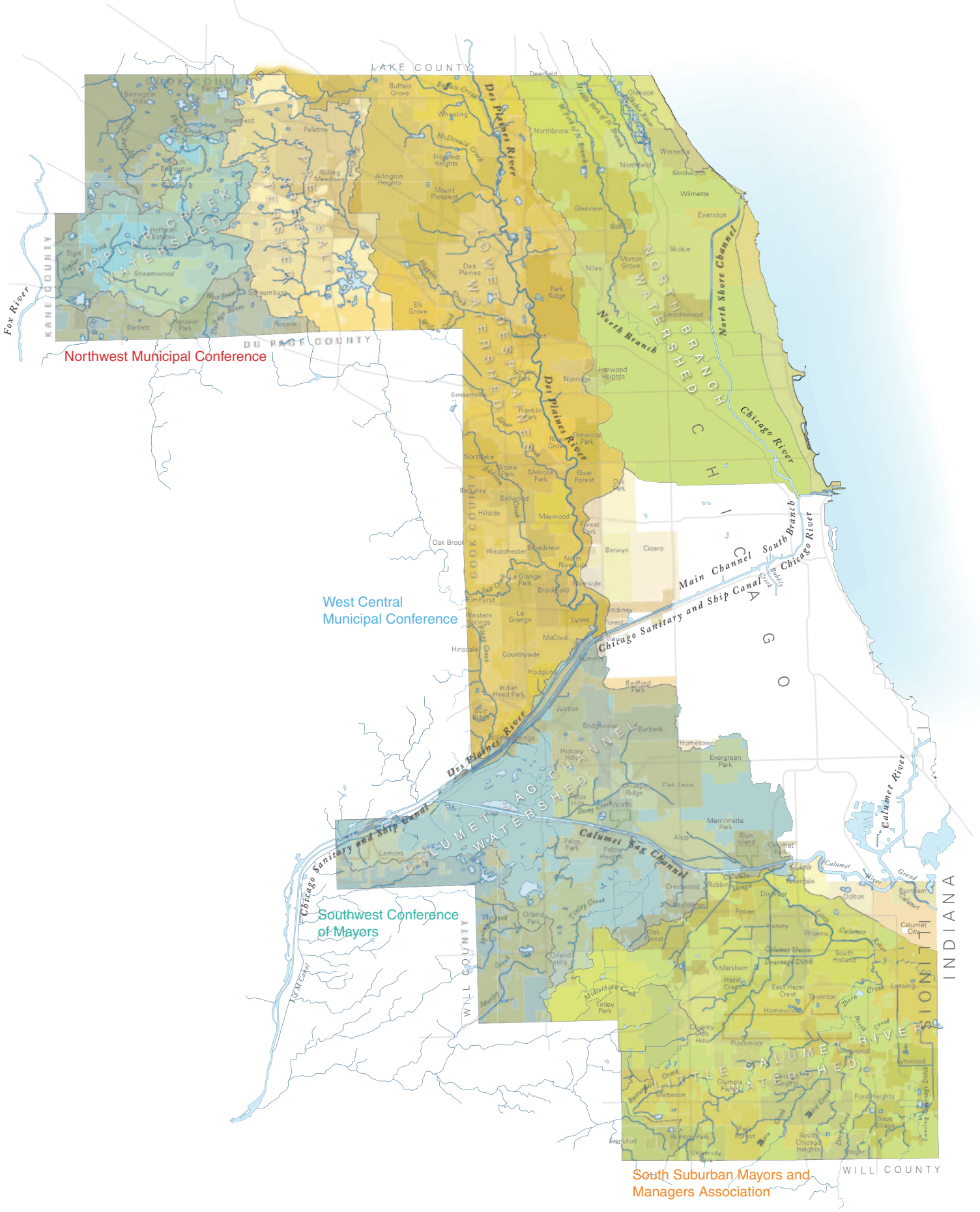
2011 Annual Report

Stormwater Management Program

Metropolitan Water Reclamation District of Greater Chicago

Cook County, Illinois

Watersheds, Waterways, Municipalities, and Major Facilities of the Metropolitan Water Reclamation District



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Streambank Erosion Repair
Severe erosion that threatened several homes was identified along Calumet-Sag Channel Tributary C, located near the intersection of 143rd Place and Billy Casper Lane in Midlothian and was addressed by the MWRD Maintenance and Operations Department's Small Streams Maintenance Program in summer of 2011.

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.

Find out more about the MWRD's Stormwater Management at **http://stormwater.mwrd.org.**

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.

In the past year, the MWRD 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), completed design for the Heritage Park Flood Control Facility, initiated preliminary and final 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. Further details concerning these items and other stormwater management activities are included in this Annual Report.

Streambank Erosion
Severe erosion along Tinley Creek, south of Calumet-Sag Road (Route 83) in Crestwood, threatens several structures including some municipal infrastructure and is a safety issue for a nearby playground. Preliminary engineering for a capital improvement project (TICR-SE1) was completed in 2011 and plans and specifications are now being developed.

2011 Accomplishments

Completion of the North Branch of the Chicago River and Lower Des Plaines River DWPs, which constituted completion of all DWPs for the established watersheds of Cook County

Conclusion of preliminary engineering for the following projects:

Streambank stabilization projects on reaches of Tinley Creek (TICR-7, TICR-8 and TICR-SE1), Midlothian Creek (MTCR-G2), I&M Canal Tributary D (IMTD-SE1), Calumet-Sag Channel Tributary C (CSTC-SE1), Melvina Ditch (MEDT-1), Oak Lawn Creek (OLCR-3), and Calumet Union Drainage Ditch (CUDD-G3)

Flood control projects on reaches of Upper Salt Creek (SCAH-50), Deer Creek (DRCR-G1), Tinley Creek (TICR-3 and TICR-5), Navajo Creek (NVCR-3), Thorn Creek (THCR-G2), Plum Creek (PLCR-G1), Little Calumet River (LCW-G5), and Cherry Creek East Branch (CHEB-G3)

Initiation of preliminary engineering and design for the following projects:

Streambank stabilization projects on reaches of the Middle Fork (MF-06 and MF-07) and the West Fork (WF-03) of the North Branch of the Chicago River, Addison Creek (ADCR-7 and ADCR-9), Higgins Creek (HGCR-1 and HGCR-2), McDonald Creek (MDCR-5), and Poplar Creek (PCMS-3, PCMS-4, and PCMS-5)

Flood control projects on reaches of Addison Creek (ADCR-6B), Buffalo Creek (BUCR-1B), Des Plaines River (DPR-13), Flagg Creek Tributary B (FGTB-1), Main Stem (MS-10) and the West Fork (WF-06) of the North Branch of the Chicago River, Skokie River (SR-08), and Farmers Prairie Creek (FRCR-12)

Initiation of an economic analysis, the second phase of the Economic Impact Study, for the draft WMO

Initiation of final design for the following projects:

Streambank stabilization on reaches of Tinley Creek (TICR-7, TICR-8, and TICR-SE1), Midlothian Creek (MTCR-G2), I&M Canal Tributary D (IMTD-SE1), Oak Lawn Creek (OLCR-3), and Calumet Union Drainage Ditch (CUDD-G3)

Flood control projects on reaches of Upper Salt Creek (SCAH-50), Deer Creek (DRCR-G1), Tinley Creek (TICR-3 and TICR-5), Navajo Creek (NVCR-3), and Cherry Creek East Branch (CHEB-G3)

Completion of the design of the Heritage Park Flood Control Facility

Continuation of the SSMP with the objective of removing debris and blockages from the 532 miles of small streams within the MWRD's service area

Summit-Lyons Conduit
In 2011, the SSMP crews improved a section of the drainage in an unnamed tributary to the Des Plaines River near Lawndale Avenue in Summit. The crews removed about 4,400 cubic yards of debris and invasive buckthorn. The area was then reseeded with a native grass seed mix for bank stabilization.
Left: January 2011, before the improvements Right: July 2011, after the improvements were completed and the grasses germinated.

Capital Projects

DWP Capital Improvement Projects

Capital improvement projects emanating from the 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 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. A listing of streambank stabilization projects is provided in Appendix A, and flood control projects can be found in Appendix B. Locations of these projects can be found online at http://gispub.mwrd.org/ecp.

Heritage Park Flood Control Facility

While DWPs were being developed, the MWRD considered funding projects that would provide regional benefits and had been studied 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 under development by the MWRD 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 was to identify solutions to flooding along the main stem of the Des Plaines 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 construction is anticipated to begin in 2012. A detailed exhibit can be found in Appendix C.

Flooding Along Kennedy Avenue in Ford Heights

DRCR-G1 is currently being designed as part of the MWRD's Stormwater Management Capital Improvement Program to prevent flooding along Kennedy Lane in Ford Heights. Photo: Looking north along Kennedy Lane on September 14, 2008. Southern Cook County experienced over 7 inches of rain between September 12-14, 2008.

Rain Barrels
MWRD personnel Charles Oden, Sally Yagol, and Karla Lopez provide rain barrels to members of the community at one of the MWRD's rain barrel distribution events at the Stickney WRP.

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 through 2011. The cost per rain barrel was $51. Municipalities within the MWRD's corporate limits may also purchase rain barrels for resale to their residents. The MWRD aggressively advertises this program and over 1,400 rain barrels were sold in 2011. The program has been modified for 2012. Rain barrels will now be delivered rather than requiring residents to travel to one of the MWRD's four distribution locations. With this change, the MWRD is anticipating an increase in sales to approximately 3,500 rain barrels in 2012.

Find out more about MWRD rain barrels at **http://rainbarrel.mwrd.org.**

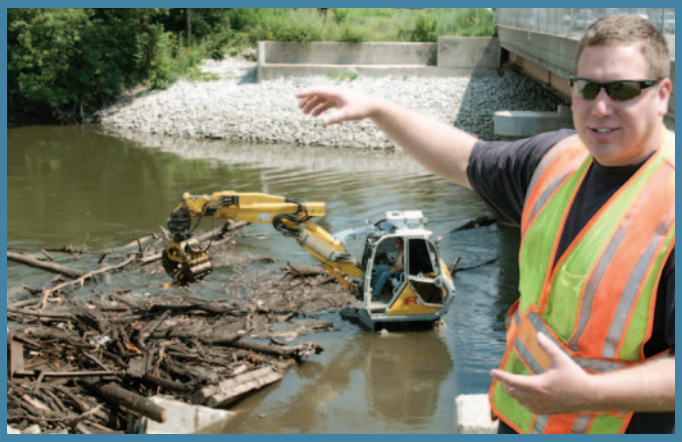
Watershed Management Ordinance

The goal of the 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. Subsequent to concerns raised during the public review process and at the request of the Cook County municipal conferences, an Economic Impact Study (EIS) for the draft WMO was initiated. The EIS will evaluate economic impacts the proposed regulations could have on development projects and is being conducted in two phases: an engineering analysis and economic analysis. The engineering analysis phase was completed in 2011 and the economic analysis portion will conclude in 2012. Upon completion of the EIS, the Board of Commissioners will determine if any modifications to the WMO are warranted prior to consideration for adoption.

