STORMWATER MANAGEMENT PROGRAM

# 2021 Annual Report

Metropolitan Water Reclamation District of Greater Chicago

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**PHOTOS:** Construction of the Addison Creek Reservoir; flooding after a rain event; a home in Riverside acquired under MWRD's Flood Prone Property Acquisition Program; green alley project in Harwood Heights; construction of a Space to Grow playground.

## BACKGROUND AND HISTORY

For years, stormwater management in Cook County was 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).

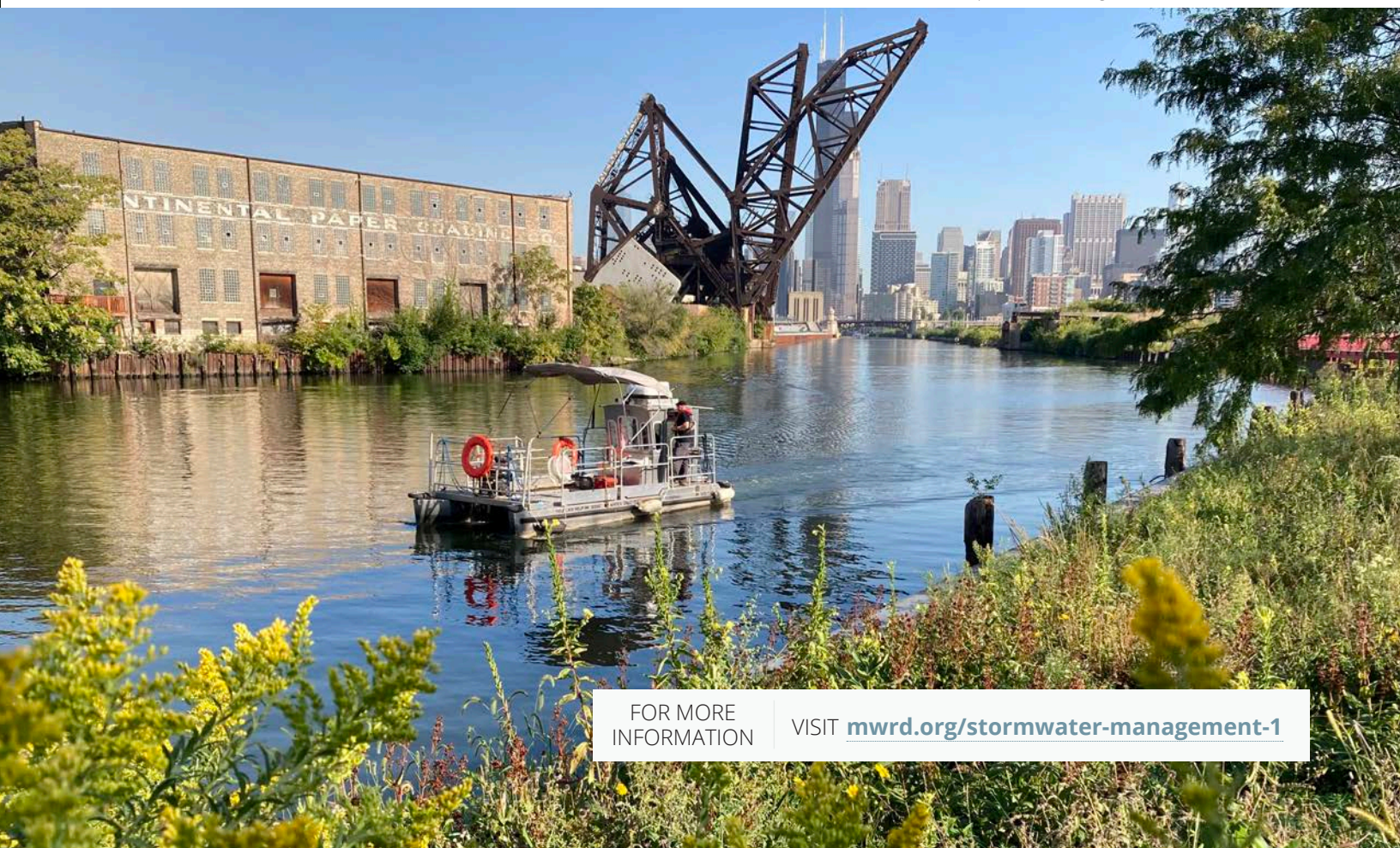
The Act required the MWRD to develop the Cook County Stormwater Management Plan. The Cook County Stormwater Management Plan provides the framework for the stormwater management program, including its mission, goals, and program elements. The MWRD's Board of Commissioners adopted the plan in February 2007. Adoption of the plan and the implementation of the 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, the 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 (SSMP), 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 the MWRD authority to allow for acquisition of flood-prone properties and to plan, implement, and finance local stormwater management projects. The 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, the MWRD's Stormwater Management Program addresses both regional and local flooding problems throughout Cook County. The MWRD has made significant investments in developing over 180 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.

▼ An MWRD debris boat patrols the Chicago River




FOR MORE INFORMATION VISIT **mwrd.org/stormwater-management-1**

## 2021 YEAR IN REVIEW

As the MWRD continued to advance its mission and goals to alleviate the impact of flooding and erosion, our Stormwater Management program has also been aligned with our new organization-wide Strategic Plan released in June 2021 (**https://mwrd.org/strategic-plan**). Under this new Strategic Plan, goals and objectives have been established to ensure our approach to mitigate flooding across Cook County is done through a proactive and equitable approach for stormwater management, including implementation of gray and green infrastructure, enforcement of the Watershed Management Ordinance, and acquisition of flood-prone property. In 2021, projects under construction in partnership with municipalities included: Addison Creek Reservoir; Addison Creek Streambank Stabilization; Buffalo Creek Reservoir Expansion; Lyons and McCook Levee Improvements Projects; Melvina Ditch Streambank Stabilization; Natalie Creek Flood Control; Green Alley projects in Harwood Heights, Lyons, and Westchester; Green Infrastructure Retrofits at Bartlett, Bellwood, Forest Preserve District of Cook County, Oak Park, Park Ridge; and new stormwater storage and conveyance systems in Mount Prospect and Lincolnwood. Further details concerning these items and other stormwater management activities are provided in this Annual Report.

### 2021 Accomplishments for the Stormwater Management Program include the following:

**Removed 19,000 cubic yards of debris** from small streams and rivers in Cook County, to prevent flooding under the Small Streams Maintenance Program, as described below;

**Developed a Volumetric Approach to Stormwater Planning** to serve as a long-term vision plan that is flexible, dynamic, and compatible with local communities' timeline and strategies for addressing flooding problems;

**Provided guidance to design engineers and developers** considering construction of offsite stormwater detention and volume control facilities and approved permits under which offsite volume control facilities were constructed;

**Advanced negotiations for a strategic partnership** with the Chicago Park District for the planning, prioritization, design, and oversight of Green Infrastructure projects. Through regular coordination with the Forest Preserve District of Cook County and City of Chicago, the framework for future strategic partnerships with those agencies is also being developed;

**Called for green infrastructure, local stormwater, and flood-prone property acquisition projects**, resulting in a large submission of potential partnership projects, sixteen of which were identified for assistance by the MWRD and approved by the Board of Commissioners. The MWRD initiated negotiations of intergovernmental agreements for acquisition of flood-prone properties within the City of Northlake, and the Villages of Lyons, Willow Springs, and Winnetka and initiated preliminary engineering for local stormwater partnership projects within the Villages of Bedford Park, Midlothian, Morton Grove, Rolling Meadows, and Schiller Park. Seven green infrastructure projects were approved for partnerships within the MWRD in Calumet City, Countryside, Des Plaines, Lyons, Maywood, Oak Lawn, and at the River Trails Middle School in Mt. Prospect. Intergovernmental agreements will be negotiated in 2022 for these projects.

▼ Small Streams Maintenance Program crew removes a blockage in Miami Woods in Morton Grove

## 2021 Budget
SIGNIFICANT FEATURES

**Develop comprehensive framework to guide proactive implementation of stormwater solutions:**

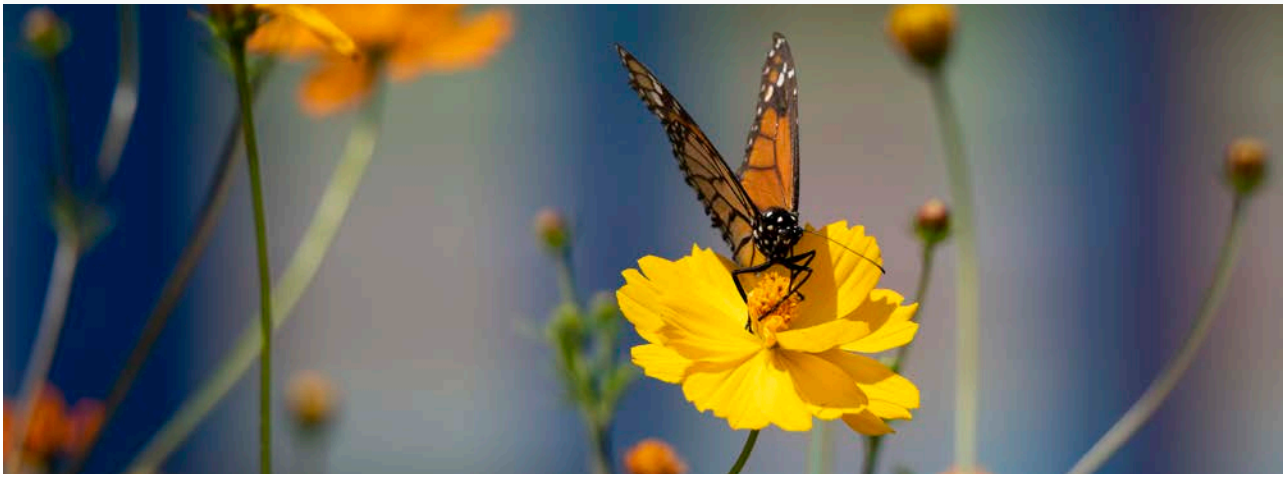
- Adopt an amendment to the WMO that provides clarification of definitions, additional means of compliance with wetland regulations, and initiation of wetland verification service;
- Issue WMO permits and provide information to design engineers, property owners, and municipalities to facilitate the permit submittal process;
- Provide guidance to satellite entities to help them achieve compliance with the Infiltration/ Inflow Control Program;
- Respond to requests for removal of debris from small streams and rivers under the SSMP;
- Implement the Volumetric Approach to Stormwater Planning and prioritize areas identified with additional storage opportunities to address flooding problems.

