

# STORMWATER MANAGEMENT PROGRAM

2019 ANNUAL REPORT



**Metropolitan Water  
Reclamation District  
of Greater Chicago**

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▲ Flood Control at Arrowhead Lake, 10-883-BF

## BACKGROUND AND HISTORY

For years, stormwater management in Cook County has been a patchwork of efforts by local, regional, state and federal agencies. The Illinois General Assembly enacted Public Act 93-1049 in November of 2004, allowing for the creation of a comprehensive stormwater management program in Cook County under the supervision of the Metropolitan Water Reclamation District of Greater Chicago (MWRD).

The Act required MWRD to develop the Cook County Stormwater Management Plan. The Cook County Stormwater Management Plan provides the framework for the stormwater management program, including its mission, goals, and program elements. MWRD's Board of Commissioners adopted the plan in February 2007. Adoption of the plan and the implementation of MWRD's countywide stormwater management program afford Cook County the means to address a range of stormwater management issues through proper watershed regulations and watershed planning.

Under this plan, MWRD has established Watershed Planning Councils and completed Detailed Watershed Plans for all six major watersheds in Cook County, initiated a Stormwater Management Capital Improvement Program, initiated a Small Streams Maintenance

Program, and adopted and implemented the Watershed Management Ordinance (WMO).

The program expanded significantly in 2014. The Cook County Stormwater Management Plan was amended in July 2014 to be consistent with P.A. 98-0652, which grants MWRD authority to allow for acquisition of flood-prone properties and to plan, implement, finance, and operate local stormwater management projects.

MWRD entered into a Consent Decree with the Environmental Protection Agency in January 2014, establishing the Green Infrastructure Program. Additionally, the Infiltration/Inflow Control Program was incorporated into the WMO in 2014.

Through a variety of engineered solutions, both green and gray, and flood-prone property acquisitions, MWRD's Stormwater Management Program addresses both regional and local flooding problems throughout Cook County. MWRD has made significant investments in developing over 140 capital stormwater projects since it assumed the authority for stormwater management in 2004. These projects, which range in both size and scope, provide flood protection for thousands of homes, businesses, and critical infrastructure.

For more information visit <http://stormwater.mwrdd.org>

## 2019 YEAR IN REVIEW

During 2019, MWRD continued preliminary engineering and design work for several of the alternatives recommended in Detailed Watershed Plans, continued work on the Small Streams Maintenance Program and administered the Watershed Management Ordinance (WMO). Other activities in 2019 included soliciting applications for Green Infrastructure, Flood Prone Property Acquisition, and localized stormwater projects to address flooding issues in partnership with other government agencies and local communities. Further details concerning these items and other stormwater management activities are provided in this Annual Report.

## 2019 ACCOMPLISHMENTS FOR THE STORMWATER MANAGEMENT PROGRAM INCLUDE THE FOLLOWING:

- Completed construction of two flood control projects and one streambank stabilization project originally identified in the Detailed Watershed Plans;
- Entered into an Intergovernmental Agreement for a pilot study with the City of Chicago to explore the effectiveness of various technologies aimed at reducing basement backups at private sites;
- Entered into an Intergovernmental Agreement for acquisition of 32 flood-prone properties within the Village of Franklin Park;
- Solicited applications for Green Infrastructure projects from local communities and agencies and continued to identify partnership opportunities to assist in construction local flood control projects;
- Required construction of 126 million gallons of volume control, detention, and floodplain compensatory storage, in conjunction with development throughout Cook County, as a result of Watershed Management Ordinance enforcement;
- Amended the Watershed Management Ordinance on May 16, 2019, to include results of the Watershed Specific Release Rate Study as well as clarifications to better serve the District and its constituents. Watershed Specific Release Rates will require detention facilities to be sized to mitigate the impact of development flood risks for downstream properties;
- Conducted a technical advisory committee meeting every two months to present changes to the Watershed Management Ordinance and Technical Guidance Manual;
- Presented Watershed Management Ordinance updates and status of the Infiltration and Inflow Control Program at Watershed Planning Council meetings;
- Provided Global Positioning System units to local municipalities as a resource to begin mapping their sewer systems in a Geographic Information System or to improve their existing sewer system map;
- Received \$5 million Community Development Block Grant for the Addison Creek Reservoir.

## 2019 BUDGET - SIGNIFICANT FEATURES

**Prioritize** and implement new Green Infrastructure projects from 2018 solicitations;

**Continue** engineering design for regional and local projects and begin construction of projects that have completed final design and have been approved by the Board of Commissioners;

**Identify** partnership opportunities to assist in implementing local drainage improvements and acquisition of flood-prone properties;

**Continue** the Small Streams Maintenance Program to reduce flooding in urbanized areas;

**Amend** the WMO and update the Technical Guidance Manual to include clarifications to better serve the District and its constituents;

**Continue** the implementation of the Infiltration / Inflow Control Program to reduce sanitary sewer overflows and basement backups.





### 2019 COMPLETED PROJECTS

#### FLOOD CONTROL/STREAMBANK STABILIZATION PROJECT ON TINLEY CREEK IN CRESTWOOD, IL

**ID:** TICR-3 **Contract:** 10-883-AF  
**Watershed:** Cal-Sag Channel  
**Location:** Crestwood, IL  
**Description:** A project to increase the conveyance capacity of Tinley Creek for about 2,000 feet downstream of Central Ave. in Crestwood.  
**Construction Cost:** \$7,582,525  
**Status:** Construction completed 10/06/2019.

#### MCDERMOTT DRIVE/MORRIS AVE. STORM SEWER IMPROVEMENTS

**ID:** Berkeley 4 **Contract:** 16-IGA-04  
**Watershed:** Lower Des Plaines  
**Location:** Berkeley, IL  
**Description:** A cost-sharing agreement with the Village of Berkeley to construct two new storm sewers along McDermott Drive and Morris Ave., expand the existing detention basin, and construct a stormwater pumping facility at the southwest corner of the existing detention basin to adequately convey a 100-year storm event.  
**Construction Cost:** \$2,706,000  
**Status:** Construction completed 06/05/2019.

#### RIVERSIDE LAWN FLOOD-PRONE PROPERTY ACQUISITIONS

**ID:** Riverside Lawn FPPA  
**Contract:** 16-IGA-06  
**Watershed:** Lower Des Plaines  
**Location:** Riverside Lawn, IL  
**Description:** Purchase 39 flood-prone homes along the Des Plaines River. This is a cost-sharing agreement with the Cook County Land Bank Authority for the acquisition of flood-prone properties in unincorporated Riverside Lawn.  
**Cost:** \$12,000,000  
**MWRD Contribution:** \$8,000,000  
**Status:** Acquisitions complete. Acquired 21 of 39 homes.

#### DES PLAINES FLOOD-PRONE PROPERTY ACQUISITIONS

**ID:** Des Plaines FPPA  
**Contract:** 16-IGA-11  
**Watershed:** Lower Des Plaines  
**Location:** Des Plaines, IL  
**Description:** Purchase 47 flood-prone homes along the Des Plaines River. This is a cost-sharing agreement with the City of Des Plaines.  
**Cost:** \$15,263,444  
**MWRD Contribution:** \$3,625,000  
**Status:** Acquisitions complete. Acquired 36 of the 47 homes.

#### LAND ACQUISITION FOR A FLOOD CONTROL PROJECT IN THE VICINITY OF 131 ST. AND CYPRESS DRIVE IN PALOS HEIGHTS

**ID:** Palos Heights 4  
**Contract:** 17-IGA-04  
**Watershed:** Cal-Sag Channel  
**Location:** Palos Heights, IL  
**Description:** Cost sharing agreement with the City of Palos Heights for the acquisition of residential property and land needed for the related project 14-259-5F, Flood Control in the vicinity of 131st St. and Cypress Drive in Palos Heights.  
**Cost:** \$370,000  
**Status:** Completed.

#### EAST OF HARMS ROAD DRAINAGE IMPROVEMENTS

**ID:** Glenview **Contract:** 18-IGA-27  
**Watershed:** North Branch  
**Location:** Glenview, IL  
**Description:** Upsize nearly 3,500 linear feet of storm sewers in the drainage area east of Harms Road to provide flood reduction benefits to 20 residential structures.  
**Construction Cost:** \$3,860,000  
**MWRD Contribution:** \$500,000  
**Status:** Completed.



Riverside Lawn Flood-Prone Property Acquisitions, 16-IGA-06.



Des Planes Pervious Concrete Alley Improvement Project, 18-IGA-06

**RELIEF SEWERS TO MITIGATE BASEMENT BACKUPS IN ARLINGTON HEIGHTS**

**ID:** Arlington Heights  
**Contract:** 18-IGA-34  
**Watershed:** Lower Des Plaines  
**Location:** Arlington Heights, IL  
**Description:** Construction of relief sewers for various locations to mitigate basement backups along Campbell St., Vail Ave., Dunton Ave., and Sigwalt St. and in downtown areas.  
**Construction Cost:** \$1,800,000  
**Status:** Completed.

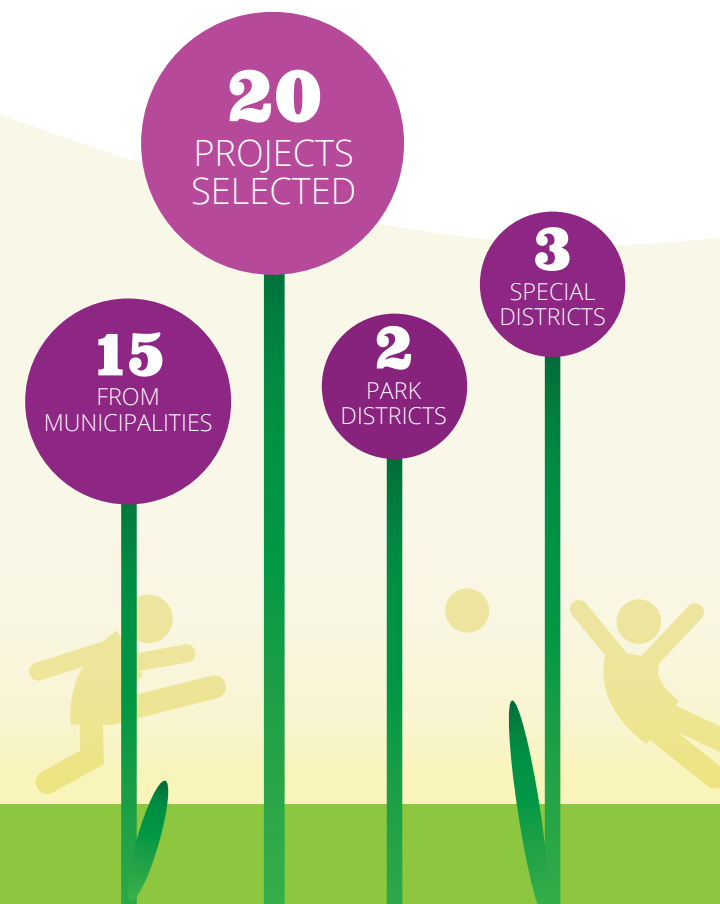
**DES PLAINES PERVIOUS CONCRETE ALLEY IMPROVEMENT PROJECT**

**ID:** Des Plaines **Contract:** 18-IGA-06  
**Watershed:** Lower Des Plaines  
**Location:** Des Plaines, IL  
**Description:** Removing deteriorated alley pavement and replacing it with new porous concrete pavement. Drainage improvements including new storm sewers where appropriate. Six alleys throughout the village were constructed with the goals of capturing stormwater, improving public safety, and reducing combined sewer overflow events.  
**Construction Cost:** \$1,056,339  
**MWRD Contribution:** \$527,145  
**Status:** Completed.