Small Streams Maintenance Program

The SSMP successfully concluded its fifth full year of operation in 2011. Established in 2006, the SSMP's goal is to reduce flooding in urbanized areas by removing debris in waterways within the MWRD's service area, that impedes the natural drainage of small streams and rivers. In order to attend to stream maintenance issues in a timely manner, the MWRD hired contractors to assist MWRD staff with stream maintenance operations. In 2011, the MWRD utilized $2,199,678.54 in services from contractors. Stream blockages are reported to the MWRD by contacting the SSMP program coordinator directly or online through the MWRD's website. In 2011, 33 requests for small stream cleaning were submitted online. Each reported issue was evaluated and prioritized based on its potential to cause flooding near businesses, residences and roads. MWRD crews and contractors removed approximately 30,762 cubic yards of debris in 2011. Included in the total is 3,808 cubic yards of river and canal debris removed by the MWRD'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 4,685 cubic yards of debris were disposed by local municipalities, which allowed the MWRD to provide an additional $102,000 of SSMP services. The total 2011 expenditure for the SSMP program was $3,958,325.36, for an average cost of $128.68 per cubic yard.

It is anticipated that 35,000 cubic yards of debris will be removed from streams and rivers in 2012. 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 MWRD's presence and execution of the SSMP. The MWRD will again retain a contractor to assist in removal of the debris; the estimated contract value is $2.5 million.



Report a waterway blockage or **request stream cleaning** at http://apps.mwrd.org/debris/debrisrequest.aspx or call 708.588.3171.

Cubic Yards of Debris Removed by the Small Streams Maintenance Program

	2009	2010	2011
Little Calumet River Watershed	9,330	6,472	9,526
Calumet-Sag Channel Watershed	9,890	9,489	3,195
Lower Des Plaines River Watershed	11,065	10,832	12,874
North Branch Chicago River Watershed	11,460	4,692	4,338
Upper Salt Creek Watershed	370	1,585	645
Poplar Creek Watershed	2,650	1,651	184
Total	**44,765**	**34,721**	**30,762**

Green Infrastructure Program

The effort toward sustainable practices is directed at all levels of operations, including grass-roots efforts such as native prairie landscaping, rain gardens, and rain barrels. To further the pursuit of sustainable practices, the MWRD's Board of Commissioners approved the development of a Green Infrastructure Program on September 1, 2011. The program will facilitate the planning, design, and construction of multiple green infrastructure projects throughout Cook County in partnership with a variety of stakeholders. Program framework and guidelines are being developed during 2012 in collaboration with stakeholders.

The Permeable Paver Lot at the Stickney WRP

Stickney Water Reclamation Plant Test Permeable Pavement

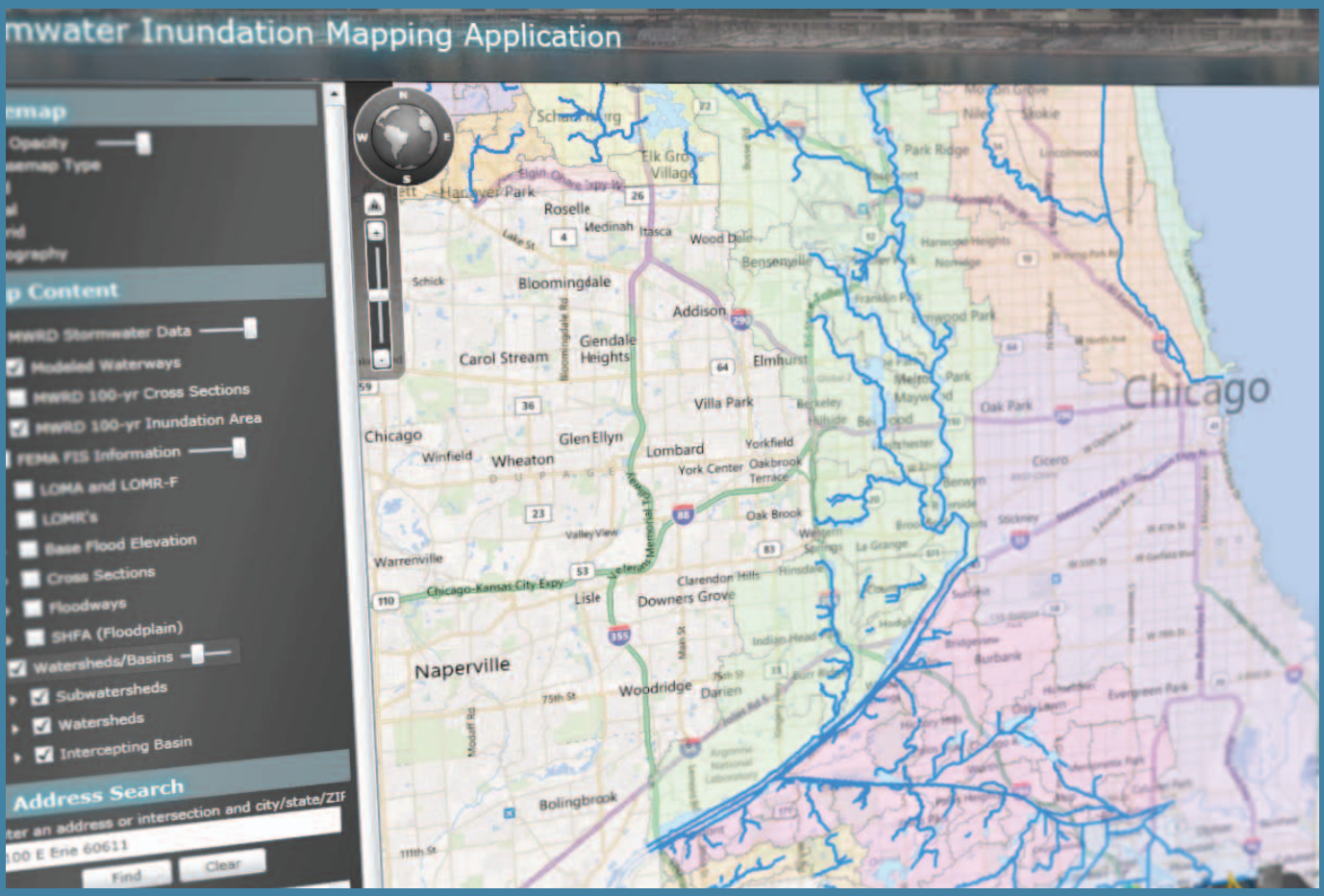
The construction of a permeable pavement parking lot at the Stickney WRP was completed in 2009. The lot utilized three pervious pavement technologies: porous asphalt, porous concrete and permeable pavers (pictured above). Since then, the MWRD's Monitoring and Research Department has been collecting water quality and runoff data for evaluation. 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 management measure.

Stream Gaging Stations

The MWRD entered into a Joint Funding Agreement with the United States Geological Survey (USGS) in 2006 and has renewed the agreement annually to fund the maintenance and operation of eight stream gages located within Cook County.

The streamflow data collected at these sites by the USGS will be added to streamflow data collected at other sites that are funded by the USACE and IDNR-OWR under similar joint funding agreements. The MWRD's participation in this USGS program helps provide the necessary funds for maintaining the records at gage locations. The data from the streamflow gaging stations has proven useful for the MWRD in calibration of the hydrologic and hydraulic models used in 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, www.usgs.gov.

As part of the MWRD's continued support of the maintenance and operation of eight streamflow gaging stations and one rain gage in Cook County, the MWRD plans to renew an agreement to jointly fund gages with the USACE, the IDNR-OWR, and the USGS in the fall of 2012. A map showing the location of the gages is located in Appendix D.



Inundation Mapping Application

The MWRD utilized data acquired during development of DWPs for the six major watersheds of Cook County to create an online Stormwater Inundation Mapping Application (SWIMA). A DWP was completed for each of the following watersheds within Cook County: Calumet-Sag Channel, Little Calumet River, Lower Des Plaines River, North Branch of the Chicago River, Poplar Creek and Upper Salt Creek. DWPs identify regional stormwater management concerns and provide conceptual level projects to potentially address identified problems. To facilitate this effort, MWRD needed reliable hydrologic and hydraulic (H&H) modeling. Hydrology were modeled with HEC-HMS and hydraulics was modeled in HEC-RAS. The starting point for the land-use data was the Chicago Metropolitan Agency for Planning's 2001 Land Use Dataset and 2005 USGS aerial photography. Multiple coordination meetings were held with local stakeholders to ensure accuracy in assumptions used in the modeling. Extensive surveying was also completed to ensure accuracy of the H&H models. Multiple storm events were used for calibration, including the September 12-14, 2008 storm (remnants of Hurricane Ike). Inundation maps were developed using HEC-GeoRAS with 2-foot contours provided by Cook County. Model specific details can be obtained from the DWP reports available at http://stormwater.mwrd.org.

SWIMA was developed as an informational tool that allows users to conveniently view DWP inundation areas along with FEMA National Flood Hazard Area information within Cook Couty Illinois. It is not meant to be used in determining regulatory base flood elevations. The goal of the tool is to provide the MWRD's inundation mapping alongside FEMA's information so that the public is aware of available modeled flood risk information. The application can be accessed at http://gispub.mwrd.org/swima/.

SWIMA was built using ArcGIS API for Silverlight with ArcGIS Server. The background maps, aerial photography and search functionality are provided by Microsoft's Bing. The MWRD stormwater layers are served locally, but the FEMA layers are provided in real time by utilizing FEMA National Flood Hazard Layer Web Map Services. The application has basic pan and zoom features with address search and layer control functionality. In addition, the application allows for easy printing of the Cook County Inundation Maps. The application was developed by MWRD's Engineering and Information Technology Departments.

Public Outreach

Left: MWRD engineer Christina Schroeder explains the preliminary engineering design of a capital improvement project on the Calumet Union Drainage Ditch at a public meeting in East Hazel Crest. Right: The MWRD's "Small Streams, Big Accomplishments" Newsletter.

Watershed Planning Councils

The Act required the formation of Watershed Planning Councils (WPCs), which serve as advisory bodies to the MWRD 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 MWRD, established WPCs for the watersheds of the North Branch of the Chicago River, Lower Des Plaines River, Calumet-Sag Channel, 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 previous agreements expired at the end of 2011. New agreements were negotiated and approved for 2012/13. In 2011, 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.

