Metropolitan Water Reclamation District of Greater Chicago

Stormwater Management Program

2012 Annual Report



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Overview

The Metropolitan Water Reclamation District of Greater Chicago (MWRD) was granted stormwater management authority for Cook County with the passage of Public Act 93-1049 (Act) in November 2004. The framework of the MWRD'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 MWRD's Board of Commissioners in February 2007.

During 2012, the MWRD continued preliminary engineering and design work for several of the alternatives recommended by the Detailed Watershed Plans (DWPs), awarded the construction contract and started construction on the Heritage Park Flood Control Facility, continued work on the Small Streams Maintenance Program (SSMP), completed the second phase of the Economic Impact Study (EIS) for the draft Watershed Management Ordinance (WMO), and continued the rain barrel program. Further details concerning these items and other stormwater management activities are provided in this Annual Report.

Mission and Goals

Stormwater Management Mission Statement

The mission of the Stormwater Management Program is to protect the safety of Cook County's residents and minimize flooding damage by coordinating, planning, implementing, financing, and operating regional stormwater management projects, and to develop and enforce reasonable rules with respect to watershed development. The framework of the MWRD's countywide stormwater management program is presented in the Cook County Stormwater Management Plan (CCSMP).

2012 Accomplishments for the Stormwater Management Program include the following:

- Commenced design of recommended stormwater improvements, or alternatives, identified in the DWPs that were completed in 2011, including projects summarized in the Stormwater Management Activities section of the Annual Report;
- Continued design for the following projects:
 - Streambank stabilization projects on reaches of Tinley Creek, Midlothian Creek, I&M Canal Tributary, Melvina Ditch, Oak Lawn Creek, Calumet Union Drainage Ditch, Middle Fork and the West Fork of the North Branch of the Chicago River, Addison Creek, Higgins Creek, and McDonald Creek;
 - Flood control projects on reaches of Upper Salt Creek, Deer Creek, Tinley Creek, Navajo Creek, Cherry Creek East Branch, Addison Creek, Buffalo Creek, Des Plaines River, Flagg Creek Tributary B, Main Stem and the West Fork of the North Branch of the Chicago River, Skokie River and Farmers Prairie Creek;
- Completed the WMO Economic Impact Study (EIS) and continued work to implement the WMO:
- Awarded the construction contract and started construction on the Heritage Park Flood Control Facility;
- Continued the removal of debris and blockages from the 532 miles of small streams within the MWRD's service area as part of the Small Streams Maintenance Program (SSMP).

Stormwater Management Activities

Stormwater Management Capital Improvement Program

Capital improvement projects recommended for implementation by DWPs are separated into two categories: streambank stabilization and flood control. Projects given the highest priority for implementation are streambank stabilization projects which address streambank erosion posing an imminent threat to public safety and/or structures. Flood control projects will address regional flooding issues through traditional measures, such as stormwater detention reservoirs, levees, and conveyance improvements. Preliminary engineering and design of projects approved by the Board of Commissioners are underway and will continue into the future.

Streambank Stabilization Projects

The following is a detailed list of streambank stabilization projects. Streambank stabilization project locations are shown in Appendix A.

• TICR-8 (Tinley Creek)

Location: Orland Park

Description: Stabilize approximately 1,803 LF of Tinley Creek using a combination of retaining walls and bioengineering techniques.

Estimated Construction Cost: \$2,460,000

Status: Final DesignTICR-7 (Tinley Creek)

Watershed: Calumet-Sag Channel

Location: Orland Park

Description: Stabilize approximately 2,200 LF of Tinley Creek using a combination of

retaining walls and bioengineering techniques. Estimated Construction Cost: \$3,410,000

Status: Final Design

• OLCR-3 (Oak Lawn Creek)

Watershed: Calumet-Sag Channel

Location: Oak Lawn

Description: Stabilize approximately 1,070 LF of Oak Lawn Creek using concrete walls.

Estimated Construction Cost: \$3,130,000

Status: Final Design

• CUDD-G3 (Calumet Union Drainage Ditch)

Watershed: Little Calumet River

Location: Markham

Description: Stabilize approximately 3,559 LF of Calumet Union Drainage Ditch using

bioengineering techniques and provide conveyance improvements.