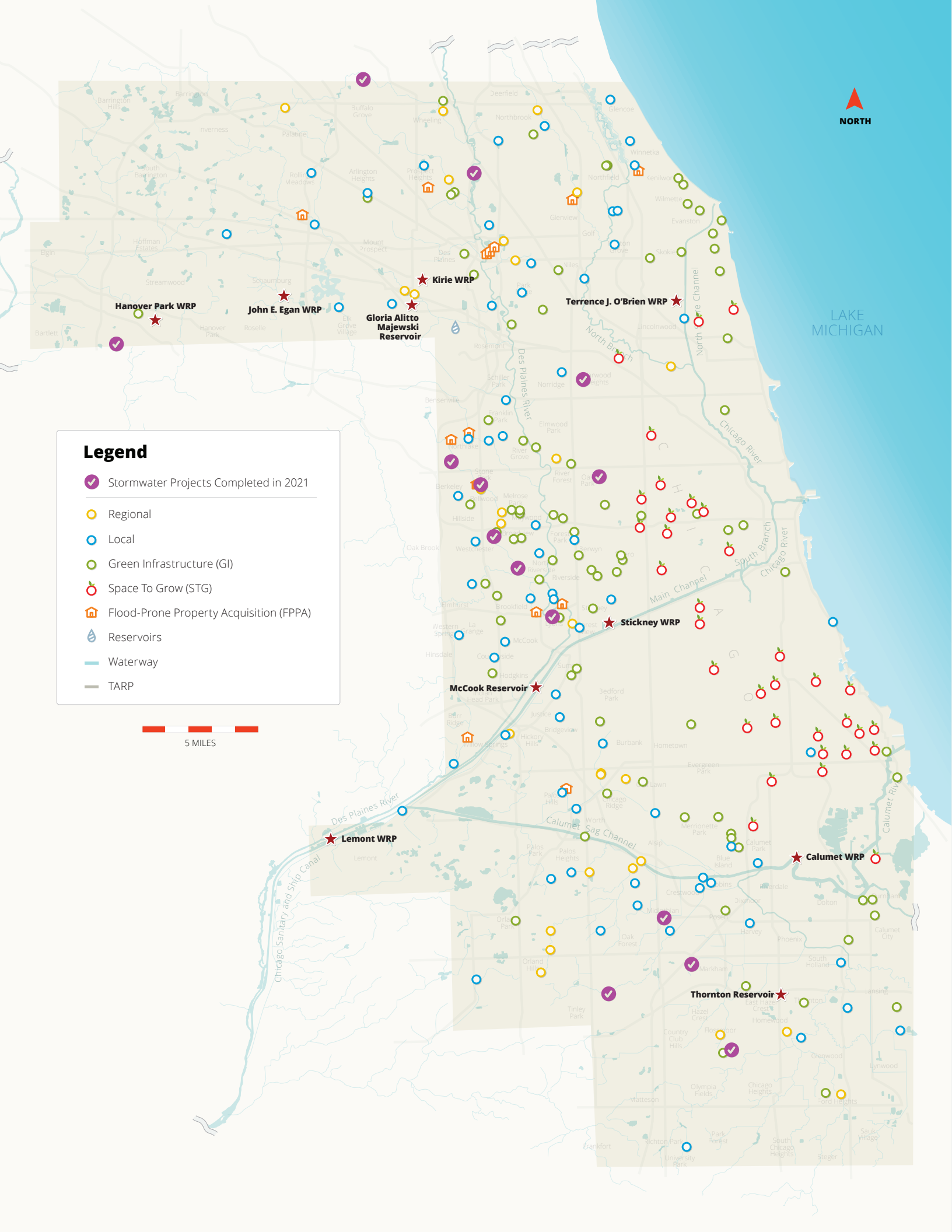
**Identify and pursue opportunities for partnering on multi-benefit projects:**

- Procure Global Positioning System equipment featuring current technology to continue offering local municipalities the opportunity to survey their sanitary sewer systems;
- Advance strategic partnerships with the Chicago Park District and other agencies to facilitate projects that provide stormwater and other environmental benefits;
- Provide technical assistance in identification and evaluation of solutions to local stormwater issues through preliminary engineering services;
- Advance stormwater partnerships for Green Infrastructure, local stormwater projects, and flood-prone property acquisitions with local communities and other agencies;
- Identify and pursue opportunities for partnering on multi-benefit projects and for coordination with other agencies to minimize the cost of potential stormwater management projects through grants and other funding resources.

**Identify and pilot stormwater management best practices:**

- Provide technical guidance to property owners interested in constructing offsite stormwater detention and volume control facilities in accordance with the ongoing pilot study;
- Advance the pilot study for a suburban green schoolyard program.




NORTH
LAKE MICHIGAN
Hanover Park WRP
John E. Egan WRP
Gloria Alitto Majewski Reservoir
Kirie WRP
Terrence J. O'Brien WRP
Stickney WRP
McCook Reservoir
Lemont WRP
Calumet WRP
Thornton Reservoir
Des Plaines River
Chicago River
North Branch Chicago River
South Branch Chicago River
Main Channel
North Shore Channel
Calumet River
Calumet Sag Channel
Chicago Sanitary and Ship Canal
Legend
Stormwater Projects Completed in 2021
Regional
Local
Green Infrastructure (GI)
Space To Grow (STG)
Flood-Prone Property Acquisition (FPPA)
Reservoirs
Waterway
TARP
5 MILES

# 2021 COMPLETED PROJECTS

## STREAMBANK STABILIZATION ALONG CALUMET UNION DRAINAGE DITCH

**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 Avenues. Replaces sanitary sewer under the ditch with new sanitary sewer on each side with service connections to existing residences.
**Estimated Construction Cost:** $3,126,000
**Status:** Construction substantially completed. Monitoring and maintenance ongoing.

## STREAMBANK STABILIZATION ALONG MIDLOTHIAN CREEK

**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 Street 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:** Construction substantially completed.

## STREAMBANK STABILIZATION PROJECTS FOR ADDISON CREEK, SSA

**Contract:** 14-108-5F
**Watershed:** Des Plaines River
**Location:** Northlake; North Riverside, IL
**Description:** Stabilizing approximately 750 feet of Addison Creek adjacent to Fullerton Avenue in Northlake and 410 linear feet of streambank adjacent to 19th Avenue in 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 completed 5/10/2020.

## FLOOD CONTROL ALONG NATALIE CREEK

**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:** Construction completed 8/26/2021.

## BUFFALO CREEK RESERVOIR EXPANSION

**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.

## GREEN ALLEYS PROJECT IN HARWOOD HEIGHTS, NSA

**Contract:** 20-IGA-11
**Watershed:** North Branch of the Chicago River
**Location:** Harwood Heights, IL
**Description:** Replacing two alleys with permeable pavement.
**Construction Cost:** $313,386
**MWRD Contribution:** $219,370
**Status:** Construction completed 8/8/2021.

## GREEN ALLEYS WATER MANAGEMENT PROJECT IN LYONS, SSA

**Contract:** 20-IGA-12
**Watershed:** Lower Des Plaines River
**Location:** Lyons, IL
**Description:** Replacing three alleys with permeable pavement.
**Construction Cost:** $780,654
**MWRD Contribution:** $500,000
**Status:** Construction completed 9/28/2021.

### BIOSWALE AND BIKE PATH REPLACEMENT IN BARTLETT, NSA

**Contract:** 20-IGA-01
**Watershed:** Poplar Creek
**Location:** Bartlett, IL
**Description:** Construct a bioswale with native plantings along a proposed bike path.
**Construction Cost:** $227,169
**MWRD Contribution:** $84,507
**Status:** Construction completed 10/30/2021.

### PUBLIC WORKS FACILITY DEMONSTRATION RAIN GARDEN IN OAK PARK, SSA

**Contract:** 19-IGA-11
**Watershed:** Combined Sewer/ Ship and Sanitary Canal Area
**Location:** Oak Park, IL
**Description:** Construct a demonstration rain garden.
**Construction Cost:** $73,290
**MWRD Contribution:** $20,000
**Status:** Construction completed 12/1/2021.

### GREEN ALLEY RECONSTRUCTION PROJECT IN WESTCHESTER, SSA

**Contract:** 21-IGA-16
**Watershed:** Lower Des Plaines River
**Location:** Westchester, IL
**Description:** Replacing four alleys with permeable pavement.
**Construction Cost:** $1,057,945
**MWRD Contribution:** $642,172
**Status:** Construction completed 12/14/2021.

### ASPEN TRAILS PARK STORMWATER STORAGE & RELIEF SEWERS PROJECT

**Contract:** 20-IGA-31
**Watershed:** Lower Des Plaines
**Location:** Mount Prospect, IL
**Description:** Construction of approximately 17 acre-feet of underground storage and associated relief sewers.
**Estimated Construction Cost:** $8,700,000
**MWRD Contribution:** $3,100,000
**Status:** Construction completed 10/15/2021.

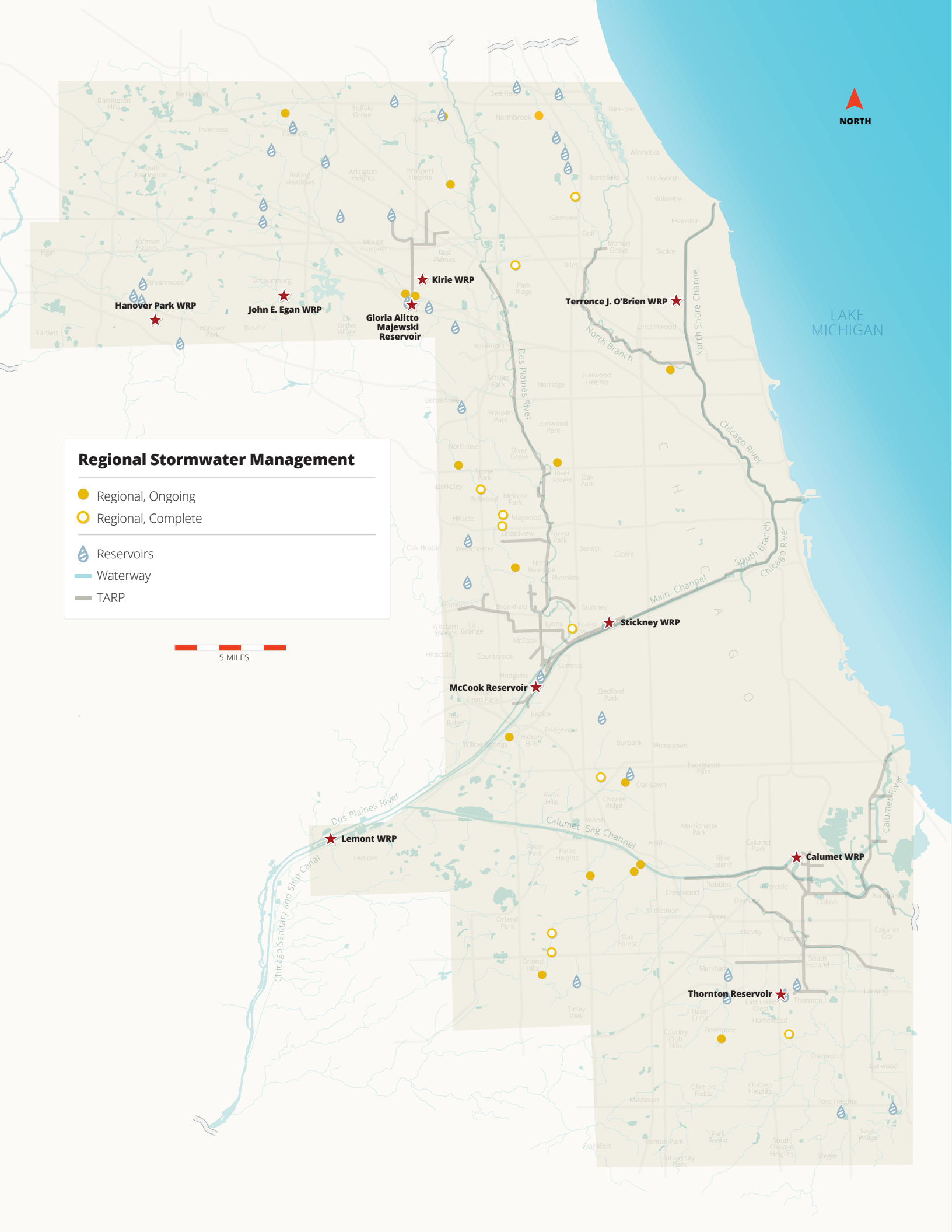
### DRAINAGE IMPROVEMENTS AT EVANS ROAD AND DOUGLAS AVENUE IN FLOSSMOOR, CSA

**Contract:** 20-IGA-36
**Watershed:** Little Cal River
**Location:** Flossmoor, IL
**Description:** Constructing new storm sewers and upsizing existing storm sewers at Evans Road as well as constructing new storm sewers at Douglas Avenue to improve stormwater drainage and conveyance.
**Construction Cost:** $816,000
**MWRD Contribution:** $750,000
**Status:** Construction completed 12/10/2021.

### NORTHLAKE FLOOD-PRONE PROPERTY ACQUISITIONS

**Contract:** 20-IGA-27
**Watershed:** Lower Des Plaines
**Location:** Palatine, IL
**Description:** Purchase 2 flood-prone homes.
**Estimated Construction Cost:** $450,000
**MWRD Contribution:** $450,000
**Status:** Properties were acquired and demolished. Site was restored. Final Completion Winter 2021.

Harwood Heights Green
Alleys Project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Kirie WRP
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South Branch
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Calumet Sag Channel
Calumet River
Chicago Sanitary and Ship Canal

# MWRD STORMWATER MANAGEMENT PROGRAM OVERVIEW

## PHASE I – 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 (PHASE I – REGIONAL)

The following is a detailed list of ongoing streambank stabilization projects. For projects completed in 2021, refer to page 6. Locations of both ongoing and completed streambank stabilization projects can be found on page 10.

