CAPACITY, MANAGEMENT, OPERATIONS AND MAINTENANCE (CMOM/CSO) PLAN

UPDATED 2023

CITY OF BELLEVILLE, ILLINOIS
PLANT 1 NPDES PERMIT #: IL0021873
PLANT 2 NPDES PERMIT #: IL0021881

FORWARD

The City of Belleville is committed to working toward the goal of achieving no discharges from sanitary sewer overflows or basement back-ups and ensuring that when they do occur, do not cause or contribute to violations of applicable standards or cause impairment in receiving waters. Maps and other forms are not included with this plan due to the significant size of the collection system and complexity. The maps and forms are accessible to employees via the current GIS system and can be provided upon request.

In order to accomplish these goals, the City of Belleville plans to implement the following controls:

A) Identify and report to IEPA all SSO's that do occur.

B) Develop, implement and submit to the IEPA a Capacity, Management, Operations and Maintenance plan, including and Asset Management strategy. The plan will be reviewed and revised as necessary in accordance with comments as received from IEPA. The City of Belleville will work with affected authorities at the local, county and state level to develop this plan.

C) A CSO pollution prevention plan (PPP) to comply with the nine minimum controls contained in the National CSO Control Policy published in the Federal Register on April 19, 1994.

1. A complete map of the collection system owned and operated by the Permittee.
2. Organizational structure; budgeting; training of personnel; legal authorities; schedules for maintenance, sewer system cleaning and preventative rehabilitation; checklists; and mechanisms to ensure that preventative maintenance is performed on equipment owned and operated by City of Belleville.
3. Documentation of unplanned maintenance
4. An assessment of the capacity of the collection and treatment system owned and operated by the City at critical junctions and immediately upstream of locations where overflows and backups occur or are likely to occur.
5. Identification and prioritization of structural deficiencies in the system owned and operated by the City.
6. Operational control, including documented system control procedures, scheduled inspection and testing.
7. Development and implementation of an Asset Management strategy to ensure the long-term sustainability of the collection system. Asset Management shall be used to assist the City in making decisions on when it is most appropriate to repair, replace or rehabilitate particular assets and develop long-term funding strategies.
8. Asset Management shall include, at a minimum, the following:
    a. Asset Inventory and State of the Asset
    b. Level of Service
    c. Critical Asset Identification
    d. Life Cycle Cost
    e. Long-Term Funding Strategy

1. Collection System

Currently, the City of Belleville is bordered by the Village of Swansea, Stookey Township, St. Clair Township, and Shiloh to the North, West, and East. The Village of Freeburg and Smithton lie to the south. Recent annexations have extended the city limits of Belleville to within 2.4 miles of Smithton's facility planning area and currently, the city limits abut the city limits of Freeburg in the southeast.

The existing Belleville Wastewater Treatment Facility is located at the intersection of Illinois Route 15 and Illinois Route 159, south centrally located in the city. The plant was originally constructed in 1939, prior to development of adjacent properties, and is now surrounded by residential developments and commercial developments.

The total collection system tributary to the Wastewater Treatment Plant No. 1 consists of nearly two hundred (200) miles of sewer line and forty-nine (49) lift stations. The original sewer system in the City of Belleville, constructed in 1912, is still in service and was built as a Combined Sewer System (CSS). Under the current NPDES permit, the City is under a compliance schedule to remove these overflows.

Currently, the City has converted all mapping and pertinent information into a GIS system. A geographic information system (GIS) is a computer system designed to capture, store, manipulate, analyze, manage, and present all types of geographical data. The current mapping system not only depicts the actual sewer system but also allows computer access to each individual structure and line. Each line and structure has variable attributes that show repairs, issues, problems and much more associated with each. The City uses and updates this information to maintain their collection system.