Estimated Construction Cost: \$2,970,000

Status: Final Design

MTCR-G2 (Midlothian Creek)

Watershed: Little Calumet River

Location: Tinley Park

Description: DWP recommended to stabilize Midlothian Creek at two locations: between

172nd Street and Oak Park Avenue and between Hickory Street and 66th Court.

Estimated Construction Cost: \$190,000

Status: Preliminary Engineering

• MEDT-1 (Melvina Ditch)

Watershed: Calumet-Sag Channel Location: Chicago Ridge, Oak Lawn

Description: Stabilize approximately 2,700 LF of Melvina Ditch.

Conceptual Cost Estimate: \$2,845,500

Status: Preliminary Engineering

• TICR-SE1 (Tinley Creek)

Watershed: Calumet-Sag Channel

Location: Crestwood

Description: Stabilize approximately 1,000 LF of Tinley Creek using gabions.

Estimated Construction Cost: \$1,213,320

Status: Final Design

• IMTD-SE1 (I&M Canal Tributary D)

Watershed: Calumet-Sag Channel

Location: Willow Springs

Description: Stabilize approximately 1,250 LF of I&M Canal Tributary D using a combination

of gabions and riprap.

Estimated Construction Cost: \$361,643

Status: Final Design

MF-06 (Middle Fork of the North Branch of the Chicago River)

Watershed: North Branch of the Chicago River

Location: Northfield

Description: Stabilize approximately 1,730 LF along the Middle Fork of the North Branch of

the Chicago River.

Conceptual Cost Estimate: \$1,610,000

Status: Design

MF-07 (Middle Fork of the North Branch of the Chicago River)

Location: Northfield

Watershed: North Branch of the Chicago River

Description: Stabilize approximately 1,205 LF along the Middle Fork of the North Branch of

the Chicago River.

Conceptual Cost Estimate: \$971.000

Status: Design

• WF-03 (West Fork of the North Branch of the Chicago River)

Watershed: North Branch of the Chicago River

Location: Northbrook

Description: Stabilize approximately 1,420 LF along the West Fork of the North Branch of

the Chicago River.

Conceptual Cost Estimate: \$2,022,000

Status: Design

• ADCR-9 (Addison Creek)

Watershed: Lower Des Plaines River

Location: North Riverside

Description: Stabilize approximately 580 LF along Addison Creek.

Conceptual Cost Estimate: \$219,000

Status: Design

ADCR-7 (Addison Creek)

Watershed: Lower Des Plaines River

Location: Northlake

Description: Stabilize approximately 1,010 LF along Addison Creek.

Conceptual Cost Estimate: \$809,000

Status: Design

• HGCR-1 (Higgins Creek)

Watershed: Lower Des Plaines River

Location: Des Plaines

Description: Stabilize approximately 210 LF along Higgins Creek.

Conceptual Cost Estimate: \$763,000

Status: Design

MDCR-5 (McDonald Creek)

Watershed: Lower Des Plaines River

Location: Mount Prospect

Description: Stabilize approximately 150 LF along McDonald Creek.

Conceptual Cost Estimate: \$798,000

Status: Design

HGCR-2 (Higgins Creek)

Watershed: Lower Des Plaines River

Location: Unincorporated Elk Grove Township

Description: Stabilize approximately 400 LF along Higgins Creek.

Conceptual Cost Estimate: \$1,375,293 Approved for Design on August 11, 2011

Status: Design

Flood Control Projects

The following is a detailed list of flood control projects. Flood control project locations are shown in Appendix B.

• CHEB-G3 (Cherry Creek)

Watershed: Little Calumet River

Location: Homewood

Description: Construct 900 LF of new open channel on the west side of Governors Highway,

create a flood shelf in the existing channel, and add culverts.

Estimated Construction Cost: \$3,017,900

Status: Final DesignTICR-5 (Tinley Creek)

Watershed: Calumet-Sag Channel Location: Orland Hills, Orland Park

Description: Dredge 1,500 LF of Tinley Creek downstream of Lake Lorin and remove

existing low flow pipe.

Estimated Construction Cost: \$172,900

Status: Final Design

• SCAH-50 (Upper Salt Creek)

Watershed: Upper Salt Creek

Location: Palatine

Description: Construct 1,200 LF of conveyance improvements.

