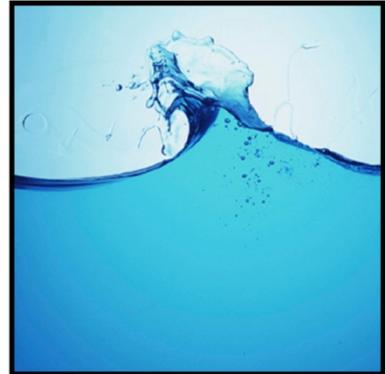


Village of
Western Springs



**Long Term
Control Plan**

Prepared by:

Baxter & Woodman, Inc.

8678 Ridgefield Rd.

Crystal Lake, IL 60012

815.459.1260

www.baxterwoodman.com

Village of Western Springs, Illinois Long Term Control Plan

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1. INTRODUCTION



Combined sewer systems are designed to collect stormwater runoff, domestic sewage and industrial wastewater in the same pipe. Combined sewer systems typically transport all wastewater to a treatment plant for complete treatment. During periods of heavy rainfall or snowmelt, however, the wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. Therefore, some combined sewer systems are designed to overflow occasionally and discharge excess wastewater directly to nearby streams, rivers or other water bodies. Such is the case in the Village of Western Springs (the Village), which has four combined sewer overflows (CSOs) that discharge to Flagg Creek and Salt Creek (Exhibit A). Treatment is not provided at or upstream of the CSO outfalls.

The purpose of this CSO Long-Term Control Plan is to identify a plan for sewer separation and elimination of the CSOs that discharge to Flagg Creek in Western Springs. This is required by the Illinois Environmental Protection Agency (IEPA) in conjunction with Special Condition 7, Paragraph 10 of the Village's discharge permit for its CSO outfalls. A copy of the permit is included as Appendix A.

2. PRESENT CONDITIONS



2.1 Project Location

The Village is located approximately 15 miles west of downtown Chicago in Cook County, Illinois. The Village encompasses approximately 1,550 acres, of which the southerly 1,000 acres is in the Flagg Creek watershed and the northerly 550 acres is in the Salt Creek watershed.

2.2 Existing Combined Sewer System

The Village is authorized by National Pollutant Discharge Elimination System (NPDES) Permit No. IL 0045039 to discharge combined sewer overflows at the locations listed in Table 1 and shown in Exhibit A.

TABLE 1

Existing CSO Outfalls

Outfall	Location	Overflow Method	Receiving Stream	Latitude	Longitude
001	Howard Avenue	Gravity	Salt Creek	41° 49' 33" N	87° 53' 44" W
002	Grove Avenue	Gravity	Salt Creek	41° 49' 28" N	87° 54' 14" W
003	49 th Street	Gravity	Flagg Creek	41° 48' 03" N	87° 54' 25" W
004	Fair Elms	Pumped	Flagg Creek	41° 47' 25" N	87° 54' 23" W

The northerly portion of the community (north of 47th Street) is served by a combined sewer system, which is a single set of sewer pipes designed to collect both domestic sewage and stormwater runoff. All of Field Park and the northerly parts of Old Town Northwest, Old Town North, and Ridge Acres neighborhoods are within the Salt Creek watershed. The domestic sewage and the stormwater runoff collected in this watershed are transported to an interceptor sewer and two drop shafts, each located north of Ogden Avenue. The interceptor sewer which is owned and maintained by the

Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) has been recently upgraded from 18-inch diameter to 36-inch diameter. When the interceptor sewer becomes surcharged, excess flow is diverted to the two drop shafts which divert excess combined sewage to the deep tunnel system which is a part of the MWRDGC Tunnel and Reservoir Plan (TARP). During very intense rainstorms, the drop shaft capacities may be exceeded at which time a portion of the combined sewage will be discharged to Salt Creek at Outfalls 001 and 002. These CSO outfalls are maintained and monitored by MWRDGC therefore they are not included in this Long-Term Control Plan. Correspondence supporting this arrangement is provided in Appendix B.

The southerly parts of Old Town Northwest, Old Town North, Ridge Acres, and all of Old Town South are in the Flagg Creek watershed. The sewage from this area is collected by combined sewers and discharged into a trunk sewer that originates at the intersection of 47th Street and Fair Elms Avenue. This trunk sewer transports the combined sewage south of Fair Elms Avenue to an MWRDGC interceptor near 55th Street.

The area south of 47th Street is served by separate sanitary and storm sewer systems. The sanitary sewers collect sewage and transport it to the trunk sewer along Fair Elms Avenue, which also receives the combined sewage from the area north of 47th Street. During rainstorms the amount of combined sewage can exceed the capacities of MWRDGC's interceptor sewer and the Fair Elms trunk sewer. Some of the excess combined sewage is discharged to Flagg Creek through an overflow (Outfall 003), which

originates at the intersection of 47th Street and Fair Elms Avenue and discharges into Flagg Creek near 49th Street.

Ownership of the MWRDGC's pumping station near 55th Street, has been transferred to the Village. While there is an outfall at this station into Flagg Creek (Outfall 004), recent modifications to the interceptor sewers at the pumping station have effectively eliminated overflows from this structure.

All wastewater collected in the Village's sanitary and combined sewers is sent to the MWRDGC's Stickney Wastewater Treatment Plant (WWTP) for treatment and discharge. Wet weather flows in excess of interceptor sewer capacities are sent to the four permitted CSOs. Wet weather flows in the Flagg Creek watershed are not connected to the TARP system. Flows in excess of the interceptor sewer capacity for these combined sewers are discharged to Flagg Creek through Outfalls 003 and 004. Table 2 summarizes historical overflows from Outfall 003.

TABLE 2

Historical Overflow Events - Outfall 003

Year	Rainfall (# of events)	Rainfall (inches)	Number of Overflow Events	Overflow Duration (hr/yr)
2008	62	41	23	119
2009	78	43	22	116
2010	68	37	29	72
2011	73	45	14	117
2012*	52	23	10	41

* Through September 2012.

2.3 Receiving Streams

The two outfalls on Flagg Creek discharge to Segment IL GK-03. The 2010 Draft Illinois Integrated Water Quality Report and Section 303(d) List contains designated uses for this stream segment that are impaired at present, as well as potential causes of the impairments (summarized in Table 3).

TABLE 3

Illinois 303(d) List Data for CSO Receiving Streams

Receiving Stream	Segment ID	Length (miles)	Designated Use(s)	Potential Causes for Impairments
Flagg Creek	IL GK-03	7.87	Aquatic Life	Arsenic, DDT, Hexachlorobenzene, Methoxychlor, Phosphorus

2.4 Need for Long-Term Control Plan

The IEPA is requiring a Long-Term Control Plan at this time due to impacts on Flagg Creek and the desire to improve water quality along the affected stream segment. The Village further recognizes that the EPA is moving toward establishing numerical limits for CSO discharges that may make elimination of the CSOs more cost-effective.

3. SYSTEM CHARACTERIZATION



3.1 General

Developing a detailed understanding of the current conditions of the Village's combined sewer system and receiving waters is a crucial component for preparing the Long Term Control Plan.

3.2 Combined Sewer Monitoring & Notification

The Village has developed and implements an Operations and Maintenance Plan for their combined sewer system, see Appendix C.

The Village submits monthly CSO Discharge Monitoring Reports (DMRs) to the IEPA for Outfalls 003 and 004. A smart cover flow meter is located in the upstream manhole of Outfall 003 which records the duration of each overflow event. The Village's rain gauge data is used to determine the amount of rain received during each rain event. This information is used to complete the DMRs. Outfall 004 is a lift station. When an overflow occurs the Village is notified by an alarm. The Village takes a sample of the combined sewage and has it analyzed for BOD and TSS. The pump data is used to determine the duration and amount of sewage that was discharged to Flagg Creek. As mentioned in subsection 2.2, MWRDGC operates and is responsible for the DMR reporting for Outfalls 001 and 002.

The Village has placed and maintains information signs at all CSO's as well as upstream and downstream of all public access points to warn the public of potential concerns. In the event of a CSO, information about the CSO is added to the Village's website which states "CSO Outfall No. __ discharged on *(insert date)* for a duration of *(insert hours)*."

3.3 Receiving Water Evaluation

A Water Quality Study of Flagg Creek for Outfall 003 at 49th Street was prepared and submitted to the IEPA in October 2010. Outfall 004 was excluded because it overflows to Flagg Creek less than four times a year. This study was performed to provide data to the IEPA to determine whether discharges from the Village's CSO outfalls to Flagg Creek were causing or contributing to violations and/or stream impairments.

An initial stream evaluation was conducted to develop baseline data for Flagg Creek. Four locations were selected for stream monitoring: one upstream of Outfall 003 and three downstream. Land use, stream access points and stream inflow points were identified for the entire stream length between the four selected stream monitoring locations. Baseline stream data were collected during dry weather a minimum of 72 hours after a rainfall event.

Data-recording flow metering equipment and stream gauge poles were installed to confirm the occurrence of overflows during rainfall events. The flow meter was installed in the combined sewer upstream of the discharge point at Outfall 003. Sampling crews were mobilized whenever storm tracking and real-time rainfall data indicated major rainfalls in the vicinity of Western Springs. Data was collected for four CSO events. The data collected was compared to the data from the baseline stream monitoring.

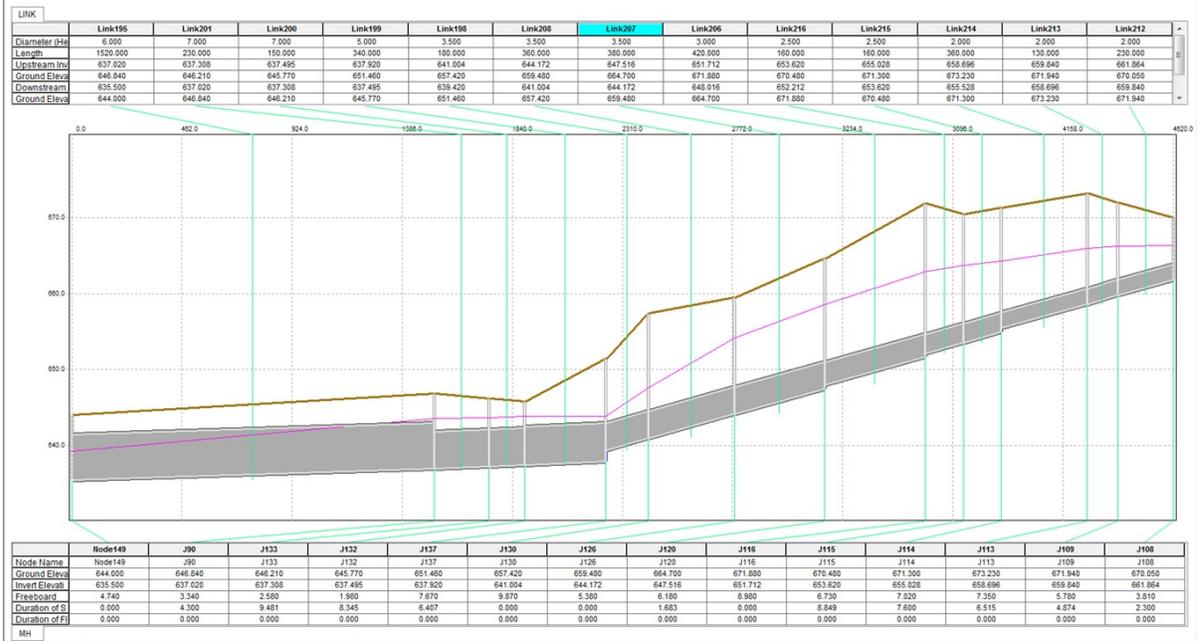
The Water Quality Study concluded that the water quality trends varied considerably between baseline data and the four CSO events included in the study. In

some cases water quality changed for the better downstream or Outfall 003 during overflow events, while in other cases the opposite occurred. Further, considering the number of stream inflow points located along the entire monitored segment, it was difficult to determine the exact source of stream impacts during CSO events. This determination would have been difficult even if different monitoring locations were selected due to the presence of point and nonpoint source discharges immediately downstream of Outfall 003. This determination was further complicated by the fact that water quality of discharges from the other inflow points is unknown.

3.4 Sensitive Areas

Flagg Creek does not meet the criteria to be classified as a “sensitive area” because the creek is not a 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.

4. COMBINED SEWER MODELING



The Village understands that a combined sewer system has more disadvantages than advantages in the long-term perspective of governing authorities. The Village has requested that a separation plan for Basins No. 3 and 4 be developed. A dynamic hydraulic model was used to determine the hydraulic requirements of a new storm system with the existing combined sewers being utilized for separate wastewater flow.

4.1 Calibrated Model

A hydraulic model was created to simulate the existing combined sewer system in Basin No. 3 and Basin No. 4. The hydraulic model was created and calibrated by James J. Benes & Associates, Inc. using Storm Water Management Model, Version 5.0.022 (SWMM 5) software. Discussion of the model creation and calibration are included in Appendix D.

4.2 Methodology

The hydraulic model of existing conditions was converted from SWMM 5 to XP-SWMM for evaluation of alternative improvements. XP-SWMM is a dynamic, hydraulic modeling software based on the SWMM 5 engine and is an industry accepted program for simulating storm water and wastewater systems.

The calibrated model was used to simulate peak wet weather flows for the Design Event. The Design Event was defined as the 10-year frequency rain event. The largest rain event captured by flow monitoring data was the April 15, 2012 event which produced 1.53 inches of rain in four hours. The most intense portion of the April 15, 2012 event produced 0.80 inches of rain in 15 minutes. According to Bulletin 70, Frequency Distributions and Hydroclimatic Characteristics of Heavy Rainstorms in

Illinois, which was published by the Illinois State Water Survey in 1989, a storm with this magnitude is statistically considered a two year storm event.

To simulate a 10-year event, it was necessary to extrapolate the rainfall data. The April 15, 2012 event was selected as the base event for extrapolation because it was the largest of the three rain events used to calibrate the model. Rain data extrapolation was accomplished by first calculating the extrapolation factor. This consisted of dividing the total rainfall amount for the Design Event by the total rainfall of the April 15, 2012 event. Bulletin 70 lists 1.21 inches of rain for a 10-year frequency, 15 minute duration event. Therefore, the extrapolation factor for this event was 1.51 (1.21/0.80).

The purpose of the hydraulic model was to simulate a proposed storm sewer system capable of conveying the Design Event peak flow. For this report, acceptable conveyance of the Design Event means the peak hydraulic grade line is located beneath the ground surface elevation. The most cost-effective storm system will have minimum pipe length and pipe diameters. This typically results in decentralized pipe routing where storm flow is discharged at multiple outfall locations rather than a single central outfall. The natural discharge location for Basins 3 and 4 is Flagg Creek. The existing CSO Outfall 003 and Outfall 004 locations are located approximately 1,300 feet and 5,300 feet south of 47th Street, respectively. These existing outfall locations are located far from the source of storm water flow in Basins 3 and 4. Utilizing these existing outfall locations with the proposed storm system would require great expense due to the large pipes sizes needed to convey peak wet weather flow. Therefore, new outfall locations

are proposed at two locations: first an outfall at the southwest corner of Spring Rock Park (Spring Rock Park Outfall), and second an outfall at the southwest corner of the Village Public Works Facility located at 1440 Hillgrove Avenue (Hillgrove Outfall). Construction of these two proposed outfalls would require consultation from the U.S. Army Corps of Engineers. The outfalls were simulated with free discharge and no backwater effect. The proposed invert elevation of Spring Rock Park Outfall is 635.50 feet and the proposed invert elevation of Hillgrove Outfall is 638.10 feet per NGVD 29.

The proposed storm system was modeled with no inlet restrictions. The model simulates a well-maintained storm system with adequate inlet capacity to convey all surface run-off to the underground pipe network.

4.3 Results

The calibrated model was used to simulate the performance of a proposed storm system during the Design Event peak wet weather flows. The proposed storm system is shown in Exhibit B. The proposed peak discharge during the 10-year, 15-minute duration event is 202 cubic feet per second (cfs) at the Spring Rock Park Outfall and 242 cfs at the Hillgrove Outfall. Many of the storm sewers surcharge during the Design Event, but no flooding occurs.

Appendix E summarizes all proposed storm sewers. Proposed storm sewers were modeled with circular pipes. However, horizontal elliptical pipe was required between Nodes J132 and J90 along Central Avenue.

Estimating costs for a project of this scope is difficult at this stage. Factors such as the location of other utilities, existing pavement depth, and permitting agency

coordination would determine if this project is feasible. For the purposes of this investigation, we are providing budgetary costs for the proposed storm system shown in Exhibit B. Actual costs may be significantly different based on the many factors involved. A break-down of estimated costs are provided in Appendix F. The total estimated cost for completing the storm and sanitary sewer separation in Basins 3 and 4 is \$26,841,000. Phasing of the proposed improvements is discussed in the Implementation Plan section of this Report. The estimated costs include contingency, engineering, legal, and administrative costs. The cost estimate was based on locating the new storm sewers in the streets. Pavement restoration represents a significant portion of the estimated construction costs.

The existing combined sewers were sized to include storm flow. If a separate storm sewer system is constructed, the existing combined sewers will be oversized for sanitary flow and susceptible to low-velocity flow. The low-velocity flow may induce solids separation and odor issues. Installing cured-in-place pipe is an alternative to alleviating solids separation and odor issues in the existing combined sewers after storm flow has been permanently diverted to dedicated storm sewers. The condition of the existing combined sewer was unknown. Therefore, the cost estimate includes work for installing cured-in-place pipe in the existing combined sewer to lengthen its service life as a separate sanitary sewer and to reduce the cross-sectional area of the existing combined pipes.

5. ALTERNATIVES FOR LONG TERM CONTROL OF CSOs



5.1 Public Participation

The Village has developed and implements a Public Notification Plan to institute policies and procedures for informing the public in the event of a combined sewer overflow (CSO), see Appendix G.

Residents have been informed that they can help reduce CSOs during periods of heavy rainfall by reducing their water usage in an effort to keep water levels as low as possible within the combined sewer system. Delaying activities such as dishwashing and laundry until after heavy rainfall has left the area will reduce the amount of water discharged and may event prevent a CSO discharge. Additionally, rainwater collection from gutters reduces the amount of rain water going into the combined sewers. Collected rainwater can then be later used to water lawns and gardens, having the added benefit of reducing water bills.