The current lift stations within the City's collection system are as follows:

Lift Station	Date Installed / Upgraded	No. Pumps	Location	GPM	TDH (ft)	FM Size (in)
Emerald	1975/2015	2	Old Caseyville Rd @ 161	100	46	4
Geoppo	1981/2013	2	Rte. 15 and 159	100	37	4
Wood Drive	1960/2008	1	302 Bellevue Park Dr.	25	20	4
N. 2nd St.	1974/2004	2	1010 N. 2nd & J St.	100	32	4
Gass Ave.	1975/2009	2	712 Gass Ave.	100	28	4
S. 98th St.	1960/2007	2	100 Concord Dr.	100	69	4
S 15th St.	1961/2001	2	417 S. 15th St.	75	23.5	6
Elmwood	1974/2013	2	5 Elmwood Dr.	100	41	4
Delila	1975/2009	2	E. 'A' & 109 Delila Dr.	100	31	4
Oak Knoll	1972/2014	2	19 Oak Knoll Place	100	53	4
S. 88th St.	1961/2000	3	36 S. 88th St.	1 @ 200 2@500	59.4	8
N. 66th St.	1964/2008	2	101 N. 66th St.	80	52	4
Berrywood	1972/2014	2	3 High Forest Dr.	100	30	4
Plant #2	1997/2016	4	6000 W. State Rte. 15	2 @ 350 2 @ 1200	41.2	10
Freeburg Ave.	1972/2000	2	1000 Freeburg & Van Buren	100	17.82	4
S. 38th St.	1964/2000	2	4009 Michelle Dr.	100	31.5	4
N. 60th & W. 'B' St.	1964/1999	2	6009 W. 'B' St.	100	38	4
N. 75th St.	1972/2001	2	212 N. 75th St.	100	64	4
Hamlet Court	1961/2009	2	6 Hamlet Court	90	59	4
S. 78th St.	1964/2013	2	S. 78th St. & Rte. 42	200	100	4
Dutch Hollow	1972/2001	2	1 Dutch Hollow Rd.	250	123	6
N. 98th St.	1965/2011	2	120 N. 98th St.	100	67	4
N. 79th St.	1972/2013	2	W. 'B' St. & N. 79th St.	100	75	6
Elm Dr.	1974/2015	2	Elm & Lebanon Rd.	100	63	4
Drew	1974/2001	2	Drew & Lebanon Rd.	100	107	4
N. 86th St.	1961/2008	1	4 Kilmar Woods	25	35	4
N. 44th St.	1964/2007	2	20 N. 44th St.	80	20	4
Claymont	1978/2010	2	7527 Claymont Court	150	29	4
Prospect	1974/2004	2	13 Rose Haven Dr.	100	46	4
Lookout	1974/2014	2	Hilltop Dr.	100	40	4
Orchards	1991/2005	2	Pro Tour Dr.	582	73.7	8
N. 51st St.	1984/2004	2	N. 50th St.	145	30	4

Gwen Court	1984/2014	2	524 N. 41st St.	100	17	4
Belle Valley	2010/2013	4	Freeburg Ave.	855	57.8	18
Sycamore Glen	1982/2003	2	65 Periwinkle Court	100	32	4
Scheel St.	1997/2005	2	Scheel St.	100	20	4
Loop Creek	1996/2006	3	Highway 177	1180	50.2	14
Southwind	2000/2014	2	2302 Old Collinsville Rd.	166	30.93	4
Moore Tract	1996/2006	2	2587 Carlyle Ave.	610	56	10
East High School	2002/2009	2	2557 Z West Blvd	100		4
West High School	2003/2014	2	4067 Frank Scott Pkwy	100	63	6
Orchards 2	2002/2007	2	2121 Jack Nicklaus Dr.	300	71.3	6
Plum Hill	2004/2015	2	2500 Plum Grove Dr.	325	57	6
Fischer Lumber	2004/2015	2	1598 E. State Rte. 15	600	51.57	10
Reunion	2003/2015	2	1950 Reserve Walkway	410	43.5	8
23rd	2018	3	North 23rd Street	8,900	25.6	30
Southside	2014	4	Southside Park	15,600	48.46	36

All lift stations are checked daily for run times and visual inspection. All have alarms or are connected to the plant SCADA system. The lift stations are also pumped down and hosed out to break down any solids that can cause problems in the lift station.

Currently, maps are updated continually using the GIS service.