Estimated Construction Cost: \$962,000

Status: Final Design

• TICR-3 (Tinley Creek)

Watershed: Calumet-Sag Channel

Location: Alsip, Crestwood, and Unincorporated Cook County

Description: Increase conveyance capacity along 2,000 LF of Tinley Creek.

Estimated Construction Cost: \$2,572,800

Status: Final Design

• NVCR-3 (Navajo Creek)

Watershed: Calumet-Sag Channel

Location: Palos Heights

Description: Raise bike trail 3 ft to provide additional storage in Lake Arrowhead.

Estimated Construction Cost: \$589,200

Status: Final Design

DRCR-G1 (Deer Creek)

Watershed: Little Calumet River

Location: Ford Heights

Description: Increase channel conveyance and raise berm for 3,000 LF.

Estimated Construction Cost: \$4,644,000

Status: Final Design

FGTB-1 (Flagg Creek Tributary B)

Watershed: Lower Des Plaines River Location: Burr Ridge, Lyons Township

Description: Construct channel improvements, new outfall and provide mitigation storage.

Conceptual Cost Estimate: \$816,000 Status: Preliminary Engineering

• ADCR-6B (Addison Creek)

Watershed: Lower Des Plaines River

Location: Northlake, Stone Park, Melrose Park, Bellwood, and Westchester Description: Construct a 960 ac-ft reservoir and conveyance improvements.

Conceptual Cost Estimate: \$133,921,000

Status: Preliminary Engineering

• DPR-13 (Des Plaines River)

Watershed: Lower Des Plaines River

Location: Riverside and Riverside Township Description: Construct a 4,300 LF floodwall. Conceptual Cost Estimate: \$14,481,000

Status: Preliminary Engineering

• BUCR-1B (Buffalo Creek)

Watershed: Lower Des Plaines River Location: Buffalo Grove and Wheeling

Description: Construct conveyance improvements and partial bulk-head to provide flood

storage.

Conceptual Cost Estimate: \$613,000 Status: Preliminary Engineering

MS-10 (Main Stem of the North Branch of the Chicago River)

Watershed: North Branch of the Chicago River

Location: Chicago (Albany Park)
Description: Construct a floodwall.
Conceptual Cost Estimate: \$16,402,000
Status: Approved for Preliminary Engineering

SR-08 (Skokie River)

Watershed: North Branch of the Chicago River

Location: Northfield

Description: Construct a levee on both sides of Interstate 94.

Conceptual Cost Estimate: \$5,761,000
Status: Approved for Preliminary Engineering

WF-06 (West Fork of the North Branch of the Chicago River)

Watershed: North Branch of the Chicago River

Location: Northbrook, Glenview, Golf, and Unincorporated Cook County

Description: Construct an additional 1,100 ac-ft of storage to expand Techny Reservoir 32A.

Conceptual Cost Estimate: \$116,088,000

Status: Preliminary Engineering

• FRCR-12(Farmers Prairie Creek).

Watershed: Lower Des Plaines River

Location: Park Ridge, Des Plaines, Niles, and Maine Township

Description: Construct conveyance improvements, pump station, additional storage, and a

new force main.

Conceptual Cost Estimate: \$19,788,000

Status: Preliminary Engineering

Heritage Park Flood Control Facility

While the DWPs were being developed, the MWRD considered funding projects that would provide regional benefits as identified in studies performed by regional agencies such as the Illinois Department of Natural Resources/Office of Water Resources (IDNR-OWR) and the United States Army Corps of Engineers (USACE). One such project is the Heritage Park Flood Control Facility, which will provide the required compensatory storage for USACE's Levee 37 project along the Des Plaines River. In 1999, the USACE approved a study for the Upper Des Plaines River from the Wisconsin/Illinois state line to Riverside, Illinois. Known as the Des Plaines River Phase I Study, its purpose is to identify solutions to flooding along the main stem of the river. Subsequently, the MWRD began negotiations with the Wheeling Park District and the Village of Wheeling for the use of Heritage Park in Wheeling as the site of the compensatory storage required for Levee 37. The MWRD entered into an intergovernmental agreement with the Wheeling Park District and the Village of Wheeling on April 1, 2010, and final design of the Heritage Park Flood Control Facility commenced shortly thereafter. Final design was completed in 2011, and a construction contract was awarded in 2012 for \$29.5 million. Construction is currently underway and is anticipated to be completed in 2014. The project includes an expansion to the existing stormwater detention reservoir known as Lake Heritage, excavation of new floodwater storage areas east and west of Buffalo Creek, and passive and active recreation components. An exhibit depicting the Heritage Park Flood Control Facility is provided in Appendix C.