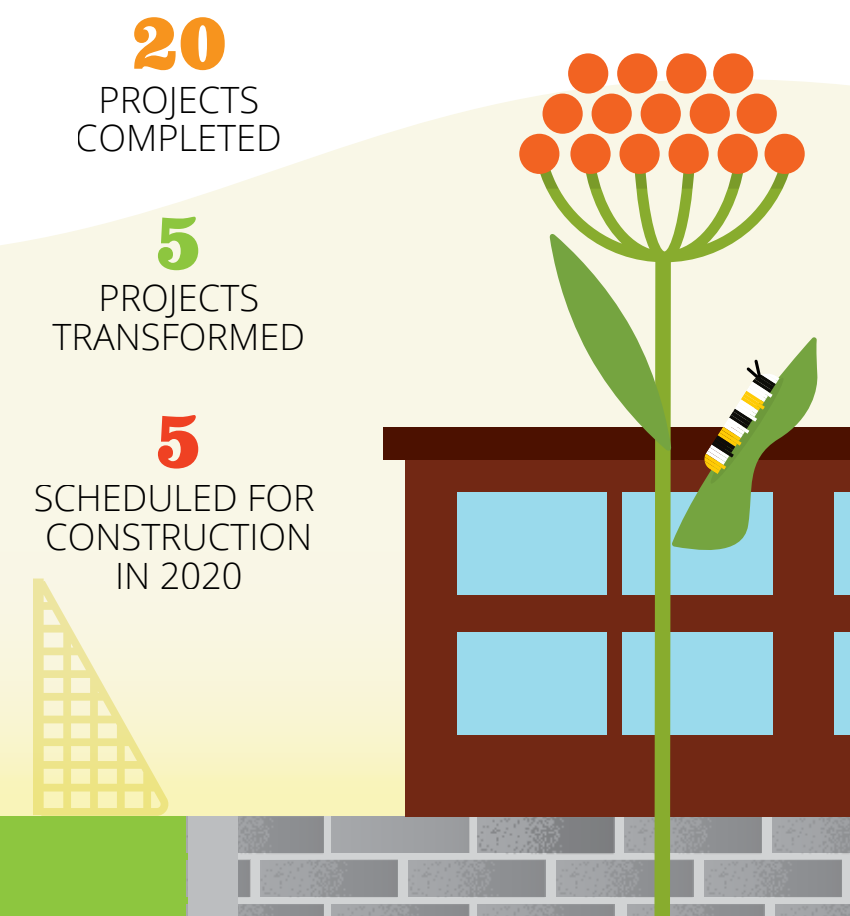
**GREEN INFRASTRUCTURE AT CHICAGO PUBLIC SCHOOLS, SPACE 2 GROW (VARIOUS LOCATIONS)**

**ID:** Multiple Locations **Contract:** 15-IGA-20  
**Watershed:** Chicago **Location:** Multiple Locations  
**Description:** MWRD, the Chicago Department of Water Management, and the Chicago Public Schools are partnering to design and install playgrounds at various Chicago Elementary Schools utilizing Green Infrastructure. The projects will reduce flooding, reduce the load on the combined sewer system, and educate students and neighbors about Green Infrastructure techniques and purpose.  
**MWRD Max Contribution (through 2022):** \$16,000,000  
**Status:** 5 playgrounds were transformed in 2019. The 5 schools along with their design retention capacity are as follows:  
**Arthur R. Ashe Elementary School**  
 8505 S. Ingleside Ave. 244,771 Gal  
**Niños Héroe Elementary School**  
 8344 S. Commercial Ave. 179,432 Gal  
**Henry H. Nash Elementary School**  
 4837 W. Erie St. 152,841 Gal  
**Daniel Webster Elementary School**  
 4055 W. Arthington St. 151,742 Gal  
**Oliver S. Westcott Elementary School**  
 409 W. 80th St. 152,630 Gal  
**Total Design Retention Capacity for 2019 CPS Schools:**  
 881,416 Gal

**CALL FOR PROJECTS**



**SPACE TO GROW**



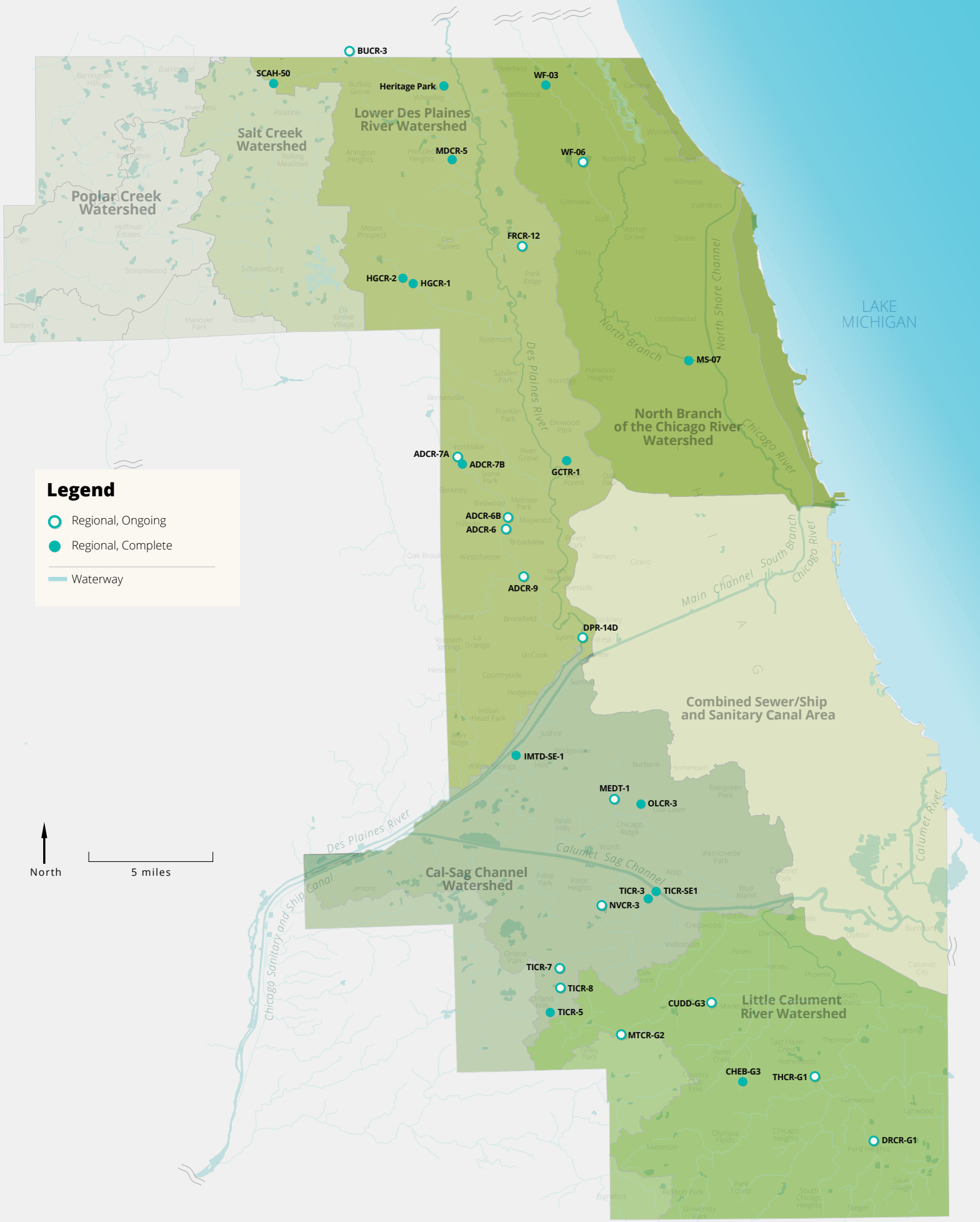
# MWRD STORMWATER MANAGEMENT PROGRAM OVERVIEW

## REGION-WIDE STREAMBANK AND FLOOD CONTROL PROJECTS

One of the initial goals of the Stormwater Management Program was to develop detailed watershed plans for each of the six watersheds in Cook County. The detailed watershed plans identified and prioritized “regional” stormwater projects based on a benefit to cost ratio. Projects were identified into two categories. Streambank stabilization projects address critical active streambank erosion threatening public safety, structures, and/or infrastructure. Flood control projects address regional overbank flooding through traditional measures such as stormwater detention reservoirs, levees, and conveyance improvements. The Board of Commissioners has approved over 30 regional projects moving forward to design and construction.

### STREAMBANK STABILIZATION PROJECTS (REGIONAL)

The following is a detailed list of ongoing streambank stabilization projects. For projects completed in 2019, refer to page 7. Locations of both ongoing and completed streambank stabilization projects can be found on page 10.



#### STREAMBANK STABILIZATION ALONG CALUMET UNION DRAINAGE DITCH

**ID:** CUDD-G3 **Contract:** 10-882-BF  
**Watershed:** Little Cal River  
**Location:** Markham, IL  
**Description:** Stabilize approximately 3,559 LF of Calumet Union Drainage Ditch, between Sunset and Central Park Ave.s. Replaces sanitary sewer under the ditch with new sanitary sewer on each side with service connections to existing residences.  
**Estimated Construction Cost:** \$2,475,000  
**Status:** Preparing final documents for bidding in 2020.