### STREAMBANK STABILIZATION ALONG TINLEY CREEK

**Contract:** 19-IGA-22 **Watershed:** Cal-Sag Channel **Location:** Orland Park, IL
**Description:** Cost sharing agreement with the Village of Orland Park. Project will stabilize approximately 2,200 LF of Tinley Creek between 86th Avenue and Crystal Creek Drive and 2,800 linear feet between 151st Street and Oriole Court.
**Estimated Construction Cost:** $3,800,000
**Status:** Intergovernmental agreement between the Village and the MWRD has been executed. The Village is finalizing design, construction expected to begin in 2023.

### STREAMBANK STABILIZATION ON MELVINA DITCH

**Contract:** 13-248-5F **Watershed:** Cal-Sag Channel **Location:** Chicago Ridge and Oak Lawn, IL
**Description:** Stabilize Melvina Ditch between 95th and 99th Streets through the use of a twin box culvert, riprap, and pre-cast modular block wall.
**Estimated Construction Cost:** $3,806,000 **Status:** Project under construction.

## FLOOD CONTROL PROJECTS (PHASE I - REGIONAL)

The following is a detailed list of ongoing flood control projects. For projects completed in 2021, refer to page 6. Locations of both ongoing and completed flood control projects can be found on page 10.

### ADDISON CREEK RESERVOIR

**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. Scheduled to be completed Fall 2022.

### DEMOLITION FOR THE ADDISON CREEK CHANNEL IMPROVEMENTS

**Contract:** 11-187-AF **Watershed:** Lower Des Plaines
**Location:** Northlake, Melrose Park, Stone Park, Bellwood, IL
**Description:** Removal of 13 mobile homes and 16 residential properties. Work is in conjunction with the Addison Creek Channel Improvement Project 11-187-3F
**Estimated Construction Cost:** $673,700
**Status:** All mobile homes and residential properties have been demolished. Backfall and site restoration in progress. Final completion Spring 2022.

### ADDISON CREEK CHANNEL IMPROVEMENTS

**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 pile wall, articulated concrete blocks, gabions, and channel clearing. Removal of three bridges along Harrison St. at 30th Ave., 31st Ave., and 32nd Ave.
**Estimated Construction Cost:** $60,139,000
**Status:** 98% Design Plans under review. Anticipated construction bidding in Summer 2022.

### FLOOD CONTROL PROJECT ON FARMERS AND PRAIRIE CREEKS

**Contract:** 12-056-5F **Watershed:** Lower Des Plaines **Location:** Park Ridge and Maine Township, IL
**Description:** Provides flood storage and conveyance improvements along Farmers and Prairie Creeks, including channel modifications and detention expansion, diversion sewer construction, and streambank stabilization.
**Estimated Construction Cost:** $14,100,000
**Status:** Modifying final design. Intergovernmental agreement being finalized. Acquiring permits.

### LYONS LEVEE FLOOD CONTROL IMPROVEMENTS

**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:** Phase I completed. Easement acquisition for Phase II underway.

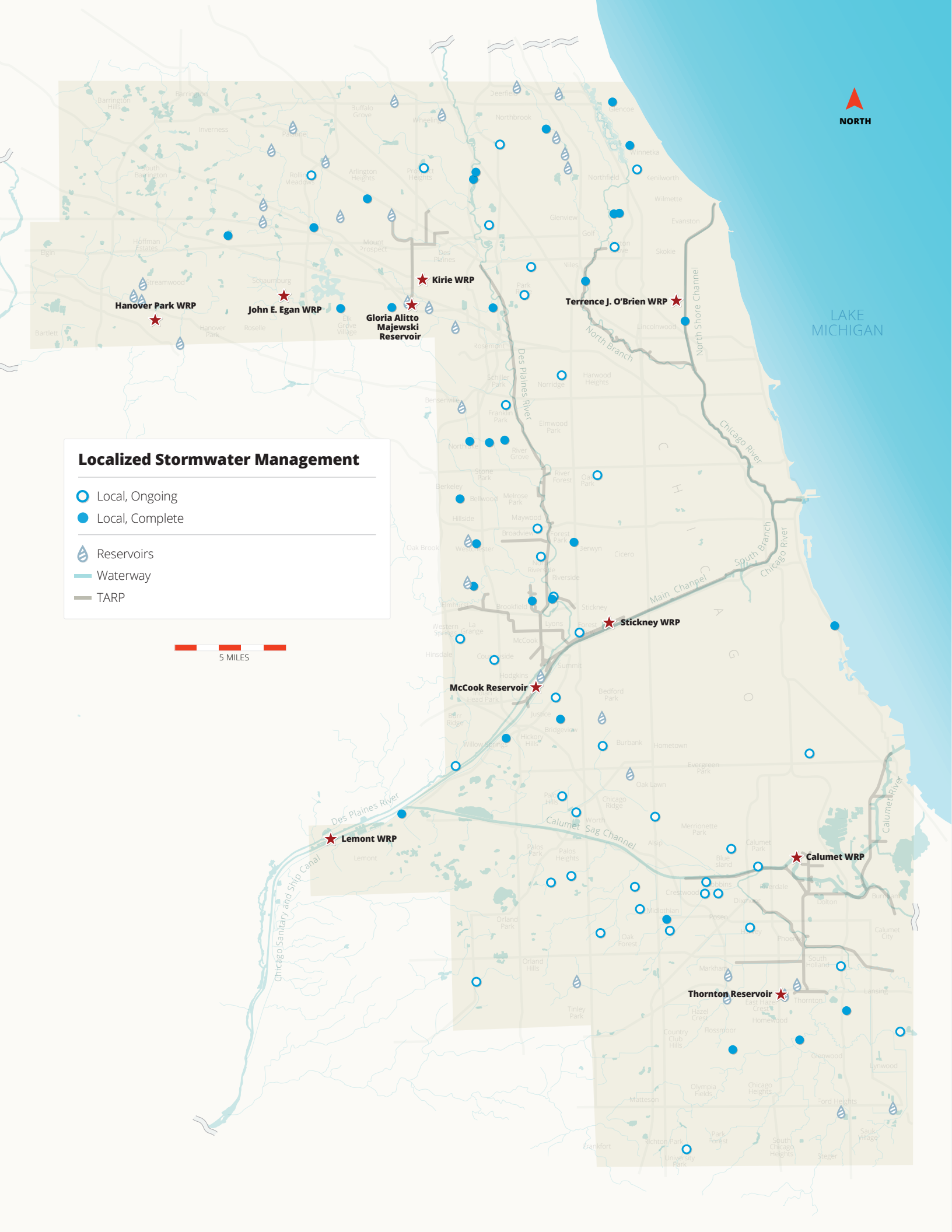
### LEVEE ALONG THORN CREEK AT ARQUILLA PARK

**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:** Currently under Design. Construction currently scheduled for 2023.

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

**Contract:** 16-IGA-18 **Watershed:** North Branch **Location:** Glenview, IL
**Description:** Construct 2.2 acre-feet of storage, pump station, and a new storm sewer.
**Estimated Construction Cost:** $6,600,000
**Status:** Working with the Village of Glenview on finalizing terms of intergovernmental agreement.

Stabilizing the streambank along Midlothian Creek in Tinley Park.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## PHASE II – LOCALIZED STORMWATER MANAGEMENT

In 2014, the State Legislature expanded the authorities of the 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 the MWRD's Phase II Stormwater Management Program. The 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'

The 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 ways, 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. The MWRD assists 'Conceptual' projects with identifying flood control alternatives through a preliminary engineering study.

The MWRD and the 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, The MWRD inspects the project installation, ensuring maintenance is in line with the project's operation and maintenance plan.

Based on the initial Phase II 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.

In 2020, the Phase II Program became the Local Stormwater Partnership Program to better reflect the fact that the resulting projects are a partnership between the MWRD and government agencies. A Local Stormwater Partnership Program 'Call for Projects' was made in late 2020 with 16 applications submitted in March of 2021. After evaluation, five 'Conceptual' projects were identified for further MWRD assistance and are coordinating with the villages to provide a variety of assistance and technical support towards advancing the projects.

### Localized Flooding Projects (Phase II)

The following is a detailed list of ongoing localized flooding projects. For 2021 completed projects, refer to page 6. Locations of both ongoing and completed localized flooding projects can be found on page 14.

#### FLOOD CONTROL PROJECT ON CENTRAL ROAD FROM DES PLAINES RIVER TO GREENWOOD ROAD

**Contract:** 14-065-5F **Watershed:** Des Plaines River **Location:** Maine and Northfield Townships , IL
**Description:** Installation of additional flood storage through a new stormwater detention facility and improving conveyance of stormwater through the construction of a main line storm sewer in Central Road, and lateral sewers feeding the main line sewer.The project will reduce flood damages for over 114 structures.
**Estimated Construction Cost:** $20,000,000 **Status:** Final design to begin in 2022.

### FLOOD CONTROL PROJECT ON 1ST AVENUE FROM ROOSEVELT ROAD TO CERMAK ROAD

**Contract:** 14-111-5F **Watershed:** Des Plaines River **Location:** Proviso Township, IL
**Description:** The construction of approximately 13,000 linear feet of storm sewer along 1st Avenue and the 1st Avenue Cutoff, a new sewer outfall structure at the Des Plaines River, and bioswales behind the east side of 1st Avenue within the Forest Preserve District of Cook County.
**Estimated Construction Cost:** $7,000,000 **Status:** Construction to begin in 2022.

### FLOOD CONTROL PROJECT ALONG THE PLAINFIELD ROAD CORRIDOR

**Contract:** 14-112-5F **Watershed:** Des Plaines River **Location:** Countryside and Lyons Township, IL
**Description:** The final design of various alternatives to address flooding concerns in the Plainfield Road corridor, which encompasses portions of the Village of La Grange and McCook, the City of Countryside, and unincorporated Lyons Township.
**Estimated Construction Cost:** $38,000,000 **Status:** Final design to begin in the spring of 2022.

### FLOOD CONTROL ON MIDLOTHIAN CREEK

**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 II. Phase I estimated to begin construction in May 2022.

### FLOOD CONTROL IN WORTHWOODS SUBDIVISION

**Contract:** 14-256-5F **Watershed:** Cal-Sag Channel **Location:** Worth, IL **Description:** Construction of a swale and new storm sewers in the vicinity of 112th Place and Beloit Avenue, with an outlet to Lucas-Berg Quarry in the Village of Worth. The Village will be responsible for ownership and maintenance of the improvements.
**Estimated Construction Cost:** $3,500,000
**Status:** Working on final design, estimated to go out to bid in Summer 2022.

### FLOOD CONTROL IN THE VICINITY OF 135TH STREET AND CENTRAL AVENUE

**Contract:** 14-258-5F **Watershed:** Cal-Sag Channel **Location:** Crestwood, IL
**Description:** Installation of a new storm sewer along 135th Street and existing storage and conveyance improvements at a detention basin on the Nathan Hale School property and Crestwood Drainage Ditch.
**Estimated Construction Cost:** $7,263,800 **Status:** Construction to begin in Spring 2022.