Small Streams Maintenance Program (SSMP)

The 2012 Small Streams Maintenance Program (SSMP) successfully concluded the sixth full year of operation. This program, conceived and established in 2006, follows the MWRD's stormwater management mission to relieve flooding in urbanized areas through immediate and relatively simple remedies. The objective of the program is to remove obstructions and debris in the waterways that impede the natural drainage of Cook County's small streams and rivers with the potential for flooding urban areas.

In November 2012, the MWRD awarded a new two-year stream maintenance contract. The MWRD paid a total of \$1,855,977.80 in 2012 to contractors to provide stream maintenance. The SSMP is advertised on the MWRD's website and includes a link to allow citizens to report stream blockages. Throughout the year, the SSMP staff attended Watershed Planning Councils (WPCs) meetings, Councils of Governments (COGs) meetings, and local public works meetings to provide an overview of the program's purpose, objectives, and goals. The local municipalities enthusiastically assisted in identifying blockages, stream deficiencies, and sensitive areas within their jurisdictions. Their communication with the MWRD is ongoing and valuable to the success of the program. MWRD staff also contacted representatives of the various WPCs and COGs, along with contacting local public works officials and citizens directly to coordinate the work.

MWRD staff and contractor crews removed approximately 23,392 cubic yards of debris in 2012. Included in the debris total was 2,917 cubic yards of river and canal debris removed by the MWRD's debris and pontoon boat crews along the Chicago Area Waterways (CAWS). Listed in the table below are the amounts removed in each watershed.

Watershed	2010 Cubic Yards	Cubic Yards 2011 Cubic Yards 2012 Cubic Yards	
	Removed	Removed	Removed
Little Cal	6,472	9,526	5,564
Cal Sag	9,489	3,195	7,414
Lower Des Plaines	10,832	12,874	5,310
North Branch	4,692	4,338	4,313
Upper Salt Creek	1,585	645	590
Poplar Creek	1,651	184	201
Total	34,721	30,762	23,392

In 2012, local municipalities provided valuable assistance in debris removal by providing barricades, flagmen, trucks, various equipment, road control, and debris disposal of approximately 2,028 cubic yards, saving the MWRD approximately \$48,000.

The SSMP will continue in 2013 at a contract budget value of \$2,500,000. It is anticipated that 35,000 cubic yards of debris will be removed from streams and rivers in 2013. Major goals include standardizing procedures, identifying critical stream areas, scheduling critical inspections, and continuing to introduce the MWRD's Small Stream crews to local governments to increase the public's awareness of the MWRD's presence and execution of the SSMP.

The total 2012 expenditure for the SSMP program was \$3,354,567. Therefore, the average cost per cubic yard was \$143.40.

Watershed Management Ordinance

The goal of the Watershed Management Ordinance (WMO) is to establish uniform, minimum, countywide stormwater management regulations throughout Cook County. Components which may be regulated under the WMO include drainage and detention, floodplain management, wetland protection, stream habitat, and riparian environment protection, soil erosion and

sediment control, and water quality. A draft WMO was released for public comment in 2009 and six public hearings were conducted throughout Cook County. At the request of various Cook County Municipalities and stakeholders, the MWRD conducted an Economic Impact Study (EIS) of the draft WMO. The purpose of the EIS was to estimate the economic effect the draft WMO may have on real estate development in Cook County. The MWRD conducted the EIS in two components: an engineering analysis and a real estate economic impact analysis. The MWRD concluded the EIS in November of 2012. Final reports for both the engineering analysis and real estate economic impact analysis are accessible through www.mwrd.org. The MWRD intends to publish an updated draft WMO for public review and comment in the second quarter of 2013. Shortly thereafter, the MWRD intends to present the draft WMO to its Board of Commissioners for consideration and adoption.

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

The MWRD 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 near 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 MWRD 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. A map showing the location of the gages is presented in Appendix D.

Coordination with Watershed Planning Councils (WPCs)

The Act required the formation of WPCs, which serve as advisory bodies to the MWRD for its stormwater management program. Membership in the 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 MWRD, 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 MWRD.

