

# Metropolitan Water Reclamation District of Greater Chicago

## Stormwater Management Program

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2010 Annual Report

April 11, 2011



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## Overview

The Metropolitan Water Reclamation District of Greater Chicago (District) was granted stormwater management authority for Cook County with the passage of Public Act 93-1049 (Act) in November 2004. The framework of the District's Stormwater Management program, including its mission, goals, and program elements, is presented in the Cook County Stormwater Management Plan (CCSMP), which was adopted by the District's Board of Commissioners in February 2007.

During the past year, the District completed work on all Detailed Watershed Plans (DWPs) for the six watersheds required by the Act, continued work on the Small Streams Maintenance Program (SSMP), entered into an intergovernmental agreement with the Wheeling Park District and the Village of Wheeling for the Heritage Park Flood Control Facility, initiated preliminary engineering for several projects from the completed DWPs, initiated an Economic Impact Study (EIS) for the draft Watershed Management Ordinance (WMO), and continued the rain barrel program. In 2011, the District's activities will include initiating preliminary engineering for several more DWP projects, continuing the SSMP and rain barrel program, and commencing final design for viable projects for which preliminary engineering was initiated in 2010. Further details concerning these items and other stormwater management activities are provided below.

## Mission and Goals

### Stormwater Management Mission Statement

The mission of the countywide stormwater management program is to provide Cook County with effective rules, regulations, and projects that will mitigate stormwater effects on public health, safety, property and the environment. The goals of the program are included in the CCSMP, which can be accessed at [www.mwrd.org](http://www.mwrd.org).

## Stormwater Management Activities

### Detailed Watershed Plans

The District has finalized its efforts in developing DWPs for all six watersheds in Cook County as required by the Act; the six watersheds are: Calumet-Sag Channel, Upper Salt Creek, Little Calumet River, Poplar Creek, North Branch of the Chicago River and Lower Des Plaines River. A map depicting the locations of the watersheds is provided in Appendix A. The DWPs provide a summary of the watershed's areas of concern and a listing of potential regional capital improvement projects to address those concerns. The watershed planning process consisted of several steps, including:

1. Gathering, analyzing, and assessing existing data and information.
2. Identifying stormwater management concerns through outreach to municipalities.
3. Classifying identified concerns as regional (to be addressed under the DWP and typically consists of eroding streambanks placing structures, infrastructure, and/or public safety at risk and overbank flooding of regional waterways) or local (i.e. inadequate local storm sewer systems).

4. Developing hydrologic and hydraulic models.
5. Identifying potential projects to address regional stormwater management concerns.
6. Quantifying benefits and costs of potential projects and determining other factors to allow for evaluation of projects by the District's Board of Commissioners.

### **Stormwater Management Capital Improvement Program**

The Stormwater Management Capital Improvement Program (CIP) consists of DWP projects approved for preliminary engineering by the Board of Commissioners and the Heritage Park Flood Control Facility, which is described in a separate section below. The DWP projects were developed at a conceptual level utilizing available data. The purposes of preliminary engineering are to collect and analyze additional data, such as soil borings, in order to further examine the potential solutions and determine if the projects are feasible. In addition to a detailed review of DWP assumptions and determination of the project's viability, preliminary engineering includes evaluation of right-of-way requirements, state and federal government permit compliance, and analysis of potential stormwater management technologies.

The District approved preliminary engineering for six streambank stabilization projects in January 2010 and nine flood control projects in February 2010 emanating from the completed Calumet-Sag Channel, Little Calumet River, and Upper Salt Creek DWPs. The streambank stabilization projects include reaches of Tinley Creek, Midlothian Creek, Melvina Ditch, Calumet Union Drainage Ditch and Oak Lawn Creek. Flood control projects include improvements on reaches of Upper Salt Creek, Tinley Creek, Thorn Creek, Cherry Creek, Plum Creek, Deer Creek Reservoir, and the Little Calumet River. Despite efforts to identify all stormwater related issues during DWP development and due to the dynamic nature of erosion, new streambank stabilization issues continue to come to light. In July 2010, three additional streambank stabilization projects meeting the District's criteria were identified and approved for preliminary engineering; the projects include a reach of Tinley Creek, I & M Canal Tributary D, and Calumet-Sag Channel Tributary C. A map showing the locations of all projects for which preliminary engineering commenced in 2010 is provided in Appendix B.