The Village actively tracks citizen complaints with regard to street, yard, and household flooding and CSO discharges. These complaints and periodic surveys form the basis for infrastructure improvement projects and maintenance plan updates.

5.2 Pollution Prevention

The Village has developed a Pollution Prevention Plan to implement best management practices to reduce pollution and negative impacts to the combined sewer system, see Appendix H.

The Village has implemented a schedule for cleaning streets, catch basins, and combined sewers to reduce the solids deposition in the system and maximize the

efficiency of these facilities. The streets are cleaned once a month, the catch basins are cleaned bi-annually, and the combined sewers are cleaned annually.

5.3 Sewer Separation

The Village has approximate 34,400 lineal feet of combined sewer that is tributary to Outfalls 003 and 004. The Village's combined sewer system has the capacity to collect and transport 95 percent of the "First Flush". First Flush are flows that consist of dry weather wastewater and initial storm water runoff to the point that any sediments within the system are picked up and carried to the MWRDGC Interceptor and then to the WWTP.

6. IMPLEMENTATION PLAN



The Long-Term Control Plan will be implemented over many years. Since the improvements will be constructed in many phases, it is imperative to address the highest priority areas first. As shown in Exhibit C, the study area was divided into four construction phases; two phases per basin. We recommend implementing the improvements in the following order:

1.	Basin 4 – Phase 1	\$ 7,795,000
2.	Basin 3 – Phase 1	\$ 3,844,000
3.	Basin 3 – Phase 2	\$ 9,182,000
4.	<u>Basin 4 – Phase 2</u>	\$ <u>6,020,000</u>
	Total Cost	\$26,841,000

A break-down of estimated costs is provided in Appendix F. Depending on the funding vehicles available, the Village could divide or combine the improvements into different construction phases. However, we have identified the corridor along 47th street as the highest priority area and it should be addressed first. We have identified the area in the vicinity of the Village’s Public Works facility on Hillgrove Avenue as the second highest priority area and recommend addressing storm water issues at this location after the improvements along the 47th Street corridor have been implemented. The Village may then address remaining issues in Basin 3 and 4 after these high priority areas have been improved.

7. POST CONSTRUCTION COMPLIANCE MONITORING



The Village will develop a monitoring program to measure the effect of Long-Term Control Plan implementation on the water quality of Flagg Creek.

APPENDIX A



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276 - (217) 782-2829
JAMES R. THOMPSON CENTER, 100 WEST RANDOLPH, SUITE 11-300, CHICAGO, IL 60601 - (312) 814-6026
217/782-0610

ROD R. BLAGOJEVICH, GOVERNOR DOUGLAS P. SCOTT, DIRECTOR

October 24, 2008

Village of Western Springs
740 Hillgrove Avenue
Western Springs, Illinois 60558

Re: Village of Western Springs
Combined Sewer Overflows
NPDES Permit No. IL0045039
Final Permit

RECEIVED
OCT 27 2008
BAXTER & WOODMAN, INC.
CRISTALLAKE

Gentlemen:

Attached is the final NPDES Permit for your discharge. The Permit as issued covers discharge limitations, monitoring, and reporting requirements. Failure to meet any portion of the Permit could result in civil and/or criminal penalties. The Illinois Environmental Protection Agency is ready and willing to assist you in interpreting any of the conditions of the Permit as they relate specifically to your discharge.

During the public notice period the Agency received a letter from Ms. Andrea Pracht from your consulting engineer Baxter & Woodman, Inc. dated September 29, 2008. During a phone conversation with Ms. Pracht on October 20th the Agency indicated that if the Village cannot obtain adequate data and needs more time to collect samples that a request for a schedule modification to its Long Term Control Plan (LTCP) submittal can be submitted at that time.

The Agency has begun a program allowing the submittal of electronic Discharge Monitoring Reports (eDMRs) instead of paper Discharge Monitoring Reports (DMRs). If you are interested in eDMRs, more information can be found on the Agency website, http://epa.state.il.us/water/edmr/index.html. If your facility is not registered in the eDMR program, a supply of preprinted paper DMR Forms for your facility will be sent to you prior to the initiation of DMR reporting under the reissued permit. Additional information and instructions will accompany the preprinted DMRs upon their arrival.

The attached Permit is effective as of the date indicated on the first page of the Permit. Until the effective date of any re-issued Permit, the limitations and conditions of the previously-issued Permit remain in full effect. You have the right to appeal any condition of the Permit to the Illinois Pollution Control Board within a 35 day period following the issuance date.

Should you have questions concerning the Permit, please contact Ralph Hahn at the telephone number indicated above.

Sincerely,

Alan Keller (handwritten signature)

Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK:REP:RJH:07082704.bah

Attachment: Final Permit

cc: Records
Compliance Assurance Section
Des Plaines Region
Baxter & Woodman, Inc.
CMAP

ROCKFORD - 4302 North Main Street, Rockford, IL 61103 - (815) 987-7760 • DES PLAINES - 9511 W. Harrison St., Des Plaines, IL 60016 - (847) 294-4000
ELGIN - 595 South State, Elgin, IL 60123 - (847) 608-3131 • PEORIA - 5415 N. University St., Peoria, IL 61614 - (309) 693-5463
BUREAU OF LAND - PEORIA - 7620 N. University St., Peoria, IL 61614 - (309) 693-5462 • CHAMPAIGN - 2125 South First Street, Champaign, IL 61820 - (217) 278-5800
COLLINSVILLE - 2009 Mall Street, Collinsville, IL 62234 - (618) 346-5120 • MARION - 2309 W. Main St., Suite 116, Marion, IL 62959 - (618) 993-7200

NPDES Permit No. IL0045039

Illinois Environmental Protection Agency

Division of Water Pollution Control

1021 North Grand Avenue East

Post Office Box 19276

Springfield, Illinois 62794-9276

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

Reissued (NPDES) Permit

Expiration Date: October 31, 2013

Issue Date: October 24, 2008
Effective Date: November 1, 2008

Name and Address of Permittee:

Village of Western Springs
740 Hillgrove Avenue
Western Springs, Illinois 60558

Facility Name and Address:

Combined Sewer Overflows
Western Springs, Illinois
(Cook County)

Receiving Waters: Salt Creek and Flagg Creek

In compliance with the provisions of the Illinois Environmental Protection Act, Title 35 of the Ill. Adm. Code, Subtitle C, Chapter I, and the Clean Water Act (CWA), the above-named Permittee is hereby authorized to discharge at the above location to the above-named receiving stream in accordance with the standard conditions and attachments herein.

Permittee is not authorized to discharge after the above expiration date. In order to receive authorization to discharge beyond the expiration date, the Permittee shall submit the proper application as required by the Illinois Environmental Protection Agency (IEPA) not later than 180 days prior to the expiration date.



Alan Keller, P.E.
Manager, Permit Section
Division of Water Pollution Control

SAK:RJH:07082704.bah

NPDES Permit No. IL0045039

Effluent Limitations, Monitoring, and Reporting

FINAL

Discharge Number(s) and Name(s): 004 Fair Elms CSO

These overflow facilities shall not be utilized until the downstream transport and treatment facilities are receiving their maximum practical flow.

From the effective date of this Permit until the expiration date, the effluent of the above discharge(s) shall be monitored and limited at all times as follows:

Parameter		CONCENTRATION		Sample Frequency	Sample Type
		LIMITS mg/L			
		Monthly Average			
Total Flow (MG)	See Below			Daily When Discharging	Continuous
BOD ₅				Daily When Discharging	Grab
Suspended Solids				Daily When Discharging	Grab

Total flow in million gallons shall be reported on the Discharge Monitoring Report (DMR) in the quantity maximum column.

Report the number of days of discharge in the comments section of the DMR.

BOD₅ and Suspended Solids shall be reported on the DMR as a monthly average concentration.

NPDES Permit No. IL0045039

Special Conditions

SPECIAL CONDITION 1. This Permit may be modified to include different final effluent limitations or requirements which are consistent with applicable laws, regulations, or judicial orders. The IEPA will public notice the permit modification.

SPECIAL CONDITION 2. The IEPA may request in writing submittal of operational information in a specified form and at a required frequency at any time during the effective period of this Permit.

SPECIAL CONDITION 3. The IEPA may request more frequent monitoring by permit modification pursuant to 40 CFR § 122.63 and Without Public Notice in the event of operational, maintenance or other problems resulting in possible effluent deterioration.

SPECIAL CONDITION 4. The effluent, alone or in combination with other sources, shall not cause a violation of any applicable water quality standard outlined in 35 Ill. Adm. Code 302.

SPECIAL CONDITION 5. This Permit may be modified to include requirements for the Permittee on a continuing basis to evaluate and detail its efforts to effectively control sources of infiltration and inflow into the sewer system and to submit reports to the IEPA if necessary.

SPECIAL CONDITION 6. During January of each year the Permittee shall submit annual fiscal data regarding sewerage system operations to the Illinois Environmental Protection Agency/Division of Water Pollution Control/Compliance Assurance Section. The Permittee may use any fiscal year period provided the period ends within twelve (12) months of the submission date.

Submission shall be on forms provided by IEPA titled "Fiscal Report Form For NPDES Permittees".

SPECIAL CONDITION 7.

AUTHORIZATION OF
COMBINED SEWER AND TREATMENT PLANT DISCHARGES

The IEPA has determined that at least a portion of the collection system consists of combined sewers. References to the collection system and the sewer system refer only to those parts of the system which are owned and operated by the Permittee unless otherwise indicated. The Permittee is authorized to discharge from the overflow(s)/bypass(es) listed below provided the diversion structure is located on a combined sewer and the following terms and conditions are met:

<u>Discharge Number</u>	<u>Location</u>	<u>Receiving Water</u>
001	Harding Avenue	Salt Creek
002	Grove Avenue	Salt Creek
003	49th Street	Flagg Creek
004	Fair Elms	Flagg Creek

Treatment Requirements

1. All combined sewer overflows and, if applicable, treatment plant bypasses, shall be given sufficient treatment to prevent pollution and the violation of applicable water quality standards and to the extent required by the federal Clean Water Act, including any amendments made by the Wet Weather Water Quality Act of 2000.
2.
 - a. For Discharge Number 004 all dry weather flows, the first flush of storm flows, and additional flows, but not less than ten times the average dry weather flow for the design year, shall be conveyed to the Metropolitan Water Reclamation District of Greater Chicago for treatment.
 - b. All dry weather flows, and storm flows from Discharge Numbers 001, 002 and 003, to the extent required by PCB 85-213 and dated November 29, 1988, shall be conveyed to the Metropolitan Water Reclamation District of Greater Chicago for treatment. The terms and conditions of this Board Order are hereby incorporated by reference as if fully set forth herein.
3. All CSO discharges authorized by this Permit shall be treated, in whole or in part, to the extent necessary to prevent accumulations of sludge deposits, floating debris and solids in accordance with 35 Ill. Adm. Code 302.203 and to prevent depression of oxygen levels below the applicable water quality standards.

NPDES Permit No. IL0045039

Special Conditions

4. Overflows during dry weather are prohibited. Dry weather overflows shall be reported to the IEPA pursuant to Standard Condition 12(e) of this Permit (24 hour notice).
5. The collection system shall be operated to optimize transport of wastewater flows and to minimize CSO discharges and the treatment system, if applicable, shall be operated to maximize treatment of wastewater flows.

Nine Minimum Controls

6. The Permittee shall comply with the nine minimum controls contained in the National CSO Control Policy published in the Federal Register on April 19, 1994. The nine minimum controls are:
 - a. Proper operation and maintenance programs for the sewer system and the CSOs (Compliance with this Item shall be met through the requirements imposed by Paragraph 8 of this Special Condition);
 - b. Maximum use of the collection system for storage (Compliance with this Item shall be met through the requirements imposed by Paragraphs 2, 5, and 8 of this Special Condition);
 - c. Review and modification of pretreatment requirements to assure CSO impacts are minimized (Compliance with this Item shall be met through the requirements imposed by Paragraph 9 of this Special Condition);
 - d. Maximization of flow to the POTW for treatment (Compliance with this Item shall be met through the requirements imposed by Paragraphs 2, 5, and 8 of this Special Condition);
 - e. Prohibition of CSOs during dry weather (Compliance with this Item shall be met through the requirements imposed by Paragraph 4 of this Special Condition);
 - f. Control of solids and floatable materials in CSOs (Compliance with this Item shall be met through the requirements imposed by Paragraphs 3 and 8 of this Special Condition);
 - g. Pollution prevention programs which focus on source control activities (Compliance with this Item shall be met through the requirements imposed by Paragraph 6 of this Special Condition, **See Below**);
 - h. Public notification to ensure that citizens receive adequate information regarding CSO occurrences and CSO impacts (Compliance with this Item shall be met through the requirements imposed by Paragraph 12 of this Special Condition); and,
 - i. Monitoring to characterize impacts and efficiency of CSO controls (Compliance with this Item shall be met through the requirements imposed by Paragraphs 10 and 11 of this Special Condition).

A pollution prevention plan (PPP) shall be developed by the Permittee unless one has already been prepared for this collection system. Any previously-prepared PPP shall be reviewed, and revised if necessary, by the Permittee to address the items contained in Chapter 8 of the U.S. EPA guidance document, Combined Sewer Overflows, Guidance For Nine Minimum Controls, and any items contained in previously-sent review documents from the IEPA concerning the PPP. Combined Sewer Overflows, Guidance For Nine Minimum Controls is available on line at <http://www.epa.gov/npdes/pubs/owm0030.pdf>. The PPP (or revised PPP) shall be presented to the general public at a public information meeting conducted by the Permittee within nine (9) months of the effective date of this Permit. The Permittee shall submit documentation that the pollution prevention plan complies with the requirements of this Permit and that the public information meeting was held. Such documentation shall be submitted to the IEPA within twelve (12) months of the effective date of this Permit and shall include a summary of all significant issues raised by the public, the Permittee's response to each issue, and two (2) copies of the "CSO Pollution Prevention Plan Certification" one (1) with original signatures. This certification form is available online at <http://www.epa.state.il.us/water/permits/waste-water/forms/cso-pol-prev.pdf>. Following the public meeting, the Permittee shall implement the pollution prevention plan within one (1) year and shall maintain a current pollution prevention plan, updated to reflect system modifications, on file at the sewage treatment works or other acceptable location and made available to the public. The pollution prevention plan shall be submitted to the IEPA upon written request.

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Sensitive Area Considerations

7. Pursuant to Section II.C.3 of the federal CSO Control Policy of 1994, sensitive areas are any water likely to be impacted by a CSO discharge which meet one or more of the following criteria: (1) designated as an Outstanding National Resource Water; (2) found to contain shellfish beds; (3) found to contain threatened or endangered aquatic species or their habitat; (4) used for primary contact recreation; or, (5) within the protection area for a drinking water intake structure.

Within one (1) month of the effective date of this Permit, the Permittee shall submit two (2) copies of documentation indicating which of the outfalls listed in this Special Condition do not discharge to sensitive areas. Such documentation shall include information regarding the use of the receiving water for primary contact activities (swimming, water skiing, etc.). If the Permittee believes that it is not possible for primary contact recreation to occur in the areas impacted or potentially impacted by the CSOs listed in this Special Condition, then justification as to why primary contact recreation is not possible shall be submitted. Adequate justification shall include, but is not limited to: (1) inadequate water depth; (2) presence of physical obstacles sufficient to prevent access to or for primary contact recreation; and, (3) uses of adjacent land sufficient to discourage primary contact activities. The IEPA will make a determination based on this documentation and other information available to the IEPA.

Should the IEPA conclude that any of the CSOs listed in this Special Condition discharge to a sensitive area, the IEPA will notify the Permittee in writing. Within three (3) months of the date of notification, or such other date contained in the notification letter, the Permittee shall submit two (2) copies of either a schedule to relocate, control, or treat discharges from these outfalls. If none of these options are possible, the Permittee shall submit adequate justification as to why these options are not possible. Such justification shall be in accordance with Section II.C.3 of the National CSO Control Policy.

Operational and Maintenance Plans

8. The IEPA received a CSO operational and maintenance plan "CSO O&M plan" for this sewerage system on December 5, 2006. The Permittee shall review and revise, if needed, the CSO O&M plan to reflect system changes and any comments previously sent to the Permittee by the IEPA. The CSO O&M plan shall be presented to the general public at a public information meeting conducted by the Permittee within nine (9) months of the effective date of this Permit. The Permittee shall submit documentation that the public information meeting was held within twelve (12) months of the effective date of this Permit. Such documentation shall be submitted to the IEPA within twelve (12) months of the effective date of this Permit and shall include a summary of all significant issues raised by the public, the Permittee's response to each issue, and two (2) copies of the "CSO Operational Plan Checklist and Certification", one (1) with original signatures. Copies of the "CSO Operational Plan Checklist and Certification" are available online at <http://www.epa.state.il.us/water/permits/waste-water/forms/cso-checklist.pdf>. Following the public meeting, the Permittee shall implement the CSO O&M plan within one (1) year and shall maintain a current CSO O&M plan, updated to reflect system modifications, on file at the sewage treatment works or other acceptable location and made available to the public. The CSO O&M plan revisions shall be submitted to the IEPA one (1) month from the revision date.

The objectives of the CSO O&M plan are to reduce the total loading of pollutants and floatables entering the receiving stream and to ensure that the Permittee ultimately achieves compliance with water quality standards. These plans, tailored to the local government's collection and waste treatment system, shall include mechanisms and specific procedures where applicable to ensure:

- a. Collection system inspection on a scheduled basis;
- b. Sewer, catch basin, and regulator cleaning and maintenance on a scheduled basis;
- c. Inspections are made and preventive maintenance is performed on all pump/lift stations;
- d. Collection system replacement, where necessary;
- e. Detection and elimination of illegal connections;
- f. Detection, prevention, and elimination of dry weather overflows;
- g. The collection system is operated to maximize storage capacity and the combined sewer portions of the collection system are operated to delay storm entry into the system; and,

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- h. The treatment and collection systems are operated to maximize treatment.