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 MWRD negotiated

agreements with each of the COGs to provide administrative assistance related to coordination of the WPCs; the current agreement was renewed for 2012 and 2013. In 2012, the COGs assisted the MWRD by arranging meeting schedules, drafting and distributing meeting agendas, distributing information from the MWRD to WPC members, assembling contact information for WPC representatives, and forwarding information about stormwater management concerns from the WPC members to the MWRD.

Rain Barrel Program

The MWRD introduced a Rain Barrel Program in 2007 and 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 in 2012, and for the first time, included home delivery. The cost for a rain barrel was \$58. Individuals are able to order up to two rain barrels per household each year. Municipalities within the MWRD boundaries are also able to purchase up to 40 rain barrels, which are then sold to their residents. As a result of an advertising campaign, the MWRD sold 707 rain barrels in 2012. The rain barrel program will continue in 2013, and the MWRD is anticipating an increase in sales to approximately 1,000.

Public Affairs

In 2012, MWRD staff provided information about the Stormwater Management Program at various public events in communities throughout the region and at various technical conferences. The MWRD 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 MWRD. The MWRD also produced a SSMP newsletter, "Small Streams, Big Accomplishments", which was made available at WPC meetings and was posted on the MWRD's website. The MWRD also organized press conferences related the Heritage Park Flood Control Project and worked to educate the general public on their water footprint by attending 47 community and environmental fairs. The 2012 Stormwater Management related press releases are listed in Appendix F.

MWRD Staff will continue to participate in community outreach events and provide rain barrel giveaways through the Water Environment Pledge initiative in 2013. The MWRD will continue to participate in Watershed Planning Council meetings, create the "Small Streams, Big Accomplishments" newsletter and continue to promote the MWRD stormwater management efforts using press releases and other media outlets.

Appendices

Appendix A Streambank Stabilization Projects

Appendix B Flood Control Projects

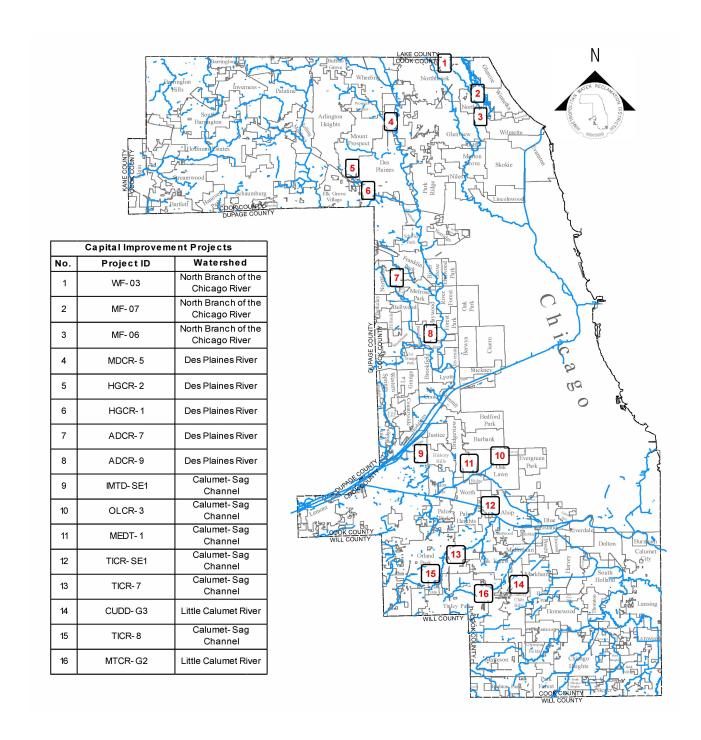
Appendix C Heritage Park Flood Control Facility