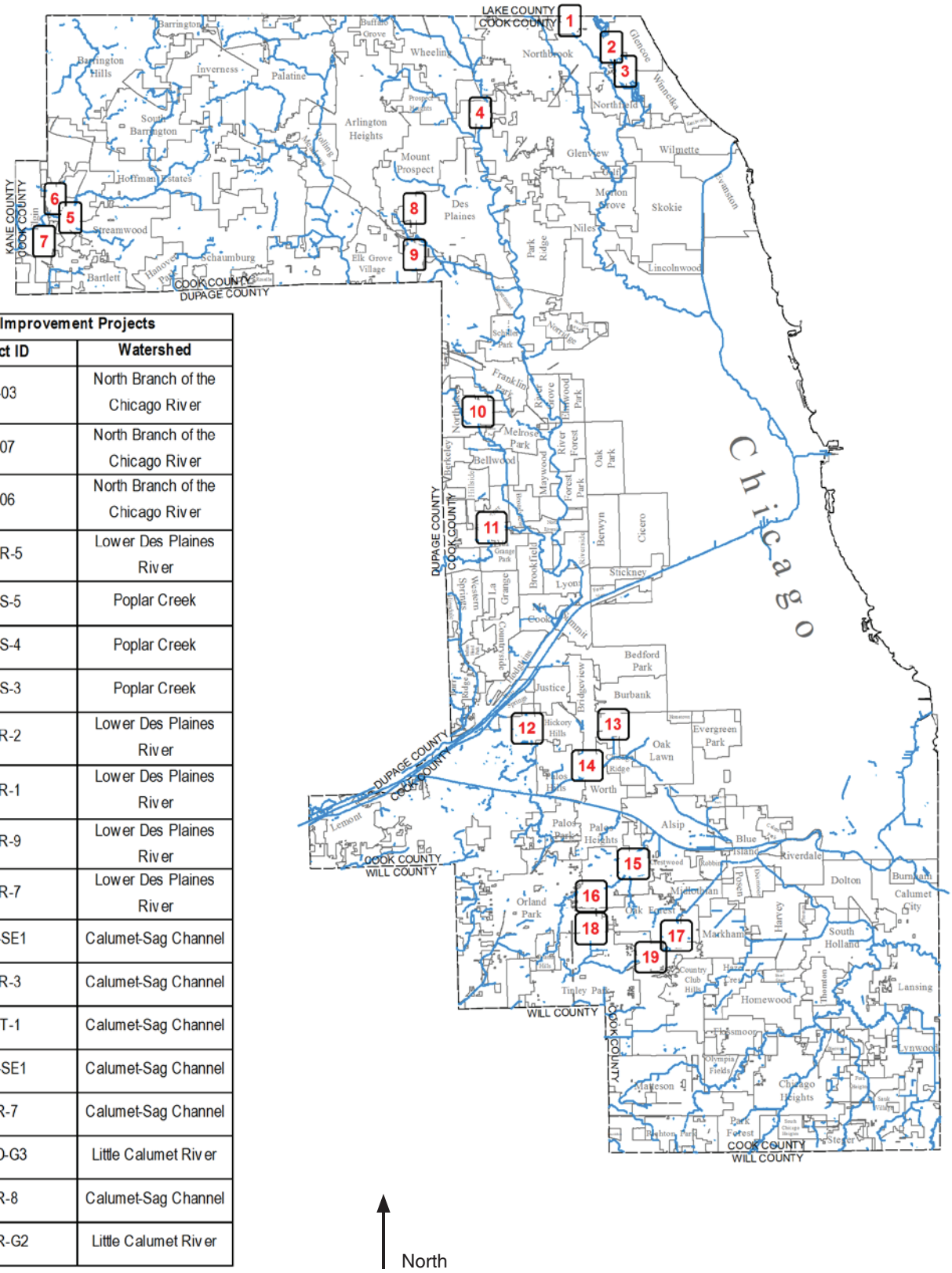
Get involved! Find WPC meeting dates, agendas, and locations at **http://stormwater.mwrd.org**

Public Involvement

In 2011, MWRD staff provided information about the Stormwater Management Program at various public events in communities throughout the region and 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 biannual SSMP newsletter, "Small Streams, Big Accomplishments," which was made available at WPC meetings, posted on the MWRD's website, and distributed at community events.

The MWRD will continue to provide information about the Stormwater Management program at various events, such as the 2012 Annual Conference of the Illinois Association for Floodplain and Stormwater Management. Educational materials will be developed to deepen public understanding of the critical role of the MWRD, 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 biannual SSMP community newsletters.

Appendix A
Streambank Stabilization Projects



Capital Improvement Projects		
No.	**Project ID**	**Watershed**
1	WF-03	North Branch of the Chicago River
2	MF-07	North Branch of the Chicago River
3	MF-06	North Branch of the Chicago River
4	MDCR-5	Lower Des Plaines River
5	PCMS-5	Poplar Creek
6	PCMS-4	Poplar Creek
7	PCMS-3	Poplar Creek
8	HGCR-2	Lower Des Plaines River
9	HGCR-1	Lower Des Plaines River
10	ADCR-9	Lower Des Plaines River
11	ADCR-7	Lower Des Plaines River
12	IMTD-SE1	Calumet-Sag Channel
13	OLCR-3	Calumet-Sag Channel
14	MEDT-1	Calumet-Sag Channel
15	TICR-SE1	Calumet-Sag Channel
16	TICR-7	Calumet-Sag Channel
17	CUDD-G3	Little Calumet River
18	TICR-8	Calumet-Sag Channel
19	MTCR-G2	Little Calumet River

Appendix A
Streambank Stabilization Projects

1. WF-03 (West Fork of the North Branch of the Chicago River)
Description: Stabilize approximately 1,420 LF along the West Fork of the North Branch of the Chicago River.
Conceptual Cost Estimate: $2,022,000
Approved for Design on March 17, 2011
Status: Design

2. MF-07 (Middle Fork of the 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
Approved for Design on March 17, 2011
Status: Design

3. MF-06 (Middle Fork of the North Branch of the Chicago River)
Description: Stabilize approximately 1,730 LF along the Middle Fork of the North Branch of the Chicago River.
Conceptual Cost Estimate: $1,610,000
Approved for Design on March 17, 2011
Status: Design

4. MDCR-5 (McDonald Creek)
Description: Stabilize approximately 150 LF along McDonald Creek.
Conceptual Cost Estimate: $798,000
Approved for Design on March 17, 2011
Status: Design

5. PCMS-5 (Poplar Creek)
Description: Stabilize approximately 450 LF along Poplar Creek.
Conceptual Cost Estimate: $874,000
Approved for Preliminary Engineering on March 17, 2011
Status: Approved for Preliminary Engineering

6. PCMS-4 (Poplar Creek)
Description: Stabilize approximately 400 LF along Poplar Creek.
Conceptual Cost Estimate: $745,200
Approved for Preliminary Engineering on March 17, 2011
Status: Approved for Preliminary Engineering

7. PCMS-3 (Poplar Creek)
Description: Stabilize approximately 400 LF along Poplar Creek.
Conceptual Cost Estimate: $715,700
Approved for Preliminary Engineering on March 17, 2011
Status: Approved for Preliminary Engineering

8. HGCR-2 (Higgins Creek)
Description: Stabilize approximately 400 LF along Higgins Creek.
Conceptual Cost Estimate: $1,375,293
Approved for Design on August 11, 2011
Status: Design

9. HGCR-1 (Higgins Creek)
Description: Stabilize approximately 210 LF along Higgins Creek.
Conceptual Cost Estimate: $763,000
Approved for Design on March 17, 2011
Status: Design

10. ADCR-09 (Addison Creek)
Description: Stabilize approximately 580 LF along Addison Creek.
Conceptual Cost Estimate: $219,000
Approved for Design on March 17, 2011
Status: Design

11. ADCR-07 (Addison Creek)
Description: Stabilize approximately 1,010 LF along Addison Creek.
Conceptual Cost Estimate: $809,000
Approved for Design on March 17, 2011
Status: Design

12. IMTD-SE1 (I&M Canal Tributary D)
Description: Stabilize approximately 1,250 LF of I&M Canal Tributary D using a combination of gabions and riprap.
Estimated Construction Cost: $361,643
Approved for Preliminary Engineering on July 8, 2010
Approved for Final Design on June 2, 2011
Status: Final Design

13. OLCR-3 (Oak Lawn Creek)
Description: Stabilize approximately 1,070 LF of Oak Lawn Creek using concrete walls.
Estimated Construction Cost: $3,130,000
Approved for Preliminary Engineering on January 21, 2010
Approved for Final Design on June 2, 2011
Status: Final Design

14. MEDT-1 (Melvina Ditch)
Description: Stabilize approximately 2,700 LF of Melvina Ditch.
Conceptual Cost Estimate: $2,845,500
Approved for Preliminary Engineering on January 21, 2010
Status: Preliminary Engineering

15. TICR-SE1 (Tinley Creek)
Description: Stabilize approximately 1,000 LF of Tinley Creek using gabions.
Estimated Construction Cost: $1,213,320
Approved for Preliminary Engineering on July 8, 2010
Approved for Final Design on June 2, 2011
Status: Final Design

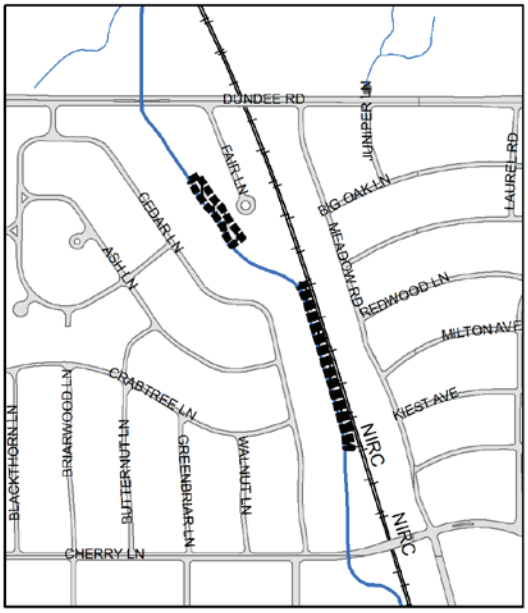
16. TICR-7 (Tinley Creek)
Description: Stabilize approximately 2,200 LF of Tinley Creek using a combination of retaining walls and bioengineering techniques.
Estimated Construction Cost: $3,410,000
Approved for Preliminary Engineering on January 21, 2010
Approved for Final Design on June 2, 2011
Status: Final Design

17. CUDD-G3 (Calumet Union Drainage Ditch)
Description: Stabilize approximately 3,559 LF of Calumet Union Drainage Ditch using bioengineering techniques and provide conveyance improvements.
Estimated Construction Cost: $2,970,000
Approved for Preliminary Engineering on January 21, 2010
Approved for Final Design on June 2, 2011
Status: Final Design

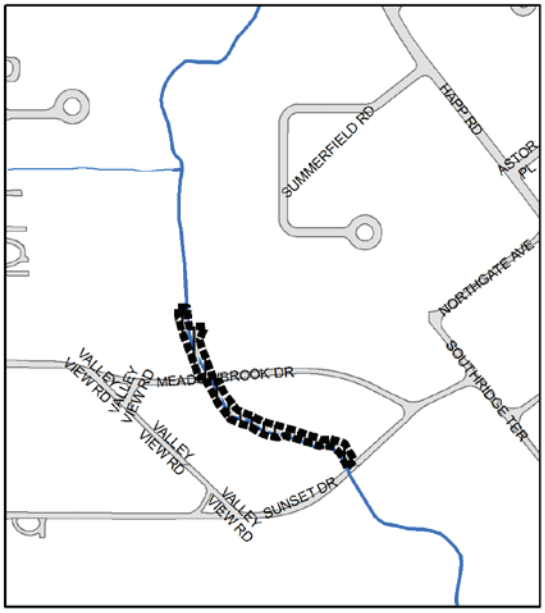
18. TICR-8 (Tinley Creek)
Description: Stabilize approximately 1,803 LF of Tinley Creek using a combination of retaining walls and bioengineering techniques.
Estimated Construction Cost: $2,460,000
Approved for Preliminary Engineering on January 21, 2010
Approved for Final Design on June 2, 2011
Status: Final Design