Sewer Use Ordinances

9. The Permittee, within six (6) months of the effective date of this Permit, shall review and where necessary, modify its existing sewer use ordinance to ensure it contains provisions addressing the conditions below. If no ordinance exists, such ordinance shall be developed and implemented within six (6) months from the effective date of this Permit. Upon completion of the review of the sewer use ordinance(s), the Permittee shall submit two (2) copies of a completed "Certification of Sewer Use Ordinance Review", one (1) with original signatures. Copies of the certification form can be obtained on line at <http://www.epa.state.il.us/water/permits/waste-water/forms/sewer-use.pdf>. The Permittee shall submit copies of the sewer use ordinance(s) to the IEPA upon written request. Sewer use ordinances are to contain specific provisions to:

- a. Prohibit introduction of new inflow sources to the sanitary sewer system;
- b. Require that new construction tributary to the combined sewer system be designed to minimize and/or delay inflow contribution to the combined sewer system;
- c. 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;
- d. 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;
- e. Assure that CSO impacts from non-domestic sources are minimized by determining which non-domestic discharges, if any, are tributary to CSOs and reviewing, and, if necessary, modifying the sewer use ordinance to control pollutants in these discharges; and,
- f. Assure that the owners of all publicly owned systems with combined sewers tributary to the Permittee's collection system have procedures in place adequate to ensure that the objectives, mechanisms, and specific procedures given in Paragraph 8 of this Special Condition are achieved.

The Permittee shall enforce the applicable sewer use ordinances.

Long-Term Control Planning and Compliance with Water Quality Standards

10. a. Pursuant to Section 301 of the federal Clean Water Act, 33 U.S.C. § 1311 and 40 CFR § 122.4, discharges from the CSOs, including the outfalls listed in this Special Condition and any other outfall listed as a "Treated Combined Sewage Outfall", shall not cause or contribute to violations of applicable water quality standards or cause use impairment in the receiving waters. In addition, discharges from CSOs shall comply with all applicable parts of 35 Ill. Adm. Code 306.305(a), (b), (c), and (d).
- b. The Permittee shall develop a Long-Term CSO Control Plan (LTCP) for assuring that the discharges from the CSOs (treated or untreated) authorized in this Permit comply with Paragraph 10.a above and all applicable standards, including water quality standards. Two (2) copies of the LTCP shall be submitted to the IEPA within twenty-four (24) months of the effective date of this Permit. The LTCP shall contain all applicable elements of Paragraph 10.c below including a schedule for implementation and provisions for re-evaluating compliance with applicable standards and regulations after implementation. The LTCP shall be:
- 1. Consistent with Section II.C.4.a.i of the Policy; or,
 - 2. Consistent with either Section II.C.4.a.ii, Section II.C.4.a.iii, or Section II.C.4.b of the Policy and be accompanied by data sufficient to demonstrate that the LTCP, when completely implemented, will be sufficient to meet water quality standards.

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c. Pursuant to the Policy, the required components of the LTCP include the following:

1. Characterization, monitoring, and modeling of the Combined Sewer System (CSS);
2. Consideration of Sensitive Areas;
3. Evaluation of alternatives;
4. Cost/Performance considerations;
5. Revised CSO Operational Plan;
6. Maximizing treatment at the treatment plant;
7. Implementation schedule;
8. Post-Construction compliance monitoring program; and
9. Public participation.

Following submittal of the LTCP, the Permittee shall respond to any initial IEPA review letter in writing within ninety (90) days of the date of such a review letter, and within thirty (30) days of any subsequent review letter(s), if any. Implementation of the LTCP shall be as indicated by IEPA in writing or other enforceable mechanism,

Monitoring, Reporting and Notification Requirements

11. The Permittee shall monitor the frequency of discharge (number of discharges per month) and estimate the duration (in hours) of each discharge from each outfall listed in this Special Condition. Estimates of storm duration and total rainfall shall be provided for each storm event.

For frequency reporting, all discharges from the same storm, or occurring within 24 hours, shall be reported as one. The date that a discharge commences shall be recorded for each outfall. Reports shall be in the form specified by the IEPA and on forms provided by the IEPA. These forms shall be submitted to the IEPA monthly with the DMRs and covering the same reporting period as the DMRs. Parameters (other than flow frequency), if required in this Permit, shall be sampled and reported as indicated in the transmittal letter for such report forms.

12. A public notification program in accordance with Section II.B.8 of the federal CSO Control Policy of 1994 shall be developed employing a process that actively informs the affected public. The program shall include at a minimum public notification of CSO occurrences and CSO impacts, with consideration given to including mass media and/or Internet notification. The Permittee shall also consider posting signs in waters likely to be impacted by CSO discharges at the point of discharge and at points where these waters are used for primary contact recreation. Provisions shall be made to include modifications of the program when necessary and notification to any additional member of the affected public. The program shall be presented to the general public at a public information meeting conducted by the Permittee. The Permittee shall conduct the public information meeting within nine (9) months of the effective date of this Permit. The Permittee shall submit documentation that the public information meeting was held, shall submit a summary of all significant issues raised by the public and the Permittee's response to each issue and shall identify any modifications to the program as a result of the public information meeting. The Permittee shall submit the public information meeting documentation to the IEPA and implement the public notification program within twelve (12) months of the effective date of this Permit. The Permittee shall submit copies of the public notification program to the IEPA upon written request.
13. If any of the CSO discharge points listed in this Special Condition are eliminated, or if additional CSO discharge points, not listed in this Special Condition, are discovered, the Permittee shall notify the IEPA in writing within one (1) month of the respective outfall elimination or discovery. Such notification shall be in the form of a request for the appropriate modification of this NPDES Permit.

Summary of Compliance Dates in this CSO Special Condition

14. The following summarizes the dates that submittals contained in this Special Condition are due at the IEPA (unless otherwise indicated):

Submission of CSO Monitoring Data (Paragraph 11)	25th of every month
Documentation of CSO Locations (Paragraph 7, Sensitive Areas)	1 month from the effective date of this Permit

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Elimination of a CSO or Discovery of Additional CSO Locations (Paragraph 13)	1 month from discovery or elimination
Submission of Revised CSO O&M Plan	1 month from revision date
Control (or Justification for No Control) of CSOs to Sensitive Areas (Paragraph 7)	3 months from IEPA notification
Certification of Sewer Use Ordinance Review (Paragraph 9)	6 months from the effective date of this Permit
Conduct Pollution Prevention, OMP, and PN Public Information Meeting (Paragraphs, 6, 8 and 12) No Submittal Due with this Milestone	9 months from the effective date of this Permit
Submit Pollution Prevention Certification, OMP Certification, and PN Information Meeting Summary (Paragraphs, 6, 8 and 12)	12 months from the effective date of this Permit
Submit CSO Long-Term Control Plan (Paragraph 10)	24 months from the effective date of this Permit

All submittals listed in this Special Condition can be mailed to the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

Attention: CSO Coordinator, Compliance Assurance Section

All submittals hand carried shall be delivered to 1021 North Grand Avenue East.

Reopening and Modifying this Permit

15. The IEPA may initiate a modification for this Permit at any time to include requirements and compliance dates which have been submitted in writing by the Permittee and approved by the IEPA, or other requirements and dates which are necessary to carry out the provisions of the Illinois Environmental Protection Act, the Clean Water Act, or regulations promulgated under those Acts. Public Notice of such modifications and opportunity for public hearing shall be provided.

SPECIAL CONDITION 8. The Permittee shall record monitoring results on Discharge Monitoring Report (DMR) Forms using one such form for each outfall each month.

In the event that an outfall does not discharge during a monthly reporting period, the DMR Form shall be submitted with no discharge indicated.

The Permittee may choose to submit electronic DMRs (eDMRs) instead of mailing paper DMRs to the IEPA. More information, including registration information for the eDMR program, can be obtained on the IEPA website, <http://www.epa.state.il.us/water/edmr/index.html>.

The completed Discharge Monitoring Report forms shall be submitted to IEPA no later than the 25th day of the following month, unless otherwise specified by the permitting authority.

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Permittees not using eDMRs shall mail Discharge Monitoring Reports with an original signature to the IEPA at the following address:

Illinois Environmental Protection Agency
Division of Water Pollution Control
1021 North Grand Avenue East
Post Office Box 19276
Springfield, Illinois 62794-9276

Attention: Compliance Assurance Section, Mail Code # 19

Standard Conditions

Definitions

Act means the Illinois Environmental Protection Act, 415 ILCS 5 as Amended.

Agency means the Illinois Environmental Protection Agency.

Board means the Illinois Pollution Control Board.

Clean Water Act (formerly referred to as the Federal Water Pollution Control Act) means Pub. L 92-500, as amended. 33 U.S.C. 1251 et seq.

NPDES (National Pollutant Discharge Elimination System) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318 and 405 of the Clean Water Act.

USEPA means the United States Environmental Protection Agency.

Daily Discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Maximum Daily Discharge Limitation (daily maximum) means the highest allowable daily discharge.

Average Monthly Discharge Limitation (30 day average) means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month.

Average Weekly Discharge Limitation (7 day average) means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best Management Practices (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Aliquot means a sample of specified volume used to make up a total composite sample.

Grab Sample means an individual sample of at least 100 milliliters collected at a randomly-selected time over a period not exceeding 15 minutes.

24 Hour Composite Sample means a combination of at least 8 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over a 24-hour period.

8 Hour Composite Sample means a combination of at least 3 sample aliquots of at least 100 milliliters, collected at periodic intervals during the operating hours of a facility over an 8-hour period.

Flow Proportional Composite Sample means a combination of sample aliquots of at least 100 milliliters collected at periodic intervals such that either the time interval between each aliquot or the volume of each aliquot is proportional to either the stream flow at the time of sampling or the total stream flow since the collection of the previous aliquot.

- (1) **Duty to comply.** The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Act and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
- (2) **Duty to reapply.** If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. If the permittee submits a proper application as required by the Agency no later than 180 days prior to the expiration date, this permit shall continue in full force and effect until the final Agency decision on the application has been made.
- (3) **Need to halt or reduce activity not a defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.
- (4) **Duty to mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.
- (5) **Proper operation and maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up, or auxiliary facilities, or similar systems only when necessary to achieve compliance with the conditions of the permit.

- (6) **Permit actions.** This permit may be modified, revoked and reissued, or terminated for cause by the Agency pursuant to 40 CFR 122.62. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- (7) **Property rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.
- (8) **Duty to provide information.** The permittee shall furnish to the Agency within a reasonable time, any information which the Agency may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also furnish to the Agency, upon request, copies of records required to be kept by this permit.
- (9) **Inspection and entry.** The permittee shall allow an authorized representative of the Agency, upon the presentation of credentials and other documents as may be required by law, to:
 - (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
 - (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
 - (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
 - (d) Sample or monitor at reasonable times, for the purpose of assuring permit compliance, or as otherwise authorized by the Act, any substances or parameters at any location.
- (10) **Monitoring and records.**
 - (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
 - (b) The permittee shall retain records of all monitoring information, including all calibration and maintenance records, and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of this permit, measurement, report or application. This period may be extended by request of the Agency at any time.
 - (c) Records of monitoring information shall include:
 - (1) The date, exact place, and time of sampling or measurements;
 - (2) The individual(s) who performed the sampling or measurements;
 - (3) The date(s) analyses were performed;
 - (4) The individual(s) who performed the analyses;
 - (5) The analytical techniques or methods used; and
 - (6) The results of such analyses.
 - (d) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this permit. Where no test procedure under 40 CFR Part 136 has been approved, the permittee must submit to the Agency a test method for approval. The permittee shall calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to ensure accuracy of measurements.
- (11) **Signatory requirement.** All applications, reports or information submitted to the Agency shall be signed and certified.
 - (a) **Application.** All permit applications shall be signed as follows:
 - (1) **For a corporation:** by a principal executive officer of at least the level of vice president or a person or position having overall responsibility for environmental matters for the corporation;
 - (2) **For a partnership or sole proprietorship:** by a general partner or the proprietor, respectively; or
 - (3) **For a municipality, State, Federal, or other public agency:** by either a principal executive officer or ranking elected official.
 - (b) **Reports.** All reports required by permits, or other information requested by the Agency shall be signed by a person described in paragraph (a) or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - (1) The authorization is made in writing by a person described in paragraph (a); and
 - (2) The authorization specifies either an individual or a position responsible for the overall operation of the facility, from which the discharge originates, such as a plant manager, superintendent or person of equivalent responsibility; and
 - (3) The written authorization is submitted to the Agency.

- (c) **Changes of Authorization.** If an authorization under (b) is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of (b) must be submitted to the Agency prior to or together with any reports, information, or applications to be signed by an authorized representative.
- (12) **Reporting requirements.**
- (a) **Planned changes.** The permittee shall give notice to the Agency as soon as possible of any planned physical alterations or additions to the permitted facility.
- (b) **Anticipated noncompliance.** The permittee shall give advance notice to the Agency of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- (c) **Compliance schedules.** Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- (d) **Monitoring reports.** Monitoring results shall be reported at the intervals specified elsewhere in this permit.
- (1) Monitoring results must be reported on a Discharge Monitoring Report (DMR).
- (2) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.
- (3) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Agency in the permit.
- (e) **Twenty-four hour reporting.** The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and time; and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The following shall be included as information which must be reported within 24 hours:
- (1) Any unanticipated bypass which exceeds any effluent limitation in the permit;
- (2) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Agency in the permit to be reported within 24 hours.
- The Agency may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.
- (f) **Other noncompliance.** The permittee shall report all instances of noncompliance not reported under paragraphs (12)(c), (d), or (e), at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (12)(e).
- (g) **Other information.** Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application, or in any report to the Agency, it shall promptly submit such facts or information.
- (13) **Transfer of permits.** A permit may be automatically transferred to a new permittee if:
- (a) The current permittee notifies the Agency at least 30 days in advance of the proposed transfer date;
- (b) The notice includes a written agreement between the existing and new permittees containing a specific date for transfer of permit responsibility, coverage and liability between the current and new permittees; and
- (c) The Agency does not notify the existing permittee and the proposed new permittee of its intent to modify or revoke and reissue the permit. If this notice is not received, the transfer is effective on the date specified in the agreement.
- (14) All manufacturing, commercial, mining, and silvicultural dischargers must notify the Agency as soon as they know or have reason to believe:
- (a) That any activity has occurred or will occur which would result in the discharge of any toxic pollutant identified under Section 307 of the Clean Water Act which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:
- (1) One hundred micrograms per liter (100 ug/l);
- (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6 dinitrophenol; and one milligram per liter (1 mg/l) for antimony.
- (3) Five (5) times the maximum concentration value reported for that pollutant in the NPDES permit application; or
- (4) The level established by the Agency in this permit.
- (b) That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the NPDES permit application.
- (15) All Publicly Owned Treatment Works (POTWs) must provide adequate notice to the Agency of the following:
- (a) Any new introduction of pollutants into that POTW from an indirect discharge which would be subject to Sections 301 or 306 of the Clean Water Act if it were directly discharging those pollutants; and
- (b) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
- (c) For purposes of this paragraph, adequate notice shall include information on (i) the quality and quantity of effluent introduced into the POTW, and (ii) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
- (16) If the permit is issued to a publicly owned or publicly regulated treatment works, the permittee shall require any industrial user of such treatment works to comply with federal requirements concerning:
- (a) User charges pursuant to Section 204(b) of the Clean Water Act, and applicable regulations appearing in 40 CFR 35;
- (b) Toxic pollutant effluent standards and pretreatment standards pursuant to Section 307 of the Clean Water Act; and
- (c) Inspection, monitoring and entry pursuant to Section 308 of the Clean Water Act.
- (17) If an applicable standard or limitation is promulgated under Section 301(b)(2)(C) and (D), 304(b)(2), or 307(a)(2) and that effluent standard or limitation is more stringent than any effluent limitation in the permit, or controls a pollutant not limited in the permit, the permit shall be promptly modified or revoked, and reissued to conform to that effluent standard or limitation.
- (18) Any authorization to construct issued to the permittee pursuant to 35 Ill. Adm. Code 309.154 is hereby incorporated by reference as a condition of this permit.
- (19) The permittee shall not make any false statement, representation or certification in any application, record, report, plan or other document submitted to the Agency or the USEPA, or required to be maintained under this permit.
- (20) The Clean Water Act provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307, or 308 of the Clean Water Act is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment for not more than one year, or both.
- (21) The Clean Water Act provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under permit shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- (22) The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit shall, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.
- (23) Collected screening, slurries, sludges, and other solids shall be disposed of in such a manner as to prevent entry of those wastes (or runoff from the wastes) into waters of the State. The proper authorization for such disposal shall be obtained from the Agency and is incorporated as part hereof by reference.
- (24) In case of conflict between these standard conditions and any other condition(s) included in this permit, the other condition(s) shall govern.
- (25) The permittee shall comply with, in addition to the requirements of the permit, all applicable provisions of 35 Ill. Adm. Code, Subtitle C, Subtitle D, Subtitle E, and all applicable orders of the Board.
- (26) The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit is held invalid, the remaining provisions of this permit shall continue in full force and effect.
- (Rev. 3-13-98)

VILLAGE *of* WESTERN SPRINGS



740 HILLGROVE AVENUE | WESTERN SPRINGS, IL 60558-0528 | www.wsprings.com

December 4, 2006

PRESIDENT

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BOARD OF TRUSTEES

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William Nelson

Ingrid Velkme

Martin Scott

Pamela Church

Anthony Bednarz

General Superintendent

Metropolitan Water Reclamation District of Greater Chicago

100 East Erie Street

Chicago, IL 60611-2803

General Superintendent:

The Illinois Environmental Protection Agency (IEPA) in cooperation with United States Environmental Protection Agency (USEPA) and Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) has evaluated MWRDGC Combined Sewer Overflow (CSO) monitoring network and determined that MWRDGC's monitoring will satisfy the CSO monitoring requirements contained in the Village's NPDES permit # IL0045039.

The Village of Western Springs authorizes acceptance for the MWRDGC to submit monitoring data directly to the IEPA on behalf of our CSO 001 and CSO 002 on a quarterly basis.