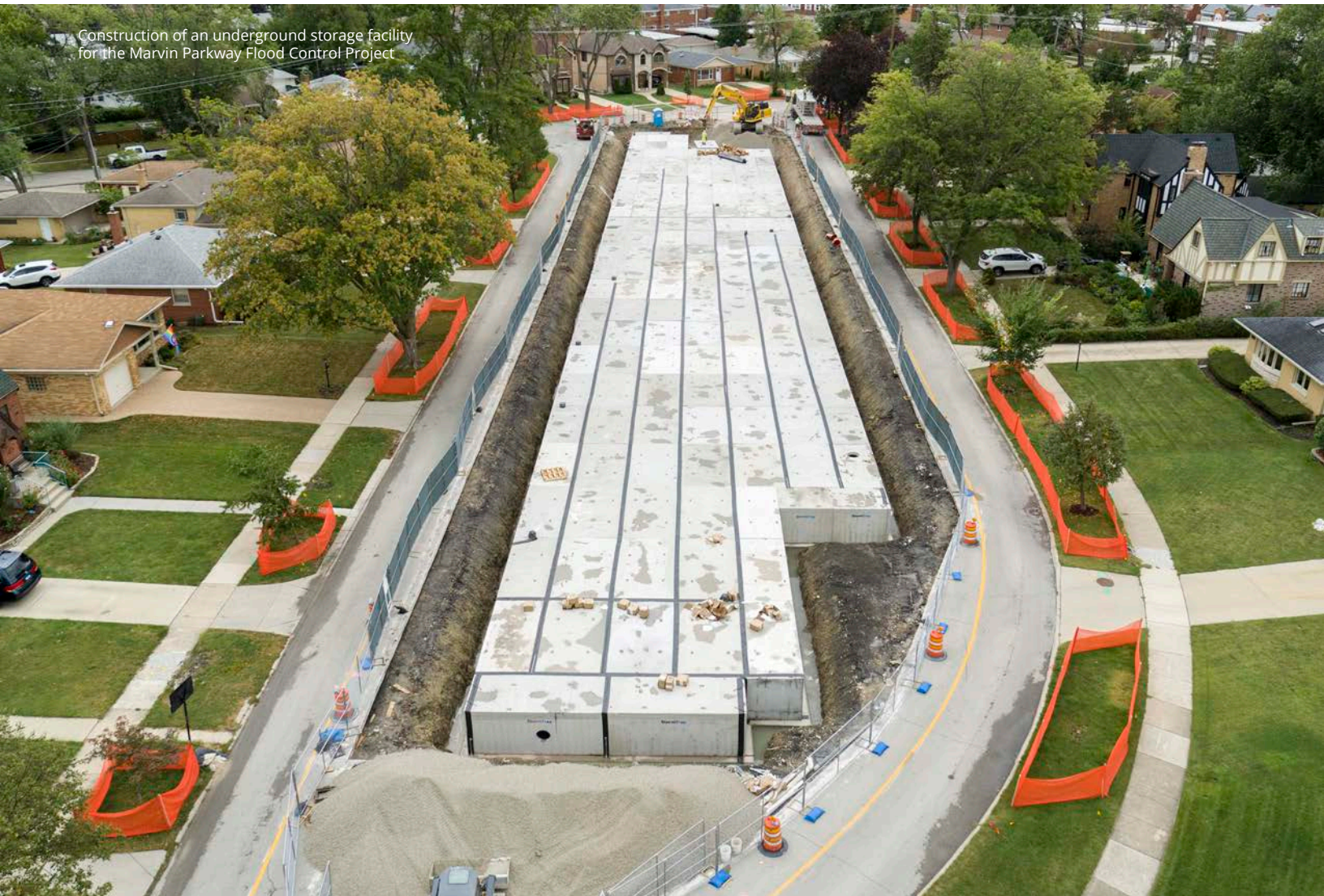
### FLOOD CONTROL IN THE VICINITY OF 131ST STREET AND CYPRESS DRIVE

**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:** $250,000 **Status:** Final design.

### FLOOD CONTROL FOR THE WASHINGTON STREET AREA

**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:** $5,700,000
**Status:** The 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.

Installation of a three-sided culvert along Natalie Creek



Construction of an underground storage facility for the Marvin Parkway Flood Control Project

Drone photo of the Buffalo Creek Reservoir Expansion

### MELVINA DITCH RESERVOIR IMPROVEMENTS

**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. The MWRD secured a $10 million Build Illinois Grant from IEPA.
**Status:** Project under construction.

### CITATION LAKE STORMWATER IMPROVEMENTS IN NORTHFIELD TOWNSHIP

**Contract:** 18-082-5F **Watershed:** Lower Des Plaines **Location:** Northfield Township, IL
**Description:** Provide relief from flooding of structures in the study area, stormwater storage and conveyance improvements.
**Estimated Construction Cost:** To be determined by Northfield Township
**Status:** Northfield Township and the MWRD working to identify additional funding needed to advance the project.

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

**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, working with City of Chicago to identify potential Green Infrastructure demonstration project sites in public right-of-way and/or vacant City-owned land.

### GROVELAND AVENUE LEVEE IMPROVEMENTS

**Contract:** 18-IGA-20 **Watershed:** Lower Des Plaines **Location:** Riverside, IL
**Description:** The Groveland Avenue 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 street will be raised or protected by additional flood walls. The village has entered a project partnership agreement with the Army Corps of Engineers as its local sponsor. The MWRD has entered 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 by the Army Corps.

### SOUTH AREA SEWER SEPARATION

**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:** $1,955,206
**Status:** Drafting intergovernmental agreement.

### HIBBARD ROAD FOREST PRESERVE WETLAND AND DUKE CHILDS STORAGE PROJECT

**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.

### CULVERT UPSIZING AND CHANNEL IMPROVEMENTS ON BOCA RIO DITCH IN OAK FOREST, CSA

**Contract:** 18-IGA-26 **Watershed:** Cal-Sag Channel **Location:** Oak Forest, IL
**Description:** This project will remove existing deteriorated roadway culverts, upsize and install dual 7.5′ x 4′ box culverts under the intersection at 151st Street and Boca Rio Drive, and install three sedimentation basins along Boca Rio Ditch south of 151st Street in Oak Forest. This project will reduce the risk of flooding for 28 residential structures and enhance water quality along Boca Rio Ditch.
**Estimated Construction Cost:** $788,660 **MWRD Contribution:** TBD
**Status:** Drafting intergovernmental agreement.

### STORMWATER STORAGE AREA IN NILES

**Contract:** 18-IGA-31 **Watershed:** Lower Des Plaines **Location:** Niles, IL
**Description:** Construction of a relief storm sewer and surface and underground stormwater storage areas near Greenwood Avenue to provide flood relief to nearby residential and commercial properties.
**Estimated Construction Cost:** $10,164,000 **MWRD Contribution:** $2,000,000
**Status:** Currently under construction. Substantial completion targeted for Fall 2022.

### FLOOD CONTROL PROJECT ON WILLOW ROAD AT MCDONALD CREEK TRIBUTARY

**Contract:** 20-IGA-23 **Watershed:** Lower Des Plaines **Location:** Prospect Heights, IL
**Description:** Elevation of Willow Road, one foot above the 100-year flood elevation, and local roads, to the 100 year flood elevation. Includes the installation of new culverts and compensatory storage areas.
**Estimated Construction Cost:** $3,120,000 **MWRD Contribution:** TBD
**Status:** Finalizing intergovernmental agreement with City; design is under development and analysis.

### VAN BUREN & 5TH AREA STORM RELIEF PROJECT

**Contract:** 20-IGA-29 **Watershed:** Lower Des Plaines **Location:** Maywood, IL
**Description:** Installation of separate storm sewers in a combined sewer area.
**Estimated Construction Cost:** $7,359,450 **MWRD Contribution:** TBD
**Status:** Finalizing intergovernmental agreement with Village.

### ORIOLE AVENUE FLOOD MITIGATION PROJECT

**Contract:** 20-IGA-30 **Watershed:** Lower Des Plaines **Location:** Harwood Heights, IL
**Description:** Construction of an underground box culvert for stormwater storage.
**Estimated Construction Cost:** $1,500,000 **MWRD Contribution:** TBD
**Status:** Finalizing intergovernmental agreement with Village.

### SOUTH THROOP FLOOD RELIEF PROJECT

**Contract:** 20-IGA-32 **Watershed:** Cal-Sag Channel **Location:** Calumet Park, IL
**Description:** Redesign of existing storm sewers, installation of new storm sewer and construction of a stormwater basin in a park setting.
**Estimated Construction Cost:** $750,000 **MWRD Contribution:** $750,000
**Status:** Finalizing intergovernmental agreement with Village.

### 133RD STREET DRAINAGE IMPROVEMENTS PROJECT

**Contract:** 20-IGA-33 **Watershed:** Cal-Sag Channel **Location:** Orland Park, IL
**Description:** Drainage improvements to convey runoff from right-of-way via system upsizing.
**Estimated Construction Cost:** $100,000 **MWRD Contribution:** TBD
**Status:** Finalizing intergovernmental agreement with Village and finalizing the design

### LEMOYNE PARKWAY RELIEF SEWER PROJECT

**Contract:** 20-IGA-34 **Watershed:** Lower Des Plaines **Location:** Oak Park, IL
**Description:** Installation of new relief sewers to alleviate flooding resulting from moderate to large rain events.
**Estimated Construction Cost:** $1,610,000 **MWRD Contribution:** $500,000
**Status:** Intergovernmental agreement with Village was executed 9/13/21; Village completed design and awarded construction contract on 11/15/21; construction to begin early 2022.

### MARVIN PARKWAY FLOOD CONTROL PROJECT

**Contract:** 20-IGA-35 **Watershed:** Lower Des Plaines **Location:** Park Ridge, IL
**Description:** Construction of an underground storage facility.
**Estimated Construction Cost:** $1,900,000 **MWRD Contribution:** $950,000
**Status:** Construction ongoing. Final completion expected in Spring 2022.

### FLANAGIN SUBDIVISION: NORTH CREEK FLOOD RELIEF PROJECT

**Contract:** 20-IGA-37 **Watershed:** Little Cal River **Location:** Lansing, IL
**Description:** Construction of a new culvert to prevent backflow into a subdivision.
**Estimated Construction Cost:** $1,600,000 **MWRD Contribution:** $1,600,000
**Status:** Finalizing intergovernmental agreement with Village.

### DETENTION BASIN AT BUTTERFIELD CREEK IN RICHTON PARK

**Contract:** 20-IGA-38 **Watershed:** Little Cal River **Location:** Richton Park, IL
**Description:** Construction of a regional detention basin along Governors Highway, south of the intersection of Sauk Trail, at the Butterfield Creek East Branch.
**Estimated Construction Cost:** $19,595,300 **MWRD Contribution:** $2,000,000
**Status:** Intergovernmental agreement with the Village was executed 12/20/2021. Construction will begin in Spring 2022.

## FLOOD CONTROL ON CALUMET-SAG TRIBUTARY C

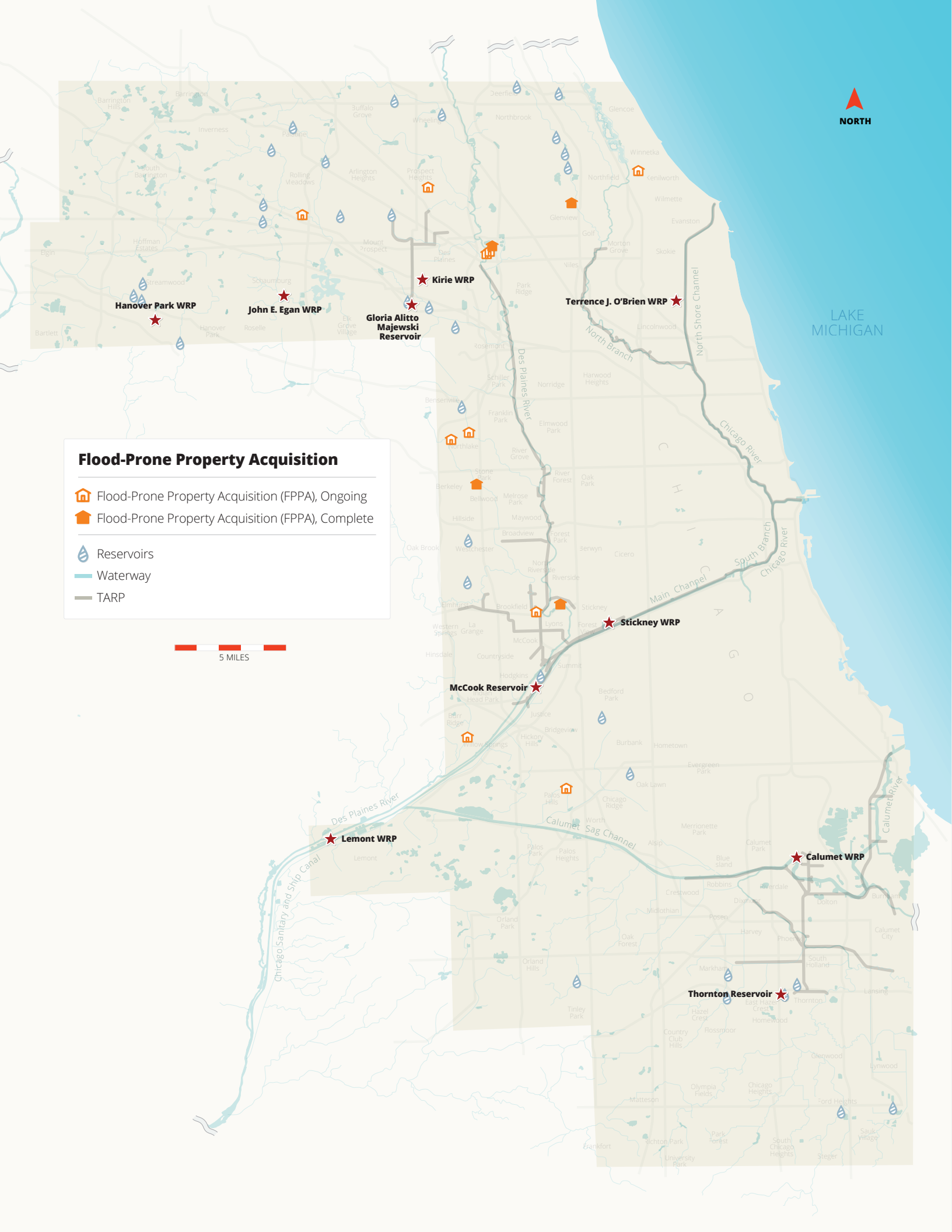
**Contract:** 21-IGA-18 **Watershed:** Cal-Sag Channel
**Location:** Bremen Township, Crestwood, & Midlothian, IL
**Description:** Installation of flood control measures for an estimated 8,000 linear feet along Cal-Sag Tributary C from Central Avenue and Maple Lane to Midlothian Turnpike and Lavergne Avenue in the Township of Bremen and Villages of Crestwood and Midlothian. Flood control measures include the replacement of culverts, channel improvements at various locations, expansion of existing detention facilities, and construction of new detention facilities. The project will reduce flood damages for 17 structures and 5 roads.
**Estimated Construction Cost:** $3,600,000 **MWRD Contribution:** TBD **Status:** Final design.