19. MTCR-G2 (Midlothian Creek)
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
Approved for Preliminary Engineering on January 21, 2010
Approved for Final Design on June 16, 2011
Status: Only the portion of the project between Hickory Street and 66th Court was approved for final design by the Board of Commissioners on June 16, 2011; preliminary engineering determined erosion at the 172nd Street and Oak Park Avenue location was not caused by Midlothian

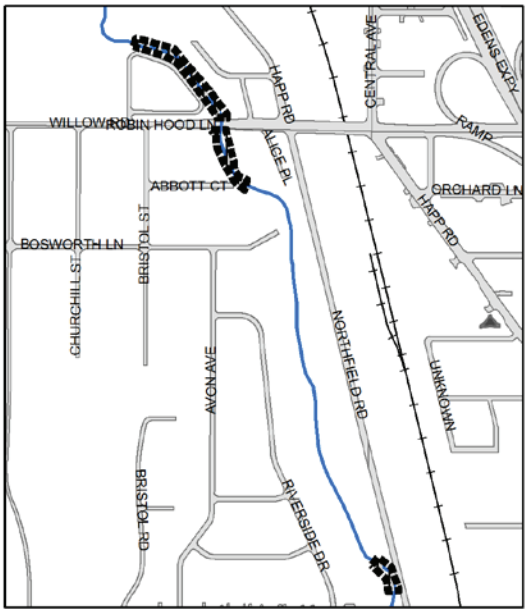
Appendix A
Streambank Stabilization Projects (cont.)



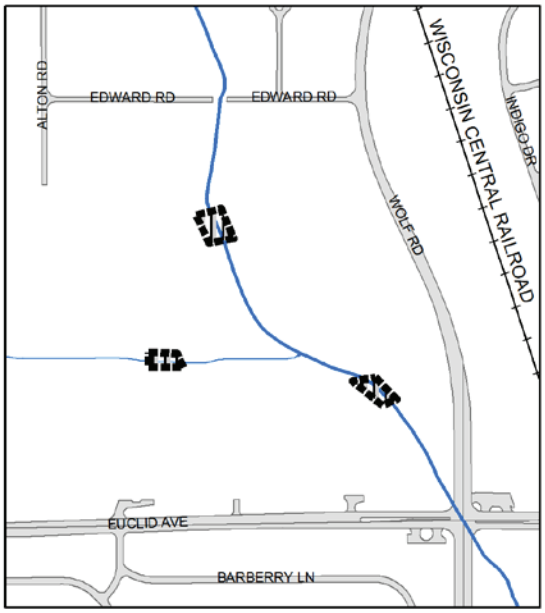
1. WF-03
West Fork of the North Branch of the Chicago River - Northbrook



2. MF-07
Middle Fork of the North Branch of the Chicago River - Northfield



3. MF-06
Middle Fork of the North Branch of the Chicago River - Northfield

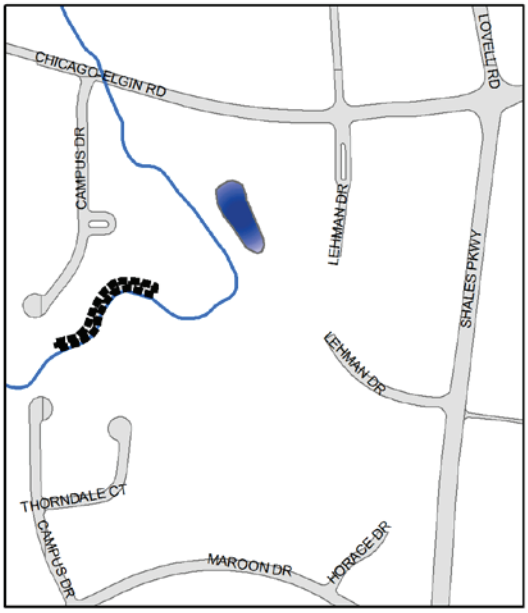


4. MDCR-5
McDonald Creek - Mount Prospect

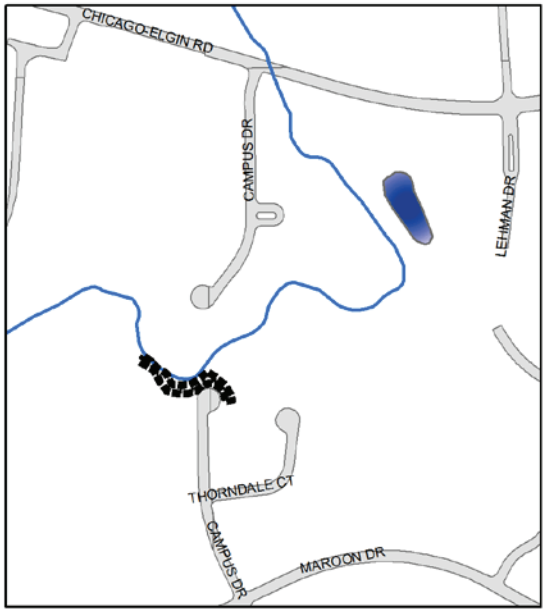
Legend

Reservoir
Open Channel Work
Culvert/Bridge
Bank Stabilization
Levee/Floodwall/Berm
North

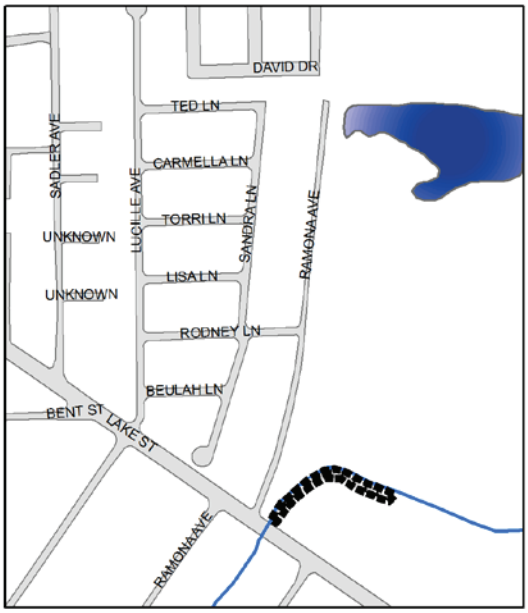
Appendix A
Streambank Stabilization Projects (cont.)



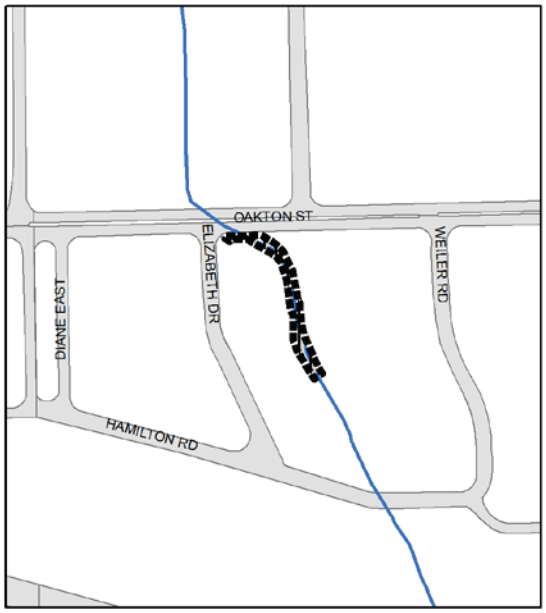
5. **PCMS-5**
Poplar Creek - Elgin



6. **PCMS-4**
Poplar Creek - Elgin



7. **PCMS-3**
Poplar Creek - Elgin

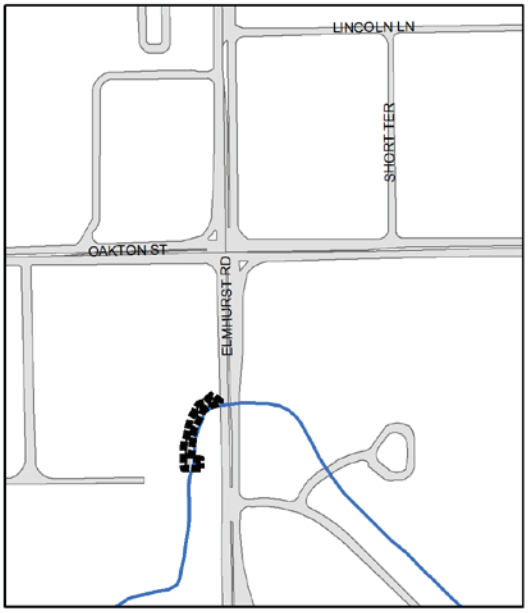


8. **HGCR-2**
Higgins Creek - Unincorporated Cook County, Elk Grove Township

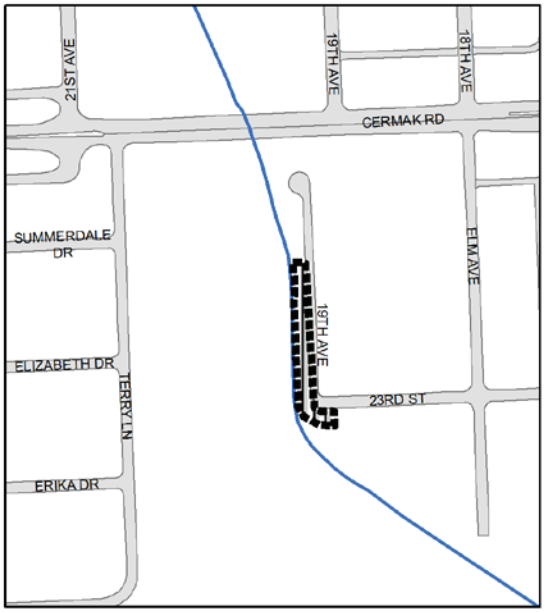
Legend

Reservoir
Open Channel Work
Culvert/Bridge
Bank Stabilization
Levee/Floodwall/Berm
North

Appendix A
Streambank Stabilization Projects (cont.)