In 2011, the District's activities will include initiating preliminary engineering for several more DWP projects and commencing final design for viable projects for which preliminary engineering was initiated in 2010.

### **Heritage Park Flood Control Facility**

On April 1, 2010, the District entered into an intergovernmental agreement with the Wheeling Park District and the Village of Wheeling to allow for the construction of the Heritage Park Flood Control Facility, which will provide the necessary compensatory storage for the U.S. Army Corps of Engineers' (USACE) Levee 37 project located on the Des Plaines River. Final design of the facility commenced shortly thereafter and is expected to conclude in fall 2011 with construction beginning 2012. The project includes an expansion to the existing stormwater detention reservoir known as Heritage Lake, excavation of new floodwater storage areas east and west of Buffalo Creek, and passive and active recreation components. A site plan is provided in Appendix C.

## Small Streams Maintenance Program (SSMP)

The SSMP successfully concluded its fourth full year of operation in 2010. Established in 2006, the SSMP's goal is to reduce flooding in urbanized areas by removing debris in waterways impeding the natural drainage of small streams and rivers. In order to attend to stream maintenance issues in a timely manner, the District hired contractors to assist District staff with stream maintenance operations. In 2010, the District utilized \$1,967,502.55 in services from contractors. Stream blockages are reported to the District by contacting the SSMP program coordinator directly or online through the District's website. In 2010, 43 requests for small stream cleaning were submitted via the District's website. Each reported issue was evaluated and prioritized based on its potential to cause flooding near businesses, residences and roads. District crews and contractors removed approximately 34,721 cubic yards of debris in 2010. Included in the total is 3,874 cubic yards of river and canal debris removed by the District's debris and pontoon boat crews. The table below summarizes the amount of debris removed from each watershed over the past three years. Local municipalities provide valuable assistance to the SSMP by contributing personnel, equipment, and access to waterways. Approximately 1,058 cubic yards of debris were disposed by local municipalities, which allowed the District to provide an additional \$61,000 of SSMP services. The total 2010 expenditure for the SSMP program was \$3,607,724.50; for an average cost of \$104 per cubic yard.

<b>Watershed</b>	<b>2008 Cubic Yards Removed</b>	<b>2009 Cubic Yards Removed</b>	<b>2010 Cubic Yards Removed</b>
Little Calumet River	10,310	9,330	6,472
Calumet-Sag Channel	7,910	9,890	9,489
Lower Des Plaines River	5,290	11,065	10,832
North Branch Chicago River	2,170	11,460	4,692
Upper Salt Creek	3,300	370	1,585
Poplar Creek	2,320	2,650	1,651
<b>Total</b>	<b>31,300</b>	<b>44,765</b>	<b>34,721</b>

It is anticipated that 35,000 cubic yards of debris will be removed from streams and rivers in 2011. Major goals include standardizing procedures, identifying critical stream areas, scheduling critical inspections, and introducing the SSMP crews to local governments to increase the public's awareness of the District's presence and execution of the SSMP. The District will again retain a contractor to assist in removal of the debris; the estimated contract value is \$2.5 million.

## Watershed Management Ordinance

The intent of the WMO is to establish uniform stormwater management regulations for development and redevelopment projects in Cook County. Components that may be regulated under the WMO include: drainage and detention, floodplain management, wetland and riparian area protection, soil erosion and sediment control, and water quality. The District released a draft WMO for public review in 2009. In response to stakeholder comments, the Board of Commissioners approved an EIS on February 4, 2010. The EIS will evaluate the potential economic impacts of the draft WMO on Cook County and consists of two components: (1) an engineering analysis and (2) an economic analysis. The engineering analysis will compare stormwater detention volumes required under the effective Sewer Permit Ordinance with detention volumes that would be required under the draft WMO. For this analysis, the Board of

Commissioners approved 5 previously permitted developments to serve as the baseline of detention comparison on October 7, 2010. The objective of the economic analysis is to predict the draft WMO's potential impacts on Cook County. The WMO advisory committee, consisting of various stakeholders, convened twice in 2010 and their input provided valuable feedback during the engineering analysis. It is anticipated the EIS will conclude in 2011 and the District's Board of Commissioners will consider its results in determining if any modifications to the WMO are warranted.

