Village under Special Assessment #218 to collect and convey drainage from a large residential area generally located between 47th Street, 51st Street, Brainard Avenue, and 10th Avenue. As part of this project a 45 inch diameter outlet sewer was extended from a combined sewer overflow structure constructed at 49th Street and East Avenue in the Village of La Grange, to an existing surface waterway located about 4,200 feet east of the Village limits in the Village of McCook. All dry weather wastewater flow was routed north through a 24 inch sewer along East Avenue from the 49th Street overflow structure to Cossitt Avenue, and into the Village's 72 inch primary outlet sewer extending to Outfall #001. In 1984 using grant funding assistance secured from the IEPA, the Village eliminated the overflow at 49th Street and rerouted all combination sewer flow north through a new 54 inch diameter sewer, connecting to the deep tunnel system (MWRD13A) access structure (DS2) located at the 47th Street. Dry weather flow continued to be routed north through the 24 inch combination sewer extending along East Avenue, to the Village's primary outlet sewer and the MWRD interceptor sewer system. In 1992, the 42 inch sewer connection to outfall #003 extending to McCook Ditch, which had been largely abandoned as part of the 1984 project, was removed by the Material Service Corporation during an expansion of their limestone quarry. The ownership of the small remaining portion of the original outfall sewer connecting to the McCook Ditch outlet, has been taken by the Material Service Corporation for use as an outlet for their pumped quarry drainage. The outfall is also being used as a drainage outlet for portions of the property located south of the limestone quarry. The Village of La Grange no longer uses this outfall, and does not have jurisdiction over its maintenance.

By design, when the capacity of the combination sewer is exceeded a combined sewer overflow event will occur. The overflow is typically directed to surface waters through the combined sewer overflow (CSO) structure. With the relief sewer capacity provided by the MWRD deep tunnel system, the likelihood for overflow events attributed to the Village of La Grange sewer system is minimized. Still it should be recognized that CSO events do occur on occasion at the Village's CSO#001 which discharges into the lower reach of Salt Creek. Although the flow discharged to Salt Creek during a CSO event consists of a diluted mixture of storm water and wastewater, and contains a significantly lower pollutant load than first flush flow that is captured by the deep tunnel system, it is still regarded as a polluted source of drainage, that should be mitigated if possible by sewer system operational controls and maintenance.

2.6 MONITORING AND REPORTING OF CSO EVENTS

In accordance with Special Condition (SC) 10.11 of the Stickney WRP National Pollutant Discharge Elimination System (NPDES) Permit No. IL0028053, effective March 1, 2002, and last revised December 15, 2008, the MWRD monitors 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 MWRD has the ability to monitor through telemetry.

In accordance with this authorization the MWRD maintains monitoring equipment at selected CSO outfalls located along the Des Plaines River, Salt Creek, and other principal water ways in Cook County. There are 10 CSO structures monitored along the Salt Creek tributary to the Des Plaines River, including CSO #001 utilized by the Village of La Grange.

Through the monitoring process, the MWRD documents the frequency and duration of CSO events and the associated depth and duration for each rainfall event. The MWRD continues to monitor the CSO outfalls at all times 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 NPDES CSO Permit requirements, the Village is responsible for the reporting of all wet and dry weather overflow discharges. However, since the MWRD has installed telemetry equipment on the Village's CSO#001 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 CSO to ensure proper operations are maintained.

2.7 PUBLIC NOTIFICATION PROGRAM

Pursuant to the NPDES permit requirements, the Village is responsible for developing a program for notifying the public of any CSO discharges. The Village has developed a Public Notification Plan that incorporates the MWRD Combined Sewer Overflow Public Notification Plan. The Village plan can be viewed on the Village's web site. (www.villageoflagrange.com)

The United States Environmental Protection Agency (USEPA) developed water quality guidelines for the discharge of urban drainage into surface waterways and also developed the NPDES permit program to identify and regulate such drainage sources. Reference materials concerning the NPDES permit program, as well as information concerning combined sewer overflow guidelines can be found on the USEPA website at the following location: (www.cfpub2.epa.gov/npdes/home.cfm?program_id=5)

The Metropolitan Water Reclamation District (MWRD) 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 MWRD's website using the following link. www.mwrdd.org/mo/csoapp/default.htm The current status of overflow activity within the region can be found on the MWRD website at the following location: (www.mwrddgc.dst.il.us/CSO/Display.aspx)