#### STREAMBANK STABILIZATION ALONG MIDLOTHIAN CREEK

**ID:** MTCR-G2 **Contract:** 19-IGA-21  
**Watershed:** Little Cal River  
**Location:** Tinley Park, IL  
**Description:** Cost sharing agreement with the Village of Tinley Park. Project will stabilize approximately 495 linear feet of Midlothian Creek from 66th Court, north of 173rd St. and 500 linear near Scott Court. Lay back the creek banks. Install two rock cross-vanes, four rock vanes, and 280 linear feet of soil lifts. Project protects structures and infrastructure in imminent danger of failure from active streambank erosion and flooding.  
**Estimated Construction Cost:** \$866,500  
**Status:** Finalizing Intergovernmental agreement.

#### STREAMBANK STABILIZATION ALONG MELVINA DITCH

**ID:** MEDT-1 **Contract:** 13-248-3F  
**Watershed:** Cal-Sag Channel  
**Location:** Chicago Ridge, Oak Lawn, IL  
**Description:** Stabilization along Melvina Ditch, from 95th St. to 99th St.. Approximately 170 linear feet of the ditch at the north end of the project will be stabilized with twin box culverts. The remaining 2,500 linear feet of the ditch will be stabilized with a precast concrete modular block retaining wall system.  
**Estimated Construction Cost:** \$8,800,000  
**Status:** Bids under review, construction to begin in early 2020.

#### STREAMBANK STABILIZATION ALONG ADDISON CREEK - NORTH RIVERSIDE/NORTHLAKE

**ID:** ADCR-7A, 9 **Contract:** 14-108-3F  
**Watershed:** Lower Des Plaines  
**Location:** Northlake; North Riverside, IL  
**Description:** Stabilizing 750 feet of Addison Creek adjacent to Fullerton Ave. in the City of Northlake and 410 linear feet of streambank adjacent to 19th Ave. in the Village of North Riverside. Stabilization methods include the installation of native vegetation, a vegetated geogrid, turf reinforcing mat, and the placement of riprap.  
**Estimated Construction Cost:** \$998,696  
**Status:** Construction ongoing.

#### STREAMBANK STABILIZATION ALONG TINLEY CREEK

**ID:** TICR-7 **Contract:** 19-IGA-22  
**Watershed:** Cal-Sag Channel  
**Location:** Orland Park, IL  
**Description:** Stabilize approximately 2,200 LF of Tinley Creek between 86th Ave. and Crystal Creek Drive and 2,800 linear feet between 151st St. and Oriole Court.  
**Estimated Construction Cost:** \$3,806,000  
**Status:** Working with the Village of Orland Park on finalizing terms of intergovernmental agreement.



▲ Streambank Stabilization along Addison Creek - North Riverside/ Northlake, 14-108-3F



▲ Buffalo Creek Reservoir Expansion, 13-370-3F

## FLOOD CONTROL PROJECTS (REGIONAL)

The following is a detailed list of ongoing flood control projects. For projects completed in 2019, refer to page 7. Locations of both ongoing and completed flood control projects can be found on page 10.

### PROJECT PARTNERSHIP AGREEMENT WITH THE UNITED STATES ARMY CORPS OF ENGINEERS FOR THE MCCOOK LEVEE FLOOD RISK MANAGEMENT PROJECT

**ID:** N/A **Contract:** N/A  
**Watershed:** Lower Des Plaines  
**Location:** McCook, IL  
**Description:** Cost-sharing agreement with the U.S. Army Corps of Engineers to provide improvements to the McCook & West Lyons Levees. The MWRD will act as the local sponsor of the project and will be responsible for the acquisition of required rights-of-way and easements for the construction and maintenance of the levee improvements. The MWRD will also be responsible for maintaining the structural components of the levee upon completion of construction.  
**Construction Cost:** \$6,130,000  
**MWRD Contribution:** \$2,145,500  
**Status:** Under Construction.

### FLOOD CONTROL AT ARROWHEAD LAKE

**ID:** NVCR-3 **Contract:** 10-883-BF  
**Watershed:** Cal-Sag Channel  
**Location:** Palos Heights, IL  
**Description:** Increase floodwater storage in Arrowhead Lake by replacing an existing dam and raising an existing bicycle trail on the north and east sides of the lake in unincorporated Palos Heights, removing 70 structures from the 100-year floodplain.  
**Estimated Construction Cost:** \$1,615,000  
**Status:** Under construction.

### FLOOD CONTROL PROJECT AT DEER CREEK

**ID:** DRCR-G1 **Contract:** 10-884-BF  
**Watershed:** Little Cal River  
**Location:** Ford Heights, IL  
**Description:** Improves channel conveyance and raising a berm approximately 3,000 feet, between U.S. Route 30 and Hammond Lane, within the Village of Ford Heights.

Includes the construction of vegetated berm, stabilization of bank slopes, placement of pools and rock riffles, and planting of diverse native landscaping.  
**Estimated Construction Cost:** \$6,500,000  
**Status:** Working with Ford Heights, Cook County and other agencies to determine feasibility.

### ADDISON CREEK RESERVOIR

**ID:** ADCR-6 **Contract:** 11-186-3F  
**Watershed:** Lower Des Plaines  
**Location:** Bellwood, IL  
**Description:** Creates an approximately 600 acre-foot flood control reservoir in Bellwood just north of Washington Boulevard and east of Addison Creek. Includes reservoir excavation and installation of necessary appurtenances for operation of the facility, such as control structure, inlet structure, spillway, piping, and a pumping station.  
**Estimated Construction Cost:** \$63,280,000  
**Status:** Project under construction.

### ADDISON CREEK CHANNEL IMPROVEMENTS

**ID:** ADCR-6B **Contract:** 11-187-3F  
**Watershed:** Lower Des Plaines  
**Location:** Northlake, Melrose Park, Stone Park, Bellwood, Westchester, and Broadview, IL  
**Description:** Improves channel conveyance through channel improvements from Northlake to Broadview that include open channel, soldier piles wall, articulated concrete blocks, gabions, and channel clearing. Removal of 3 bridges along Harrison St. at 30th Ave., 31st Ave., and 32nd Ave  
**Estimated Construction Cost:** \$43,400,000  
**Status:** Final Design. Right-of-way acquisition in progress. Estimate construction bidding in Fall 2020.

### FLOOD CONTROL PROJECT ON FARMERS CREEK

**ID:** FRCR-12 **Contract:** 12-056-AF  
**Watershed:** Lower Des Plaines  
**Location:** Des Plaines and Maine Township, IL  
**Description:** Provides flood storage and conveyance improvements along Farmers Creek, including channel modifications and detention expansion.  
**Estimated Construction Cost:** \$1,000,000

▼ Addison Creek Reservoir, 11-186-3F



**Status:** Modifying final design. Intergovernmental agreement being finalized. Acquiring permits.

### FLOOD CONTROL PROJECT ON PRAIRIE CREEK

**ID:** FRCR-12 **Contract:** 12-056-BF  
**Watershed:** Lower Des Plaines  
**Location:** Park Ridge and Maine Township, IL  
**Description:** Provides flood storage and conveyance improvements along Prairie Creek, including channel modifications, detention expansion, diversion sewer construction, and streambank stabilization.  
**Estimated Construction Cost:** \$13,000,000  
**Status:** Modifying final design. Intergovernmental agreement being finalized. Acquiring easements.

### LYONS LEVEE FLOOD CONTROL IMPROVEMENTS

**ID:** DPR-14D **Contract:** 13-199-3F  
**Watershed:** Lower Des Plaines  
**Location:** Lyons, IL  
**Description:** Restoration and improvement of the levee to a condition that will elevate the levee to modern design standards, provide flood protection, and prevent overtopping by events up to a 100-year design flood.  
**Estimated Construction Cost:** \$3,500,000

**Status:** Construction contract has been awarded by the Army Corps of Engineers with MWRD as the local Sponsor. Contract work is in progress.

### BUFFALO CREEK RESERVOIR EXPANSION

**ID:** BUCR-3 **Contract:** 13-370-3F  
**Watershed:** Lower Des Plaines  
**Location:** Buffalo Grove, IL  
**Description:** Increases the storage volume of the existing Buffalo Creek Reservoir by approximately 180 acre-feet. Pedestrian bridges and boardwalks will be replaced and existing trails will be relocated to remove them from the 10-year storm event.  
**Estimated Construction Cost:** \$9,678,900  
**Status:** Construction substantially completed monitoring and maintenance ongoing.

### LEVEE ALONG THORN CREEK AT ARQUILLA PARK

**ID:** THCR-G1 **Contract:** 15-IGA-14  
**Watershed:** Little Cal River  
**Location:** Glenwood, IL  
**Description:** A cost-sharing agreement with the Village of Glenwood to provide a levee at Arquilla Park to protect residential structures from overbank flooding.  
**Estimated Construction Cost:** \$5,770,000  
**MWRD Contribution:** \$3,870,000  
**Status:** Village working to acquire remaining properties needed for levee.

### FLOOD CONTROL PROJECT FOR THE WEST FORK OF THE NORTH BRANCH OF THE CHICAGO RIVER

**ID:** WF-06 **Contract:** 16-IGA-18  
**Watershed:** North Branch  
**Location:** Glenview  
**Description:** Construct 80 acre-feet of storage, a floodwall, pump station, and a new storm sewer.  
**Estimated Construction Cost:** \$6,600,000  
**Status:** Village of Glenview is collaborating with the U.S. Army Corps of Engineers on a feasibility study.



### LOCALIZED STORMWATER MANAGEMENT

In 2014, the State Legislature expanded the authorities of MWRD’s stormwater management legislation to address local drainage and flooding problems, and to acquire flood-prone property from property owners on a voluntary basis. These legislative changes form the basis of MWRD’s localized stormwater project Stormwater Management Program. MWRD is also conducting Stormwater Master Plan studies to address flooding by identifying potential projects within publicly and privately owned property.

### LOCALIZED FLOODING ‘CALL FOR PROJECTS’

MWRD initiated a Phase II ‘Call for Projects’ to directly support municipalities with stormwater management. The program assists municipalities throughout Cook County in identifying, funding, and building projects that address localized flooding and drainage concerns. These projects utilize a variety of traditional engineered solutions such as localized detention, upsizing critical storm sewers and culverts, pumping stations, and establishing drainage way, alongside green infrastructure.

Projects are prioritized on their ability to reduce localized flooding and the number of structures benefitted by the project amongst other criteria. Projects are identified as either ‘Shovel Ready’, projects with a near finalized design, or ‘Conceptual’ projects where flooding has been identified but no engineering analysis has been performed. Selected ‘Shovel Ready’ projects will enter into a cost-share agreement to build the project. MWRD assists ‘Conceptual’ projects with identifying flood control alternatives through a preliminary engineering study.

MWRD and partnering agency execute an intergovernmental agreement to facilitate the project, with long term maintenance responsibilities assigned to the partnering agency. Design and/or construction of each installation is monitored by the MWRD. After completion, MWRD inspects the project installation, ensuring maintenance is in line with the project’s operation and maintenance plan.