### **Joint Funding Agreement with the United States Geological Survey (USGS) for Stream Gaging Stations in Cook County**

The District entered into a Joint Funding Agreement with the USGS in 2006 and has renewed the agreement annually to fund the maintenance and operation of the following eight stream gages located within Cook County:

1. North Branch of the Chicago River at Deerfield
2. Salt Creek at Elk Grove Village
3. Salt Creek at Western Springs
4. Salt Creek at Rolling Meadows
5. Deer Creek at Chicago Heights
6. Butterfield Creek at Flossmoor
7. Midlothian Creek at Oak Forest
8. Tinley Creek near Palos Park

The data from the streamflow gaging stations has proven useful for the District with calibration of the hydrologic and hydraulic models in the DWP development. In addition to the streamflow gages, this agreement also funds a rain gage on Salt Creek near Rolling Meadows. Real time data from these gages is available on the USGS's website at [www.usgs.gov](http://www.usgs.gov).

As part of the District's continued support of the maintenance and operation of eight streamflow gaging stations and one rain gage in Cook County, the District plans to renew an agreement to jointly fund gages with the USACE, the IDNR-OWR, and the USGS in the fall of 2011 for the 2011/2012 year.

### **Permeable Pavement Parking Lot at Stickney Water Reclamation Plant (WRP)**

The construction of a permeable pavement parking lot at the Stickney WRP was completed in 2009. Since then, the District's Monitoring and Research Department has been collecting water quality and runoff data for evaluation. Data will continue to be collected and analyzed by the District's Monitoring and Research Department, and after sufficient information is gathered, reports will be made available to the public. The monitoring program will continue into future years and will be used to provide insight into the use of permeable pavement systems as a stormwater measure.

### **Coordination with Watershed Planning Councils (WPCs)**

The Act required the formation of WPCs, which serve as advisory bodies to the District for its stormwater management program. Membership of WPCs includes the chief elected official, or his or her designee, for municipalities and townships, and the Cook County Board President, or his or her designee, for unincorporated areas. In 2005, the municipal conferences, with assistance from the District, established WPCs for the watersheds of the North Branch of the

Chicago River, the Lower Des Plaines River, the Calumet-Sag Channel, the Little Calumet River, Poplar Creek, and Upper Salt Creek.

Since 2005, each of the WPCs has met at least quarterly, as required by the Act. WPC meetings serve as a mechanism for representatives of municipalities and townships to be updated on the progress of the DWPs, SSMP, WMO, and capital projects, as well as to communicate concerns of the public to the District.

The following Councils of Government (COGs) are responsible for coordination of the WPCs: Northwest Municipal Conference, West Central Municipal Conference, South Suburban Mayors and Managers Association, and Southwest Conference of Mayors. The District negotiated agreements with each of the COGs to provide administrative assistance related to coordination of the WPCs; the current agreement is set to expire at the end of 2011. In 2010, the COGs assisted the District by arranging meeting schedules, drafting and distributing meeting agendas, distributing information from the District to WPC members, assembling contact information for WPC representatives, and forwarding information about stormwater management concerns from the WPC members to the District.

### **Rain Barrel Program**

The District introduced a Rain Barrel Program in 2007 where residents could purchase up to two rain barrels and municipalities could purchase up to 40 rain barrels that could be sold to their residents. In 2010, the program continued to sell rain barrels and distribute them on a monthly basis at the Stickney Water Reclamation Plant (WRP), Calumet WRP, Egan WRP and North Side WRP. The cost per rain barrel was \$50 in 2010. The District aggressively advertises this program and over 1,250 rain barrels were sold in 2010. The rain barrel program will continue in 2011; the price of a rain barrel will be increased by \$1 to \$51 to cover administrative costs associated with the program. Rain barrel pick-up events at our WRPs resumed in March 2011 and will be held twice per month thru July, and once per month through November. Visit the District's website, [www.mwrd.org](http://www.mwrd.org), for further information.