The Metropolitan Water Reclamation District (MWRD) developed a regional plan for the construction of a unique and highly effective collection and treatment system in order to prevent or reduce CSO discharges into the regions' waterways. The Tunnel and Reservoir Plan (TARP) as it is generally known, is comprised of a network of deep tunnels, connecting structures, and pumping equipment that is designed to intercept the polluted combined sewer wet weather flow and convey it to regional treatment plants for processing before being released to surface waterways. Reference information concerning this system can be found on the MWRD website at the following location: (www.mwrdd.org/plants/tarp.htm)

2.8 MAXIMIZING STORAGE OF POLLUTANTS IN COMBINED SEWER SYSTEM

The following is a summary of many of the Villages efforts to maximize the storage of waste water pollutants within 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. Plan for the construction of relief sewer systems intended to reduce the volume of water discharged into the combination sewer systems tributary to CSO outfall. In this regard preliminary planning has been conducted to prepare for the construction of a relief sewer along Maple Avenue (MARS) and along Ogden Avenue (OARS). Portions of these systems are scheduled to be constructed during 2009 and 2010.
2. 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 system has been implemented where feasible.
4. Correct structural deficiencies in the combined sewer system (sewer mains, catch basins, manholes, etc.) and groundwater infiltration by reconstruction or through sewer lining projects.
5. 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.
6. The Village continues a regular program to clean and inspect the combined sewer system, including sewer mains and catch basins, so that their capacity is undiminished by debris and roots which can impede the flow in the sewers.
7. 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

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 into the combined sewer system.

Listed in the following are activities or services the Village provides in order to collect and remove various solid waste materials in order to keep pollutants and other debris from entering the Village's combined sewer system with the potential of discharging into Salt Creek and the Des Plaines River watershed.

1. Street sweeping/cleaning
2. Catch basin/drainage structure cleaning
3. Solid waste collection and disposal (refuse, recyclable, yard waste, bulk items)
4. Leaf collection and disposal

2.10 ILLINOIS POLLUTION CONTROL BOARD

The Illinois Pollution Control Board has not issued any orders or violations to the Village of La Grange regarding its CSO outfall structure.

2.11 SENSITIVE AREA CONSIDERATIONS

The Village of La Grange CSO outfall structure discharges to the Salt Creek tributary to the Des Plaines River, which functions largely as a regional urban drainage waterway. The CSO does not discharge to sensitive areas such as wetlands and beaches, or Outstanding Natural Resource Waters, National Marine Sanctuaries, shellfish beds, or waters with threatened or endangered species. Salt Creek and the downstream Des Plaines River are not used as a potable water source. There are no water intake structures within these waterways. No boating or other primary contact recreation activities occur in Salt Creek due to inadequate water depth, stream bed soil and shoreline characteristics, limitations of public access, and due to physical obstacles such as logs, dams, and bridge pier structures. As a result human contact is largely limited to accidental exposure.

SECTION 3 - MAINTENANCE

3.1 GENERAL MAINTENANCE OBJECTIVES

The Village of La Grange periodically conducts preventative maintenance of the combined sewer system to ensure proper operation during dry and wet weather flows. The Village recognizes that proper and regular maintenance of the combined sewer system effectively maximizes the conveyance and storage capacity of the sewer system. It also can reduce excessive inflow and/or infiltration into the system, help prevent basement sewer backups, mitigate adverse surcharging of the manholes, and help reduce the volume of solids that is typically conveyed during the initial “first flush” associated with rainfall events.

3.2 STREET SWEEPING, LEAF COLLECTION AND BRUSH PICKUP

The Village of La Grange operates a street sweeper on a daily basis (weather permitting) from mid-March through mid-December. Under this program each street is scheduled to be cleaned on a weekly cycle. During the Village’s leaf collection season, which runs from October through December, property owners rake leaves into the street. The leaves are then removed from Village streets and hauled to a recycling site by the Department of Public Works. The removal is integrated with the sweeping operations to ensure thorough cleaning.

The Village also offers a free brush pickup service once per month from April through November, during the first full week of the month only. Residents are invited to put brush out for removal including tree branches and shrub trimmings.

3.3 CATCH BASIN CLEANING

The Village of La Grange conducts the cleaning of surface drainage collection structures or catch basins, on a four-year cycle using vactor-type equipment. In those areas where debris is known to accumulate, cleaning is conducted seasonally. During periods of rainfall, particularly during the fall season, catch basin operation and surface flooding conditions are monitored and extra cleaning is conducted to ensure proper operation. Material gathered during the cleaning process is regarded as landscape waste and is temporarily stored and conveyed to an appropriate landfill.

3.4 SEWER CLEANING

The sewer system is cleaned and inspected on about a 10 year cycle to reduce the volume of sediment accumulation and ensure that the system conveyance capacity is not restricted.