Based on the initial localized stormwater project outreach by the MWRD starting in September 2013, dozens of projects were initially approved by the MWRD Board of Commissioners. The approved projects that resulted from the initial outreach and subsequent ‘Call for Projects’ are distributed across Cook County and include green infrastructure improvements, localized detention, upsizing critical storm sewers/culverts, pump stations, and establishing drainage ways.

Another ‘Call for Projects’ was made in late 2019 with 46 applications submitted in early 2020. Of the applications submitted 8 are ‘Shovel Ready’ Projects while the rest are ‘Conceptual’ projects or in the ‘Design’ phase. All projects are currently being evaluated.

### LOCALIZED FLOODING PROJECTS (PHASE II)

The following is a detailed list of ongoing localized flooding projects. For 2019 completed projects, refer to page 7. Locations of both ongoing and completed localized flooding projects can be found on page 14.

**CENTRAL ROAD FLOOD CONTROL PROJECT**  
**ID:** IDOT-17 **Contract:** 14-065-5C  
**Watershed:** Lower Des Plaines  
**Location:** Unincorporated Northfield, Maine Township, and Glenview, IL  
**Description:** Analysis of new conveyance improvements along Central Road and possible detention facilities.  
**Estimated Construction Cost:** TBD  
**Status:** Ongoing coordination with the Illinois Department of Transportation.

**FIRST AVE. FROM ROOSEVELT ROAD TO CERMAK ROAD FLOOD CONTROL**  
**ID:** IDOT-15 **Contract:** 14-111-5C  
**Watershed:** Lower Des Plaines  
**Location:** Maywood, IL  
**Description:** Flood relief along 1st Ave. from Roosevelt Road to Cermak Road.  
**Estimated Construction Cost:** \$5,200,000  
**Status:** Final design.

**PLAINFIELD ROAD FROM WILLOW SPRINGS TO EAST AVE. FLOOD CONTROL**  
**ID:** CCDTH 4 **Contract:** 14-112-5C  
**Watershed:** Lower Des Plaines  
**Location:** LaGrange; Countryside; McCook; and Lyons Township, IL  
**Description:** May include construction of a new trunk sewer along portions of Plainfield Road, 55th St. and East Ave. and stormwater improvements to the McCook Ditch, McCook Ditch Overflow, and McCook Levee.  
**Estimated Construction Cost:** TBD  
**Status:** Preliminary Engineering being finalized in coordination with local municipalities, Cook County Department of Transportation and Highways, and the Illinois Department of Transportation.





### FLOOD CONTROL ALONG NATALIE CREEK

**ID:** Midlothian 1 **Contract:** 14-252-5F  
**Watershed:** Little Cal River  
**Location:** Oak Forest; Midlothian, IL  
**Description:** Installation of flood control measures for an estimated 15,800 linear feet along Natalie Creek from 157th and Central Park in Oak Forest to 146th and Pulaski in Midlothian. Flood control measures involve the upsizing of restrictive culverts, improving the channel at several locations and the installation of a stormwater detention basin. The project will reduce flood damages for over 230 structures.  
**Estimated Construction Cost:** \$7,629,000  
**Status:** Project under construction

### FLOOD CONTROL ON MIDLOTHIAN CREEK

**ID:** Robbins 2  
**Contract:** 14-253-5F / 17-IGA-02  
**Watershed:** Little Cal River  
**Location:** Robbins, IL  
**Description:** Creation of a naturalized wetland detention area along with channel improvements to resemble a park setting. The project will reduce flood damages for over 92 structures. The actual MWRD cost share will be determined based upon funding being sought from various local and regional agencies as well as grants.  
**Estimated Construction Cost:** \$11,000,000  
**Status:** Working on final design of Phase I Diversion Channel.

### FLOOD CONTROL ON CALUMET-SAG TRIBUTARY C

**ID:** Bremen Twp 1 **Contract:** 14-257-5C  
**Watershed:** Cal-Sag Channel  
**Location:** Bremen Township & Midlothian, IL  
**Description:** Preliminary engineering alternatives developed to address flooding along Calumet-Sag Tributary Channel in the vicinity of 143rd St. and Linder Ave..  
**Estimated Construction Cost:** TBD  
**Status:** Preliminary design

### FLOOD CONTROL IN THE VICINITY OF 135TH ST. AND CENTRAL AVE.

**ID:** Crestwood 1 **Contract:** 14-258-5C  
**Watershed:** Cal-Sag Channel  
**Location:** Crestwood, IL  
**Description:** Preliminary engineering analysis to identify and evaluate solutions to address flooding in the vicinity of 135th St. and Central Ave..  
**Estimated Construction Cost:** \$9,250,000  
**Status:** Final design

### FLOOD CONTROL IN THE VICINITY OF 131ST ST. AND CYPRESS DRIVE

**ID:** Palos Heights 4  
**Contract:** 14-259-5F / 17-IGA-04  
**Watershed:** Cal-Sag Channel  
**Location:** Palos Heights, IL  
**Description:** This project involves the acquisition and demolition of one structure and the installation of a swale and a new downstream storm sewer and outfall to Navajo Creek.  
**Estimated Construction Cost:** \$200,000  
**Status:** Currently under design

### FLOOD CONTROL FOR THE WASHING ST. AREA

**ID:** Blue Island 1 **Contract:** 14-260-5F  
**Watershed:** Cal-Sag Channel  
**Location:** Blue Island, IL  
**Description:** Stormwater storage and conveyance improvements to address flooding of approximately 45 structures. The actual MWRD cost share will be determined based upon funding being sought from various local and regional agencies as well as grants.  
**Estimated Construction Cost:** TBD  
**Status:** MWRD and the City are investigating additional flood control alternatives in order to ensure that the most effective solution is selected. Additional study is nearing completion.

### MELVINA DITCH RESERVOIR IMPROVEMENTS

**ID:** MD Rsvr Exp **Contract:** 14-263-3F  
**Watershed:** Cal-Sag Channel  
**Location:** Burbank, IL  
**Description:** Expands the existing Melvina Ditch Reservoir by up to 195 acre-feet to increase its storage capacity (up to a 118 percent increase), modifying the pumping station to accommodate the reservoir expansion, and installing a new emergency overflow weir to reduce the likelihood of reservoir overtopping.  
**Estimated Construction Cost:** \$14,245,000  
**Status:** Project under construction

### RAILROAD DRAINAGE OUTLET

**ID:** Riverside 13 **Contract:** 16-IGA-03  
**Watershed:** Lower Des Plaines  
**Location:** Riverside, IL  
**Description:** Construction of a 24-inch storm sewer outlet to the Des Plaines River and blocking or restricting flow from the storm sewers of the railroad drainage area to the existing combined sewer. This is a cost-sharing agreement with the Village of Riverside.  
**Estimated Construction Cost:** \$90,000  
**Status:** Project under construction.

### PILOT STUDY FOR INVESTIGATING TECHNOLOGY TO ADDRESS BASEMENT BACKUPS

**ID:** N/A **Contract:** 16-IGA-20  
**Watershed:** Chicago  
**Location:** Chicago, IL  
**Description:** Intergovernmental agreement with the City of Chicago to share the cost of a research pilot study on the south side of Chicago to gain insight into the effectiveness of various technologies aimed at reducing basement backups.  
**MWRD Contribution:** \$400,000  
**Status:** Study ongoing.



▲ Melvina Ditch Reservoir Improvements, 14-263-3F

**GROVELAND AVE. LEVEE IMPROVEMENTS**

**ID:** Riverside 11 **Contract:** 18-IGA-20  
**Watershed:** Lower Des Plaines  
**Location:** Riverside, IL  
**Description:** The Groveland Ave. levee will be improved by raising the levee with a sheet pile floodwall. A pumping station will be built to drain the land side of the levee. An adjacent St. will be raised or protected by additional flood walls. The village will enter a project partnership agreement with the Army Corps of Engineers as its local sponsor. MWRD will enter into an intergovernmental agreement with the Village to provide the non-federal share of the design and construction costs.  
**Estimated Construction Cost:** \$7,200,000  
**MWRD Contribution:** \$2,500,000  
**Status:** Currently under design.

**SOUTH AREA SEWER SEPARATION 18-IGA-21**

**ID:** Forest Park **Contract:** 18-IGA-21  
**Watershed:** Lower Des Plaines  
**Location:** Forest Park, IL  
**Description:** New storm sewers and connection to existing Des Plaines River outfall.  
**Estimated Construction Cost:** \$2,800,000  
**MWRD Contribution:** TBD  
**Status:** Drafting intergovernmental agreement.

**NEW STORM SEWERS AND OUTFALL ALONG NORTH SHORE AVE.**

**ID:** Lincolnwood **Contract:** 18-IGA-22  
**Watershed:** North Branch  
**Location:** Lincolnwood, IL  
**Description:** New storm sewer system will protect residential homes from basement backups and drain into a new outfall along North Shore Ave..  
**Estimated Construction Cost:** \$3,600,000  
**MWRD Contribution:** \$1,400,000  
**Status:** Project under construction

**HIBBARD ROAD FOREST PRESERVE WETLAND AND DUKE CHILDS STORAGE PROJECT 18-IGA-24**

**ID:** Winnetka **Contract:** 18-IGA-24  
**Watershed:** North Branch  
**Location:** Winnetka, IL  
**Description:** Wetland enhancement facility on Forest Preserve District property and an underground storage and water quality facility on Duke Childs Field.  
**Estimated Construction Cost:** \$25,903,340  
**MWRD Contribution:** TBD  
**Status:** Finalizing intergovernmental agreement with Village.

**STORMWATER STORAGE IN MOUNT PROSPECT**

**ID:** Mount Prospect **Contract:** 18-IGA-25  
**Watershed:** Lower Des Plaines  
**Location:** Mount Prospect, IL  
**Description:** Design and construction of two new flood storage basins and upgrade of ancillary storm sewers to provide a cumulative flood storage volume of approximately 30 acre-feet.  
**Estimated Construction Cost:** \$2,000,000  
**MWRD Contribution:** \$1,348,000  
**Status:** Project under construction.

**CULVERT UPSIZING AND CHANNEL IMPROVEMENTS ON BOCA RIO DITCH COOK COUNTY DOTH 18-IGA-26**

**ID:** CCDOTH **Contract:** 18-IGA-26  
**Watershed:** Little Cal River  
**Location:** Oak Forest, IL  
**Description:** Culvert upsizing and channel improvements.  
**Estimated Construction Cost:** \$619,000  
**MWRD Contribution:** TBD  
**Status:** Drafting intergovernmental agreement.