### **Public Affairs**

In 2010, District staff provided information about the Stormwater Management Program at various public events in communities throughout the region and at various technical conferences. The District attends all WPC meetings to provide updates on watershed planning efforts, development of the WMO, and stream maintenance activities. These meetings are open to the public and provide an opportunity for concerns of the public to be communicated to the District. The District also produced a biannual SSMP newsletter, which was made available at WPC meetings and was posted on the District's website.

The District will continue to provide information about the Stormwater Management program at various events, such as the 2011 Annual Conference of the Illinois Association for Floodplain and Stormwater Management. Educational materials will be developed to deepen the public understanding of the critical role of the District, its Stormwater mission, and public responsibilities in achieving quality programs and results. This will include a new Stormwater Management booklet, a SSMP brochure and the bi-annual SSMP community newsletters.

## Expenditures

Category	Description	2010 Expenditures
Personal Services: Consultant	<b>Fees paid to consultants for professional services rendered, including the following projects:</b>	\$5,736,860
	Regulatory Ordinance Development	\$ 81,709
	Detailed Watershed Plans	\$ 2,798,576
	Preliminary Engineering	\$ 1,408,651
	Heritage Park Flood Control Facility Final Design	\$ 1,361,418
	Heritage Park Flood Control Facility Legal Services	\$ 79,506
	Small Streams Maintenance Program Consulting Services	\$ 7,000
Personal Services: In House	<b>Salaries and associated costs related to District personnel:</b>	\$4,108,173
	General Administration Department	\$ 174,593
	Engineering Department	\$ 1,620,389
	Maintenance and Operations Department	\$ 2,313,191
Contractual Services	<b>Fees paid for services provided by COGs, agencies or companies, including the following:</b>	\$6,495,240
	COGs Administrative Contracts:	
	Northwest Municipal Conference	\$ 7,751
	South Suburban Mayors and Managers Association	\$ 5,284
	Southwest Conference of Mayors	\$ 49,054
	West Central Municipal Conference	\$ 6,553
	Small Streams Maintenance Program	\$ 1,967,502
	Court Reporting Services	\$ 8,772
	USGS Joint Funding Agreement for Stream Gaging Stations in Cook County	\$ 86,831
	Streetscape and Sustainability Design Program	\$ 57,882
	Permeable Pavement Installation	\$ 15,300
	Heritage Park Flood Control Facility Land Acquisition	\$ 3,227,722
	Heritage Park Flood Control Facility Easements	\$ 1,000,000
	Miscellaneous Contractual Services	\$ 62,589
Administrative Expenses	<b>Materials, equipment and supplies:</b>	\$68,189