2. Organizational Structure, Budgeting, Training, Schedules, Checklist, and Mechanisms – Preventative Maintenance

A well-established organizational structure, which delineates responsibilities and authority for each position, is an important component of a CMOM program for a collection system. This information may take the form of an organizational chart or narrative description of roles and responsibilities, or both. The organizational chart should show the overall personnel structure, including operation and maintenance staff. Additionally, up-to-date job descriptions should be available. Job descriptions should include the nature of the work performed, the minimum requirements for the position, the necessary special qualifications or certifications, examples of the types of work, lists of licenses required for the position, performance measures or promotion potential. Other items to note regarding the organizational structure are the percentage of staff positions currently vacant, on average, the length of time positions remain vacant, and the percentage of collection system work that is contracted out.

3. Documentation of Unplanned Maintenance

Maintenance may be planned or unplanned. There are essentially two types of planned maintenance: predictive and preventive. Predictive maintenance is

a method that tries to look for early warning signs of equipment failure such that emergency maintenance is avoided. Preventive maintenance consists of scheduled maintenance activities performed on a regular basis. There are two types of unplanned maintenance, corrective and emergency. Corrective maintenance consists of scheduled repairs to problems identified under planned or predictive maintenance. Emergency maintenance are activities (typically repairs) performed in response to a serious equipment or line failure where action must be taken immediately.

The City's Sewer Lines Division also employs "Report A Concern", where residents can make the City aware of possible issues.

4. Treatment System Assessment

Belleville's first sewage collection system was built in 1912. It was constructed as a combined sewage system, and is still in service today. Prior to World War II, a large number of combined sewers and overflow points had been constructed. The combined sewer interceptors generally paralleled Richland and East Creeks, and, proceeded along West Main Street as the City grew. An estimated 40% of the current collection system consists of combined sewers.

A second collection system was constructed in the 1960's as a separate wastewater collection system. About 11.2 miles of sewer lines located in this collection system are tributary to the old Wastewater Treatment Plant No. 2, which was converted to a pumping station and excess holding basin. Flows from this collection system are sent to the Stookey Township Facility. Conversely, flows from two Stookey Township collection system lift stations at the far west end of the Belleville West Main system discharge into the 88th Street Swirl Concentrator and Pumping Station, and are treated by the Belleville No. 1 Plant.

Wastewater flows from St. Clair Township are also received by the Belleville collection system, and are treated by the Belleville Wastewater Treatment Plant No. 1. That part of the St. Clair Township system lying along West Boulevard on the eastern part of the Belleville East Creek Subsystem drains to the Belleville system, and is treated by the Belleville No. 1 WWTP. No known CSO's exist within the Stookey or St. Clair Township portions of the collection systems.

For the majority of the Belleville Subsystems, collected sewage flows from north to south. Interceptor No. 1 drains from west to east, while the Wabash

Subsystem drains opposite, from east to west. There are 12.5 square miles of sewers within the Belleville City limits.

During the early 1990's three major interceptor sewers were constructed as a means of conveying larger flows to Treatment Plant No. 1, thereby relieving surcharged conditions and reducing the frequency and volume of combined sewer overflow discharges. A forty-eight inch diameter Richland Creek CSO Interceptor was constructed from near the plant at South Church Street, and along the west bank of Richland Creek to the north portion of the Richland Creek CSO Interceptor Subsystem. The new Richland Creek CSO Interceptor parallels the existing forty-two inch Old Richland Creek Interceptor which lies along the east bank of Richland Creek. The new forty-eight inch Richland Creek Interceptor was tied to the major trunk lines coming off the West Main Subsystems, helping to take flow off the old, east bank Richland Interceptor. Major cross-connections between the parallel interceptors constructed west of the WWTP, and at 2nd & Cleveland Streets cause low-end hydraulic conditions in one interceptor to carry over into the other. Numerous combined sewer overflows were closed as a result of the New Richland Creek CSO Interceptor addition to the network.