Please feel free to contact me at (708) 246-1800 ext. 276 if you have any further questions or concerns.

Sincerely,

Gregory Rackow
Municipal Services Analyst

cc. William Nelson, Director of Municipal Services

POLICE Tel 708.246.8540 Fax 708.246.3609 | FIRE Tel 708.246.1182 Code Fax 708.246.4871

VILLAGE SERVICES Tel 708.246.1800 Fax 708.246.0284 | RECREATION Tel 708.246.9070 Fax 708.246.1309

VILLAGE *of* WESTERN SPRINGS



740 HILLGROVE AVENUE | WESTERN SPRINGS, IL 60558-0528 | www.wsprings.com

December 4, 2006

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Anthony Bednarz

Illinois Environmental Protection Agency
Bureau of Water
Compliance Assurance Section, Mail Code #19
1021 North Grand Avenue East
P.O. Box 19276
Springfield, IL 62794-9276

To Whom It May Concern:

The Illinois Environmental Protection Agency (IEPA) in cooperation with United States Environmental Protection Agency (USEPA) and Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) has evaluated MWRDGC Combined Sewer Overflow (CSO) monitoring network and determined that MWRDGC's monitoring will satisfy the CSO monitoring requirements contained in the Village's NPDES permit # IL0045039.

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cc. William Nelson, Director of Municipal Services

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VILLAGE SERVICES Tel 708.246.1800 Fax 708.246.0284 | RECREATION Tel 708.246.9070 Fax 708.246.1309

APPENDIX B

Protecting Our Water Environment

BOARD OF COMMISSIONERS

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Metropolitan Water Reclamation District of Greater Chicago

100 EAST ERIE STREET CHICAGO, ILLINOIS 60611-3154 312-751-5600

Osoth Jamjun, P.E.
Chief of Maintenance and Operations
312.751.5101 FAX: 312.751.5145

December 13, 2006

Mr. Gregory Rackow
Municipal Services Analyst
Village of Western Springs
740 Hillgrove Avenue
Western Springs, IL 60558-0528

Subject: Metropolitan Water Reclamation District of Greater Chicago (MWRDGC)
Representative Combined Sewer Overflow (CSO) Monitoring and Reporting

Dear Mr. Rackow:

The MWRDGC acknowledges receipt of your letter dated December 4, 2006 authorizing acceptance of MWRDGC CSO monitoring data to be submitted to the IEPA on your behalf. Please be advised that the MWRDGC will report this data for your municipality on a quarterly basis commencing with CSO activity occurring after September 30, 2006. Therefore, the first report will cover the period of October 1, 2006 through December 31, 2006 and will be submitted to the IEPA by February 15, 2007.

The MWRDGC looks forward to continued cooperation regarding CSO compliance issues.

Sincerely,



Osoth Jamjun
Chief of Maintenance & Operations

c: Al Keller, IEPA - Springfield
Rob Sulski, IEPA - Des Plaines

APPENDIX C

VILLAGE OF WESTERN SPRINGS
COMBINED SEWER OVERFLOW (CSO) OPERATIONS & MAINTENANCE PLAN
SECTION I
CSO PERMIT IL0045039
December 6, 2006
REVISED: February 9, 2009

CONTENTS

<u>Chapter:</u>	<u>Page:</u>
General Information	1
Maintenance	4
Inspections and Monitoring	5

GENERAL INFORMATION

1. Collection system description (outfalls and overflows, control (diversion) structures, treatment facilities, pumping stations, and associated capacities)

The Village of Western Springs is located approximately 15 miles west southwest from Chicago. It encompasses approximately 1,550 acres, of which the southerly 1,000 acres is in the Flag Creek watershed and the northerly 550 acres is in the Salt Creek watershed. The northerly portion of the community (north of 47th Street) is served by a combined sewer system, which is a single set of sewer pipes designed to collect both the domestic sewage and the storm water runoff. Attached with this O&M Plan is a map of the Village's CSO outfalls and sewers. The Village is currently operating under the Illinois Environmental Protection Agency (IEPA) Combined Sewer Overflow (CSO) NPDES Permit No. IL0045039 and a copy of the permit is attached.

All of Field Park and the northerly parts of Old Town Northwest, Old Town North, and Ridge Acres are within the Salt Creek watershed. The domestic sewage and the storm water runoff that are collected in this watershed are transported to an interceptor sewer and two drop shafts, each located north of Ogden Avenue. The interceptor sewer which is owned and maintained by the Metropolitan Water Reclamation District of Greater Chicago (MWRD-GC) has been recently upgraded from 18" diameter to 36" diameter. The MWRD-GC Tunnel and Reservoir Plan (TARP) is designed to divert excess combined sewage produced during rain storms to the deep tunnel through the use of an overflow at each deep shaft location. During very intense rainstorms, the drop shaft capacities may be exceeded at which time a portion of the combined sewage will be discharged to Salt Creek.

The southerly parts of Old Town Northwest, Old Town North, Ridge Acres, and all of Old Town South are in the Flag Creek watershed. The sewage from this area is

collected by combined sewers and discharged into a trunk sewer that originates at the intersection of 47th Street and Fair Elms Avenue. This trunk sewer transports the combined sewage south of Fair Elms Avenue to an MWRD-GC interceptor near 55th Street.

The area south of 47th Street is served by separate sanitary and storm sewer systems. The sanitary sewers collect the sewage and transport it to the trunk sewer along Fair Elms Avenue, which also receives the combined sewage from the area north of 47th Street. During rainstorms the amounts of combined sewage can exceed the capacities of the MWRD-GC's interceptor sewer and the Fair Elms trunk sewer. Some of the excess combined sewage is discharged to Flagg Creek through an overflow, which originates at the intersection of 47th Street and Fair Elms Avenue and discharges into Flagg Creek near 49th Street.

Ownership of the MWRD-GC's pumping station near 55th Street, has been transferred to the Village. While there is an outfall at this station into Flagg Creek (Outfall 004), recent modifications to the interceptor sewers at the pumping station have effectively eliminated overflows from this structure.

MWRD-GC authorized acceptance of monitoring data on a quarterly basis to be submitted to IEPA for Outfalls 001 and 002 on behalf of the Village. The first monitoring period was to commence after September 30, 2006 and was to cover the period of October 1, 2006 to December 31, 2006 and be submitted to IEPA by February 15, 2007.

2. Relationship to other collection entities, esp. other CSO collection entities

All wastewater collected in Village sanitary and combined sewers is sent to the MWRD-GC for treatment and discharge. Wet-weather flows in excess of interceptor sewer capacities are sent to the four (4) permitted CSO's. Excess flows to Outfalls 001 and 002 (Salt Creek outfalls) are first diverted to two drop shafts in the TARP system. If the TARP system reaches capacity, additional flows are diverted to the outfalls. Wet weather flows in the Flagg Creek watershed are not connected to the TARP system. Flows in excess of the interceptor sewer capacity for these combined sewers are discharged to Flagg Creek through Outfalls 003 and 004.

3. Illinois Pollution Control Board orders currently in effect

The Village is currently under an Illinois Pollution Control Board Exemption Order.

4. Outfalls to sensitive areas

The section of Salt Creek where Outfalls 1 and 2 are located has been designated as "primary contact," one of the criteria for designating a water body as a "sensitive area." Flagg Creek does not meet the criteria to be classified as a "sensitive area" because the creek is not a 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.

5. Efforts undertaken to minimize the discharge of pollutants

The Village of Western Springs has conducted studies in 1963, 1976, 1978, 1984, 1992, 1995, and 2001 to optimize and upgrade their combined sewer system. These studies are part of an ongoing process by the Village to identify those areas most in need of additional wet weather flow capacity. As a result of this process, a phased schedule of larger capacity combined and separate storm sewers have been implemented as funds become available. Phases I and II of this program have been completed, relieving flooding problems in some of the problem areas of the Village. The installation of new separate storm sewers serves to reduce the discharge of pollutants to the CSO by removing a portion of the current inflow.

6. Efforts undertaken to maximize storage of pollutants in the collection system

Sewer upgrades have also effectively increased storage volume in the remaining combined sewer system. Additionally, through the connection with the TARP system, discharges through CSO Outfalls 001 and 002 have been significantly reduced. This situation will improve as TARP capacity expands with additional reservoir construction. Further, MWRDGC has recently upgraded the interceptor sewer prior to Outfalls 001 and 002 from 18" to 36", increasing the storage capacity of the regular collection system before the drop shafts and Outfalls 001 and 002. Phase III and IV improvements will further increase storage capacity when funds become available for these improvements.

7. Pollution prevention

The Village of Western Springs uses an aggressive program of maintenance to prevent pollution from entering into the combined sewer system. This program is described in the following section, "Maintenance." Further, the Village Pollution Prevention Plan lays out the Village's efforts with regard to waste collection, reduction and education.

8. Efforts to monitor CSO impacts and the efficacy of CSO controls

The Village actively tracks citizen complaints with regard to street, yard, and household flooding and CSO discharges. These complaints and periodic surveys form the basis for infrastructure improvement projects and maintenance plan updates. The Village's study "First Flush Determination and Water Quality Investigation of Flagg Creek," (December 1985) concluded that 95% of the first-flush was captured by the combined sewer system for this watershed and there was no environmental impact to Flagg Creek due to CSO discharges. Since that report, large sections of separate storm sewers have been constructed to help reduce the potential for discharge through the CSO outfalls.

The Village also conducts monthly inspections of the CSO Outfalls.

9. Public notification program for CSO occurrences and impacts

As specified in the Village's CSO Public Notification Plan, a variety of methods are used to inform the public of a CSO discharge. These include web notices and warning signs are posted at each CSO outfall as well as upstream and downstream public access points warning of the potential for discharges.

10. Latitude and longitude for each outfall

<u>Location</u>	<u>Outfall</u>	<u>Receiving Water</u>	<u>Latitude</u>	<u>Longitude</u>
Howard Avenue	001	Salt Creek	41° 49' 33" N	87° 53' 44" W
Grove Avenue	002	Salt Creek	41° 49' 28" N	87° 54' 14" W
47th Street	003	Flagg Creek	41° 48' 03" N	87° 54' 25" W
Fair Elms	004	Flagg Creek	41° 47' 25" N	87° 54' 23" W

MAINTENANCE

1. Schedule for regular street cleaning in combined sewer areas (w/added emphasis for leaf removal)

The Village cleans every street once per month, downtown areas once per week. The Village annually sponsors leaf removal and disposal for residents in the fall. Removal of leaves from the Village streets begins the end of October. Two cycles of removal take place through the entire Village. During the leaf removal operation, residents can call the Leaf Hotline at 708-246-1800, Ext. 305 for daily updates on the program.

2. Schedule for catch basin cleaning

All catch basins are cleaned bi-annually.

3. Schedule for routine cleaning of trunk and interceptor sewers

All trunk and interceptor sewers are cleaned annually.

4. Procedures for stop planks at highest level practical without causing basement backups or excessive street flooding

The overflow structures do not use stop planks.

5. Procedures for cleaning screening equipment after and, if necessary, during each storm

The overflow structures do not use screens.

6. Procedures for regulating diversion and bypass valves

The overflow structures do not use bypass valves.

7. Procedures for reducing solids deposition in the combined sewer system

All combined sewers are cleaned annually to reduce the solids deposition in the system.

INSPECTIONS AND MONITORING

1. Schedule to inspect regulator and diversion structures

The Village inspects the overflow structure at Flagg Creek annually. MWRDGC inspects the diversion structures along Salt Creek.

2. Routine pump/lift station inspection and preventive maintenance

A preventative maintenance contract is in place for the Fair Elms lift station whereby the pumps are inspected, greased, and operated quarterly. Example sheets of the Village's CSO inspection log and Outfall 004 pump station log chart are attached.

3. Schedule to inspect manholes and sewers (e.g., televise, etc.)

Manholes and sewers are inspected on an as needed basis per complaint or as part of the infrastructure improvement plan in coordination with their planned replacement.

4. Schedule to inspect surface water anti-intrusion devices (e.g., flapgates, etc)

Gates are currently installed downstream of CSO 001 and 002. The gates are installed in MWRDGC controlled structures and as such are operated and maintained by MWRDGC.

5. Collection system replacement, where necessary

Manholes and sewers are inspected on an as needed basis per complaint or as part of the infrastructure improvement plan in coordination with their planned replacement.

6. Procedures for finding and eliminating illegal sewer connections

Illegal sewer connections are identified through periodic field surveys. Once an illegal sewer connection is found the source is identified and notified of the illegal connection. Disconnection is required within 60 days.

7. Procedures for finding and eliminating dry-weather overflows

The Village is not currently experiencing any dry weather overflows.

As part of the Village's 1985 "Combined Sewer System Study", much of the system was inspected and evaluated. This was followed up by a "Study Update" in 1992, which included some smoke testing to look for inappropriate connections.

VILLAGE OF WESTERN SPRINGS
COMBINED SEWER OVERFLOW (CSO) OPERATIONS & MAINTENANCE PLAN
SECTION II
CSO PERMIT IL0045039
December 6, 2006
REVISED: November 16, 2007

Section II is not submitted to the IEPA, but all elements must be filed in a central location and available for inspection by State officials at any time

MAPS AND DIAGRAMS

Sewer system map with:

- Combined sewers and sanitary sewers tributary to combined sewers
- Storm sewers using combined sewers as a transport link
- All major interceptors and trunk sewers
- 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
- All pump and lift stations and their capacities

Diagram of CSO Treatment Facilities with:

- All unit processes and associated capacities identified

SEWER SYSTEM CHARACTERISTICS

Drainage area and population tributary to each overflow indicated

Sewer capacity immediately upstream and downstream of each overflow indicated

Description of structural and physical condition of sewer system

- Age of system included

- Bottlenecks in the system included

Average dry weather flow rate through sewer at each overflow

- Year last monitored

Land use and zoning classification in the vicinity of each overflow

Projected growth tributary to each overflow indicated

List of non-residential sewer users tributary to each overflow

- Dischargers of toxics indicated

- Dischargers of high strength wastewater indicated

- High-volume dischargers indicated

Percent pervious area developed and kept current for each sewerage basin

RECORD KEEPING

Logs maintained on the following:

- Collapsed and blocked sewers
- Basement backups, street flooding, and other complaints
- Regulator and diversion structure inspections
- CSO and excess flow retention basin levels

APPENDIX D



JAMES J. BENES AND ASSOCIATES, INC.
CONSULTING ENGINEERS

Combined Sewer Overflow Modeling
Western Springs, Illinois
August 8, 2012

The following are the results of a study of the existing combined sewer system in the west central portion of Western Springs. The study area extends from Oak Street, south to 47th Street (Chicago Avenue); and from the west limits of the Village, east to Franklin Avenue. The combined sewer system was modeled with the USEPA Storm Water Management Model (SWMM), Version 5.0.022. SWMM is a fully dynamic rainfall-runoff simulation model used for single event or long-term (continuous) simulation of runoff quantity and quality from primarily urban areas. The runoff component of SWMM operates on a collection of subcatchment areas that receive precipitation and generate runoff and pollutant loads. The routing portion of SWMM transports this runoff through a system of pipes, channels, storage facilities, pumps and flow regulators. SWMM tracks the quantity and quality of runoff generated within each subcatchment, and the flow rate, flow depth, and quality of water in each pipe and channel during a simulation period comprised of multiple time steps. For the purposes of this study, we are only interested in the quantity of runoff, so the water quality input data and results have been omitted.

Existing Sewer System The first step was to create a network of the existing combined sewer system and the subcatchment areas that drained to the system. Note that the neighborhoods in the northwest section of the study area and along the north side of 47th Street do not have subcatchments. These areas are served by a separate storm sewer system, so the runoff from these areas will not affect the combined sewers. Western Avenue was included in the model so that sanitary sewer flows from the houses could be included in the model as a dry weather flow. Data for the existing system was obtained from the Village GIS model. Additional survey data was gathered for those areas where GIS information was lacking, primarily in Springrock Park and a few isolated intersections. Subcatchment areas were defined by using aerial photography, Village sewer atlases and contour mapping.

Rainfall Data The rainfall data for March and April 2012 was obtained from the Village rain gauge. Cumulative rainfall amounts were collected every 30 minutes, even though the third column on the output spreadsheet is labeled "Five Minute Rain Total". We are not sure about the significance of the fourth column is. It is labeled "Total Rain Rate" but appears to be the rainfall total for the previous 30 minutes multiplied by 20. The rainfall data covered 16 storm events in March and April. We chose the storms for which Baxter & Woodman has provided measured pipe flow data. Rainfall data was then converted from 30-minute totals to 15-minute totals to match the output from the flow meters. The largest storm was April 14 / April 15 and this was the storm used to create the model. The storms of March 23 and March 12 were then run through the model for comparison.

Calibration It was found that the SWMM model is sensitive to the Manning's Equation pipe roughness coefficient assigned to the pipes. In order to more closely match the data from the Baxter & Woodman flow meters, the pipes in the north portion of the watershed were assigned a roughness coefficient of 0.0148, while those in the eastern portion received a 0.0155 coefficient.

Dry Weather Flows Dry weather flow data was also provided by Baxter & Woodman. These flows represent the sewage flows in the system caused by sanitary sewer connections. The average flow rate was computed and converted from gallons per minute to cubic feet per second. The flow reading every 15 minutes was then compared to the average flow and an adjustment factor was developed. The factors were averaged every hour to develop an hourly flow factor based on the time of day. This information was then entered into the SWMM model for the dry weather flows. To simplify the dry weather analysis, the dry weather flows for the 36" pipe in Springrock Park and the system to the north were simply injected into Structure J154. The dry weather flows for the 24" pipe on 47th Street and the system to the east were similarly injected into Structure J90.

Instability The SWMM model can exhibit some instability in the analysis of certain pipes, especially pipes that are rather short or if the analysis utilizes time steps that are too large. After running the model, the summary report indicated that the five pipes exhibiting the most instability were C15, C95, C4, C11 and C9, which were all short pipes. The time step was not excessively large, so we added 100 feet to each of the five pipe lengths and reran the model. This had the effect of slightly decreasing the flow routing continuity errors.