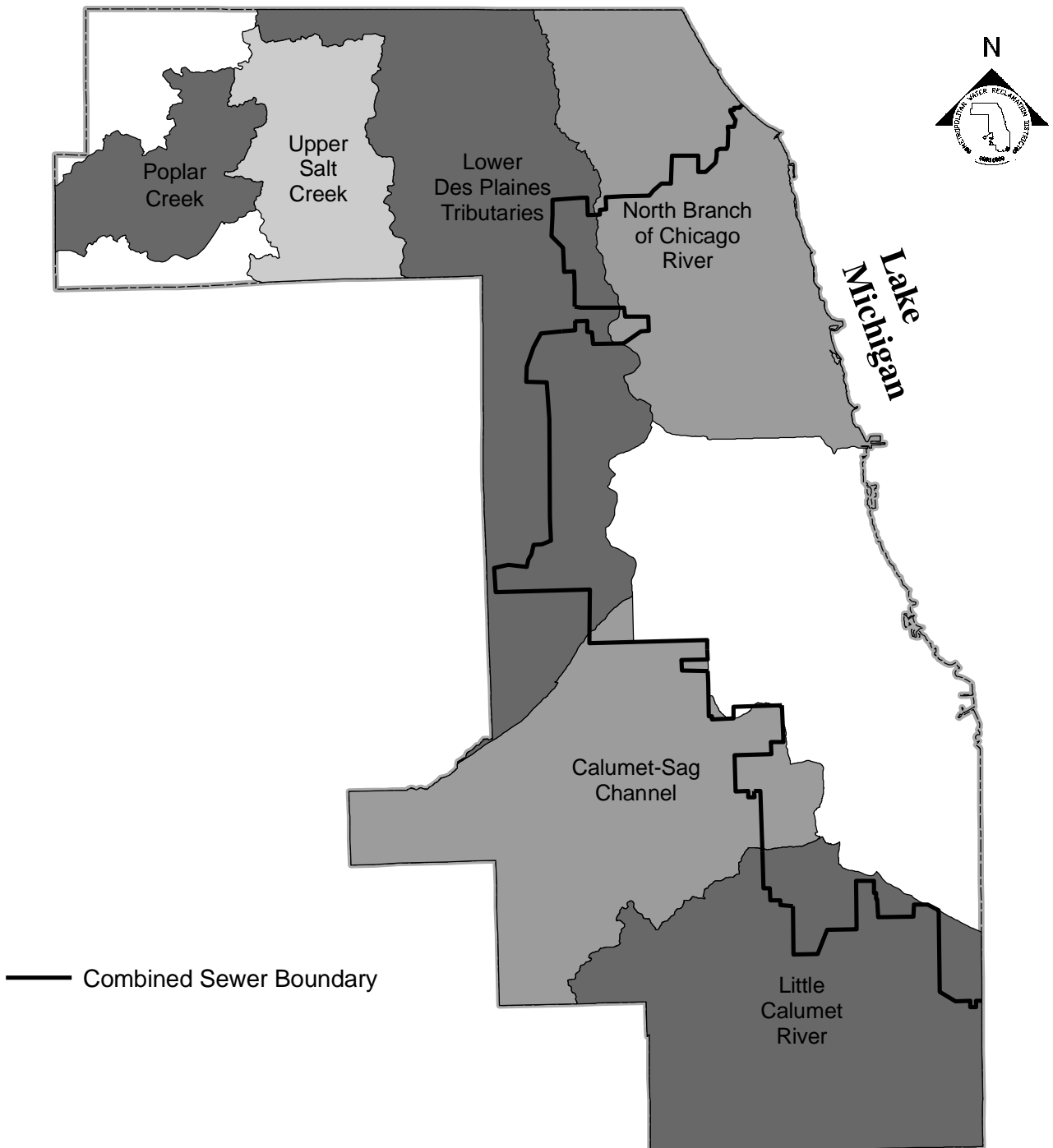
Total 2010 Expenditures	\$16,408,462
2010 Appropriation	\$39,928,900
Net Assets Appropriable for 2011	\$23,520,438