A thirty-six inch parallel relief sewer was constructed from the Belleville Treatment Plant No. 1 along East Creek where it served to relieve surcharging and combined sewer overflow conditions near Freeburg and Van Buren Streets. The East Creek CSO Relief sewer continued along East Creek using cross-connections at Freeburg & Van Buren Streets, and at Cathy Ann Drive, and cross-connected again at the top end of the relief sewer at the southern end of East End Park.

The third major interceptor constructed during the 1990's headed east from the Master Lift Station at Treatment Plant No. 1 to receive flows from the Wabash Avenue area, and continued up Wabash Avenue and along Mascoutah Avenue (Route 177) to the southern end of the Portland Avenue drainage basin. The Wabash CSO and Overflow Interceptor is a sixty-inch polyethylene pipe until near Wabash Avenue where it reduces to forty-eight inch diameter. The Wabash Subsystem consists of a combination of areas of both combined and separate sewer collection systems. The Wabash Interceptor receives combined sewage flow from the Portland Avenue Drainage Basin which lies to the north of Route 177. Recent developments producing additional separate sewer flows in the Wabash Interceptor have occurred to the northeast, east, and southeast. These flows currently mix with the combined sewage flows from the Portland Avenue Drainage Basin en route to the Belleville WWTP No. 1.

Since the construction of the three CSO interceptors in the 1990's, the number of combined sewer overflows points have been reduced from the mid-forties to the fifteen CSO's locations that are now permitted. There are forty-six lift stations operating within the Belleville collection system.

Since 2007, the City has been complying with a mandated Long Term Control Plan (LTCP) and Sanitary Sewer Overflow Action Plan (SSO) in order to remove the overflows. The schedule plan has been modified several times and is included in the NPDES permit.

5. Identification and Prioritization

The current GIS systems help to identify and prioritize structural deficiencies and the City is currently following the current LTCP.

1. Monitor the effectiveness of CMOM
2. Upgrade the elements of the CMOM plan as necessary
3. Maintain summary of CMOM activities.

1. Monitor the Effectiveness of CMOM

The City has plans to continually monitor the effectiveness of the plan to maintain compliance with IEPA guidelines.

2. Upgrade the Elements of CMOM Plan

It is anticipated that the CMOM plan will be upgraded at a minimum annually as necessary.

3. Maintain Summary of CMOM Activities Standards

The following codes must be followed when designing and constructing residential and commercial plumbing and pipes. An important installation is the connection of private laterals to the sewer main. Often these connections, if not properly installed, can be significant sources of infiltration.

State Plumbing Code

Illinois Plumbing Code (77 Ill. Adm. Code 890)

State Sewerage System Code

Illinois Pollution Control Board Environmental Regulations for the State of Illinois, Title 35 of the Illinois Administrative Code, Part 370: Illinois Recommended Standards For Sewage Works

Local Municipal Codes

All local municipal codes are as dictated by the City of Belleville Sewer Department. Also included in the maintenance section are the inspection reports for grease traps within the City.

1. Know where overflows within the facilities owned and operated by the Permittee occur
2. Respond to each overflow to determine additional actions such as clean up
3. Locations where basement back-ups and/or sanitary sewer overflows occur shall be evaluated as soon as practicable for excessive inflow /infiltration, obstructions or other causes of overflows or back-ups as set forth in the System Evaluation Plan

1. Locations of Overflow or Backup

The current GIS service identifies Sewer Main Backups/Overflows and shows the areas where repairs have been made and corrected.

2. Response to Overflow or Backup

Emergency equipment is maintained to insure that all equipment is in top working order in case of a backup. All lift stations are equipped with alarms and as stated earlier, several are on the Wastewater Treatment Plant SCADA system and can be monitored easily and at any time.

This plan and all steps necessary to guard against collection system upsets will be monitored to ensure compliance with EPA guidelines.