Model Results – April 14 / 15 The model results for the April 14 / 15 storm events were:

- 24" pipe along 47th Street: maximum flow = 14.9 cfs at 01:15 (am) April 15; maximum measured flow = 12.9 cfs at 23:30 (pm) April 14.
- 36" pipe in Springrock Park: maximum flow = 9.3 cfs at 01:35 (am) April 15; maximum measured flow = 9.2 cfs at 00:00 (midnight).
- 24" CSO overflow pipe: maximum flow = 8.4 cfs at 01:15 (am) April 15; maximum measured flow = 15.0 cfs at 23:45 (pm) April 14.

Model Results – March 23 The model results for the March 23 storm event were:

- 24" pipe along 47th Street: maximum flow = 13.1 cfs at 09:15 (am); maximum measured flow = 9.2 cfs at 07:45 (am).
- 36" pipe in Springrock Park: maximum flow = 9.3 cfs at 09:20 (am); maximum measured flow = 0 (flow meter was fouled by debris in the pipe)
- 24" CSO overflow pipe: maximum flow = 7.4 cfs at 09:20 (am); maximum measured flow = 7.5 cfs at 08:00 (am).

Model Results – March 12 The model results for the March 12 storm event were:

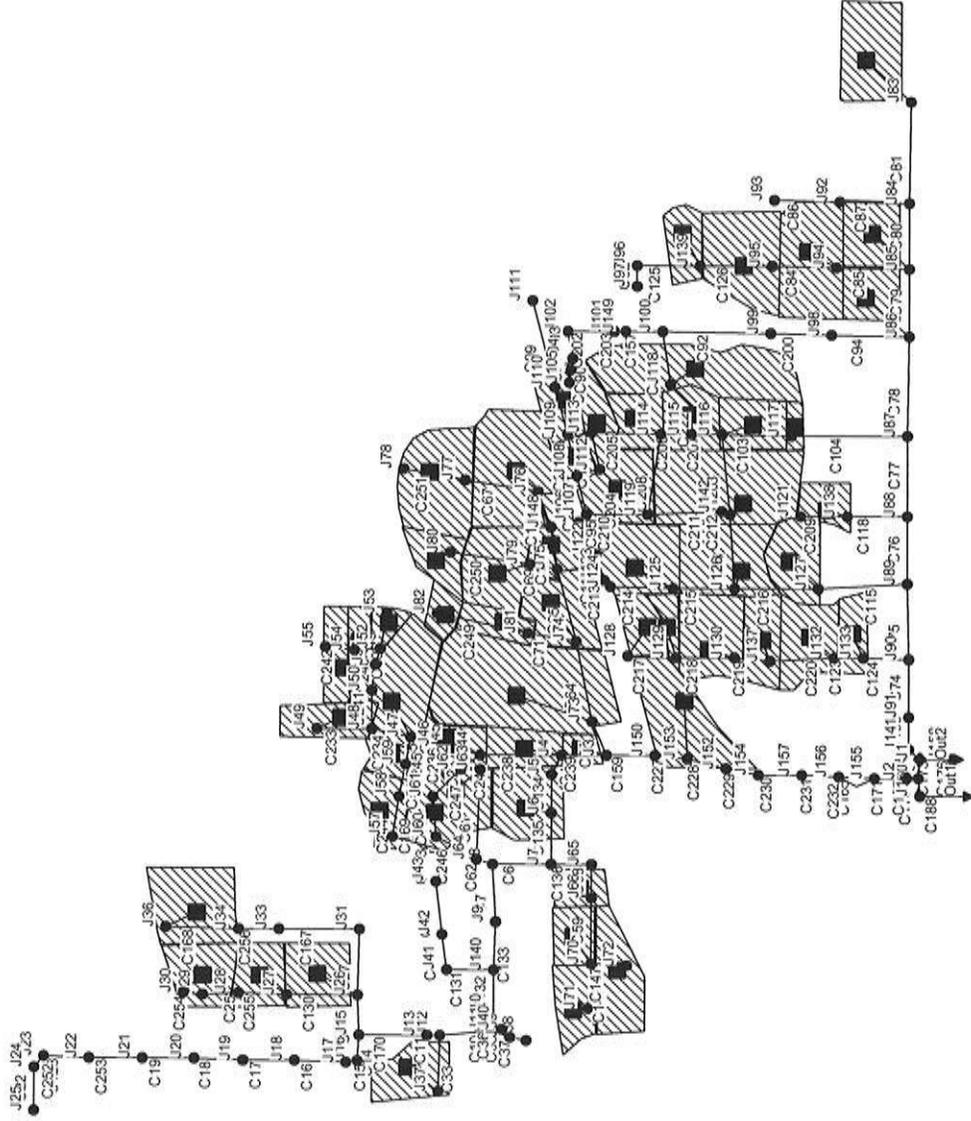
- 24" pipe along 47th Street: maximum flow = 6.1 cfs at 04:20 (am); maximum measured flow = 1.4 cfs at 03:00 (am).
- 36" pipe in Springrock Park: maximum flow = 3.6 cfs at 03:10 (am); maximum measured flow = 1.6 cfs at 03:00 (am).
- 24" CSO overflow pipe: maximum flow = 0 cfs (no overflow); maximum measured flow = 0 cfs (no overflow).

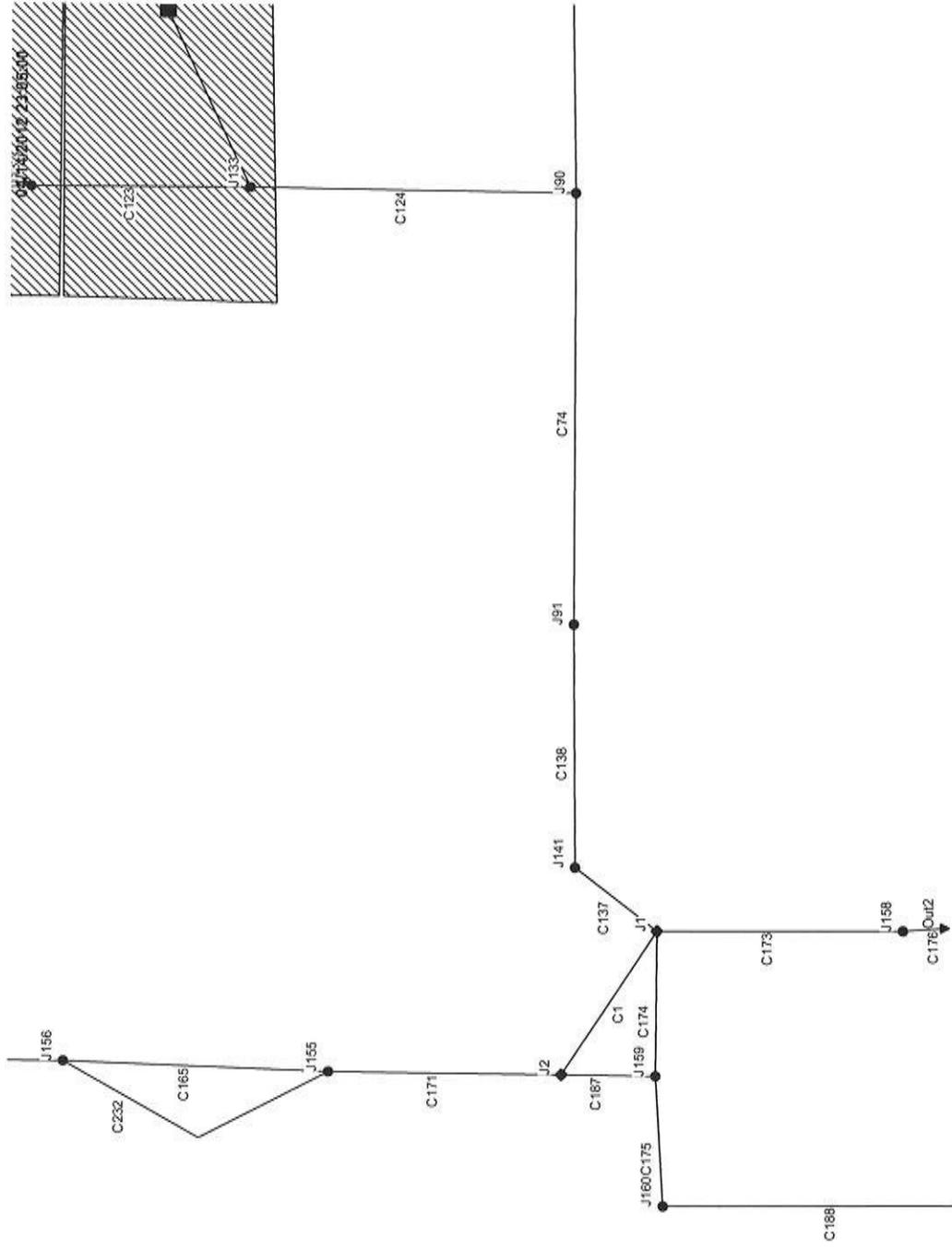
Time Discrepancy There is a time discrepancy between the modeled peak flows and the measured peak flows. This may be due in some small part to assumptions that were made in modeling the system may not accurately affect travel times in the pipes. However, the difference appears to be about 90 minutes; and is probably the result of the clock on the rain gauge being set an hour or more ahead of the clocks on the flow gauges. (Maybe one was on standard time and the other was on daylight saving time?).

Continuity Errors The continuity errors for the April 14 / 15 model were -1.36% for runoff and -0.83% for flow routing. We usually like to see the runoff error below 1% and the flow routing error below 0.5%. The continuity errors for the March 23 model were -0.66% for runoff and -0.28% for flow routing. The continuity errors for the March 12 model were -0.20% for runoff and +0.03% for flow routing. The errors are still small enough that they will not affect the results sufficiently to be a problem.

We surmise the model is losing 1.4% of the water during the larger storm because manholes fill to the rim and the excess water runs off. At known flooding locations we modeled a curb & gutter transect or a drainage swale transect to carry the excess flow down the hill to the next structure. At low spots, we estimated flooding depths and areas to allow ponding over the structure and the recapture of the ponded water as the HGL begins to recede.

MODEL DETAILS





STORM NO.	DATE	RAINFALL TOTALS (IN)	
		WESTERN SPRINGS	CHICAGO O'HARE
1	02-Mar-12	0.24	0.19
2	08-Mar-12	0.22	0.28
3	12-Mar-12	0.29	0.19
4	19-Mar-12	0.05	0.03
5	22-Mar-12	0.14	0.16
6	23-Mar-12	0.61	1.25
7	30-Mar-12	0.12	0.58
8	01-Apr-12	0.06	0.06
9	15-Apr-12	2.08	0.67
10	16-Apr-12	0.05	0.01
11	18-Apr-12	0.07	0.01
12	20-Apr-12	0.04	0.00
13	25-Apr-12	0.03	0.10
14	28-Apr-12	0.23	0.25
15	29-Apr-12	0.14	0.36
16	30-Apr-12	0.16	Trace

Use Storms 3, 6 and 9 in the model, as these are the storms for which we have pipe flow and CSO overflow data.

Date	Time	Five Minute Rain Total	Total Rain Rate		
4/14/2012	22:00	0	0		
4/14/2012	22:30	0	0		
4/14/2012	23:00	0	0		
4/14/2012	23:30	0	0		
4/15/2012	0:00	0.03	0.6		
4/15/2012	0:30	1.06	21.2		
4/15/2012	1:00	0.02	0.4		
4/15/2012	1:30	0.01	0.2		
4/15/2012	2:00	0.01	0.2		
4/15/2012	2:30	0	0		
4/15/2012	3:00	0	0		
4/15/2012	3:30	0.35	7		
4/15/2012	4:00	0.05	1	1.53	4 hrs.
4/15/2012	4:30	0	0		
4/15/2012	5:00	0.01	0.2		
4/15/2012	5:30	0	0		
4/15/2012	6:00	0	0		
4/15/2012	6:30	0	0		
4/15/2012	7:00	0	0		
4/15/2012	7:30	0	0		
4/15/2012	8:00	0	0		

Five Minute Rain			
Date	Time	Total	Total Rain Rate
3/23/2012	6:00	0	0
3/23/2012	6:30	0	0
3/23/2012	7:00	0	0
3/23/2012	7:30	0	0
3/23/2012	8:00	0.01	0.2
3/23/2012	8:30	0	0
3/23/2012	9:00	0.33	6.6
3/23/2012	9:30	0.04	0.8
3/23/2012	10:00	0	0
3/23/2012	10:30	0	0
3/23/2012	11:00	0	0
3/23/2012	11:30	0.02	0.4
3/23/2012	12:00	0.02	0.4
3/23/2012	12:30	0	0
3/23/2012	13:00	0	0
3/23/2012	13:30	0	0
3/23/2012	14:00	0.1	2
3/23/2012	14:30	0.05	1
3/23/2012	15:00	0.02	0.4
3/23/2012	15:30	0.01	0.2
3/23/2012	16:00	0	0
3/23/2012	16:30	0	0
3/23/2012	17:00	0	0
3/23/2012	17:30	0	0
3/23/2012	18:00	0	0

0.6 inches in 7.5 hours

Five Minute Rain

Date	Time	Total	Total Rain Rate
3/12/2012	0:00	0	0
3/12/2012	0:30	0	0
3/12/2012	1:00	0	0
3/12/2012	1:30	0.02	0.4
3/12/2012	2:00	0.02	0.4
3/12/2012	2:30	0.06	1.2
3/12/2012	3:00	0.03	0.6
3/12/2012	3:30	0.02	0.4
3/12/2012	4:00	0.08	1.6
3/12/2012	4:30	0.02	0.4
3/12/2012	5:00	0.01	0.2
3/12/2012	5:30	0.02	0.4
3/12/2012	6:00	0	0
3/12/2012	6:30	0	0
3/12/2012	7:00	0	0
3/12/2012	7:30	0.01	0.2
3/12/2012	8:00	0	0
3/12/2012	8:30	0	0
3/12/2012	9:00	0	0
3/12/2012	9:30	0	0
3/12/2012	10:00	0	0

0.28 inches in 4 hours

AVERAGE DAILY DRY FLOW

24" Pipe East of Fair Elms - Average Dry Flow, gpm						
Time	Weekday	Factor	Ave Factor	Weekend	Factor	Ave Factor
0:00	59.0	0.63	0.74	88.4	0.97	0.88
0:15	60.3	0.64		87.6	0.96	
0:30	57.5	0.61		70.7	0.78	
0:45	61.5	0.66		62.6	0.69	
1:00	57.1	0.61	0.63	65.8	0.72	0.79
1:15	53.0	0.57		63.1	0.69	
1:30	49.7	0.53		62.9	0.69	
1:45	56.5	0.60		55.9	0.61	
2:00	56.8	0.61	0.58	58.1	0.64	0.66
2:15	58.0	0.62		61.7	0.68	
2:30	51.7	0.55		58.5	0.64	
2:45	54.1	0.58		58.7	0.64	
3:00	56.5	0.60	0.59	58.2	0.64	0.65
3:15	64.0	0.68		45.7	0.50	
3:30	54.3	0.58		52.6	0.58	
3:45	53.8	0.58		51.3	0.56	
4:00	58.6	0.63	0.62	54.0	0.59	0.56
4:15	56.8	0.61		51.5	0.57	
4:30	62.3	0.67		47.7	0.52	
4:45	63.3	0.68		62.7	0.69	
5:00	73.3	0.78	0.68	64.1	0.70	0.62
5:15	98.3	1.05		68.0	0.75	
5:30	105.1	1.12		59.9	0.66	
5:45	104.7	1.12		64.1	0.70	
6:00	108.4	1.16	1.11	66.7	0.73	0.71
6:15	124.3	1.33		57.3	0.63	
6:30	134.7	1.44		68.3	0.75	
6:45	129.2	1.38		66.2	0.73	
7:00	125.4	1.34	1.37	83.4	0.92	0.76
7:15	129.1	1.38		105.3	1.16	
7:30	120.4	1.29		101.8	1.12	
7:45	121.6	1.30		99.1	1.09	
8:00	120.1	1.28	1.31	98.9	1.09	1.11
8:15	116.4	1.24		100.3	1.10	
8:30	100.1	1.07		106.0	1.16	
8:45	112.4	1.20		103.0	1.13	
9:00	107.3	1.15	1.17	100.4	1.10	1.12
9:15	109.5	1.17		107.5	1.18	
9:30	102.4	1.09		113.5	1.25	
9:45	108.4	1.16		108.6	1.19	
10:00	101.1	1.08	1.13	116.1	1.27	1.22
10:15	97.3	1.04		117.8	1.29	
10:30	103.7	1.11		118.6	1.30	
10:45	93.5	1.00		115.5	1.27	
11:00	97.5	1.04	1.05	117.4	1.29	1.29
11:15	99.9	1.07		111.7	1.23	
11:30	105.1	1.12		117.9	1.29	
11:45	97.5	1.04		113.3	1.24	
12:00	101.2	1.08	1.08	110.2	1.21	1.24
12:15	99.2	1.06		109.2	1.20	
12:30	101.5	1.08		115.7	1.27	