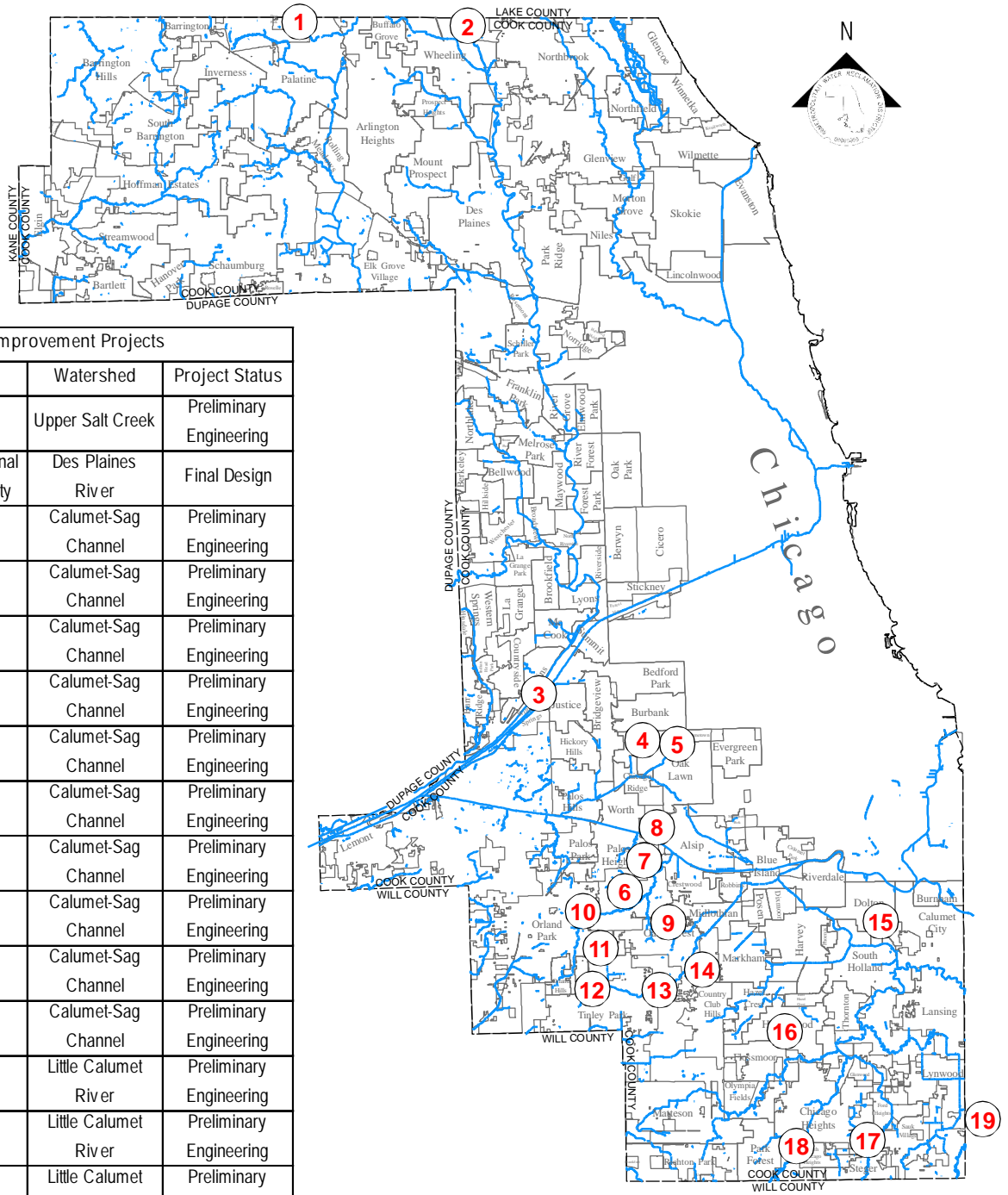
## Appendix

Appendix A	Stormwater Management Watersheds
Appendix B	Stormwater Management Project Map
Appendix C	Heritage Park Flood Control Facility