## EXPANSION OF EXISTING DETENTION BASIN IN ORLAND PARK

**Contract:** 18-IGA-33 **Watershed:** Cal-Sag Channel **Location:** Orland Park, IL
**Description:** Expansion of the Grasslands Regional Detention Basin in Orland Park. This will provide upstream storage and flood protection for the Grasslands Subdivision by reducing flooding for an estimated 30 structures.
**Estimated Construction Cost:** $600,000 **MWRD Contribution:** $558,000
**Status:** Under construction. Final completion anticipated in Spring 2022.

## CENTRAL PARK STORMWATER DETENTION BASIN AND SEPARATE STORM SEWER IMPROVEMENTS IN HARVEY, CSA

**Contract:** 18-249-AF **Watershed:** Little Cal River **Location:** Harvey, IL
**Description:** This project will construct a 23 acre-foot stormwater detention basin along Myrtle Avenue, between 153rd Street and 154th Street on an approximately 20-acre site of the future Central Park in the City of Harvey. New separated storm sewer will be constructed to convey stormwater to the proposed basin and allow discharge into the Wood Street storm sewer system.
**Estimated Construction Cost:** $9,660,000 **MWRD Contribution:** TBD
**Status:** Design and negotiating intergovernmental agreement.


NORTH
LAKE MICHIGAN
Hanover Park WRP
John E. Egan WRP
Kirie WRP
Gloria Alitto Majewski Reservoir
Terrence J. O'Brien WRP
Stickney WRP
McCook Reservoir
Lemont WRP
Calumet WRP
Thornton Reservoir
Des Plaines River
North Branch
North Shore Channel
Chicago River
South Branch
Main Channel
Calumet River
Calumet Sag Channel
Chicago Sanitary and Ship Canal
Flood-Prone Property Acquisition
Flood-Prone Property Acquisition (FPPA), Ongoing
Flood-Prone Property Acquisition (FPPA), Complete
Reservoirs
Waterway
TARP
5 MILES

# 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** - The 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 the MWRD's Board of Commissioners approved capital projects from the 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** - The MWRD will consider applications directly from local governments requesting property acquisition of specific flood-prone structures.

In 2017, the MWRD solicited applications from municipalities and townships for assistance with the acquisition of flood-prone structures located throughout Cook County. The MWRD previously entered into intergovernmental agreements with several municipalities and the Cook County Land Bank Authority to acquire 58 flood-prone properties to date. 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 2021 completed projects, refer to page 6. Locations of both ongoing and completed flood prone property acquisition projects can be found on page 22.

### DES PLAINES III FLOOD-PRONE PROPERTY ACQUISITIONS

**Contract:** 20-IGA-22 **Watershed:** Lower Des Plaines **Location:** Des Plaines, IL
**Description:** Purchase 13 flood-prone homes.
**Estimated Construction Cost:** $3,115,890 **MWRD Contribution:** $800,000
**Status:** Three parcels have been acquired.

### FORD HEIGHTS FLOOD-PRONE PROPERTY ACQUISITIONS

**Contract:** 10-884-BF **Watershed:** Little Cal River **Location:** Ford Heights, IL
**Description:** Purchase 121 residential properties and 53 vacant parcels along Deer Creek.
**Estimated Construction Cost:** $6,226,128
**Status:** Working with Ford Heights, Cook County and other agencies to determine feasibility.

### DES PLAINES IV FLOOD-PRONE PROPERTY ACQUISITIONS

**Contract:** 20-IGA-24 **Watershed:** Lower Des Plaines **Location:** Des Plaines, IL
**Description:** Purchase 19 flood-prone homes.
**Estimated Construction Cost:** $11,500,000 **MWRD Contribution:** $5,000,000
**Status:** Finalizing Intergovernmental agreement.

### PALOS HILLS FLOOD-PRONE PROPERTY ACQUISITIONS

**Contract:** 20-IGA-25 **Watershed:** Cal-Sag Channel **Location:** Palos Hills, IL
**Description:** Purchase 4 flood-prone homes.
**Estimated Construction Cost:** $855,394 **MWRD Contribution:** $800,000
**Status:** Three parcels have been acquired.

### PALATINE TOWNSHIP FLOOD-PRONE PROPERTY ACQUISITIONS

**Contract:** 20-IGA-26 **Watershed:** Lower Des Plaines **Location:** Palatine, IL
**Description:** Purchase 3 flood-prone homes along Salt Creek.
**Estimated Construction Cost:** $1,650,000 **MWRD Contribution:** $1,400,000
**Status:** Finalizing intergovernmental agreement.

### NORTHLAKE FLOOD-PRONE PROPERTY ACQUISITION 3

**Contract:** 21-IGA-25 **Watershed:** Lower Des Plaines **Location:** Palatine, IL
**Description:** Purchase 2 flood-prone homes.
**Estimated Construction Cost:** $600,000 **MWRD Contribution:** $600,000
**Status:** IGA with Northlake has been executed. Northlake is working with property owners regarding the buyout.

### PROSPECT HEIGHTS FLOOD-PRONE PROPERTY ACQUISITIONS

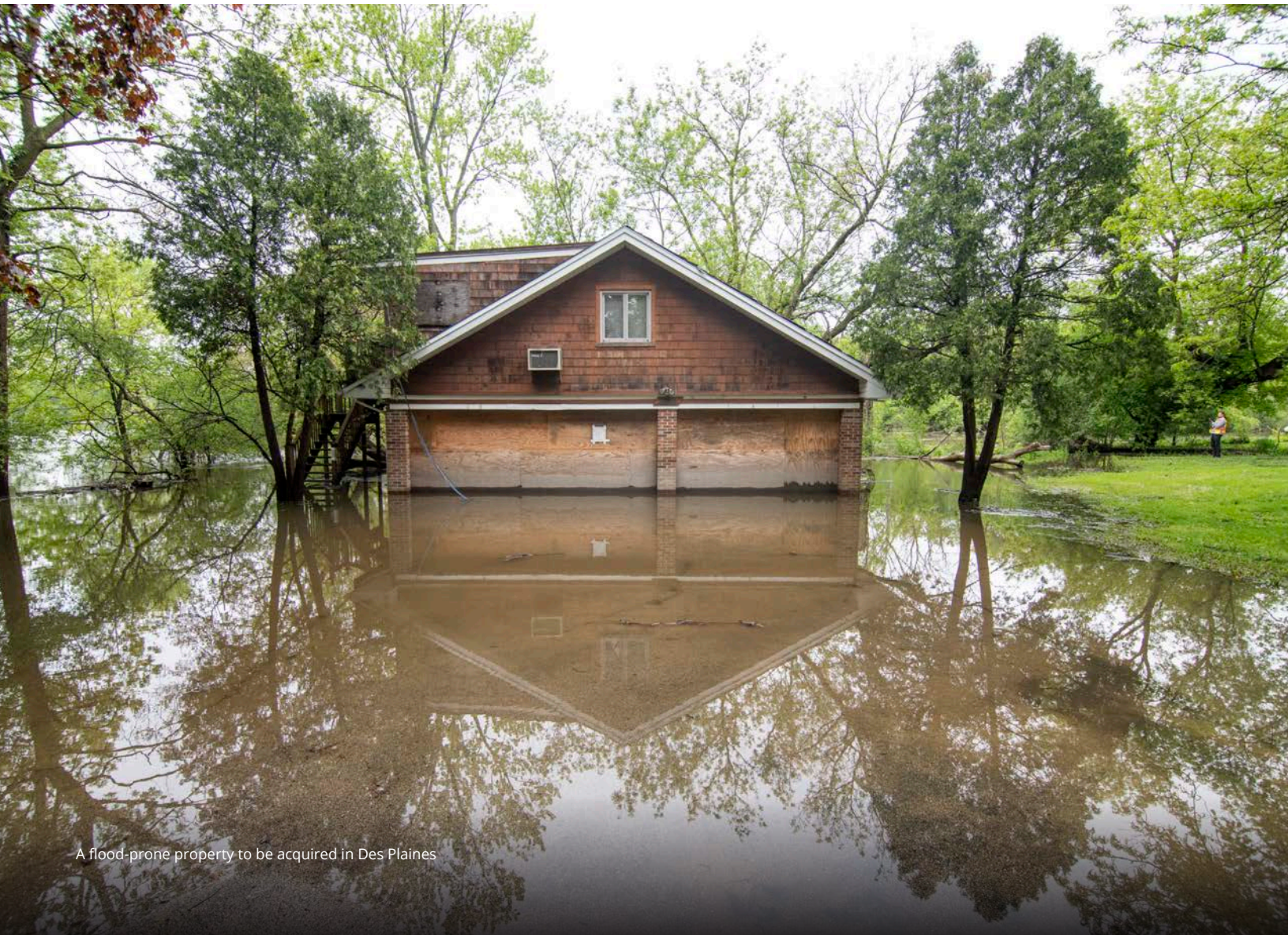
**Contract:** 20-IGA-28 **Watershed:** Lower Des Plaines **Location:** Palatine, IL
**Description:** Purchase 1 flood-prone home.
**Estimated Construction Cost:** $375,000 **MWRD Contribution:** $375,000
**Status:** Finalizing intergovernmental agreement.

### WILLOW SPRINGS FLOOD-PRONE PROPERTY ACQUISITIONS

**Contract:** 20-IGA-26 **Watershed:** Lower Des Plaines **Location:** Willow Springs, IL
**Description:** Purchase 1 flood-prone home.
**Estimated Construction Cost:** $465,000 **MWRD Contribution:** $375,000
**Status:** Drafting intergovernmental agreement.

### ACQUISITION OF FLOOD-PRONE PROPERTIES IN LYONS

**Contract:** 21-IGA-24 **Watershed:** Lower Des Plaines **Location:** Lyons, IL
**Description:** Purchase 26 residential properties along Salt Creek.
**Estimated Construction Cost:** $6,340,136 **MWRD Contribution:** $5,777,581
**Status:** Working with Ford Heights, Cook County and other agencies to determine feasibility.



A flood-prone property to be acquired in Des Plaines

## STORMWATER MASTER PLAN PILOT STUDIES

Under Phase II of the MWRD's Stormwater Management Program initiated in 2014 to plan, implement, and finance local stormwater projects, five master plan pilot studies were performed (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). Upon completion of these studies in 2017, a standard approach using lessons learned from the pilot studies for performing additional master plans was developed, and six additional study areas were identified and prioritized in 2019 (Butterfield Creek, North Creek and Deer Creek, Weller Creek and Willow Creek, South Suburbs, Chicago West and Chicago South). The scope of these studies includes analysis of existing flooding issues, development of concept level alternative solutions, and review of potential funding opportunities for implementing stormwater improvements. While these ongoing studies are expected to provide meaningful recommendations for reducing the impact of flooding issues in the identified priority study areas, the MWRD realized that expanding this approach for master planning countywide could take several decades.