1. Capacity Assurance

The City of Belleville has on hand for immediate access during emergencies:

- Sewer maps
- Sewer system plans and specifications.
- Manhole location maps with numbered manholes
- Lift station pump and wet well capacity information
- Lift station O&M manual

The City of Belleville has identified these areas within their collection system:

- Areas with flat sewers
- Areas with surcharging
- Areas with bottlenecks or constrictions
- Areas with occasional basement backups or sanitary sewer overflows
- Areas with excess debris, solids or grease accumulation. Lift Stations are cleaned once a month and areas with heavy grease accumulation are treated with a floating lift station degreaser.
- Areas with heavy root growth
- Areas with excessive infiltration/inflow
- Sewer and manholes with severe corrosion. Older brick manholes will be lined.
- Lift station capacity and/or pumping problems.

Incidents are reported as required within the EPA guidelines. Following is the Compliance Maintenance Report.

1. Describes how, under various overflow scenarios, the public, as well as other entities, would be notified of overflows within the Permittee's system that may endanger public health, safety or welfare
2. Identifies overflows within the Permittee's system that would be reported, giving consideration to various types of events including events with potential widespread impacts
3. Identifies who shall receive the notification.
4. Identifies the specific information that would be reported including actions that will be taken to respond to the overflow
5. Includes a description of the lines of communication.
6. Includes the identities and contact information of responsible POTW officials and local, county, and/or state level officials

CodeRED is an emergency notification service that allows emergency officials to notify residents and businesses by telephone, cell phone, text message, email and social media regarding time-sensitive general and emergency notifications. Only authorized officials have access to the CodeRED system.

The City uses CodeRED Emergency Communication to notify residents and businesses of any emergencies that may endanger public health, safety or welfare. Following are some of the aspects of the program.

When will CodeRED be used? Any message regarding the safety, property or welfare of the community will be disseminated using the CodeRED system. These may include AMBER alerts, notifications of hazardous traffic or road conditions, boil water advisories or evacuation notices.

Does the CodeRED system replace other systems that have been used to provide time-sensitive information to residents? This system is an enhancement to existing means of communication and is meant to supplement current or past systems used for mass notification.

Does the CodeRED system already have my telephone number, or do I need to sign up to receive CodeRED notifications? The CodeRED database contains information received from public databases, including regional phonebooks. However, no resident should assume that their information is in the system. The home page of the City of Belleville website, www.Bellevilleil.org has a link to the CodeRED Community Notification Enrollment page where you can register online. If you cannot register online, you can call the Belleville Fire Department 618-234-3291 to complete your registration over the telephone.

I have a business located in Belleville can I arrange to have CodeRED contact my business? Yes. Fill out the CodeRED registration form but be sure to select the "This address is a business" option. Please note that emergency calls can only be delivered to a direct dial number. Automated attendants will disrupt the process and the calls will not be delivered. Businesses should register their main number and establish a procedure for distributing the CodeRED message to their workforce.

What if I want to register additional numbers for my address? After you submit the initial registration form, you may start the registration process again and submit more numbers for the same address.

Is my personal information protected? CodeRED is a service of Emergency Communications Network which takes security and privacy concerns very seriously. They will not sell, trade, lease or loan any data citizen supplied data to third parties.

How will I recognize a CodeRED message? A CodeRED Emergency message will have a caller ID of 866-419-5000. A CodeRED General message will have a caller ID 855-969- 4636. We suggest you program both numbers in your cell phone as a "new contact" and use "CodeRED Emergency" and "CodeRED General" as the contact name. If you need to replay the emergency notification message again, simply dial the number and you will be able to hear the message again.

What should I do if I receive a CodeRED message? Listen carefully to the entire message. You will have the option to repeat the message by pressing any key. Do not call 911 for further information unless directed to do so or if you need immediate aid from the Police or Fire department

Will the CodeRED system leave a message on an answering machine? Yes, the CodeRED system will leave a message on a machine or on voicemail. The CodeRED system will leave the entire message in one pass.

NINE MINIMUM CONTROLS COMPLIANCE

Compliance

Compliance with the nine minimum controls is being achieved as follows:

1. *Proper operation and maintenance programs for the sewer system and the CSOs*

   IEPA reviewed and accepted the CSO Operational and Maintenance Plan (CSO O&M Plan) for the City of Belleville sewage system on February 4, 2000. The CSO O&M Plan was reviewed during development of the LTCP with appropriate revisions made relative to implementation of the plan. A copy of the plan is kept at the wastewater treatment plant and collection system maintenance office.