**WENONAH AVE. BASIN FLOODING RELIEF IMPROVEMENTS**

**ID:** Forest View **Contract:** 18-IGA-28  
**Watershed:** Lower Des Plaines  
**Location:** Forest View, IL  
**Description:** New storm sewers and outfall in coordination with IDOT drainage project.  
**Estimated Construction Cost:** \$1,300,000  
**MWRD Contribution:** TBD  
**Status:** Drafting intergovernmental agreement.

**CULVERT IMPROVEMENTS IN ELK GROVE VILLAGE**

**ID:** Elk Grove Village **Contract:** 18-IGA-30  
**Watershed:** Lower Des Plaines  
**Location:** Elk Grove Village, IL  
**Description:** Culvert improvements in conjunction with channel maintenance.  
**Estimated Construction Cost:** \$2,215,019  
**MWRD Contribution:** \$1,250,000  
**Status:** Project under construction.

**STORMWATER STORAGE AREAS IN NILES**

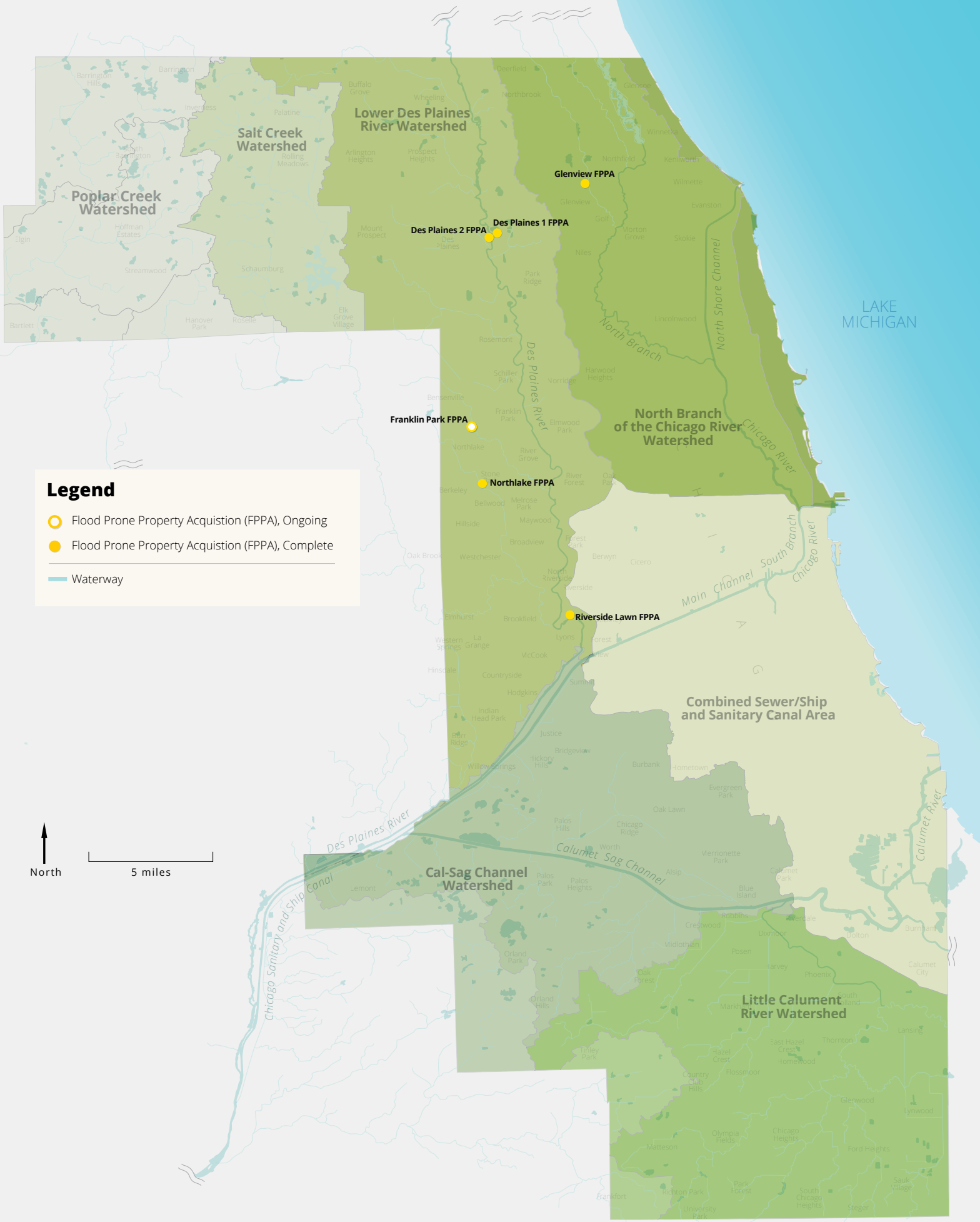
**ID:** Niles **Contract:** 18-IGA-31  
**Watershed:** North Branch  
**Location:** Niles, IL  
**Description:** New stormwater storage in open space in coordination with recreational improvements.  
**Estimated Construction Cost:** \$8,838,000  
**MWRD Contribution:** \$2,000,000  
**Status:** Finalizing intergovernmental agreement with Village.

**OLD TOWN SOUTH COMBINED SEWER SEPARATION**

**ID:** Western Springs **Contract:** 18-IGA-32  
**Watershed:** Lower Des Plaines  
**Location:** Western Springs, IL  
**Description:** Construction of new storm sewers and outfall to Flagg Creek  
**Estimated Construction Cost:** \$1,000,000  
**MWRD Contribution:** \$752,937  
**Status:** Finalizing intergovernmental agreement with Village.

**EXPANSION OF EXISTING DETENTION BASIN IN ORLAND PARK**

**ID:** Orland Park **Contract:** 18-IGA-33  
**Watershed:** Little Calumet River  
**Location:** Orland Park, IL  
**Description:** Expansion of the Grasslands Regional Detention Basin in Orland Park.  
**Estimated Construction Cost:** \$600,000  
**MWRD Contribution:** \$558,000  
**Status:** Finalizing intergovernmental agreement with Village.



### FLOOD-PRONE PROPERTY ACQUISITION

On August 7, 2014, the Board of Commissioners adopted a policy on the selection and prioritization of projects for acquiring flood-prone property. This program is comprised of three distinct components:

- **Local Sponsor Assistance Program** - MWRD's top priority will be to facilitate the Illinois Emergency Management Agency's federally funded program by assisting Local Sponsor communities in providing their share of the cost for property acquisition.
- **MWRD Initiated Program** - in communities where MWRD's Board of Commissioners approved capital projects from MWRD's Detailed Watershed Plans, should the cost of a property acquisition alternative be less than the capital project and provide equivalent benefits, the acquisition alternative will be pursued.
- **Local Government Application Program** - MWRD will consider applications directly from local governments requesting property acquisition of specific flood-prone structures.

In 2018, MWRD solicited applications from municipalities and townships for assistance with the acquisition of flood-prone structures located throughout Cook County. MWRD previously entered into intergovernmental agreements with several municipalities and the Cook County Land Bank Authority to acquire 69 flood-prone properties to date with another 132 under negotiations. Upon acquisition, the structures are removed and deed restrictions are placed on the acquired properties requiring them to remain as open spaces in perpetuity.

### FLOOD-PRONE PROPERTY ACQUISITION PROJECTS

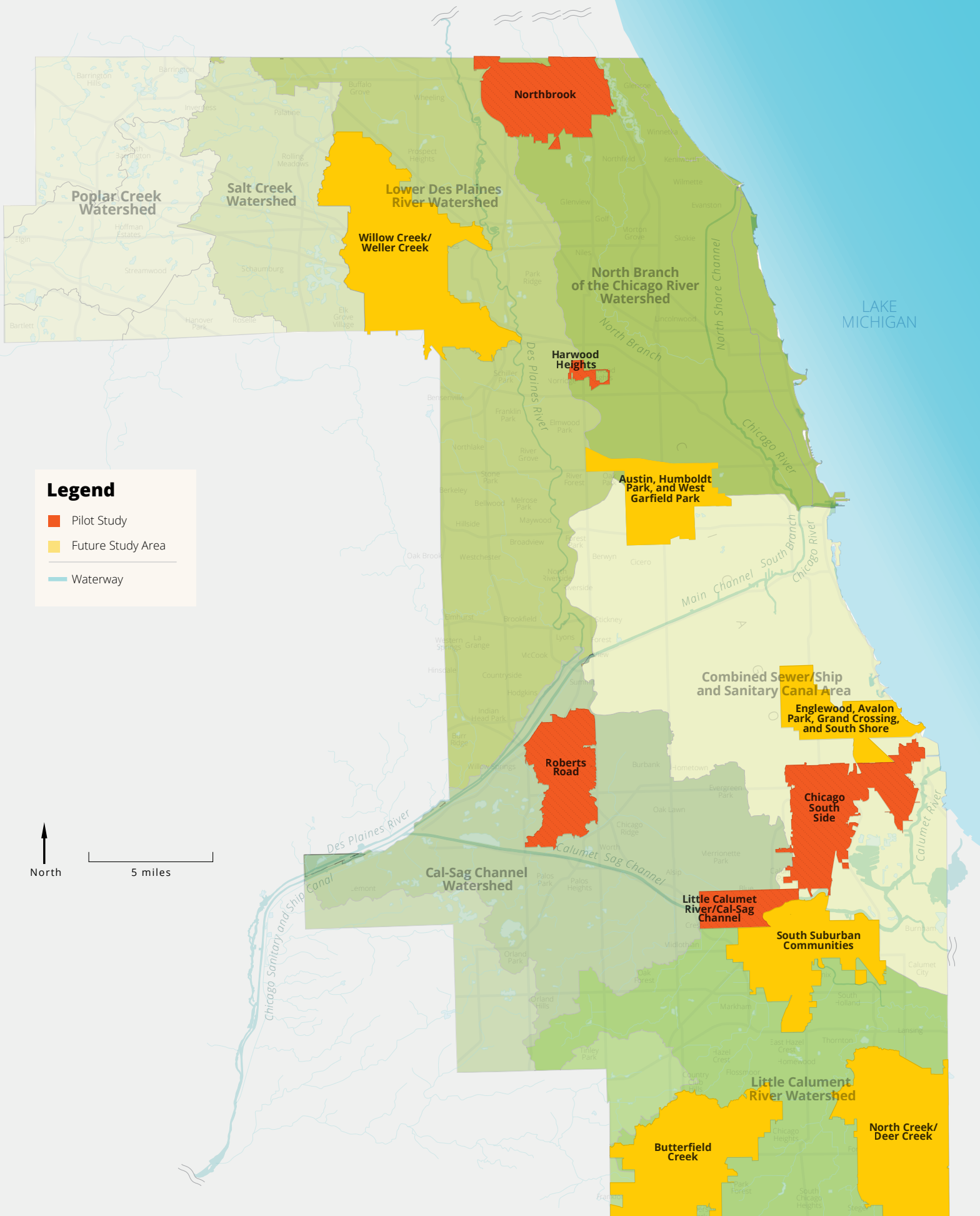
The following is a detailed list of ongoing flood-prone property acquisition projects. For 2019 completed projects, refer to page 7. Locations of both ongoing and completed flood prone property acquisition projects can be found on page 20.