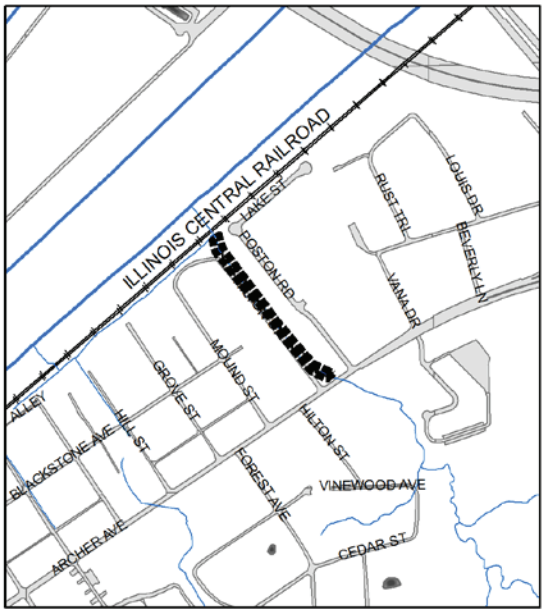


9. HGCR-1
Higgins Creek - Des Plaines



10. ADCR-9
Addison Creek - North Riverside

11. ADCR-7
Addison Creek - Northlake

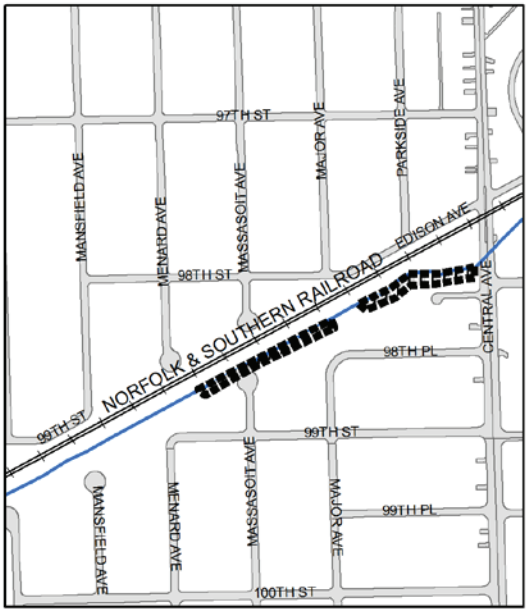


12. IMTD-SE1
I & M Canal Tributary D - Willow Springs

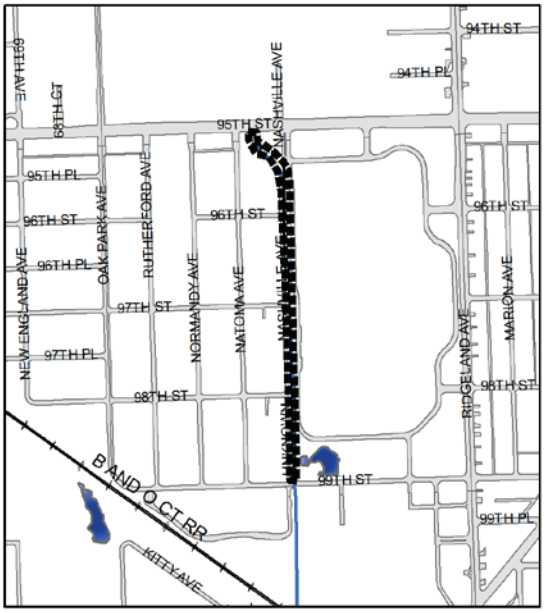
Legend

Reservoir
Bank Stabilization
Open Channel Work
Levee/Floodwall/Berm
Culvert/Bridge
North

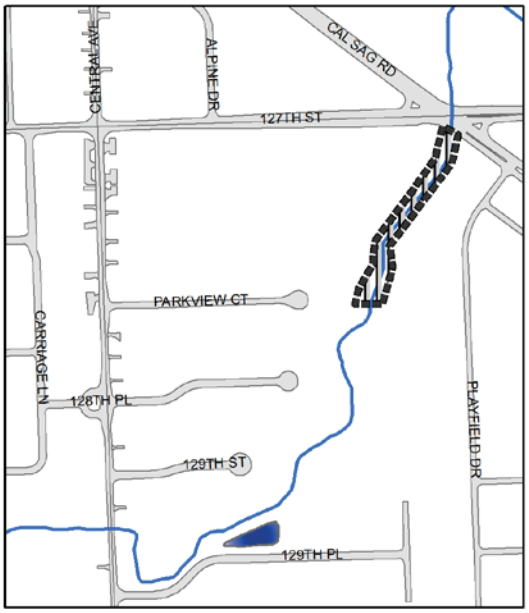
Appendix A
Streambank Stabilization Projects (cont.)



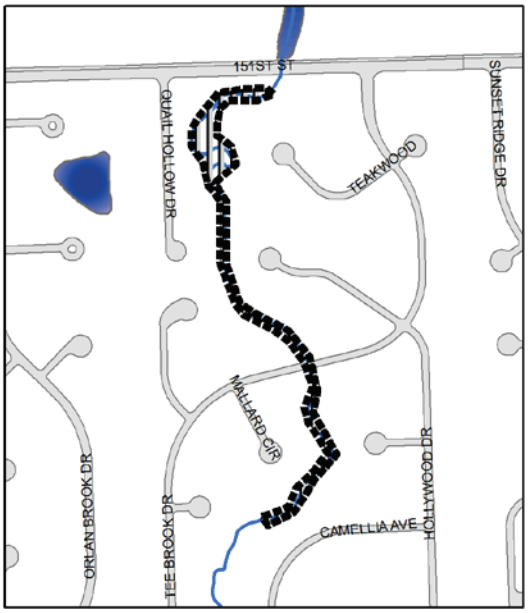
13. OLCR-3
Oak Lawn Creek-Oak Lawn



14. MEDT-1
Melvina Ditch - Chicago Ridge/Oak Lawn



15. TICR-SE1
Tinley Creek-Crestwood

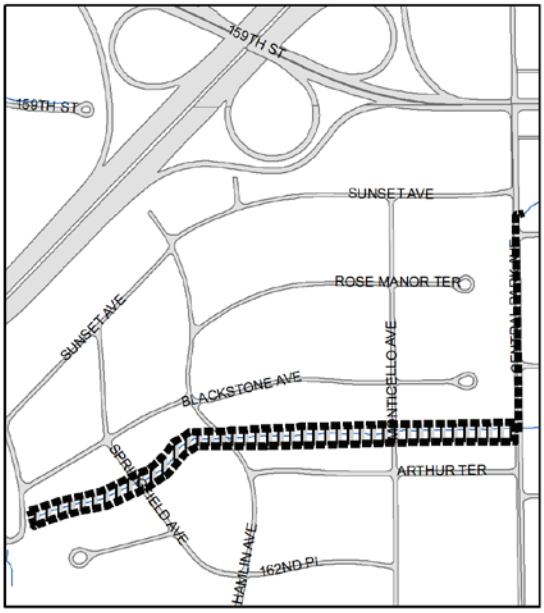


16. TICR-7
Tinley Creek - Orland Park

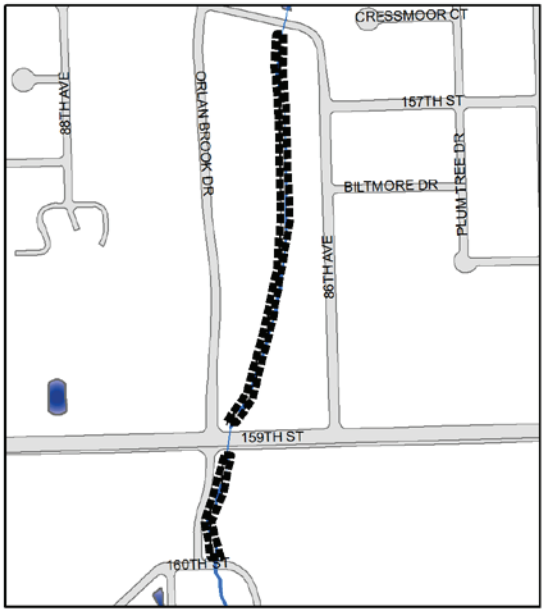
Legend

Reservoir
Open Channel Work
Culvert/Bridge
Bank Stabilization
Levee/Floodwall/Berm
North

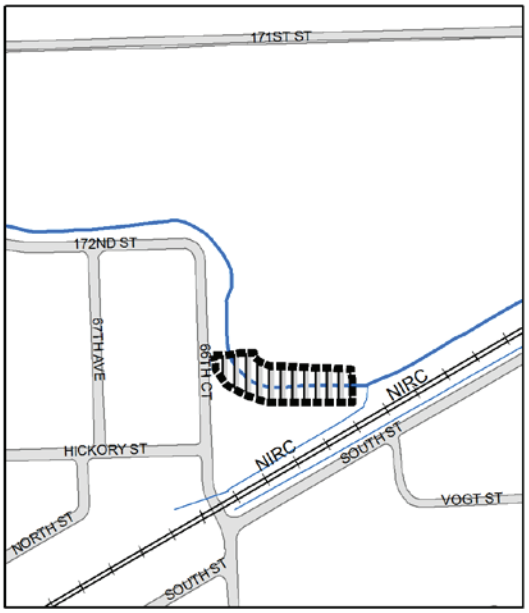
Appendix A
Streambank Stabilization Projects (cont.)



17. CUDD-G3
Calumet Union Drainage Ditch - Markham



18. TICR-8
Tinley Creek - Orland Park

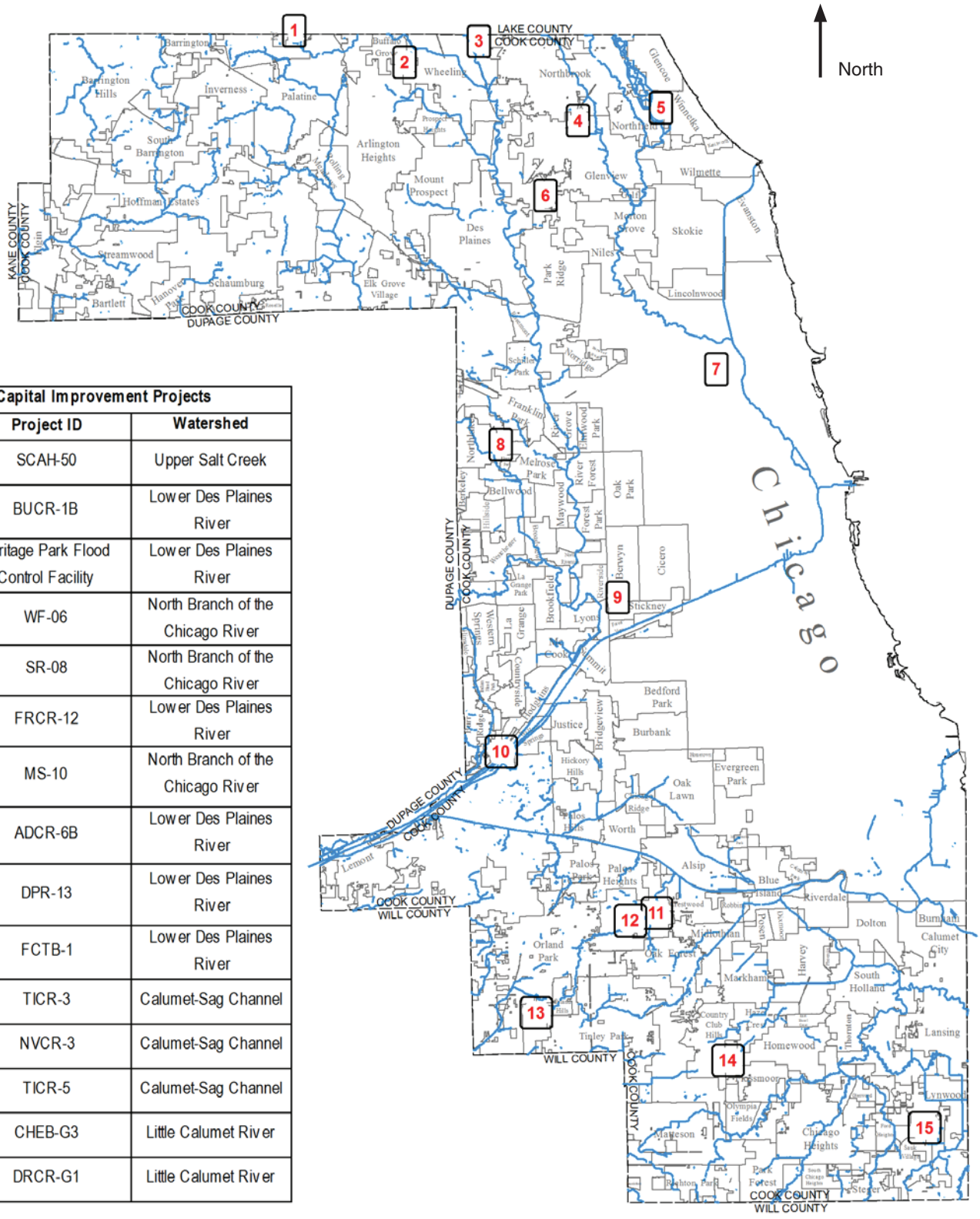


19. MTCR-G2
Midlothian Creek - Tinley Park

Legend

Reservoir
Open Channel Work
Culvert/Bridge
Bank Stabilization
Levee/Floodwall/Berm
North