AVERAGE DAILY DRY FLOW

24" Pipe East of Fair Elms - Average Dry Flow, gpm						
Time	Weekday	Factor	Ave Factor	Weekend	Factor	Ave Factor
12:45	95.4	1.02		114.9	1.26	
13:00	101.7	1.09	1.06	113.8	1.25	1.25
13:15	96.2	1.03		102.4	1.12	
13:30	98.2	1.05		107.0	1.17	
13:45	106.1	1.13		105.5	1.16	
14:00	97.0	1.04	1.06	109.0	1.20	1.16
14:15	94.8	1.01		107.5	1.18	
14:30	94.3	1.01		101.8	1.12	
14:45	88.6	0.95		101.9	1.12	
15:00	94.6	1.01	0.99	103.4	1.14	1.14
15:15	92.9	0.99		107.9	1.18	
15:30	98.6	1.05		109.6	1.20	
15:45	100.9	1.08		107.8	1.18	
16:00	102.2	1.09	1.05	103.4	1.13	1.18
16:15	96.4	1.03		104.6	1.15	
16:30	112.4	1.20		107.2	1.18	
16:45	104.9	1.12		98.1	1.08	
17:00	108.0	1.15	1.13	102.3	1.12	1.13
17:15	107.2	1.15		103.8	1.14	
17:30	115.1	1.23		104.9	1.15	
17:45	124.0	1.32		111.3	1.22	
18:00	107.5	1.15	1.21	104.9	1.15	1.17
18:15	103.5	1.11		108.0	1.19	
18:30	110.2	1.18		104.1	1.14	
18:45	102.2	1.09		98.6	1.08	
19:00	109.1	1.17	1.14	99.7	1.09	1.13
19:15	108.6	1.16		99.5	1.09	
19:30	110.8	1.18		98.9	1.09	
19:45	106.2	1.13		96.1	1.05	
20:00	107.8	1.15	1.16	99.0	1.09	1.08
20:15	107.5	1.15		103.5	1.14	
20:30	116.5	1.24		99.5	1.09	
20:45	111.2	1.19		98.5	1.08	
21:00	111.6	1.19	1.19	103.0	1.13	1.11
21:15	100.9	1.08		98.9	1.09	
21:30	103.6	1.11		101.0	1.11	
21:45	94.7	1.01		97.7	1.07	
22:00	86.6	0.93	1.03	101.4	1.11	1.09
22:15	92.4	0.99		87.6	0.96	
22:30	85.1	0.91		84.2	0.92	
22:45	83.9	0.90		87.5	0.96	
23:00	84.7	0.91	0.92	88.3	0.97	0.95
23:15	78.5	0.84		84.2	0.92	
23:30	75.1	0.80		73.3	0.81	
23:45	63.3	0.68		76.2	0.84	

Average Flow	93.6	gpm		91.1	gpm	
	0.209	cfs		0.203	cfs	

AVERAGE DAILY DRY FLOW

36" Sewer in Park - Average Dry Flow, gpm						
Time	Weekday	Factor	Ave Factor	Weekend	Factor	Ave Factor
0:00	168.8	0.95	0.93	187.4	0.97	0.98
0:15	159.7	0.90		192.3	1.00	
0:30	150.6	0.85		171.1	0.89	
0:45	173.8	0.98		168.5	0.87	
1:00	152.4	0.86	0.89	180.2	0.93	0.92
1:15	153.3	0.86		177.8	0.92	
1:30	162.8	0.92		171.8	0.89	
1:45	165.8	0.93		188.1	0.97	
2:00	163.5	0.92	0.91	161.7	0.84	0.90
2:15	150.2	0.84		152.3	0.79	
2:30	153.8	0.87		166.1	0.86	
2:45	146.8	0.83		177.5	0.92	
3:00	172.2	0.97	0.88	147.9	0.77	0.83
3:15	140.2	0.79		140.8	0.73	
3:30	154.9	0.87		154.4	0.80	
3:45	146.5	0.82		160.2	0.83	
4:00	141.7	0.80	0.82	150.0	0.78	0.78
4:15	156.2	0.88		153.4	0.79	
4:30	137.8	0.77		167.0	0.86	
4:45	147.0	0.83		127.8	0.66	
5:00	158.9	0.89	0.84	94.5	0.49	0.70
5:15	151.2	0.85		142.6	0.74	
5:30	162.4	0.91		106.2	0.55	
5:45	168.2	0.95		156.9	0.81	
6:00	190.2	1.07	0.94	166.7	0.86	0.74
6:15	205.6	1.16		163.8	0.85	
6:30	197.3	1.11		171.3	0.89	
6:45	237.6	1.34		170.0	0.88	
7:00	223.4	1.26	1.21	163.8	0.85	0.87
7:15	208.2	1.17		155.2	0.80	
7:30	206.9	1.16		177.0	0.92	
7:45	197.8	1.11		181.8	0.94	
8:00	213.6	1.20	1.16	185.2	0.96	0.90
8:15	206.8	1.16		210.7	1.09	
8:30	182.1	1.02		205.4	1.06	
8:45	230.8	1.30		245.8	1.27	
9:00	198.8	1.12	1.15	230.1	1.19	1.15
9:15	188.0	1.06		228.6	1.18	
9:30	203.4	1.14		228.9	1.18	
9:45	190.6	1.07		247.8	1.28	
10:00	166.2	0.93	1.05	248.4	1.29	1.23
10:15	197.5	1.11		224.3	1.16	
10:30	200.1	1.13		236.3	1.22	
10:45	152.4	0.86		209.4	1.08	
11:00	151.5	0.85	0.99	193.4	1.00	1.12
11:15	170.4	0.96		220.4	1.14	
11:30	176.2	0.99		248.0	1.28	
11:45	197.3	1.11		221.2	1.14	
12:00	172.3	0.97	1.01	236.7	1.23	1.20
12:15	195.9	1.10		203.0	1.05	
12:30	195.2	1.10		227.8	1.18	

AVERAGE DAILY DRY FLOW

36" Sewer in Park - Average Dry Flow, gpm						
Time	Weekday	Factor	Ave Factor	Weekend	Factor	Ave Factor
12:45	189.2	1.06		210.2	1.09	
13:00	190.2	1.07	1.08	229.4	1.19	1.13
13:15	172.4	0.97		221.7	1.15	
13:30	181.8	1.02		161.2	0.83	
13:45	178.4	1.00		197.1	1.02	
14:00	157.2	0.88	0.97	220.6	1.14	1.04
14:15	157.8	0.89		245.3	1.27	
14:30	178.7	1.01		208.3	1.08	
14:45	163.0	0.92		234.4	1.21	
15:00	167.8	0.94	0.94	228.3	1.18	1.19
15:15	158.8	0.89		204.3	1.06	
15:30	170.9	0.96		191.8	0.99	
15:45	181.5	1.02		206.1	1.07	
16:00	179.7	1.01	0.97	193.2	1.00	1.03
16:15	201.2	1.13		197.4	1.02	
16:30	200.4	1.13		194.9	1.01	
16:45	187.8	1.06		186.6	0.97	
17:00	187.8	1.06	1.09	199.0	1.03	1.01
17:15	178.4	1.00		200.5	1.04	
17:30	166.9	0.94		175.5	0.91	
17:45	175.8	0.99		227.4	1.18	
18:00	140.6	0.79	0.93	203.5	1.05	1.04
18:15	179.4	1.01		189.6	0.98	
18:30	178.6	1.00		234.9	1.22	
18:45	216.9	1.22		202.0	1.05	
19:00	205.6	1.16	1.10	215.8	1.12	1.09
19:15	188.4	1.06		188.8	0.98	
19:30	187.4	1.05		192.8	1.00	
19:45	182.3	1.03		210.1	1.09	
20:00	186.5	1.05	1.05	186.3	0.96	1.01
20:15	173.7	0.98		198.0	1.02	
20:30	184.2	1.04		216.7	1.12	
20:45	187.6	1.06		224.0	1.16	
21:00	195.5	1.10	1.04	213.3	1.10	1.10
21:15	169.0	0.95		194.6	1.01	
21:30	165.8	0.93		178.0	0.92	
21:45	198.7	1.12		230.2	1.19	
22:00	181.3	1.02	1.01	183.7	0.95	1.02
22:15	191.8	1.08		203.2	1.05	
22:30	186.1	1.05		211.1	1.09	
22:45	176.7	0.99		168.1	0.87	
23:00	177.5	1.00	1.03	203.3	1.05	1.02
23:15	174.0	0.98		170.7	0.88	
23:30	166.6	0.94		189.8	0.98	
23:45	154.5	0.87		209.2	1.08	

Average Flow	177.8	gpm		193.2	gpm	
	0.396	cfs		0.431	cfs	

APPENDIX E

**PROPOSED STORM SEWER SYSTEM
PIPES**

Link Name	Dia (in)	Length (ft)	US Invert Elev	US Rim Elev	DS Invert Elev	DS Rim Elev	Avg. Depth (ft)	Shape
Link181	12	150	669.96	673.96	668.46	674.30	4.92	Circular
Link210	12	320	658.99	666.39	655.79	659.98	5.80	Circular
Link209	12	360	666.65	674.65	663.05	671.88	8.42	Circular
Link179	12	80	654.15	661.75	652.95	662.20	8.43	Circular
Link202	12	380	666.92	674.92	663.12	672.18	8.53	Circular
Link196	12	250	656.37	664.37	653.87	663.92	9.02	Circular
Link187	12	330	668.57	676.57	665.27	678.87	10.80	Circular
Link188	15	150	664.24	672.24	661.99	669.29	7.65	Circular
Link178	15	220	669.02	677.02	666.82	674.22	7.70	Circular
Link163	18	340	643.82	646.55	642.80	646.19	3.06	Circular
Link220	18	300	645.30	647.88	643.70	649.45	4.17	Circular
Link218	18	320	656.83	664.83	653.63	659.48	6.93	Circular
Link182	18	140	667.90	674.30	666.50	677.02	8.46	Circular
Link197	18	300	652.87	663.92	651.37	657.42	8.55	Circular
Link211	18	470	649.22	656.22	644.52	655.57	9.03	Circular
Link176	18	390	665.62	671.67	659.77	674.22	10.25	Circular
Link183	18	190	666.50	677.02	664.13	675.33	10.86	Circular
Link172	18	490	667.09	675.91	658.57	672.34	11.30	Circular
Link184	18	260	664.13	675.33	660.88	678.87	14.60	Circular
Link185	18	480	660.88	678.87	654.88	673.74	18.43	Circular
Link189	21	880	667.32	675.32	657.87	665.55	7.84	Circular
Link217	21	430	658.82	666.82	655.60	664.70	8.55	Circular
Link164	24	240	642.30	646.19	641.70	646.73	4.46	Circular
Link180	24	300	647.15	650.82	644.15	653.23	6.38	Circular
Link166	24	390	665.17	673.17	661.27	670.76	8.75	Circular
Link152	24	360	656.80	666.00	653.20	661.52	8.76	Circular
Link153	24	100	653.20	661.52	652.57	662.00	8.87	Circular
Link205	24	380	664.60	672.60	661.75	671.88	9.07	Circular
Link203	24	340	662.41	672.18	659.75	668.18	9.10	Circular
Link212	24	230	661.86	670.05	659.84	671.94	10.14	Circular
Link155	24	260	651.44	666.47	649.80	659.06	12.15	Circular
Link154	24	180	652.57	662.00	651.44	666.47	12.23	Circular
Link213	24	130	659.84	671.94	658.70	673.23	13.32	Circular
Link177	24	150	659.27	674.22	658.15	672.34	14.57	Circular
Link214	24	360	658.70	673.23	655.53	671.30	15.15	Circular
Link186	24	250	654.38	673.74	651.25	666.24	17.18	Circular
Link219	27	1800	640.00	646.04	635.50	644.00	7.27	Circular
Link157	30	200	646.97	655.01	645.71	651.28	6.80	Circular
Link156	30	370	649.30	659.06	646.97	655.01	8.90	Circular
Link204	30	370	659.25	668.18	656.37	665.55	9.05	Circular
Link174	30	420	651.45	662.20	644.15	653.23	9.92	Circular
Link167	30	420	660.77	670.76	657.62	669.29	10.83	Circular
Link190	30	360	656.37	665.55	653.56	666.22	10.92	Circular

**PROPOSED STORM SEWER SYSTEM
PIPES**

Link Name	Dia (in)	Length (ft)	US Invert Elev	US Rim Elev	DS Invert Elev	DS Rim Elev	Avg. Depth (ft)	Shape
Link168	30	400	657.62	669.29	654.62	666.24	11.65	Circular
Link173	30	380	658.07	672.34	651.45	662.20	12.51	Circular
Link215	30	160	655.03	671.30	653.62	670.48	16.57	Circular
Link216	30	160	653.62	670.48	652.21	671.88	18.26	Circular
Link165	36	310	640.72	644.72	639.79	646.73	5.47	Circular
Link158	36	420	645.71	651.28	643.06	649.45	5.98	Circular
Link194	36	390	642.92	655.57	639.02	646.84	10.24	Circular
Link193	36	360	645.73	659.98	642.92	655.57	13.45	Circular
Link191	36	520	653.06	666.22	649.00	662.80	13.48	Circular
Link192	36	420	649.00	662.80	645.73	659.98	14.02	Circular
Link206	36	420	651.71	671.88	648.02	664.70	18.43	Circular
Link160	42	500	641.80	647.30	640.80	646.73	5.72	Circular
Link159	42	280	643.06	649.45	641.80	647.30	5.94	Circular
Link170	42	190	644.38	654.93	642.00	652.15	10.35	Circular
Link169	42	430	649.75	666.24	644.38	654.93	13.52	Circular
Link198	42	180	641.00	657.42	639.42	651.46	14.23	Circular
Link208	42	360	644.17	659.48	641.00	657.42	15.86	Circular
Link207	42	380	647.52	664.70	644.17	659.48	16.25	Circular
Link175	54	230	642.15	653.23	641.69	652.15	10.77	Circular
Link161	60	400	639.29	646.73	638.99	645.00	6.73	Circular
Link199	60	340	637.92	651.46	637.50	645.77	10.91	Circular
Link162	72	230	638.49	645.00	638.10	644.10	6.26	Circular
Link171	72	1370	640.50	652.15	638.49	645.00	9.08	Circular
Link195	72	1520	637.02	646.84	635.50	644.00	9.16	Circular
Link200	84	150	637.50	645.77	637.31	646.21	8.59	Elliptical
Link201	84	230	637.31	646.21	637.02	646.84	9.36	Elliptical

**PROPOSED STORM SEWER SYSTEM
MANHOLES**

MH Name	Rim Elev	Invert Elev	MH Depth (ft)	Freeboard (ft)	Duration of Surge (min)	Duration of Flooding (min)
J3	652.15	640.50	11.65	5.94	0.00	0.00
J4	653.23	642.15	11.09	6.71	0.00	0.00
J6	650.82	647.15	3.68	2.44	0.00	0.00
J11	647.30	641.30	6.00	2.60	0.00	0.00
J12	649.45	643.06	6.39	4.06	0.00	0.00
J15	651.28	645.71	5.57	3.61	0.00	0.00
J26	655.01	646.97	8.04	5.45	1.53	0.00
J27	659.06	649.30	9.76	7.61	0.00	0.00
J28	666.47	651.44	15.03	12.99	1.18	0.00
J29	662.00	652.57	9.43	7.15	3.60	0.00
J30	661.52	653.20	8.32	6.50	0.00	0.00
J36	666.00	656.80	9.20	8.12	0.00	0.00
J37	647.88	645.30	2.58	2.25	0.00	0.00
J44	662.20	651.45	10.75	7.30	3.05	0.00
J47	672.34	658.07	14.27	12.20	0.00	0.00
J49	675.91	667.09	8.82	8.10	0.00	0.00
J52	677.02	666.50	10.52	4.58	7.82	0.00
J53	675.33	664.13	11.21	3.97	10.31	0.00
J54	674.30	667.90	6.40	1.01	5.82	0.00
J55	673.96	669.96	4.00	0.13	4.13	0.00
J57	671.67	665.62	6.05	5.19	0.00	0.00
J59	674.22	659.27	14.95	12.53	0.00	0.00
J61	677.02	669.02	8.00	3.21	12.86	0.00
J63	661.75	654.15	7.60	3.81	13.52	0.00
J66	646.55	643.82	2.73	1.89	0.00	0.00
J70	646.19	642.30	3.89	2.03	0.00	0.00
J71	646.73	639.29	7.44	3.02	0.00	0.00
J72	644.72	640.72	4.00	1.01	0.00	0.00
J73	654.93	644.38	10.55	5.79	5.28	0.00
J74	666.24	649.75	16.49	13.47	0.00	0.00
J75	669.29	657.62	11.67	4.66	5.73	0.00
J76	670.76	660.77	9.99	2.81	9.35	0.00
J77	673.17	665.17	8.00	3.90	4.85	0.00
J79	672.24	664.24	8.00	1.80	12.94	0.00
J80	676.57	668.57	8.00	1.53	9.98	0.00
J81	673.74	654.38	19.37	17.78	0.00	0.00
J82	678.87	660.88	18.00	9.69	6.13	0.00
J83	675.32	667.32	8.00	6.71	0.00	0.00
J85	665.55	656.37	9.18	5.99	0.90	0.00
J86	666.22	653.06	13.16	8.20	5.30	0.00
J87	662.80	649.00	13.80	8.74	6.06	0.00
J88	659.98	645.73	14.25	9.14	0.00	0.00

**PROPOSED STORM SEWER SYSTEM
MANHOLES**

MH Name	Rim Elev	Invert Elev	MH Depth (ft)	Freeboard (ft)	Duration of Surchage (min)	Duration of Flooding (min)
J89	655.57	642.92	12.65	7.82	7.60	0.00
J90	646.84	637.02	9.82	3.34	4.30	0.00
J94	668.18	659.25	8.93	6.51	0.30	0.00
J95	672.18	662.41	9.77	8.29	0.00	0.00
J108	670.05	661.86	8.19	3.81	2.30	0.00
J109	671.94	659.84	12.10	5.78	4.87	0.00
J113	673.23	658.70	14.53	7.35	6.52	0.00
J114	671.30	655.03	16.27	7.02	7.60	0.00
J115	670.48	653.62	16.86	6.73	8.85	0.00
J116	671.88	651.71	20.17	8.98	0.00	0.00
J117	674.65	666.65	8.00	7.23	0.00	0.00
J118	672.60	664.60	8.00	4.35	7.77	0.00
J119	666.82	658.82	8.00	5.44	1.06	0.00
J120	664.70	647.52	17.18	6.18	1.68	0.00
J125	664.83	656.83	8.00	4.43	9.07	0.00
J126	659.48	644.17	15.31	5.38	0.00	0.00
J127	656.22	649.22	7.00	1.42	5.88	0.00
J128	664.37	656.37	8.00	5.40	8.07	0.00
J129	663.92	652.87	11.05	9.49	0.00	0.00
J130	657.42	641.00	16.42	9.87	0.00	0.00
J132	645.77	637.50	8.27	1.98	8.35	0.00
J133	646.21	637.31	8.90	2.58	9.48	0.00
J137	651.46	637.92	13.54	7.67	6.41	0.00
J138	666.39	658.99	7.40	4.82	6.47	0.00
J139	674.92	666.92	8.00	2.95	11.22	0.00
J153	646.04	640.00	6.04	3.94	0.00	0.00
Node147	645.00	638.49	6.51	1.50	0.00	0.00
Node148	644.10	638.10	6.00	1.74	0.00	0.00
Node149	644.00	635.50	8.50	4.74	0.00	0.00
J16	651.22	645.30	5.92	2.10	107.52	0.00