#### FRANKLIN PARK FLOOD-PRONE PROPERTY ACQUISITIONS

**ID:** Franklin Park FPPA **Contract:** 16-IGA-13 **Watershed:** Lower Des Plaines **Location:** Franklin Park, IL  
**Description:** Purchase 32 flood-prone homes along Silver Creek. This is a cost-sharing agreement with the Village of Franklin Park.  
**Estimated Construction Cost:** \$6,400,000 **MWRD Contribution:** \$4,681,000  
**Status:** Intergovernmental agreement executed. Appraisals are being performed.



Des Plaines River Flooding.



## STORMWATER MASTER PLAN PILOT STUDIES

MWRD initiated five Stormwater Master Plan pilot studies in 2015 to begin putting together a Cook County green and gray infrastructure plan that would better protect the community against severe weather events. The goal of these pilot studies was to identify solutions to 100-year flooding of structures and basement backups located in publicly and privately owned properties. To achieve this goal, it will be necessary to demonstrate to the general public that no agency alone can solve the flooding woes plaguing our region. Through extensive public outreach and education, MWRD will work to educate the public as to the magnitude of the flooding issues faced by our region. Based on input from each of the four Councils of Government and the City of Chicago, the five pilot locations were:

The Little Calumet River/Calumet-Sag Channel drainage areas,

- Northbrook,
- Roberts Road drainage area,
- Village of Harwood Heights, and
- The City of Chicago's 8th Ward and surrounding area (on the southeast side).

After completing the pilot Stormwater Master Plans, the findings of these studies revealed that exorbitant investments by MWRD and the local communities would be necessary to protect structures from flooding through traditional gray or blended green and gray infrastructure. As MWRD moves forward with its stormwater master planning effort for the entire county, the lessons learned in the pilot studies will be applied, and an adaptive approach will be utilized to find ways to address community issues that considers local communities' capacity and identifies potential partnership opportunities to help fund multi-objective solutions centered on stormwater management. After an assessment and review of community planning needs across Cook County is completed, additional stormwater master planning studies will be pursued in order to create an overall plan for Cook County.

It is anticipated that Stormwater Master Plans will be developed for all areas of Cook County over the next several years following the process defined through initial pilot studies completed in 2016.

As part of the MWRD's continuing Stormwater Master Planning effort, questionnaires were sent out in the 1st quarter of 2019 to all communities to gather available information related to stormwater issues for use in future plans initiated by the MWRD. The data sought in the questionnaire includes:

- Location, frequency and severity of flood problems
- If planning or engineering efforts have already been made to address stormwater issues
- Other top community needs.

The questionnaire will be in two parts. The first part will be general questions answered through an online application. The second will be an interactive online GIS tool to show locations of flooding on a map.





## GREEN INFRASTRUCTURE

The Green Infrastructure Program focuses on engineered systems that capture and manage precipitation where it falls rather than it traveling through conventional stormwater systems. By addressing the increase of impervious area due to land development, Green infrastructure can reduce combined sewer discharges, localized flooding and stormwater impacts in an area. Green infrastructure includes natural systems which use vegetation, such as bioswales and rain gardens, to manage rainfall. Green infrastructure also includes manufactured solutions such as rain barrels, permeable pavement and rain water harvesting. Established in 2014, the Green Infrastructure Program seeks to increase the acceptance and investment of Green infrastructure throughout Cook County through numerous partnerships.



▲ Space to Grow, Oliver S. Westcott Elementary School, 15-IGA-20

## GREEN INFRASTRUCTURE 'CALL FOR PROJECTS'

MWRD introduced the Green Infrastructure Call for Projects to scale its investment into green infrastructure. The program seeks to partner with local communities and public agencies throughout Cook County to fund and build green infrastructure projects. These projects vary in size and scope and can include roadside bioswales and rain gardens, green roofs, permeable pavement alleys, green streetscapes, and eco-orchards.

The program is available to government organizations within MWRD's corporate boundaries. Projects are prioritized on their ability to capture and store water (measured as design retention capacity), flood risk, and structures benefitted by the green infrastructure amongst other criteria. MWRD and a partnering agency execute an intergovernmental agreement to facilitate the project, with long term maintenance responsibilities assigned to the partnering agency. Design and construction of each installation are monitored by MWRD to optimize benefits. After completion, MWRD inspects the installation, ensuring maintenance is in line with the project's operation and maintenance plan.

In 2017 and 2018, 40 projects were selected. In June of 2019, a third "Call for Projects" was held. 41 applications were evaluated, with an additional 20 more projects selected. The projects selected over the last three years will provide a total of approximately 6 million gallons of design retention capacity.

The Arlington Heights, River Forest, Skokie, and Wheeling Park District projects were completed in 2018, providing 205,453 gallons of design retention capacity for an investment of \$694,000.

In 2019, the District worked with the City of Des Plaines, and the Villages of Forest Park, Harwood Heights, La Grange, Maywood, Riverside and Tinley Park to develop green infrastructure projects consisting of permeable pavement parking, green alleys, and bioretention facilities. The District will contribute up to \$2,935,034 to these projects which provided a combined DRC of 1,109,170 gallons.



## GREEN INFRASTRUCTURE PARTNERSHIPS 'CALL FOR PROJECTS'

The following is a list of Green Infrastructure Partnerships under construction in 2019. For 2019 completed projects, refer to page 7 & 9. Locations of both ongoing and completed Green Infrastructure Partnerships can be found on page 24.

### GREEN INFRASTRUCTURE PARTNERSHIP PROJECTS UNDER CONSTRUCTION IN 2019

ID	Contract	Project Title
Des Plaines	18-IGA-06	Des Plaines Green Infrastructure Project
Forest Park	18-IGA-07	Forest Park Green Infrastructure Project
Hardwood Heights	18-IGA-09	Hardwood Heights Green Alleys
Maywood	18-IGA-10	Village of Maywood Green Infrastructure Project
LaGrange	19-IGA-08	LaGrange Parking Lot Retrofits
Tinley Park	19-IGA-15	North St. Permeable Pavers
Riverside	18-IGA-17	Village of Riverside Green Infrastructure Project

### GREEN INFRASTRUCTURE PARTNERSHIP SELECTIONS - 2019 'CALL FOR PROJECTS'

The following is a list of agencies and associated projects selected during the 2019 Green Infrastructure 'Call For Projects'. Intergovernmental Agreements are currently being drafted between the MWRD and listed agencies.

ID/Contract	Partnering Agency	Project Title
20-IGA-01	Village of Bartlett	Bioswale and Bike Path Replacement Project
20-IGA-02	Berwyn Park District	Liberty Green Annex
20-IGA-03	City of Blue Island	119 <sup>th</sup> Place Bioswale and Permeable Alley
20-IGA-04	Village of Broadview	Broadview 2020 Green Alley Improvements
20-IGA-05	Village of Burnham	Cottage Park Stormwater Improvements
20-IGA-06	City of Chicago	Calumet River Gateway Garden
20-IGA-07	Village of Chicago Ridge	Metra Station Permeable Paver Parking Lot
20-IGA-08	Town of Cicero	Cicero 2020 Green Alley Paving
20-IGA-09	City of Evanston	Parking Lot Improvements Project
20-IGA-10	Forest Preserve District	Schuth's Grove Parking Lot GI Retrofit
20-IGA-11	Village of Harwood Heights	Harwood Heights Green Alley Project
20-IGA-12	Village of Lyons	Green Alleys Water Management
20-IGA-13	Village of Maywood	Maywood Green Alleys Program
20-IGA-14	Northfield Park District	Clarkson Park Improvements
20-IGA-15	City of Northlake	Northlake City Centre Permeable Parking Lot Project
20-IGA-16	Poplar Creek Public Library District	Concrete Walkway Replacement with Permeable Paving System
20-IGA-17	Village of River Grove	River Grove 2020 Green Alley Program
20-IGA-18	Village of Skokie	Skokie 2020 Green Alley Program
20-IGA-19	Union Ridge School District 86	Union Ridge School Parking Lot Improvements
20-IGA-20	Village of Wilmette	Village Hall Parking Lot Retrofit



### SPACE TO GROW

Space to Grow is an innovative public-private partnership with a mission of transforming Chicago schoolyards into vibrant green spaces for physical activity, outdoor learning and play. As centers of school and community life, Space to Grow schoolyards typically feature expanded and safer playground equipment, track and field areas, multi-purpose courts, turf fields, outdoor classrooms and vegetable gardens. The schoolyards also incorporate many green infrastructure design elements to reduce water pollution and neighborhood flooding. These features include permeable play surfaces, native plantings and rain gardens.

The program is co-managed by the Healthy Schools Campaign and Openlands with capital funding, leadership and expertise from MWRD, Chicago Public Schools and the City of Chicago Department of Water Management. MWRD also provides technical support for green infrastructure elements to ensure that the new schoolyards provide optimal stormwater capture benefits.

Space to Grow schools are prioritized based on flood risk, site suitability and socioeconomic factors. Numerous community meetings were held to describe project details and benefits. MWRD and Chicago Public Schools executed an intergovernmental agreement to facilitate the projects whereby long term maintenance responsibilities are assigned to Chicago Public Schools. MWRD maintains the right to inspect the green infrastructure to ensure it is being properly maintained in accordance with the operations and maintenance plan developed for each school.

Since 2014, MWRD has invested into 20 schools providing 3.65 million gallons of design retention capacity. The program will be amended to continue through 2022, funding green infrastructure at up to thirty-four schools for a total investment of approximately \$18 million. Construction was completed at 5 schools in 2019. Another 5 projects have been designed with construction anticipated in early 2020.

The existing intergovernmental agreement between MWRD and Chicago Public Schools will be amended to extend the timeline for the remaining projects through 2022. MWRD plans to invest \$1 million to fund ten school designs, with the remaining school designs to be funded by Chicago Public Schools and the City of Chicago Department of Water Management.

### SPACE TO GROW PARTNERED SCHOOLS

The following is a list of Space to Grow Projects scheduled for construction in 2020. For 2019 completed projects, refer to page 9. Locations of both ongoing and completed Space to Grow Projects can be found on page 28.