Appendix B
Flood Control Projects



Capital Improvement Projects		
No.	**Project ID**	**Watershed**
1	SCAH-50	Upper Salt Creek
2	BUCR-1B	Lower Des Plaines River
3	Heritage Park Flood Control Facility	Lower Des Plaines River
4	WF-06	North Branch of the Chicago River
5	SR-08	North Branch of the Chicago River
6	FRCR-12	Lower Des Plaines River
7	MS-10	North Branch of the Chicago River
8	ADCR-6B	Lower Des Plaines River
9	DPR-13	Lower Des Plaines River
10	FCTB-1	Lower Des Plaines River
11	TICR-3	Calumet-Sag Channel
12	NVCR-3	Calumet-Sag Channel
13	TICR-5	Calumet-Sag Channel
14	CHEB-G3	Little Calumet River
15	DRCR-G1	Little Calumet River

Appendix B
Flood Control Projects

1. SCAH-50 (Upper Salt Creek)
Description: Construct 1,200 LF of conveyance improvements.
Estimated Construction Cost: $962,000
Approved for Preliminary Engineering on February 18, 2010
Approved for Final Design on June 2, 2011
Status: Final Design

2. BUCR-1B (Buffalo Creek)
Description: Construct conveyance improvements and a partial bulk-head to provide flood storage.
Conceptual Cost Estimate: $613,000
Approved for Preliminary Engineering on March 17, 2011
Status: Preliminary Engineering

3. Heritage Park Flood Control Facility
Description: Compensatory Storage for Levee 37
Cost Estimate: $33,049,268
Status: Design Completed in 2011 and Construction Expected in 2012
Status: Advertised

4. WF-06 (West Fork of the North Branch of the Chicago River)
Description: Construct an additional 1,100 ac-ft of storage to expand Techny Reservoir 32A.
Conceptual Cost Estimate: $116,088,000
Approved for Preliminary Engineering on March 17, 2011
Status: Approved for Preliminary Engineering

5. SR-08 (Skokie River)
Description: Construct a levee on both sides of Interstate 94.
Conceptual Cost Estimate: $5,761,000
Approved for Preliminary Engineering on March 17, 2011
Status: Approved for Preliminary Engineering

6. FRCR-12 (Farmers Prairie Creek)
Description: Construct conveyance improvements, pump station, additional storage, and a new force main.
Conceptual Cost Estimate: $19,788,000
Approved for Preliminary Engineering on March 17, 2011
Status: Approved for Preliminary Engineering

7. MS-10 (Main Stem of the North Branch of the Chicago River)
Description: Construct a floodwall.
Conceptual Cost Estimate: $16,402,000
Approved for Preliminary Engineering on March 17, 2011
Status: Approved for Preliminary Engineering

8. ADCR-6B (Addison Creek)
Description: Construct a 960 ac-ft reservoir and conveyance improvements.
Conceptual Cost Estimate: $133,921,000
Approved for Preliminary Engineering on March 17, 2011
Status: Preliminary Engineering

9. DPR-13 (Des Plaines River)
Description: Construct a 4,300 LF floodwall.
Conceptual Cost Estimate: $14,481,000
Approved for Preliminary Engineering on March 17, 2011
Status: Preliminary Engineering

10. FGTB-1 (Flagg Creek Tributary B)
Description: Construct channel improvements, new outfall and provide mitigation storage.
Conceptual Cost Estimate: $816,000
Approved for Preliminary Engineering on March 17, 2011
Status: Preliminary Engineering

11. TICR-3 (Tinley Creek)
Description: Increase conveyance capacity along 2,000 LF of Tinley Creek.
Estimated Construction Cost: $2,572,800
Approved for Preliminary Engineering on February 18, 2010
Approved for Final Design on June 2, 2011
Status: Final Design

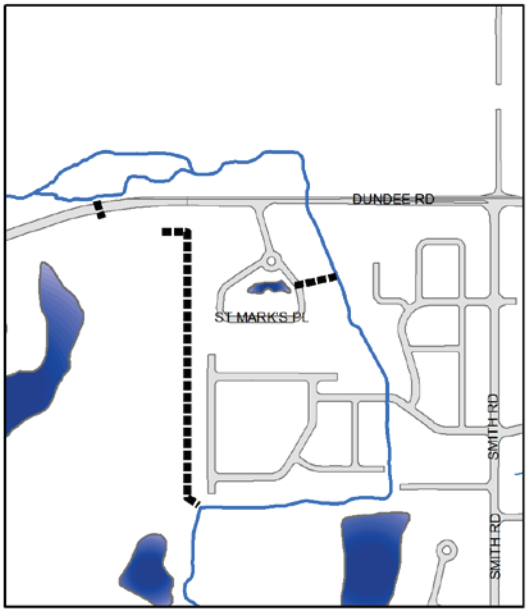
12. NVCR-3 (Navajo Creek)
Description: Raise bike trail 3 ft to provide additional storage in Lake Arrowhead.
Estimated Construction Cost: $589,200
Approved for Preliminary Engineering on February 18, 2010
Approved for Final Design on June 2, 2011
Status: Final Design

13. TICR-5 (Tinley Creek)
Description: Dredge 1,500 LF of Tinley Creek downstream of Lake Lorin and remove existing low flow pipe.
Estimated Construction Cost: $172,900
Approved for Preliminary Engineering on February 18, 2010
Approved for Final Design on June 2, 2011
Status: Final Design

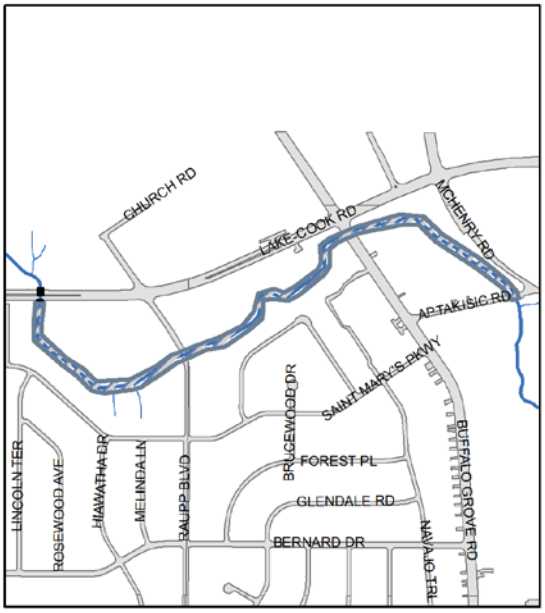
14 CHEB-G3 (Cherry Creek)
Description: Construct 900 LF of new open channel on the west side of Governors Highway, create a flood shelf in the existing channel, and add culverts.
Estimated Construction Cost: $3,017,900
Approved for Preliminary Engineering on February 18, 2010
Approved for Final Design on June 2, 2011
Status: Final Design

15. DRCR-G1 (Deer Creek)
Description: Increase channel conveyance and raise berm for 3,000 LF.
Estimated Construction Cost: $4,644,000
Approved for Preliminary Engineering on February 18, 2010
Approved for Final Design on June 2, 2011
Status: Final Design