There are no stop logs constructed as part of the CSO system. There are stop logs installed in various deep tunnel control structures. Stop logs are set in accordance with Metropolitan Water Reclamation District (MWRD) requirements. The record of stop logs adjustments is maintained by the MWRD.

The cleaning of screening equipment after and during storms is completed by the MWRD which regulates diversion and bypass devices. There are no screening or bypass devices included as part of the Village of La Grange combined sewer system.

3.5 ROOT CUTTING

Root cutting is performed on an as-needed basis. Sewers with a history of problems are serviced more frequently. If necessary, sewers with excessive root problems are treated with chemical root retardant, or lined or replaced as determined to be necessary, by the Director of Public Works.

3.6 SEWER REHABILITATION

Sewer rehabilitation involves the replacement or lining of existing sewers based upon the 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 functional 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 into 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.

3.7 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 signs 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 lined 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.

SECTION 4 - INSPECTIONS & MONITORING

The Village's sewer system including special appurtenances such as inverted siphon chambers, CSO outfall structures, and key junction structures, are inspected periodically on a schedule established by the Director of Public Works.

4.1 MANHOLE INSPECTIONS

All manholes are routinely inspected and the results of the inspections documented to develop work orders and budgets for programmed repairs. Inspections will focus on structural as well as operational matters, including conditions affecting the manhole frame and lid, frame seal, grade rings, steps, walls, bench and trough, and pipe connections. The inspections will identify the sources of leakage, safety, and function to ensure proper operation and maintenance.

4.2 SEWER INSPECTIONS

The televised inspection of sewer mains are conducted by contract service on a ten-year cycle and in conjunction with street improvement projects. The structural and functional condition of the sewer mains and service connections are documented so that repairs can be scheduled and budgeted. The video recording of the televised inspection are retained by the Department of Public Works.

4.3 OUTFALL STRUCTURE AND SIPHON CHAMBERS

The CSO outfall structures are regularly inspected and cleaned or repaired as determined to be necessary by the Director of Public Works.

4.4 FLOW MONITORING

The monitoring of the combined sewer overflow (CSO) structures is conducted on a continuous basis by the Metropolitan Water Reclamation District (MWRD). The record of CSO operation is telemetered to the MWRD operations section and reported to the IEPA on a quarterly basis. The Village Department of Public Works conducts visual inspections of the CSO to confirm function of system. The Village also inspects the operation of the sewer system at key manholes to confirm consistency of operation. If determined to be necessary, the Director of Public Works may retain the services of a specialist to conduct special flow monitoring studies.

4.5 BUILDING INSPECTIONS

If other inspections indicate that private property and buildings may be a source of excessive extraneous flow an inspection of such property and buildings will be conducted as determined by the Director of Public Works. Village staff will be familiarized with the sewer use ordinance so that unauthorized connections to the sewer can be identified and disconnected.

4.6 REHABILITATION AND MAINTENANCE WORK

The rehabilitation work determined to be necessary by the Director of Public Works as a result of the inspections and investigations, is scheduled and budgeted as determined to be required. Rehabilitation methods employed reflect current standards, conventions, and regulations.

4.7 ELIMINATION OF DRY WEATHER OVERFLOWS

The CSO system is configured such that the dry weather flow conveyed by the outlet sewer is intercepted by the 27 inch diameter dry weather interceptor (Salt Creek #2) maintained by the MWRD. 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 installed by the MWRD are designed to identify such flows. In the unlikely event that a dry weather overflow occurs, the MWRD 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 Village staff, the Village will notify the IEPA and implement corrective actions. The Village has also installed signs at the CSO outfall structure alerting the public to call if a discharge or overflow event is observed during dry weather.

SECTION 5 - OTHER CSO PERMIT EFFORTS

5.1 RECORD KEEPING

The Village Department of Public Works maintains records of work orders routinely issued in the process of repairing collapsed and blocked sewers, investigating basement backups, street flooding, collection system complaints, and excess flow levels at combined sewer overflows. The records and documentation is generally used to aid planning for future maintenance work.

5.2 SEWER SYSTEM MAPPING

The Village maintains an electronic and printed map records 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 periodic basis to reflect changes to the sewer system caused by sewer system improvements and to add content, as new information becomes available. Printed copies of the latest version of the map are distributed to Village Staff as determined to be required to support maintenance operations.

5.3 PROCEDURES FOR LAND DEVELOPMENT

The Village of La Grange issues building permits for land development projects after approval is granted by the MWRD in compliance with its Sewer Permit 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.