**ID:** Multiple Locations **Contract:** 14-IGA-06 and 15-IGA-20 **Watershed:** Chicago **Location:** Multiple Locations  
**Description:** MWRD, the Chicago Department of Water Management, and the Chicago Public Schools are partnering to design and install playgrounds at various Chicago Elementary Schools utilizing green infrastructure. The projects will reduce flooding, reduce the load on the combined sewer system, and educate students and neighbors about green Infrastructure techniques and purpose.

**MWRD Max Contribution:** \$18,000,000  
**Status:** 20 of a total up to 34 schools have been completed through 2019. Five playgrounds were transformed in 2019. An additional 5 schools have been designed and are planned for construction in 2020. They are as follows:

- John Barry Elementary School** | 2828 N. Kilbourn Ave.
- Daniel Boone Elementary School** | 6710 N. Washtenaw Ave.
- Genevieve Melody Elementary School** | 3937 W. Wilcox Street
- Jesse Sherwood Elementary School** | 245 W. 57th Street
- Harold Washington Elementary School** | 9130 S. University Ave.

The existing intergovernmental agreement between MWRD and Chicago Public Schools will be amended to extend the timeline for the remaining projects through 2022. MWRD plans to invest \$1 million to fund ten school designs, with the remaining school designs to be funded by Chicago Public Schools and the City of Chicago Department of Water Management.



▲ Space to Grow, Henry H. Nash Elementary School, 15-IGA-20

## STORMWATER MAINTENANCE AND OPERATION

### CAPITAL PROJECT MAINTENANCE & INTERGOVERNMENTAL AGREEMENTS

Regular upkeep and maintenance are necessary for the new installations to function properly and provide the expected stormwater benefit. For that reason, routine maintenance is required as dictated by an operation and maintenance plan developed for each project.

Agencies that receive financial assistance from MWRD enter into an intergovernmental agreement with the MWRD, which includes the operation and maintenance plan, and the maintainer of the project is established. Typically, the partnering agency is responsible for all costs associated with inspection, operation, and maintenance of the project. MWRD reviews inspection reports generated to assess the operation of the final project and to ensure proper maintenance is being performed. MWRD may also conduct their own inspections of the project on an as needed basis.

### SMALL STREAMS MAINTENANCE PROGRAM

Through the management of the Small Streams Maintenance Program, the Maintenance & Operations Department works to reduce flooding in urbanized areas. Cook County has little elevation change; therefore, its streams tend to move slowly and are naturally prone to flooding. Many developed areas were originally uninhabited muddy marshes with meandering streams that often overtopped their banks. The streams that flow through the neighborhoods of Cook County are more than just a scenic part of the landscape or a habitat for wildlife. They serve the vital function of draining stormwater and preventing flooding. Minor blockages can build up quickly in heavy rains, restricting flow and creating a potential for urban flooding. In order to function properly, the streams must be maintained.

Total Debris Removed By Watershed (Cubic Yard)		
Watershed	2018	2019
Little Cal	7,821	5,522
Cal-Sag	9,791	5,064
Lower Des Plaines	7,041	3,123
North Branch	1,321	3,652
Upper Salt Creek	185	628
Poplar Creek	70	945
<b>Total</b>	<b>26,229</b>	<b>18,934</b>

The Small Streams Maintenance Program, established in 2006, has successfully concluded its thirteenth year of operation. The program follows MWRD's stormwater management mission to relieve flooding in urbanized areas through immediate and relatively simple remedies. The program's top priorities are to maintain creeks, streams, and waterways by removing blockages, obstructions, and debris. The program also prevents future blockages by removing dead and unhealthy trees, which can fall into streams. Maintenance crews also remove

harmful invasive species, such as buckthorn and honeysuckle, which can choke out native plants and leave the ground vulnerable to erosion.

MWRD and contractor crews removed approximately 18,934 cubic yards of debris in 2019. In addition 3,189 cubic yards of river and canal debris was removed by MWRD's debris and skimmer boat crews along the Chicago Area Waterways. In 2019, MWRD continued to utilize a two-year stream maintenance contract, paying a total of \$2,472,936 to contractors to provide stream maintenance. Listed in the table below are the debris amounts removed in each watershed for the past two years.

The 2019 expenditure for the Small Streams Maintenance Program was \$2,966,427. The average cost per cubic yard of debris removed was \$156.67.

The Small Streams Maintenance Program will continue in 2020 and is anticipating removal of approximately 25,000 cubic yards of debris. Major goals include standardizing procedures, identifying critical stream areas, scheduling critical inspections and continuing to introduce MWRD's small stream crews to local governments to increase the public's awareness of MWRD's presence and execution of the program.

Citizens are encouraged to report waterway blockages and request removal of debris from small creeks or waterways in Cook County, IL, by either visiting <https://gispub.mwrdd.org/incidentreporting/> or downloading the Citizen Incident Reporting iPhone app (search for **MWRD Citizen Incident Reporting** on the iPhone App store or visit: <https://apple.co/2LTtEa8>).

## WATERSHED MANAGEMENT ORDINANCE

MWRD began requiring stormwater detention in 1972 under the Sewer Permit Ordinance for development projects greater than five acres. In 2007, MWRD began work on a new stormwater management regulatory ordinance known as the Watershed Management Ordinance (WMO). Numerous public hearings were held on the WMO in order to receive public input. The MWRD's Board of Commissioners subsequently approved the WMO, which became effective on May 1, 2014. The WMO is a comprehensive regulatory ordinance drafted with the assistance of an Advisory Committee consisting of regulatory agencies, municipalities, and non-governmental organizations.

The WMO aims to protect public health, safety, and welfare, and Cook County homes and businesses from flood damage by managing and mitigating the effects of development and redevelopment on stormwater drainage. It provides uniform minimum stormwater management regulations for Cook County that are consistent with the region. The WMO replaces the MWRD's Sewer Permit Ordinance with more comprehensive permit requirements. Components regulated under the WMO include drainage and detention, volume control, floodplain management, isolated wetland protection, riparian environment protection and soil erosion and sediment control. The MWRD has included a green infrastructure component in the ordinance which requires the capture of 1-inch of runoff from impervious surfaces for parcels greater than ½ acre in size when a WMO permit is required.

The WMO was amended by MWRD's Board of Commissioners on July 10, 2014 to incorporate the Infiltration/Inflow Control Program (Article 8). It was amended again on February 15, 2018. The WMO was amended on May 16, 2019 to allow the new Watershed Specific Release Rates, incorporation of updated Bulletin 70 rainfall data, and updates to the redevelopment provisions relating to detention to become effective on January 1, 2020. MWRD continues to develop the Technical Guidance Manual, which serves as a technical reference to the WMO. The WMO webpage, <http://wmo.mwrdd.org/>, contains more information on both the WMO and the Technical Guidance Manual.

Regulation of the WMO is administered by issuing permits for development within Cook County. Permits are reviewed by MWRD Engineering Department staff to ensure the project design is in compliance with the WMO. Additionally, construction sites are inspected to enforce the provisions approved under the permit. In 2019, five hundred and twenty-nine permits were issued, requiring a total of 97,673,900 gallons of detention volume. 207 permits required a total of 17,711,957 gallons of green infrastructure retention volume. The following table illustrates the number of permits issued and inspected in 2019 and since the inception of the WMO. Volumes of water captured onsite in the form of detention and volume control (green infrastructure) are also included.

Watershed Management Ordinance Program				
Year	# Permits Issued	# Site Inspections	Total Detention Volume	Total Green Infrastructure Volume
2019	529	5,275	97,673,900 gallons	17,711,900 gallons
<b>Total</b>	<b>2,473</b>	<b>-</b>	<b>451,336,200 gallons</b>	<b>71,049,800 gallons</b>

### GIS/GPS ASSISTANCE

In 2017, MWRD purchased six Global Positioning System (GPS) units to provide sewer system owners with resources to begin mapping their sewer systems in a Geographic Information System (GIS) or to improve their existing sewer system maps. In return, sewer system owners provide MWRD with their sanitary, storm and combined sewer data. To obtain GPS equipment and related software at no cost, sewer system owners must enter into an intergovernmental agreement with MWRD. As of January 2019, nine municipalities have entered into an intergovernmental agreement with MWRD to utilize the GPS units. Sewer system owners that wish to be added to the list for the next available GPS unit should submit a letter of intent to the MWRD Director of Engineering. A template intergovernmental agreement and modifiable letter of intent can be found at [mwrdd.org/wmo](http://mwrdd.org/wmo).



## INFILTRATION/INFLOW CONTROL PROGRAM ADMINISTRATION

MWRD's Infiltration/Inflow Control Program provides a framework for asset management of separate sewer systems to meet the following goals:

- Maintain infrastructure to prevent sanitary sewer overflows and basement backups due to sewer surcharging and other adverse sewer system conditions;
- Comply with MWRD's National Pollution Discharge Elimination System permits and all other applicable federal, state, and local laws and regulations;
- Minimize extraneous flows transported to MWRD's facilities due to defective system components or illegal connections.

The Infiltration/Inflow Control Program is implemented due to special conditions imposed within the National Pollutant Discharge Elimination System permits issued by the Illinois Environmental Protection Agency for MWRD's Water Reclamation Plants. In addition to adopting a Capacity, Management, Operation and Maintenance Program for the conveyance and treatment facilities, MWRD is required to take action to reduce excessive infiltration and inflow within the local sanitary sewer systems.

All satellite entities (sewer system owners) within MWRD's separate sewer area that discharge directly or indirectly into MWRD facilities are required to identify and address infiltration and inflow sources within the public and private sewer systems. This will be accomplished by the individual satellite entities performing ongoing inspections and conducting maintenance and rehabilitation work on the sewer system. All satellite entities must annually report work completed to meet the goals of the Infiltration/Inflow Control Program to MWRD.