2. *Maximum use of the collection system for storage*

   Approximately 25% of the collection system is cleaned each year to optimize flow and storage capacities of the collection system in accordance with the CSO O&M Plan. Six city employees are utilized for cleaning sewer lines and catch basins on both a scheduled and as needed basis. One combination jetter/vacuum truck and two jetter trucks are owned and operated by the city for collection system cleaning. CSO regulators are inspected during each rain event, if possible, to assure proper operation and optimal adjustment to minimize CSO discharge. Solids are also periodically removed from the holding basin to retain full storage capacity. Hydraulic modeling was done as part of the LTCP development to determine if any potential for additional storage within the system exists. CSS modeling is included in Section No. 2 of the LTCP. The City of Belleville Subdivision Code which is applicable to any building construction or land development specifies that "no building or construction permits or no plat approval shall be issued until the Storm Water Management Plan has been approved". This code requires on site detention of storm water run-off with a release rate at or below the rate prior to development for both a ten (10) and one hundred (100) year storm event.

3. *Review and modification of pretreatment requirements to assure CSO impacts are minimized*

   IEPA has reviewed and accepted the City of Belleville Sewer Use Ordinance. Review of the ordinance, as required, including consideration of non-domestic users to determine if any revisions were needed.

4. *Maximization of flow to the POTW for treatment*

   Inspections of the wastewater treatment facilities are performed hourly each day to assure that maximum flow and proper treatment are being accomplished. The pumps at the wastewater treatment plant pump station (Master Lift Station) are inspected and preventive maintenance procedures are performed every six (6) months in accordance with the CSO O&M Plan. Hydraulic modeling was done as part of the LTCP development to determine if increasing the capacity of the Master Lift Station would reduce the frequency and duration of CSO discharges. The possibility and cost effectiveness of providing additional bypass treatment consisting of primary treatment and disinfection only at the WWTP to reduce CSO discharge was also evaluated. CSS modeling is included in Section No. 2 of the LTCP.

5. *Prohibition of CSOs during dry weather*

   The City performs weekly inspections of the combined sewer overflows to ensure that the regulators are working properly and that a dry weather overflow has not occurred. A portion of the combined sewer overflow inspections are performed at higher sanitary sewer flow periods in the dry weather flow cycle. These observations verify that the combined sewer overflow regulating mechanisms are adequate to control the peak dry weather flows and maximize the storage of pollutants in the sewer system and minimize the discharge of pollutants from the combined sewer overflows. No known dry weather overflow (DWO) has occurred since implementation of the inspection program at any of the City's authorized combined sewer overflows.

6. *Control of solids and floatable materials in CSOs*

   During the weekly inspection of CSO locations any debris that is found is removed from the flow channels and steps within the manhole and from the outfall. Street sweeping is performed on a regular basis to minimize the amount of debris flushed into the combined sewer system during a rain event. Inspection and cleaning of catch basins is performed on a continuous basis. Approximately 25% of the ±4300 catch basins are cleaned each year to remove solids and debris. Approximately 25% of the sewer system is cleaned each year to prevent excessive buildup of solids and debris. The first flush basin located at the WWTP catches the solids that are deposited in the pipes from wastewater during periods of low flow in addition to solids and organic material that may be washed into the combination sewers from streets and parking lots at the beginning of a

rain event. The increased flow and velocity due to the inflow of storm water cleans the pipes early in the rain event, prior to combined sewer overflow discharge, and deposits these solids and debris in the basin. The most recent stream inspections revealed no evidence of sewage sludge deposits within pools at or downstream of combined sewer overflow discharge points.

7. *Pollution prevention programs which focus on source control activities*

   The City of Belleville Pollution Prevention Plan approved by IEPA on June 19, 1997 and updated in August 2016 has been implemented

   The Pollution Prevention Plan addresses the following:

   - Anti-litter campaigns
   - Trash receptacles along city streets
   - Control use of fertilizer, pesticides, de-icing salt by city agencies in combined sewer areas
   - Enforcement programs to stop illegal dumping.
   - City operated bulk refuse disposal facilities.
   - City operated hazardous waste collection program.
   - Public education programs

   A copy of the plan is included.