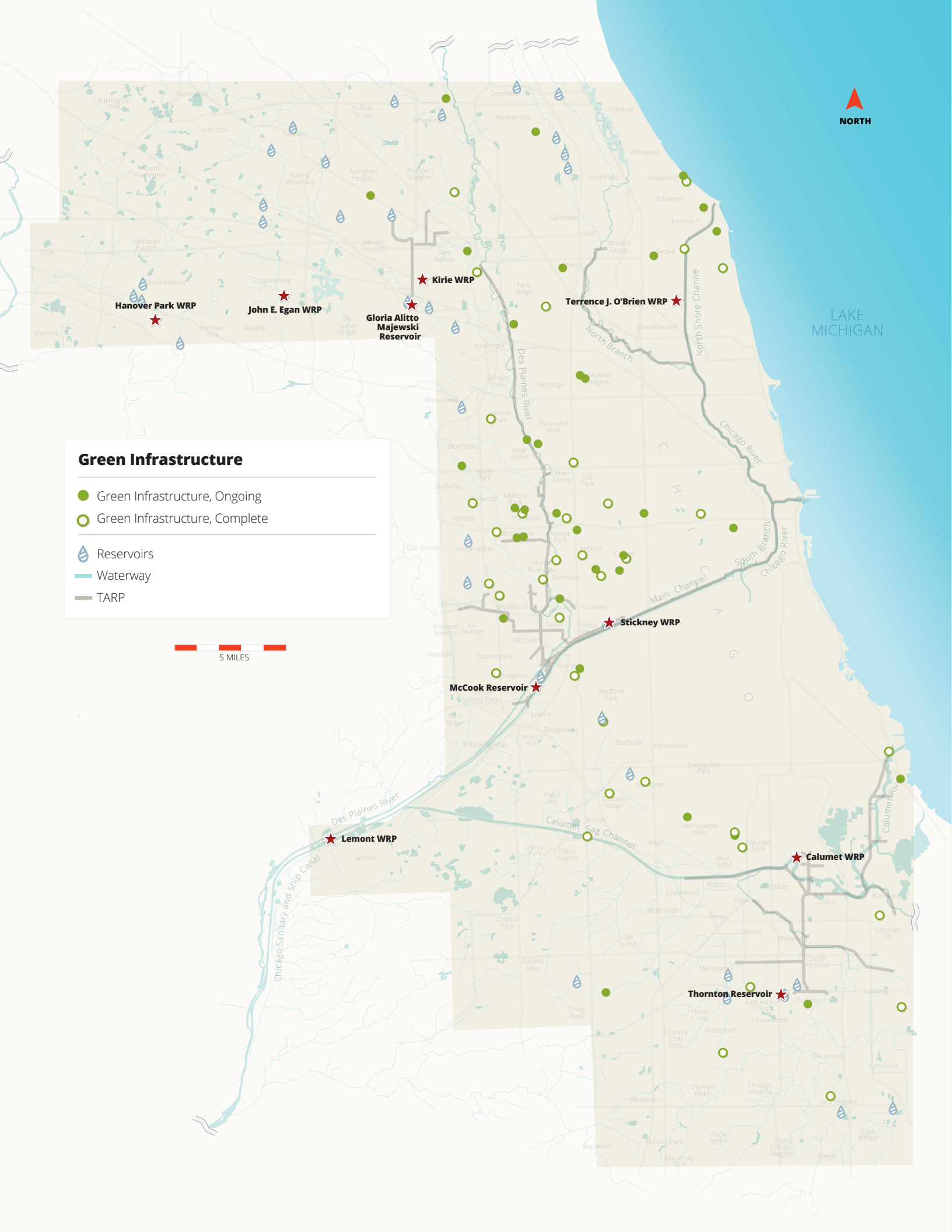
### A New Approach

Because master plans developed through a traditional approach can have a limited shelf-life due to changing conditions such as climate change, evolving development trends, and ever-changing community priorities, there is a narrow window of time they will remain relevant. This approach to stormwater planning can result in static solutions being developed for dynamic conditions. In order for the MWRD to develop a long-term vision for master planning that is flexible and dynamic, an innovative approach has been developed to be more compatible with each community's needs and timeline for addressing their evolving stormwater issues. The MWRD found that the basic principle of our Watershed Management Ordinance (WMO) to ensure volume is created for new development to abate the negative impacts of stormwater runoff, could serve as a useful planning tool to apply across the entire county. By adopting this principle of the WMO, an estimate of volume needed throughout subwatersheds and sewersheds across the county can be established and serve as the foundation of a planning tool that places each community's stormwater needs on common ground.

This Volumetric Approach will provide a set of dynamic tools that can be used to provide focus for areas where flooding is more likely, and can be developed countywide in a much shorter timeframe. It includes building an online platform to allow communities and other agencies to easily access information from a Geographic Information System (GIS) database, which will also be easily adaptable to climate change and development trends to ensure it remains relevant and compatible with each community's changing priorities and timelines. Initially, this approach will allow the MWRD to answer two key questions about urban flooding: where is it most likely to occur, and what size is the issue. Development of this tool includes a series of countywide maps and data metrics that are being created to identify:

1) where potential flood problem areas are located,
2) opportunities for mitigation projects, and
3) priority areas for actionable next steps.

The Volumetric Approach for Stormwater Master Planning is expected to achieve more results in a shorter timeframe than traditional planning approaches. Based on the foundation of the GIS data, additional tools could be incorporated to further reduce efforts and investment in studies and planning and to be even more prepared to conceptualize and implement projects. Examples of additional data that could be incorporated to make this tool even more powerful include local storm and combined sewer conveyance information, flooding data collected by past studies, and location of planned infrastructure projects, amongst other relevant community data that align with the goals and objectives of the MWRD's Stormwater Management program.


NORTH
LAKE MICHIGAN
Hanover Park WRP
John E. Egan WRP
Kirie WRP
Gloria Alitto Majewski Reservoir
Terrence J. O'Brien WRP
Stickney WRP
McCook Reservoir
Lemont WRP
Calumet WRP
Thornton Reservoir
Des Plaines River
North Branch
North Shore Channel
Chicago River
South Branch
Main Channel
Calumet Sag Channel
Chicago Sanitary and Ship Canal
Green Infrastructure
Green Infrastructure, Ongoing
Green Infrastructure, Complete
Reservoirs
Waterway
TARP
5 MILES

# GREEN INFRASTRUCTURE

The Green Infrastructure (GI) 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.

## Green Infrastructure 'Call For Projects'

The 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 the 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 GI amongst other criteria. The 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 the MWRD to optimize benefits. After completion, the MWRD inspects the installation, ensuring maintenance is in line with the project's operation and maintenance plan.

- **In 2017 through 2020**, 76 projects were selected. The projects selected in those years will provide a total of approximately 6.5 million gallons of design retention capacity.
- **In June of 2020**, another call for projects was issued. 32 applications were reviewed and 16 were selected.
- **In June of 2021**, another call for projects was issued. 32 applications were reviewed and 7 were selected, which will provide a combined estimated DRC of 800,000 gallons.
- **In 2021**, the MWRD worked with the Villages of Bartlett, Harwood Heights, Lyons, Oak Park, and Westchester to complete GI projects consisting of green alleys, bioswales, and rain gardens. the MWRD contributed $1,451,580 to these projects which provided a combined DRC of 552,358 gallons.

## Green Infrastructure Partnerships 'Call for Projects'

The following is a list of Green Infrastructure Partnerships scheduled for construction in 2022. For completed projects, refer to page 6. Locations of both ongoing and completed Green Infrastructure Partnerships can be found on page 26.

### WINCHESTER AVENUE GREEN INFRASTRUCTURE PROJECT IN CALUMET PARK, CSA

**Contract:** 18-IGA-02 **Watershed:** Calumet-Sag Channel **Location:** Calumet Park, IL
**Description:** Construction of a roadside bioswale and permeable pavers in the parking lane of Winchester Avenue.
**Estimated Construction Cost:** $1,375,000 **MWRD Contribution:** $360,000
**Status:** Advertisement of construction contract.

### GARFIELD PARK COMMUNITY ECO ORCHARD IN CHICAGO, SSA

**Contract:** 18-IGA-05 **Watershed:** Combined Sewer/Ship and Sanitary Canal Area **Location:** Chicago, IL
**Description:** Construction of bioswales and food forests.
**Estimated Construction Cost:** $900,000 **MWRD Contribution:** $500,000
**Status:** Partner's procurement process.

### LAKE KATHERINE COMMUTER PARKING LOT IN PALOS HEIGHTS, CSA

**Contract:** 18-IGA-14 **Watershed:** Calumet-Sag Channel **Location:** Palos Heights, IL
**Description:** Installation of a new permeable parking lot and bioswales at Lake Katherine Nature Center.
**Estimated Construction Cost:** $831,968 **MWRD Contribution:** $184,000
**Status:** Construction anticipated in Fall 2023.

### GREEN STREETS PROJECT IN FORD HEIGHTS, CSA

**Contract:** 19-IGA-12 **Watershed:** Little Calumet River **Location:** Ford Heights, IL
**Description:** Construction of roadside bioswales located in the street right-of-way.
**Estimated Construction Cost:** $360,000 **MWRD Contribution:** $356,500
**Status:** Advertisement of construction contract.

### GREEN ALLEY IMPROVEMENTS PROJECT IN OAK PARK, SSA

**Contract:** 19-IGA-14 **Watershed:** Combined Sewer/Ship and Sanitary Canal Area **Location:** Oak Park, IL
**Description:** Replacing four alleys with permeable pavement.
**Estimated Construction Cost:** $1,290,000 **MWRD Contribution:** $475,000
**Status:** Construction contract awarded; work to begin April 2022.

### PUBLIC LIBRARY GREEN PARKING LOT IN PARK RIDGE, SSA

**Contract:** 19-IGA-17 **Watershed:** Lower Des Plaines River **Location:** Park Ridge, IL
**Description:** Construction of a permeable paver parking lot and rain gardens.
**Construction Cost:** $1,263,511 **MWRD Contribution:** $650,000
**Status:** Construction began in 2021 and to be completed Summer 2022.

### PERMEABLE PARKING AND BIOSWALE AT LIBERTY GREEN ANNEX IN BERWYN, SSA

**Contract:** 20-IGA-02 **Watershed:** Combined Sewer/Ship and Sanitary Canal Area **Location:** Berwyn, IL
**Description:** Construction of a bioretention area.
**Estimated Construction Cost:** $100,000 **MWRD Contribution:** $85,000 **Status:** Preliminary design.

### 119TH PLACE BIOSWALE AND PERMEABLE ALLEY IN BLUE ISLAND, CSA

**Contract:** 20-IGA-03 **Watershed:** Calumet-Sag Channel **Location:** Blue Island, IL
**Description:** Construction of a new bioretention area in a vacant, low-lying lot and a permeable alley using permeable pavers.
**Estimated Construction Cost:** TBD **MWRD Contribution:** TBD
**Status:** Construction anticipated in 2022.

### CALUMET RIVER GATEWAY GARDEN IN CHICAGO, CSA

**Contract:** 20-IGA-06 **Watershed:** Combined Sewer/Ship and Sanitary Canal Area **Location:** Chicago, IL
**Description:** Construction of Calumet River Gateway Garden to manage stormwater on this site and from nearby impervious surfaces using a dry river bed and green infrastructure.
**Estimated Construction Cost:** TBD **MWRD Contribution:** TBD **Status:** Preliminary design.

### PERMEABLE PAVER PARKING LOT IN CHICAGO RIDGE, CSA

**Contract:** 20-IGA-07 **Watershed:** Calumet-Sag Channel **Location:** Chicago Ridge, IL
**Description:** Construction of a permeable parking lot at the Village's police station.
**Estimated Construction Cost:** $541,230 **MWRD Contribution:** $227,847
**Status:** Construction anticipated in Summer 2022.

### FOREST PRESERVES GREEN INFRASTRUCTURE PARKING LOT RETROFIT IN UNINCORPORATED PROVISO TOWNSHIP, SSA

**Contract:** 20-IGA-10 **Watershed:** Lower Des Plaines River **Location:** Unincorporated Proviso Township, IL
**Description:** Reconstruction of an entire parking lot with porous unit paving and retrofit approximately 2,000 square feet of bioretention into the four parking lot islands.
**Construction Cost:** $615,806 **MWRD Contribution:** $203,107
**Status:** Construction began in 2021 and to be completed Summer 2022.