APPENDIX F

Village of Western Springs CSO Long Term Control Plan			PRIORITY 1: BASIN 4 - PHASE 1			
Engineer's Opinion of Probable Costs					Revised:	10-23-12
No.	Pay Item		Approx. Quant.	Unit	Unit Price	Amount
1	Preconstruction Video Recording:		1	L.Sum	\$ 4,000	\$ 4,000
2	Erosion Control:	Silt Filter Fence	16260	lin.ft.	\$ 4	\$ 65,040
		Inlet Traps	82	each	\$ 400	\$ 32,800
3	TV Ex. Sewers to locate service connections:		6100	lin.ft.	\$ 2	\$ 12,200
4	Sanitary Sewer Lining - CIPP					
		8-inch through 12-inch	6225	lin.ft.	\$ 60	\$ 373,500
		15-inch through 18-inch	225	lin.ft.	\$ 85	\$ 19,125
		21-inch through 24-inch	1000	lin.ft.	\$ 115	\$ 115,000
		30-inch through 36-inch	2100	lin.ft.	\$ 145	\$ 304,500
5	Sanitary sewer manhole Rehab/Coating:		48	each	\$ 3,000	\$ 144,000
6	Relocation of water main (4" to 10"):		14	each	\$ 15,000	\$ 210,000
7	Storm sewer (open cut):					
		12-inch 00-08 feet deep	320	lin.ft.	\$ 50	\$ 16,000
		12-inch 08-12 feet deep	380	lin.ft.	\$ 58	\$ 22,040
		18-inch 08-12 feet deep	470	lin.ft.	\$ 73	\$ 34,310
		21-inch 08-12 feet deep	880	lin.ft.	\$ 82	\$ 72,160
		24-inch 08-12 feet deep	340	lin.ft.	\$ 92	\$ 31,280
		27-inch 00-08 feet deep	1800	lin.ft.	\$ 90	\$ 162,000
		30-inch 08-12 feet deep	730	lin.ft.	\$ 117	\$ 85,410
		36-inch 08-12 feet deep	390	lin.ft.	\$ 132	\$ 51,480
		36-inch 12-16 feet deep	1300	lin.ft.	\$ 152	\$ 197,600
		72-inch 08-12 feet deep	1520	lin.ft.	\$ 235	\$ 357,200
8	Storm manhole:					
		Ty A - 8' dia	1	each	\$ 7,000	\$ 7,000
		Ty A - 7' dia.	2	each	\$ 6,000	\$ 12,000
		Ty A - 6' dia.	8	each	\$ 5,000	\$ 40,000
		Ty A - 5' dia	3	each	\$ 3,000	\$ 9,000
		Ty A - 4' dia.	7	each	\$ 2,500	\$ 17,500
		Base Tee - 48"x 84"	2	each	\$ 7,000	\$ 14,000
9	Catch basin: Ty A (4' dia)		7	each	\$ 1,000	\$ 7,000
10	Inlet: Ty A (2' dia.)		44	each	\$ 400	\$ 17,600
11	Connect to existing storm structure (12-inch):		82	each	\$ 1,000	\$ 82,000
12	Granular Backfill:					
	Storm	12-inch through 15-inch	700	lin.ft.	\$ 20	\$ 14,000
		18-inch through 21-inch	1350	lin.ft.	\$ 25	\$ 33,750
		24-inch through 30-inch	2870	lin.ft.	\$ 30	\$ 86,100
		36-inch through 42-inch	1690	lin.ft.	\$ 35	\$ 59,150
		48-inch through 60-inch	0	lin.ft.	\$ 40	\$ -
		72-inch through 84-inch	1520	lin.ft.	\$ 50	\$ 76,000

Village of Western Springs			PRIORITY 1: BASIN 4 - PHASE 1			
CSO Long Term Control Plan						
Engineer's Opinion of Probable Costs					Revised:	10-23-12
No.	Pay Item		Approx. Quant.	Unit	Unit Price	Amount
13	Televised new sewer for final inspection:					
	Storm		8130	lin.ft.	\$ 2	\$ 16,260
	Sanitary		9550	lin.ft.	\$ 2	\$ 19,100
14	Pavement Restoration:		5600	lin.ft.	\$ 350	\$ 1,960,000
15	Lawn and Parkway Restoration:		9000	sq.yds.	\$ 10	\$ 90,000
		Construction Total				\$ 4,871,000
		Contingency (30%)				\$ 1,462,000
		Engineering (25%)				\$ 1,218,000
		Legal/Administration (5%)				\$ 244,000
		TOTAL				\$ 7,795,000

Village of Western Springs CSO Long Term Control Plan				PRIORITY 2: BASIN 3 - PHASE 1			
Engineer's Opinion of Probable Costs					Revised:	10-23-12	
No.	Pay Item			Approx. Quant.	Unit	Unit Price	Amount
1	Preconstruction Video Recording:			1	L.Sum	\$ 4,000	\$ 4,000
2	Erosion Control:	Silt Filter Fence		8620	lin.ft.	\$ 4	\$ 34,480
		Inlet Traps		44	each	\$ 400	\$ 17,600
3	TV Ex. Sewers to locate service connections:			3300	lin.ft.	\$ 2	\$ 6,600
4	Sanitary Sewer Lining - CIPP						
		8-inch through 12-inch		6975	lin.ft.	\$ 60	\$ 418,500
		15-inch through 18-inch		825	lin.ft.	\$ 85	\$ 70,125
		21-inch through 24-inch		0	lin.ft.	\$ 115	\$ -
		30-inch through 36-inch		0	lin.ft.	\$ 145	\$ -
5	Sanitary sewer manhole Rehab/Coating:			26	each	\$ 3,000	\$ 78,000
6	Relocation of water main (4" to 10"):			8	each	\$ 15,000	\$ 120,000
7	Storm sewer (open cut):						
		18-inch 00-08 feet deep		640	lin.ft.	\$ 63	\$ 40,320
		24-inch 00-08 feet deep		240	lin.ft.	\$ 80	\$ 19,200
		24-inch 08-12 feet deep		460	lin.ft.	\$ 92	\$ 42,320
		24-inch 12-16 feet deep		570	lin.ft.	\$ 106	\$ 60,420
		30-inch 00-08 feet deep		200	lin.ft.	\$ 101	\$ 20,200
		30-inch 08-12 feet deep		370	lin.ft.	\$ 117	\$ 43,290
		36-inch 00-08 feet deep		420	lin.ft.	\$ 114	\$ 47,880
		42-inch 00-08 feet deep		780	lin.ft.	\$ 128	\$ 99,840
		60-inch 00-08 feet deep		400	lin.ft.	\$ 182	\$ 72,800
		72-inch 00-08 feet deep		230	lin.ft.	\$ 204	\$ 46,920
8	Storm manhole:						
		Ty A - 7' dia.		4	each	\$ 6,000	\$ 24,000
		Ty A - 6' dia.		3	each	\$ 5,000	\$ 15,000
		Ty A - 5' dia.		3	each	\$ 3,000	\$ 9,000
		Ty A - 4' dia.		1	each	\$ 2,500	\$ 2,500
9	Catch basin: Ty A (4' dia.):			5	each	\$ 1,000	\$ 5,000
10	Inlet:	Ty A (2' dia.)		24	each	\$ 400	\$ 9,600
11	Connect to existing storm structure (12-inch):			44	each	\$ 1,000	\$ 44,000
12	Granular Backfill:						
	Storm	12-inch through 15-inch		0	lin.ft.	\$ 20	\$ -
		18-inch through 21-inch		640	lin.ft.	\$ 25	\$ 16,000
		24-inch through 30-inch		1840	lin.ft.	\$ 30	\$ 55,200
		36-inch through 42-inch		1200	lin.ft.	\$ 35	\$ 42,000
		48-inch through 60-inch		400	lin.ft.	\$ 40	\$ 16,000
		72-inch through 84-inch		230	lin.ft.	\$ 50	\$ 11,500
13	Televiser new sewer for final inspection:						
		Storm		4310	lin.ft.	\$ 2	\$ 8,620
		Sanitary		7800	lin.ft.	\$ 2	\$ 15,600

Village of Western Springs			PRIORITY 2: BASIN 3 - PHASE 1			
CSO Long Term Control Plan						
Engineer's Opinion of Probable Costs					Revised:	10-23-12
No.	Pay Item		Approx. Quant.	Unit	Unit Price	Amount
14	Pavement Restoration:		2400	lin.ft.	\$ 350	\$ 840,000
15	Lawn and Parkway Restoration:		2400	sq.yds.	\$ 10	\$ 24,000
22	Rock dam outfall:		2	each	\$ 10,000	\$ 20,000
		Construction Total				\$2,401,000
		Contingency (30%)				\$ 721,000
		Engineering (25%)				\$ 601,000
		Legal/Administration (5%)				\$ 121,000
		TOTAL				\$3,844,000

Village of Western Springs				PRIORITY 3: BASIN 3 - PHASE 2			
CSO Long Term Control Plan							
Engineer's Opinion of Probable Costs						Revised:	10-23-12
No.	Pay Item			Approx. Quant.	Unit	Unit Price	Amount
1	Preconstruction Video Recording:			1	L.Sum	\$ 4,000	\$ 4,000
2	Erosion Control:	Silt Filter Fence		16080	lin.ft.	\$ 4	\$ 64,320
		Inlet Traps		81	each	\$ 400	\$ 32,400
3	TV Ex. Sewers to locate service connections:			6100	lin.ft.	\$ 2	\$ 12,200
4	Sanitary Sewer Lining - CIPP						
		8-inch through 12-inch		7125	lin.ft.	\$ 60	\$ 427,500
		15-inch through 18-inch		600	lin.ft.	\$ 85	\$ 51,000
		21-inch through 24-inch		1700	lin.ft.	\$ 115	\$ 195,500
		30-inch through 36-inch		0	lin.ft.	\$ 145	\$ -
5	Sanitary sewer manhole Rehab/Coating:			47	each	\$ 3,000	\$ 141,000
6	Relocation of water main (4" to 10"):			14	each	\$ 15,000	\$ 210,000
7	Storm sewer (open cut):						
		12- inch 00-08 feet deep		150	lin.ft.	\$ 50	\$ 7,500
		12- inch 08-12 feet deep		410	lin.ft.	\$ 58	\$ 23,780
		15-inch 00-08 feet deep		370	lin.ft.	\$ 56	\$ 20,720
		18-inch 08-12 feet deep		1210	lin.ft.	\$ 73	\$ 88,330
		18-inch 12-16 feet deep		260	lin.ft.	\$ 84	\$ 21,840
		18-inch 16-20 feet deep		480	lin.ft.	\$ 97	\$ 46,560
		24-inch 00-08 feet deep		300	lin.ft.	\$ 80	\$ 24,000
		24-inch 08-12 feet deep		390	lin.ft.	\$ 92	\$ 35,880
		24-inch 12-16 feet deep		400	lin.ft.	\$ 106	\$ 42,400
		30-inch 08-12 feet deep		1240	lin.ft.	\$ 117	\$ 145,080
		30-inch 12-16 feet deep		380	lin.ft.	\$ 135	\$ 51,300
		42-inch 08-12 feet deep		190	lin.ft.	\$ 148	\$ 28,120
		42-inch 12-16 feet deep		430	lin.ft.	\$ 171	\$ 73,530
		54-inch 08-12 feet deep		230	lin.ft.	\$ 187	\$ 43,010
		72-inch 00-08 feet deep		230	lin.ft.	\$ 204	\$ 46,920
		72-inch 08-12 feet deep		1370	lin.ft.	\$ 235	\$ 321,950
8	Storm manhole:						
		Ty A - 7' dia.		4	each	\$ 6,000	\$ 24,000
		Ty A - 6' dia.		5	each	\$ 5,000	\$ 25,000
		Ty A - 5' dia.		5	each	\$ 3,000	\$ 15,000
		Ty A - 4' dia.		11	each	\$ 2,500	\$ 27,500
		Base Tee - 48"x 72"		1	each	\$ 6,000	\$ 6,000
9	Catch basin: Ty A (4' dia):			6	each	\$ 1,000	\$ 6,000
10	Inlet:	Ty A (2' dia.)		48	each	\$ 400	\$ 19,200
11	Connect to existing storm structure (12-inch):			81	each	\$ 1,000	\$ 81,000

Village of Western Springs CSO Long Term Control Plan			PRIORITY 4: BASIN 4 - PHASE 2			
Engineer's Opinion of Probable Costs					Revised:	10-23-12
No.	Pay Item		Approx. Quant.	Unit	Unit Price	Amount
1	Preconstruction Video Recording:		1	L.Sum	\$ 4,000	\$ 4,000
2	Erosion Control:	Silt Filter Fence	10280	lin.ft.	\$ 4	\$ 41,120
		Inlet Traps	52	each	\$ 400	\$ 20,800
3	TV Ex. Sewers to locate service connections:		3900	lin.ft.	\$ 2	\$ 7,800
4	Sanitary Sewer Lining - CIPP					
		8-inch through 12-inch	6000	lin.ft.	\$ 60	\$ 360,000
		15-inch through 18-inch	1600	lin.ft.	\$ 85	\$ 136,000
		21-inch through 24-inch	0	lin.ft.	\$ 115	\$ -
		30-inch through 36-inch	0	lin.ft.	\$ 145	\$ -
5	Sanitary sewer manhole Rehab/Coating:		30	each	\$ 3,000	\$ 90,000
6	Relocation of water main (4" to 10"):		9	each	\$ 15,000	\$ 135,000
7	Storm sewer (open cut):					
	12-inch	08-12 feet deep	610	lin.ft.	\$ 58	\$ 35,380
	18-inch	00-08 feet deep	320	lin.ft.	\$ 63	\$ 20,160
	18-inch	08-12 feet deep	300	lin.ft.	\$ 73	\$ 21,900
	21-inch	08-12 feet deep	430	lin.ft.	\$ 82	\$ 35,260
	24-inch	08-12 feet deep	610	lin.ft.	\$ 92	\$ 56,120
	24-inch	12-16 feet deep	490	lin.ft.	\$ 106	\$ 51,940
	30-inch	16-20 feet deep	320	lin.ft.	\$ 135	\$ 43,200
	36-inch	16-20 feet deep	420	lin.ft.	\$ 175	\$ 73,500
	42-inch	12-16 feet deep	920	lin.ft.	\$ 171	\$ 157,320
	60-inch	08-12 feet deep	340	lin.ft.	\$ 210	\$ 71,400
	84-inch	08-12 feet deep	380	lin.ft.	\$ 264	\$ 100,320
8	Storm manhole:					
		Ty A - 7' dia.	3	each	\$ 6,000	\$ 18,000
		Ty A - 6' dia.	2	each	\$ 5,000	\$ 10,000
		Ty A - 5' dia.	4	each	\$ 3,000	\$ 12,000
		Ty A - 4' dia.	7	each	\$ 2,500	\$ 17,500
		Base Tee - 48"x 84"	1	each	\$ 7,000	\$ 7,000
9	Catch basin: Ty A (4' dia):		5	each	\$ 1,000	\$ 5,000
10	Inlet:	Ty A (2' dia.):	30	each	\$ 400	\$ 12,000
11	Connect to existing storm structure (12-inch):		52	each	\$ 1,000	\$ 52,000
12	Granular Backfill:					
	Storm	12-inch through 15-inch	610	lin.ft.	\$ 20	\$ 12,200
		18-inch through 21-inch	1050	lin.ft.	\$ 25	\$ 26,250
		24-inch through 30-inch	1420	lin.ft.	\$ 30	\$ 42,600
		36-inch through 42-inch	1340	lin.ft.	\$ 35	\$ 46,900
		48-inch through 60-inch	340	lin.ft.	\$ 40	\$ 13,600
		72-inch through 84-inch	380	lin.ft.	\$ 50	\$ 19,000

Village of Western Springs			PRIORITY 4: BASIN 4 - PHASE 2			
CSO Long Term Control Plan						
Engineer's Opinion of Probable Costs					Revised:	10-23-12
No.	Pay Item		Approx. Quant.	Unit	Unit Price	Amount
13	Televised new sewer for final inspection:					
	Storm		5140	lin.ft.	\$ 2	\$ 10,280
	Sanitary		7600	lin.ft.	\$ 2	\$ 15,200
14	Pavement Restoration:		5400	lin.ft.	\$ 350	\$1,890,000
15	Lawn and Parkway Restoration:		9000	sq.yds.	\$ 10	\$ 90,000
		Construction Total				\$3,761,000
		Contingency (30%)				\$1,129,000
		Engineering (25%)				\$ 941,000
		Legal/Administration (5%)				\$ 189,000
		TOTAL				\$6,020,000

APPENDIX G

VILLAGE OF WESTERN SPRINGS
PUBLIC NOTIFICATION PLAN

FINAL

CSO PERMIT IL0045039

January 23, 2007

REVISED: February 9, 2009

Introduction

The purpose of this plan is to institute policies and procedures for informing the public in the event of a combined sewer overflow (CSO). Per NDPEs CSO discharge permit IL0045039 Special Condition 7, paragraph 12, a public notification program is required which employs a process to actively inform the affected public during periods of CSO. The Village maintains four CSO outfalls (see attached map that details CSO outfall locations and sewers). Outfalls 001 and 002 are located on Salt Creek and Outfalls 003 and 004 are located on Flagg Creek.

Need for CSO Outfalls

Portions of the Western Springs sewer system serve as conveyances for both stormwater and domestic sewage. In the event a rainfall exceeds the capacity of the combined sewers, the excess is discharged through outfalls along Flagg Creek and Salt Creek. The combined sewer system is limited to the area north of 47th Street. Areas south of 47th Street are served by separate storm and sanitary sewers. Wastewater from combined and separate sanitary sewers is collected and treated by the Water Reclamation District of Greater Chicago (MWRDGC).