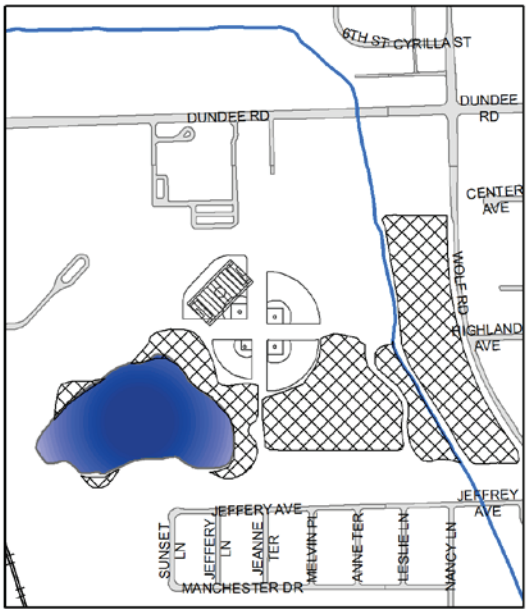
Appendix B
Flood Control Projects



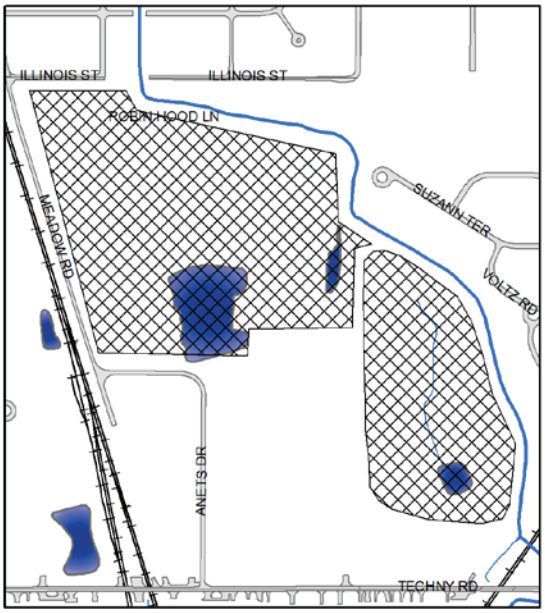
1. SCAH-50
Upper Salt Creek - Palatine



2. BUCR-1B
Buffalo Creek - Buffalo Grove/Wheeling



3. Heritage Park Flood Control Facility
Buffalo Creek - Wheeling

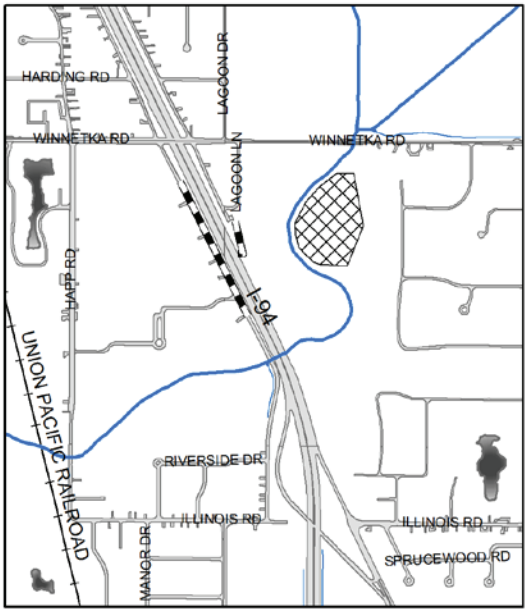


4. WF-06
West Fork of the North Branch of the Chicago River - Northbrook

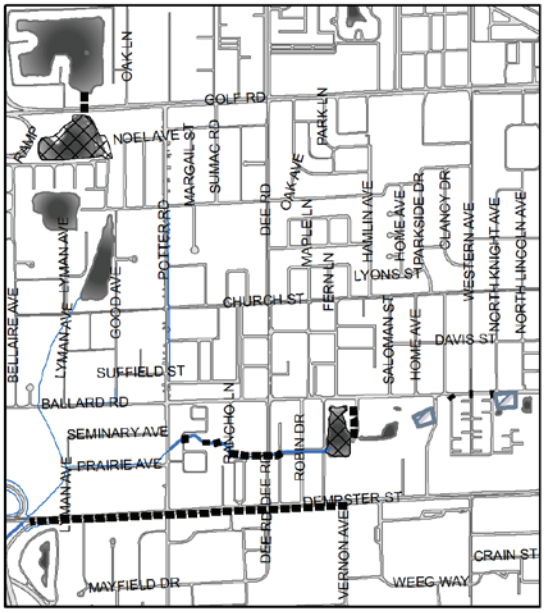
Legend

Reservoir
Open Channel Work
Culvert/Bridge
Bank Stabilization
Levee/Floodwall/Berm
North

Appendix B
Flood Control Projects

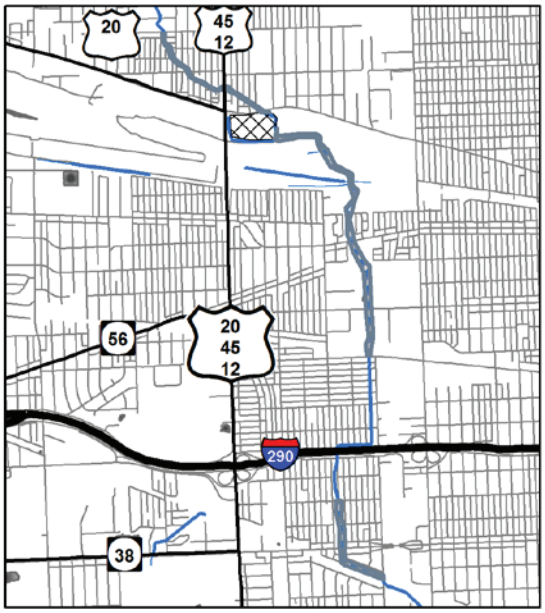


5. SR-08
Skokie River - Northfield



6. FRCR-12
Farmers Prarie Creek - Park Ridge, Des Plaines, Niles and Maine Township

7. MS-10
North Branch of the Chicago River - Chicago

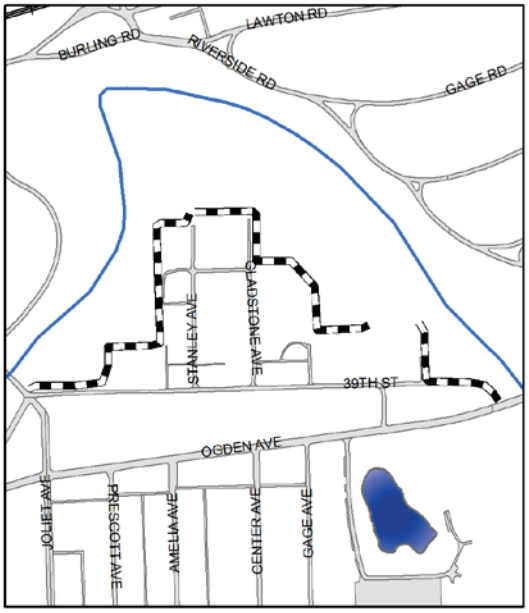


8. ADCR-6B
Addison Creek - Stone Park, Melrose Park, Bellwood, and Westchester

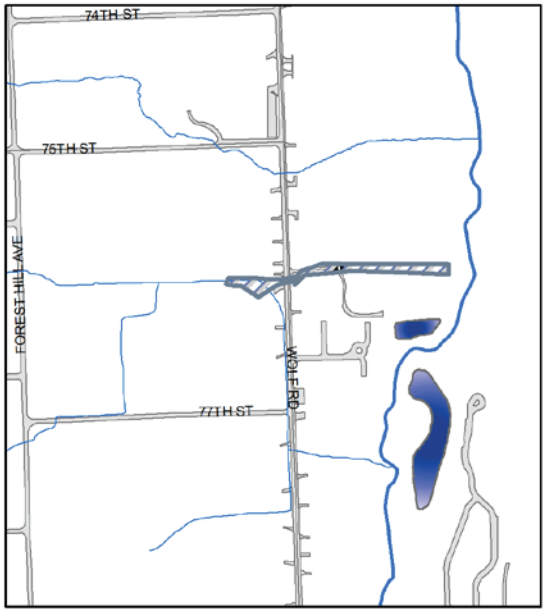
Legend

Reservoir
Open Channel Work
Culvert/Bridge
Bank Stabilization
Levee/Floodwall/Berm
North

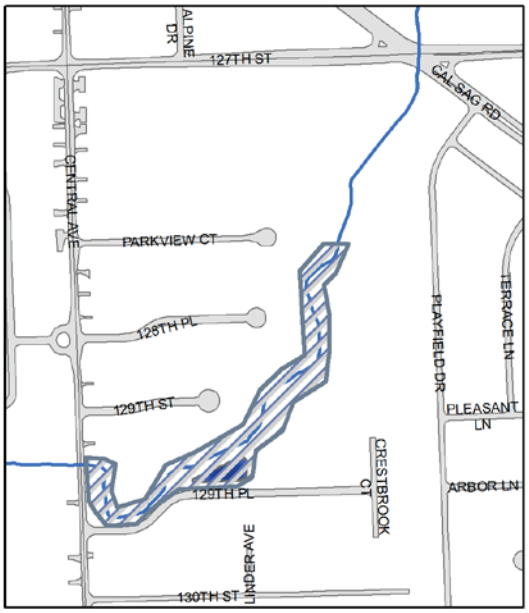
Appendix B
Flood Control Projects



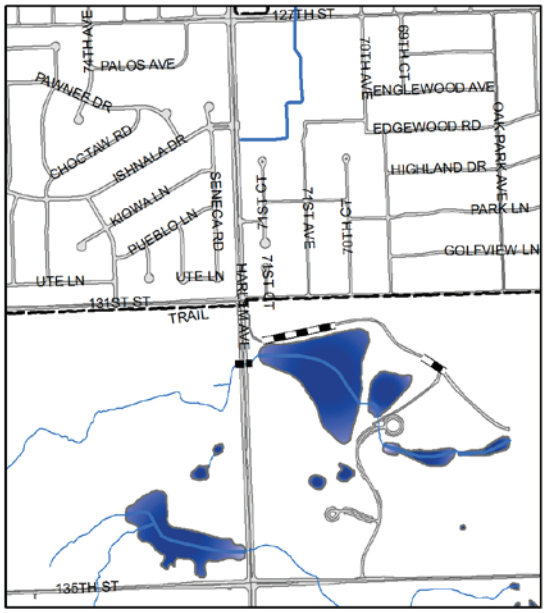
9. DPR-13
Des Plaines River - Riverside



10. FGTB-1
Flagg Creek Tributary B - Burr Ridge/Lyons Township



11. TICR-3
Tinley Creek - Crestwood

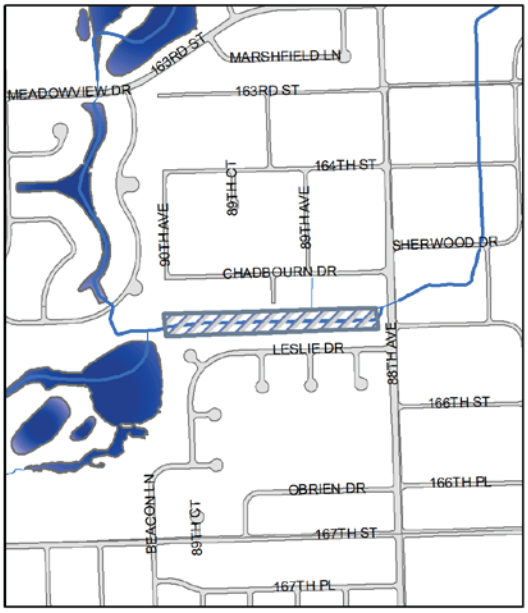


12. NVCR-3
Navajo Creek - Palos Heights

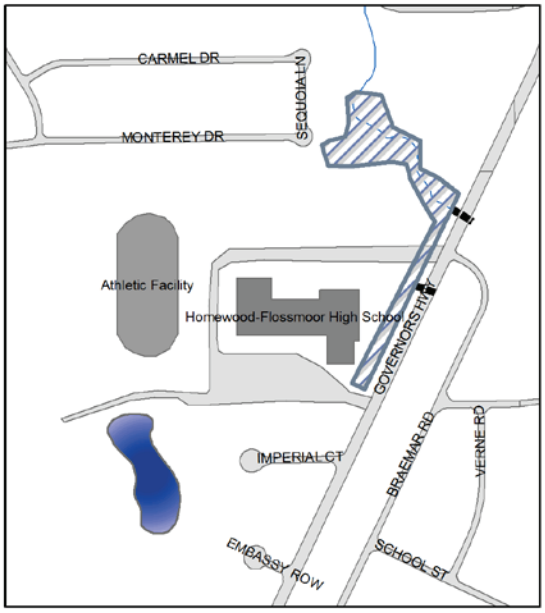
Legend

Reservoir
Open Channel Work
Culvert/Bridge
Bank Stabilization
Levee/Floodwall/Berm
North