### GREEN ALLEY PROGRAM IN SKOKIE, NSA

**Contract:** 20-IGA-18 **Watershed:** North Branch of the Chicago River **Location:** Skokie, IL
**Description:** Replacing three alleys with permeable pavement.
**Estimated Construction Cost:** $650,000 **MWRD Contribution:** $190,000
**Status:** Partner's procurement process.

### WEST BELLWOOD PARKWAY BIORETENTION PROJECT IN BELLWOOD, SSA

**Contract:** 21-IGA-01 **Watershed:** Lower Des Plaines River **Location:** Bellwood, IL
**Description:** Construction of 12 bioretention facilities within the parkways of Village streets.
**Construction Cost:** $508,378 **MWRD Contribution:** $343,000
**Status:** Construction began in 2021 and to be completed Summer 2022.

### GREEN ALLEY IMPROVEMENTS IN BERWYN, SSA

**Contract:** 21-IGA-02 **Watershed:** Combined Sewer/Ship and Sanitary Canal Area **Location:** Berwyn, IL
**Description:** Replacing three alleys with permeable pavement.
**Estimated Construction Cost:** $1,005,578 **MWRD Contribution:** $503,000
**Status:** Construction anticipated in Summer 2022.

### CITY HALL PARKING LOT PAVING IMPROVEMENT IN BURBANK, CSA

**Contract:** 21-IGA-03 **Watershed:** Calumet-Sag Channel **Location:** Burbank, IL
**Description:** Improvements to the City Hall's parking lot using permeable pavers.
**Estimated Construction Cost:** $279,000 **MWRD Contribution:** $122,000 **Status:** Final design.

### GREEN PARKING LOT AND ALLEY IMPROVEMENTS IN CICERO, SSA

**Contract:** 21-IGA-04 **Watershed:** Combined Sewer/Ship and Sanitary Canal Area **Location:** Cicero, IL
**Description:** Reconstruction of an existing parking lot/alley using permeable pavers.
**Estimated Construction Cost:** $543,660 **MWRD Contribution:** $205,000
**Status:** Construction anticipated in Summer 2022.

### STORMWATER TREATMENT TRAIN IN ELMWOOD PARK, SSA

**Contract:** 21-IGA-05 **Watershed:** Lower Des Plaines River **Location:** Elmwood Park, IL
**Description:** Construction of a green infrastructure treatment train on a property previously purchased by the Village including an open-bottom detention basin, a rain garden to capture runoff and nonpoint source pollution, and new curb cuts with bioswales.
**Construction Cost:** $630,000 **MWRD Contribution:** $165,000
**Status:** Construction contract awarded; work to begin Spring 2022.

### BERRY LANE STORMWATER IMPROVEMENTS IN FLOSSMOOR, CSA

**Contract:** 21-IGA-07 **Watershed:** Little Calumet River **Location:** Flossmoor, IL
**Description:** Installation of permeable pavers along Berry Lane, from Sunset Avenue to Bob O Link Road.
**Estimated Construction Cost:** $874,360 **MWRD Contribution:** $208,000
**Status:** Construction to begin Spring 2022.

### PERMEABLE PAVER PARKING LOT PROJECT IN FOREST PARK, SSA

**Contract:** 21-IGA-08 **Watershed:** Lower Des Plaines River **Location:** Forest Park, IL
**Description:** Construction of a permeable parking lot.
**Estimated Construction Cost:** TBD **MWRD Contribution:** TBD
**Status:** Project is pending additional funding.

### POSSUM HOLLOW WOODS GREEN INFRASTRUCTURE PARKING LOT RETROFIT IN UNINCORPORATED PROVISO TOWNSHIP, SSA

**Contract:** 21-IGA-10 **Watershed:** Lower Des Plaines River **Location:** Unincorporated Proviso Township, IL
**Description:** Reconstruction of a parking lot using permeable pavers and restoring a portion of the existing asphalt parking lot to natural open space.
**Estimated Construction Cost:** $1,007,193 **MWRD Contribution:** $420,000 **Status:** Final design.


Native plantings at Rutherford Sayre Park in Chicago

### PACIFIC AVENUE INDUSTRIAL CORRIDOR GREEN INFRASTRUCTURE IN FRANKLIN PARK, SSA

**Contract:** 21-IGA-11 **Watershed:** Lower Des Plaines River **Location:** Franklin Park, IL
**Description:** Through the use of rain gardens, the project will reduce the current load to the combined sewer system and alleviate flooding within the project area.
**Estimated Construction Cost:** $250,000 **MWRD Contribution:** $101,000 **Status:** Final design.

### GREEN INFRASTRUCTURE ALLEY IMPROVEMENTS IN HAZEL CREST, CSA

**Contract:** 21-IGA-12 **Watershed:** Little Calumet River **Location:** Hazel Crest, IL
**Description:** Provide volume control areas which enable infiltration of storm water draining to alley intersections within downtown Hazel Crest between 169th Street and 171st Street and between Jodave Avenue and Page Avenue, thereby reducing the load onto the existing storm sewer system.
**Estimated Construction Cost:** $500,000 **MWRD Contribution:** TBD
**Status:** Design and drafting Intergovernmental Agreement.

### GREEN ALLEY IMPROVEMENTS IN SUMMIT, SSA

**Contract:** 21-IGA-15 **Watershed:** Calumet-Sag Channel **Location:** Summit, IL
**Description:** Replacing two alleys with permeable pavement.
**Estimated Construction Cost:** $540,000 **MWRD Contribution:** $350,000
**Status:** Construction anticipated Summer of 2022.

## GREEN INFRASTRUCTURE PARTNERSHIP SELECTIONS – 2021 'CALL FOR PROJECTS'

The following is a list of agencies and associated projects selected during the 2021 Green Infrastructure 'Call For Projects'.

### GREEN ALLEYS PROJECT IN CALUMET CITY, CSA

**Contract:** 22-IGA-01 **Watershed:** Combined Sewer/Ship and Sanitary Canal Area
**Location:** Calumet City, IL
**Description:** Replacing four alleys with permeable pavement.
**Estimated Construction Cost:** $504,000 **MWRD Contribution:** TBD
**Status:** Design and negotiating Intergovernmental Agreement.

### GREEN PARKING LOT IMPROVEMENTS IN COUNTRYSIDE, SSA

**Contract:** 22-IGA-02 **Watershed:** Lower Des Plaines River **Location:** Countryside, IL
**Description:** Reconstruction of two parking lots at Countryside Park using permeable pavers.
**Estimated Construction Cost:** $476,000 **MWRD Contribution:** TBD
**Status:** Design and negotiating Intergovernmental Agreement.

### PERVIOUS CONCRETE ALLEY IMPROVEMENT PROJECT IN DES PLAINES, SSA

**Contract:** 22-IGA-03 **Watershed:** Lower Des Plaines River **Location:** Des Plaines, IL
**Description:** Replacing five alleys with permeable pavement.
**Estimated Construction Cost:** $968,000 **MWRD Contribution:** TBD
**Status:** Design and negotiating Intergovernmental Agreement.

### GREEN ALLEYS WATER MANAGEMENT PROJECT 2 IN LYONS, SSA

**Contract:** 22-IGA-04 **Watershed:** Lower Des Plaines River **Location:** Lyons, IL
**Description:** Replacing three alleys with permeable pavement.
**Estimated Construction Cost:** $750,000 **MWRD Contribution:** TBD
**Status:** Design and negotiating Intergovernmental Agreement.

### GREEN INFRASTRUCTURE ALLEY IMPROVEMENTS IN MAYWOOD, SSA

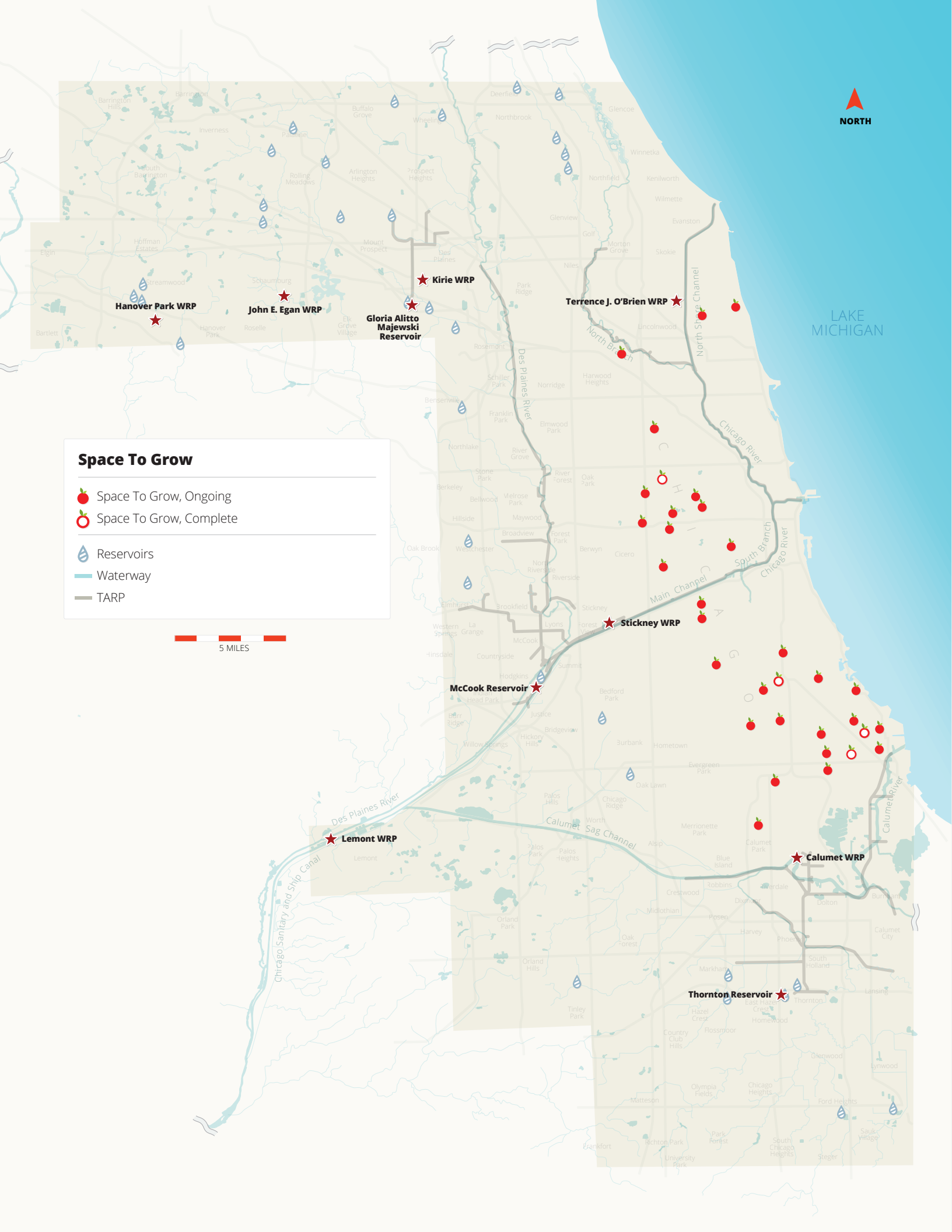
**Contract:** 22-IGA-05 **Watershed:** Lower Des Plaines River **Location:** Maywood, IL
**Description:** Replacing three alleys with permeable pavement.
**Estimated Construction Cost:** $774,000 **MWRD Contribution:** TBD
**Status:** Design and negotiating Intergovernmental Agreement.

### DETENTION BASIN NATURALIZATION IN OAK LAWN, CSA

**Contract:** 22-IGA-06 **Watershed:** Calumet-Sag Channel **Location:** Oak Lawn, IL
**Description:** Conversion of one existing grass-bottom detention basin into one that contains native plantings; project will also include monitoring of the naturalized detention basin and a control basin for evaluation of stormwater benefits.
**Estimated Construction Cost:** $70,000 **MWRD Contribution:** TBD
**Status:** Design and negotiating Intergovernmental Agreement.