8. *Public notification to ensure that citizens receive adequate information regarding CSO occurrences and CSO impacts*

   The City of Belleville initiated a public notification program on February 5, 2004 with a public hearing at City Hall. A combined sewer overflow discharge link has been to the City's website. This link advises of combined sewer overflow discharge occurrences and combined sewer overflow discharge impacts. An estimate of flow duration by date is provided. Information concerning the detection of significant levels of any suspended solids, microorganisms, floatables, oxygen demanding organic compounds, oil and grease as the result of a combined sewer overflow discharge is also included. The Combined Sewer Overflow Public Notification Program is included in this report.

9. *Monitoring to characterize impacts and efficiency of CSO controls*

   Forms are submitted monthly to IEPA with the DMRs reporting the frequency and duration of all CSO discharges. The following information is included on the report:

- Rain event start date
- Estimated duration of rain event
- Outfall number and description of CSOs that had discharge.
- Estimated duration of discharge

CITY OF BELLEVILLE

Combined Sewer Overflow Public Notification Program

The City of Belleville has developed a long term control plan (LTCP) for combined sewer system overflows to protect the environment and assure compliance with the clean water act.

The original sewer system in the City of Belleville, constructed in 1912, is still in service and was constructed as a combined sewer system (CSS). A combined sewer system is a wastewater collection system that conveys sanitary wastewater (domestic, commercial and industrial wastewaters) and storm water though a single-pipe system to a publicly owned treatment works (POTW) treatment plant. Construction of combined sewer systems was common practice during that era. Dilution of wastewater by storm water was believed to be beneficial at that time, as effective treatment processes meeting today's standards had not yet been developed. Construction of combined sewer systems is no longer allowed under current EPA standards. Additions were made to the original system, complying with the standards in effect during the time of construction, as the city grew. We estimate that approximately 40% of the current system consists of combined sewers. A combined sewer overflow (CSO) is the discharge from a combined sewer system at a point prior to the publicly owned treatment works. During periods of moderate to heavy rainfall, the sewer system cannot handle the amount of inflow due to the capacity limits of the pipe or treatment plant and the combined sewer overflows discharge to relieve the system. Combined sewer overflow discharge varies with the intensity and duration of the rainfall event. Without the relief provided by combined sewer overflows extreme street flooding and numerous basement backups would frequently take place.

Combined sewer overflow discharges consist primarily of storm water runoff and could contain mixtures of domestic sewage, industrial wastewater and commercial wastewater. At times combined sewer overflow discharges may have detectable levels of pollutants.

Combined sewer overflows are subject to National Pollutant Discharge Elimination System (NPDES) permit requirements including both technology-based and water quality-based requirements of the Clean Water Act (CWA). The City of Belleville's NPDES permit includes the operation of ~~fifteen (15)~~ two (2) combined sewer overflows. IEPA has determined that none of the combined sewer overflow outfalls within the City of Belleville discharge into sensitive areas. Sensitive areas are any water in the immediate area of the discharge point designated as an Outstanding National Resource Water, found to contain either shellfish beds or threatened or endangered aquatic species or their habitat, used for primary contact recreation, or within the protection area for a drinking water intake structure.

Following is a list of the permitted combined sewer overflows within the City's sewer system:

CITY OF BELLEVILLE

Combined Sewer Overflow Public Notification Program

CSO #	Location	Receiving Stream	Pipe Size
2	Portland Ave & Mascoutah Ave.	Richland Creek	72"
35	South 88th St at lift station	Powder mill Creek	36"

The City of Belleville has developed and implemented a combined sewer overflow inspection and maintenance program to minimize the effects of combined sewer overflow discharge. Elements of this program are as follows:

- Inspections of the wastewater treatment facilities are performed hourly each day to assure that maximum flow and proper treatment are being maintained.
- The bar screens in the pump station at the wastewater treatment plant are inspected each shift and are continuously self-cleaning.
- The pumps at the wastewater treatment plant pump station are inspected and preventive maintenance procedures are performed every six (6) months.
- Inspections of the first flush/holding basin concrete lining of the interior levee slopes and the influent and effluent structures are performed on a daily basis.
- Inspections and preventive maintenance procedures are performed on the forty nine (49) pump stations within the sewer system on a continuous cycle.
- All combined sewer overflow discharge points are inspected weekly during dry weather and during, if practical, or within twenty four (24) hours of a rain event.
- Street sweeping is performed on a regular basis to minimize the amount of debris flushed into the combined sewer system during a rain event. During fall months a greater emphasis is placed on street sweeping in wooded areas with combined sewers to reduce the amount of leaves entering the system that can cause clogging of pipes.
- Inspection and cleaning of catch basins is performed on a continuous basis. Approximately 25% of the ±4300 catch basins are cleaned each year.
- Approximately 25% of the sewer system is cleaned each year to prevent excessive buildup of solids and maintain system capacity.
- Suspected problem areas in the sewer lines are inspected by running a video camera through the line. Repairs are then made on an as needed basis.
- Smoke and dye testing is used to detect illegal connections which are then ordered to be removed in accordance with the sewer use ordinance.

No known dry weather overflow (DWO) has occurred since implementation of the inspection program at any of the City's authorized combined sewer overflows. We perform weekly inspections of the City's combined sewer overflows to ensure that the regulators are working properly and that a dry weather overflow has not occurred. A portion of the combined sewer overflow inspections are performed at higher sanitary sewer flow periods in the dry weather flow cycle. These

observations verify that the combined sewer overflow regulating mechanisms are adequate to control the peak dry weather flows and maximize the storage of pollutants in the sewer system and minimize the discharge of pollutants from the combined sewer overflows. The most recent stream inspections revealed no evidence of sewage sludge deposits within pools at or downstream of combined sewer overflow discharge points. Downstream water samples taken during combined sewer overflow discharge have been in compliance with the wastewater treatment plant effluent standards specified in the NPDES permit.

Beginning in 1991 the City initiated steps to significantly reduce the frequency of combined sewer overflow discharges. A new pumping station and first flush/holding basin were constructed at the treatment plant to handle additional flows during rainfall events. Subsequent to completion of the pump station and basin, three (3) new interceptor sewers were constructed to transport more flow to the treatment plant and reduce the frequency of combined sewer overflow discharges. The first flush basin also catches the solids that are deposited in the pipes from wastewater during periods of low flow in addition to solids and organic material that may be washed into the combination sewers from streets and parking lots at the beginning of a rain event. The increased flow and velocity due to the inflow of storm water cleans the pipes early in the rain event, prior to combined sewer overflow discharge, and deposits these solids in the basin.

Wastewater entering the combined sewer system during a rain event of adequate intensity to cause combined sewer overflow discharge would then be extremely diluted.

The long term control program currently being developed will include provisions to further reduce combined sewer overflow discharges. Separation of storm water and wastewater throughout the City is both impractical and cost prohibitive. It would require construction of a completely new collection system for storm water and extensive modification of the existing system to be left in place for wastewater. Construction operations would require removal and replacement of large quantities of street, curbing and sidewalk in addition to relocation of numerous underground utilities. Considerable inconveniences would be experienced by residents and business owners due to road closures/lane restrictions and intermittent utility service loss. The cost for total separation throughout the City could be as much as $100,000,000. Separation of storm water and wastewater can, however, be feasible in specific areas and will be included as an element of the long term control program. Every effort is made to accomplish storm water and wastewater separation in conjunction with any street improvement projects
Construction plans for separation of storm water and wastewater have been developed that would possibly allow closure of the combined sewer overflow located at Portland Avenue and Mascoutah Avenue (CSO#2). This is our largest

permitted combined sewer overflow with a pipe diameter of seventy two (72) inches

Other cost effective alternatives to reduce combined sewer overflow discharge are presently being studied and will be included in the long term control program.