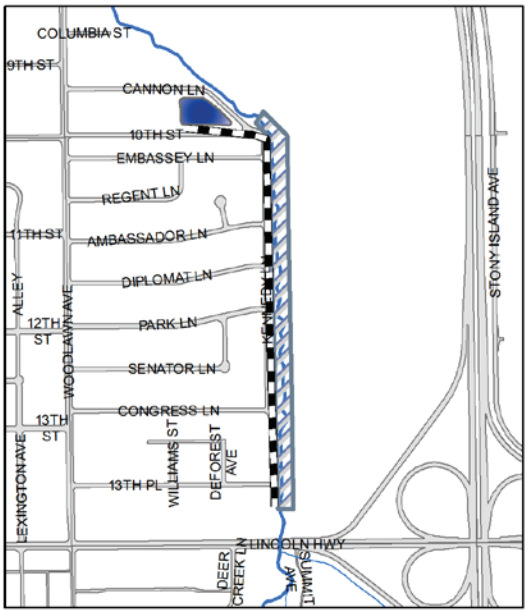
Appendix B
Flood Control Projects



13. **TICR-5**
Tinley Creek - Orland Hills



14. **CHEB-G3**
East Branch of Cherry Creek - Flossmoor

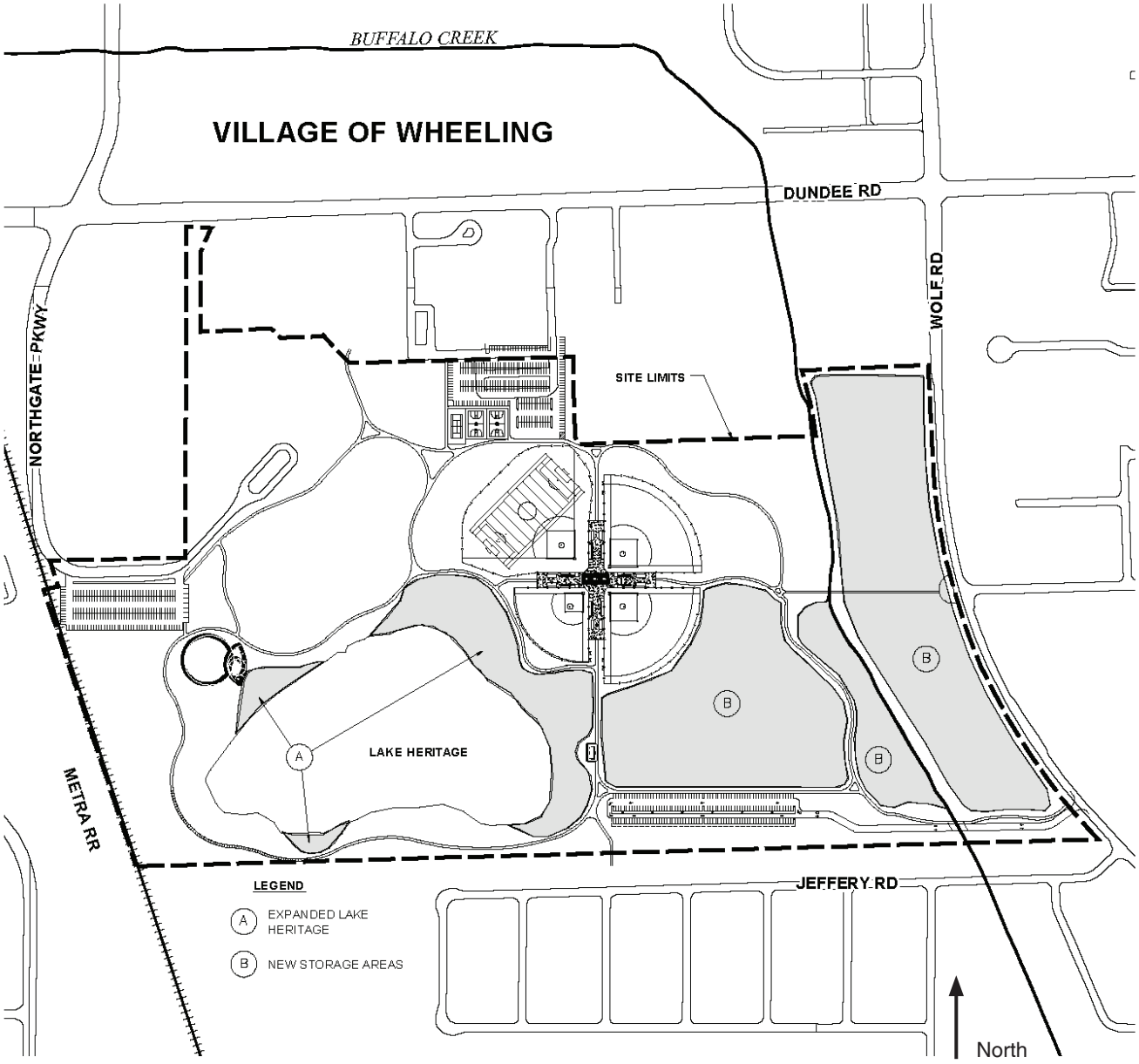


15. **DRCR-G1**
Deer Creek - Ford Heights

Legend

Reservoir
Open Channel Work
Culvert/Bridge
Bank Stabilization
Levee/Floodwall/Berm
North

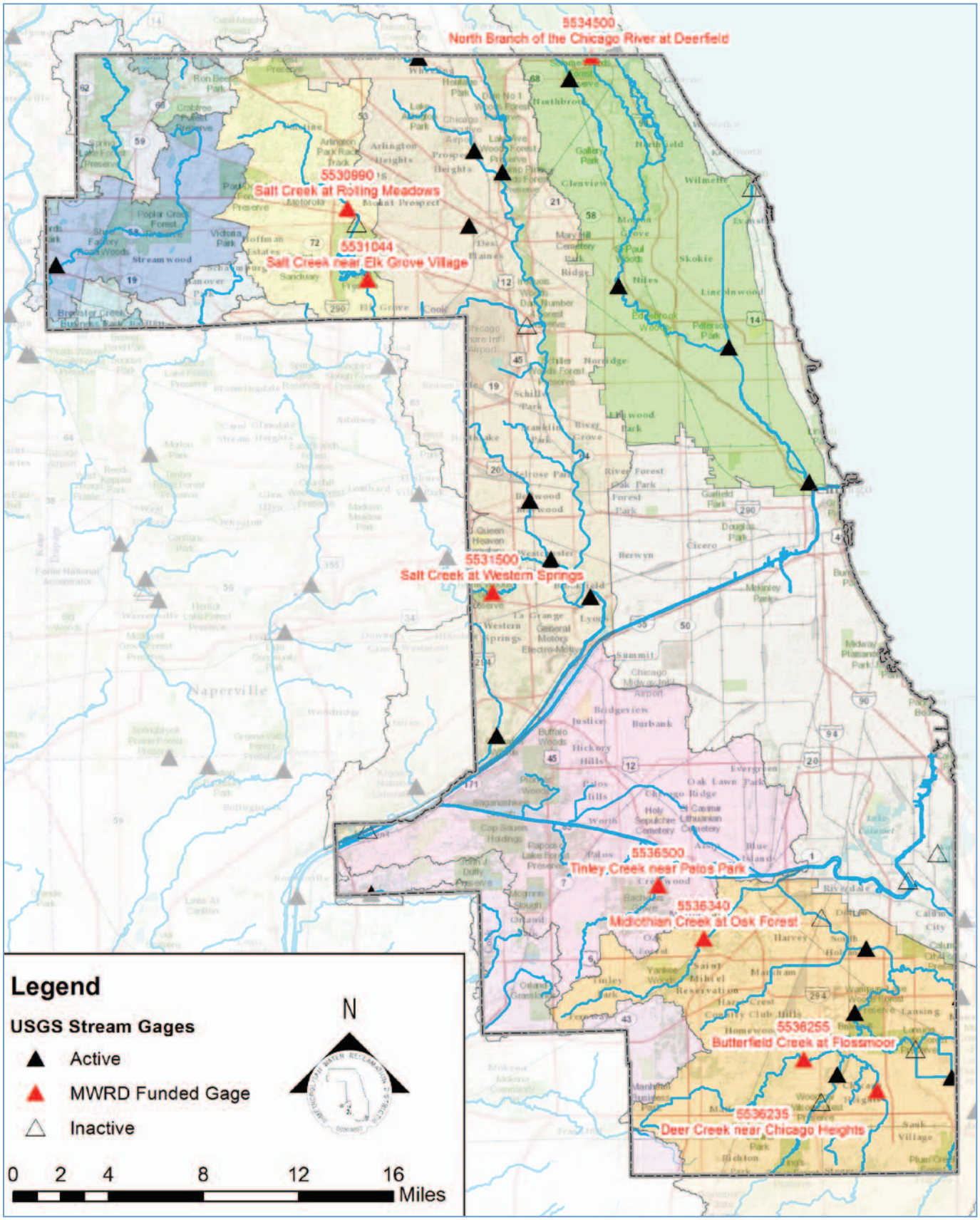
Appendix C
Heritage Park Flood Control Facility, Wheeling, IL



The Heritage Park Flood Control Facility project is a multi-objective project designed to satisfy the IDNR-OWR permit requiring compensatory storage for United States Army Corps of Engineer's project Levee 37 along the Des Plaines River. The project provides new floodwater storage, enlarges the storage of an existing stormwater facility, while providing new athletic facilities as well as other recreational amenities. The project is expected to cost $33,049,268 and the construction contract is planned to be awarded in 2012.

Appendix D

District and USGS Joint Funded USGS Stream Gages



Appendix E
2011 Stormwater Expenditures

Personnel Services: Consultant

Paid to consultants for professional services rendered

Detailed Watershed Plans	$337,461
Preliminary and Final Engineering	$2,048,832
Heritage Park Flood Control Facility Final Design	$1,226,790
Heritage Park Flood Control Facility Legal Services	$222,354
GIS Implementation	$229,500
Total Consultant Personnel Services	**$4,064,937**

Personnel Services: In-House

Salaries and associated costs related to MWRD personnel

General Administration Department	$72,120
Engineering Department	$1,372,458
Maintenance and Operations Department	$2,148,232
Total In-House Personnel Services	**$3,592,810**

Contractual Services

Fees paid for services provided by COGs, agencies or companies

COGs Administrative Contracts	
Northwest Municipal Conference	$4,741
South Suburban Mayors and Managers Association	$2,433
Southwest Conference of Mayors	$44,548
West Central Municipal Conference	$4,127
Small Streams Maintenance Program	$2,199,678
Small Streams Maintenance Program Waste Disposal	$38,880
Court Reporting Services	$9,549
USGS Joint Funding Agreement for Stream Gaging Stations in Cook County	$70,985
Streetscape and Sustainability Design Program	$60,000
Capital Projects Not Otherwise Classified	$308,400
Heritage Park Flood Control Facility Land Acquisition	$1,182,261
Real Estate Appraisals	$12,590
Waterways Facilities Structures	$665,226
Repairs to Collection Facilities	$528,950
Miscellaneous Contractual Services	$43,150
Total Contractual Services	**$5,175,518**

Administrative Expenses

Materials, equipment and supplies:	$73,527

Total 2011 Expenditures $12,906,792

Heritage Park Site Plan

The Heritage Park Flood Control Facility is a multi-objective flood control facility. The project includes expansion of the existing reservoir, in addition to the creation of three additional basins to provide approximately 115 Acre-Ft. of flood storage. The project also includes recreational amenities including a band shell, pavilion by the lake, five soccer fields, and four baseball diamonds. This design was the result of successful multi-agency coordination creating a balanced approach to flood control.