Combined sewage from the Salt Creek watershed is sent to a recently constructed 36" interceptor sewer (was previously 18") for transport to MWRDGC treatment facilities. There are two drop shafts prior to the Outfalls 1 and 2 which are connected to the MWRDGC Tunnel and Reservoir Plan (TARP). If the wet-weather flows exceed the interceptor sewer capacity, the excess flow is diverted to the TARP for treatment after the increased flows subside. The amount of flow from the Village allowed into the TARP is decided by the MWRDGC based upon anticipated volume from all users to the TARP. Flows in excess of the interceptor sewer and the TARP are discharged to Salt Creek via Outfalls 001 and 002. Discharges into Salt Creek will become less frequent as the TARP system adds capacity through reservoir construction.

The combined sewers in the Flagg Creek watershed meet at a trunk sewer that originates at the intersection of 47th Street and Fair Elms Avenue. This 18" trunk sewer transports the combined sewage south along Fair Elms Avenue to an MWRDGC interceptor near 55th Street. If wet-weather flows exceed the capacity of the 18" trunk sewer, the excess flow is discharged through Outfall 003 (Fair Elms Avenue and 49th Street) into Flagg Creek. If flows exceed the MWRDGC interceptor at 55th Street, the excess flow will be discharged into Flagg Creek through Outfall 004.

Affected Public: For the purposes of this plan, the Affected Public is the citizens of Western Springs, the IEPA, USEPA, and concerned environmental organizations.

Signage at CSO Outfalls: Warning signs have been placed at the outfalls for each CSO location, as well as upstream and downstream public access points indicating the areas are CSO areas.

Event Notification: In the event of a CSO, the general public will be informed through the Village webpage (www.wsprings.com) for a minimum of 24 hours and state “CSO Outfall No. __ discharged on (*insert date*) for a duration of (*insert hours*).” The website notification will be printed by staff and filed for each CSO discharge notification. If a discharge impacts an area downstream of the event, temporary signs will be placed warning people from contact with the water. The Village’s website will have a link to the Metropolitan Water Reclamation District of Greater Chicago’s (MWRGC) website (www.mwrdgc.dst.il.us) because MWRDGC has assumed accepted monitoring requirements of the CSO Outfalls 001 and 002 on Salt Creek. Village residents can report emergency spills along Salt Creek by calling the MWRDGC emergency spill hotline at 1-800-332-DUMP.

Additionally, the CSO NPDES Permit Plans will be posted on the Village’s website.

Public Help In Reducing CSO’s: During periods of heavy rainfall, it is helpful for residents to reduce their water usage in an effort to keep water levels as low as possible within the combined sewer system. Delaying activities such as dishwashing and laundry until after heavy rainfall has left the area will reduce the amount of water discharged and may event prevent a CSO discharge. Additionally, rainwater collection from gutters reduces the amount of rain water going into the combined sewers. Collected rainwater can then be later used to water lawns and gardens, having the added benefit of reducing water bills.

APPENDIX H

VILLAGE OF WESTERN SPRINGS
POLLUTION PREVENTION PLAN
CSO PERMIT IL0045039
July 21, 2006
REVISED: February 9, 2009

Introduction: This plan is to outline the steps the Village of Western Springs, Illinois takes in preventing pollution within the community. It is prepared in partial fulfillment of Special Condition 7, paragraph 6 of NPDES Permit No. IL0045039. Attached with this Pollution Prevention Plan are the CSO Pollution Prevention Plan Certification and a map of the Village's CSO outfalls and sewers.

1. Village Best Management Practices for pollution prevention within the Village:
 - a. Regular street cleaning – The Village cleans every street once per month, downtown areas once per week. The Village owns their own street sweeper.
 - b. Salt storage – The Village has a salt shed.
 - c. Vehicle fueling and maintenance – The Village uses spill pans.
 - d. Used oil disposal – The Village has a waste oil storage tank. A contractor disposes of the waste oil.

2. Public education efforts – Public education of Village policies regarding pollution prevention is through the bimonthly Village newsletter (*Tower Topics*), Village web page (www.wsprings.com), and Cable Channel 6. The Village's website will have a link to the Metropolitan Water Reclamation District of Greater Chicago's (MWRGC) website (www.mwrddgc.dst.il.us) because MWRDGC has assumed accepted monitoring requirements of the CSO Outfalls 001 and 002 on Salt Creek. Village residents can report emergency spills along Salt Creek by calling the MWRDGC emergency spill hotline at 1-800-332-DUMP.

3. Public Help In Reducing CSO's - During periods of heavy rainfall, it is helpful for residents to reduce their water usage in an effort to keep water levels as low as possible within the combined sewer system. Delaying activities such as dishwashing and laundry until after heavy rainfall has left the area will reduce the amount of water discharged and may event prevent a CSO discharge. Additionally, rainwater collection from gutters reduces the amount of rain water going into the combined sewers. Collected rainwater can then be later used to water lawns and gardens, having the added benefit of reducing water bills.

4. Solid waste collection & recycling – The Village provides regular refuse collection by contract with Browning Ferris Industries, Inc (BFI). Waste generated above and beyond normal weekly allotment (i.e. yard waste, brush, or extra bags) require a Village waste sticker. These stickers are available for purchase at eight local businesses.

Recycling is done in conjunction with solid waste collection. Recyclables are segregated by classification (newspaper, other paper, glass/metal/plastic, and cardboard) and set out at curbside in blue bags provided free by the Village.

The Village annually sponsors leaf removal and disposal for residents in the fall. Removal of leaves from the Village streets begins the end of October. Two cycles of removal take place through the entire Village. During the leaf removal operation, residents can call the Leaf Hotline at 246-1800, Ext. 305 for daily updates on the program.

5. Product ban/substitution - Currently, the Village does not ban any product packaging or participate in product packaging substitution.

6. Control of product use – The Public Works Department uses herbicides sparingly throughout the summer/autumn (May through Sept.). Sprayings concentrate directly on the weed or wild growth on curb lines, islands, sidewalks, medians, and expansion joints. Young trees (1-4 years old) are given deep root fertilizations once per year.

7. Illegal dumping prevention – Illegal dumping has not been a problem within the Village. Through user-friendly bulk refuse and household hazardous waste collection programs, citizens do not have cause to dump items illegally.

8. Disposal of bulk refuse – Bulk items are collected curbside with appropriate number of refuse stickers affixed to the item. Residents can call BFI for more information on costs for large items. Construction items can also be disposed by BFI if the resident makes prior arrangements.

9. Collection of hazardous waste – Special collections for household hazardous waste and electronics are provided by the West Cook County Solid Waste Agency at (708) 405-0100. Additionally, the Illinois Environmental Protection Agency sponsors household hazardous waste collection days in various municipalities throughout Illinois during the spring and summer (<http://www.epa.state.il.us/land/hazardous-waste/household-haz-waste/hhwc-schedule.html>).

10. Water conservation efforts – As of May 2000, the Village no longer has a summertime water use restriction. Currently there are no water restrictions in Western Springs, as the Village does not have a Lake Water allocation; however, water conservation is encouraged of all users.

11. Commercial/industrial pollution prevention – Commercial/industrial discharges are controlled via municipal code:

8-6-3-H. Each business and commercial/industrial property shall be required to install a control manhole and, when required by the director of the department of municipal services, the owner of any property serviced by a building sewer carrying industrial wastes shall install a suitable control manhole together with such necessary meters and other appurtenances in the sewer service line to facilitate observation, sampling, and measurement of the wastes. Such manhole, when required, shall be accessibly and safely located, and shall be constructed in accordance with plans approved by the department of

municipal services. The manhole shall be installed by the owner at his/her expense, and shall be maintained by the owner so as to be safe and accessible at all times.

8-6-3-I. The owner of any property serviced by a sewer service line carrying industrial wastes shall provide laboratory measurements, tests, and analyses of waters and wastes to illustrate compliance with this chapter and any special conditions for discharge established by the village or regulatory agencies having jurisdiction over the water and waste discharge. The number, type, and frequency of laboratory analyses to be performed by the owner shall be as stipulated by the village of Western Springs, but no less than once per year each business must supply a complete analysis of the constituents of the wastewater discharge to assure that compliance with the federal, state, and village standards is being met. Under emergency circumstances as determined by the director of the department of municipal services, the owner, at its expense, shall perform such testing and analyses upon the request of the village. The owner shall report the results of measurements and laboratory analyses to the village of Western Springs at such times and in such a manner as prescribed by the village of Western Springs. The owner shall bear the expense of all measurements, analyses, and reporting required by the village of Western Springs. At such times as deemed necessary the village of Western Springs reserves the right to take measurements and samples for analysis by an outside laboratory service.

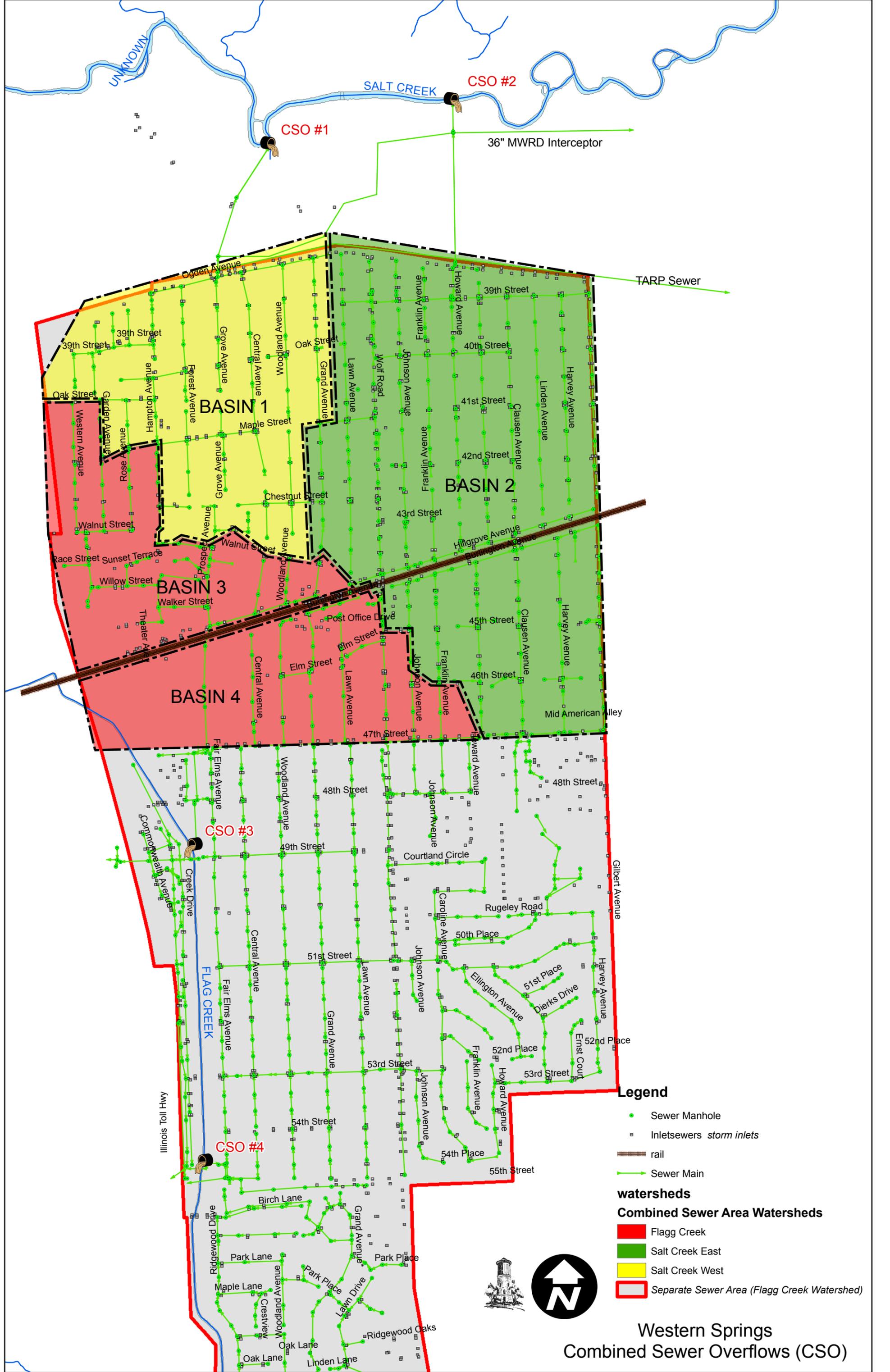
Attachment 1: "No" Items from Pollution Prevention Plan Checklist

4. Product ban/substitution - Currently, the Village does not ban any product packaging or participate in product packaging substitution.

6. Illegal dumping prevention – Illegal dumping has not been a problem within the Village. Through user-friendly bulk refuse and household hazardous waste collection programs, citizens do not have cause to dump items illegally.

9. Water conservation efforts – As of May 2000, the Village no longer has a summertime water use restriction. Currently there are no water restrictions in Western Springs, as the Village does not have a Lake Water allocation; however, water conservation is encouraged of all users.

EXHIBIT A



CSO #1

CSO #2

BASIN 1

BASIN 2

BASIN 3

BASIN 4

CSO #3

CSO #4

36" MWRD Interceptor

TARP Sewer

Legend

- Sewer Manhole
- Inletsewers storm inlets
- rail
- Sewer Main

watersheds

Combined Sewer Area Watersheds

- Flagg Creek
- Salt Creek East
- Salt Creek West
- Separate Sewer Area (Flagg Creek Watershed)



Western Springs
Combined Sewer Overflows (CSO)

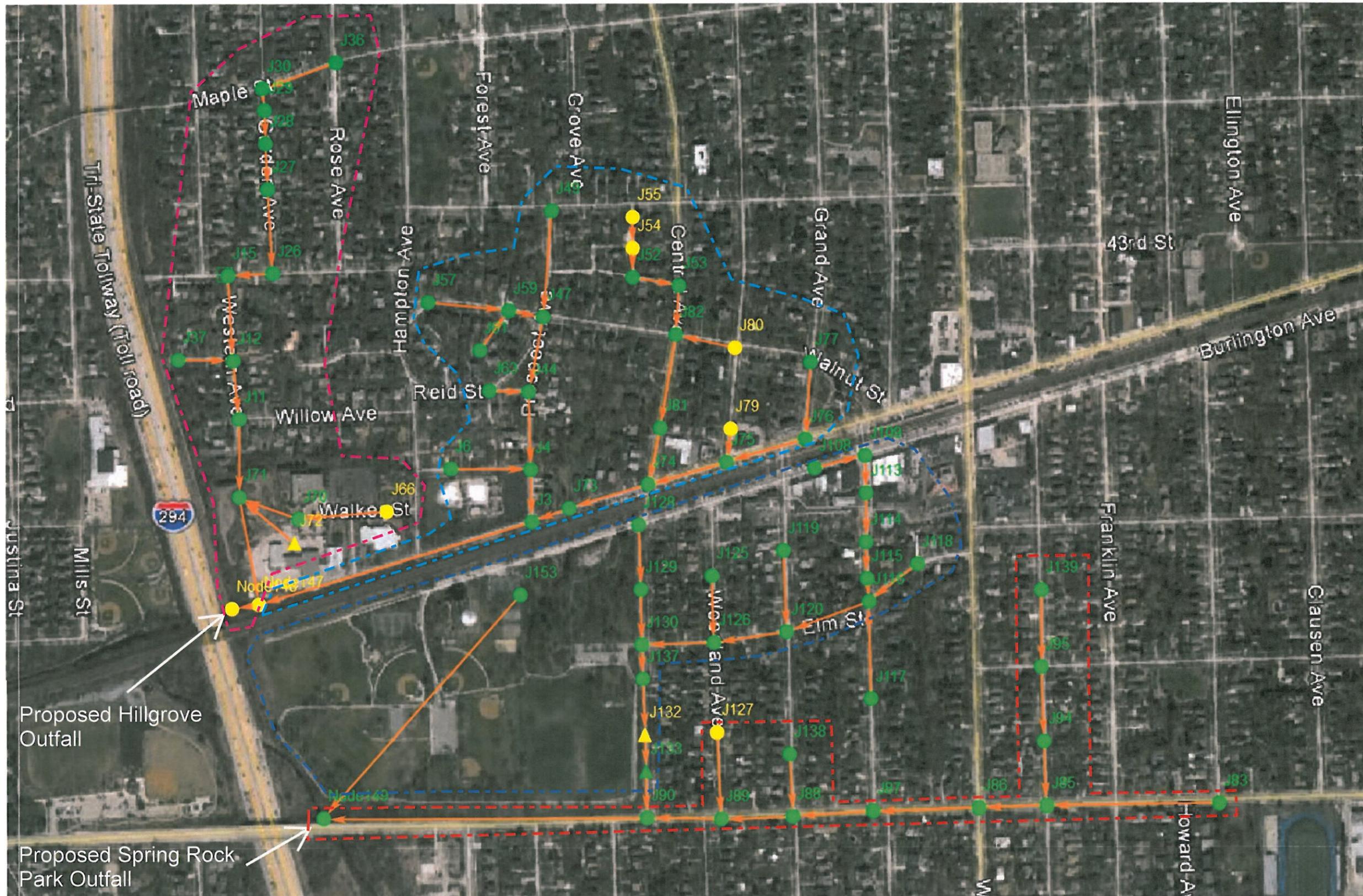
EXHIBIT B

PROPOSED STORM SEWER SYSTEM



EXHIBIT C

PROPOSED STORM SEWER SYSTEM CONSTRUCTION PHASING



PHASING
 PRIORITY 1
 PRIORITY 2
 PRIORITY 3
 PRIORITY 4

Storm Sewer

Manhole Freeboard (ft)
 -0.00
 2.00
 50.00

Proposed Hillgrove Outfall

Proposed Spring Rock Park Outfall



Justinia St
 Mills St

Franklin Ave

Clausen Ave

Howard Ave

Burlington Ave

43rd St

Ellington Ave

Forest Ave

Grove Ave

Center Ave

Grand Ave

Walnut St

Hampton Ave

Reid St

Willow Ave

Walker St

North St

Elm St

Wesland Ave

Howard Ave

Maple

Rose Ave

Weston Ave