## INFILTRATION / INFLOW CONTROL PROGRAM SATELLITE ENTITIES

Alsip	Hickory Hills	Orland Park
Aqua Illinois	Hillside	Palatine
Arlington Heights	Hinsdale	Palatine Township
Bartlett	Hodgkins	Palos Heights
Bedford Park	Hoffman Estates	Palos Hills
Bellwood	Homewood	Palos Park
Berkeley	Illinois American Water	Park Ridge
Bridgeview	Indian Head Park	Plum Grove Estates SD
Broadview	Inverness	Plum Grove Woodlands SD
Brookfield	Justice	Prospect Heights
Buffalo Grove	Kenilworth	Richton Park
Burr Ridge	Kimberly Heights SD	River Grove
Calumet City	La Grange	Riverdale
Chicago Ridge	La Grange Highlands SD	Robbins
Country Club Hills	La Grange Park	Rolling Meadows
Countryside	Lansing	Roselle
Crestwood	Lemont	Rosemont
Deer Park	Leyden Township	Sauk Village
Des Plaines	Lynwood	Schaumburg
Dolton	Markham	Schiller Park
East Hazel Crest	Matteson	South Barrington
Elk Grove Township	McCook	South Holland
Elgin	Melrose Park	South Lyons Township SD
Elk Grove Village	Merrionette Park	South Palos Township SD
Evergreen Park	Midlothian	South Stickney SD
Flagg Creek WRD	Mission Brook SD	Stone Park
Flossmoor	Morton Grove	Streamwood
Ford Heights	Mount Prospect	Thornton
Forest River SD	Niles	Tinley Park
Franklin Park	Norridge	Westchester
Garden Homes SD	Northbrook	Western Springs
Glenbrook SD	Northfield	Wheeling

Glencoe  
Glenview  
Glenwood  
Hanover Park  
Harvey  
Harwood Heights  
Hazel Crest

Northfield Township  
Northfield Woods SD  
Northlake  
Oak Forest  
Oak Lawn  
Oak Meadow SD  
Olympia Fields

Willow Springs  
Wilmette  
Winnetka  
Woodley Road SD  
Worth

## PARTNERSHIPS AND PUBLIC OUTREACH

### JOINT FUNDING AGREEMENT WITH THE UNITED STATES GEOLOGICAL SURVEY FOR STREAM GAGING STATION IN COOK COUNTY

MWRD entered into a Joint Funding Agreement with the United States Geological Survey beginning in 2006 and has since renewed the agreement annually to fund the continued maintenance and operation of various stream gages and rain gages within Cook County. Under the 2018-2019 agreement, MWRD is funding the following seven stream gages:

- Salt Creek at Rolling Meadows
- Salt Creek near Elk Grove Village
- Salt Creek at Western Springs
- Des Plaines River at Lyons
- North Branch of the Chicago River at Deerfield
- Natalie Creek at Midlothian
- Tinley Creek near Palos Park

MWRD is also funding two rain gages located on Salt Creek near Rolling Meadows and on Natalie Creek at Midlothian. The data from the streamflow gaging stations has proven useful for MWRD with calibration of the hydrologic and hydraulic models in the Detailed Watershed Plan development, and MWRD will continue to use data from these stations in ongoing and future planning and design of stormwater improvements. Real time data from the stream gages are available on the United States Geological Survey's website at <https://waterdata.usgs.gov/nwis>. Precipitation data is available at <https://il.water.usgs.gov/gmaps/precip/index.php>.

## WATERSHED PLANNING COUNCILS

The Watershed Planning Councils were formed in 2005 to serve as advisory bodies to MWRD for its stormwater management program. Municipalities and townships are represented in the councils by their chief elected officials or designees. Unincorporated areas are represented by the Cook County Board President or his or her designee. Councils meet at least quarterly 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. Watershed Planning Council meetings serve as a mechanism for representatives of municipalities and townships to be updated on MWRD's stormwater management program as well as to communicate concerns of the public to MWRD.

The following Councils of Government are responsible for coordination of the WPCs:

- Northwest Municipal Conference
- West Central Municipal Conference
- South Suburban Mayors and Managers Association
- Southwest Conference of Mayors.

MWRD negotiated agreements with each of the Councils of Government to provide administrative assistance related to coordination of the Watershed Planning Councils; the current agreement was renewed for 2018 and 2019. The Councils of Government assist MWRD by arranging meeting schedules, drafting and distributing meeting agendas, distributing information from MWRD to council members, assembling contact information for council representatives, and forwarding information about stormwater management concerns from the council members to MWRD.

Visit <https://mwr.org/watershed-planning-council-meetings> to view the current Watershed Planning Council meeting schedule.

## PUBLIC AFFAIRS

In 2019, MWRD staff provided information about MWRD and the Stormwater Management Program at various public events in communities throughout the region and at various technical conferences. MWRD attends all Watershed Planning Council meetings to provide updates on watershed planning efforts, changes to 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 MWRD. The Space to Grow projects in partnership with Chicago Public Schools and Department of Water Management also have a large public affairs component, including community meetings to recommend design elements, community planting days and ribbon cutting ceremonies, where the value of green infrastructure is demonstrated. MWRD also worked to educate the general public on their water footprint by attending numerous community and environmental fairs throughout Cook County.

MWRD Staff will continue to participate in community outreach events in 2020. MWRD will also continue to participate in Watershed Planning Council meetings, and continue to promote MWRD stormwater management efforts using press releases and other media outlets.

## COOK COUNTY HAZARD MITIGATION PLAN

The Cook County Hazard Mitigation Plan is the use of long-term and short-term policies, programs, projects, and other activities to alleviate the death, injury and property damage that can result from a disaster. Cook County, MWRD, and a coalition of planning partners prepared the Cook County Multi-Jurisdictional Hazard Mitigation Plan in order to identify the risks posed by hazards and find ways to reduce their impacts. The plan reduces risk for those who live in, work in, and visit the County. MWRD continues to work closely with Cook County and our other planning partners to mitigate against flooding through projects identified in our annual report.

In late 2019 the Board of Commissioners of the Metropolitan Water Reclamation District of Greater Chicago adopted Volume 1 in its entirety and certain portions of Volume 2 of the Cook County Multi-Jurisdictional Hazard Mitigation Plan. Web-links for both Volumes of the Hazard Mitigation Plan are provided below.

### COOK COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN VOLUME 1 – PLANNING-AREA-WIDE ELEMENTS

<https://www.cookcountyemergencymanagement.org/sites/default/files/images/Cook%20County%20Multi-Jurisdictional%20Hazard%20Mitigation%20Plan%20Update.pdf>

### COOK COUNTY MULTI-JURISDICTIONAL HAZARD MITIGATION PLAN VOLUME 2 – MUNICIPAL ANNEXES – COUNTY MITIGATION ACTIONS

<https://www.cookcountyemergencymanagement.org/sites/default/files/images/Countywide%20Mitigation%20Actions.pdf>

## 2019 STORMWATER MANAGEMENT PRESS RELEASES

- December 04, 2019 MWRD selects 20 green infrastructure projects across Cook County to absorb more stormwater and bolster resiliency
- December 03, 2019 Space to Grow partnership brightens schoolyard at Niños Heroes
- November 22, 2019 Space to Grow transformation benefits Nash/KIPP schoolyard to mitigate flooding
- November 19, 2019 “SWS CONFERENCE & EXPO 2019: TAKING THE INDUSTRY BY STORM,” Storm Water Solutions Magazine
- November 18, 2019 “Union Ridge will replace parking lot with permeable pavers under MWRD Green Infrastructure Partnership,” Pioneer Press
- November 14, 2019 Space to Grow partners transform Webster Elementary schoolyard
- November 06, 2019 Ribbon-cutting ceremony to be held on Webster School Space to Grow schoolyard today!
- October 18, 2019 Space to Grow partners unveil first new schoolyard of 2019
- October 11, 2019 MWRD, Riverside to introduce new permeable parking lot
- October 11, 2019 Green parking lots represent commitment from MWRD and La Grange to protect environment and address stormwater
- October 07, 2019 MWRD, La Grange introduce new permeable parking lots
- October 03, 2019 MWRD, Tinley Park partner on permeable St. to soak up water
- October 01, 2019 Learn how to protect your water environment: MWRD to host Watershed Management Ordinance training sessions

- September 30, 2019 MWRD, Tinley Park to celebrate new green St.
- September 16, 2019 Recent WMO Amendments Include New Watershed Specific Release Rates
- June 18, 2019 MWRD seeks government partners to apply for green infrastructure project assistance by Aug. 9
- June 06, 2019 Green infrastructure training provided by MWRD and WEF enhances stormwater management and improves water quality
- May 1, 2019 CDOT and Water Departments to Discuss Success of Albany Park Stormwater Diversion Tunnel in the 39th Ward
- May 1, 2019 MWRD breaks ground on Arrowhead Lake flood control project
- April 25, 2019 Arrowhead Lake project to deliver flood control in Palos Heights and Forest Preserve
- April 24, 2019 MWRD to break ground on Addison Creek Reservoir to provide flood relief for six communities
- April 05, 2019 Unique green infrastructure training opportunity to be held at Stickney Water Reclamation Plant
- February 27, 2019 MWRD prioritizes green infrastructure projects for 2019
- January 29, 2019 Comments accepted through Feb. 7 on MWRD’s watershed management ordinance MWRD reservoir expansion to alleviate Burbank and Oak Lawn flooding

## 2019 STORMWATER MANAGEMENT COMMITTED EXPENDITURES

Category	Description	Committed Expenditures	
<b>Personal Services: Consultants</b>	<b>Fees paid to consultants for professional services rendered:</b>	<b>\$</b>	<b>4,195,769 5.64%</b>
	Preliminary Engineering	\$	1,415,915
	Final Engineering	\$	2,736,421
	Post Award	\$	43,433
<b>Personal Services: In-House Contractual Services</b>	<b>Salaries and associated costs related to MWRD personnel (57 Full time Employee Positions):</b>	<b>\$</b>	<b>9,731,101 13.08%</b>
	<b>Fees paid for services provided by Councils of Governments, agencies or companies:</b>	<b>\$</b>	<b>54,658,048 81.26%</b>
	Small Streams Maintenance Program	\$	2,536,483
	Small Streams Maintenance Program Waste Disposal	\$	33,802
	Court Reporting Services	\$	16,126
	Contractual Services, N.O.C	\$	433,346
	Land Acquisition and Appraisals	\$	1,124,956
	Waterways Facilities Structures (Construction)	\$	38,098,618
	Army Corps of Engineers Services	\$	1,659,772
	Permit Review	\$	37,327
	IGAs	\$	10,387,612
	Payments for Easements	\$	178,421
	Debt Service for Alternate Revenue Bonds	\$	5,771,900
	Miscellaneous Contractual Services	\$	141,585
<b>Administrative Expenses</b>	<b>Materials, equipment, supplies:</b>	<b>\$</b>	<b>11,773 .02%</b>
	<b>Total 2019 Committed Expenditures</b>	<b>\$</b>	<b>74,368,591</b>
	<b>Net Assets Appropriable for 2020</b>	<b>\$</b>	<b>152,995,492</b>

## BOARD OF COMMISSIONERS

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## Metropolitan Water Reclamation District of Greater Chicago

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Tours are offered for groups of up to 25.

     [mwr.org](http://mwr.org)

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Established in 1889, the MWRD is an award-winning, special purpose government agency responsible for wastewater treatment and stormwater management in Cook County, Illinois.

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