Appendix D MWRD and USGS Joint Funded Stream Gages

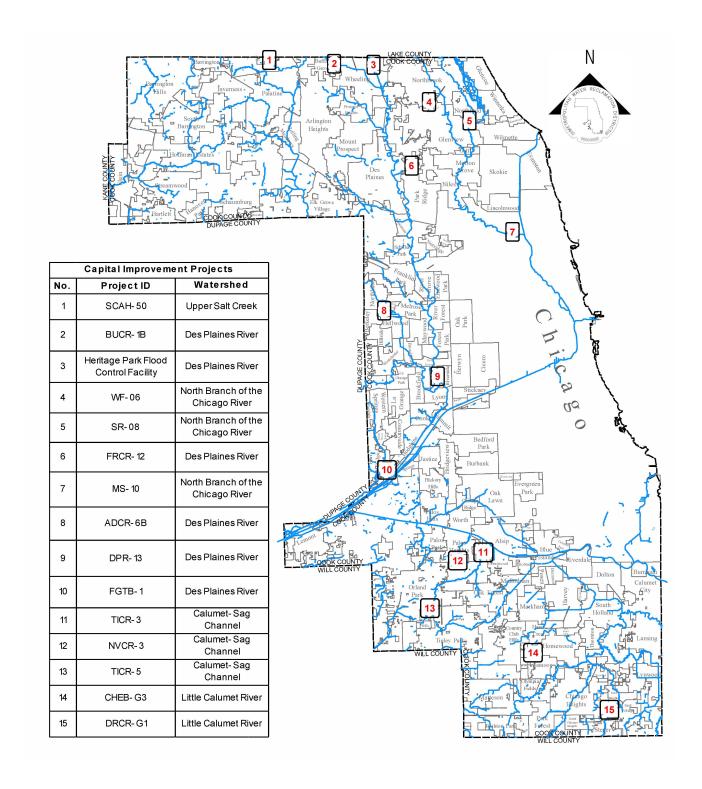
Appendix E Stormwater Expenditures

Appendix F Stormwater Management Related Press Releases

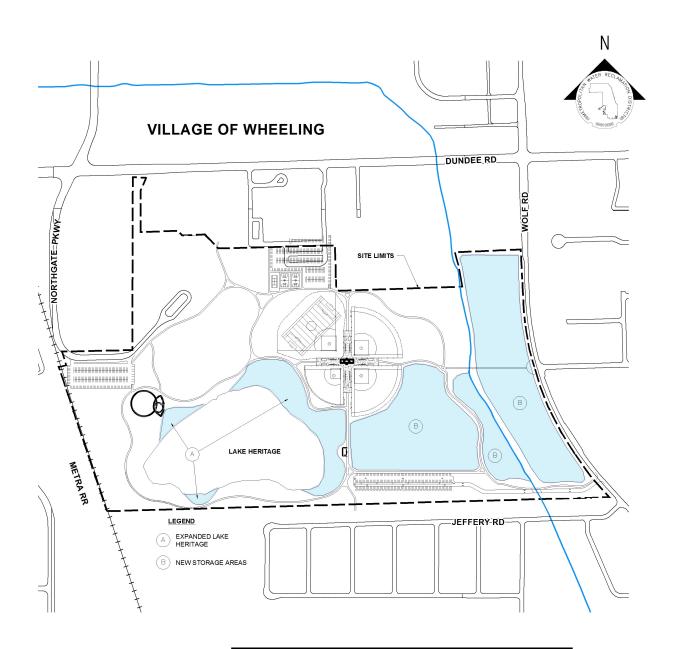
Appendix A - Stream Bank Stabilization Projects