# STORMWATER MANAGEMENT WATERSHEDS

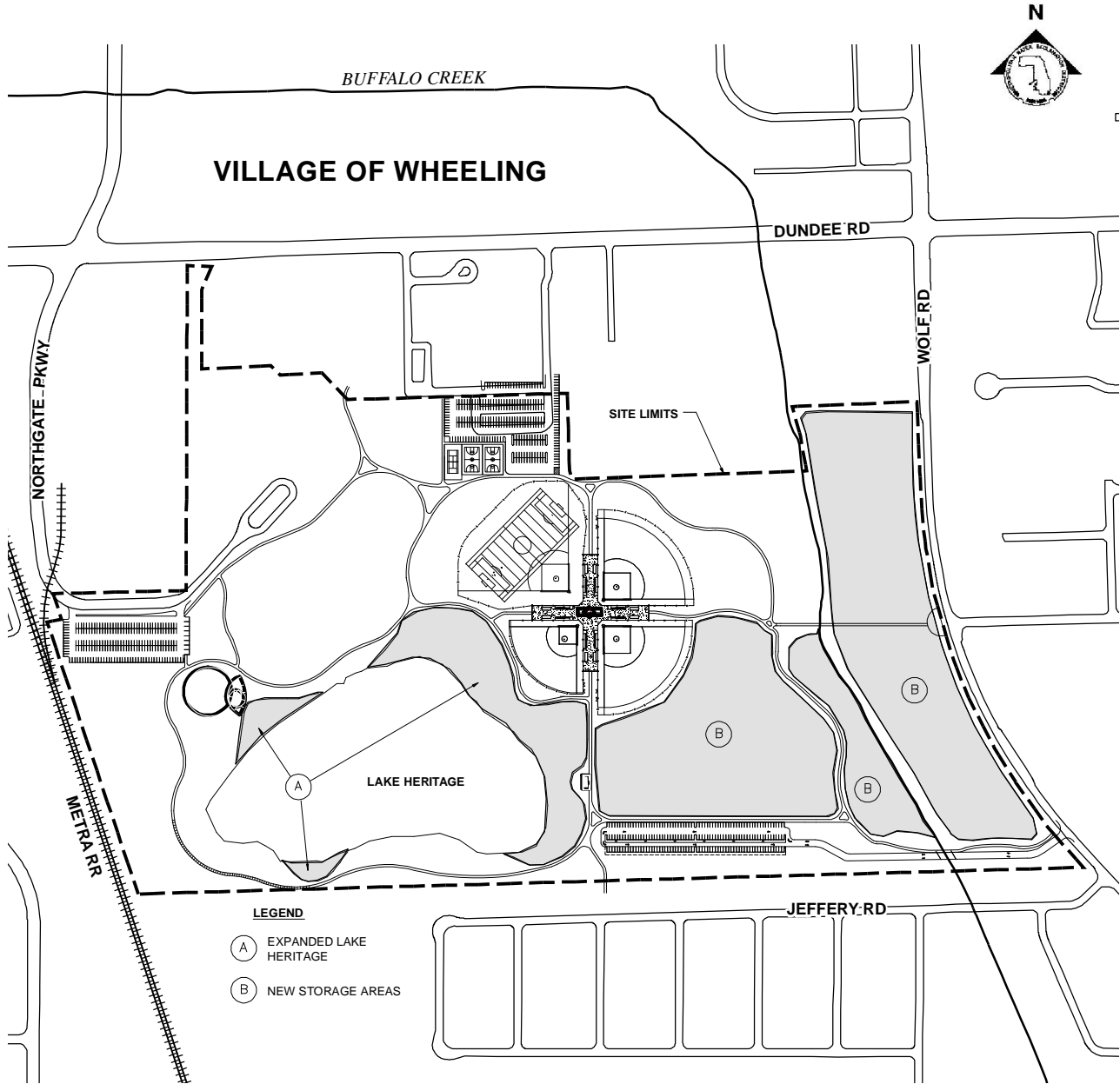


# STORMWATER MANAGEMENT PROJECT MAP 2011



Capital Improvement Projects			
No.	Project ID	Watershed	Project Status
1	SCAH-50	Upper Salt Creek	Preliminary Engineering
2	Heritage Park Regional Flood Control Facility	Des Plaines River	Final Design
3	IMTD-SE1	Calumet-Sag Channel	Preliminary Engineering
4	MEDT-1	Calumet-Sag Channel	Preliminary Engineering
5	OLCR-3	Calumet-Sag Channel	Preliminary Engineering
6	NVCR-3	Calumet-Sag Channel	Preliminary Engineering
7	TICR-3	Calumet-Sag Channel	Preliminary Engineering
8	TICR-SE1	Calumet-Sag Channel	Preliminary Engineering
9	CSTC-SE1	Calumet-Sag Channel	Preliminary Engineering
10	TICR-7	Calumet-Sag Channel	Preliminary Engineering
11	TICR-8	Calumet-Sag Channel	Preliminary Engineering
12	TICR-5	Calumet-Sag Channel	Preliminary Engineering
13	MTCR-G2	Little Calumet River	Preliminary Engineering
14	CUDD-G3	Little Calumet River	Preliminary Engineering
15	LCRW-G5	Little Calumet River	Preliminary Engineering
16	CHEB-G3	Little Calumet River	Preliminary Engineering
17	DRCR-G1	Little Calumet River	Preliminary Engineering
18	THCR-G2	Little Calumet River	Preliminary Engineering
19	PLCR-G1	Little Calumet River	Preliminary Engineering

# HERITAGE PARK FLOOD CONTROL FACILITY CONTRACT 09-365-5F



**HERITAGE PARK FLOOD CONTROL FACILITY  
(COMPENSATORY STORAGE FACILITY FOR LEVEE 37)  
FLOODWATER STORAGE & RECREATIONAL AMENITIES  
COST: \$30,000,000**