### RIVER TRAILS MIDDLE SCHOOL GREEN INFRASTRUCTURE IMPROVEMENTS IN MOUNT PROSPECT, NSA

**Contract:** 22-IGA-07 **Watershed:** Lower Des Plaines River **Location:** Mount Prospect, IL
**Description:** Construction of three permeable parking lots and connecting drives using permeable pavers and three rain gardens at the River Trails Middle School.
**Estimated Construction Cost:** $1,644,500 **MWRD Contribution:** TBD
**Status:** Design and negotiating Intergovernmental Agreement.


NORTH
LAKE MICHIGAN
Hanover Park WRP
John E. Egan WRP
Kirie WRP
Gloria Alitto Majewski Reservoir
Terrence J. O'Brien WRP
Stickney WRP
McCook Reservoir
Lemont WRP
Calumet WRP
Thornton Reservoir
Des Plaines River
North Branch Chicago River
North Shore Channel
Chicago River
South Branch Chicago River
Main Channel
Calumet River
Calumet Sag Channel
Chicago Sanitary and Ship Canal
Space To Grow
Space To Grow, Ongoing
Space To Grow, Complete
Reservoirs
Waterway
TARP
5 MILES

## 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.

Space to Grow playground at John Whistler Elementary School

The program is co-managed by the Healthy Schools Campaign and Openlands with capital funding, leadership and expertise from the MWRD, Chicago Public Schools and the City of Chicago Department of Water Management. The 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. The MWRD and Chicago Public Schools executed an intergovernmental agreement to facilitate the projects whereby long term maintenance responsibilities are assigned to Chicago Public Schools. The 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.

Starting in 2014, the MWRD has invested into 30 schools providing 5.56 million gallons of design retention capacity. The program was 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 five schools in 2021. Another four projects have been designed with construction anticipated in 2022.

### Space To Grow Partnered Schools

The following is a list of Space to Grow Projects scheduled for construction in 2021. For 2020 completed projects, refer to page 6. Locations of both ongoing and completed Space to Grow Projects can be found on page 32.

**Description:** The 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 Maximum Contribution:** $18,000,000
**Status:** 30 of 34 schools have been completed through 2021. Five playgrounds were transformed in 2021. An additional four schools have been designed and are planned for construction in 2022. They are as follows:

| | |
|---|---|
| Robert A. Black Magnet Elementary School | 9101 S. Euclid Avenue |
| Edward Coles Elementary School | 8441 S. Yates Boulevard |
| Benjamin Mays Elementary Academy | 6656 S. Normal Avenue |
| Brian Piccolo Elementary School | 1040 N. Keeler Avenue |

The existing intergovernmental agreement between the MWRD and Chicago Public Schools was amended to extend the timeline for the remaining projects through 2022. The MWRD invested $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.

### Suburban Green Schoolyard Feasibility Analysis

In 2020, the MWRD conducted a feasibility study for a green infrastructure program for Suburban Cook County schools. The program would be similar to the Space to Grow Program. An online questionnaire was emailed to school district contacts in Suburban Cook County. The MWRD is currently analyzing the results of the survey. Next steps for the program include identifying entities to assist in managing the program and developing a pilot program to assess how to best move forward with greening suburban schoolyards.

## STORMWATER MAINTENANCE AND OPERATIONS

### Capital Project Maintenance and 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 the MWRD enter into an intergovernmental agreement, which includes an operation and maintenance plan defining the partner agencies' responsibilities for inspection, operation, and maintenance of the project. The MWRD reviews inspection reports generated to assess the operation of the final project and to ensure proper maintenance is being performed. The 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 and 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.

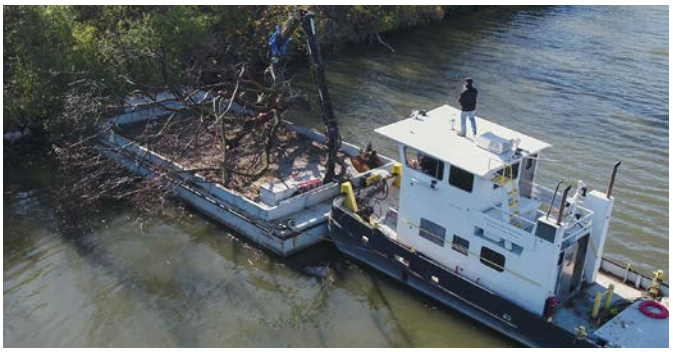
The Small Streams Maintenance Program, established in 2006, has successfully concluded its sixteenth year of operation. The program follows the MWRD's stormwater management mission to relieve flooding in urbanized areas through immediate and relatively simple remedies. The program's top priorities are 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.

The MWRD and contractor crews removed approximately 16,893 cubic yards of debris in 2021. In addition, 1,682 cubic yards of river and canal debris was removed by the MWRD's debris and skimmer boat crews along the Chicago Area Waterways. In 2021, the MWRD continued to utilize a two-year stream maintenance

contract, paying a total of $2,112,760 to contractors to provide stream maintenance. Listed in the table below are the debris amounts removed in each watershed for the past two years.

**TOTAL DEBRIS REMOVED BY WATERSHED (CUBIC YARD)**

| Watershed | 2020 | 2021 |
|---|---|---|
| Little Cal | 4,611 | 5,420 |
| Cal-Sag | 3,397 | 3,516 |
| Lower Des Plaines | 4,033 | 5,074 |
| North Branch | 1,813 | 1,730 |
| Upper Salt Creek | 673 | 941 |
| Poplar Creek | 315 | 212 |
| **Total** | **14,842** | **16,893** |



The 2021 expenditure for the Small Streams Maintenance Program was $2,112,760. The average cost per cubic yard of debris removed was $125.07.

The Small Streams Maintenance Program will continue in 2022 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 the MWRD's small stream crews to local governments to increase the public's awareness of the 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 **mwrd.org** > Services > Report an Issue 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

The MWRD began requiring stormwater detention in 1972 under the Sewer Permit Ordinance for development projects greater than five acres. In 2007, the 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 replaced 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 the MWRD's Board of Commissioners on July 10, 2014, to incorporate the Infiltration/Inflow Control Program (Article 8). It was amended again on May 16, 2019, to include watershed specific release rates. The WMO was also amended on May 7, 2020, to allow the regional stormwater detention and volume control trading program pilot study in the Lower Des Plaines River and Little Calumet River watershed planning areas to commence. References to current rainfall data were also updated. Throughout 2021, MWRD staff developed another amendment which would add new regulatory requirements and terminology for projects involving and/or impacting wetlands. This amendment would also include clarifications to requirements for development in flood protection areas. A public comment period was conducted and relevant comments were incorporated into the draft amendment. The amendment will be presented to the Board of Commissioners in 2022 for adoption.

The MWRD has developed the Technical Guidance Manual (TGM), which serves as a technical reference to the WMO, and updates the TGM as needed. The WMO webpage, **mwrd.org/wmo** 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 the 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 2021, 359 permits were issued, requiring a total of 107,944,700 gallons of detention volume and 14,470,700 gallons of green infrastructure retention volume. The following table illustrates the number of permits issued and inspected in 2021 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 |
|---|---|---|---|---|
| 2021 | 359 | 5,137 | 107,944,700 gallons | 14,470,700 gallons |
| **Total** | **2,402** | **33,585** | **761,126,800 gallons** | **104,878,300 gallons** |

### GIS/GPS Assistance

In 2017, the 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 the MWRD with their sanitary, storm and combined sewer data. In February 2022, the six GPS units became unusable due to their 3G network capability. As such, three new GPS units were purchased by the MWRD in February 2022 to allow for continued sewer system mapping. To obtain GPS equipment and related software at no cost, sewer system owners must enter into an intergovernmental agreement with the MWRD. Since 2017, ten municipalities have entered into an intergovernmental agreement with the 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 (**https://mwrd.org/geographic-information-system-assistance**).

### Infiltration / Inflow Control Program Adminstration

The 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 the MWRD's National Pollution Discharge Elimination System permits and all other applicable federal, state, and local laws and regulations;
- Minimize extraneous flows transported to the 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 the MWRD's Water Reclamation Plants. In addition to adopting a Capacity, Management, Operation and Maintenance Program for the conveyance and treatment facilities, the MWRD is required to take action to reduce excessive Infiltration/Inflow within the local sanitary sewer systems.

All satellite entities (sewer system owners) within the 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 the MWRD.

### Infiltration / Inflow Control Program Satellite Entities

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

## PARTNERSHIPS AND PUBLIC OUTREACH

### Joint Funding Agreeement with the United States Geological Survey for Stream Gaging Station in Cook County

The 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 2019–2021 agreement, the 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
- Calumet Union Drainage Ditch at Markham
- Tinley Creek near Palos Park

The 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 the MWRD with calibration of the hydrologic and hydraulic models in the Detailed Watershed Plan development, and the 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 (WPCs) were formed in 2005 to serve as advisory bodies to the 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 the MWRD's stormwater management program as well as to communicate concerns of the public to the MWRD.

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

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

The 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 2020 and 2021. The Councils of Government assist the MWRD by arranging meeting schedules, drafting and distributing meeting agendas, distributing information from the MWRD to council members, assembling contact information for council representatives, and forwarding information about stormwater management concerns from the council members to the MWRD.

Visit **https://mwrd.org/irj/portal/anonymous/meetingschedule** to view the current Watershed Planning Council meeting schedule.

### Public Affairs

In 2021, MWRD staff provided information about the MWRD and the Stormwater Management Program at various virtual events for communities throughout the region and at various virtual technical conferences. The 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 the 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 Staff will continue to participate in community outreach events in 2022, virtually and in person when possible. The 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, the 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. The MWRD continues to work closely with Cook County and our other planning partners to mitigate against flooding through projects identified in our annual report.

A list of stormwater management press releases issued in 2021 can be found here:

### 2021 Stormwater Management Press Releases

| | |
|---|---|
| January 4, 2021 | Space to Grow partners transform schoolyards, brighten play areas, mitigate flooding for South Side communities |
| January 6, 2021 | The MWRD funds 16 local green infrastructure projects to enhance public spaces |
| February 22, 2021 | Webinar to discuss new suburban schoolyard stormwater protection program set for March 2 at 3:30 p.m. |
| June 3, 2021 | Funding available for green infrastructure projects from the MWRD |
| July 14, 2021 | Illinois EPA Awards $1 Million Grant to Metropolitan Water Reclamation District |
| September 1, 2021 | The MWRD green infrastructure welcomes students back to UIC |
| September 22, 2021 | Space to Grow partners kick off another school year by transforming new schoolyard at Whistler Elementary School |
| October 7, 2021 | South Side schoolyard transformation mitigates flooding, improves water quality, learning environment and play areas |
| October 29, 2021 | New Burning Bush Trails Park amenities to combat flooding and protect Mount Prospect neighbors |
| October 29, 2021 | Space to Grow transforms schoolyard, mitigates flooding at Mireles Academy |
| November 24, 2021 | Space to Grow partners transform schoolyards, brighten play areas, mitigate flooding for South Side communities |

## 2021 STORMWATER MANAGEMENT COMMITTED EXPENDITURES

| | |
|---|---|
| **Personal Services: Consultants** | **$3,739,858** |
| **Preliminary Engineering** | **$2,637,906** |
| Final Engineering and Post Award | $1,101,951 |
| **Personal Services In-House** | **$10,221,962** |
| Contractual Services | $27,900,116 |
| Small Streams Maintenance Program | $2,651,320 |
| Small Streams Maintenance Program waste disposal | $28,968 |
| Court Reporting Services | $9,742 |
| Contractual Services NOC | $274,120 |
| Land Acquisition and Appraisals | $1,949,304 |
| Waterways Facilities Structures (Construction) | $12,439,132 |
| Army Corps of Engineers Services | $- |
| Permit Review | $486,315 |
| IGAs | $12,056,019 |
| Payments for Easements | $208,861 |
| Miscellaneous Contractual Services | $447,655 |
| **Administrative Expenses** | **$230,120** |
| Materials, Equipment, & Supplies | $230,120 |
| | **$44,743,377** |

*These figures do not include stormwater bond funds used to finance larger capital projects. Refer to the MWRD's 2021 Annual Budget Report for more detailed information available here:

**https://mwrd.org/sites/default/files/documents/2021%20FINAL%20Budget%20Book%20Web%20Version%20jpg%20ltr%20hd%20After%20Optimizing.pdf**

**Metropolitan Water Reclamation District of Greater Chicago**

100 East Erie Street • Chicago, Illinois 60611-3154

**mwrd.org**

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