Appendix B - Flood Control Projects

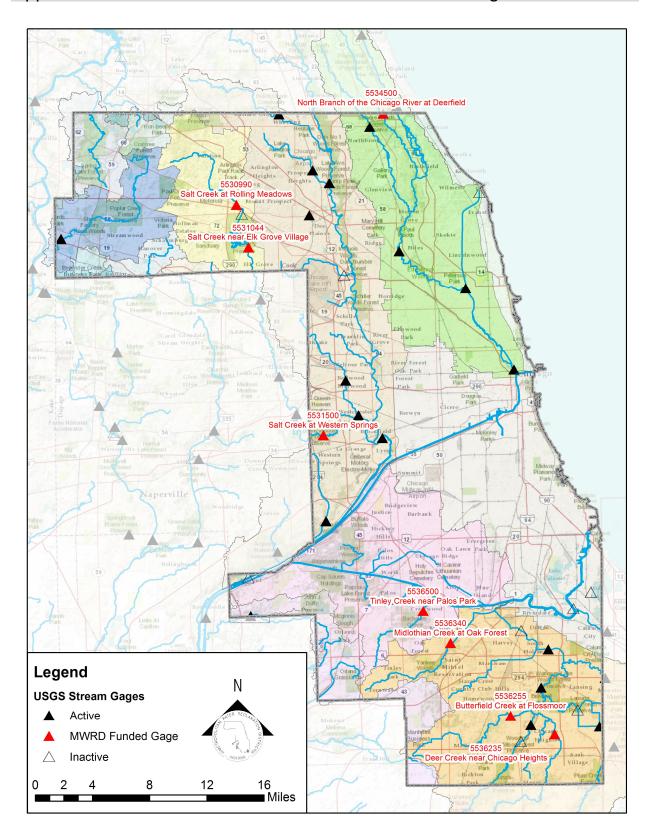


Appendix C - Heritage Flood Control Facility



HERITAGE PARK FLOOD CONTROL FACILITY (COMPENSATORY STORAGE FACILITY FOR LEVEE 37) AWARDED IN 2012 COST: \$29,475,000

Appendix D - MWRD and USGS Joint Funded Stream Gages



Appendix E - Expenditures

Category	Description		2012
		Expenditures	
Personal Services: Consultant	Fees paid to consultants for professional services rendered, including the following projects:	\$	5,418,850
	Preliminary and Final Engineering	\$	5,033,554
	Post Award	\$	315,616
	Heritage Park Flood Control Facility Final Design	\$	31,745
	Heritage Park Flood Control Facility Legal Services	\$	12,435
	SSMP GIS Implementation	\$	25,500
Personal Services: In-House	Salaries and associated costs related to MWRD personnel:	\$	4,408,073
	Engineering Department	\$	1,527,200
	Maintenance and Operations Department	\$	2,880,873
Contractual Services	Fees paid for services provided by COGs, agencies or companies, including the following:	\$	6,938,800
	COGs Administrative Contracts:	\$	
	Northwest Municipal Conference	\$	4,855
	South Suburban Mayors and Managers Association	\$	4,240
	Southwest Conference of Mayors	\$	13,924
	West Central Municipal Conference	\$	11,040
	Small Streams Maintenance Program	\$	1,855,978
	Small Streams Maintenance Program Waste Disposal	\$	51,252
	Court Reporting Services	\$	8,835
	USGS Joint Funding Agreement for Stream Gaging Stations in Cook County	\$	70,985
	Streetscape and Sustainability Design Program	\$	60,000
	Heritage Park Flood Control Facility Land Acquisition	\$	84,851
	Waterways Facilities Structures	\$	4,545,436
	Repairs to Collection Facilities	\$	183,848
	Miscellaneous Contractual Services	\$	43,556
Administrative Expenses	Materials, equipment and supplies:	\$	15,791
	Total 2012 Expenditures	\$	16,781,514

Appendix F - 2012 Stormwater Management Related Press Release

April 16	MWRD and Gompers Fine Art Option students to celebrate Earth month by painting rain barrels
April 17	Rain barrels draw attention to water collection during Earth Week; MWRD, Shedd Aquarium and Gompers School use artistic flair
May 8	Roll out the (rain) barrel! MWRD announces newly improved rain barrel sales program
May 31	Heritage Park stormwater facility groundbreaking set for June 4
June 6	MWRD, federal, state and local officials break ground on flood control facility
June 6	Irish American Heritage Center, Shamrock Kids Club paint rain barrels, plant seeds to promote conservation
June 20	Buffalo Grove to host first environmental green fair; MWRD to give away a rain barrel
June 21	MWRD to give away a rain barrel at the Green Music Fest in Wicker Park
July 2	Act now to prevent basement backups later; Limit use of water prior to and during storms
August 29	Free delivery improves residents' access to rain barrels in Cook County; Drought season increases need
October 11	MWRD Commissioner Debra Shore helps unveil "Greenest street in America"
October 16	MWRD Commissioner Mariyana Spyropoulos explains flood prevention methods during environmental panel
October 16	MWRD's David St. Pierre invited to participate on national stormwater management panel at White House
October 23	U.S. Senator Durbin, officials inspect Heritage Park Flood Control Facility construction site
November 1	Governor Pat Quinn, partners announce completion of Hofmann Dam removal on Des Plaines River
November 26	Riverbank Neighbors, environmental groups and MWRD discuss streambank improvements for north branch of Chicago River
November 28	"Small Streams, Big Accomplishments" newsletter highlights efforts to keep waterways clear and prevent flooding